DRAFT ENVIRONMENTAL ASSESSMENT

Columbus East (East 29th Avenue) Viaduct
And Related Roadway Improvements
Platte County, Nebraska

Project Number RRZ-71(33)
C.N. 32190

U.S. Department of Transportation
Federal Highway Administration

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DEPARTMENT OF ROADS

Platte County
Nebraska

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15 September 2016

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Submitted Pursuant to 42 USC 4332(2)(c) and 23 CFR 771 & 774

to the US Department of Transportation, Federal Highway Administration
by Nebraska Department of Roads

Project Sponsor signatures indicate verification that the content of this document and the scope of the project are accurate. FHWA signature gives approval to distribute this information for public and agency review and comment. Such approval does not commit to approve any future grant requests to fund the preferred alternative.

For the Federal Highway Administration, Nebraska Division Administrator	For Nebraska Department of Roads, Project Sponsor	For Platte County Liaison
10/14/16	9/22/16	9/19/16
Date	Date	Date

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ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
ADM	Archer Daniels Midland
APE	Area of Potential Effect
APP	Avian Protection Plan
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CN	Control Number
CORRACTS	RCRA Corrective Action Sites
CSD	Conservation and Survey Division
CSW	Construction Storm Water
CY	cubic yard
dBA	A-weighted Decibels
DEA	Draft Environmental Assessment
DHHS	Department of Health and Human Services
DNR	Department of Natural Resources
EA	Environmental Assessment
ECDHD	East-Central District Health Department
EDR	Environmental Data Resources, Inc.
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FHU	Felsburg Holt & Ullevig
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FR	Federal Register
FY	Fiscal Year
GIS	geographic information system

HAP-NSHS	Highway Archaeology Program of the Nebraska State Historical Society
HMTR	Hazardous Materials Technical Report
LAST	leaking aboveground storage tank
LEP	Limited English Proficiency
LOS	Level of Service
LPPD	Loup Public Power District
LQG	large quantity generator
LUST	leaking underground storage tank
MAP-21	Moving Ahead for Progress in the 21st Century
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MEV	Million Entering Vehicles
mg/kg	milligrams per kilogram
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
NAC	Noise Abatement Criterion
NDEQ	Nebraska Department of Environmental Quality
NDNR	Nebraska Department of Natural Resources
NDOA	Nebraska Department of Aeronautics
NDOR	Nebraska Department of Roads
NEPA	National Environmental Policy Act of 1969
NESCA	Nebraska Nongame and Endangered Species Conservation Act
NGPC	Nebraska Game and Parks Commission
No.	Number
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PCB	polychlorinated biphenyl
PDO	Property Damage Only
PEMA	palustrine emergent temporarily flooded wetland
PEMC	palustrine emergent seasonally flooded wetland
P.L.	Public Law
PREC	Potential Recognized Environmental Condition
PRRIP	Platte River Recovery Implementation Program
PS&E	Plans, Specification & Estimates

PSSA	palustrine scrub-shrub temporarily flooded
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROW	right-of-way
RSL	regional screening level
SB	sample boring
SF	square feet
SHPO	State Historic Preservation Officer
SHWS	State hazardous waste site
SPILLS	Emergency Surface Spill List
SQG	small quantity generator
STIP	State Transportation Improvement Program
SVOC	Semi-volatile Organic Compounds
SWMP	Stormwater Management Programs
SWPPP	Storm Water Pollution Prevention Plan
TCE	trichloroethylene
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
UNL	University of Nebraska at Lincoln
UPRR	Union Pacific Railroad
US	United States
US 30	United States Highway 30
USACE	United States Army Corps of Engineers
USC	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VOC	Volatile Organic Compound
vpd	vehicles per day
WOUS	Waters of the United States
WPA	Wellhead Protection Area

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Project Number RRZ-71(33), C.N. 32190

EXECUTIVE SUMMARY

Project Overview

Background. Platte County is proposing to construct a new three-lane, grade-separated viaduct along East 29th Avenue over the existing double-track mainline and single siding track of the Union Pacific Railroad (UPRR). The proposed Columbus East Viaduct project (hereafter referred to as "project"), located in Platte County, Nebraska, is on the eastern fringe of the City of Columbus. The proposed project is being developed as a federal-aid project with the Federal Highway Administration (FHWA) as the lead federal agency, and the Nebraska Department of Roads (NDOR) and Platte County as project sponsors.

Purpose and Need

Purpose. The purpose of the project is to improve the efficiency of the Platte County road network by (1) improving accessibility to the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions at the East 29th Avenue and East 14th Avenue railroad crossings.

Need. The need for the project is based primarily on the current vehicular and train conflicts at the East 29th Avenue railroad crossing. The UPRR currently carries 70 to 80 trains daily on the double-track mainline and single siding track resulting in at least 2.5 to 3.0 hours per day that the crossing is blocked to vehicular travel. Additionally, East 29th Avenue is the primary route connecting United States Highway 30 (US 30) with the industries and businesses south of the railroad crossing, with approximately 55 percent of the traffic attributed to heavy trucks. Traffic backups and delays are common due to passing trains, and these backups and delays are expected to increase with the future expansion of local industries and increased rail traffic. Currently, traffic backups often extend north from the railroad crossing and onto US 30, as well as south from the railroad crossing and onto 8th Street. Backups often limit and/or block access to businesses located along and adjacent to the East 29th Avenue corridor.

Typically, grade separations are considered when the exposure factor (Annual Average Daily Traffic [AADT] x daily train volume) exceeds 50,000. In 2013 the daily train volume along the UPRR corridor was estimated to be approximately 80 trains per day, and the AADT of East 29th Avenue was estimated at 3,700 vehicles per day (vpd). This equates to an exposure rating of 296,000. The adjacent crossing at East 14th Avenue is also expected to be closed as part of the project. In 2013, the AADT of the East 14th Avenue crossing was 800 vpd. Assuming all of the traffic from those two crossings would benefit from a viaduct, NDOR estimates that the combined AADT would be 4,500 vpd, which equates to a combined exposure factor of 360,000.

From 1988 to 2013, three vehicle-train collisions have occurred at the East 29th Avenue at-grade railroad crossing, resulting in one fatality. The Federal Railroad Administration crossing

database had one reported vehicle-train collision (property damage only [PDO] in 1995) at the East 14th Avenue and UPRR highway-rail grade crossing over the last 20 years.

The UPRR crossing blockages cause roadway traffic congestion, delays, and the potential for vehicle crashes on East 29th Avenue, US 30, and East 8th Street as vehicles stack at the crossing. East 29th Avenue experiences the greatest queuing because it serves as the primary entrance into the truck scales for the Archer Daniels Midland (ADM) Columbus facility, 800 feet south of the UPRR mainline. Hundreds of trucks serve the plant and other adjacent industries each day with peaks of more than 30 trucks per hour counted using the East 29th Avenue crossing.

Crash records from NDOR for the intersection of US 30 with East 29th Avenue were reviewed for the most recent three-year period (2010–2012). These records were converted to crash rates per million entering vehicles (MEV). The average crash rate for the intersection is 0.96 crashes per MEV. Statistics are not available for statewide crash rates of signalized intersections of state highways and county roads. However, the statewide average crash rate for similar intersections of two state highways in Nebraska is 0.664 crashes per MEV. This supports the need for intersection improvements at US 30 and East 29th Avenue. Two fatal crashes have involved westbound semi-trucks on the approach to the intersection. Overall, 62 percent of the crashes at the intersection of East 29th Avenue and US 30 involved at least one semi-truck, reinforcing the need to give special attention to truck movements.

Detailed reviews of the crash history at the intersection indicate a pattern of rear-end crashes due to right turns off US 30 originating from a shared through lane. Right-turning crashes represent 27 percent of the total crashes during this three-year period, and rear-end crashes represent 32 percent of the total.

The two fatal crashes were rear-end crashes involving westbound semi-trucks on approach to the intersection. An advance warning system has been installed along US 30 to alert drivers to the upcoming traffic signal at East 29th Avenue. The advanced warning system consists of warning signs and beacons on both the eastbound and westbound approaches to the intersection.

Logical Termini. Logical termini for project development are defined as rational end points for a transportation improvement project and rational end points for a review of the environmental impacts associated with the project. The logical termini for this project were defined as:

- North Termini: The proposed East 29th Avenue roadway improvements on the north would likely end at the intersection with US 30, which serves as the primary origin and destination route for vehicular traffic.
- South Termini: The proposed East 29th Avenue roadway improvements on the south would likely end at the intersection with 8th Street, where East 29th Avenue terminates and aligns with a major driveway entrance to ADM. East 8th Street serves as a secondary origin and destination route because it is the only paved road between the UPRR and the Platte River.

These two junctions are the primary points of traffic entering and leaving the industrial area. To the north, East 29th Avenue becomes a gravel surfaced county road, and to the south, East 29th Avenue leads to a driveway providing business access for the ADM facility.

Environmental Study Area

Construction of the proposed project may end where the horizontal and vertical alignment and lane configuration ties back into the existing roadway; however, the environmental study area may extend beyond that point to the next adjacent intersection. The environmental study area is generally centered along the East 29th Avenue corridor and extends 0.5 mile west and 1 mile east to accommodate any modifications that might be required to adjust the priority movement of freight from the industries, as well as to locate potential detour routes during construction. Additionally, the environmental study area includes the immediate vicinity around the UPRR crossing on East 14th Avenue, which would be permanently closed in conjunction with the completion of the proposed East 29th Avenue viaduct.

Alternatives

The National Environmental Policy Act (NEPA) requires that reasonable alternatives, including a No Build (or No Action) alternative, be presented and evaluated in a NEPA document. Because there are two types of needs relating to the railroad crossing exposure/conflicts and access/circulation needs, several concepts were initially developed to address each need.

Viaduct Concepts. A No Build Alternative and five viaduct alternatives were considered:

- No Build Alternative
- Concept 1 – Existing Alignment
- Concept 2 – East Alignment
- Concept 3 – West Alignment
- Concept 4 – Far East Alignment
- Concept 5 – Far West Alignment

All viaduct concepts assume that viaduct sections would generally be 56 feet wide and would include two 12-foot-wide through lanes with 10-foot-wide shoulders and a 12-foot-wide painted left-turn lane. The left-turn lane would be predominately for the heavy volume of southbound left-turning trucks slowing to turn and access East 15th Street. A much shorter left-turn lane would be provided for northbound vehicles on the north side of the overpass.

Access and Circulation Concepts. Several access and circulation options that could be combined with most of the viaduct concepts were considered, including the following:

- No Build Alternative (No viaduct structure and no changes in access and circulation; some pavement reconstruction from US 30 to just north of 12th Street)
- Viaduct construction with a loop road connection to East 18th Street northwest of the tracks under the viaduct
- Viaduct construction with the new east-west connecting road between East 29th Avenue and East 32nd Avenue north of the tracks

- Viaduct construction with standard jug handles* providing access to industries on both sides of East 29th Avenue south of the viaduct
- Viaduct construction with a larger jug handle on the east side of East 29th Avenue south of the viaduct and a loop road connection to the west side under the viaduct
- Viaduct on greater offset alignment and using existing streets for access and circulation

Screening of Alternatives. Investigations and agency coordination resulted in an early understanding of project impacts regarding wetlands, endangered and threatened species, cultural resources, noise, and hazardous materials, among others. Few differences regarding these resources existed among the five build alternatives. As such, the primary differences among the build alternatives involved stakeholder concerns, detour requirements, and meeting the overall project purpose and need. Based on these criteria, the following four alternatives were dismissed from further consideration:

- Concept 1 – Existing Alignment
- Concept 2 – East Alignment
- Concept 4 – Far East Alignment
- Concept 5 – Far West Alignment

Alternatives Carried Forward for Detailed Evaluation. Two alternatives were carried forward:

1. *No Build Alternative.* The No Build Alternative would not meet the project purpose and need to (1) improve accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reduce traffic congestion and associated delays as train and vehicle volumes increase; and (3) decrease the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. The No Build Alternative was carried forward for analysis to establish a baseline for comparison of the build alternatives.
2. *Concept 3 – West Alignment Alternative.* Concept 3 would address railroad exposure/conflicts and provide the most effective design for access and circulation. With Concept 3, the alignment would be offset to the west to construct the new viaduct on a new alignment and maintain traffic on East 29th Avenue during construction, thereby, minimizing impacts to area industries and the traveling public. Concept 3 was presented to East 29th Avenue stakeholders at a meeting on 22 April 2014. Sixteen stakeholders who attended the meeting indicated overall support for the project and the concept offset 70 feet to the west. There was, however, some opposition to the new roadway connection on the north side of the viaduct between East 29th Avenue and East 32nd Avenue. There were also minor comments regarding specific access locations. Adjustments were made to address the concerns and are reflected in Concept 3A – West Alignment. The Preferred Alternative (Concept 3A) is a slightly modified version of the West Alignment Alternative (Concept 3) as described below.

* The term “jug handle” refers to a frontage road connection to a major roadway. The “jug handle” serves to provide a single controlled access connection to the major roadway. As a result, destinations along the major roadway have direct access to the frontage road, as opposed to the major roadway.

Preferred Alternative. Of the two alternatives carried forward, Concept 3A – West Alignment was identified as the Preferred Alternative. The Preferred Alternative would be constructed as a three lane rural cross section with open drainage, except for the viaduct structure and approaches. A frontage road would be provided on the northwest side of the viaduct connecting East 29th Avenue to East 18th Street, maintaining adequate access and circulation to area industries. The length of the bridge span over the UPRR would be increased to accommodate the frontage road under East 29th Avenue. The point at which East 29th Avenue gets back down to the existing grade would not change because the clearance over the tracks controls the profile and grades on the viaduct approaches.

The connection on the east side of East 29th Avenue north of the tracks would be a stub right-of-way serving a joint access to Columbus Steel and Paraclipse.

The elevation of the bridge over the UPRR tracks would require reconstruction of the intersection with East 12th Street south of the tracks to tie back into existing streets with reasonable grades for loaded trucks. An additional frontage road would be provided southeast of the viaduct connecting the East 29th Avenue and East 12th Street intersection with East 15th Street. The frontage road, using a large jug handle design, would include one wide lane in each direction to accommodate turning truck traffic. Furthermore, a separate right-turn lane would be provided for northbound traffic on the frontage road turning on to eastbound East 15th Street, again to accommodate the large volume of slower moving trucks.

Schedule and Funding. The construction of the Preferred Alternative as described would cover two construction seasons and last approximately 18 months. Construction is tentatively expected to begin spring 2019 and to be completed fall 2020.

The total cost for the project is estimated to be $15.76 million.

Affected Environment and Environmental Impacts

The document discusses environmental considerations for the project, the contextual setting of the affected environment, impacts of the No Build and Preferred Alternative, proposed mitigation, and standard specifications. **Table ES-1** summarizes the environmental consequences and assigns a relative ranking for the two alternatives carried forward for detailed evaluation. A rank assignment of high, medium, or low indicates how one alternative ranks relative to the other in impacts to the environmental consideration (i.e., land use, noise, air quality). For instance, a rank of high in the land use category indicates that a particular alternative would result in larger impacts to land use relative to the other alternatives. A rank assignment of negative, neutral, or positive is also used to further define the impact.

Table ES.1 Summary and Ranking of Environmental Consequences

Environmental Consideration	No Build Alternative	Preferred Alternative
Section 4(f) Resources	None	None. No known 4(f) properties.
Section 6(f) Resources	None	None. No known 6(f) properties.
Wild and Scenic Rivers	None	None. No Wild or Scenic Rivers within the project vicinity.
Title VI/Environmental Justice	None	None. No relocations would be necessary. The project would not adversely impact a low-income or minority community.
Land Ownership, Jurisdiction and Land Use	None	Low Negative: Acquisition of approximately 9.91 acres of ROW expected. No relocations would be necessary.
Socioeconomic Considerations	Moderate Negative: Decline in region due to congestion, delay, and time lost. Less desirable for new employers, no accommodation for oversized trucks or passing lanes. Continued degradation of roadway asset.	Moderate Positive: Would provide a more reliable transportation facility through the region, improve transportation movement through the area, and encourage development/new employers to the area.
Neighborhood Continuity & Cohesion	High-Negative: High traffic area with no reliability and long delays.	High Positive: New viaduct would enhance connectivity and improve traffic movements, flow, and reliability.
Cultural Resources	None	None. No effects determination.
Noise	Low Negative: Likely increases in traffic.	Low Negative: Increases in traffic, but no noise impacts predicted.
Air Quality	Low Negative: Increased traffic and delay, increasing idling time and traffic congestion resulting in higher emission factors for the area.	Moderate Positive: Would provide a more reliable transportation facility through the region and improve transportation movement through the area.
Utilities	None	Low Negative: Requires minor utility adjustments.
Land Resources and Vegetation	None	Low Negative: Approximately 0.6 acre of wetland impacts, 0.4 acre of dry land cropland, and 8.91 acres of developed industrial and residential land.
Streams, Drainage, and Floodplains	None	None. A floodplain permit is not required.
Groundwater and Wellhead Protection Areas	None	None. No known wells located within the construction limits.
Wetlands, Waters of the US, and Waters of the State	None	Low Negative: Impacts to approximately 0.75 acre of wetlands that have been determined to be Waters of the State, but not WOUS. Wetland impacts would be mitigated.
Impaired/Unique Waters	None	None. No impaired or unique waters within the project area.
Platte River Depletions and Borrow	None	None with proposed environmental commitments regarding borrow sites.
Noxious Weeds	None	Low Positive: Proposed standard specifications for revegetation.

Environmental Consideration	No Build Alternative	Preferred Alternative
Endangered & Threatened Species, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act	None	No effect for most T&E species. "May affect, not likely to adversely affect" northern long-eared bat with conservation conditions. Not likely to adversely affect eagles or migratory birds with proposed mitigation following the Avian Protection Plan.
Farmland	None	Low Negative: 0.4 acre of dryland cropland and up to 6 acres of land designated as prime farmland or farmland of statewide importance currently used for other purposes (i.e., industrial development).
Hazardous Materials	Neutral: Known regulated sites are located in the area.	Neutral: Known regulated sites are located in the area. Proposed mitigation measures if impacted soil or groundwater is encountered during construction.
Material Sources and Waste Materials	None	None, with proposed environmental commitments regarding borrow sites. Low-negative, disposal of excess material would require the Contractor to follow mitigation measures for disposal.
Temporary Construction Impacts	None	Minor disruption to traveling public during construction with proposed temporary access plan and phasing. Construction noise would be minor and temporary. Standard provisions address dust suppression.
Airports	None	None. The Columbus Municipal Airport is approximately 2.5 miles from the proposed viaduct. The viaduct and construction equipment are not expected to exceed Federal Aviation Administration (FAA) or Nebraska Department of Aeronautics (NDOA) height zoning regulations.
Secondary and Cumulative Impacts	Moderate Negative: Increased travel time for personal and commercial vehicles, impacting access to industrial operations and business.	Moderate Positive: Would provide more reliable transportation facility and access to the area, improve transportation movement through the area, and encourage development/new employers / economic growth to the area.

Public and Agency Involvement / Project Coordination

The project included the following opportunities for agency coordination and public outreach.

Agency Scoping Activities

- UPRR/NDOR Scoping Meeting, 25 February 2013
- NDOR Monthly Interagency Meetings, February 2013 – October 2014 (as needed)

Public Outreach Activities

- Public Information Meeting, 5 March 2013
- Area Industry Stakeholder Meeting No. 1, 5 March 2013
- Chamber of Commerce Meeting, 17 April 2013
- Area Industry Stakeholder Meeting No. 2, 25 April 2013
- One-on-One Stakeholder Meetings, 14 May 2013
- Area Industry Stakeholder Meeting No. 3, 22 April 2014

Public Hearing (to be scheduled) and Availability of the DEA for Public Review at:

City of Columbus – City Clerk	2424 14th Street	Columbus, Nebraska
City of Columbus Public Library	2504 14th Street	Columbus, Nebraska
Platte County Highway Department	2610 14th Street	Columbus, Nebraska
NDOR District 3 Maintenance Office	3303 12th Street	Columbus, Nebraska
NDOR Headquarters	1500 Highway 2	Lincoln, Nebraska
FHWA Nebraska Division	100 Centennial Mall North	Lincoln, Nebraska

Before the public hearing, the DEA will also be available on the NDOR website at http://www.roads.nebraska.gov/projects/ and clicking on the “Columbus East Viaduct” link. There will be a 30-day comment period for the DEA, after which the Final Environmental Assessment (EA) will be prepared in errata format.

1. INTRODUCTION

A. Background

The proposed Columbus East Viaduct project (hereafter referred to as "project") is located in the heart of the East Industrial Park, one of the most active and expanding industrial areas in Platte County and the City of Columbus. The Union Pacific Railroad (UPRR) mainline dissects the East Industrial Park, with several large industrial businesses located throughout the study area on both sides of the UPRR corridor. Train blockages routinely impact the operations of these industries throughout the corridor leading to traffic backups and delays and to limited business access. To address these problems, Platte County is proposing to construct a new three-lane, grade-separated viaduct along East 29th Avenue over the existing double-track mainline and single siding track of the UPRR.

This Draft Environmental Assessment (DEA) has been prepared to satisfy the National Environmental Policy Act (NEPA) of 1969 requirements (42 United States Code [USC] 4321 et seq.). All federally funded projects must comply with NEPA, which requires social, environmental, and economic considerations be incorporated into project planning and public involvement as part of the decision-making process. The intent of the law is to find a balance between population needs and use of resources, with the idea that there can be a productive harmony between advancing development and preservation of our nation's resources for future generations.

This DEA has been developed consistent with NEPA requirements according to Federal Highway Administration (FHWA) guidance for preparing environmental documents (23 Code of Federal Regulations [CFR] 771; FHWA Technical Advisory T-6640.8A, 30 October 1987). FHWA guidance and regulations ensure that all relevant factors are considered in the project decision-making process, including the significance of environmental impacts and public involvement.

Appendix A provides a list of preparers of this document.

B. Location

The proposed project, located in Platte County, Nebraska, is on the eastern fringe of the City of Columbus (Sections 22 and 23, Township 17 North, Range 01 East) (**Figure 1.1**). The project study area is generally centered along the East 29th Avenue corridor bounded by United States Highway 30 (US 30) on the north, East 8th Street on the south, East 44th Avenue on the east, and approximately 0.5 mile to the west of East 29th Avenue. The study area also includes the existing at-grade crossing of East 14th Avenue with the UPRR mainline. Current NDOR policy regarding new viaduct construction requires the closure of two at-grade crossings: one at or near the location of the structure and one or more others as selected and approved by NDOR and the political subdivisions. As a result, the County has agreed to close the at-grade crossing of East 14th Avenue in addition to the East 29th Avenue crossing with the construction of the proposed viaduct on East 29th Avenue. Access and circulation in the area are somewhat restricted by not only UPRR on the north but also the Platte River on the south, and, to a lesser extent, the Loup Power District Canal (Loup Canal). Loup Canal is a hydroelectric and irrigation canal owned and managed by the Loup Public Power District. Other important physical features include railroad siding tracks, which cross 8th Street at several locations, and Lost Creek, which meanders through the area.

Existing roadways serving the area were evaluated as potential detour routes to be used during project construction. East-west paved roadways serving the area are limited to:

- US 30; a four-lane divided highway.
- 8th Street; a three-lane paved urban roadway recently improved by the County from the Columbus city limits to the Loup Canal. East of the Loup Canal, 8th Street is a paved two-lane rural roadway. The repaving of 8th Street from 1st Avenue to the Loup Power Canal (east of East 32nd Avenue) was completed in spring 2012.

In addition to East 29th Avenue, north-south roadways include:

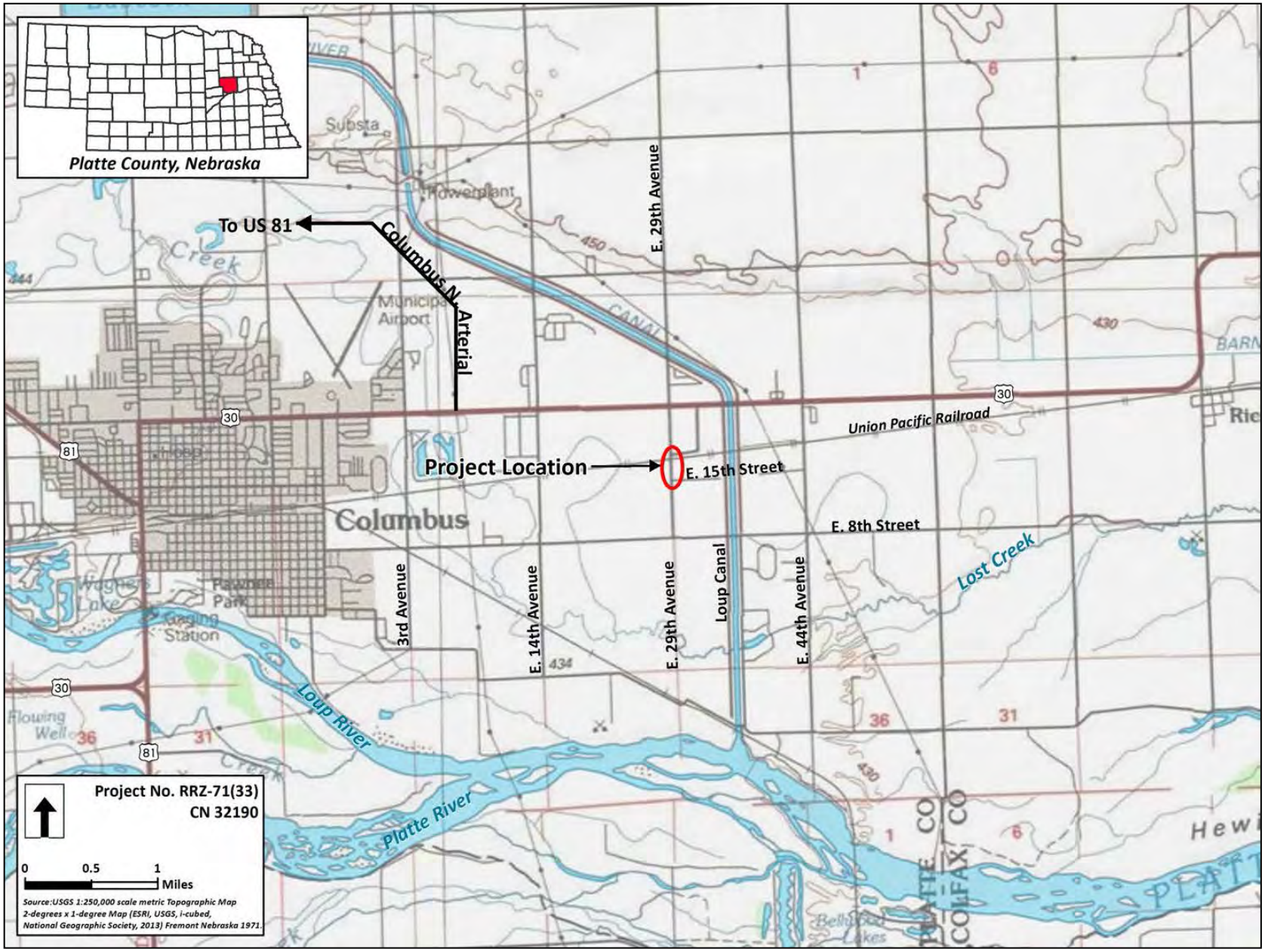
- East 14th Avenue; a paved two-lane roadway north of the UPRR and a gravel rural roadway south of the UPRR. The paved portion of East 14th Avenue is in good condition.
- East 44th Avenue; a paved two-lane roadway between US 30 on the north and 8th Street on the south. The asphalt pavement on East 44th Avenue was recently chip sealed to extend the life of the pavement and to prevent moisture damage. East 44th Avenue is a gravel rural roadway south of 8th Street.
- East 29th Avenue; a two-lane paved roadway. East 29th Avenue experiences significant pavement distress due to a large volume of heavy truck traffic. The concrete pavement panels are experiencing uneven wear and settlement at the joints from US 30 to 15th Street. South of 15th Street, the asphalt pavement is in fair condition.

Outside the study area, 3rd Avenue is the next major roadway crossing the UPRR west of East 14th Avenue. As part of the Columbus Viaducts Project, 3rd Avenue has been identified as the preferred location for a viaduct and is scheduled for construction in the 2017-2018 timeframe. Completing the Columbus North Arterial in 2011 provided a more direct connection from US 81 to US 30 at East 6th Avenue.

The area surrounding East 29th Avenue is primarily a mix of industrial and agricultural uses (see **Figure 1.2**; also shown on **Figure 4.1**). Agricultural fields in proximity to the project are planted in row crops or used as hay fields. The remaining areas are used for heavy industrial purposes, including, but not limited to, ethanol production, steel electric transmission pole fabrication, and metal building fabrication. These industrial areas include buildings used for manufacturing and distribution, outdoor storage yards, staging areas, and parking. Train blockages primarily impact facilities located south of the corridor; however, all industry is affected when traffic from those blockages extends past the access points for businesses north of the corridor. The largest traffic generator south of the UPRR corridor is the Archer Daniels Midland (ADM) Columbus facility, the largest ethanol producer in the State according to the Nebraska Energy Office, producing 300 million gallons of ethanol per year (Nebraska Energy Office, April 2014). The facility includes a wet corn mill, dry mill, and coal-fired cogeneration plant. It receives grains primarily by trucks traveling from US 30 to East 29th Avenue. While most products are shipped out by rail, co-products for cattle are trucked from the plant.

Small residential pockets are scattered along East 8th Street and East 44th Avenue, and one residence is located on East 29th Avenue. The Loup Canal runs north and south between East 29th Avenue and East 44th Avenue and flows directly into the Platte River located approximately 1.5 miles south of East 8th Street.

Figure 1.1 – Vicinity Map



C. Project Description

The project involves constructing a new three-lane grade-separated viaduct on East 29th Avenue over the existing double-track mainline and single siding track of the UPRR. In conjunction, at-grade crossings of the railroad would be closed at East 29th Avenue and East 14th Avenue. The proposed viaduct is anticipated to consist of a pier and abutment configuration using the existing East 29th Avenue alignment; however, off alignment alternatives are being considered (**Chapter 3**). Proposed viaduct sections would generally be 56 feet wide and would likely include two 12-foot-wide through lanes with 10-foot-wide shoulders and a 12-foot-wide painted southbound left-turn lane. The viaduct would conform to UPRR design standards and provide adequate vertical clearance for continued use of the UPRR mainline and single siding track. Viaduct approach grades of 3 to 5 percent are expected. As a result, multiple access points to adjacent properties would be eliminated from East 29th Avenue. Alternative access points would need to be constructed or relocated to provide adequate access and circulation.

Detours would be required if the bridge is constructed on the existing East 29th Avenue alignment. Potential detour options include a temporary at-grade UPRR crossing adjacent to the East 29th Avenue alignment or use of East 44th Avenue, East 8th Street, and East 32nd Avenue (**Figure 1.3**). During previous resurfacing construction on East 29th Avenue, the detour route used East 44th Avenue and East 8th Street to provide access to ADM and other sites south of the UPRR corridor. This is the most reasonable detour route given that East 14th Avenue is unpaved south of the UPRR corridor and anticipated to be closed. As discussed in **Chapter 1, Section B**; the County has agreed to close the at-grade crossing of East 14th Avenue in conjunction with the construction of the proposed viaduct on East 29th Avenue. It is also possible that the proposed viaduct on 3rd Avenue may be completed before construction begins on the project. If so, it is likely to be used by area employees as an alternative route to work.

The use of East 44th Avenue, East 8th Street, and East 32nd Avenue would potentially require modifications to accommodate the expected heavy truck traffic. This route would be a signed detour route and would use the East 44th Avenue at-grade crossing of the UPRR, which is currently marked with flashing signals and gates. It is anticipated that the pavement along East 8th Street and East 44th Avenue would potentially need to be rehabilitated twice. Prior to project construction, the detour route would need to be modified and rehabilitated to accommodate a heavy volume of large trucks. After project construction is complete, the detour route would likely require additional repairs due to damage incurred from overuse. Improvements would also include:

- a temporary traffic signal at the intersection of US 30 and East 44th Avenue during construction (approximately 18 months),
- radius improvements and pavement widening at the intersection of East 44th Avenue and East 8th Street to accommodate the truck turning movements, and
- paving East 32nd Avenue between East 8th Street and East 15th Street to provide an all-weather surface and to support the temporary circulation of heavy trucks for the 18-month construction period near the intersection of East 29th Avenue and East 8th Street.

The proposed project is anticipated to require additional right-of-way (ROW) and utility relocations. No relocations or acquisitions of structures are expected. Significant lead time and coordination with UPRR would be required if a temporary crossing would be provided.

The proposed project would also include the following:

- Survey and staking
- Clearing and grubbing
- Pavement removal
- Major grading (beyond the hinge point)
- Culvert new, replacement, extension, repair
- Earth shoulder construction
- Temporary at-grade railroad crossing
- Curb and flume
- Piers and pile driving (impact)
- Construction of a bridge superstructure and substructure/overpass
- Rock or gravel surfacing
- Paving
- Crack sealing and joint sealing
- Retaining walls (not in water/wetlands)
- Guardrail repair with soil disturbance
- Signs with soil disturbance
- Pavement marking
- Erosion and sediment control (barriers, post-construction erosion control, and vegetation)

D. Funding

The total cost for the project is estimated to be approximately $15.76 million.

Figure 1.2 – Project Location

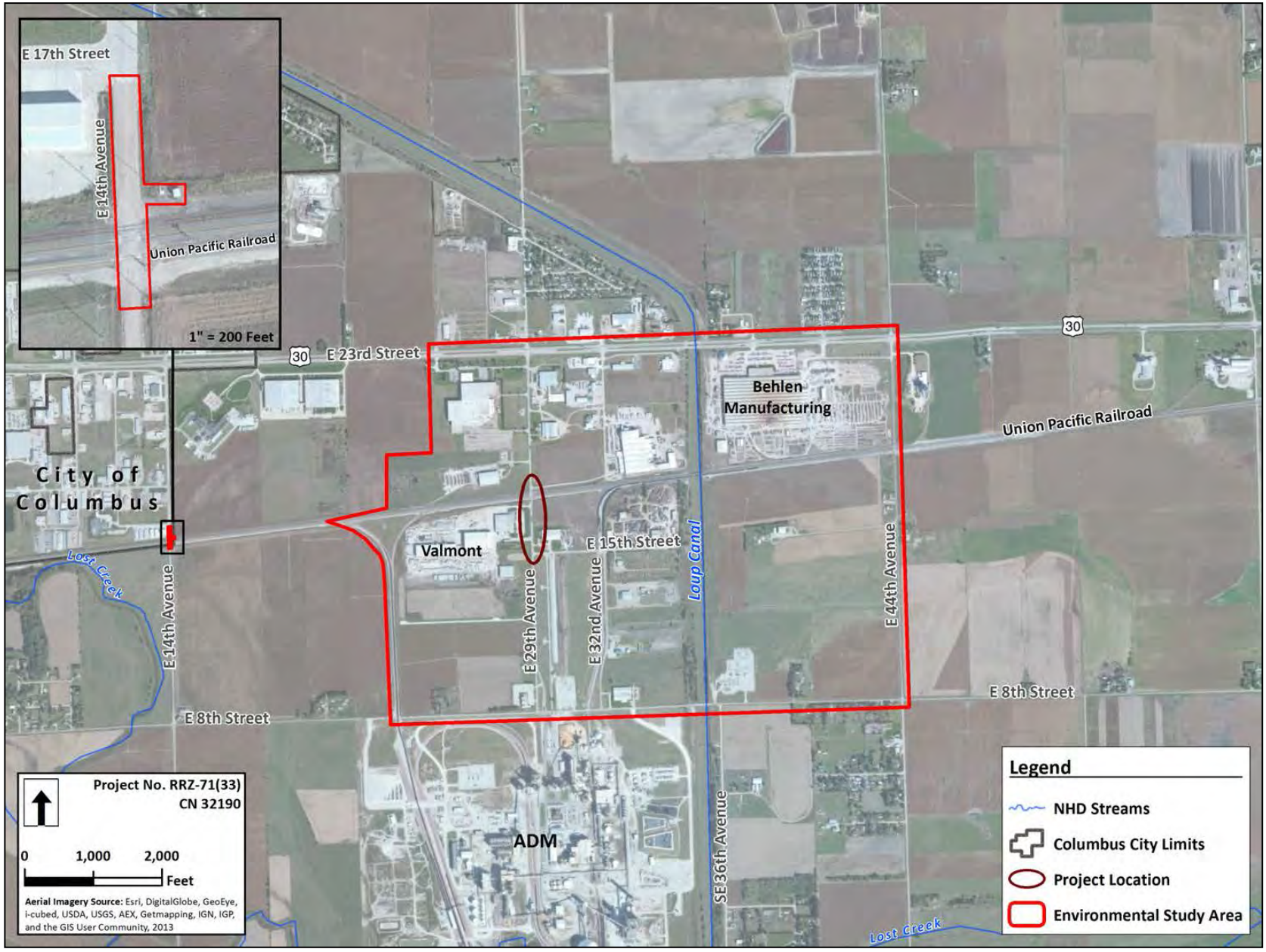
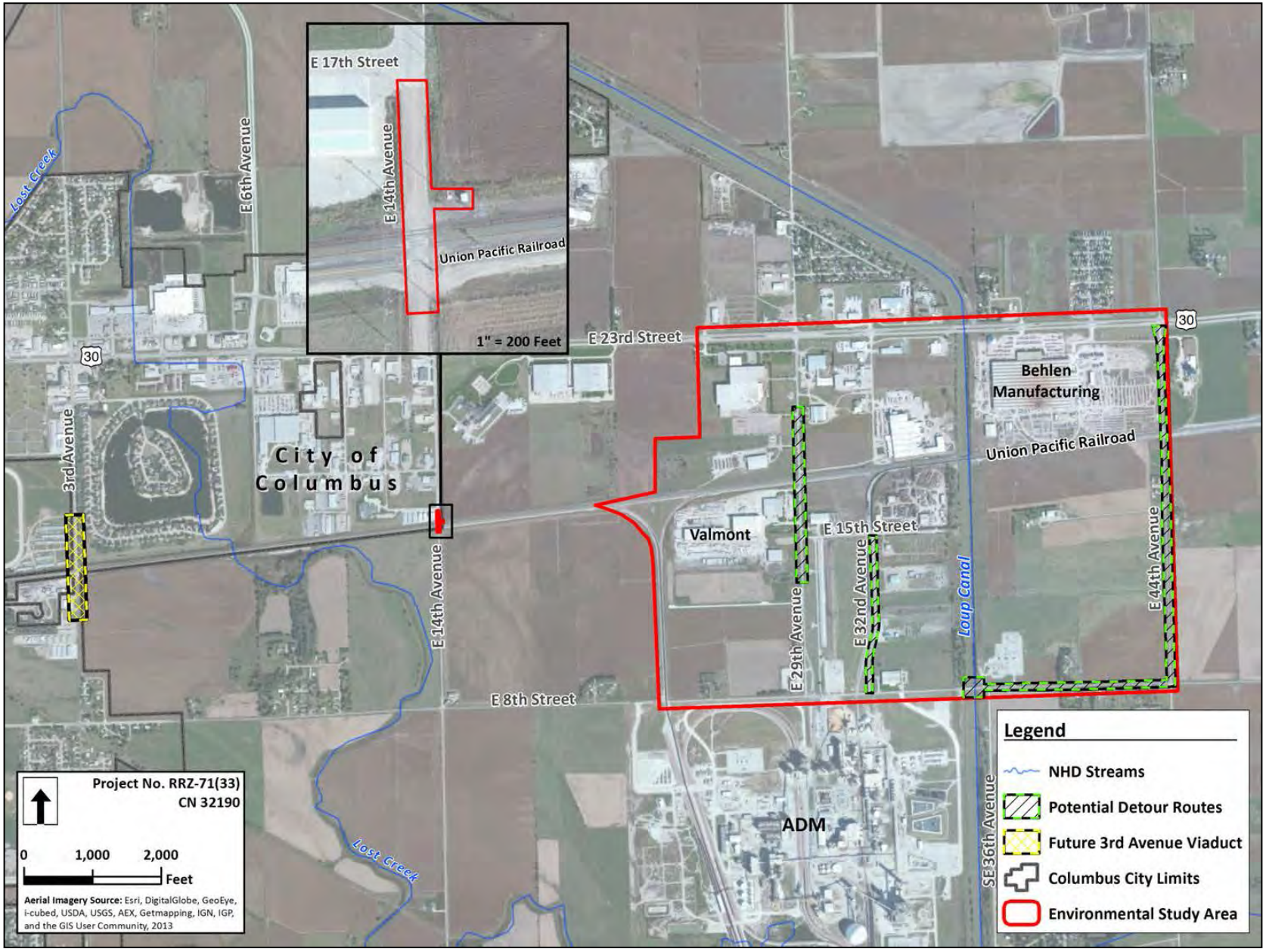


Figure 1.3 – Potential Detour Routes



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2. PURPOSE AND NEED

A. Purpose

The purpose of the project is to improve the efficiency of the Platte County Road network by (1) improving accessibility to the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions at the East 29th Avenue and East 14th Avenue railroad crossings.

B. Need

The need for the project is based primarily on the current vehicular and train conflicts at the East 29th Avenue railroad crossing. The UPRR currently carries 70 to 80 trains daily on the double-track mainline and single siding track resulting in at least 2.5 to 3.0 hours per day that the crossing is blocked to vehicular travel. Additionally, East 29th Avenue is the primary route connecting US 30 with the industries and businesses south of the railroad crossing, with approximately 55 percent of the traffic attributed to heavy trucks. Traffic backups and delays are common due to passing trains, and these backups and delays are expected to increase with future expansion of local industries and increased rail traffic. Currently, traffic backups often extend north from the railroad crossing and onto US 30, as well as south from the railroad crossing and onto 8th Street. Backups often limit and/or block access to businesses located along and adjacent to the East 29th Avenue corridor.

Appendix B includes a traffic study for the project.

B.1 Need Based on Vehicle-Train Conflicts

Typically, grade separations are considered when the exposure factor (Annual Average Daily Traffic [AADT] x daily train volume) exceeds 50,000. In 2013, the daily train volume along the UPRR corridor was estimated to be approximately 80 trains per day, and the AADT of East 29th Avenue was estimated at 3,700 vehicles per day (vpd). This equates to an exposure rating of 296,000. The adjacent crossing at East 14th Avenue is also expected to be closed as part of the project. In 2013, the AADT of the East 14th Avenue crossing was 800 vpd. Assuming all of the traffic from those two crossings would benefit from a viaduct, NDOR estimates that the combined AADT would be 4,500 vpd, which equates to a combined exposure factor of 360,000.

From 1988 to 2013, three vehicle-train collisions occurred at the East 29th Avenue at-grade railroad crossing, resulting in one fatality. **Table 2.1** summarizes crash records from the Federal Railroad Administration for the highway-rail grade crossing of East 29th Avenue with the UPRR for the most recent 25-year period (1988–2013). The Federal Railroad Administration crossing database had one reported vehicle-train collision (property damage only [PDO] in 1995) at the East 14th Avenue and UPRR highway-rail grade crossing over the last 20 years.

Table 2.1 – East 29th Ave and UPRR Crossing – Crash Data by Year (1988–2013)

Year	Fatal	Injury	Property Damage Only	Total
2012	0	0	1	1
1995	0	0	1	1
1992	1	0	0	1
Total	**1**	**0**	**2**	**3**

B.2 Need Based on Traffic Backups and Delays

Train traffic on the existing double-track mainline and single siding track of the UPRR is approximately 70 to 80 trains per day in the study area. These trains are generally unit trains up to 135 cars (1.5 miles) in length traveling at speeds up to 70 miles per hour. Each crossing is thus blocked by the crossing gates for 2 minutes or greater, while through trains travel through the corridor. Switching activity also occurs several times daily on the adjacent siding track south of the UPRR mainline, from 3rd Avenue to East 44th Avenue, serving the adjacent industries. These slower moving trains can block the crossings for longer periods as they move rail cars in and out of adjacent industrial sidings. The traffic study prepared for the project estimated that the East 29th Avenue crossing is blocked 2.5 to 3.0 hours per day (see **Appendix B**).

The UPRR crossing blockages cause roadway traffic congestion, delays, and the potential for vehicle crashes on East 29th Avenue, US 30, and East 8th Street as vehicles stack at the crossing (see **Photograph 2.1**). East 29th Avenue experiences the greatest queuing because it serves as the primary entrance into the truck scales for the ADM Columbus facility, 800 feet south of the UPRR mainline. Hundreds of trucks serve the plant and other adjacent industries each day with peaks of more than 30 trucks per hour counted using the East 29th Avenue crossing. Trucks bring raw materials and grain into the facility and deliver manufactured products and processed grain by-products to markets.

The UPRR crossing on East 14th Avenue carries 800 vpd with 5 percent heavy trucks and serves primarily as an alternate route for workers from area industries avoiding delay at East 29th Avenue and US 30 when shift changes occur. North-south traffic currently using East 14th Avenue would be routed to the proposed 3rd Avenue and East 29th Avenue viaducts. The proposed grade separation on 3rd Avenue and East 29th Avenue would provide uninterrupted north-south routes one mile to the west and east of East 14th Avenue, respectively. Only two existing residences front along the entire stretch of East 14th Avenue south of the UPRR corridor. Travel distances between these residences and destinations north of the UPRR mainline would increase by approximately 1.5 miles. Although the travel distance would increase, the trip is expected to be less stressful and the travel time more predictable because there would be no possibility of train blockages by through trains and switching activity on existing and future siding tracks. Additional details regarding the closure of the East 14th Avenue crossing can be found in **Chapter 4**, **Section C**.

The UPRR has stated plans to add one track on both the north and south sides of the existing three tracks for a total of five tracks through both the East 29th Avenue and East 14th Avenue crossings. Blockages of the East 14th Avenue crossing would be expected to increase as would the exposure to train-vehicle conflicts with the additional tracks. The proposed closure of East

14th Avenue would divert these trips to the grade separations on East 29th Avenue or 3rd Avenue. Coupled with the additional proposed Columbus Viaducts Projects (see discussion in **Chapter 2, Section C**), constructing a viaduct on East 29th Avenue and closing the at-grade UPRR crossing on East 14th Avenue would create an uninterrupted train corridor and quiet zone, extending east from the US 30/US 81 viaduct through Columbus and terminating at East 44th Avenue on the west, a distance of approximately 4 miles.

Crash records from NDOR for the intersection of US 30 with East 29th Avenue were reviewed for the most recent three-year period (2010–2012) (**Table 2.2**). These records were converted to crash rates per million entering vehicles (MEV) (**Table 2.3**). The average crash rate for the intersection is 0.96 crashes per MEV. The statewide average crash rate for similar intersections in Nebraska is 0.664 crashes per MEV. This supports the need for intersection improvements at US 30 and East 29th Avenue. Two fatal crashes have involved westbound semi-trucks on the approach to the intersection. Overall, 62 percent of the crashes at the intersection of East 29th Avenue and US 30 involved at least one semi-truck, reinforcing the need to give special attention to truck movements.

Photograph 2.1 – Truck traffic stacking along East 29th Avenue to US 30 due to a blockage of the UPRR crossing

Table 2.2 – US 30 and East 29th Avenue – Crash Data by Year (2010–2012)

Year	Fatal	Injury	Property Damage Only	Total
2010	1	2	3	6
2011	1	6	6	13
2012	0	0	3	3
Total	**2**	**8**	**12**	**22**

Table 2.3 – US 30 and East 29th Avenue – Crash Rates (2010–2012)

Intersection	Crashes by Severity				Daily Traffic	3-Year (MEV)*	Crash Rate per MEV*
	Fatal	Injury	PDO	Total			
US 30 and E 29th Ave	2	8	12	22	20,920	22.9074	0.96

MEV – Million Entering Vehicles
PDO – Property Damage Only

Table 2.4 summarizes the crash history at the intersection of US 30 with East 29th Avenue. Detailed reviews of the crash history at the intersection indicate a pattern of rear-end crashes due to right turns off US 30 originating from a shared through lane. Right-turning crashes represent 27 percent of the total crashes during this three-year period, and rear-end crashes represent 32 percent of the total.

The two fatal crashes were rear-end crashes involving westbound semi-trucks on approach to the intersection. An advance warning system has been installed along US 30 to alert drivers to the upcoming traffic signal at East 29th Avenue. The advanced warning system consists of warning signs and beacons on both the eastbound and westbound approaches to the intersection.

Table 2.4 – Crash Summary by Type (2010–2012)

Crash Pattern	2010	2011	2012	TOTAL
Right Angle	1	5	0	6
Left Turning Leaving	1	2	1	4
Rear-end	2	5	0	7
Sideswipe	2	0	0	2
Backing	0	0	1	1
N/A	0	1	1	2
Total	**6**	**13**	**3**	**22**

B.3 Logical Termini

Logical termini for project development are defined as rational end points for a transportation improvement project and rational end points for a review of the environmental impacts associated with the project. The logical termini for this project were defined as:

- North Termini: The proposed East 29th Avenue roadway improvements on the north would likely end at the intersection with US 30, which serves as the primary origin and destination route for vehicular traffic.
- South Termini: The proposed East 29th Avenue roadway improvements on the south would likely end at the intersection with 8th Street, where East 29th Avenue terminates and aligns with a major driveway entrance to ADM. East 8th Street serves as a secondary origin and destination route because it is the only paved road between the UPRR and the Platte River.

These two junctions are the primary points of traffic entering and leaving the industrial area. To the north, East 29th Avenue becomes a gravel surfaced county road, and to the south, East 29th Avenue provides direct access to an ADM driveway.

Construction of the proposed project may end where the horizontal and vertical alignment and lane configuration ties back into the existing roadway; however, the environmental study area may extend beyond that point to the next adjacent intersection. The environmental study area is generally centered along the East 29th Avenue corridor and extends 0.5 mile west and 1 mile east to accommodate any modifications that might be required to adjust the priority movement of freight from the industries, as well as to locate potential detour routes during construction. Additionally, the environmental study area includes potential impacts related to the UPRR crossing on East 14th Avenue, which would be permanently closed in conjunction with the completion of the proposed East 29th Avenue viaduct.

The environmental study area boundaries, as shown in **Chapter 1, Figure 1.2,** were initially drawn to include the proposed alternatives, detours, and other areas potentially impacted by construction activities. Although these boundaries may be sufficient to evaluate resources directly impacted by the proposed project footprint and associated construction activities (i.e., wetlands, utilities, farmlands, etc.), other resources require an evaluation of surrounding or adjacent areas to adequately evaluate impacts (i.e., environmental justice, hazardous materials, etc.). Consequently, the environmental study area, as shown in **Chapter 1, Figure 1.2,** does not necessarily represent the total area of study for all resources evaluated in **Chapter 4**. See **Chapter 4** for an in-depth resource-specific discussion of potential impacts to various environmental resources.

C. Conformance with Regulations and Land Use Plans

MAP-21 – *Moving Ahead for Progress in the 21st Century* (Public Law [P.L.] 112-141) includes provisions to support investment in freight-related surface transportation projects. Specific measures include assessing barriers to improved freight transportation performance by reducing congestion, improving safety, and being in a state of good repair. The project is consistent with those measures and also consistent with local land use plans. The project is included in Platte County's Six-Year Plan for Fiscal Year (FY) 2015–2020, a six-year road program of capital improvements projects.

The Columbus East Viaduct project is also included in the State Transportation Improvement Program (STIP) for FY 2017–2020 (NDOR, 9 September 2016, page 48). The STIP is NDOR's four-year highway improvement program. Projects in the STIP that are funded with federal dollars must conform to any and all federal, state, or local regulations/statutes that are applicable based on the type of funding received, scope of work, and/or impact to the natural or human environments. Based on the STIP for FY 2017–2020, the proposed project is expected to cost approximately $15.76 million and is scheduled for construction in spring 2019.

The project is located east of the proposed 3rd-18th Avenue Viaducts, Project No. RRZ-TMT-6065(5); the UPRR/12th Avenue Viaduct, Project No. RRZ-TMT-6061(8); and the UPRR/23rd Avenue and UPRR/25th Avenue Viaduct, Project No. RRZ-TMT-6057(2). These projects would construct viaducts near 3rd Avenue and 12th Avenue, as well as a pedestrian overpass near 18th Avenue. An additional viaduct between 23rd Avenue and 25th Avenue is currently being

studied. Upon completion of these proposed projects, the only remaining at-grade crossing between East 29th Avenue and US 81/33rd Avenue is East 14th Avenue (**Figure 2.1**).

East 14th Avenue is a local paved street north of the UPRR corridor providing access to the adjacent industries from US 30. East 14th Avenue is a gravel roadway from the UPRR corridor south to East 8th Street with only field access to the adjacent farm ground.

The East 14th Avenue crossing (**Figure 2.2** and **Figure 2.3**) would remain open during construction of the East 29th Avenue viaduct and be closed to traffic upon completion of the project. Combined with existing and planned future viaducts within the City of Columbus, closing the East 14th Avenue crossing would provide an uninterrupted UPRR corridor approximately 7.5 miles in length, making it easier for UPRR to provide rail service to industrial customers. It would also result in less sounding of locomotive horns for area residents along the corridor.

Current NDOR policy regarding new viaduct construction requires the closure of two at-grade crossings. The only other remaining at-grade crossing is East 44th Avenue one mile east of East 29th Avenue. East 44th Avenue is a paved collector from East 8th Street to US 30, carrying approximately 2,000 vehicles per day. As a result, the City of Columbus and the County have agreed to close the at-grade crossing of East 14th Avenue in conjunction with the funding agreement with the State and UPRR for construction of the proposed viaduct on East 29th Avenue. **Appendix C** includes documentation regarding these agreements.

North-south traffic currently using East 14th Avenue would be routed to the proposed 3rd Avenue and East 29th Avenue viaducts. The proposed grade separation on 3rd Avenue and East 29th Avenue would provide uninterrupted north-south routes 1 mile to the west and east of East 14th Avenue, respectively. Emergency vehicles from the Columbus Fire Station on the north side of 8th Street just west of 3rd Avenue would use the 3rd Avenue viaduct. Traffic access to the residential area southwest of 3rd Avenue and 8th Street, including Centennial Elementary School, would also continue to use 3rd Avenue to travel north of the UPRR corridor.

The users of the existing crossing of East 14th Avenue are primarily employees of area industries using it as a short cut to avoid minor congestion at shift changes on East 29th Avenue. The industrial traffic with destinations east of East 14th Avenue would be able to use the new viaduct along East 29th Avenue at the added capacity. The only drivers that would have any added travel would be trips originating from the residential units within the vicinity of East 14th Avenue south of the UPRR corridor to destinations north of the UPRR corridor near East 14th Avenue. Travel distances between these destinations would increase by approximately 1.5 miles. Although the travel distances would increase, the trip is expected to be less stressful, and the travel time more predictable, as there would be no possibility of train blockages by through trains and switching activity on existing and future siding tracks.

Chapter 4, Section C, Socioeconomic Considerations, contains an evaluation of the potential effects of the closure of East 14th Avenue. The project is compatible with potential future changes in both transportation and land uses. **Chapter 4, Section B**, **Land Ownership, Jurisdiction, and Land Use**, discusses the existing and future land use in detail.

Figure 2.1 **– City of Columbus and Vicinity Proposed UPRR Corridor Viaduct Projects**

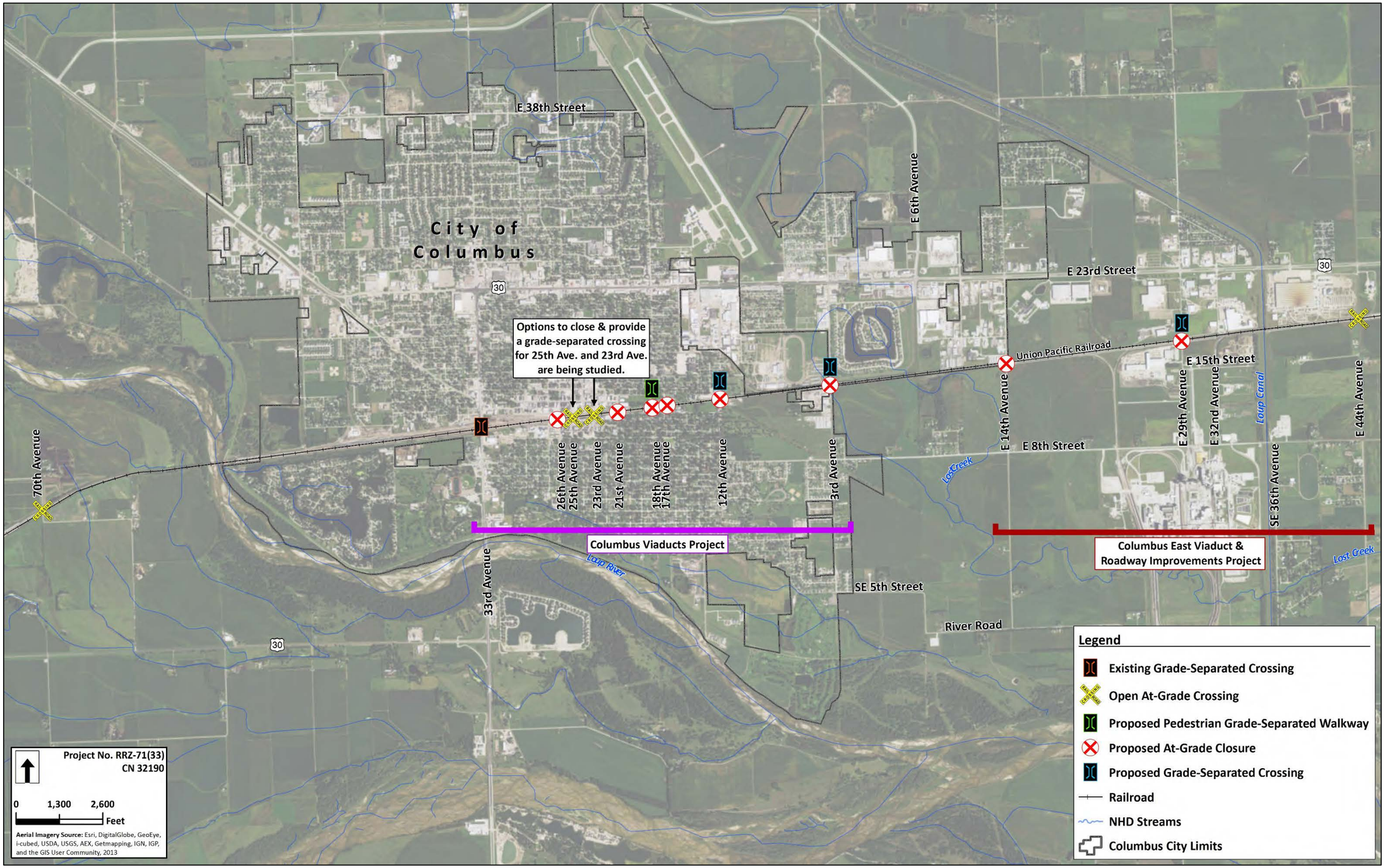

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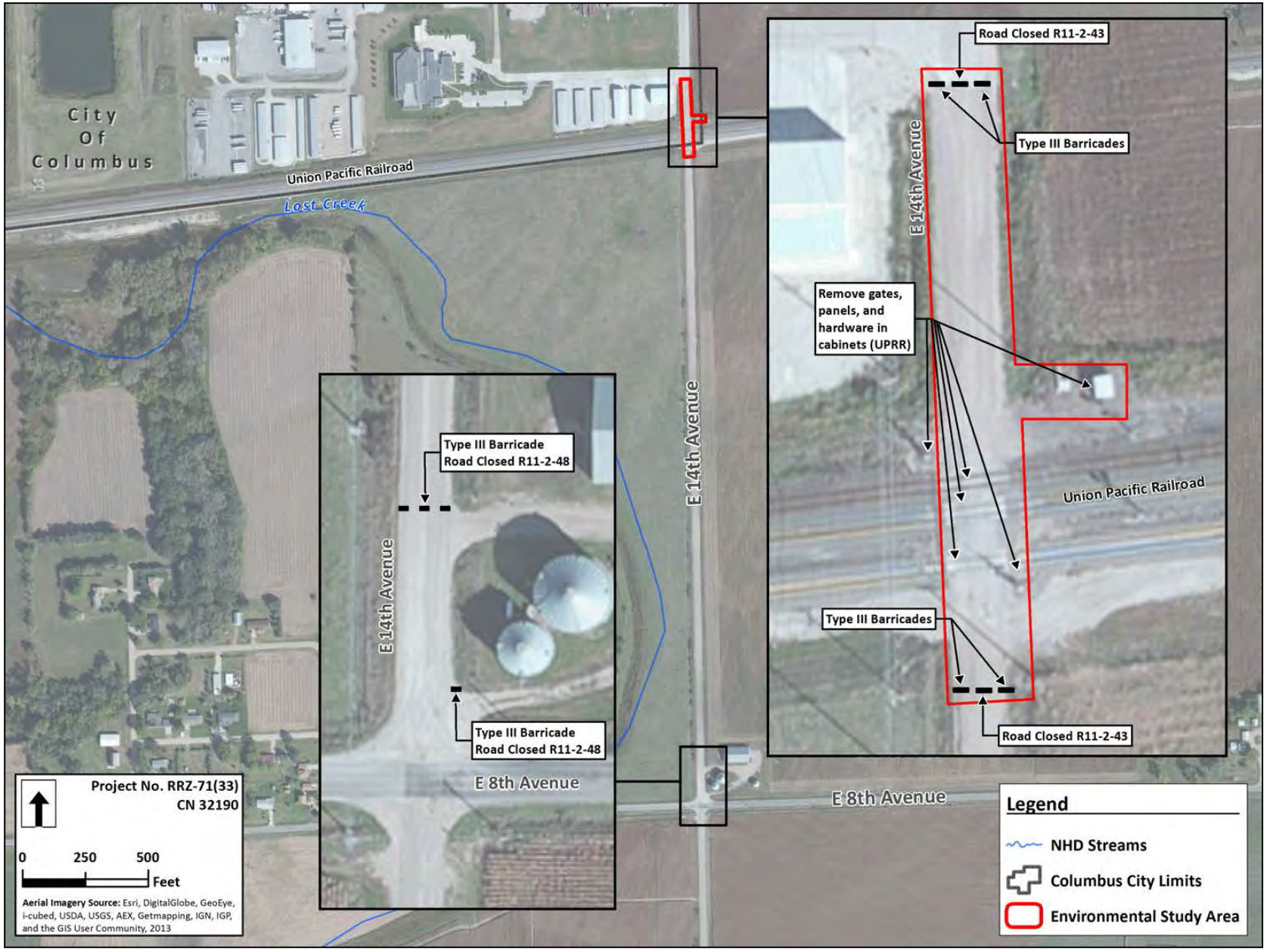
Figure 2.2 – Crossing Closure Overview, East 14th Avenue

Figure 2.3 – Crossing Closure Detail, East 14th Avenue



3. ALTERNATIVES

A. Development of Concepts

NEPA requires that reasonable alternatives, including a No Build (or No Action) alternative, be presented and evaluated in a NEPA document. This chapter describes the process used to identify the various concepts assessed in this document. Because there are two types of needs relating to the railroad crossing exposure/conflicts and access/circulation needs, several concepts were initially developed to address each need.

Based on the need for a viaduct over the UPRR as previously described, two general alternatives were considered: No Build Alternative (no viaduct) and Viaduct Alternative.

Closing the at-grade crossings of the UPRR at East 29th Avenue and East 14th Avenue crossings would reduce the exposure for vehicle-train collisions. The City of Columbus, NDOR, and UPRR agreed to the East 14th Avenue crossing closure in conjunction with the construction of a viaduct on East 29th Avenue (signed agreement included in **Appendix C**). According to the Columbus City Council transcript from December 1, 2008, the closure of the East 14th Avenue crossing was generally supported as follows:

- Traffic study results suggest that closing East 14th Avenue was preferred based on anticipated UPRR and industry expansion plans, and the associated reduction in train-vehicle exposure as compared to other options, namely East 44th Avenue.
- Coupled with the Columbus Viaducts Project, closing the East 14th Avenue crossing would allow an uninterrupted UPRR corridor through the City of Columbus, greatly limiting train-vehicle exposure and vehicle delay due to trains (see **Figure 2.1**).
- Public testimony from local residents supports closing the East 14th Avenue crossing as opposed to the East 44th Avenue crossing.

Appendix C includes the Columbus City Council transcript from December 1, 2008.

Based on this information, closing the East 14th Street crossing was assumed for all East 29th Avenue viaduct concepts considered.

Two viaduct concepts were initially considered:

1. Viaduct structure on the existing East 29th Avenue alignment with detour
2. Viaduct structure offset to the east of the existing alignment

The concepts were presented at a public information meeting held 5 March 2013. Local residents were not vocal in either their support or their opposition for improving what is widely considered an industrial crossing. Because the general public did not express a preference for a design, a more focused stakeholder outreach was initiated with involvement of the businesses within the East Industrial Park area. Comments received at an initial meeting on 5 March 2013, were used to develop and refine concepts incorporating features to address stakeholder concerns.

Following the initial stakeholder meetings, three additional viaduct concepts were developed, for a total of five viaduct concepts. All viaduct concepts assume that viaduct sections would generally be 56 feet wide and would include two 12-foot-wide through lanes with 10-foot-wide

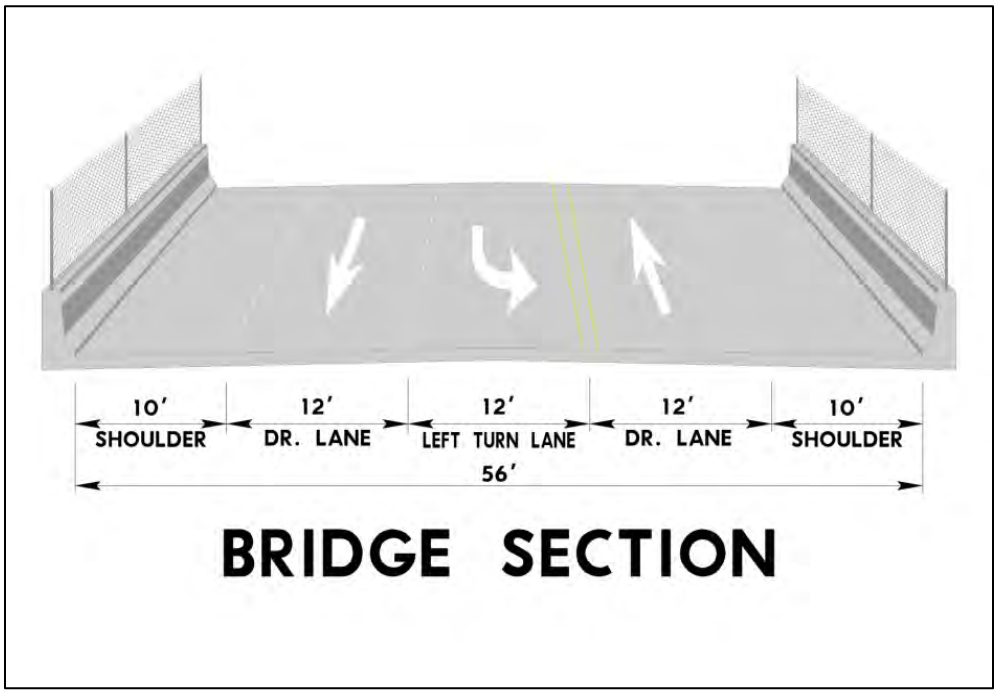
shoulders and a 12-foot-wide painted left-turn lane (**Figure 3.1**). The southbound left-turn lane would be predominantly for the heavy volume of left-turning trucks slowing to turn and access East 15th Street. A much shorter left-turn lane would be provided for northbound vehicles on the north side of the overpass.

Developed viaduct concepts include:

- No Build Alternative (**Figure 3.2**)
- Concept 1 – Existing Alignment (**Figure 3.3**)
- Concept 2 – East Alignment (**Figure 3.4**)
- Concept 3 – West Alignment (**Figure 3.5**)
- Concept 4 – Far East Alignment (**Figure 3.6**)
- Concept 5 – Far West Alignment (**Figure 3.7**)

Chapter 3, **Section B**, provides an in-depth description of each viaduct concept.

Figure 3.1 – Typical Viaduct Section



Access and Circulation Options. Several access and circulation options that could be combined with most of the viaduct concepts were considered. These included the following:

- No Build Alternative (No viaduct structure and no changes in access and circulation; some pavement reconstruction from US 30 to just north of 12th Street)
- Viaduct construction with a loop road connection to East 18th Street northwest of the tracks under the viaduct – Used for Concept 1 (**Figure 3.3**) and Concept 2 (**Figure 3.4**)

- Viaduct construction with the new east-west connecting road between East 29th Avenue and East 32nd Avenue north of the tracks – Used for Concept 3 (**Figure 3.5**) and Concept 4 (**Figure 3.6**)
- Viaduct construction with standard jug handles* providing access to industries on both sides of East 29th Avenue south of the viaduct – Used for Concept 1 (**Figure 3.3**) and Concept 2 (**Figure 3.4**)
- Viaduct construction with a larger jug handle on the east side of East 29th Avenue south of the viaduct and a loop road connection to the west side under the viaduct – Used for Concept 3 (**Figure 3.5**)
- Viaduct on greater offset alignment and using existing streets for access and circulation – Used for Concept 4 (**Figure 3.6**) and Concept 5 (**Figure 3.7**)

* The term "jug handle" refers to a frontage road connection to a major roadway. The "jug handle" serves to provide a single controlled access connection to the major roadway. As a result, destinations along the major roadway have direct access to the frontage road, as opposed to the major roadway.

Figure 3.2 **– No Build Alternative**

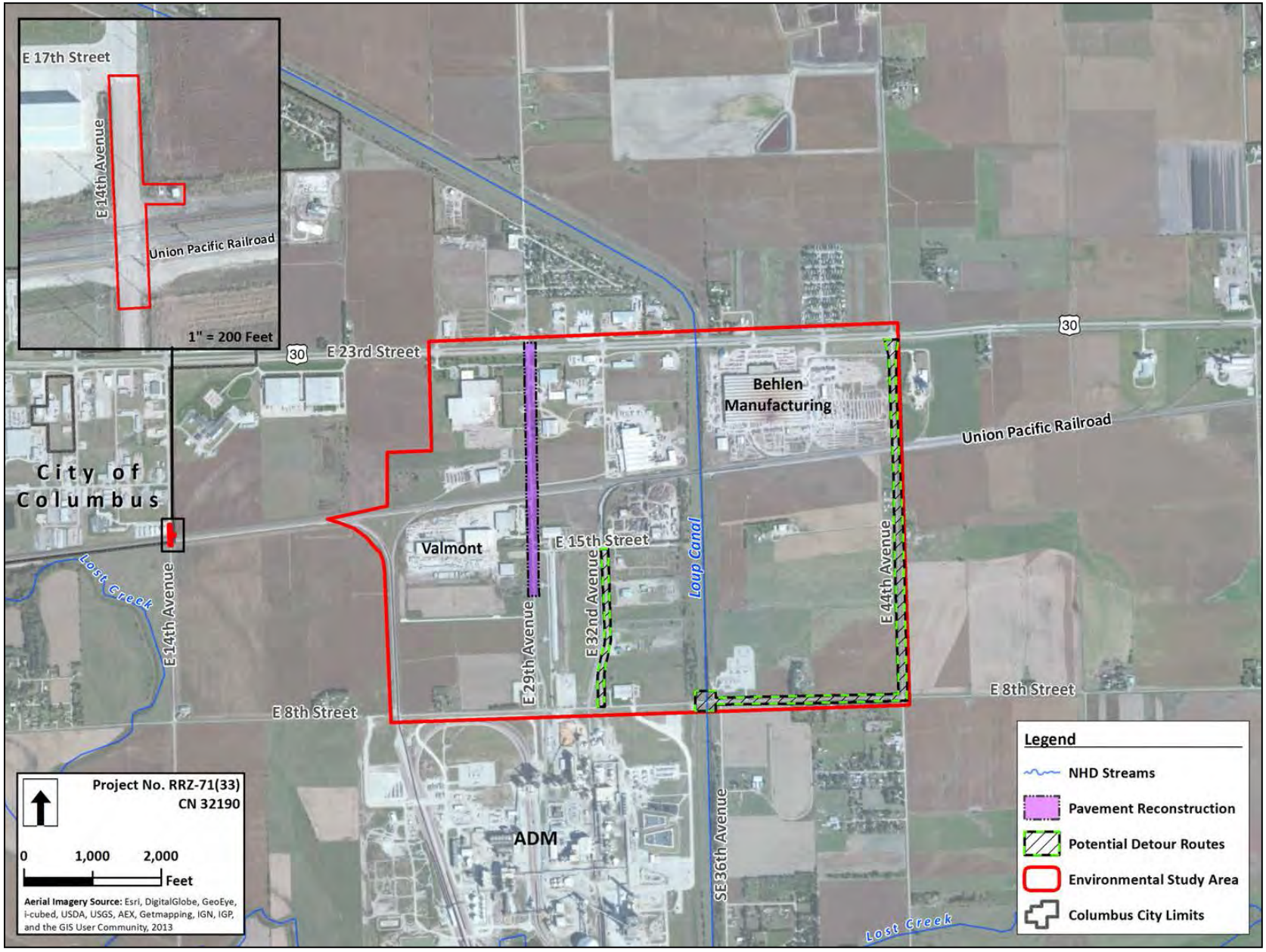
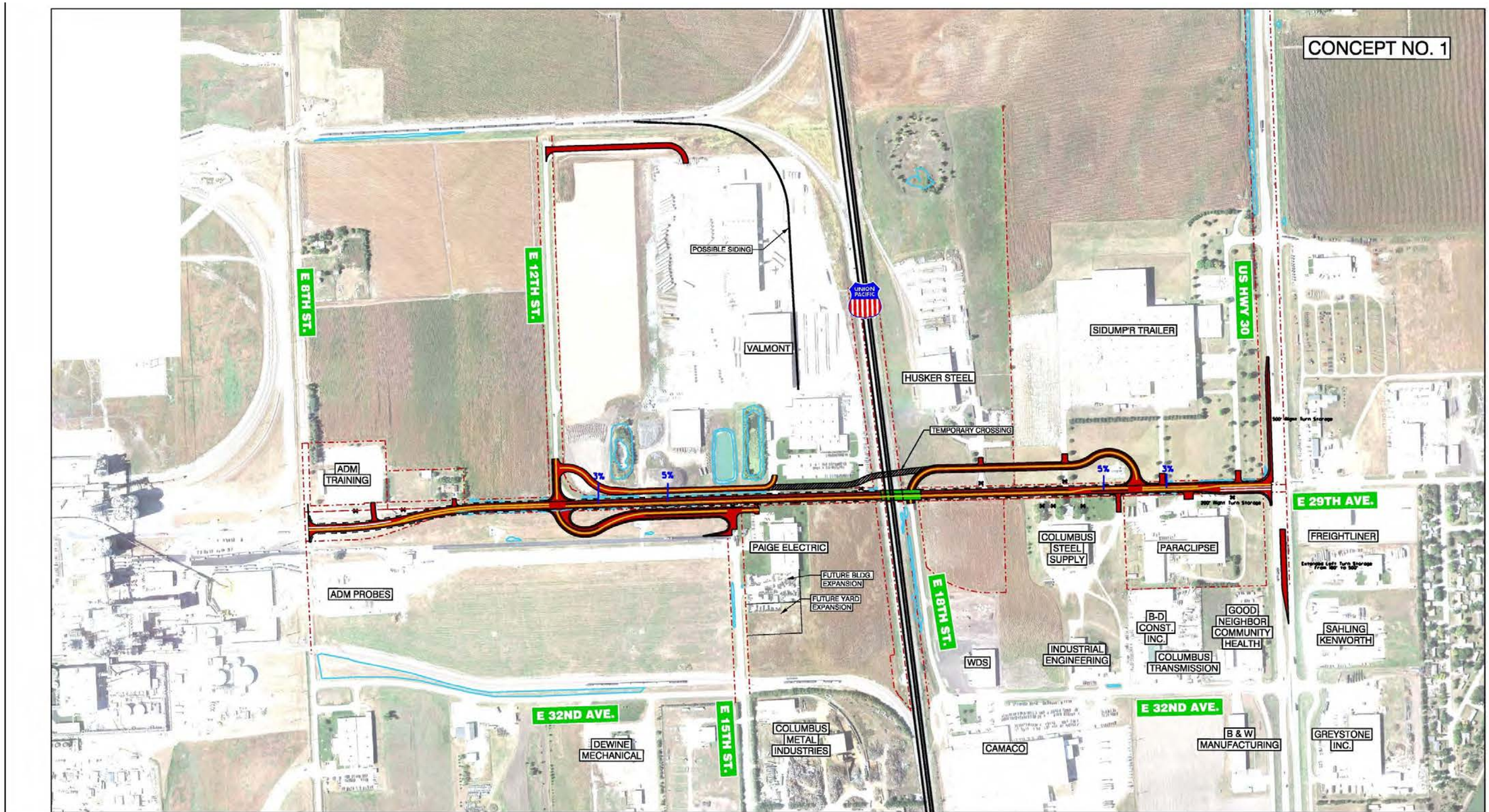
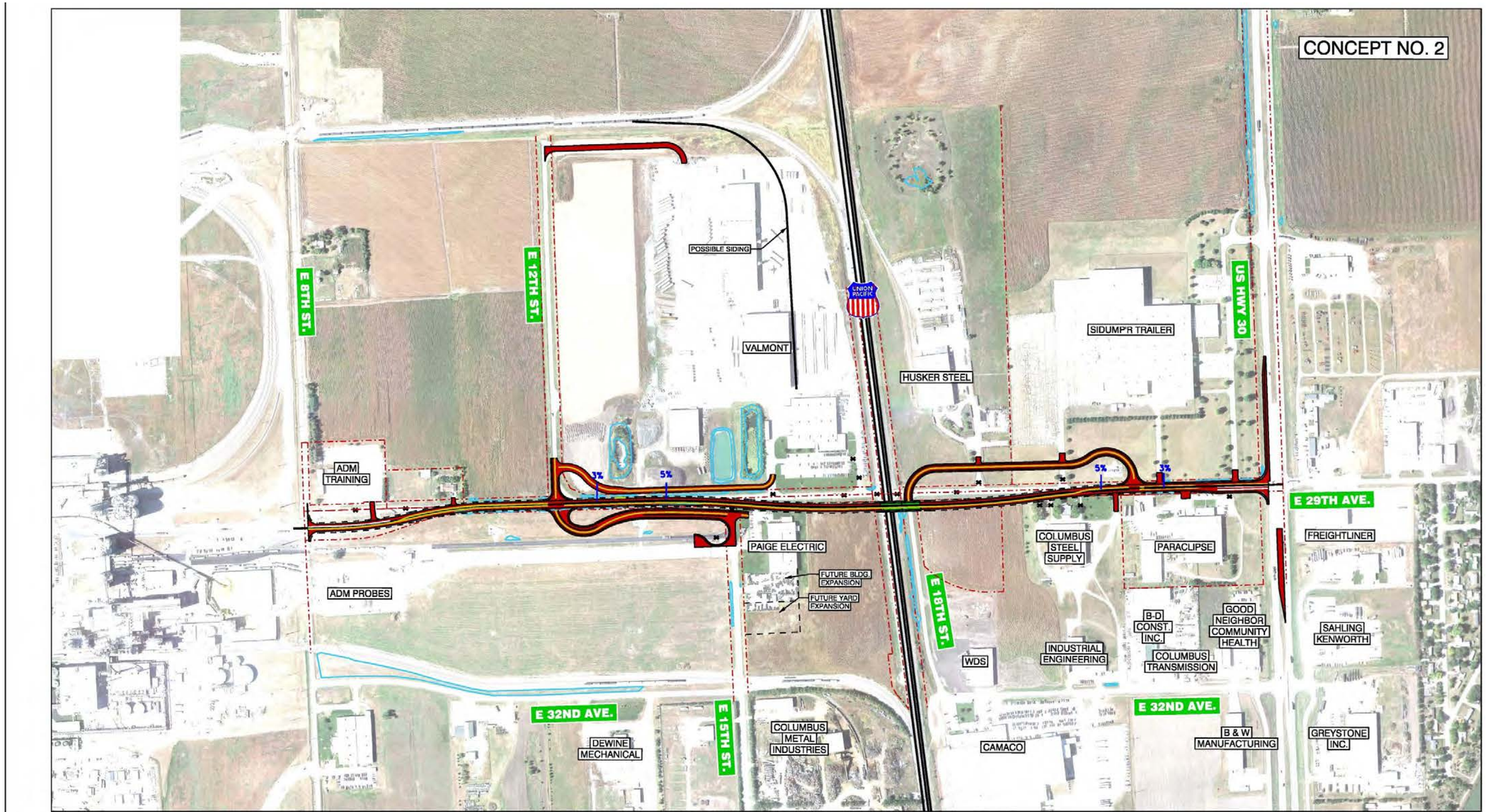


Figure 3.3 – Concept 1, Existing Alignment



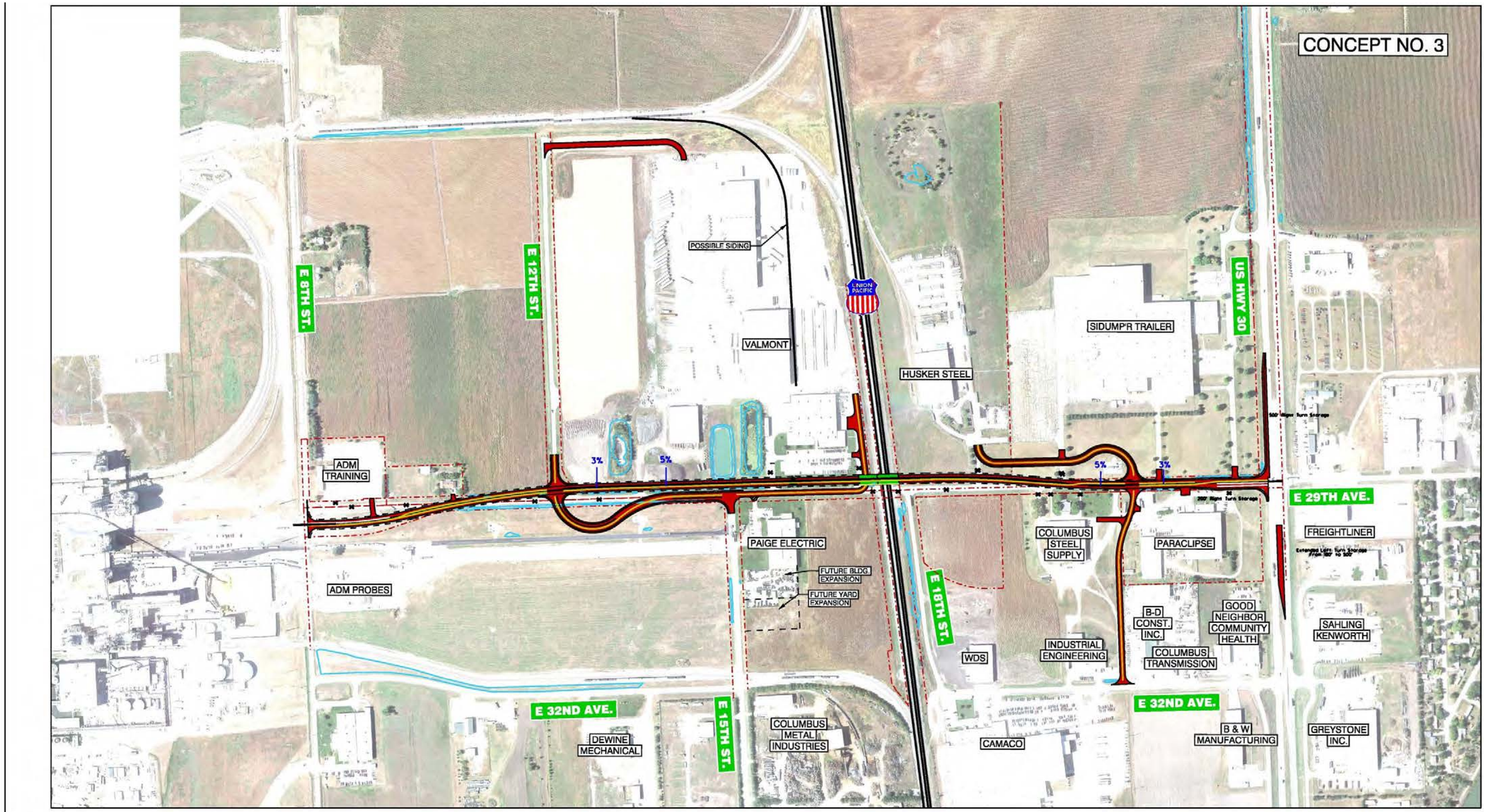
Viaduct on Existing E. 29th Avenue
Columbus East Viaduct
Platte County, NE

Figure 3.4 – Concept 2, East Alignment



Viaduct offset to the East
Columbus East Viaduct
Platte County, NE

Figure 3.5 – Concept 3, West Alignment



Viaduct offset to the West
Columbus East Viaduct
Platte County, NE

Figure 3.6 – Concept 4, Far East Alignment

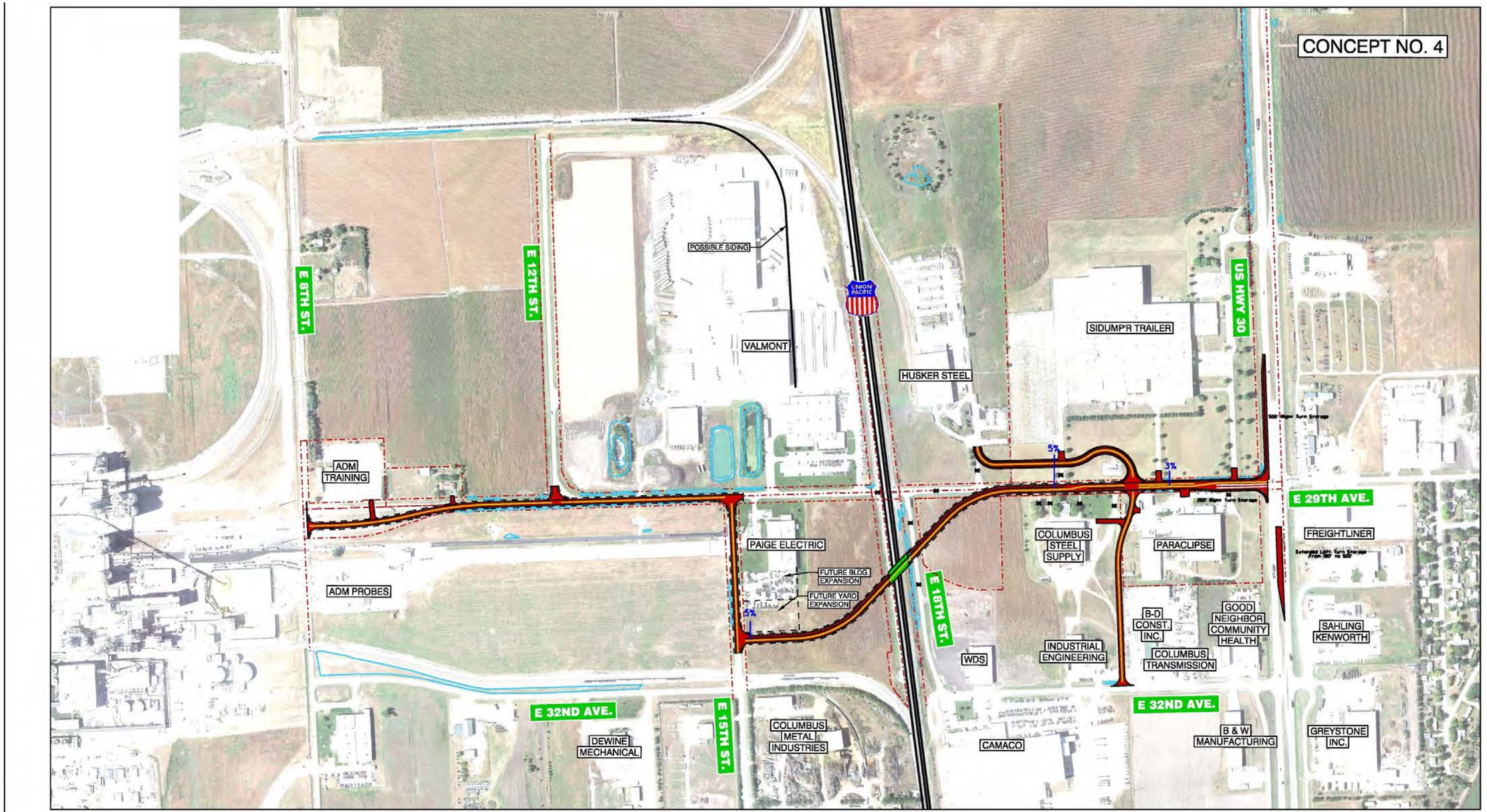
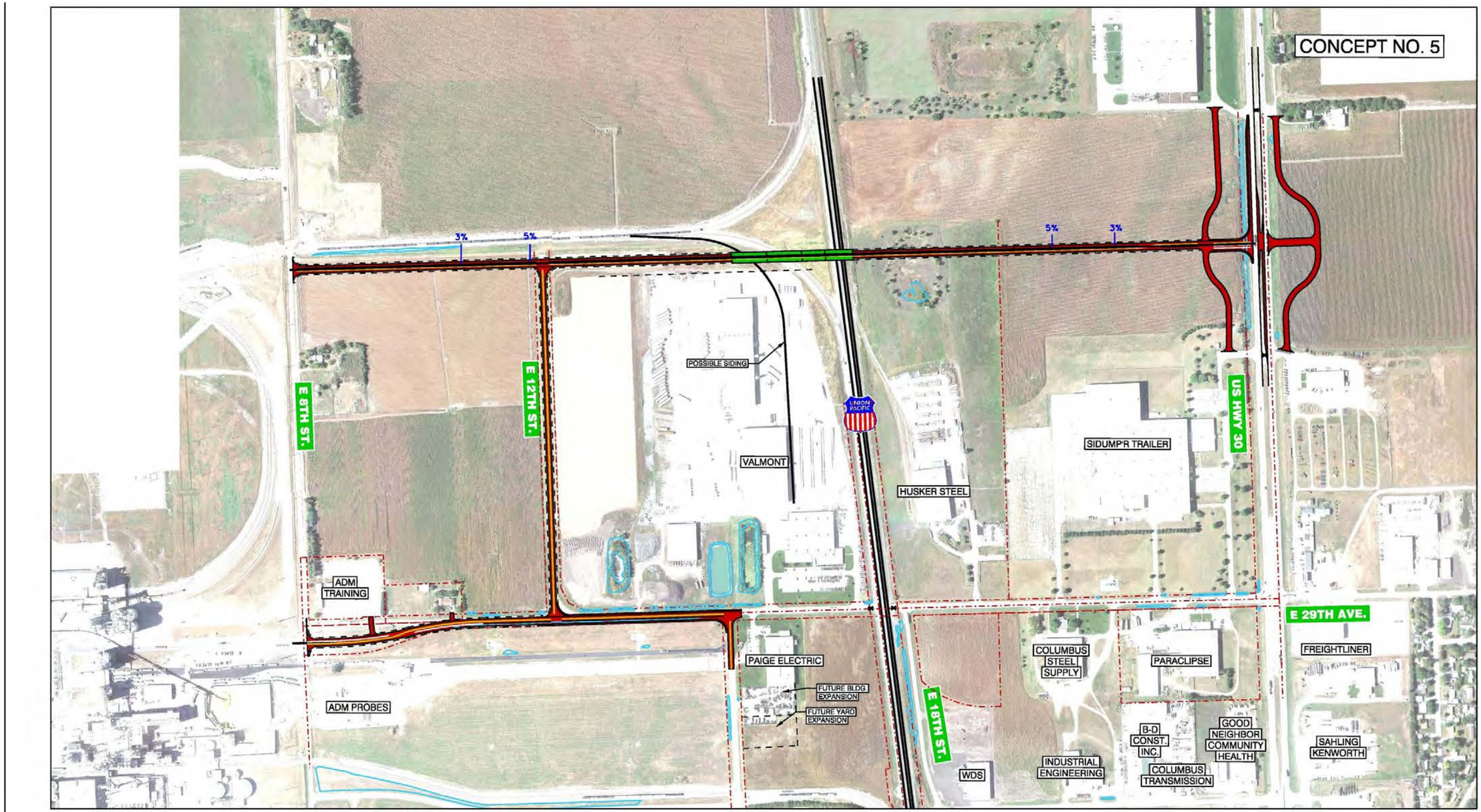


Figure 3.7 – Concept 5, Far West Alignment



Viaduct offset 1,600' West
Columbus East Viaduct
Platte County, NE

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B. Description of Viaduct Concepts

B.1 No Build Alternative (Figure 3.2)

The No Build Alternative involves no federal action.

Access and Circulation Movements. Existing access and circulation movements would remain unchanged with increasing disruptions from the current 2.5 hours per day proportionately as train volumes increase. There would also be a time when the roadway must be closed for repaving to address the current pavement stresses. When the roadway is closed, truck movements across the UPRR corridor would be directed to the at-grade separation provided at East 44th Avenue, 1 mile to the east, which would result in a total distance of 2 miles of additional travel for trucks coming from the west, but little additional travel for those coming from the east. The unpaved portion of East 32nd Avenue between East 8th Street and East 15th Avenue would need to be monitored. To the west, 3rd Avenue is anticipated to have a grade separation completed in 2016 two miles away from East 29th Avenue for passenger vehicle traffic.

Exposure to Trains. The No Build Alternative would not address the project purpose and need of (1) improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. As traffic and train volumes increase, the exposure and potential for vehicle-train collisions would increase. The interruption of travel on East 29th Avenue and East 14th Avenue would also increase the potential for vehicle-vehicle collisions.

Pavement Deficiencies. For purposes of this environmental evaluation, the No Build Alternative would consist of not constructing a viaduct over the UPRR corridor. This alternative would involve keeping the existing at-grade crossings on East 29th Avenue and East 14th Avenue open. Due to structural deficiencies of the existing roadway, East 29th Avenue would be closed to traffic for reconstruction to address pavement stress due to truck loads from just north of East 12th Street to US 30 on each side of the UPRR tracks. Traffic would be required to find alternate routes for north-south movements across the tracks during reconstruction of the roadway. Because East 14th Avenue is not paved between the UPRR and East 8th Street, the two closest potential detour routes are:

- West on 8th Street, north on 3rd Avenue, to US 30. Area employees would use this route, which would cross the UPRR corridor with a viaduct, scheduled for completion in 2016. Because the East 8th Street pavement is not designed to handle heavier truck loads, this route would not be a signed detour.
- East on 8th Street, north on East 44th Avenue, to US 30. This route would be the signed detour route and would use the existing UPRR at-grade crossing equipped with signals and gates. The pavement along East 8th Street and East 44th Avenue would need to be evaluated for possible rehabilitation before and after the detour (see **Figure 1.3**).

Intersection Improvements. No intersection improvements would be made with the No Build Alternative until the time when US 30 pavement must be rehabilitated. At that time, the intersection with US 30 would need to be improved and reconfigured to provide an eastbound right-turn lane, a longer westbound left-turn lane, and wider turning radii on the southwest and southeast corners to accommodate the truck movements. A similar situation would be created on the south end, with increasing conflicts between left-turning and right-turning movements between the west leg of East 8th Street and the north leg of East 29th Avenue. Wider turning radii and a southbound right-turn lane would need to be considered as part of any future pavement work at the intersection.

US 30 is currently being resurfaced west of the project study area, from US 81 east to East 6th Avenue. At this time, no other projects are planned in NDOR's Program for District 3 through 2020 for US 30 in the vicinity of East 29th Avenue.

B.2 Concept 1 – Existing Alignment (Figure 3.3)

Access and Circulation Movements. The Existing Alignment Alternative (**Figure 3.3**) would include a detour of traffic from existing East 29th Avenue to a temporary offset crossing or to East 44th Avenue (see **Figure 1.3**). The construction of a temporary crossing by the UPRR would cost an estimated $700,000 to install flashers, gates, and crossing panels. The construction of the temporary crossing would also add 6 to 12 months to the schedule for UPRR to design, order, and install equipment.

The potential alternate detour route (see **Figure 1.3**) would follow 8th Street to the east and turn north on East 44th Avenue to US 30. This route would be the signed detour route and would use the East 44th Avenue at-grade crossing of the UPRR, which is currently equipped with flashing signals and gates. Improvements associated with this detour would include:

- Rehabilitating pavement along East 8th Street and East 44th Avenue before East 29th Avenue is closed and the alternate detour route is used due to the condition of the existing roadway surfaces and the anticipated heavy truck loads. The pavement along East 8th Street and East 44th Avenue may also be rehabilitated after being used as a detour based on road impacts due to the expected truck traffic.
- Adding a temporary traffic signal at the intersection of US 30 and East 44th Avenue.
- Improving the radius and widening pavement at the intersection of East 44th Avenue and East 8th Street to accommodate truck turning movements.
- Paving East 32nd Avenue, between East 8th Street and East 15th Street, to accommodate the temporary circulation of trucks.

The construction of a new viaduct would include permanent adjustments to access and circulation under the bridge and at the bottom of the approaches. The project would meet current NDOR Bridge and UPRR design standards requiring proper vertical and lateral clearances from the existing and future tracks. The combination of satisfying the 23.5-foot vertical clearance requirement and providing a single span bridge to eliminate bridge piers within the lateral clearance zone would result in a deeper bridge structure and raise the roadway approaches, thereby necessitating the shifting of connections to adjacent industries and businesses.

The higher percentage of trucks loaded with grain using East 29th Avenue is a special consideration for the design of the improvements. Viaduct approaches are typically designed with 5 to 6% grades. Grades of 5 to 6% may not be appropriate for trucks with heavy loads, especially when turning movements would need to be negotiated near the end of the approaches. Reducing the approach grade would move the possible touchdown point, where the approaches meet existing grades, a distance of 1,400 to 1,800 feet from the closest track.

A frontage road on the west side of East 29th Avenue and a connection to East 18th Street under the viaduct would provide access to adjoining industries on the north side of the viaduct. Frontage roads on both sides of East 29th Avenue from its intersection with East 12th Street would provide access to the industries on the south side of the viaduct.

Exposure to Trains. The free-flowing traffic movements across the viaduct would eliminate vehicle-train conflicts by separating the high speed train traffic from the lengthy crossing times of slower moving trucks using the roadway. The closure of the at-grade crossings of the UPRR at East 29th Avenue and East 14th Avenue would reduce the exposure for vehicle-train collisions. Concept 1 would meet the project purpose and need of reducing traffic congestion and associated delays as train and vehicle volumes increase; and decreasing the potential for train-vehicle collisions at the East 29th Avenue railroad crossing.

Pavement Deficiencies. Concept 1 would consist of constructing the approaches to the viaduct and roadway from US 30 to East 8th Street with new full-depth pavement with paved shoulders sufficient to handle the truck loads and separate turn lanes as needed at intersections. The bridge structure would provide three lanes to accommodate the higher percentage of slow moving trucks southbound turning left at East 12th Street.

Intersection Improvements. Based on the traffic operational analysis (**Appendix B**), the following improvements would be included at the intersection of East 29th Avenue with US 30:

- Improving and reconfiguring the south approach to provide a separate left-turn lane, a shared left-turn/through lane, and a separate right-turn lane.
- Adding a separate eastbound right-turn lane.
- Lengthening the existing westbound left-turn lane.
- Providing wider turning radii on the southwest and southeast corners to accommodate frequent truck movements.

The intersection would be projected to operate at level of service (LOS) C in the year 2040 with the above improvements. LOS is the qualitative assessment of traffic operational conditions within a traffic stream in terms of the average stopped delay per vehicle at a controlled intersection. LOSs are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, LOS F representing a breakdown of traffic flow with noticeable congestion and delay, and LOS C representing a desirable operation.

At the intersection of East 29th Avenue and East 8th Street, a separate southbound left-turn lane and wider turning radii would be provided to handle the projected truck volumes. A traffic signal would also be provided when warranted in future years when traffic volumes increase.

South of the UPRR mainline, the intersection of East 29th Avenue and 12th Street is projected to operate at LOS C or better under stop control given the anticipated traffic volumes in the year 2040. As a result, traffic signals would not be warranted at East 29th Avenue and 12th Street. Traffic signals would also not be warranted at access points north of the UPRR mainline where anticipated traffic volumes are lower than at points south of the tracks (see **Appendix B, Figure 12 & 13**).

Roundabouts are not proposed for any of the intersections along the East 29th Avenue corridor and are not supported by current or projected 2040 traffic volumes. Furthermore, the East 29th Avenue corridor is primarily industrial in nature with a high proportion of truck traffic requiring large roundabout turning radii, potentially increasing the overall project footprint.

Right-of-Way Impacts. Concept 1, with construction centered on the existing ROW, would require ROW acquisition (11 acres) and permanent easements. Minor temporary construction easements would be required in some locations but would total less than 0.10 acre. A railroad agreement with UPRR would be required for construction of the new viaduct.

B.3 Concept 2 – East Alignment (Figure 3.4)

Access and Circulation Movements. The East Alignment (Concept 2) would avoid a lengthy detour by offsetting the viaduct a sufficient distance to the east to maintain access through most of the construction period using the existing roadway and at-grade crossing.

The construction of a new viaduct would include permanent adjustments to access and circulation under the bridge and at the bottom of the approaches. The project would meet current NDOR Bridge and UPRR design standards requiring proper vertical and lateral clearances from the existing and future tracks. The combination of satisfying the 23.5-foot vertical clearance requirement and providing a single span bridge to eliminate bridge piers within the lateral clearance zone would result in a deeper bridge structure and raise the roadway approaches, necessitating the shifting of the connections to adjacent industries and businesses.

The higher percentage of trucks loaded with grain using East 29th Avenue is a special consideration. The 5 to 6% grades normally provided on approaches to viaducts would need to be reduced where turning movements are to be negotiated to avoid shifting loads. This would shift the possible touchdown point where the approaches meet existing grades to a distance of 1,400 to 1,800 feet from the closest track.

A frontage road on the west side of East 29th Avenue and a connection to East 18th Street under the viaduct would provide access to adjoining industries on the north side of the viaduct. Frontage roads on both sides of East 29th Avenue from its intersection with East 12th Street would provide access to the industries on the south side of the viaduct. The frontage road connection on the east side of East 29th Avenue would have tighter turning movements due to the shift in alignment to the east.

Exposure to Trains. The free-flowing traffic movements across the viaduct would eliminate vehicle-train conflicts by separating the high train volumes and speeds from the lengthy crossing times of slower moving trucks using the roadway. The closure of the at-grade crossings of the UPRR at East 29th Avenue and East 14th Avenue would reduce the exposure for vehicle-train

collisions. Concept 2 would meet the project purpose and need of reducing traffic congestion and associated delays as train and vehicle volumes increase; and decreasing the potential for train-vehicle collisions at the East 29th Avenue railroad crossing.

Pavement Deficiencies. Concept 2 would consist of constructing the approaches to the viaduct and roadway from US 30 to East 8th Street with new full-depth pavement with paved shoulders sufficient to handle the truck loads and separate turn lanes, as needed, at intersections. The bridge structure would provide three lanes to accommodate the higher percentage of slow moving trucks southbound turning left at East 12th Street.

Intersection Improvements. Based on the traffic operational analysis (**Appendix B**), the following improvements would be included at the intersection of East 29th Avenue with US 30:

- Improving and reconfiguring the south approach to provide a separate left-turn lane, a shared left-turn/through lane, and separate right-turn lane.
- Adding a separate eastbound right-turn lane.
- Lengthening the existing westbound left-turn lane.
- Providing wider turning radii on the southwest and southeast corners to accommodate the frequent truck movements.

The intersection would be projected to operate at LOS C in the year 2040 with the above improvements.

At the intersection of East 29th Avenue and East 8th Street, a separate southbound left-turn lane and wider turning radii would be provided to handle the projected truck volumes. A traffic signal would also be provided when warranted in future years when traffic volumes increase.

South of the UPRR mainline, the intersection of East 29th Avenue and 12th Street is projected to operate at LOS C or better under stop control given the anticipated traffic volumes in the year 2040. As a result, traffic signals would not be warranted at East 29th Avenue and 12th Street. Traffic signals would also not be warranted at access points north of the UPRR mainline where anticipated traffic volumes are lower than at points south of the tracks (see **Appendix B, Figure 12 & 13**).

Roundabouts are not proposed for any of the intersections along the East 29th Avenue corridor and are not supported by current or projected 2040 traffic volumes. Furthermore, the East 29th Avenue corridor is primarily industrial in nature with a high proportion of truck traffic requiring large roundabout turning radii, potentially increasing the overall project footprint.

Right-of-Way Impacts. Concept 2 would require ROW acquisition (10.1 acres) and permanent easements. Minor temporary construction easements would be required in some locations but would total less than 0.10 acre. A railroad agreement with UPRR would be required for construction of the new viaduct. This concept would place the roadway 46 to 86 feet closer to the offices of two industries on the east side of East 29th Avenue.

B.4 Concept 3 – West Alignment (Figure 3.5)

Access and Circulation Movements. The West Alignment (Concept 3) would avoid a lengthy detour by offsetting the viaduct a sufficient distance to the west to maintain access through most of the construction period using the existing roadway and at-grade crossing.

The construction of a new viaduct would include adjustments to access and circulation under the bridge and at the bottom of the approaches. The project would meet current NDOR Bridge and UPRR design standards requiring proper vertical and lateral clearances from the existing and future tracks. The combination of satisfying the 23.5-foot vertical clearance requirement and providing a single span bridge to eliminate bridge piers within the lateral clearance zone would result in a deeper bridge structure and raise the roadway approaches, necessitating the shifting of the connections to adjacent industries and businesses.

The higher percentage of trucks loaded with grain using East 29th Avenue is a special consideration. The 5 to 6% grades normally provided on viaduct approaches would need to be reduced where turning movements are to be negotiated to avoid shifting loads. This would shift the possible touchdown point where the approaches meet existing grades to a distance of 1,400 to 1,800 feet from the closest track.

A new connecting road on the east side of East 29th Avenue to East 32nd Avenue would provide access to adjoining industries on the north side of the viaduct. This would eliminate the need for a connection to East 18th Street under the viaduct and allow the structure length to be shortened by 100 feet on the north, as compared to Concept 1 and Concept 2. A frontage road on the east side of East 29th Avenue from its intersection of East 12th Street would provide access to the industries on the south side of the viaduct. This access road would include two lanes northbound and a larger turning radius at East 12th Street to accommodate truck movements. A connection to the industry on the west side of East 29th Avenue would be provided under the viaduct lengthening the structure on the south by 100 feet, as compared to Concept 1 and Concept 2.

Exposure to Trains. The free-flowing traffic movements across the viaduct would eliminate vehicle-train conflicts by separating the high speed traffic from the lengthy crossing times of slower moving trucks using the roadway. Closing the at-grade crossings of the UPRR at East 29th Avenue and East 14th Avenue crossings would reduce the exposure for vehicle-train collisions. Concept 3 would meet the project purpose and need of reducing traffic congestion and associated delays as train and vehicle volumes increase; and decreasing the potential for train-vehicle collisions at the East 29th Avenue railroad crossing.

Pavement Deficiencies. Concept 3 would consist of constructing the approaches to the viaduct and roadway from US 30 to East 8th Street with new full-depth pavement with full-depth shoulders sufficient to handle the truck loads and separate turn lanes, as needed, at intersections. The bridge structure would provide three lanes to accommodate the higher percentage of slow moving trucks southbound turning left at East 12th Street.

Intersection Improvements. Based on the traffic operations analysis (**Appendix B**), the following improvements would be included at the intersection of East 29th Avenue with US 30:

- Improving and reconfiguring the south approach to provide a separate left-turn lane, a shared left-turn/through lane, and a separate right-turn lane.
- Adding a separate eastbound right-turn lane.
- Lengthening the existing westbound left-turn lane.
- Providing wider turning radii on the southwest and southeast corners to accommodate frequent truck movements.

The intersection would be projected to operate at LOS C in the year 2040 with the above improvements.

At the intersection of East 29th Avenue and East 8th Street, a separate southbound left-turn lane and wider turning radii would be provided to handle the projected truck volumes. A traffic signal would also be provided when warranted in future years when traffic volumes increase.

South of the UPRR mainline, the intersection of East 29th Avenue and 12th Street is projected to operate at LOS C or better under stop control given the anticipated traffic volumes in the year 2040. As a result, traffic signals would not be warranted at East 29th Avenue and 12th Street. Traffic signals would also not be warranted at access points north of the UPRR mainline where anticipated traffic volumes are lower than at points south of the tracks (see **Appendix B, Figure 12 & 13**).

Roundabouts are not proposed for any of the intersections along the East 29th Avenue corridor and are not supported by current or projected 2040 traffic volumes. Furthermore, the East 29th Avenue corridor is primarily industrial in nature with a high proportion of truck traffic requiring large roundabout turning radii, potentially increasing the overall project footprint.

Right-of-Way Impacts. Concept 3 would require ROW acquisition (10.3 acres) and permanent easements. Minor temporary construction easements would be required in some locations but would total less than 0.10 acre. A railroad agreement with UPRR would be required for construction of the new viaduct. This concept would place the roadway 76 feet closer to the employee parking lot for the business on the west side of East 29th Avenue.

B.5 Concept 4 – Far East Alignment (Figure 3.6)

Access and Circulation Movements. The Far East Alignment Alternative (Concept 4) would avoid a lengthy detour by offsetting the viaduct a considerable distance to the east to maintain access through all of the construction period using the existing roadway and at-grade crossing.

The construction of a new viaduct would include adjustments to access and circulation under the bridge and at the bottom of the approaches. The project would meet current NDOR Bridge and UPRR design standards requiring proper vertical and lateral clearances from the existing and future tracks. The combination of satisfying the 23.5-foot vertical clearance requirement and providing a single span bridge to eliminate bridge piers within the lateral clearance zone would result in a deeper bridge structure and raise the roadway approaches, necessitating the shifting of the connections to adjacent industries and businesses.

The higher percentage of trucks loaded with grain using East 29th Avenue is a special consideration. The 5 to 6% grades normally provided on viaduct approaches would need to be

reduced where turning movements are to be negotiated to avoid shifting loads. This would shift the possible touchdown point where the approaches meet existing grades to a distance of 1,400 to 1,800 feet from the closest track. Concept 4 would provide only 1,000 feet between the closest track and the intersection with East 15th Street, which would result in 5% grades on the north leg of the intersection of relocated East 29th Avenue and East 15th Street. Concept 4 would not meet the project purpose and need of improving efficiency of the Platte County road network by improving accessibility in the industrial area in the vicinity of East 29th Avenue. The concept would provide severe jog in the alignment of East 29th Avenue at East 15th Street and break the continuity of the county road network.

A new connecting road on the east side of East 29th Avenue to East 32nd Avenue would provide access to adjoining industries on the north side of the viaduct. This would eliminate the need for a connection to East 18th Street under the viaduct and allow the structure length to be shortened by 100 feet on the north. On the south side of the viaduct, access to the industries would be provided by the existing roadways on both sides of East 29th Avenue from its intersection of East 15th Street.

Exposure to Trains. The free-flowing traffic movements across the viaduct would eliminate vehicle-train conflicts by separating the high speed train traffic from the lengthy crossing times of slower moving trucks using the roadway. Closing the at-grade crossings of the UPRR at East 29th Avenue and East 14th Avenue would reduce the exposure for vehicle-train collisions. Concept 4 would meet the project purpose and need of reducing traffic congestion and associated delays as train and vehicle volumes increase; and decreasing the potential for train-vehicle collisions at the East 29th Avenue railroad crossing.

Pavement Deficiencies. Concept 4 would consist of constructing the approaches to the viaduct and roadway from US 30 to East 8th Street with new full-depth pavement with paved shoulders sufficient to handle the truck loads and separate turn lanes, as needed, at intersections. The bridge structure would provide three lanes to accommodate the higher percentage of slow moving trucks southbound turning right at East 15th Street.

Intersection Improvements. Based on the traffic operational analysis (**Appendix B**), the following improvements would be included at the intersection of East 29th Avenue with US 30:

- Improving and reconfiguring the south approach to provide a separate left-turn lane, a shared left-turn/through lane, and a separate right-turn lane.
- Adding a separate eastbound right-turn lane.
- Lengthening the existing westbound left-turn lane.
- Providing wider turning radii on the southwest and southeast corners to accommodate frequent truck movements.

The intersection would be projected to operate at LOS C in the year 2040 with the above improvements.

At the intersection of relocated East 29th Avenue and East 15th Street, a separate southbound right-turn lane would be provided. East 15th Street would be widened to provide east-west left-turn lanes between relocated East 29th Avenue and existing East 29th Avenue.

At the intersection of East 29th Avenue and East 8th Street, a separate southbound left-turn lane and wider turning radii would be provided to handle the projected truck volumes. A traffic signal would also be provided when warranted in future years when traffic volumes increase.

South of the UPRR mainline, the intersection of East 29th Avenue and East 15th Street is projected to operate at LOS B or better under stop control given the anticipated traffic volumes in the year 2040. As a result, traffic signals would not be warranted at East 29th Avenue and East 15th Street. Traffic signals would also not be warranted at access points north of the UPRR mainline where anticipated traffic volumes are lower than at points south of the tracks (see **Appendix B, Figure 14 & 15**).

Roundabouts are not proposed for any of the intersections along the East 29th Avenue corridor and are not supported by current or projected 2040 traffic volumes. Furthermore, the East 29th Avenue corridor is primarily industrial in nature with a high proportion of truck traffic requiring large roundabout turning radii, potentially increasing the overall project footprint.

Right-of-Way Impacts. Concept 4 would require ROW acquisition (13 acres) and permanent easements. Minor temporary construction easements would be required in some locations but would total less than 0.10 acre. A railroad agreement with UPRR would be required for construction of the new viaduct.

B.6 Concept 5 – Far West Alignment (Figure 3.7)

Access and Circulation Movements. The Far West Alignment (Concept 5) would avoid the need for a detour by offsetting the viaduct a considerable distance to the west. This would permit the maintenance of access through all of the construction period using the existing roadway and at-grade crossing.

The construction of a new viaduct would avoid adjustments to access and circulation along existing East 29th Avenue. The project would meet current NDOR Bridge and UPRR design standards requiring proper vertical and lateral clearances from the existing and future tracks. The combination of satisfying the 23.5-foot vertical clearance requirement and providing longer span bridges to eliminate bridge piers within the lateral clearance zone would result in a thicker bridge structure raising the roadway approaches, necessitating the shifting of the connections to adjacent industries and businesses. A potential future siding track to the industry on the south side of the UPRR corridor would add substantial structure length up to a total of 675 feet.

The higher percentage of trucks loaded with grain using East 29th Avenue is a special consideration. The 5 to 6% grades normally provided on approaches to viaducts would need to be reduced where turning movements are to be negotiated to avoid shifting loads. This would shift the possible touchdown point where the approaches meet existing grades to a distance of 1,400 to 1,800 feet from the closest track.

On the north side of the viaduct, reconstructing the median openings and frontage roads on both sides of US 30 would provide access to adjoining businesses. Access to businesses on the south side of the viaduct would be provided at the intersection of East 12th Street. The existing grade of East 12th Street would be raised to match the viaduct approaches. Approximately 400 to 800 feet of East 12th Street would require regrading.

Exposure to Trains. The free-flowing traffic movements across the viaduct would eliminate vehicle-train conflicts by separating the high speed train traffic from the lengthy crossing times of slower moving trucks using the roadway. Closing the at-grade crossings of the UPRR at East 29th Avenue and East 14th Avenue would reduce the exposure for vehicle-train collisions. Concept 5 would meet the project purpose and need of reducing traffic congestion and associated delays as train and vehicle volumes increase; and decreasing the potential for train-vehicle collisions at the East 29th Avenue railroad crossing.

Pavement Deficiencies. Concept 5 would consist of constructing the approaches to the viaduct and roadway from US 30 to East 8th Street with new full-depth pavement with paved shoulders sufficient to handle the truck loads and separate turn lanes as needed at intersections. The bridge structure would provide three lanes to accommodate the higher percentage of slow moving trucks southbound turning left at East 12th Street. The existing pavement on East 29th Avenue would also need to be upgraded from US 30 to East 18th Street and from East 12th Street to East 15th Street.

Intersection Improvements. Based on the traffic operational analysis (**Appendix B**), the following improvements would be included at the intersection of the new roadway (East 22nd Avenue) with US 30:

- Constructing the south approach to provide a separate left-turn lane, a shared left-turn/through lane, and a separate right-turn lane.
- Adding a separate eastbound right-turn lane.
- Adding a new median opening with eastbound and westbound left-turn lanes in US 30 and closing the existing median openings immediately east and west.
- Constructing frontage roads on both sides of US 30 to connect to the access points east and west of the new median opening.
- Providing wider turning radii on the southwest and southeast corners to accommodate the frequent truck movements.
- Providing a traffic signal at the intersection of the new roadway and US 30.
- Evaluating the existing traffic signal at East 29th Avenue and US 30 for possible removal or relocation to East 32nd Avenue.

The intersection would be projected to operate at LOS C in the year 2040 with the above improvements.

At the intersection of the new roadway (East 22nd Avenue) and East 8th Street, a separate southbound left-turn lane and wider turning radii would be provided to handle the projected truck volumes. A traffic signal would also be provided when warranted in future years when traffic volumes increase.

All intersections south of the UPRR mainline are projected to operate at LOS C or better under stop control given the anticipated traffic volumes in the year 2040. As a result, traffic signals would not be warranted (see **Appendix B, Figure 16 & 17**).

Roundabouts are not proposed for any of the intersections along the East 29th Avenue corridor or the proposed new roadway (East 22nd Avenue) and are not supported by current or projected 2040 traffic volumes. Furthermore, the study area is primarily industrial in nature with a high proportion of truck traffic requiring large roundabout turning radii, potentially increasing the overall project footprint.

Right-of-Way Impacts. Concept 5 would require ROW acquisition (18 acres) and permanent easements. Minor temporary construction easements would be required in some locations but would total less than 0.10 acre. A railroad agreement with UPRR would be required for construction of the new viaduct.

C. Initial Screening of Viaduct Concepts

Concepts 4 and 5 were eliminated during initial screening.

Concept 4 Evaluation. Concept 4 would meet the project purpose and need of (1) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (2) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. However, Concept 4 would not meet the purpose and need of improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR. Concept 4 would also create a severe jog in the alignment of East 29th Avenue at East 15th Street and break the continuity of the county road network. Furthermore, Concept 4 would also have higher impacts on adjoining industrial properties as compared to Concepts 1, 2, and 3, requiring 13 acres of new ROW. Concept 4 would also require 5% grades, coupled with tighter turning movements, as compared to Concepts 1, 2, and 3. Due to the high volume of heavy trucks, 5% grades associated with tight turning movements are not desirable. For these reasons, Concept 4 was eliminated during initial screening.

Concept 5 Evaluation. Concept 5 would meet the project purpose and need of (1) improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. Concept 5 would avoid detours; however, a potential future siding track to the industry on the south side of the UPRR corridor would add substantial structure length up to a total of 675 feet and increase project costs. Estimated structure lengths for Concepts 1, 2, and 3 are approximately 300 feet or less. Concept 5 would have greater access and circulation impacts on adjoining industrial properties along US 30, but fewer impacts on industrial access along East 29th Avenue as compared to Concepts 1, 2, and 3. However, Concept 5 would have an impact on the continuity of the existing county road network by creating an offset alignment at US 30. Comparatively, Concepts 1, 2, and 3 would not disrupt the existing county road network. Concept 5 would also require 18 acres of ROW, the highest among all concepts. For these reasons, Concept 5 was eliminated during initial screening.

Based on this analysis, the No Build Alternative and viaduct Concept 1, Concept 2, and Concept 3 were carried through to final screening and evaluation.

D. Final Screening of Viaduct Concepts

Table 3.1 provided at the end of **Chapter 3, Section D,** presents a comparison of the No Build Alternative and viaduct Concept 1, Concept 2, and Concept 3.

No Build Evaluation. The No Build Alternative would not meet the project purpose and need of (1) improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. The No Build Alternative was carried forward for analysis and discussed in subsequent sections to establish a baseline for comparison of the build alternative.

Concept 1 Evaluation. Concept 1 would meet the project purpose and need of (1) improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. The concept would require a detour to a temporary crossing on an offset alignment or a detour to the east on East 44th Avenue. Both of these detour options would add cost and time to the project in comparison to concepts with an offset alignment, as well as require utility relocations before construction of the viaduct would begin; therefore, Concept 1 was eliminated.

Concept 2 Evaluation. Concept 2 would meet the project purpose and need of (1) improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. Concept 2 would avoid detours but would have greater impacts on adjoining industrial properties, particularly on the east side of East 29th Avenue, where this concept would place the roadway 46 to 86 feet closer to the offices of two industries on the east side of East 29th Avenue. Concept 2 would also result in tighter truck turning movements than Concept 3; therefore, it was eliminated.

Concept 3 Evaluation. Concept 3 would also meet the project purpose and need of (1) improving accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reducing traffic congestion and associated delays as train and vehicle volumes increase; and (3) decreasing the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. Concept 3 would avoid detours and would have fewer impacts on adjoining industrial properties and allow better truck turning movements than Concepts 1 and 2. For these reasons, Concept 3 was carried forward for further study and presented to area stakeholders.

Table 3.1 –Alternative Concept Final Screening Matrix

Viaduct Alternative		ALTERNATIVE SCREENING CRITERIA and DESCRIPTIONS								Alternative Summary
		Performance				*Implementation*				
		Truck Movements	***Safety***	***Stakeholder Support***	***Environmental***	***Utilities***	***Cost***	***Right-of-Way***	***Constructability***	
NO BUILD		Would not address existing delay and safety issues that exist for trucks at the two project crossings. Would not address the existing tight turning movements for trucks at US 30 intersection.	Would not address existing traffic safety or operational problems that exist at the two project crossings. Would not address the existing geometric issues at US 30 intersection.	There is strong stakeholder support to construct a viaduct to reduce delay and conflicts near E. 29th Avenue at the UPRR railroad crossing. Closure of E. 14th Avenue crossing would also facilitate switching activities on siding tracks.	Minimal effects to environmental resources are anticipated.	Minimal utility relocations would be required to construct this alternative.	$0.3 Million	No Right-of-way impacts would be expected.	Resurfacing existing E. 29th Avenue would require a short term closure and detour on E. 44th Avenue	No action would result in ongoing delays and safety concerns at E. 29th Avenue and E.14th Avenue railroad crossings. Condition of existing roadway would also need to be addressed.
CONCEPT 1 Existing Alignment		Current alignment would result in a tight turning radius for southbound to eastbound left turns and westbound to northbound right turns at intersection of E. 29th Avenue and E.12th Street.	Connecting roadway under E. 29th Avenue from E. 32nd Avenue north of the UPRR corridor would require left turns at the intersection south of US 30. Northbound access from Valmont parking lot would likewise require left turns at unsignalized intersection of E. 29th Avenue and E. 12th Street.	There were some stakeholder concerns raised by businesses on the east side of E. 29th Avenue with constructing a viaduct closer to their buildings and parking lots.	Low level soil contamination will require soil to remain on site, or a special waste permit must be obtained for disposal. Groundwater recovered should be containerized and treated. Approximately 0.61 acres of wetlands will be Impacted by the alternative. An additional 0.74 acres of wetlands will be impacted by the proposed detour route. Total wetland impacts are assumed to be approximately 1.35 acres.	Initial responses from area utilities indicate that some conflicts may occur. For the current evaluation, it is assumed that existing utilities within 30' of the E. 29th Avenue centerline would be relocated under this alternative	$11.4 Million	10.98 Acres of right-of-way impacts- No relocations.	Construction phasing would require long-term closures and detours.	The Current Alignment Alternative would reduce delay and improve safety at the E. 29th Avenue and E. 14th Avenue crossings. However, this alternative would require construction of a temporary crossing or detour (E. 44th Avenue). Impacts on the detour route as well as utilities in E. 29th Avenue would need to be addressed.
CONCEPT 2 East Alignment		Offset east alignment would result in a tighter turning radius for southbound to eastbound left turns and westbound to northbound right turns at intersection of E. 29th Avenue and E.12th Street.	Connecting roadway under E. 29th Avenue from E. 32nd Avenue north of the UPRR corridor would require left turns at the intersection south of US 30. Northbound access from Valmont parking lot would likewise require left turns at unsignalized intersection of E. 29th Avenue and E. 12th Street.	There were serious stakeholder concerns raised by businesses on the east side of E. 29th Avenue with constructing a viaduct 30' (north) to 70' (south) closer to their buildings and parking lots.	Low level soil contamination will require soil to remain on site, or a special waste permit must be obtained for disposal. Groundwater recovered should be containerized and treated. Approximately 0.65 acres of wetlands will be Impacted by the alternative.	Initial responses from area utilities indicate that some conflicts may occur and that relocations, primarily overhead power lines and underground gas, would be required to construct this alternative.	$12.1 Million	10.07 Acres of right-of way impacts. No relocations although some impacts would occur to businesses on the east side of E. 29th Avenue with the offset roadway alignment.	Construction phasing would allow construction of a bridge adjacent to existing E.29th Avenue crossing. Would allow E. 29th Avenue to remain open during construction.	The Offset East Alignment Alternative would reduce delay and improve safety at the E. 29th Avenue and E. 14th Avenue crossings. This alternative would not require construction of a temporary crossing or detour. Potential Impacts to businesses on the east side of E. 29th Avenue would need to be addressed.
CONCEPT 3 West Alignment		Offset west alignment would allow a larger turning radius for southbound to eastbound left turns and westbound to northbound right turns at intersection of E. 29th Avenue and E.12th Street.	Connecting roadway between E. 29th and E. 32nd Avenues north of the UPRR corridor would reduce potential left turn delay at the unsignalized intersection of US 30 and E. 32nd Street by providing direct access to signal at E. 29th Avenue. Northbound access from Valmont employee parking lot would also be improved. Main east and west access points to E. 29th Avenue north of the UPRR would be aligned directly opposite of one another, creating better conditions for traffic turning left onto E. 29th Avenue.	There were less stakeholder concerns raised by businesses on E. 29th Avenue with constructing a viaduct offset to the west. This alternative received some negative reaction and objections from businesses north of the UPRR between East 29th Avenue and East 32nd Avenue.	This alternative would maintain the west edge of the traveled roadway the same distance from the existing residence on the west side of E. 29th Avenue. It would likely avoid encroachment on the holding ponds for industry northwest of E. 12th Street. Low level soil contamination will require soil to remain on site, or a special waste permit must be obtained for disposal. Groundwater recovered should be containerized and treated. Approximately 0.75 acres of wetlands will be Impacted by the alternative.	Initial responses from area utilities indicate that some conflicts may occur. For the current evaluation, it is assumed that major utility relocations could be avoided to construct this alternative.	$11.9 Million	10.28 Acres of right-of-way impacts- No relocations.	Construction phasing would allow construction of a bridge adjacent to existing E.29th Avenue crossing. Would allow E. 29th Avenue to remain open during construction.	The Offset West Alignment Alternative would reduce delay and improve safety at the E. 29th Avenue and E. 14th Avenue crossings. This alternative would not require construction of a temporary crossing or detour.

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E. Alternatives Carried Forward

Two alternatives are carried forward.

No Build Alternative. The No Build Alternative would not meet the project purpose and need to (1) improve accessibility in the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR; (2) reduce traffic congestion and associated delays as train and vehicle volumes increase; and (3) decrease the potential for train-vehicle collisions based on traffic volumes at the East 29th Avenue railroad crossing. The No Build Alternative was carried forward for analysis and discussed in subsequent sections to establish a baseline for comparison of the build alternatives.

Concept 3 – West Alignment Alternative. Concept 3 would address railroad exposure/conflicts and provide the most effective design for access and circulation. With Concept 3, the alignment would be offset to the west to construct the new viaduct on a new alignment and maintain traffic on East 29th Avenue during construction, thereby, minimizing impacts to area industries and the traveling public.

Concept 3 was presented to East 29th Avenue stakeholders at a meeting on 22 April 2014. Sixteen stakeholders who attended the meeting indicated overall support for the project and the proposed alignment of the East 29th Avenue viaduct, offset 70 feet to the west. Concepts eliminated from consideration (Concepts 1, 2, 4, and 5) had been discussed with area stakeholders previously. See **Chapter 5 – Public Involvement/Project Coordination**, for a complete overview of stakeholder involvement.

Although there was overall support for the proposed alignment of East 29th Avenue presented in Concept 3, stakeholders commented on the circulation and access options. In particular, there was some opposition to the new roadway connection on the north side of the viaduct between East 29th Avenue and East 32nd Avenue. The consensus at that meeting was that the configuration previously shown in Concepts 1 and 2 on the north side of the UPRR corridor was preferred over that shown in Concept 3. This refinement would maintain continuity on East 18th Street and reduce the required ROW. Stakeholders also made minor comments on specific access locations. **Chapter 5, Section H** contains specific comments from the 22 April 2014 meeting regarding Concept 3.

Based on the stakeholder input received at the 22 April 2014 meeting, minor adjustments regarding circulation and access were made to Concept 3. These changes are reflected in Concept 3A – Preferred Alternative (**Figure 3.8**). The Preferred Alternative (Concept 3A) is a slightly modified version of the West Alignment Alternative (Concept 3) as described below.

Concept 3A – Preferred Alternative. The Preferred Alternative would be constructed as a three-lane rural cross section with open drainage, except for the viaduct structure and approaches (**Figure 3.8**). As compared to Concept 3, the new roadway connection on the north side of the viaduct between East 29th Avenue and East 32nd Avenue would be removed. The new roadway connection would be replaced by a stub ROW serving as joint access to Columbus Steel and Paraclipse on the east side of East 29th Avenue north of the tracks.

To maintain access and circulation to East 32nd Avenue and other area industries, the frontage road on the northwest side of the viaduct would be extended. In Concept 3, the frontage road

would provide access to businesses on the west side of East 29th Avenue north of the tracks. In the Preferred Alternative, the frontage road would continue under the proposed viaduct connecting East 29th Avenue to East 18th Street. Due to the inclusion of the frontage road, the length of the bridge span over the UPRR would be increased by approximately 100 feet to accommodate the frontage road under East 29th Avenue. The point at which East 29th Avenue gets back down to the existing grade would not change because the clearance over the tracks controls the profile and grades on the viaduct approaches. The elevation of the bridge over the UPRR tracks would require reconstruction of the intersection with East 12th Street south of the tracks to tie back into existing streets with reasonable grades for loaded trucks. An additional frontage road would be provided southeast of the viaduct connecting the East 29th Avenue and East 12th Street intersection with East 15th Street. The frontage road, using a large jug handle design, would include one wide lane in each direction to accommodate turning truck traffic. Furthermore, a separate right-turn lane would be provided for northbound traffic on the frontage road turning on to eastbound East 15th Street, again to accommodate the large volume of slower moving trucks.

As part of the Preferred Alternative, the East 14th Avenue crossing of the UPRR mainline would be closed upon completing and opening the viaduct on East 29th Avenue. No detour route would be required because the offset viaduct would allow East 29th Avenue to remain open during construction.

Table 3.2 presents a comparison of all alternatives carried forward, including the Preferred Alternative. As compared to Concept 3, the Preferred Alternative would result in:

- Greater stakeholder support. Overall, the stakeholders were supportive of the proposed alignment of the East 29th Avenue alignment presented in Concept 3; however, the proposed access and circulation options were not ideal. The Preferred Alternative would provide better access and circulation options to meet the needs of local stakeholders.
- Higher construction cost. The Preferred Alternative is expected to cost $13.0 million as compared to $11.9 million for Concept 3. The cost increase is primarily due to the increased length of the proposed viaduct.
- Decreased ROW acquisition.
- Decreased reduction in unsignalized conflicts. Concept 3 would provide a direct connection from East 32nd Avenue to the signalized intersection of East 29th Avenue and US 30, potentially reducing the unsignalized left-turn movements when accessing US 30 from East 32nd Avenue. Although preferred by the stakeholders, the Preferred Alternative provides a less direct connection from East 32nd Avenue to the signalized intersection of East 29th Avenue and US 30.

The remaining alternative screening criteria are similar when comparing Concept 3 to the Preferred Alternative. Concerns regarding truck movements and environmental resources including wetland impacts, utilities, and constructability do not differ as a result of the modifications.

F. Phasing (Preferred Alternative)

The Preferred Alternative would construct the new railroad viaduct to the west of the existing East 29th Avenue crossing. The approaches would also be constructed offset to the west to

allow the existing roadway to remain open during construction. East 29th Avenue would then transition back to the existing alignment approximately 2,250 feet south of the existing railroad crossing and 1,050 feet north of the existing crossing. Temporary roads would be constructed on both the south and north ends of the project so that traffic could bypass the areas of construction where the proposed roadway is on the same alignment as the existing roadway. By doing this, the existing railroad crossing can be used for most of the construction project.

Temporary impacts would be anticipated due to lane closures necessary to accommodate specific construction activities/phases. These activities could include construction phasing, delivery of materials, equipment mobilization, and construction of tie-ins and cross-overs.

Field and residential drives would be temporarily impacted during project construction and regrading or realignment of drive approaches. Access would be maintained throughout construction via temporary access roads, lane closings, shooflys*, and road flaggers. These methods, combined with additional phased construction methods, would also be used to maintain access to the county roads and US 30. Impacts to the county roads along the project are as follows:

- East 12th Street would be closed during its reconstruction. East 12th Street does not provide access to any developed properties.
- Access to East 15th Street would be maintained throughout construction via temporary roads, lane closings, or other methods until the new viaduct is open. Once the new viaduct is open, the intersection would be reconstructed to tie into the new frontage road.
- Access to East 18th Street would be maintained off the existing roadway until the new viaduct is open. Once the new viaduct is open, the intersection would be removed and reconstructed to provide access via the new frontage road along the west side of East 29th Avenue. Alternative access to East 18th Street would be available from East 32nd Avenue.

G. General Project Schedule and Anticipated Funding

The construction of the Preferred Alternative is programmed in the STIP page 48 for Fiscal Year 2017–2020 (NDOR, 9 September 2016).

The construction of the Preferred Alternative as described would cover two construction seasons and last approximately 18 months. Construction is tentatively expected to begin spring 2019 and to be completed fall 2020.

* A short temporary roadway that bypasses a construction site or other obstruction.

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Figure 3.8 – Concept 3A, West Alignment (Preferred Alternative)

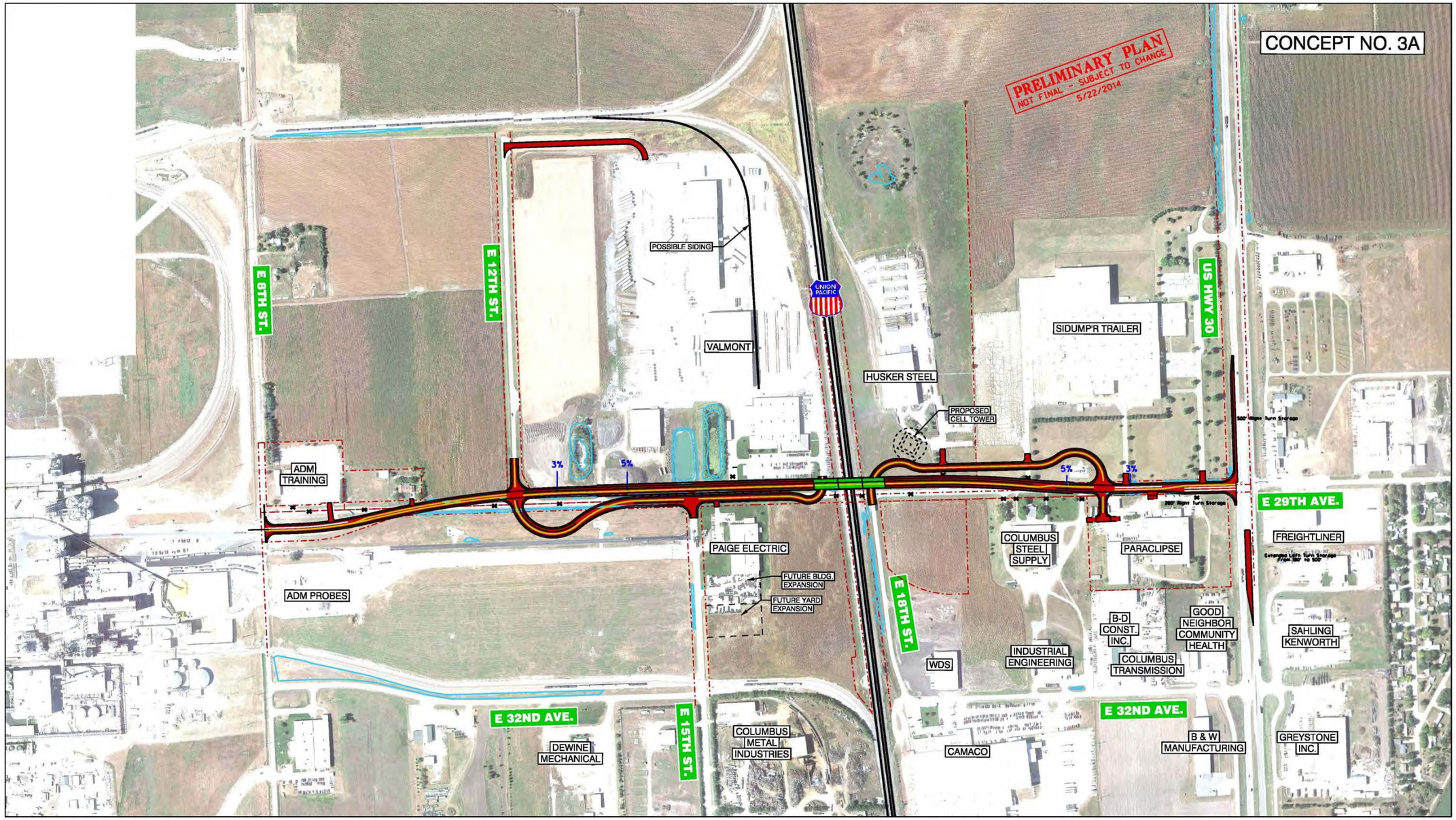


Figure 6A
Viaduct offset to the West
Columbus East Viaduct
Platte County, NE

Table 3.2 – Matrix of Alternative Concepts Carried Forward

Viaduct Alternative		ALTERNATIVE SCREENING CRITERIA and DESCRIPTIONS								Alternative Summary
		Performance				*Implementation*				
		Truck Movements	***Safety***	***Stakeholder Support***	***Environmental***	***Utilities***	***Cost***	***Right-of-Way***	***Constructability***	
NO BUILD		Would not address existing delay and safety issues that exist for trucks at the two project crossings. Would not address the existing tight turning movements for trucks at US 30 intersection.	Would not address existing traffic safety or operational problems that exist at the two project crossings. Would not address the existing geometric issues at US 30 intersection.	There is strong stakeholder support to construct a viaduct to reduce delay and conflicts near E. 29th Avenue at the UPRR railroad crossing. Closure of E. 14th Avenue crossing would also facilitate switching activities on siding tracks.	Minimal effects to environmental resources are anticipated.	Minimal utility relocations would be required to construct this alternative.	$0.3 Million	No Right-of-way impacts would be expected.	Resurfacing existing E. 29th Avenue would require a short term closure and detour on E. 44th Avenue	No action would result in ongoing delays and safety concerns at E. 29th Avenue and E.14th Avenue railroad crossings. Condition of existing roadway would also need to be addressed.
CONCEPT 3 West Alignment		Offset west alignment would allow a larger turning radius for southbound to eastbound left turns and westbound to northbound right turns at intersection of E. 29th Avenue and E.12th Street.	Connecting roadway between E. 29th and E. 32nd Avenues north of the UPRR corridor would reduce potential left turn delay at the unsignalized intersection of US 30 and E. 32nd Street by providing direct access to signal at E. 29th Avenue. Northbound access from Valmont employee parking lot would also be improved. Main east and west access points to E. 29th Avenue north of the UPRR would be aligned directly opposite of one another, creating better conditions for traffic turning left onto E. 29th Avenue.	This alternative received some negative reaction and objections from businesses north of the UPRR between East 29th Avenue and East 32nd Avenue.	This alternative would maintain the west edge of the traveled roadway the same distance from the existing residence on the west side of E. 29th Avenue. It would likely avoid encroachment on the holding ponds for industry northwest of E. 12th Street. Low level soil contamination will require soil to remain on site, or a special waste permit must be obtained for disposal. Groundwater recovered should be containerized and treated. Approximately 0.75 acres of wetlands will be Impacted by the alternative.	Initial responses from area utilities indicate that some conflicts may occur. For the current evaluation, it is assumed that major utility relocations could be avoided to construct this alternative.	$11.9 Million	10.28 Acres of right-of-way impacts- No relocations.	Construction phasing would allow construction of a bridge adjacent to existing E.29th Avenue crossing. Would allow E. 29th Avenue to remain open during construction.	The Offset West Alignment Alternative would reduce delay and improve safety at the E. 29th Avenue and E. 14th Avenue crossings. This alternative would not require construction of a temporary crossing or detour.
CONCEPT 3A Preferred Alternative		Offset west alignment would allow a larger turning radius for southbound to eastbound left turns and westbound to northbound right turns at intersection of E. 29th Avenue and E.12th Street.	Connecting roadway to East 18th Street under bridge avoids long dead-end roadway, but increases left turn delay. Northbound access from Valmont employee parking lot would also be improved. Main east and west access points to E. 29th Avenue north of the UPRR would be aligned directly opposite of one another, creating better conditions for traffic turning left onto E. 29th Avenue.	There were less stakeholder concerns raised by businesses on E. 29th Avenue with constructing a viaduct offset to the west. This alternative received favorable reactions from most stakeholders.	This alternative would maintain the west edge of the traveled roadway the same distance from the existing residence on the west side of E. 29th Avenue. It would likely avoid encroachment on the holding ponds for industry northwest of E. 12th Street. Low level soil contamination will require soil to remain on site, or a special waste permit must be obtained for disposal. Groundwater recovered should be containerized and treated. Approximately 0.75 acres of wetlands will be Impacted by the alternative.	Initial responses from area utilities indicate that some conflicts may occur. For the current evaluation, it is assumed that major utility relocations could be avoided to construct this alternative.	$13.0 Million	9.92 Acres of right-of-way impacts- No relocations.	Construction phasing would allow construction of a bridge adjacent to existing E.29th Avenue crossing. Would allow E. 29th Avenue to remain open during construction.	The Offset West Alignment Alternative would reduce delay and improve safety at the E. 29th Avenue and E. 14th Avenue crossings. This alternative would not require construction of a temporary crossing or detour.

4. AFFECTED ENVIRONMENT AND ENVIRONMENTAL IMPACTS

Chapter 4 discusses environmental considerations for the project, the contextual setting of the affected environment, impacts of the No Build and Preferred Alternatives, proposed mitigation, and standard specifications and special provisions (when they are used to minimize or avoid impacts).

Standard specifications are NDOR requirements regarding materials, products, services, and construction methods. Special provisions are additions and revisions to the standard specifications. This chapter also addresses issues that were eliminated from further study.

Standard Specification 107.01: Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007) is required comprehensively for all work conducted by the Contractor. Therefore, it is not repeated under every evaluated resource. The specification requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.

A. Issues Eliminated from Further Detailed Study

Section 4(f) Resources

Issues involving Section 4(f) resources were eliminated from further study because no publically owned parks, recreation areas, or wildlife and waterfowl refuges were identified within the project study area (23 CFR 771.135).

Section 6(f) Resources

Issues involving Section 6(f) resources were eliminated from further study because no properties in the study area are funded with Land and Water Conservation Funds (16 USC 4601.4 through 4601.11).

Wild and Scenic Rivers

Wild and Scenic Rivers were eliminated from further study because there are no Wild and Scenic Rivers, or National Rivers Inventory rivers, in the project vicinity.

Title VI/Environmental Justice

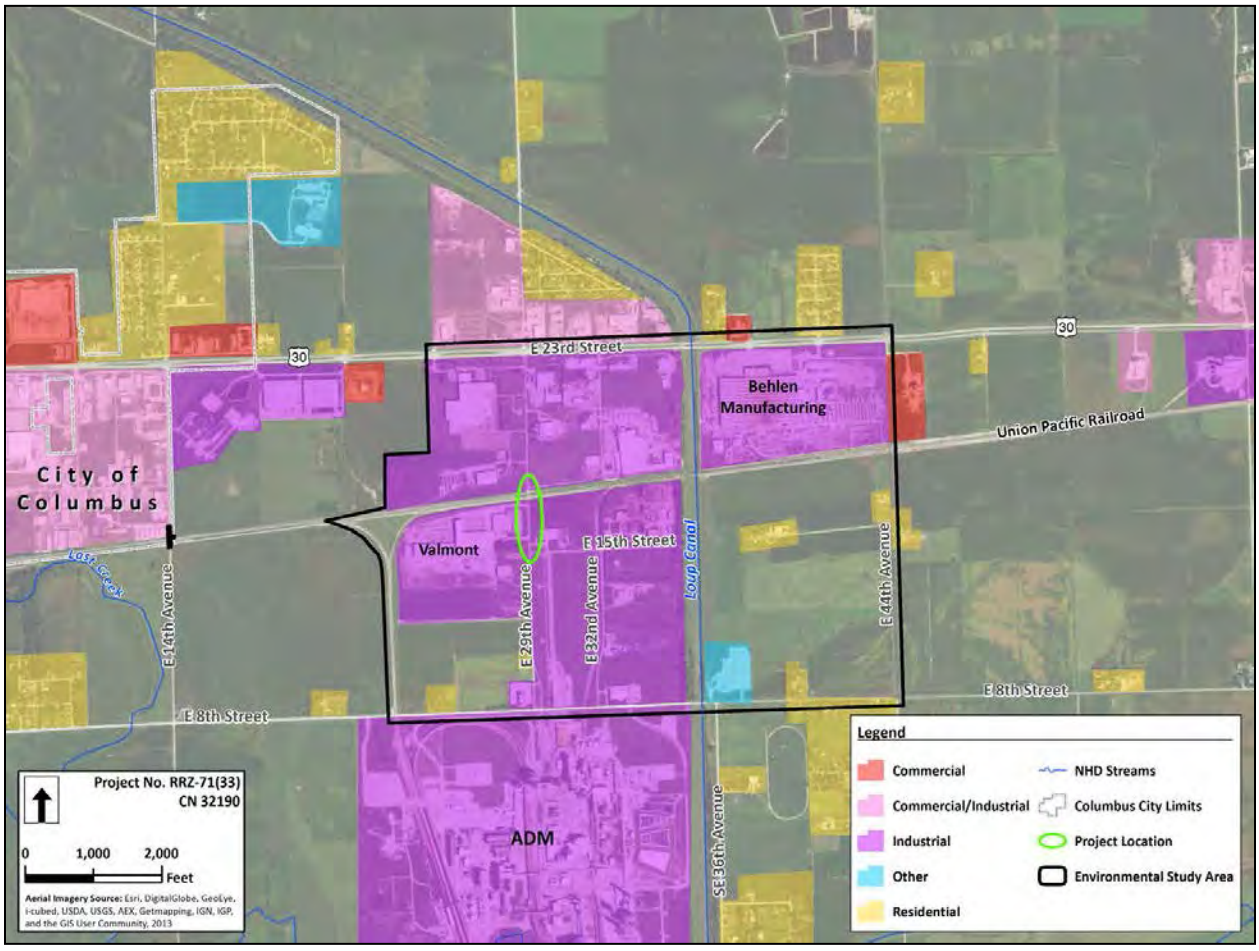
Environmental Justice was eliminated from further study because no minority or low-income populations were identified that would be adversely impacted by the proposed project. **Appendix D** includes additional information and supporting data.

B. Land Ownership, Jurisdiction, and Land Use

B.1 Summary

Land ownership, jurisdiction, and use were determined as to public versus private ownership, governmental jurisdiction, and existing and anticipated land uses. Based on this information, project alternatives were evaluated for their potential to bring about changes in land use. These include direct and indirect effects of the alternatives on existing land use and verifying consistency of the project with development patterns and land use planning. **Figure 4.1** and **Figure 4.2** show existing and expected future land use within the vicinity of the project.

Figure 4.1 – Existing Land Use in the City of Columbus and Surrounding Areas



Areas not classified (unshaded) are currently used for agricultural purposes, primarily row crop production.

B.2 Affected Environment

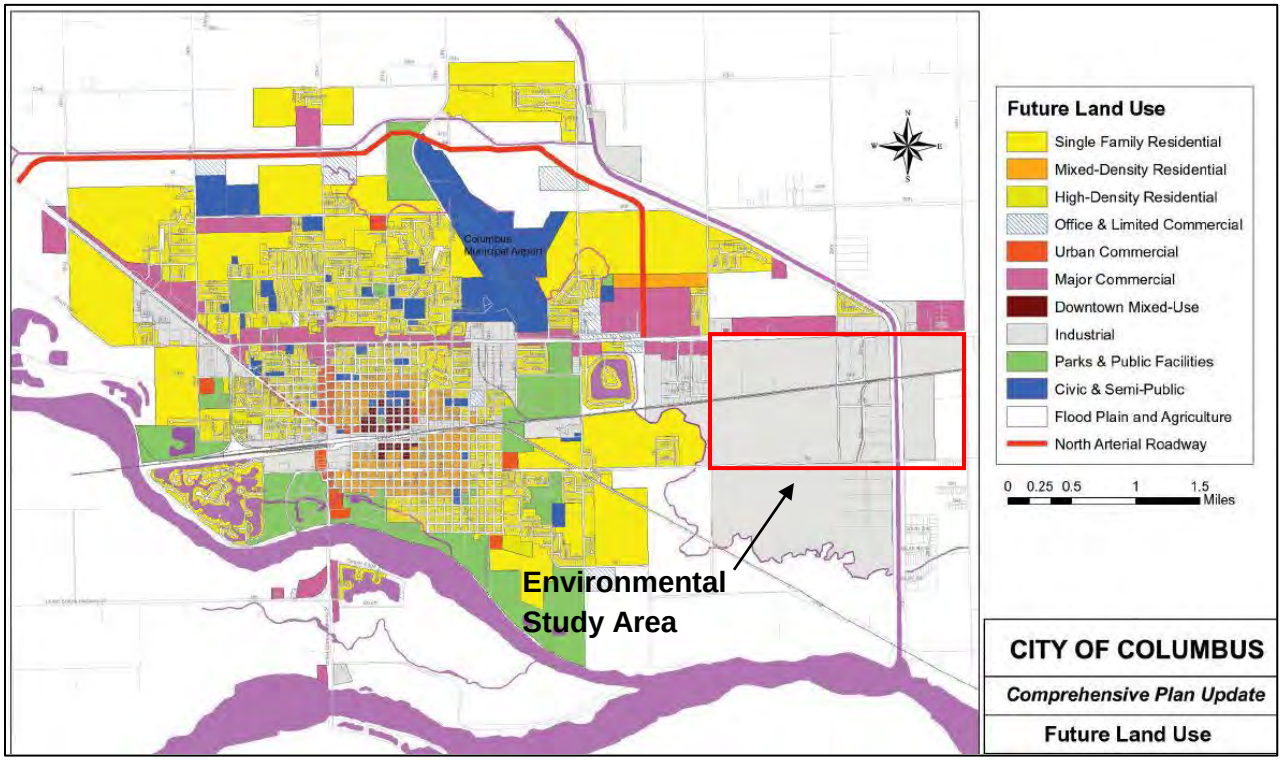
Resource Review

Current land ownership, jurisdiction, and use were determined by reviewing aerial photography, project plans, the *Columbus Comprehensive Plan Update* (City of Columbus, October 2005), and zoning maps from the City of Columbus (**Appendix E**).

Environmental Study Area

The environmental study area is generally centered along the East 29th Avenue corridor and is bound by US 30 on the north, East 8th Street on the south, East 14th Avenue on the west, and East 44th Avenue on the east. Specific attention focused on two areas potentially impacted by the project alternatives and road closures as shown on **Figure 1.2**. The larger area includes East 29th Avenue and the Loup Canal, generally encompasses the alternative alignments and detours, and is approximately 1.4-miles long (east-west) and 1.0-mile wide (north-south). The smaller area encompasses the East 14th Avenue crossing of the UPRR. This smaller portion of the study area is included due to a road closure that would occur at this crossing.

Figure 4.2 – Future Land Use in the City of Columbus and Surrounding Areas



Source: City of Columbus, October 2005

Land Ownership

Land ownership is predominantly privately held, with the exception of ROW areas along US 30 and other roads throughout the study area. The ROW width along US 30 is approximately 200 feet. ROW width for East 29th Avenue, East 8th Street, East 14th Street, and East 44th Street is generally 75 to 80 feet. In addition, the UPRR ROW is approximately 150 to 175 feet in width.

Jurisdiction

The independent jurisdictional authorities governing within the environmental study area are Platte County and the City of Columbus. Most of the environmental study area is outside the corporate limits of the City of Columbus but is within its extra-territorial jurisdiction that extends 2 miles beyond the city's corporate limits. The City of Columbus' eastern extent ends at East 14th Street.

Existing Land Uses

Land uses in the environmental study area are predominantly industrial/commercial businesses interspersed with agricultural production areas. There are also scattered private residences, a non-profit health center, roadways, rail lines, and the Loup Canal.

Agricultural

Agricultural land within the study area is predominantly row crop agriculture and hay fields. These agricultural fields are found throughout the study area between developed businesses. Some of these agricultural fields are associated with local farmsteads.

Residential

A small number of private residences and farmsteads are present within the environmental study area. Most of these residences are located along East 8th Street in the southeast corner of the study area. Additional residences are located along East 29th Avenue, East 44th Avenue, and East 8th Street in the southwest corner of the study area.

Industrial/Commercial

Much of the study area is used for industrial purposes that involve manufacturing and distribution, outdoor storage yards and staging areas, and parking. The major industrial businesses within the study area include Valmont Industries, a manufacturer of agricultural and utility infrastructure products; Behlen Manufacturing Company, a manufacturer of steel products; and ADM Company, an agricultural processing plant with its entrance at the south central portion of the study area at East 15th Street. ADM is the largest producer of ethanol in Nebraska (Nebraska Energy Office, April 2014). Other industrial/commercial businesses located in the study area include Columbus Metal Industries, Dewine Mechanical, Paige Electric, CAMACO, Husker Steel, Columbus Steel Supply, B&W Manufacturing, Greystone Inc., Paraclipse, Freightliner, Sidump'r Trailer, B-D Construction, Inc., and Sahling Kenworth. The major rail line in the environmental study area runs southwest to northeast and belongs to UPRR. Additional spurs from this line go to the ADM plant south of the environmental study area.

Non-Profit Services

The Good Neighbor Community Health Center is located just south of US 30 on East 32nd Avenue. The organization is a non-profit housed within the East-Central District Health Department (ECDHD). The Good Neighbor Community Health Center works in collaboration with established community service organizations to increase access to primary preventative health care for the underserved and vulnerable populations (ECDHD, 2014).

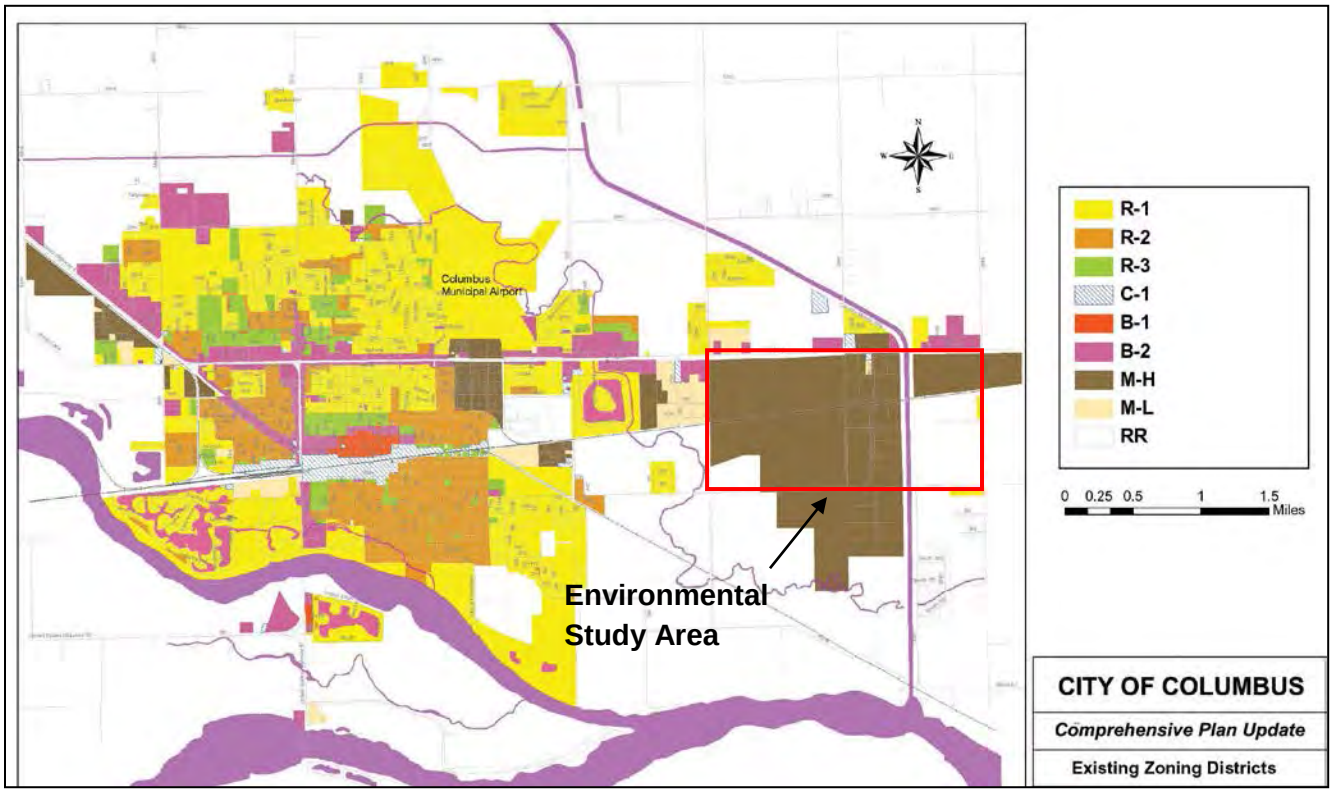
Zoning

Most of the environmental study area is zoned General Industrial (MH) with large areas of Rural Residential (RR) in the southeast and southwest (see **Figure 4.3**). Near the north border of the study area, relatively small areas are zoned Limited Industrial (ML/C1) and General Commercial (B2) along US 30. Near the extreme southeast and east borders of the study area, small areas are zoned Single Family Residential (R1). **Appendix E** contains additional zoning maps from the City of Columbus.

Future Land Uses

The focus of the *Columbus Comprehensive Plan Update* (City of Columbus, October 2005) does not extend to the project's environmental study area. However, the plan recommends that industrial development remain limited to areas currently zoned for industrial land use and the plan's future land use map shows the project's environmental study area remaining industrial (City of Columbus, October 2005). The population of the City of Columbus was projected to grow from 20,971 in 2000 (actual) to 24,839 in 2020 (City of Columbus, October 2005). With an increase in population in the City of Columbus, it is probable that industrial business within the study area would expand into existing agricultural areas.

Figure 4.3 – Existing Zoning Districts in the City of Columbus and Surrounding Areas



Source: City of Columbus, October 2005

B.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would not improve accessibility to the industrial area in the vicinity of East 29th Avenue and the mainline of the UPRR. Traffic congestion and associated delays would likely increase over time as train and vehicle volumes increase. Furthermore, the potential for train-vehicle collisions at East 29th Avenue would remain and potentially increase with increasing traffic volumes.

B.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would have direct impacts on existing land use. The alignment of the Preferred Alternative would place the roadway approximately 70 feet closer to industrial businesses on the west side of East 29th Avenue, requiring ROW acquisition and permanent easements. This would result in the conversion of approximately 9.91 acres of privately owned land to publicly owned ROW; the exact amount of ROW needed for the project would be determined during final design. The acquired property for the ROW would be located primarily in the lawns of industrial businesses and should have a minimal effect on their operations. No relocations would be necessary. Less than 0.10 acre of temporary easements may also be necessary for construction in some areas. No additional or new public facilities/public lands (temporary or permanent) would be required for this project. ROW acquisition would be conducted by paying fair market value for the property rights and damages that may occur as a result of the taking. ROW acquisition would be completed in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform

Act), as amended, (42 USC 4601 et seq.), and the Nebraska Relocation Assistance Act (Nebraska Revised Statute Section 76-1214 et seq. 2009).

The Preferred Alternative would allow the existing East 29th Avenue to remain open to traffic during construction, maintaining access to adjacent businesses. Temporary roads would be constructed on both the south and north ends of the project so that traffic could bypass the construction areas where the proposed roadway is on the same alignment as the existing roadway. By doing this, the existing railroad crossing can be used for most of the construction project. Field and residential drives would be temporarily impacted during construction, and necessary regrading or realignment of drive approaches may occur; however, access to fields, businesses, county roads, and US 30 within this project would be maintained throughout construction via temporary access roads, lane closings, shooflys, and road flaggers and phased construction methods. Final ROW and temporary easements quantities may change in final design through ROW negotiations with property owners.

Completion of the project would be compatible with existing and planned land uses in the area, which are primarily industrial. The viaduct would reduce traffic congestion and delays associated with train crossings and allow heavy trucks easier access to the industrial businesses south of US 30. Improved access to the area may result in the expansion of new or existing industrial businesses into neighboring agricultural fields that have been zoned industrial.

The *Columbus Comprehensive Plan Update* (City of Columbus, October 2005) identified the need for major transportation improvements such as railroad viaducts “to ensure an effective transportation system in the future.” Although the proposed project is not specifically cited in the 2005 *Columbus Comprehensive Plan Update* (City of Columbus, October 2005), the proposal is consistent with land use plans and the City of Columbus’ goal of improving traffic flow to ensure long-term success of the city’s transportation system.

Permanent Access Changes. Current access points would be perpetuated or consolidated where reasonable and feasible with adjacent properties. Details regarding access point changes would be determined in the final design process in coordination with local property owners, taking into consideration existing and future land use, operations, and land value. As a result, changes in access due to the proposed project are not anticipated to negatively affect adjacent properties. Controlled access would be acquired for the entire length of the project.

Maintaining Access During Construction. Reasonable access to the individual businesses, residences, and other facilities in the area would be maintained during construction. The Contractor would coordinate any potential access restrictions with individual landowners and the City of Columbus prior to restrictions.

The Preferred Alternative is in conformance with the STIP and with existing and currently proposed future land use plans. The project would have only a minimal effect on land ownership, jurisdiction, and land use.

Upon completion of the East 29th Avenue viaduct, closure of the East 14th Avenue crossing would not require the conversion of any additional land to ROW. Access to nearby businesses

would be maintained from US 30, the primary access for both trucks and other vehicles. Use of the proposed East 29th Avenue and/or 3rd Avenue viaducts and related improvements would facilitate travel across the UPRR corridor. Closing the East 14th Avenue crossing would not be expected to change any existing or future land uses.

B.5 Mitigation

- Access to individual businesses, residences, and other facilities in the area would be maintained during construction (Platte County, Contractor).
- ROW acquisition would be conducted by paying fair market value for the property rights and damages that may occur as a result of the taking. ROW acquisition would be completed in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended (42 USC 4601 et seq.), and the Nebraska Relocation Assistance Act (Nebraska Revised Statute Section 76-1214 et seq. 2009).

B.6 Standard Specifications

The following specifications from the NDOR Standard Specifications for Highway Construction would apply:

- Standard Specification 105.12 – Control of Work – Use of Land (NDOR, 2007). State's Contractor must have consent and leave the property in a neat and presentable condition.
- Standard Specification 104.08 – Scope of Work – Final Clean Up (NDOR, 2007). Requires the Contractor to clean up the construction area prior to acceptance and final payment.
- Standard Specification 107.12 – Legal Relations and Responsibility to the Public – Responsibility for Damage, Injury, or Other Claims (NDOR, 2007). Requires the Contractor to be responsible for property damage and injuries associated with the prosecution of work.
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, and prevent damage to all public and private property.

C. Socioeconomic Considerations

C.1 Summary

Socioeconomic issues related to the construction of a new railroad viaduct are often complicated due to the magnitude of the project. Issues to be considered include permanent or temporary changes or impacts on travel patterns or accessibility, school districts or their operations (busing), recreational facilities, police and fire services, highway safety, and impacts on businesses.

C.2 Affected Environment

This project is located in the industrial area west of Columbus along US 30, approximately 5.0 miles from the US 30 junction with US 81. Columbus had a population of 22,111 in 2010,

which is a 5 percent decrease from the year 2000 according to the US Census Bureau (USCB, 2010). **Appendix D** contains additional details about the demographic data of the project study area.

The area surrounding East 29th Avenue is primarily a mix of industrial and agricultural uses (see **Figure 1.2**; also shown on **Figure 4.1**). Agricultural fields in proximity to the project are planted in row crops or used as hay fields. The remaining areas are used for heavy industrial purposes, including, but not limited to, ethanol production, steel electric transmission pole fabrication, and metal building fabrication. These industrial areas include buildings used for manufacturing and distribution, outdoor storage yards, staging areas, and parking. Small residential pockets are scattered along East 8th Street and East 44th Avenue, and one residence on East 29th Avenue. The Loup Canal runs north and south between East 29th Avenue and East 44th Avenue and flows directly into the Platte River located approximately 1.5 miles south of East 8th Street.

C.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would not address issues concerning traffic delays due to volume increases and improvements in accessibility to the study area. Economic progress and industry growth have resulted in more oversized trucks using the corridor and more employee traffic. Currently, 60 percent of the traffic on East 29th Avenue is attributed to heavy trucks. The percentage of heavy trucks is expected to remain constant or drop slightly to 55 percent, as employment traffic increases (see Traffic Study in **Appendix B**).

C.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would be built with minimal disruption to the traveling public as East 29th Avenue would remain open during most of construction. School and emergency services routes, truck delivery for manufacturing and businesses, traffic transporting goods and services, as well as general traffic would be minimally inconvenienced during construction equipment movements and material deliveries. Long-term impacts of the Preferred Alternative would be positive, resulting in a railroad viaduct that would be better suited to the industrial nature of the study area and result in faster responses by emergency services to the area businesses.

In addition, it is anticipated that project construction would result in economic benefit in the region by reducing delays associated with the at-grade crossing and eliminating the potential for train-vehicle collisions.

Closing the East 14th Avenue crossing after completion of the East 29th Avenue viaduct construction would require minimal out-of-distance travel because East 14th Avenue is a gravel roadway from the UPRR corridor south to East 8th Street with only field access to the adjacent farm ground (see Traffic Study in **Appendix B**). Alternate north-south routes between US 30 and East 8th Street would include the proposed East 29th Avenue and/or 3rd Avenue viaducts; both of which would be safer and provide uninterrupted travel across the UPRR corridor to serve the existing and future traffic demands (**Figure 4.4**). Closure of the East 14th Avenue crossing, and use of the proposed East 29th Avenue and/or 3rd Avenue viaducts, would require approximately 1.5 miles of additional travel to connect destinations on opposite sides of the UPRR corridor along East 14th Avenue.

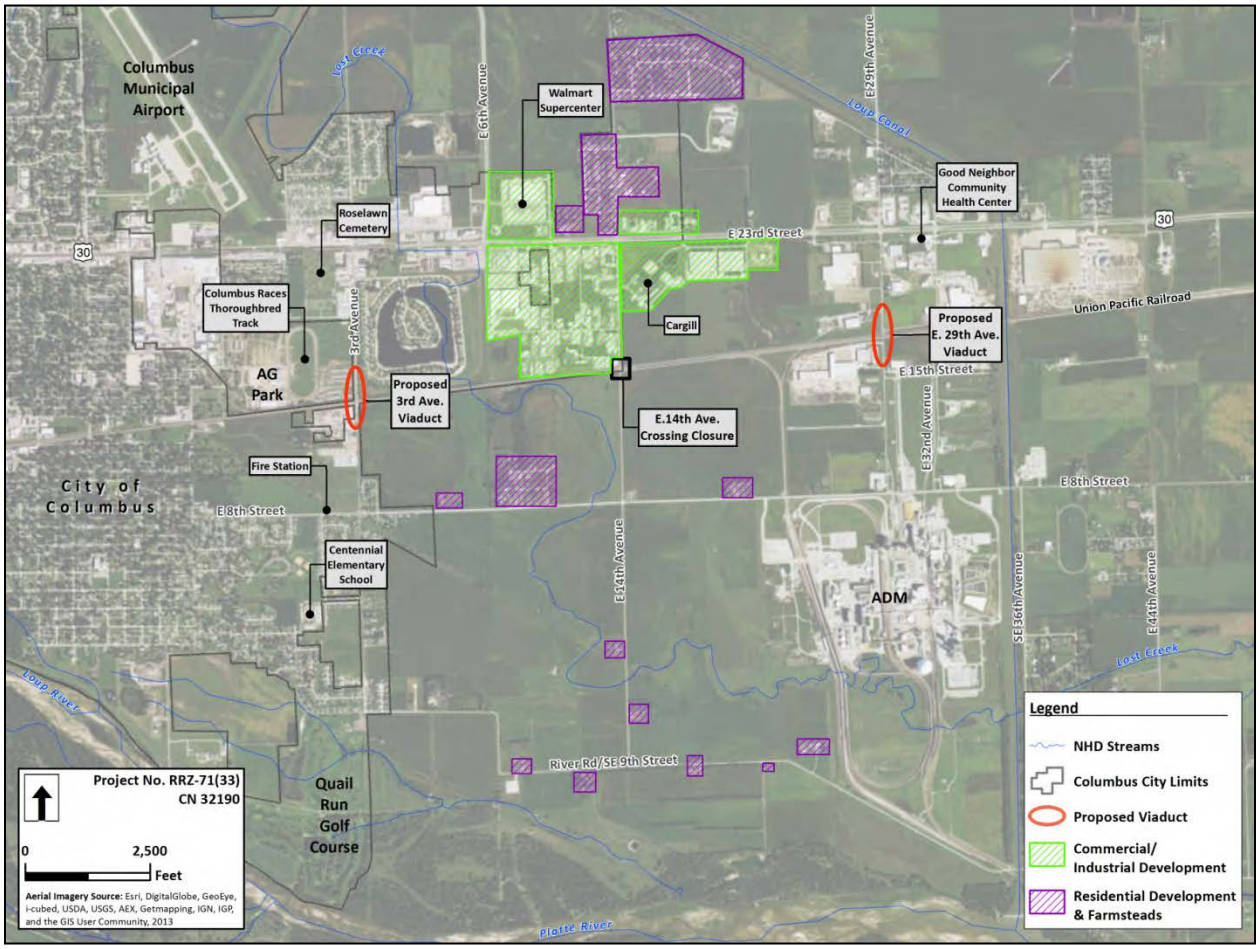
Closure of the East 14th Avenue crossing is not expected to impact community cohesion and accessibility. East-west travel through the area would generally remain unchanged. East 8th Street would remain the primary corridor for travel from parts of Columbus south of the UPRR corridor to the east, connecting Columbus residential neighborhoods and businesses to ADM or other eastern destinations. North of the UPRR corridor, east-west travel along US 30 would also remain unchanged. City of Columbus residential neighborhoods and businesses north of the UPRR corridor would have direct access to commercial, residential, and industrial developments along US 30 east of the City of Columbus limits.

The ease of north-south travel through the area is also generally expected to remain unchanged or unaffected by the closure of the East 14th Avenue crossing. North-south travel within the City of Columbus limits would be possible via one of the four proposed viaducts, providing north-south connections within the city limits free from train blockages and delays (see **Figure 2.1**). North-south travel within the vicinity of East 29th Avenue is expected to improve as delays resulting from train blockages would be eliminated with the construction of the East 29th Avenue viaduct.

North-south traffic currently using East 14th Avenue would be routed to the proposed 3rd Avenue and East 29th Avenue viaducts. The proposed grade separation on 3rd Avenue and East 29th Avenue would provide uninterrupted north-south routes one mile to the west and east of East 14th Avenue, respectively. Emergency vehicles from the Columbus Fire Station on the north side of 8th Street just west of 3rd Avenue would use the 3rd Avenue viaduct. Traffic access to the residential area southwest of 3rd Avenue and 8th Street, including Centennial Elementary School, would also continue to use 3rd Avenue to travel north of the UPRR corridor. Construction of the 3rd Avenue viaduct is expected during 2017-2018, and would be completed prior to construction of the East 29th Avenue viaduct.

Destinations north of the UPRR along East 14th Avenue include commercial and industrial developments primarily located between US 30 and the UPRR corridor, and scattered residential development primarily located north of US 30. Few destinations exist south of the UPRR corridor along East 14th Avenue. East 14th Avenue extends approximately 1.5 miles south of the UPRR corridor before terminating at River Road/Southeast 9th Street. Aside from two known residences, there are no other existing developments along this stretch of East 14th Avenue, with most abutting an adjacent land currently being used for row crop agriculture. Additional scattered residential developments and farmsteads are located along East 8th Street and River Road/SE 9th Street within the vicinity of East 14th Avenue. The City of Columbus Comprehensive Plan Update (City of Columbus, 2005) recommends that undeveloped agricultural land west of East 14th Avenue south of the UPRR be used for residential growth, and undeveloped land east of East 14th Avenue south of the UPRR appropriate for Industrial uses. Any future residential growth west of East 14th Avenue would be served by the proposed 3rd Avenue viaduct. Future industrial growth, including a future siding track and eastern expansion of the existing industrial park along East 29th Avenue would be served by the proposed East 29th Avenue viaduct.

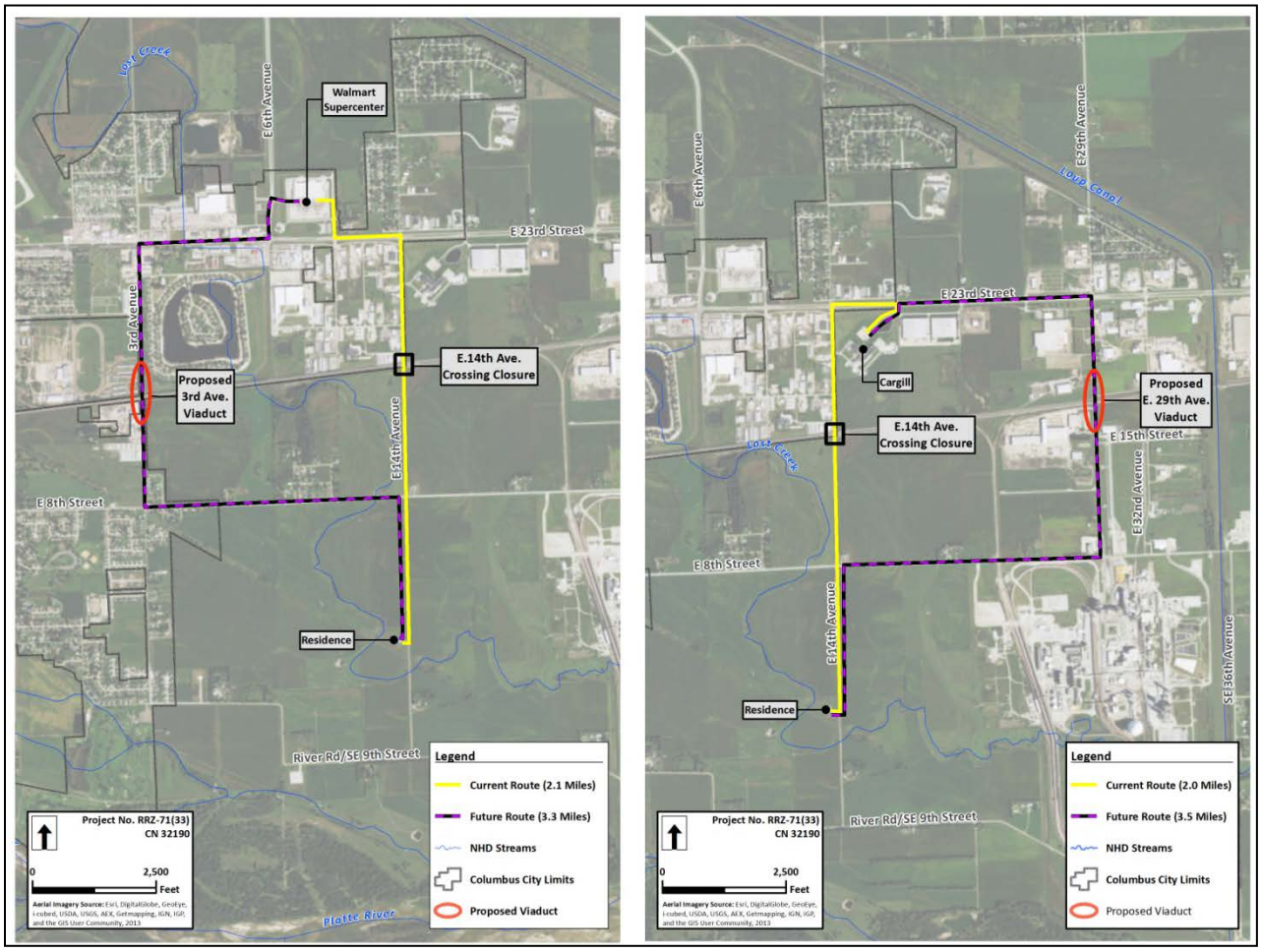
Figure 4.4 – Proposed North-South Viaducts and Destinations Near East 14th Avenue



Users of the existing crossing of East 14th Avenue are primarily employees of area industries using it as a shortcut to avoid minor congestion at shift changes on East 29th Avenue. The industrial traffic with destinations east of East 14th Avenue would be able to use the new viaduct along East 29th Avenue at the added capacity. The only drivers that would have any added travel would be trips originating from the residential units within the vicinity of East 14th Avenue south of the UPRR corridor to destinations north of the UPRR corridor near East 14th Avenue. Travel distances between these destinations would increase by approximately 1.5 miles. Although the travel distance would increase, the trip is expected to be less stressful and the travel time more predictable because there would be no possibility of train blockages by through trains and switching activity on existing and future siding tracks.

Figure 4.5 provides examples of future routes between destinations on opposite sides of the UPRR due to the closure of East 14th Avenue.

Figure 4.5 – Future North-South Routes Due to Closure of East 14th Avenue



C.5 Mitigation

- Per Standard Practice, NDOR shall notify the public at the start of construction by placing notices in the newspaper 14 calendar days before construction. Electronic message boards may be used before beginning construction activities. The Project Sponsor shall also notify emergency services such as police and fire departments before construction activities begin, as well as maintain continued coordination throughout construction. Emergency services providers would be invited to the pre-construction meeting for this project. (Platte County).
- For each impacted county road, except East 12th Street, access would be constructed in phases to maintain access at all times. A note would be included on the construction plans indicating that access is to be maintained. Furthermore, per NDOR's Standard Specifications, the Contractor shall at all times, to the extent practicable, provide private dwellings, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all

private dwellings, commercial properties, businesses, and public facilities. During those periods when a road is closed, even for a short duration, limited access must be maintained for authorized local traffic. If access is to be closed longer than one day, the Contractor shall coordinate with the affected property owners to address temporary access issues. Access details shall be coordinated among the Project Sponsor's Project Manager, the Contractor, and property owners. (Contractor, Platte County).

C.6 Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public (NDOR, 2007). Requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.

D. Cultural Resources

D.1 Summary

Section 106 of the National Historic Preservation Act, as amended, and implementing regulations found at 36 CFR 800, require that federal agencies consider any effect a proposed action may have on historic properties. This is generally accomplished through the Section 106 compliance process, as follows:

- Identify consulting parties.
- Identify and evaluate historic properties located within the Area of Potential Effect (APE) established for an undertaking.
- Assess adverse effects on properties listed, or eligible for listing, on the National Register of Historic Places (NRHP).
- Consult with the State Historic Preservation Officer (SHPO) and, as appropriate, the Advisory Council on Historic Preservation, and other interested parties to resolve adverse effects.

Four main criteria determine if a property is eligible for inclusion on the NRHP. A property is considered eligible if it meets one or more of those criteria listed below:

- **Criterion A:** Associated with events that have made a significant contribution to the broad pattern of our history.
- **Criterion B:** Associated with the lives of persons significant in our past.
- **Criterion C:** Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or that possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.
- **Criterion D:** Has yielded, or may be likely to yield, information important in history or pre-history.

In addition to being significant and meeting one of the four criteria for eligibility, the NRHP requires that a resource have integrity. As defined in National Register Bulletin 16A (Appendix IV: 3), integrity is "authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric

period" (US Department of Interior, 1997). A historic property must retain enough of its essential physical features to convey its significance; this is expressed as "the characteristics of a historic property that qualify the property for inclusion in the National Register" [36 CFR 800.6(a)(1)].

Integrity is the manifestation of the significant period, themes, and contexts developed in the overview sections of the cultural resource evaluation documents. This is common to all historic property types, including archaeological sites. However, the "essential physical features" would vary, depending on the *type* of resource (building, structure, site, object or district) and *why* it is significant. For most non-archaeological resources, essential physical features are visible and can readily convey the resource's historic appearance. Essential physical features of prehistoric and historical archaeological sites may be buried or the values are not as readily apparent.

Cultural resources generally include archaeological sites, historic properties, traditional cultural places, and other places where significant historic activities have taken place. These sites are often considered valuable to the human environment, and measures must be taken to ensure that they are treated appropriately.

Congress passed the American Indian Religious Freedom Act of 1978 (P.L. 95-341) to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise their traditional religions including, but not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional sites. Therefore, the law requires that the effects of a federal undertaking on Native American sites or places (prehistoric or historic) that have religious, ceremonial, or sacred aspects be evaluated within the context of this law.

D.2 Affected Environment

The Highway Archaeology Program of the Nebraska State Historical Society (HAP-NSHS) evaluated the potential for archaeological and architectural resources within the APE. In 2013, historical resources were evaluated for this project (RRZ-71(33), Control Number [CN] 32190) and determined to be unaffected. Concurrence was received from the SHPO on 29 October 2013 (**Appendix F**).

A 2013 review of the NSHS geographic information system (GIS) cultural resources database indicated no previously recorded archeological sites within the APE. An archaeological field reconnaissance was conducted on 16 July and 28 August 2013. Accessible areas of the APE not previously disturbed by road construction and development were pedestrian surveyed with negative results. The database review and field reconnaissance resulted in no historic archeological properties found within the APE (**Appendix F**).

A 2013 evaluation of standing structures identified two properties within the APE recommended as eligible for listing on the NRHP. The Kosch Building and the Behlen Manufacturing Building are both recommended eligible under multiple criteria (**Table 4.1**). Five additional properties were identified during the survey, but all were recommended not eligible for listing on the NRHP due to lack of integrity and/or lack of historic or architectural association (**Appendix F**).

In addition to the HAP-NSHS and GIS review, the Iowa Tribe of Kansas and Nebraska Tribal Historic Preservation Officer also asked to review the project area for potential historical

resources (**Appendix F**, letter dated 9 October 2013). Concurrence from the Iowa Tribe has not been received as of the date of this submittal.

Table 4.1 – Eligible NRHP Structures within the APE

Eligible Structure	Criteria
The Kosch Building (FN7)	Criterion C – Vernacular architecture Criterion Consideration G – Properties that have achieved significance in the last 50 years
Behlen Manufacturing Factory (PT00-062)	Criterion A – Association with local industry and business Criterion B – Association with Walter Behlen Criterion C – Engineering and architectural

D.3 Environmental Impacts of the No Build Alternative

Because the No Build Alternative would result in no construction activities, it would have no effect on historic properties.

D.4 Environmental Impacts of the Preferred Alternative

Based on the project review, the project would have no impact on historic properties. Eligible structures within the APE are located approximately 0.5 mile from the proposed project construction limits and in an altered industrial landscape with modern buildings located between the eligible structures and the project. Therefore, it has been determined that the Preferred Alternative would have no effect on historic properties (**Appendix F**).

D.5 Mitigation

No pre-construction mitigation is required.

- If archaeological or paleontological materials are discovered during construction, NDOR Standard Specifications for Highway Construction 107.10 (NDOR, 2007 pg. 60) states, “The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation” (Platte County, Contractor).

D.6 Standard Specifications

The following specifications from the NDOR Standard Specifications for Highway Construction would apply:

- Standard Specification 107.10 – Legal Relations and Responsibility to the Public – Archaeological and Paleontological Discoveries (NDOR, 2007). In the event of a late discovery of archaeological materials, this specification states, “The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation.”
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007).

Requires the Contractor to preserve, protect, and prevent damage to all public and private property.

E. Noise

E.1 Summary

NDOR conducted a traffic noise study for the project in accordance with 23 CFR 772 et seq. and the NDOR Noise Analysis and Abatement Policy (NDOR, July 2011) (see **Appendix G**). The project was Type I because the prospective railroad overpass would constitute a substantial vertical alteration of East 29th Avenue.

The primary purpose of the study was to conclude whether there would be noise impacts from either traffic noise levels or noise-level increases at properties near the project exceeding the thresholds from NDOR and FHWA guidelines. If so, traffic noise abatement measures would be considered for the project.

The study used FHWA Traffic Noise Model (TNM) Version 2.5 software. Noise levels were predicted for existing (2013) conditions, 2040 No Build Alternative conditions, and 2040 Preferred Alternative conditions.

E.2 Affected Environment

Most of the land in the project corridor was in industrial/commercial or undeveloped uses (Activity Categories F and G); these uses were not noise sensitive and were not of consequence for the noise study. There was one residence (Activity Category B) near 8th Street, which was noise sensitive. There were no Activity Category C or E properties, which were noise sensitive, in the corridor.

The conclusion from the noise study was that none of the corridor noise receptors approached or exceeded the applicable FHWA Noise Abatement Criterion (NAC) under existing conditions. Therefore, no properties were found to be impacted by traffic noise currently.

E.3 Environmental Impacts of the No Build Alternative

The conclusion from the noise study was that none of the corridor noise receptors approached or exceeded the applicable NAC for the 2040 No Build Alternative. None of the receptors would see an increase of 15 A-weighted decibels (dBA) or more; the largest overall increase was predicted to be 6 dBA from existing conditions. Therefore, no properties were found to be impacted by traffic noise for 2040 No Build Alternative conditions.

E.4 Environmental Impacts of the Preferred Alternative

The conclusion from the noise study was that none of the corridor noise receptors approached or exceeded the applicable NAC for the 2040 Preferred Alternative. None of the receptors would see an increase of noise levels of 15 dBA or more; the largest overall increase was predicted to be 10 dBA from existing conditions. Therefore, no properties were found to be impacted by traffic noise for 2040 Preferred Alternative conditions.

Upon completion of the East 29th Avenue viaduct, the related closure of East 14th Avenue, and the Columbus Viaducts Project (3rd-18th Avenue Viaducts), a railroad quiet zone would be

created from 0.25 miles west of East 44th Avenue to 0.25 miles east of 23rd Avenue in the City of Columbus. This represents a distance of approximately 3.9 miles. Closing East 14th Avenue allows the silencing of locomotive horns over the eastern 2.0 miles of the 3.9-mile quite zone. This would also eliminate the need for trains to sound their horns in advance of the crossing providing relief and improving the quality of life for noise sensitive receptors in the area currently impacted by train horns sounding 280 to 320 times per day as shown in **Appendix G.**

E.5 Mitigation

No receptors in the project corridor were found to be impacted by traffic noise. Therefore, no noise abatement actions were evaluated or recommended for the Preferred Alternative.

F. Air

F.1 Summary

NDOR conducted a Mobile Source Air Toxics (MSAT) evaluation for the project (**Appendix H**). Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments of 1990, whereby Congress mandated that the US Environmental Protection Agency (EPA) regulates 188 air toxics, also known as hazardous air pollutants, many of which are MSAT.

The evaluation was conducted according to the procedures outlined in the Interim Guidance Update on MSAT Analysis in NEPA Documents (FHWA Memorandum dated 6 December 2012). The primary purpose of the evaluation was to determine whether there would be impacts due to increased MSAT as a result of the project. If so, MSAT abatement measures would be considered for the project.

F.2 Affected Environment

The area surrounding East 29th Avenue is primarily a mix of industrial and agricultural uses (**Figure 1.2**). Agricultural fields in proximity to the project are planted in row crops or used as hay fields. Most of the remaining areas are used for heavy industrial purposes including, but not limited to, ethanol production, steel electric transmission pole fabrication, and steel and metal building fabrication. These major land uses, coupled with the existing automobile and rail traffic, contribute to the ambient air quality conditions of the project area.

F.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have minimal air impacts due to increased traffic.

F.4 Environmental Impacts of the Preferred Alternative

The purpose of this project is to ease traffic flow by constructing a viaduct. This project has been determined to generate minimal air quality impacts for Clean Air Act Amendments criteria pollutants and has not been linked with any special MSAT concerns. As such, the Preferred Alternative would not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the No Build Alternative (see **Appendix H**).

Moreover, EPA regulations for vehicle engines and fuels would cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's Motor Vehicle Emissions Simulator (MOVES) model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This would reduce both the background level of MSAT and the possibility of even minor MSAT emissions from this project.

F.5 Mitigation

No increase in MSAT levels are expected as a result of the project. No mitigation is required.

G. Utilities

G.1 Summary

NDOR has the authority and responsibility to regulate utility occupancy on all state highway ROWs. In exercising this responsibility, NDOR may enter into agreements with political subdivisions regarding state highways located within their geographical boundaries. All other public roads and streets not designated as state highways are under the jurisdiction of the local political subdivisions in accordance with state statutes and local ordinances.

G.2 Affected Environment

The following known providers have utilities in the project corridor:

- Cornhusker Energy
- Frontier Communication
- Black Hills Energy
- Nebraska Public Power District
- Time Warner Cable
- Loup Power District

G.3 Environmental Impacts of the No Build Alternative

With the No Build Alternative, because there would be no change to the existing utilities within the environmental study area, there would be no impact.

G.4 Environmental Impacts of the Preferred Alternative

Under the Preferred Alternative, there would be a need to relocate utilities. All required utility adjustments would be coordinated through NDOR and the Contractor as per NDOR's Standard Specifications for Highway Construction. All utilities in the area have been notified of the project. Environmental impacts are not anticipated as a result of utility adjustments. A redundant service is provided so that customers do not experience the effect of being without service. This redundancy is provided in extra lines or in bypassing the existing feeds before reconstruction of the existing lines. The utility owner is responsible for obtaining any environmental permits and approvals required for utility relocation. Disruption of utility service is not anticipated as a result of utility adjustments. The adjustment for these utilities would take place in the appropriate phase of construction. The utility companies are responsible for relocating their own facilities.

Specifically, the following may require relocation:

- Electric distribution lines adjacent to East 29th Avenue
- Telecommunication lines adjacent to East 29th Avenue

- Approximately 750 lineal feet of 6-inch gas main on the east side of East 29th Avenue from East 15th Street to East 12th Street on a private easement, generally running parallel to the roadway

Based on the current configuration of the Preferred Alternative, an electric substation northwest of the UPRR crossing would not have to be relocated.

G.5 Mitigation

- The Contractor shall follow the guidelines of NDOR's Policy for Accommodating Utilities on State Highway ROW (NDOR, 2001). It is the Project Sponsor's responsibility to notify utility companies of the need for relocation during the design stage of the project. The Project Sponsor would coordinate utility agreements with the utility companies before construction. It is the Contractor's responsibility to notify utility companies of relocation needs during the construction phase of the project for utilities that were not relocated before construction. If utility relocations using federal funds are located outside the environmental study area, those locations would be evaluated before construction. (Platte County, Contractor, Utility Provider(s)).

G.6 Standard Specifications

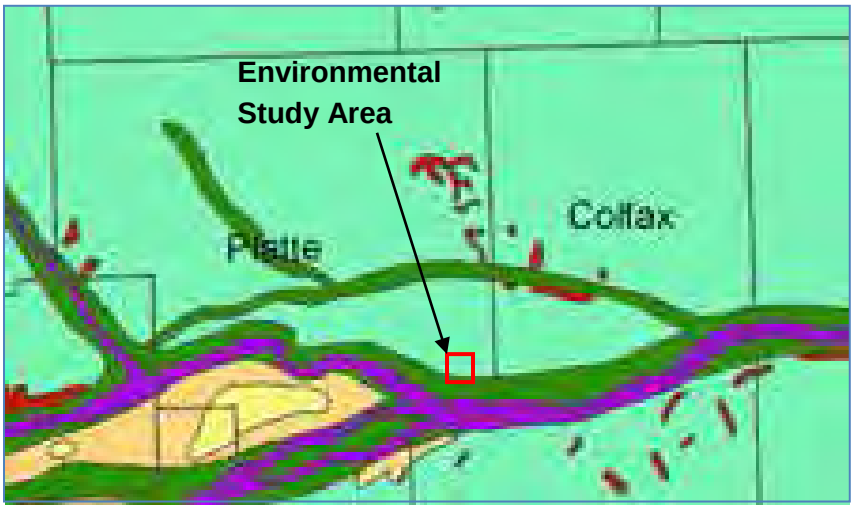
- Standard Specification 105.06 – Control of Work – Cooperation with Utilities (NDOR, 2007). This states that the Department would notify all utility companies, pipeline owners, railroads, or other parties affected by the work.
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, and prevent damage to all public and private property.
- Standard Specification 107.12 – Legal Relations and Responsibility to the Public – Responsibility for Damage, Injury, or Other Claims (NDOR, 2007). Requires the Contractor to be responsible for property damage and injuries associated with the prosecution of work.
- Standard Specification 107.16 – Legal Relations and Responsibility to the Public – Contractor's Responsibility for Utility Property and Services (NDOR, 2007). Requires the Contractor to verify the location of existing utilities.

H. Land Resources and Vegetation

H.1 Summary

As described by Kaul and Rolfsmeier in *Native Vegetation of Nebraska* (1993), the project is located within an area historically dominated by upland and lowland tallgrass prairie (**Figure 4.6**). Additional vegetation communities within the region include riparian deciduous forest, mosaic upland deciduous forest, sandhills mixed-grass prairie, and sandhills borders mixed-grass prairie. These additional communities are primarily found along the Platte River to the south and east of the project.

Figure 4.6 – Native Vegetation of Nebraska



Source: Kaul and Rolfsmeier, 1993

Upland Tallgrass Prairie
Lowland Tallgrass Prairie
Riparian Deciduous Forests
Mosaic Upland Deciduous Forests
Sandhills Mixed-Grass Prairie
Sandhills Borders Mixed-Grass Prairie

Upland Tallgrass Prairie

The upland tallgrass prairie region is primarily dominated by big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), and Canada wild-rye (*Elymus canadensis*). These perennial species are the original perennial, sod-forming bunchgrasses that historically dominated the uplands in the eastern third of Nebraska. These areas also include many species of wildflowers and other forbs such as goldenrods (*Solidago* sp.), prairie blazing-star (*Liatris pycnostachya*), skyblue aster (*Symphyotrichum oolentangiense*), and purple coneflower (*Echinacea purpurea*). Agriculture and other developments have eliminated a vast majority of these areas, which have also been heavily impacted by overgrazing and non-native species introductions (Kaul and Rolfsmeier, 1993).

Lowland Tallgrass Prairie

Lowland tallgrass prairies are primarily found within broad river valleys and floodplains of major river and streams. Due to the proximity to water and the potential for flooding, lowland tallgrass prairie generally extends further west into Nebraska than upland tallgrass prairie. Increased soil fertility and moisture are generally thought to allow dominant tallgrass species to persist where shortgrass species would typically dominate. In general, areas of lowland tallgrass prairie contain similar species composition as upland tallgrass prairie; however, they are often more productive. Similar to upland tallgrass prairie, lowland tallgrass prairie has been heavily impacted or eliminated by agriculture, grazing, development, and invasive species (Kaul and Rolfsmeier, 1993).

H.2 Affected Environment

The project is located in the Valleys Topographic region along the Platte River Valley (University of Nebraska [UNL] Conservation & Survey Division [CSD], 1973). This area consists of flat-lying

land along the Platte River. Although the project is in the native vegetation regions of upland tallgrass prairie and lowland tallgrass prairie, the area is disturbed and not representative of this vegetation type. The project area is very industrial, consisting of large areas of pavement, gravel, or maintained lawns that surround businesses and industiral developments. Outside these industrial areas are fields with row-crop agriculture. Although some grassland vegetation exists along roadside ditches, along the railroad, and in some previously farmed fields, none of these areas have plant communities characteristic of upland tallgrass prairie.

H.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impacts on existing land resources or vegetation.

H.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would not have any significant adverse impacts on land resources and vegetation. This is due to past disturbance and the absence of native vegetative communities that are characteristic of the upland or lowland tallgrass prairie regions. The Preferred Alternative would have the potential to increase the quality of the vegetation in the project area when ROW is planted with species native to the area.

The project footprint beyond the existing ROW includes the following amounts of habitat or land resources:

- Approximately 0.6 acre of wetlands
- Approximately 0.4 acre of dryland cropland
- Approximately 0.01 acre of residential land
- Approximately 8.9 acres of developed land (commercial or industrial)

H.5 Mitigation

- Upland vegetation disturbed by road construction would be seeded with appropriate seed mixtures. NDOR Standard Specifications would be followed (Platte County).

H.6 Standard Specifications

- Standard Specification Division 800 – Roadside Development and Erosion Control (NDOR, 2007)
- Standard Specification Section 805 – Certified noxious weed free mulch (NDOR, 2007)

I. Streams, Drainage, and Floodplain Considerations

I.1 Affected Environment

Streams

Based on review of US Geological Survey (USGS) 7.5-minute topographic maps, the project site was found to have no natural streams within the environmental study area (USGS, 1971). An ephemeral stream, Lost Creek, was mapped approximately 1.1 miles west of the proposed viaduct in the environmental study area and flows east where it is then approximately 0.7 mile south of the environmental study area. See **Figure 1.2**.

The project alignment parallels the Loup Canal (also known as Loup Power Canal/Loup River Canal/Tailrace Canal), which was determined to be the only feature with a defined bed and bank within the environmental study area. The Loup Canal is a man-made canal that supplies water to the Loup River Hydroelectric Project north of the project study area. For the purposes of this DEA, the canal will be referred to as the Loup Canal. The Loup Canal is fed by the Loup River and begins at the Headworks Diversion Structure west of Genoa, Nebraska. Once the diverted water reaches Columbus, it is stored in Lake Babcock and Lake North until it runs through the Columbus Powerhouse to generate energy for hydrocycling or peaking to meet community demands. After passing through the powerhouse, the canal is referred to as Tailrace Canal as it passes through Tailrace Park and empties into the Platte River. The canal appears to have a significant nexus through additional canals and possibly an unnamed tributary and eventually drains into the Platte River. The jurisdictional determination from the US Army Corps of Engineers (USACE) identified the Loup Canal as a Waters of the US (WOUS) (**Appendix I**).

Floodplains

Federal Emergency Management Agency (FEMA, 19 April 2010) has mapped the area surrounding the Platte River, including Lost Creek and the Loup Canal, approximately 1.5 miles east of the City of Columbus (Sections 22 and 23, Township 17 North, Range 1 East) as located in a Zone X area with reduced flood risk due to the levee. **Figure 4.7** shows the FEMA floodplain map for the environmental study area.

Drainage and National Pollutant Discharge Elimination System Considerations

Under Section 402 of the Clean Water Act, in 1990, the EPA published final regulations in 40 CFR 122 that identified construction as an industrial activity requiring a National Pollutant Discharge Elimination System (NPDES) permit (incorporated by Nebraska Department of Environmental Quality [NDEQ] in Nebraska Administrative Code Title 119, Rules and Regulations Pertaining to the Issuance of Permits Under the National Pollutant Discharge Elimination System [16 May 2005]) (40 CFR 122).

The City of Columbus has received authorization from NDEQ to discharge stormwater under the NPDES in accordance with the Nebraska Environmental Protection Act. The Municipal Separate Storm Sewer System (MS4) permits authorize new or existing discharges composed of stormwater from the City of Columbus designated urbanized areas into Waters of the State as defined by Nebraska Administrative Code Title 119 – *Rules and Regulations Pertaining to the Issuance of Permits Under the National Pollutant Discharge Elimination System* (NDEQ, 16 May 2005).

The terms and conditions of the MS4 permits require all entities to develop specific Stormwater Management Programs (SWMP). The development of these programs increases the likelihood of maintaining and protecting local water quality conditions that are protected under the terms of Nebraska Administrative Code Title 117 – *Nebraska Surface Water Quality Standards* (NDEQ, 22 March 2009). Implementation of the SWMP constitutes compliance with the MS4 permit.

Figure 4.7 – FEMA Floodplain Map of East 29th Avenue; Lost Creek and Loup Canal in Platte County

Source: FEMA floodplain map of Platte County, Community Panel Numbers 31141C0345E, 31141C0340E, 31141C0335E, and 31141C0330E Effective Date 19 April 2010.

The goals of NDPES and the stormwater minimum controls are to minimize water quality impacts to the maximum extent practicable as a result of the project; to conform to the requirements of the Clean Water Act; and to achieve Nebraska Administrative Code Title 117 Water Quality Standards (NDEQ, 22 March 2009). These regulations apply to construction activities that disturb more than one acre of land and require that a Storm Water Pollution Prevention Plan (SWPPP) be prepared prior to submission of the Construction Storm Water (CSW) Notice of Intent (NOI).

The project area is located 1.5 miles outside the city limits but within the City's jurisdiction. Work within the study area would have to comply with the SWMP for the City of Columbus and its regulatory-based conditions. The City is ultimately responsible for ensuring compliance with its SWMP conditions within the drainage in its jurisdictional limits. The primary goal of the City's MS4 program is to implement construction and site stormwater management minimum control measures, which can be described as the reduction in the amount of stormwater pollution from construction sites (sediment, building materials, oil, etc.). The SWMP and MS4 program require proper management practices and material disposal on construction sites including procedures for site plan review, inspections during construction, and reporting protocols to evaluate

compliance. Construction site owners or operators are also required to implement erosion and sediment control best management practices (BMPs) and to control other waste such as discarded building materials.

According to Michael Middendorf, Assistant City Engineer, City of Columbus and MS4 Program Administrator, via electronic communication on 27 January 2014 (**Appendix J**), sites outside the city limits "have not been regulated [for post-construction stormwater minimum control measures] unless there is a direct influence to the stormwater inside city limits. The proposed project should outfall into the canal if flowing down along existing ditches along the tracks or south along existing drainage. Either way, the stormwater outfall would remain outside the city line."

I.2 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impacts on streams, drainage, or floodplains.

I.3 Environmental Impacts of the Preferred Alternative

Stormwater drainage drop structures from the viaduct and open ditches are planned for conveying stormwater runoff from the facility in the preliminary design of the Preferred Alternative. Impacts on streams, drainage, and floodplains would be limited to redevelopment of the open-drainage ditches along the roadway on East 29th Avenue. It is likely that impacts at this location would not require mitigation; however, revegetation of the ditch side slopes should follow standard provisions.

I.4 Mitigation

This project does not require a floodplain development permit.

- The Project Sponsor would obtain a CSW permit from NDEQ and produce an associated project-specific SWPPP. The Project Sponsor would incorporate soil erosion and sediment control practices as detailed in the CSW permit and SWPPP. Permanent drainage and water quality facilities (that is, BMPs) may be included with the final design to mitigate adverse impacts caused by stormwater runoff. These BMPs would protect water quality and provide a discharge velocity that is equal to or better than the current conditions. The project would comply with construction stormwater permit requirements. (Platte County)
- The project-specific SWPPP would outline mitigating measures during construction and maintenance requirements for all permanent BMPs. The SWPPP would include a detailed Erosion and Sediment Control Plan as part of the roadway design set. These plans would show temporary measures, such as silt fences, hay bales, soil retention blankets, inlet protection, and stabilized construction entrances. The design of measures to be taken would be determined during final design. (Platte County, Contractor)

I.5 Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public (NDOR, 2007). Requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.

I.6 Special Provisions

- Special Provision – Temporary Water Pollution Control (NDOR, 2007; B-3-0509). Establishes the required documentation included in the Environmental Commitment Document and Project Erosion and Sediment Control Inspection.
- Special Provision – Storm Water Pollution Prevention Plan (NDOR, 2007; A-20-0307). Requires the Contractor to understand the terms and conditions of the general NPDES.
- Special Provision – Storm Water Discharges (NDOR, 2007; A-43-0408). Requirements associated with storm water discharges from construction sites to Waters of the State of Nebraska.
- Legal Relations and Responsibility to the Public (NDOR, 2007; A-43-0210). Requirements if Contractor violates any governing federal, state, or local environmental quality regulations and/or is in noncompliance with any environmental commitment.

J. Groundwater and Wellhead Protection Areas

J.1 Summary

Groundwater and Wellhead Protection Areas (WPAs) were investigated for their potential to be affected by the project. Groundwater is defined as “water occurring beneath the surface of the ground that fills available openings in rock or soil materials such that they may be considered saturated” (NDEQ, 27 March 2006). Nebraska Administrative Code Title 118, Ground Water Quality Standards and Use Classification, is the foundation for groundwater regulatory programs in Nebraska that protect groundwater quality and prevent contamination in designated areas. It is administered by the NDEQ, provides numerical standards for many parameters, and requires that any substance introduced to groundwater, directly or indirectly, should not cause the groundwater to exceed those standards (NDEQ, 27 March 2006). Nebraska Department of Natural Resources (NDNR) is responsible for permitting and maintaining records related to wells throughout the state (NDNR, 2014a). The Wellhead Protection Area Act (Nebraska Revised Statute 46-1501 et seq. 2010) provides for WPAs to regulate potential sources of contamination in close proximity to municipal and other public wells used to provide drinking water. The NDEQ is the lead agency for WPA Plan approval.

J.2 Affected Environment

The environmental study area is located over the High Plains Aquifer (Ogallala Aquifer), which covers 174,000 square miles (USGS, 2014). Static water levels within the environmental study area range from approximately 5 to 30 feet below ground surface (bgs) but in most areas are between 10 to 15 feet bgs (NDNR, 2014b). The boring logs from the March 2014 subsurface investigation related to the hazardous materials review (**Section Q**) indicate that the water table is approximately 18 feet bgs (Benesch, 14 April 2014). Regional flow of groundwater generally occurs in an east-southeasterly direction (UNL CSD, 1995). Groundwater flow may be independently influenced by water table elevations, flowing from areas with higher water table elevations to areas with lower water table elevations; this may not be consistent with the direction of flow for surface water. Sites west-northwest of the project area are assumed to be potentially up-gradient relative to the project area. Confirmation of the direction of groundwater flow beneath the subject property was beyond the scope of this study.

The environmental study area contains approximately 77 registered active groundwater wells (NDNR, 2014b). Most of the wells, approximately 50, are groundwater quality monitoring wells. There are 10 commercial wells, 7 domestic drinking water wells, 7 livestock drinking water wells, and 3 wells registered as other uses (NDNR, 2014b). Wells in place before 1993 are not required by law to be registered with NDNR (NDNR, 2014a); therefore, an unknown number of unregistered wells may be located within the study area.

The northern portion of the study area falls within the southern half of the City of Columbus WPA, located between East 29th Avenue and East 38th Avenue. The portion of the study area within the WPA is approximately 120 acres and stretches 0.75 mile east-west and 0.25 mile north-south. Two additional WPAs located in the vicinity of the project but outside the study area include the Silver Trailer Park WPA, approximately 0.75 mile north of the project study area, and an additional City of Columbus WPA, approximately 1 mile west of the study area. No other WPAs are located within 3 miles of the environmental study area. **Figure 4.8** shows the location of the WPAs in the vicinity of the project.

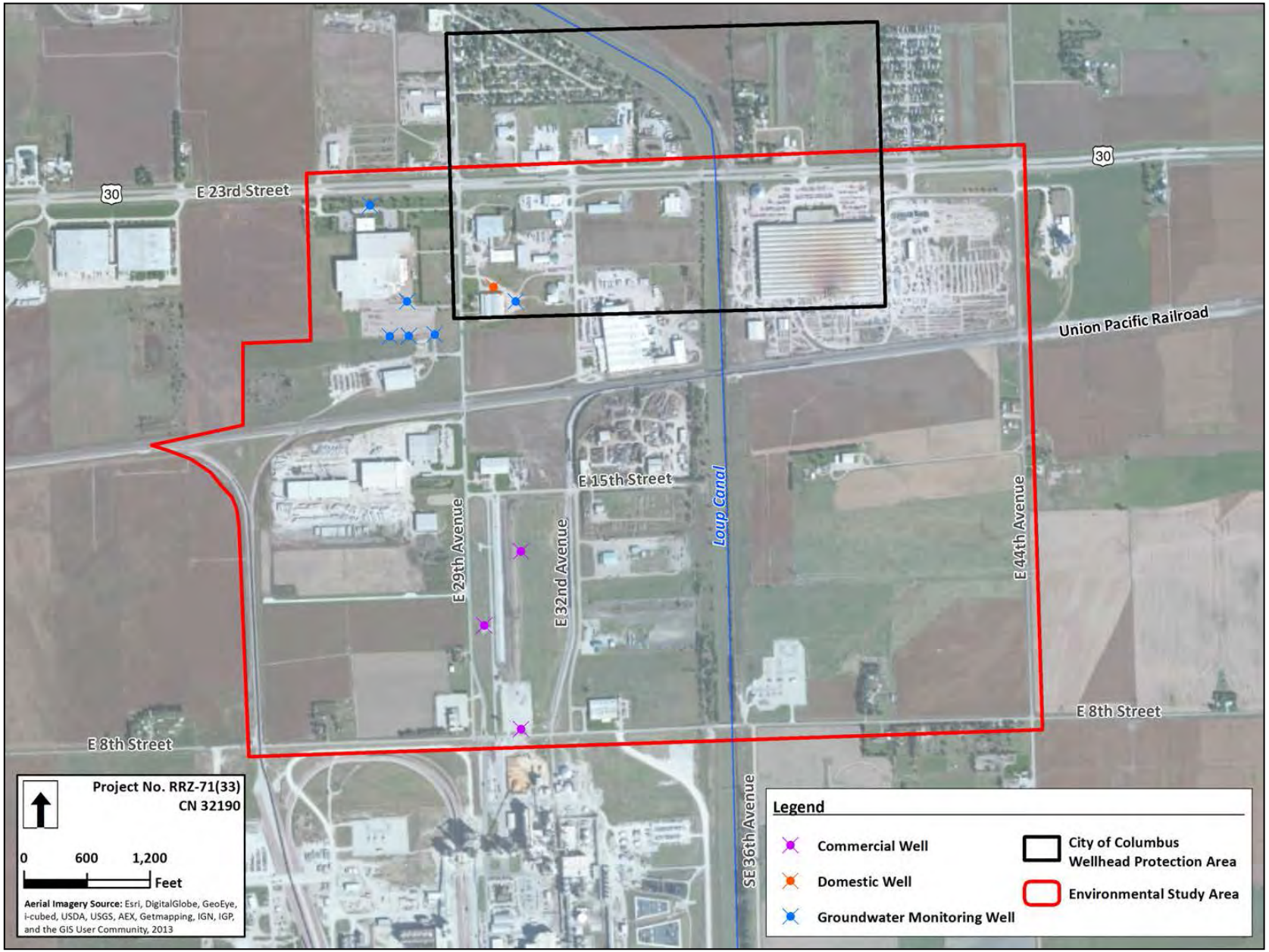
J.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would not affect current groundwater levels, groundwater quality, or wells within the study area. There would be no new road construction or soil disturbances besides general maintenance and repair of the existing roadways that would not impact groundwater.

J.4 Environmental Impacts of the Preferred Alternative

Under the Preferred Alternative, decreases in groundwater quality and impacts on the water table or aquifers are considered unlikely. The Preferred Alternative would result in an increase in impermeable surfaces that could decrease groundwater recharge; based on the scope of the project, the amount of decrease would likely be negligible. Although many registered groundwater wells are located within the project study area, most of these wells are located away from the Preferred Alternative and would not be impacted by the project. Wells in close proximity to the Preferred Alternative include one domestic well, six groundwater monitoring wells, and three commercial wells. **Figure 4.8** shows the locations of these wells. Based on preliminary design, construction of the Preferred Alternative is not expected to impact any of these wells. It is possible that unregistered wells may be located near the Preferred Alternative alignment; however, none were observed during site reconnaissance activities. Any registered or unregistered wells within the ROW to be acquired would be properly decommissioned. A licensed water well contractor would decommission the groundwater well(s) as specified in the Nebraska Department of Health and Human Services (DHHS) regulations under Nebraska Administrative Code Title 178, Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards (Nebraska DHHS, 12 February 2005). Proper decommissioning of affected wells would not have a significant impact on groundwater quality.

Figure 4.8 – Location of Wellhead Protection Areas in the Project Vicinity



Groundwater is not anticipated to be encountered during construction of the Preferred Alternative. Maximum depth of excavation is approximately 3 feet. Please refer to **Section Q, Hazardous Materials,** and **Section R, Material Sources and Waste Materials,** for additional information about the potential to encounter groundwater and materials management.

The northern portion of the Preferred Alternative's alignment would be located in the southwest corner of the City of Columbus WPA. Therefore, the Preferred Alternative would be subject to applicable wellhead protection regulations (NDOR, 2007). No requirements or restrictions applicable to the construction of the Preferred Alternative were identified in a review of the City of Columbus Wellhead Protection Plan (City of Columbus Code: Ordinance No. 05-47, Title V, Chapter 52, Section 52.130). For additional information, contact NDEQ.

J.5 Mitigation

- A portion of the project has been identified as being located within the City of Columbus WPA. NDOR's Standard Specifications 107.01, 107.09, and 107.16 address the Contractor's responsibility to keep fully informed of, observe, and comply with all federal, state, and local laws and ordinances that affect the conduct of the work (Contractor).
- The Project Sponsor would coordinate with the owners of wells that would be directly impacted by the proposed project. If the well is actively used, the Project Sponsor would get estimates to have the property owner hire their own contractor to replace the well. The Project Sponsor would then have an independent contractor decommission the well after ROW negotiations and acquisitions are complete. If the well is not in use, the Contractor would decommission the well after negotiations with the owner (Platte County, Contractor).
- A licensed water well contractor would decommission any wells in accordance with the Nebraska DHHS regulations under Nebraska Administrative Code Title 178, Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards (Nebraska DHHS, 12 February 2005) (Platte County).

J.6 Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public (NDOR, 2007). Requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, replace, or restore private property.
- Standard Specification 107.16 – Contractor's Responsibility for Utility Property and Services (NDOR, 2007). Requires the Contractor to notify utilities and determine locations of underground facilities to ensure that utility service is relocated, restored, and interruption is kept at minimum. The Contractor must protect and keep operational all encountered utilities.

K. Wetlands, Waters of the US, and Waters of the State

K.1 Summary

Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328). Wetlands are a regulated resource as per Executive Order (EO) 11990, Protection of Wetlands (42 Federal Register [FR] 26961). Wetland scientists from Felsburg Holt and Ullevig (FHU) conducted a wetland delineation of the project location between 22 and 24 July 2013 (FHU, October 2013). Wetland scientists collected the data for the field research by walking and driving the project area to identify hydrophytic vegetation wetland soils and hydrology sources, then mapping all wetland sites using GPS in accordance with the methods set forth in the *1987 US Army Corps of Engineers Wetlands Delineation Manual* (USACE, 1987) and *Regional Supplement to the US Army Corps of Engineers Wetland Delineation Manual: Midwest Region* (USACE, August 2010). Wetland scientists examined areas of the environmental study area within 150 feet of the proposed alternatives for the presence of wetlands and other water resources. Proposed detour routes, access roads, intersection improvements, and other locations potentially impacted by construction of the proposed alternatives were also surveyed. As a result, the entire environmental study area was not surveyed.

K.2 Affected Environment

Based on a review of existing resources and the field investigation, it was determined that 48 distinct wetlands occur within the delineated portions of the study area. This includes 44 Palustrine Emergent Temporarily/Seasonally Flooded (PEMA/PEMC) wetlands and 1 Palustrine Scrub-Shrub Temporarily Flooded (PSSA) wetland (Cowardin et al., 1979). Additionally, there is 1 WOUS in the study area, the Loup Canal. Identified wetlands were primarily located within roadside and agricultural drainage ditches, or adjacent to stream channels. The total area of wetlands delineated within the vicinity of the project alternatives is approximately 5.3 acres.

The Loup Canal, with a channel width greater than 100 feet, contains a defined bed and bank and ordinary high water mark. The drainages and tributaries in the project area flow toward the Loup Canal, which, in turn, flows into the Platte River approximately 1.5 miles downstream of the project study area.

Table 4.2 lists wetlands identified within the study area, and **Table 4.3** shows the characteristics of Loup Canal.

A jurisdictional determination request was submitted to the USACE in November 2013 to determine whether wetlands and waters within the study area are WOUS (under the jurisdiction of the USACE) or Waters of the State (under the jurisdiction of NDEQ; NDEQ, 22 March 2009). A Preliminary Jurisdictional Determination was received 17 April 2014 indicating that the Loup Canal and abutting wetlands (WOUS 112, Wetland 112, and Wetland 113) are jurisdictional wetlands or WOUS (**Appendix I**).

K.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impact on any additional wetlands.

K.4 Environmental Impacts of the Preferred Alternative

At this time, only preliminary impacts are known due to the level of design that has been done. Preliminary impacts indicate that the Preferred Alternative would have an impact on approximately 0.75 acre of wetlands. Wetland impacts are primarily due to the modification of the East 29th Avenue alignment and widening. No impacts to any jurisdictional wetlands or WOUS are anticipated.

Table 4.2 – Wetlands Along the Proposed Project Alternative Alignments

Wetland	Classification[1,2,3]	Acres	Remarks
S-1	PEMA/PEMC	0.011	Wetland 1 is a small PEMA/PEMC depressional wetland located within the road ditch along the west side of East 29th Avenue.
S-3	PEMA/PEMC	0.018	Wetland 2 is a small PEMA/PEMC depressional wetland located within the road ditch along the west side of East 29th Avenue.
S-4	PEMA/PEMC	0.012	Wetland 4 is a small PEMA/PEMC depressional wetland located within the road ditch southwest of the intersection of East 29th Avenue and an unnamed side road.
S-6	PEMA/PEMC	0.181	Wetland 6 is a linear PEMA/PEMC depressional wetland located within the ditch along the east side of the rail line located on the west side of the study area.
S-10	PEMA/PEMC	0.191	Wetland 10 is a small PEMA/PEMC depressional wetland that may have been an old stormwater collection area.
S-25	PEMA/PEMC	0.235	Wetland 25 is a small PEMA/PEMC depressional wetland located within the road ditch along the west side of East 29th Avenue.
S-30	PEMA/PEMC	0.025	Wetland 30 is a small PEMA/PEMC depressional wetland located within the road ditch along the west side of East 29th Avenue, southwest of Paige Electric Company.
S-33	PEMA/PEMC	0.139	Wetland 33 is a small PEMA/PEMC depressional, linear wetland located within the road ditch along the west side of East 29th Avenue.
S-34	PSSA	0.429	Wetland 34 is a PSSA fringe wetland located along the edges of a small pond on the west side of East 29th Avenue.
S-35	PEMA/PEMC	0.240	Wetland 35 is a PEMA/PEMC fringe wetland located along the edges of a pond on the west side of East 29th Avenue. This wetland was assumed because the site could not be accessed due to a tall fence.
S-38	PEMA/PEMC	0.055	Wetland 38 is a small PEMA/PEMC depressional, linear wetland located within the road ditch along the west side of East 29th Avenue. This wetland was assumed because the site could not be accessed due to a tall fence.
S-40	PEMA/PEMC	0.511	Wetland 40 is a PEMA/PEMC fringe wetland located along the edges of a pond on the west side of East 29th Avenue. This wetland was assumed because the site could not be accessed due to a tall fence.
S-43	PEMA/PEMC	0.025	Wetland 43 is a small PEMA/PEMC depressional wetland located east of East 29th Avenue, in the road ditch on the west side of the drive that leads to the ethanol plant.

Wetland	Classification[1,2,3]	Acres	Remarks
S-46	PEMA/PEMC	0.009	Wetland 46 is a small PEMA/PEMC depressional wetland located east of East 29th Avenue, in the road ditch on the west side of the drive that leads to the ethanol plant.
S-48	PEMA/PEMC	0.055	Wetland 48 is a small PEMA/PEMC depressional, linear wetland located within the road ditch along the south side of 15th Street.
S-51	PEMA/PEMC	0.001	Wetland 51 is a very small PEMA/PEMC depressional wetland located within the road ditch along the north side of 15th Street.
S-56	PEMA/PEMC	0.010	Wetland 56 is a small PEMA/PEMC depressional wetland located within the road ditch along East 29th Avenue, just south of the UPRR.
S-58	PEMA/PEMC	0.038	Wetland 58 is a small PEMA/PEMC depressional wetland located within a side road ditch east of East 29th Avenue, just north of the UPRR.
S-59	PEMA/PEMC	0.159	Wetland 59 is a linear PEMA/PEMC depressional wetland located between the UPRR and a road to the north, just east of East 29th Avenue.
S-65	PEMA/PEMC	0.002	Wetland 65 is a very small PEMA/PEMC depressional wetland located within the road ditch along the west side of East 29th Avenue.
S-68	PEMA/PEMC	0.004	Wetland 68 is a very small PEMA/PEMC depressional wetland located within the road ditch along the west side of East 29th Avenue.
S-70	PEMA/PEMC	0.031	Wetland 70 is a small PEMA/PEMC depressional, linear wetland located within the road ditch along the west side of East 29th Avenue.
S-71	PEMA/PEMC	0.013	Wetland 71 is a small PEMA/PEMC depressional, linear wetland located within the road ditch along the west side of East 29th Avenue.
S-73	PEMA/PEMC	0.014	Wetland 73 is a small PEMA/PEMC depressional wetland located within the road ditch southwest of the intersection of East 29th Avenue and US 30.
S-76	PEMA/PEMC	0.003	Wetland 76 is a very small PEMA/PEMC depressional wetland located within the road ditch southeast of the intersection of East 29th Avenue and US 30.
S-83	PEMA/PEMC	0.008	Wetland 83 is a small PEMA/PEMC depressional wetland located within the road ditch on the east side of East 29th Avenue.
S-84	PEMA/PEMC	0.035	Wetland 84 is a small PEMA/PEMC linear, depressional wetland located within the road ditch along the east side of East 29th Avenue.
S-89	PEMA/PEMC	0.014	Wetland 89 is a small PEMA/PEMC depressional wetland located within the road ditch on the west side of East 32nd Avenue.
S-94	PEMA/PEMC	0.411	Wetland 94 is a linear PEMA/PEMC depressional wetland located within the road ditch along the south side of US 30.
S-97	PEMA/PEMC	0.011	Wetland 97 is a small PEMA/PEMC depressional wetland located within the road ditch along the north side of US 30.
S-100	PEMA/PEMC	0.010	Wetland 100 is a small PEMA/PEMC depressional wetland located within the road ditch along the north side of US 30.
S-103	PEMA/PEMC	1.574	Wetland 103 is a long, linear PEMA/PEMC depressional wetland located in the area between the west side of East 32nd Avenue and the east side of the railroad.

Wetland	Classification[1,2,3]	Acres	Remarks
S-112	PEMA/PEMC	0.024	Wetland 112 is a small PEMA/PEMC fringe wetland located along the west bank of the Loup Canal, south of 8th Street East.
S-113	PEMA/PEMC	0.009	Wetland 113 is a small PEMA/PEMC fringe wetland located along the east bank of the Loup Canal, south of 8th Street East.
S-133	PEMA/PEMC	0.059	Wetland 133 is a PEMA/PEMC depressional wetland located in the ditch northeast of the intersection of East 44th Avenue and an unnamed side road.
S-135	PEMA/PEMC	0.069	Wetland 135 PEMA/PEMC depressional wetland located in the ditch southwest of the intersection of East 44th Avenue and US 30.
S-136	PEMA/PEMC	0.008	Wetland 136 is a small PEMA/PEMC depressional wetland located in the ditch southeast of the intersection of East 44th Avenue and US 30.
S-140	PEMA/PEMC	0.143	Wetland 140 is a long, linear PEMA/PEMC depressional wetland located in the ditch along the west side of East 44th Avenue.
S-143	PEMA/PEMC	0.209	Wetland 143 is a linear PEMA/PEMC wetland that receives irrigation return flow and is located in the ditch along the east side of East 44th Avenue.
S-145	PEMA/PEMC	0.079	Wetland 145 is a linear PEMA/PEMC depressional wetland located in the ditch along the west side of East 44th Avenue.
S-147	PEMA/PEMC	0.002	Wetland 147 is a very small PEMA/PEMC depressional wetland located in the ditch along the west side of East 44th Avenue.
S-149	PEMA/PEMC	0.084	Wetland 149 is a linear PEMA/PEMC depressional wetland located in the ditch along the west side of East 44th Avenue.
S-153	PEMA/PEMC	0.0003	Wetland 153 is a very small PEMA/PEMC depressional wetland located in the ditch northeast of the intersection of East 44th Avenue and 8th Street East.
S-155	PEMA/PEMC	0.0006	Wetland 155 is a small PEMA/PEMC depressional wetland located in the ditch along the east side of East 44th Avenue.
S-157	PEMA/PEMC	0.051	Wetland 157 is a PEMA/PEMC depressional wetland located in the ditch along the north side of 8th Street East.
S-159	PEMA/PEMC	0.111	Wetland 159 is a PEMA/PEMC depressional wetland located in the ditch along the west side of East 14th Avenue.
S-160	PEMA/PEMC	0.052	Wetland 160 is a PEMC/PEMA depressional wetland located in the ditch along the west side of East 14th Avenue.
S-161	PEMA/PEMC	0.012	Wetland 161 is a PEMA/PEMC depressional wetland located in the ditch along the east side of East 14th Avenue.

[1] PEMA = Palustrine Emergent Temporarily Flooded

[2] PEMC = Palustrine Emergent Seasonally Flooded

[3] PSSA = Palustrine Scrub-Shrub Temporarily Flooded

Table 4.3 – Waters and other Features Along the Proposed Project Alternative Alignments

Water	Classification	Type	Remarks
Loup Canal	WOUS	Channel	Loup Canal runs through the project study area and drains into the Platte River approximately 1.5 miles south of the project.

K.5 Mitigation

- Before any construction work, The Poject Sponsor would obtain a Letter of Opinion of Non-Degradation from NDEQ for Impacts to Waters of the State (NDEQ, 22 March 2009) (Platte County). Although not anticipated, a Section 404 permit from the USACE would be obtained if impacts include WOUS (USACE, 2012).
- At the discretion of NDEQ, impacted wetlands occurring within roadside ditches may be mitigated on-site at a 1:1 ratio, if the project design allows the creation of new ditch wetlands adjacent to the impacted areas. Appropriate mitigation sites would require adequate hydrology and would be seeded with a mix of hydrophytic grasses and sedges appropriate for the region to create in-kind replacement. Monitoring the progress of vegetation establishment and evaluating hydrology would be required to ensure the success of the mitigation wetland areas (Platte County).

L. Impaired/Unique Waters

L.1 Summary

Section 303(d) of the Federal Clean Water Act, which Congress enacted in 1972, requires states, territories, and authorized tribes (states) to identify and establish a priority ranking for all water bodies where technology-based effluent limitations required by Section 301 are not stringent enough to attain and maintain applicable water quality standards (33 CFR 1251 et seq.). Once identified, states are to establish total maximum daily loads (TMDLs) for the pollutants causing impairment in those water bodies and to submit, bi-annually, the (revised) list of impaired water bodies and TMDLs to the EPA. The requirements to identify and establish TMDLs apply to all water bodies regardless of whether a water body is impaired by point sources, nonpoint sources, or a combination of both. *Pronsolino v. Marcus, 2000* WL 356305 (Northern District of California, 30 March 2000).

The 303(d) List of Waters reports on streams and lakes identified as impaired for one or more pollutants and do not meet one or more water quality standard. Impaired waters are identified through assessment and monitoring programs administered by NDEQ personnel and other local, state, and federal agencies, and published in the bi-annual *Water Quality Integrated Report* (NDEQ, April 2012).

L.2 Affected Environment

Based on NDEQ's 2012 *Water Quality Integrated Report*, there are impaired streams or waters within the vicinity of the project, but none are located within the environmental study area (NDEQ, April 2012) (**Figure 4.9**). The nearby impaired streams or waters include the Loup Canal and Clear Creek, which are impaired with Escherichia coli (E. coli). The nearest impaired stream segment, Loup Canal, is located 1.5 miles south of the south end of the proposed project. The Platte River from the confluence with Clear Creek east is impaired with Atrazine. In 2007, a TMDL was established on the NE-LP1-20000 segment of the Platte River for E. coli.

L.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impacts on impaired/unique waters.

L.4 Environmental Impacts of the Preferred Alternative

Based on the types of impairments reported in the NDEQ 2012 *Water Quality Integrated Report* for Loup Canal and Clear Creek (NDEQ, April 2012), the Preferred Alternative would have no impacts on impaired/unique waters.

Figure 4.9 – My WATERS Mapper Image of Impaired Streams or Water near Columbus, Platte County

Source: EPA MyWATERSMapper, Retrieved 28 January 2014.

L.5 Mitigation

- The Project Sponsor would obtain a CSW permit from NDEQ under NPDES and would produce an associated SWPPP before submitting the NOI. Additionally, the City of Columbus is required as part of their MS4 permit to report annually to NDEQ on the status of post-construction activities within its jurisdiction. NPDES requirements include the evaluation of impaired and unique waters as part of the CSW NOI, SWPPP preparation, and MS4 compliance (Platte County, City of Columbus).

L.6 Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to be aware of any observed federal, state, and local laws and ordinances.

L.7 Special Provisions

- Special Provision – Storm Water Pollution Prevention Plan (A-20-0307). Requires the Contractor to understand the terms and conditions of the general NPDES CSW permit.

M. Platte River Depletions

M.1 Summary

Governors of Colorado, Nebraska, and Wyoming, and the US Department of the Interior signed the Platte River Recovery Implementation Program (PRRIP), following the Record of Decision for the April 2006 Environmental Impact Statement (US Department of Interior, April 2006). The PRRIP effective date was 1 January 2007. Habitat of the interior least tern, piping plover, and pallid sturgeon may be affected by water depletions in the Platte River basin resulting from the potential impoundment of surface water runoff in borrow sites or excavation that exposes groundwater that is hydrologically connected to the river, thereby depleting the river through increased evapotranspiration (PRRIP, 24 April 2009).

M.2 Affected Environment

Because the portion of the project located in Platte County is within the Platte River drainage basin, it has the potential to have an impact on Platte River flows related to water depletion concerns.

M.3 Environmental Impacts of the No Build Alternative

Platte River depletion concerns are not applicable to the No Build Alternative because the need for borrow would not be part of this alternative.

M.4 Environmental Impacts of the Preferred Alternative

Stormwater drainage drop structures from the viaduct and open ditches are planned for conveying stormwater runoff from the facility in the preliminary design of the Preferred Alternative. Therefore, stormwater runoff would not be detained and all water would remain in the same drainage basin, thereby meeting the US Fish and Wildlife Service (USFWS) *de minimis* determination (USFWS, 2009). Operational or maintenance activities would not expose groundwater. According to the USFWS website concerning Endangered Species Act (ESA) (16 USC 1531 et seq.) coverage under the Program, if it is below the threshold for *de minimis*, consultation is not required.

M.5 Mitigation

- The Contractor would be required to provide the needed borrow material and would identify a source of material that does not include dredging Platte River sediment. The Contractor shall try to obtain borrow material from an upland site to prevent depletion issues and would be required to submit a Materials Source Site Identification and Evaluation form to the Project Sponsor, NDOR, and USACE. After receiving the form, the Project Sponsor would forward the Material Source Form to the USFWS, NGPC, Department of Natural Resources (DNR), and HAP-NSHS (Platte County, Contractor).
- If the borrow site is located within a depletion area of concern and it is identified that it would pond water after excavation, The Project Sponsor would determine project-related impacts by calculating the evaporated loss of water at the borrow site, by using the Natural Resource Conservation Service (NRCS) – US Department of Agriculture (USDA) Consumptive Use Calculator. For borrow sites/detention basins that would result in the exposure of groundwater in the North Platte River Basin, the Project Sponsor would

submit the borrow site request information to the NGPC and USFWS. This would be done to determine ways to avoid depletions or provide offsets if depletions are to occur. Requests for borrow sites that occur outside the Platte River watershed would be submitted to the DNR for tracking surface water depletions (Platte County, Contractor).

- Borrow sites that expose groundwater and are obtained outside the PRRIP areas would be offset according to the Biological Opinion prepared by NGPC in accordance with the Nebraska Nongame and Endangered Species Conservation Act (Nebraska Revised Statute 37-806 et seq. 2008). Borrow sites that pond water and occur outside the PRRIP area and the Platte River watershed would be calculated using the NRCS Consumptive Use Calculator and submitted to the DNR to be included in the report to the Governance Committee (Platte County, Contractor).

M.6 Standard Specifications

- Standard Specification 205.02 – Excavation and Embankment – Material Requirement (NDOR, 2007). Contractors are required to provide clean earth fill that is of approved suitable materials for roadbed and embankments.

M.7 Special Provisions

- Special Provision – Borrow Site Approval (NDOR, 2007; B-1-0408). Requirements associated with the embankment materials, and borrow site approval.

N. Noxious Weeds

N.1 Summary

Noxious weeds, invasive species that are monitored because of their tendency to degrade natural ecosystems and native plant communities, could be introduced as result of the project. The State of Nebraska regulates noxious weeds. Several regulations and guidelines pertain to noxious weeds and invasive species, including EO 13112, Invasive Species (64 FR 6183, 8 February 1999), the Nebraska Noxious Weed Control Act (Nebraska Revised Statute 2-945.01-2-966. 2012), and the Nebraska Noxious Weeds Regulations (Nebraska Department of Agriculture, December 2011).

EO 13112 states that all projects would, "…subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: i) prevent the introduction of invasive species; ii) detect and respond rapidly to, and control, population of such species in a cost-effective and environmentally sound manner; iii) monitor invasive species population accurately and reliably…[and] iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded…" (64 FR 6183, 8 February 1999). The Nebraska Noxious Weed Control Act states that all landowners must manage noxious weeds that may be damaging to adjacent landowners (Nebraska Revised Statute 2-945.01-2-966. 2012).

The list of noxious weeds of Nebraska includes the following that occur statewide (Nebraska Weed Control Association, 2013):

- Musk thistle (*Carduus nutans*)

- Leafy spurge (*Euphorbia esula*)
- Canada thistle (*Cirsium arvense*)
- Plumeless thistle (*Carduus acanthoides*)
- Spotted and diffuse knapweed (*Centaurea diffusa*, *C. maculosa*, and *C. stoebe*)
- Purple loosestrife (*Lythrum salicaria* and *L. virgatum*)
- Saltcedar (*Tamarix ramosissima* and *T. parviflora*)
- Common Reed (*Phragmites australis*)
- Japanese knotweed (*Fallopia japonica*)
- Sericea lespedeza (*Lespedeza cuneata*)

The Nebraska Invasive Species Council has developed Nebraska's Watch List for Invasive Species, which is a list of possible invasive plants to monitor for their spread and impacts on surrounding areas (Nebraska Invasive Species Project, 2014). The listed plants may be on adjoining states' noxious weeds lists or may have an impact on agriculture or ecosystems of Nebraska.

For the project region, the Watch List includes the following invasive species that are not yet in Nebraska but pose a significant risk if introduced:

- Giant reed (*Arundo donax L*.)
- Oriental bittersweet (*Celastrus orbiculatus*)
- Water hyancith (*Eichhornia crassipes*)
- Hydrilla (*Hydrilla verticillata*)
- Brittle naiad (*Najas minor*)
- Giant salvinia (*Salvinia molesta*)

For the project region, the Watch List also includes the following invasive species for top priority (eradication still possible for new and existing populations):

- Amur maple (*Acer ginnala*)
- Russian knapweed (*Acroptilon repens*)
- Garlic mustard (*Allaria petiolata*)
- Australian beardgrass or Caucasian bluestem (*Bothriochloa bladhii* or *Andropogon bladhii*)
- Yellow bluestem (*Bothriochloa ischaemum*)
- Black knapweed (*Centaurea moncktonii*)
- Yellow star thistle (*Centaurea solstitalis*)
- Sweet autumn virgin's-bower (*Clematis terniflora*)
- Houndstongue (*Cynoglossum officinale*)
- Cutleaf teasel (*Dipsacus laciniatus*)
- Sickleweed (*Falcaria vulgaris*)
- Goat's-rue (*Galega officinalis*)

- Yellow bedstraw (*Galium verum*)
- Japanese honeysuckle (*Lonicera japonica, morrowii, morrowii x tatarica*)
- Eurasian water-milfoil (*Myriophyllum spicatum*)
- Kudzu (*Pueraria montanta* var. *lobata*)
- Hoary cress (*Cardaria draba L.*)
- St. John's wart (*Hypericum perforatum*)
- Crown vetch (*Securigera varia*)

N.2 Affected Environment

The project environmental study area is primarily made up of roadways, industrial businesses, and agricultural production areas. As a consequence, vegetation in the project area has been highly disturbed. Maintained lawns with ornamental vegetation or planted trees exist around some of the businesses and roadways. Areas around the margins of agricultural fields may be highly disturbed and contain a mix of native and non-native vegetation. Due to an ethanol plant in the area, a large number of trucks from around the region pass through the area daily; these trucks may have the unintended consequence of transporting invasive plant seeds into the area. Roadside ditches in the area contain a mix of native and non-native species. One Watch List Species, Japanese honeysuckle (*Lonicera morrowii*), was observed along the south side of 8th Street while conducting project wetland delineations.

N.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would result in neither disturbance nor improvement to the proposed site's vegetation composition.

N.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would require the conversion of some agricultural areas or maintained lawns into pavement and ROW; the project may also require tree removals, and clearing and grubbing in certain areas. Due to the amount of disturbance that has already occurred in the project area, these actions are unlikely to lower the overall quality of the area's vegetation. The creation of new roadways and associated ditches may improve the area's vegetation composition if planted in species native to the project area's ecoregion, as required by the conservation condition (**S-3**) outlined in **Chapter 4, Section O.5**.

N.5 Mitigation

No mitigation is required.

N.6 Standard Specifications

- Standard Specification 202.01(4)(d) – Clearing and Grubbing (NDOR, 2007). The Contractor shall dispose of trash, dead trees, and vegetation in the ROW limits and beyond the limits of construction.
- Standard Specification 803.02 – Seeding – Material Requirements (NDOR 2007). Requirements associated with seeding methods, rates of application, and seed mixtures.

- Standard Specification 803.03 – Seeding – Construction Methods (NDOR, 2007). Requirements associated with planting season and methods.
- Standard Specification 806.02(4)(c) – Sodding – Material Requirements (NDOR, 2007). Requirements associated with sod material and placement.
- Standard Specification 807 – Erosion Control (NDOR, 2007)

O. Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act

O.1 Summary

Endangered and Threatened Species

Federally listed endangered and threatened species are protected under the ESA of 1973 as amended (16 USC 1531 et seq.). Adverse effects on a federally listed species or its habitat would require consultation with the USFWS under Section 7 of the ESA. Section 7 of the ESA of 1973, as amended, requires federal agencies to ensure that actions that they authorize, fund, or carry out are not likely to jeopardize the continued existence of proposed, endangered, or threatened species or result in the destruction or adverse modification of their critical habitat. State listed endangered and threatened species are protected under the Nebraska Nongame and Endangered Species Conservation Act (NESCA) (Nebraska Revised Statute 37-806 et seq. 2008). The Nebraska Game and Parks Commission (NGPC) administer the NESCA.

Bald and Golden Eagles

Bald and golden eagles have specific protection under the Bald and Golden Eagle Protection Act (BGEPA) (16 USC 668-668c.), which is administered by the USFWS. Protections under this act prohibit “take” of bald and golden eagles. The project was reviewed for potential impacts to these species. Bald eagles use tall trees for roosting or nesting, and they use nearby open water for foraging; golden eagles use shortgrass and mixed-grass prairies for foraging, and they use rocky cliffs, tall trees, and other high places for nesting. There is no golden eagle nesting or roosting habitat within the vicinity of the project. However, there are records of bald eagle nests within 5 miles of the project, and suitable bald eagle habitat exists within 0.5 mile of the environmental study area.

Migratory Birds

Under the Migratory Bird Treaty Act (MBTA) (16 USC 703-712: Ch. 128), construction activities in grassland, wetland, stream, and woodland habitats, and those that occur on bridges (for example, which may affect swallow nests on bridge girders) that would otherwise result in the “taking” of migratory birds, eggs, young, and/or active nests should be avoided. Although the provisions of MBTA are applicable year-round, most migratory bird nesting activity in Nebraska occurs during the period of 1 April to 15 July. However, some migratory birds are known to nest outside the aforementioned primary nesting season period. For example, raptors can be expected to nest in woodland habitats during 1 February through 15 July, whereas sedge wrens, which occur in some wetland habitats, normally nest from 15 July to 10 September.

O.2 Affected Environment

Endangered and Threatened Species

The project is located within the Tallgrass Prairie Ecoregion as defined by the Nebraska Natural Legacy Project (NGPC, 2011); however, species and plant communities indicative of this ecoregion are not present within the study area due to past human development. Suitable habitat within the study area exists for the northern long-eared bat, which is federally listed as threatened. This species may roost in trees or under bridges or culverts that are present within the study area. According to the Species Evaluation Parameters Form, suitable habitat does not exist for any other state or federally listed species in the environmental study area.

Bald and Golden Eagles

Golden eagles require large expanses of open land for hunting and scavenging and prefer to nest on canyon outcrops or buttes. No suitable nesting sites for golden eagles were found within close proximity of the project.

Bald eagles prefer nesting sites characterized by mature forested corridors adjacent to open water. Generally, bald eagles would likely avoid the study area due to the industrial setting and frequent human disturbances, including heavy truck traffic and other noise. In spite of these disturbances, small forested patches adjacent to the Loup Canal may be considered potential bald eagle habitat within 0.5 mile of the study area. These locations contain many large mature trees (diameter breast height 12 to 24 inches) that can support eagle nests. Bald eagles were observed flying south of the study area near the Platte River; however, no potential bald eagle nests were observed within the project vicinity. The Natural Heritage Database contains records of bald eagle nests within 5 miles of the environmental study area.

Migratory Birds

The proposed project is located within an industrialized setting with undeveloped areas primarily used for row crop agriculture. There are a number of planted trees along streets and in residential or business yards, as well as small stands growing along the Loup Canal. These trees may provide nesting habitat for woodland migratory bird species. Some low diversity grassland exists in the southeast quadrant of the study area, east of the Loup Canal; other grassland and wetland vegetation exists primarily in ditches throughout the project area. These habitats, although not ideal, may still be sufficient for ground-nesting, grassland migratory bird species. Other habitats in the project vicinity include commercial and industrial structures, as well as area bridges, which may be suitable for certain ledge-nesting migratory bird species (that is, cliff swallows and barn swallows).

O.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impact on endangered and threatened species, bald and golden eagles, or migratory birds because there would be no new disturbances other than general maintenance and repair of the existing roadways. These types of activities generally occur within the existing footprint of the roadway. Therefore, endangered and threatened species and migratory bird resources would not be expected to be adversely affected by the No Build Alternative.

O.4 Environmental Impacts of the Preferred Alternative

Endangered and Threatened Species

The activities of clearing and grubbing and culvert work that would occur as part of the Preferred Alternative would have the potential to impact northern long-eared bats. Conservation Conditions NLEB-1 or NLEB-2 would be implemented to avoid adverse impacts to the species (see **O.5 Mitigation**). Therefore, it is determined that the Preferred Alternative **may affect, but is not likely to adversely affect** the northern long-eared bat, and would have **no effect** to all other state or federally listed species.

Migratory Birds

Migratory birds likely to be present within the study area include urban tree-nesting, grassland ground-nesting, and urban ledge-nesting species. The primary areas of grassland habitat, in the southeast quadrant of the study area, are unlikely to be impacted, as the Preferred Alternative would not disturb these habitats. Construction activity along the Preferred Alternative is likely to remove trees, grassland, and wetland vegetation in ditches. This loss of habitat would most likely be temporary. Disturbed areas would be seeded with native vegetation and the existing East 29th Avenue alignment would most likely be reclaimed providing additional habitat for nesting and foraging. In addition, the construction of a bridge would result in nesting habitat for some ledge-nesting species (such as cliff swallows). Direct impacts to migratory birds from construction activities associated with the Preferred Alternative are unlikely to be adverse.

Bald and Golden Eagles

The Preferred Alternative is unlikely to affect golden eagles because there is no suitable habitat in the project vicinity. The Preferred Alternative and associated construction activities in the project area would have the potential to disturb bald eagles; however, significant adverse effects are unlikely due to the ongoing industrial disturbances already present in the area.

O.5 Mitigation

The concurrence package for the project includes the following conservation conditions and survey protocol that would be required based on the Programmatic Agreement for Endangered and Threatened Species (and covering BGEPA and MBTA) (**Appendix K**). The Responsible Party for the measure is found in parentheses.

- **A-1 Changes in Project Scope**. If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from FHWA. (District Construction, Contractor)
- **A-2 Conservation Conditions**. Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. (District Construction, Contractor)
- **A-3 Early Construction Starts**. Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle

timeframes. Work in these timeframes would require approval from FHWA and could require consultation with the USFWS and NGPC. (District Construction, Contractor)

- **A-4 E&T Species**. If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. (NDOR Environmental, District Construction, Contractor)
- **A-5 Refueling**. Refueling would be conducted outside those sensitive areas identified on the plans, in the contract, and/or marked in the field. (Contractor)
- **A-6 Restricted Activities**. The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the ROW designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.

  For activities outside the project limits, the Contractor should refer to the NGPC website to determine which species ranges occur within the off-site area. The Contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site or other off-site activities. The Contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

  Any project-related activities that occur outside the project limits must be environmentally cleared/permitted with the NGPC as well as any other appropriate agencies by the Contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The Contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of four different ground photos showing the existing conditions at the proposed activity site, depth to groundwater and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager would notify NDOR Environmental, which would coordinate with FHWA for acceptance, if needed. The Contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (NDOR Environmental, District Construction, Contractor).
- **A-7 Waste/Debris**. Construction waste/debris would be disposed of in areas or in a manner that would not adversely affect state and/or federally listed species and/or designated critical habitat. (Contractor)
- **S-2 Platte River Depletions**. If within the Platte River watershed (including the Elkhorn, Salt Creek, Loup, Calamus, and Lower Platte drainage basins), include the following for all detention basins/retention basins and borrow sites:

  All efforts would be made to design the project and select borrow sites to prevent depletions to the Platte River. If there is any potential to create a depletion, NDOR

(during design) and the Contractor (for borrow sites) shall follow the current Platte River depletion protocols for coordination, minimization, and mitigation. In general, the following are considered *de minimis* depletions, but may still require agency coordination; a project which: a) creates an annual depletion less than 0.1 acre feet, b) creates a detention basin that detains water for less than 72 hours, c) any diverted water would be returned to its natural basin within 30 days, or d) creates a one-time depletion of less than 10 acre feet (NDOR Environmental, District Construction, Contractor).

- **S-3 Revegetation**. All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed plants were identified during the survey, any seed mix requirements identified during resource agency consultations shall be used for the project. (NDOR Environmental)
- **NLEB-1** Tree clearing, bridge deck joint replacements over the bridge deck, bridge/>5-ft box-culvert removal activities would be scheduled to occur between 1 October through 31 March to avoid impacts to the northern long-eared bat roosting period. (NDOR Environmental, District Construction, Contractor)

  OR

  NLEB-2 If tree clearing, bridge deck joint replacement over the bridge deck, or removal of bridge/>5-ft box-culvert structures occurs during the northern long-eared bat maternal roosting period (1 April – 30 September), NDOR or a qualified biologist would perform surveys prior to the start of these activities at the location of suitable habitat. If the species is absent, work may proceed. If the species is found, NDOR Environmental Section would consult with the USFWS, NGPC, and FHWA prior to the start of construction. (NDOR Environmental, District Construction, Contractor)

Bald and Golden Eagle Protection Act

- NDOR would use the Bald Eagle Survey Protocol to determine when a survey for nests/roosts should be conducted. If the survey identifies nest(s) are present within 0.5 mile of the project area, NDOR would notify FHWA as well as NGPC and the Service, and construction would not commence prior to their approval. (NDOR Environmental, District Construction, Contractor)

Migratory Bird Treaty Act

NDOR has developed an Avian Protection Plan (APP) to reduce conflicts between construction of NDOR projects and the laws governing migratory birds. This procedure is designed to protect and conserve avian populations and reduce avian conflicts through changes in project scheduling (that is, tree clearing outside primary nesting period), increased migratory bird surveys, and changes in project construction timelines. NDOR would use its APP to reduce conflicts with migratory birds on this project.

- If the proposed construction project is planned to occur during the primary nesting season or at any other time that may result in the "take" of nesting migratory birds, the USFWS recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys must be conducted during the nesting season. USFWS further recommends that field surveys for nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) until such time as construction on the proposed project has been completed. (NDOR Environmental, District Construction, Contractor)

O.6 Special Provisions

- Special Provision – Environmental Commitment Document (NDOR, 2007; B-3-0509). Establishes the required documentation included in the Environmental Commitment Document and Project Erosion and Sediment Control Inspection.
- Special Provision – Special Prosecution and Progress – Migratory Bird Responsibility (NDOR, 2007; A-42-0807). The Project Sponsor would be responsible for migratory birds on this project until the execution of the contract; at which time, the Contractor shall assume the responsibility for meeting all requirements for migratory birds.

P. Farmland

P.1 Summary

Under the Farmland Protection Policy Act (FPPA), federal agencies must identify and take into account the adverse effects of federal programs on the preservation of prime or unique farmland (7 CFR Part 658). The purpose of the FPPA and 7 CFR Part 658 is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses and to assure that federal programs are compatible with state and local policies to protect farmland.

The USDA FPPA guidelines require coordination with the NRCS if the land needed for development is purchased after 6 August 1984. Form CPA-106 (Farmland Conversion Impact Rating) is used to score the relative value of the site. For FPPA-regulated farmland, a threshold limit of 160 points determines if further action is necessary. Scores between 160 and 200 require further consideration of alternatives that would avoid this loss.

P.2 Affected Environment

According to the US Farm Service Agency Platte County Field Office (27 March 2014), Platte County has 2,100 farms totaling 439,360 acres of farmland. Of the total acres, 355,259 (80.9 percent) is characterized as cropland; 16,161 is characterized as pasture (3.6 percent); and 67,940 (15.5 percent) is characterized as other uses.

Within the environmental study area, NRCS Web Soil Survey (Soil Survey Staff NRCS USDA, 2014) identifies:

- Two soil types as prime farmland
  - Grigston silt loam, wet substratum, rarely flooded
  - Janude fine sandy loam, 0 to 1 percent slopes;
- Two soil types as being prime farmland if drained
  - Wann loam, occasionally flooded
  - Gibbon silt loam, occasionally flooded
- One soil type as being farmland of statewide importance (O'Neill fine sandy loam, 0 to 2 percent slopes)

These soil types, located within the environmental study area, would not be acquired for permanent ROW or temporary easement. Approximately 59 percent of the land within the environmental study area is designated as prime farmland, prime farmland if drained, and farmland of statewide importance, with 8 soil map units contributing to the land coverage. The Platte County NRCS field office identifies about 329,520 acres (75 percent) of the total land cover within the county as a type of prime farmland.

P.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impacts on farmlands.

P.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative requires the acquisition of approximately 9.91 acres of land for ROW and roadway construction purposes. Of the 9.91 acres, up to 6 acres are designated as a type of prime farmland or farmland of statewide importance. This represents less than 0.01 percent of the total acreage of prime farmland within the county. Acquisition of ROW would primarily take place adjacent to the existing East 29th Avenue ROW and within currently developed property within the industrial area.

The completed Farmland Conversion Impact Rating Form (**Appendix L**) shows Part VI as having corridor assessment of 71 points, which does not warrant a land evaluation by the NRCS. The Preferred Alternative would fall below the 160-point threshold and does not require further action.

P.5 Mitigation

No mitigation is required.

Q. Hazardous Materials

Q.1 Summary

Hazardous materials are defined as substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present an eminent threat to public health or the environment if released. Solid wastes are designated as hazardous if they are corrosive, ignitable, explosive, chemically reactive, or toxic, as defined in 40 CFR 261 Subpart C. EPA and other federal and state agencies regulate hazardous materials under the Toxic Substances Control Act; Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Resource Conservation and Recovery Act (RCRA); Superfund Amendments and Reauthorization Act; and Emergency Planning and Community Right-to-Know Act. RCRA gives

EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground storage tanks containing petroleum and other hazardous substances. Hazardous wastes are regulated under Nebraska Administrative Code Title 128, Nebraska Hazardous Waste Regulations (NDEQ, 18 August 2007).

Nebraska Administrative Code Title 178, Environmental Health, Chapter 23, Lead-Based Paint Activities, governs the removal of lead-based paint from structures (Nebraska DHHS, 10 April 2005). Nebraska Administrative Code Title 178, Environmental Health, Chapter 22, Asbestos Projects, governs the removal of asbestos from structures (Nebraska DHHS, 5 September 2009).

FHU prepared a Hazardous Materials Technical Report (HMTR) (Version 3.0, April 2014) to identify and characterize sites and areas that may represent a risk from exposure to hazardous materials. Environmental professionals experienced in conducting Phase I Environmental Site Assessments in accordance with ASTM 1527-13 and All Appropriate Inquiry conducted a site reconnaissance on 05 June 2013. The methodology used to identify sites with recognized environmental conditions (RECs) and potential recognized environmental conditions (PRECs) included:

- Limited site reconnaissance from public ROW of properties adjacent to the project area to identify activities that could potentially result in hazardous materials contamination
- Review of readily available historical sources of information of the environmental study area
- Review of readily available local, state, and federal agency environmental records to identify known contaminated sites and regulated sites
- Identification of properties within the environmental study area requiring additional evaluation or investigation to assist in ROW acquisition, project design, and specific-materials management or institutional controls required during construction

Q.2 Affected Environment

The HMTR (FHU, April 2014) identified five RECs and three properties with PRECs within the project area or in the vicinity of the project during the site reconnaissance, historical review, or regulatory records search. Sites identified as RECs are those with known existing or past releases of any hazardous substances or petroleum products into structures on the site or into the ground, groundwater, or surface water of the site. Sites identified as PRECs are those where a REC may be present but could not be confirmed without additional inspection or investigation, which was beyond the scope of the HMTR. **Table 4.4** identifies those sites having PRECs and RECs and recommendations based on the HMTR review. **Figure 4.10** shows the locations of the sites.

Q.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would not involve any ROW or construction activities other than general maintenance and repair of the existing roadways within the project area. The No Build

Alternative would have no effect on any known PREC or REC sites within the environmental study area.

Q.4 Environmental Impacts of the Preferred Alternative

Soil excavation would be required to construct the road bed and to develop stormwater drainage and post-construction BMPs; however, no soil is planned to leave the project site. Based on preliminary plans, up to 124,572 cubic yards (CY) of fill material would be required for project construction.

The PRECs and RECs identified in **Table 4.4** may potentially be directly affected by ROW acquisition and/or construction activities associated with the Preferred Alternative. Additionally, the new access road described in the Preferred Alternative would have an impact on the RECs located east of the main alignment on East. 29th Avenue. Partial ROW acquisition is also anticipated from properties that represent RECs on the west side of East 29th Avenue. Therefore, based on this and the previous information, soil sampling for heavy metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and petroleum compounds was recommended.

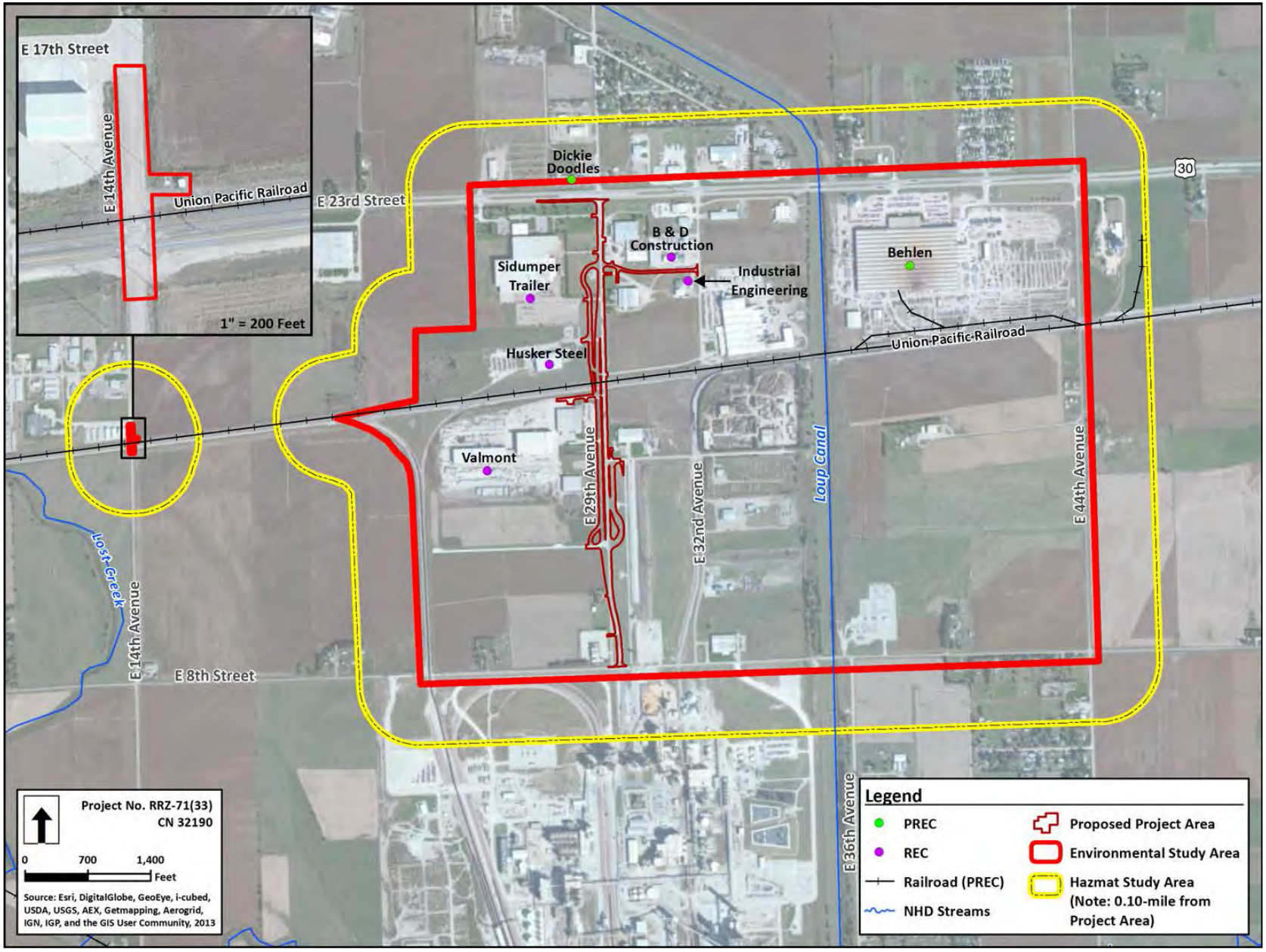
Table 4.4 – Sites with Potential Impacts to the Project

Site Address	Description of Property	Recommendations
1. B&D Construction, Inc. 2154 East 32nd Avenue	REC. leaking underground storage tank (LUST) site, contaminated soil may be present. Unknown material in apparent burn pile. Materials management during construction is expected. Temporary easement and/or partial ROW acquisition is expected.	The facility building (where potential activities would occur) is considered to be up- to cross-gradient in relation to the proposed locations of temporary easement and permanent ROW, necessary for road construction. Soil and groundwater sampling is recommended to be conducted to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling would aid in determining appropriate materials management during construction.
2. Behlen Manufacturing Company	PREC. LUST, leaking aboveground storage tank (LAST), Emergency Surface Spill List (SPILLS), RCRA TSDF, RCRA corrective action (CORRACTS) site. Residual levels of petroleum hydrocarbon and VOC contamination in soils and groundwater. Site under ongoing remedial investigation. No ROW acquisition is expected.	Behlen is located along the proposed detour route (within the environmental study area boundary) but outside the project limits of construction. The facility is topographically (hydrologically and elevation) cross-gradient from the project. If improvements to the detour route occur, work would likely remain within the edge of pavement. Based on this information, the Behlen facility is unlikely to be impacted by the viaduct project and vice versa. No further assessment is required.
3. Dickie Doodles 2820 East 23rd Street	PREC. Impacts to soil and groundwater at the property may exist due to undocumented events. However, no reported releases are on record for this facility. No ROW acquisition is expected.	Dickie Doodles was not listed in the Environmental Data Resources, Inc. (EDR) report as a regulated facility. It is located on the environmental study area boundary, outside the project limits of construction and topographically (hydrologically and elevation) cross-gradient from the project. Based on this information, the Dickie Doodles facility is unlikely to be impacted by the viaduct project and vice versa. No further assessment is required.

Site Address	Description of Property	Recommendations
4. Sidump'r Trailer/Douglas Holdings/EGS Electrical Group/Appleton Electric 2500 East 23rd Street	REC. State hazardous waste site (SHWS), CERCLA-NFRAP, LAST, LUST site closed to No Further Action Based on review of the NDEQ regulatory file, the facility operations formerly included activities such as machining, grinding, plating, and painting. NDEQ issued a notice to review an investigation work plan in 2013 and appears to be ongoing. Temporary easement and/or partial ROW acquisition is expected.	The facility is located topographically up-gradient from the proposed viaduct project. Therefore, soil or groundwater contamination, if found at the facility, could potentially impact construction and vice versa. Soil and groundwater sampling is recommended to be conducted to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling would aid in determining appropriate materials management during construction.
5. Husker Steel 1864 29th Avenue	REC. LUST site closed to No Further Action Two (2) underground storage tanks were pulled in 1990. The tanks were reported to be in good condition and over-excavation to clean soils was done to remove contaminated soils that were limited to the area immediately under the tanks. Additionally, groundwater contamination was not detected in an April 1990 investigation. Temporary easement and/or partial ROW acquisition is expected.	The proposed locations of temporary easement and permanent ROW necessary for road construction were reviewed in relation to the facility building (where potential activities would occur) and are considered topographically cross-gradient. However, based on the proximity to the proposed project, soil and groundwater sampling is recommended to be conducted to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling would aid in determining appropriate materials management during construction.
6. Industrial Engineering Co. 2070 East 32nd Avenue	REC. RCRA-small quantity generator (SQG) with reported violations. Unknown waste buried on-site and unknown material handling, storage, and disposal practices. Potential materials include ignitable and halogenated hazardous waste and spent solvents. Temporary easement and/or partial ROW acquisition is expected.	The facility building (where potential activities would occur) is considered to be down- to cross-gradient in relation to the proposed locations of temporary easement and permanent ROW, necessary for road construction. However, based on the unknown on-site waste disposal locations or general land use practices, soil and groundwater sampling is recommended to be conducted to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling would aid in determining appropriate materials management during construction.

Site Address	Description of Property	Recommendations
7. Valmont / Katana Summit 1600 East 29th Avenue	REC. RCRA-large quantity generator (LQG), NPDES Multi-Sector General Permit Impacts to soil and groundwater at the property may exist due to undocumented events. However, no reported releases are on record for this facility. Temporary easement and/or partial ROW acquisition is expected.	Valmont is located within the proposed project limits of construction and topographically (hydrologically and elevation) up-gradient from the project. Based on this information, the Valmont facility is likely to be impacted by the proposed viaduct project and vice versa. Soil and groundwater sampling is recommended to be conducted to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling would aid in determining appropriate materials management during construction.
8. Union Pacific Railroad (UPRR) Adjacent and perpendicular to East 29th Avenue	PREC. Impacts to soil and groundwater along the railroad corridor may exist due to undocumented events and an accumulation of hydrocarbon exhaust, drips, leaks, and spills over time. No ROW acquisition is expected; however, temporary construction easement or a railroad agreement may be necessary.	Based on topography and low risk conditions along a railroad track, this property requires no further assessment.

Figure 4.10 – Sites with Potential Impacts on the Project



2014 Phase II – Subsurface Soil and Groundwater Sampling and Analysis

Soil sampling was conducted for the specific purpose of assessing the potential presence of contamination at multiple locations along the proposed alternatives within the environmental study area. The sample locations are within areas of potential ROW acquisition and subsurface construction activities and where the potential for surficial soil contamination exists due to historic use of the nearby properties as industrial manufacturers may be present.

Soil was sampled for heavy metals, VOCs, SVOCs, and petroleum compounds to determine if contamination was present at concentrations that would influence the alternative selection process, to ensure the proper avoidance/mitigation strategies are implemented, to ensure full disclosure to the public during the NEPA process, and to determine if human health risks exist from the construction or operation of the proposed facility. Alfred Benesch & Company (Benesch) conducted the field work on 10 March 2014 to determine the presence of heavy metals, VOCs, SVOCs, and petroleum compounds in the surface soils and groundwater within the project environmental study area. Sampling was conducted in accordance with accepted industry field methods and the NDOR approved work plan in March 2014. **Appendix M** contains the final sampling report, dated 14 April 2014.

Soil and groundwater samples were collected from 7 sample locations within the environmental study area relative to both the existing roadway and the proposed alternative designs (**Figure 4.11**). Samples were advanced using GeoProbe direct push technology. A total of 21 soil samples from various depths were submitted for laboratory analysis for VOCs and SVOCs using EPA Method 8260 and 8270. Each boring was advanced to 20 feet bgs. Groundwater was encountered at approximately 18 feet bgs. The top 3 feet of each boring was analyzed for the 8 RCRA metals with EPA Method 6010. The 8 RCRA metals are arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver.

Seven groundwater samples were collected from each boring location and submitted for laboratory analysis of heavy metals, VOCs, and SVOCs using EPA Methods 6010, 8260, and 8270, respectively. The samples were collected under chain-of-custody and sent to Keystone Laboratories, Inc. in Newton, Iowa. The detected concentrations of constituents are compared to EPA's maximum contaminant levels (MCLs) for groundwater and EPA Region 9's regional screening levels (RSLs) for soil. Laboratory analysis indicated low level metal contamination for arsenic and chromium and low levels of VOCs in Sample Boring (SB) 4. Low levels of metals, one VOC (trichloroethylene or TCE) and on SVOC (bis(2-ethylhexyl)phthalate (also known as di(2-ethylhexyl)phthalate or DEHP)) were detected in groundwater samples. **Tables 4.5 through 4.8** summarize the laboratory results.

Figure 4.11 – Location of Borings

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Table 4.5 – Results of Laboratory Analysis (Metal Concentrations Detected in Soil Samples)

Sample Identification	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	EPA Regional Screening Levels (RSLs)		EPA Hazardous Waste Classification
Sample Depth	2-3 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	1-2 ft	Residential	Industrial	
Parameter	*mg/kg*[#]	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Arsenic*	1.8	**2.4**	**3.2**	**3.5**	**2.5**	**3.4**	**4.4**	0.61	2.4	100
Barium	59.5	83.9	117	154	130	123	232	1,500	19,000	2,000
Cadmium	-	-	-	-	-	-	0.6	7.0	80	20
Chromium	4.7	**6.2**	**9.6**	**9.7**	**6.6**	**8.8**	**7.5**	0.29	5.6	100
Lead	3.5	4.6	6.6	15.9	5.6	9.0	4.9	400	800	100

[#]*Concentrations are listed as milligrams per kilogram (mg/kg).* [*]*Items in **bold** denote RSL exceedance*

Table 4.6 – Results of Laboratory Analysis (Metal Concentrations Detected in Groundwater Samples)

Sample Identification	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	EPA MCLs*
Parameter	*µg/L*[#]	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*	*µg/L*
Arsenic	0.0045	-	-	-	0.0421	0.0126	0.0046	10
Barium	0.563	0.456	0.427	0.412	0.354	0.221	0.0016	2,000
Chromium	0.0784	0.044	0.108	0.0836	0.0112	0.0665	-	100
Lead	0.0294	0.0196	0.0186	0.0406	0.0085	0.0412	-	15
Selenium	0.0131	-	-	0.0075	-	-	0.0137	50
Silver	-	-	-	-	0.008	-	-	-

[#]*Concentrations are listed as micrograms per liter (µg/L).* [*]*MCL = Maximum Contaminant Level*

Table 4.7 – Results of Laboratory Analysis (VOC Concentrations in Soil Samples)

Sample Identification	**SB-4**	**EPA Regional Screening Levels (RSLs)**	
Sample Depth	12-16 ft	Residential	Industrial
Parameter	*mg/kg*	*mg/kg*	*mg/kg*
1,2-Dichlorobenzene*	0.002	190	980
1,3-Dichlorobenzene	0.002	-	-
1,4-Dichlorobenzene	0.002	2.4	120

**Concentrations are listed as milligrams per kilogram (mg/kg).*

Table 4.8 – Results of Laboratory Analysis (VOC and SVOC Concentrations in Groundwater Samples)

Sample Identification	**SB-1**	**SB-5**	**EPA MCLs**
Parameter	*µg/L*[#]	*µg/L*	*µg/L*
Trichloroethylene (also known as TCE)	-	1.0	5.0
Bis(2-ethylhexyl) Phthalate (also known as DEHP)**	**72**	**12**	6.0

[#]*Concentrations are listed as micrograms per liter (µg/L).*

**MCL = Maximum Contaminant Level*

***Items in **bold** denote MCL exceedance*

The detectable concentrations of metal in soil were compared to the EPA Region 9 RSLs for industrial sites and MCLs. RSLs are risk-based screening levels used by the EPA and authorized state agencies to determine whether the level of contamination found at a site warrants further investigation and/or cleanup. MCLs are the maximum concentration level allowable for listed contaminants under the Safe Drinking Water Act. Based on the information provided previously and the results of the subsurface sampling analysis, no further environmental investigation or remedial action is recommended for the project and areas within the environmental study area; however, due to the low levels of heavy metals in soil and the detection of VOCs in soils and groundwater within the environmental study area, mitigation measures are recommended for the project. Project construction is considered to be low risk to human health concerns for the construction workers; however, the use of personal protective equipment, such as gloves, boots, and safety glasses, during construction if workers would encounter subsurface soil and/or groundwater when working in the areas of SB-1 and SB-5 is recommended.

The 2014 Phase II samples did not indicate the presence of contaminants of concern near the footprint of the proposed viaduct piers. Further review, including coordination with NDEQ regarding the Sidump'r Trailer/Appleton Electric regulated site, indicated that groundwater appears to be migrating in a narrow band approximately 300 feet wide southeast, and then south of the property boundary from the southeast corner of the Sidump'r building. The facility's consultant, under the supervision of NDEQ, conducted field investigations in June 2015. Preliminary data did not indicate concentrations of concern off-site in the vicinity of the proposed viaduct.

Although contaminants at concentrations of concern were not encountered in the vicinity of the proposed viaduct, an additional Phase II investigation was completed to further characterize existing conditions, specifically at the proposed pier locations of the viaduct structure. The additional Phase II was completed due to concerns regarding the potential for pier construction to create a preferential pathway that could promote the spread of contamination to isolated pockets of groundwater, the unknown extent of the southern edge of the TCE plume at the Sidump'r Trailer/Appleton Electric regulated site, and the lack of adequate groundwater sampling data below 40 feet bgs corresponding to the known depth of the Sidump'r Trailer/Appleton Electric regulated site TCE plume.

2016 Phase II – Pier Location Subsurface Groundwater and Geotechnical Investigation

An additional Phase II investigation, in conjunction with a geotechnical engineering study, was conducted to determine the significance of TCE concentrations potentially within the footprint of the proposed piers, as the piers are the most likely location where the scope of construction work could potentially impact existing conditions. For this Phase II investigation, groundwater was sampled at approximately 50 feet bgs to correspond with the known depth of the Sidump'r Trailer/Appleton Electric regulated site TCE plume. The geotechnical engineering study was coupled to the groundwater sampling for two primary reasons. First, the geotechnical data was needed to determine the presence and depth of any confining clay layer that may provide a natural barrier to groundwater migration. Second, the geotechnical data was used to determine the method of pier construction and the proposed pier depth. Different pier construction methods have varying potential to act as a conduit connecting previously isolated pockets of ground water. Furthermore, the proposed pier depth was needed to determine if the piers would potentially pierce a confining clay layer (if present), thereby compromising its integrity.

Benesch conducted the 2016 Phase II fieldwork in January 2016 to determine the presence of TCE in groundwater within the immediate vicinity of the proposed bridge pier locations. **Appendix M** contains the Benesch Groundwater Sampling & Analysis Report dated 29 February 2016.

Two (2) groundwater samples were collected from locations specified by NDOR and FHWA. The samples were collected using a GeoProbe unit to push a 2-inch diameter probe that houses a 1-inch diameter stainless steel well screen to a depth of approximately fifty (50) feet bgs. Groundwater was then retrieved using a peristaltic pump and HDPE tubing. Each groundwater sample was collected in three (3) 40-milliliter glass vials and hydrochloric acid (HCl) preservative, labeled, preserved in ice, and sent to Keystone Laboratories, Inc., in Newton, Iowa, under chain-of-custody for analysis. The submitted soil samples were analyzed for

concentrations of TCE by EPA laboratory Method 8260. **Table 4.9** summarizes the laboratory results.

Table 4.9 – Results of Laboratory Analysis (Trichloroethylene [TCE] Concentrations at Proposed Pier Locations)

Sample Identification	TCE concentration (µg/L)*
GW-1	2.3
GW-2	3.6
MCL	**5.0**

**Concentrations are listed as microgram per liter (µg/L).*

The groundwater in the near vicinity of the proposed bridge piers showed the presence of low levels of TCE contamination. The detected TCE concentrations in groundwater were 2.3 and 3.6 micrograms per liter (µg/L). The reported concentrations for TCE at the project site are below the EPA recommended screening MCL of 5.0 µg/L.

Based on a review of the geotechnical report dated 7 April 2016 (**Appendix M**), the proposed construction method for the bridge piers is driven H-piles (see pier construction memo dated 1 April 2016 in **Appendix M**). This proposed construction method of the piers would generate minimal soil cuttings and would also minimize the need for dewatering. Moreover, soil would be managed so that it does not leave the site and essentially remains in the same location (that is, in the project area). This includes soil that is moved around within the project area, utility work where the soil is backfilled, etc. The current preliminary design requires approximately 124,572 cubic yards of borrow material to be brought on site and may require more once final design is completed.

The geotechnical report indicated the presence of a confining clay layer at approximately 70 to 90 feet bgs. To avoid creating a preferential pathway (via driven H-pile) for contaminated groundwater to spread to an isolated aquifer, pier construction would be restricted to the depths of the confining clay later at approximately 70 to 90 feet bgs.

Based on this information, it is considered low risk that construction of the viaduct bridge piers would exacerbate potential groundwater contamination resulting from the Sidump'r/Appleton Electric regulated site. Coordination with NDEQ is included in **Appendix M**.

Dust Suppression

Dust suppression is also recommended for dry and windy conditions during construction to keep heavy metal-contaminated top soils in place and to reduce fugitive dust. Dust suppression activities typically involve the application of calcium chloride in a wet or dry form to stabilize soil and gravel particles on site. Dust suppression following NDOR Standard Specification Section 309 with proper calcium chloride concentrations is not considered to be a hazardous material concern for the project, nor would it worsen known contamination concerns on the adjoining properties. Applying the calcium chloride in a wet form should not act to spread any existing contamination in the soil, as the amount of moisture added to the soil is generally minimal and is not applied in such a manner or volume to promote movement of the soil particles or contaminants via runoff. **Chapter 4, Section Q.5** and **Chapter 4, SectionT.5** include fugitive dust mitigation measures.

The NDOR *Unexpected Waste Action Plan* (NDOR, 2015) outlines policies and procedures should unanticipated hazardous materials or suspected hazardous material be encountered during construction.

Q.5 Mitigation

- If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material would stop until NDOR/FHWA is notified and a plan to dispose of the hazardous materials has been developed. Then NDEQ shall be consulted and a remediation plan shall be developed for this project. The potential exists to have contaminants present resulting in minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the NDEQ shall be contacted for consultation and appropriate actions be taken. The Contractor is required by NDOR's Standard Specification Section 107 (legal relations and responsibilities to the public) (NDOR, 2007) to handle and dispose of contaminated material in accordance with applicable laws. (Contractor)
- Project plans and specifications would identify relocation of the overhead electrical utility lines and pole-mounted transformers, which may or may not contain polychlorinated biphenyl (PCB). Performance of the work set forth in the project plans and specifications would be conducted in accordance with any easement agreement among the utility companies, Platte County, and/or private landowners. Platte County or their representative would contact the utilities to schedule performance of the work and would coordinate the work with the project construction activities per NDOR's *Standard Specifications for Highway Construction*, Subsections 105.06 and 107.16 (NDOR, 2007). (Platte County, Contractor)
- The shallow soil (from ground surface to 3 feet bgs) showed low levels of arsenic and chromium contamination while the deeper soil showed very low levels of VOC contamination. During construction, any shallow soil that is excavated should either be returned to the excavation or be disposed of as a special waste under a special waste permit. No shallow soil should be hauled off for reuse somewhere else. (Platte County, Contractor).
- The SVOC contamination in groundwater exceeded EPA's MCL for bis(2-ethylhexyl)phthalate (di(2-ethylhexyl)phthalate [DEHP]). Any groundwater recovered from this site during the construction should be containerized and discharged at a wastewater treatment plant. Coordination with the wastewater treatment plant would be required. (Platte County, Contractor).
- Nebraska Air Quality Regulations (NDEQ, 13 May 2014) state that no person may cause or permit a road being constructed or repaired without applying reasonable measures to prevent particulate matter (commonly referred to as dust) from becoming airborne and remaining visible beyond the premises where it originates. Slight wetting of the soil during demolition and earthwork activities to prevent dust from impacting on-site workers and any potential off-site migration is recommended. Additionally, EPA suggests the need for dust suppression when dry and dusty conditions are present to reduce the inhalation of dust, including the recommended use of dust masks by contractors. The

Contractor is required by NDOR's Standard Specification Section 309 for dust control during construction. (Contractor)

- It is acceptable for pile to be driven into the confining clay layer so long as the pile does not pierce through the lower depths of the clay, potentially creating a preferential pathway for the contaminated groundwater to spread to another aquifer. Pier design and construction shall be restricted to the depths of the confining clay later at approximately 70 to 90 feet bgs. (Project Sponsor, Contractor)
- Prior to construction activities, a Preconstruction Meeting would be held as required by Section 103.01 of the 2002 NDOR Construction Manual (NDOR, 2002). The purpose of the meeting is to discuss pertinent information to the project before construction begins, including hazardous materials reviews and health and safety issues. (Platte County, Contractor)

Q.6 Standard Specifications

- Nebraska Administrative Code Title 178, Chapter 23. Regulations regarding the training, certification, and work practices associated with the removal of lead-based paint (Nebraska Department of Health and Human Services, 10 April 2005).
- Standard Specification 701.01 – General Requirements – Description (NDOR, 2007). Describes procedures and equipment associated with the construction of structures.
- Standard Specification 203.01 – Removal of Structures and Obstructions – Description (NDOR, 2007). Requirements associated with the removal and disposal of structures and obstructions.
- Standard Specification 203.02 – Removal of Structures and Obstructions – Construction Methods (NDOR, 2007). Requirements associated with the construction methods associated with the removal of structures and obstructions.
- Standard Specification 203.03 – Removal of Structures and Obstructions – Method of Measurement (NDOR, 2007). Specifies how to measure removal of structures and obstructions.
- Standard Specification 107.01 as Amended A-43-0210 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered

R. Material Sources and Waste Materials

R.1 Summary

Material sources (borrow sites) are used for the construction of projects and must adhere to environmental laws before their use. For some projects, materials excavated from a project site may also be used for fill material or for other construction needs. The Contractor should obtain all environmental clearances and permits required for borrow sites before obtaining borrow material for a project (see **Section M, Platte River Depletions**). Borrow and material waste areas must be restored as specified in NDOR's Standard Specification 208 (NDOR, 2007). The project requirements for material sources and details regarding material disposal are provided below.

R.2 Affected Environment

Borrow sources are generally available up and down the Platte River Valley in this region of Nebraska, as evidenced by abandoned sand and gravel pits that have been converted to recreational lakes. Active commercial sand and gravel pits are operating in this region.

R.3 Environmental Impacts of the No Build Alternative

Because the No Build Alternative has no associated borrow or waste material, there would be no impact on material sources or waste materials.

R.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative is anticipated to need approximately 124,572 CY of borrow material. Borrow materials are anticipated to be available for site preparation in the general area. No material source has been identified for borrow material at this time. The selected Contractor would be required to provide the needed borrow material and would identify a source of material that does not include dredging within the channel of the Platte River. The Contractor should obtain all environmental clearances and permits required for the borrow site before obtaining borrow material for the project (see **Section M, Platte River Depletions**). Should excess materials need to be removed from the project, the materials would be legally disposed of in accordance with NDOR Standard Specifications and the mitigation measures identified in **Section Q, Hazardous Materials**.

R.5 Mitigation

- The following project activities would, to the extent possible, be restricted to the beginning and ending points of the project (stationing, reference posts, mile markers, and/or section-township-range references), within the ROW designated on the project plans: borrow, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage areas. The Contractor must environmentally clear/permit any project-related activities that occur outside these areas with the USFWS and NGPC, as well as any other appropriate agencies and submit those clearances/permits to the District Construction Project Manager before the start of the above listed project activities. The Contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan sheet or drawing showing the location and dimensions of the activity site, a minimum of four ground photos showing the existing conditions of the proposed activity site, depth to groundwater and depth of the planned pit, and the “Platte River depletion status” of the site. The District Construction Project Manager would notify NDOR Environmental, which would coordinate with FHWA for acceptance, if needed. The Contractor must receive notice of acceptance from NDOR before starting the above-listed project activities. (Platte County, Contractor).

R.6 Standard Specifications

- Standard Specification 732.01 – Lead-Based Paint Removal – Description (NDOR, 2007). Requirements associated with the removal of lead-based painted structural steel members.

- Standard Specification 732.02 – Lead-Based Paint Removal – Material Requirements (NDOR, 2007). Requires that all materials used must be in compliance with all applicable laws and regulations.
- Standard Specification 732.03 – Lead-Based Paint Removal – Construction Methods (NDOR, 2007). Requirements associated with construction methods for removal of lead-based paint.
- Standard Specification 701.01 – General Requirements – Description (NDOR, 2007). Describes procedures and equipment associated with the construction of structures.
- Standard Specification 203.01 – Removal of Structures and Obstructions – Description (NDOR, 2007). Requirements associated with the removal and disposal of structures and obstructions.
- Standard Specification 203.02 – Removal of Structures and Obstructions – Construction Methods (NDOR, 2007). Requirements associated with the construction methods associated with the removal of structures and obstructions.
- Standard Specification 203.03 – Removal of Structures and Obstructions – Method of Measurement (NDOR, 2007). Specifies how to measure removal of structures and obstructions.
- Standard Specification 107.01 as Amended A-43-0210 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered.
- Standard Specification 205.02 – Excavation and Embankment – Material Requirement (NDOR, 2007). Requirements associated with the embankment materials, and borrow site approval.
- Standard Specification 208 – Borrow and Waste Site Restoration (NDOR, 2007). Requirements associated with the restoration of Department provided sites from which borrow is obtained.

S. Visual Resources

S.1 Summary

Because an elevated viaduct is proposed to be built within the environmental study area, it is important to consider the impact on visual aesthetics of the project. This section describes the character of the landscape in the project area, as well as the local government planning, that is relevant to the physical appearance of project components. This section also describes whether the project would be compatible with local scenic highways and byways, as well as the measures and methods available for reducing visual impacts.

The view of the viaduct bridge would not be inconsistent with, or visually more intrusive than, the existing at-grade alignment and industrial buildings and equipment in the area.

S.2 Affected Environment

The heavy industrial setting along the railroad corridor and the industrial land uses along East 29th Avenue characterize most of the viewshed in this urban location. Pockets of residential and agricultural land uses make up the remainder of the landscape. Currently, no

plans exist for additional scenic resources within the environmental study area, and there are no scenic highways or byways within or near the environmental study area.

S.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impact on visual resources.

S.4 Environmental Impacts of the Preferred Alternative

Project construction of the Preferred Alternative is likely to change the visual aesthetics within the environmental study area. During construction, machinery and activities would change the current view from the existing alignment. However, such obstructions would be temporary in nature and would not likely detract from the visual resources once construction of the proposed project is complete. Within the area of the Preferred Alternative, the visual aspect of a new bridge would not be inconsistent with or visually more intrusive than the existing industrial buildings, and truck traffic in the area. It is anticipated that views of and from the new viaduct bridge from close, mid, and long range would be more attractive than those from the existing at-grade intersection with the railroad tracks, and views would be enhanced by the new roadway improvements.

S.5 Mitigation

No mitigation is required.

T. Temporary Construction Impacts

T.1 Summary

Project construction activities may lead to temporary short-term impacts. These impacts would typically include construction noise, dust, traffic accommodations during construction activities, access to adjoining properties, and construction accommodations needed to build the project.

T.2 Affected Environment

The existing environment includes a two-lane roadway with residential, industrial, commercial, and agricultural properties adjacent. Construction activities are not currently in progress.

T.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would require continued maintenance activities such as pavement overlays to the existing pavement. Maintenance activities would have temporary construction impacts relative to the No Build Alternative. These impacts would include lane closures and increased travel times. The ultimate replacement of the pavement infrastructure would occur sooner with this alternative.

T.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would construct the new railroad viaduct to the west of the existing East 29th Avenue crossing. The approaches would also be constructed offset to the west to allow the existing roadway to be used during construction. East 29th Avenue would then transition back to existing alignment approximately 2,250 feet south of the existing railroad crossing and 1,050 feet north of the existing crossing. Temporary roads would be constructed on both the south and north ends of the project so that traffic could bypass the areas of

construction where the proposed roadway is on the same alignment as the existing roadway. By doing this, the existing railroad crossing can be used for most of the construction project.

Temporary impacts would be anticipated due to lane closures necessary to accommodate specific construction activities/phases. These activities could include construction phasing, delivery of materials, equipment mobilization, and construction of tie-ins and cross-overs. Temporary closures, if needed, are expected to be less than 3 days in length. Temporary traffic signals may be required.

Field and residential drives would be temporarily impacted during construction of the project and necessary regrading or realignment of drive approaches. Access would be maintained at all times via temporary roads, lane closings, or other methods.

Access to the county roads within this project would generally be maintained at all times via temporary roads, lane closings, phased construction or other methods. Locations of the county roads and Preferred Alternative are shown on **Figure 3.8**. Impacts to the county roads along the project are described below.

East 12th Street was previously constructed to accommodate future development; it currently does not provide access to any properties. As such this intersection would be closed during its reconstruction.

East 15th Street would be temporarily impacted during construction of the project. Access would be maintained off the existing roadway until the new viaduct is open. At that time the intersection would be reconstructed to tie into the new frontage road. Access would be maintained throughout construction via temporary roads, lane closings, or other methods.

East 18th Street would be temporarily impacted during construction of the project. Access would be maintained off the existing roadway until the new viaduct is open. At that time the intersection would be removed and reconstructed to provide access via the new frontage road along the west side of East 29th Avenue. Traffic volumes are low and impacts would be temporary with easily accessible alternative access available to the east from East 32nd Avenue.

The Preferred Alternative would have no major traffic noise level impact. Increased noise from construction activities would be temporary and short term.

Dust from construction activities would be minor and temporary. Dust suppression activities, including the application of calcium chloride in a wet or dry form to stabilize soil and gravel particles on site, would be used as needed. **Chapter 4, Section Q.4** includes additional information about dust suppression.

T.5 Mitigation

- Access would be maintained for the traveling public during the project construction. The public and emergency services would be notified of road closures prior to them occurring. Message boards may be used to alert the public of road closures and detours. (Platte County, Contractor)

- For each impacted county road, except East 12th Street, access would be constructed in phases to maintain access at all times. A note would be included on the construction plans indicating that access is to be maintained. Furthermore, per NDOR's Standard Specifications, the Contractor shall at all times, to the extent practicable, provide private dwelling, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, and public facilities. If a road is closed, limited access must be maintained for authorized local traffic. If access is closed longer than one day, the Contractor would meet with the property owners to address temporary access issues. Access details shall be coordinated by the Project Sponsor, the Contractor, and property owners. (Platte County, Contractor)
- Nebraska Air Quality Regulations (NDEQ, 13 May 2014) state that no person may cause or permit a road being constructed or repaired without applying reasonable measures to prevent particulate matter (commonly referred to as dust) from becoming airborne and remaining visible beyond the premises where it originates. Slight wetting of the soil during demolition and earthwork activities to prevent dust from impacting on-site workers and any potential off-site migration is recommended. Additionally, the EPA suggests the need for dust suppression when dry and dusty conditions are present to reduce the inhalation of dust, including the recommended use of dust masks by contractors. The Contractor is required by NDOR's Standard Specification Section 309 for dust control during construction. (Contractor)

T.6 Standard Specifications

- Standard Specification 301.02(1a, 1b) General Requirements – Equipment (NDOR, 2007). Requires that all equipment shall be kept in satisfactory working condition and shall be operated within the manufacturer's specifications.
- Standard Specification 309 – Calcium Chloride Treatment (NDOR, 2007)
- Standard Specification 312 – Removal and Processing of Concrete (NDOR, 2007)

U. Airports

U.1 Summary

The Federal Aviation Administration and (FAA) and Nebraska Department of Aeronautics (NDOA) have established height restrictions for temporary and permanent structures based upon their proximity to airports facilities and flightpaths.

U.2 Affected Environment

The Columbus Municipal Airport is located approximately 2.5 miles from the proposed project. The Columbus Municipal Airport's Height Restriction Zoning applies to structures greater than 200 feet in height, or structures that may obstruct the glidepath at a 100:1 slope from any point on the runway.

No helipads are located within 4 miles of the project.

U.3 Environmental Impacts of the No Build Alternative

The No Build Alternative would have no impact on airports, aircraft facilities, or designated flightpaths.

U.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would construct a viaduct approximately 2.5 miles from the southern edge of the Columbus Municipal Airport. The height of the proposed viaduct (approximately 35 feet above the existing grade) would not exceed 200 feet in height, or obstruct the glidepath at a 100:1 slope from any point on the runway. It is anticipated that the project would comply with Columbus Municipal Airport's Height Restriction Zoning.

U.5 Mitigation

- Because of the proximity to the Columbus Municipal Airport in Columbus, NE, the height of any equipment used in the construction of the project (or any antennae installed on the equipment) shall not exceed the local airport's Height Restriction Zoning. Any Contractor involved in the project shall use the Notice Criteria Tool available at https://oeaaa.faa.gov/oeaaa/external/portal.jsp . If required, the Contractor shall file a 7460-1 Form with the Federal Aviation Administration (FAA). The form shall be required if the Contractor uses any equipment over 200' tall, or the equipment breaks a 100:1 slope from a public-use airport. This includes any trucks or equipment used during the construction of the project. The Project Sponsor shall verify clearance for permanent construction in the controlled zone from the Nebraska Department of Aeronautics (NDOA) and FAA. The Project Sponsor shall identify those contracts that shall require the special provision concerning the Contractor's responsibility to gain FAA and NDOA clearance for temporary encroachments due to construction operations. NDOR's Plans, Specification & Estimates (PS&E) / Contracts shall include the special provision in the appropriate project contracts. (Contractor)

V. Secondary and Cumulative Impacts

V.1 Summary

Direct Impacts. According to the Council on Environmental Quality (CEQ), a direct effect is one that is caused by the proposed action and occurs at the same time and place. The direct effects of the Preferred Alternative have been discussed in the previous chapters of this document.

Secondary Impacts. CEQ defines a secondary effect as one that is caused by the action, but is later in time or farther removed in distance; however, the effect is still reasonably foreseeable. The CEQ cites induction of growth, changes in land use, or effects to air, water, or ecosystems as examples of secondary effects (40 CFR 1508.8).

Cumulative Impacts. A cumulative impact is defined as 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 can result from individually minor but collectively significant actions taking place over a period of time.

Cumulative impacts include the direct and indirect impacts of a project, together with the impacts from reasonably foreseeable future actions of other projects. For an action to be reasonably foreseeable, it must have advanced far enough in the planning process that its implementation is likely. The impacts of reasonably foreseeable future actions not associated with the project include the impacts of other federal, state, and private actions. Reasonably foreseeable future actions are not speculative, are likely to occur based on reliable sources, and are typically characterized in planning documents (40 CFR 1508.7; CEQ, January 1997).

V.2 Affected Environment

Past Actions included in the Impacts Analysis. Over the 17-year period of 1994–2011, an average of 105,000 SF per year of expansion or new construction was noted from historic aerial photos within the Columbus East industrial area. Many access roads and UPRR side tracks have been developed to aid in the shipping of materials to and from the area. Most of the area is currently zoned for industrial development. Adjacent undeveloped areas are primarily used for row crop agriculture.

- *Development* – Industrial facilities have developed along the UPRR tracks. Commercial business has developed along US 30; however, the area is primarily industrial. Pockets of residential neighborhoods have developed in the project vicinity. Overall, in-fill of the area is incomplete.
- *Railroad Crossings* – UPRR is the largest rail carrier in the US. The double tracks and single siding track at this location serve the City of Columbus and the industrial park within the environmental study area. Aside from the East 29th Avenue at-grade crossing, the next closest crossings over the tracks (as measured along the tracks) are approximately 0.4 mile west at East 14th Avenue and approximately 1 mile east at the East 44th Avenue crossing. The East 14th Avenue crossing would be closed as part of the project.
- *Hazardous Materials* – The project is located in a historically industrial area with known regulated facilities and indications of spills and releases that could impact the project's construction activities due to potential groundwater and localized soil contamination. Based on the initial hazardous materials review, subsurface soil and groundwater testing of the project site was recommended. The findings of the subsurface investigation indicated that with the implementation of mitigation measures, secondary and cumulative impacts of the industrial activity are not anticipated to have adverse impacts on human health or the environment.

Present Actions included in the Impacts Analysis. No present actions are included in the impacts analysis.

Future Actions included in the Impacts Analysis. The *Columbus Comprehensive Plan Update* (City of Columbus, October 2005) recommends that industrial development continue on both the north and south sides of the UPRR mainline between East 14th Avenue and the Loup Power Canal. The area north of the UPRR was estimated to have 824,000 square feet (SF) of potential industrial park space remaining in 2011. The area south of the UPRR would accommodate 2,141,500 SF of industrial park space under the current growth trend between 2011 and 2040.

Undeveloped agricultural land to the west of East 14th Street south of the UPRR mainline currently zoned for residential development.

The following are proposed future projects in the project vicinity:

- Reconstruction of 3rd Avenue from 8th to 5th Streets
- Construction of 2nd Avenue and 10th Street
- Construction of various streets west of 3rd Avenue
- Road and sewer improvements south of the 3rd Avenue and 8th Street intersection
- Construction of vehicular viaducts over the UPRR mainline at 12th Avenue and 3rd Avenue, and a pedestrian overpass at 18th Avenue
- Proposed construction of an additional viaduct at either 23rd Avenue or 25th Avenue
- Reconstruction of 8th Street from near 3rd Avenue to the Loup Power Canal

Resources Considered for Impacts Analysis. The secondary and cumulative impacts of the above actions were anticipated to have impacts on the following resources:

- City and county roadway network
- UPRR railway network
- Neighborhood cohesiveness
- Community facilities

V.3 Environmental Impacts of the No Build Alternative

Secondary Effects. A secondary impact of the No Build Alternative would be the continued deterioration (rutting, spalling, cracking) of the roadway due to increased traffic volumes. This condition would result in traffic finding alternate routes to the nearest grade separation over the railroad tracks. Traffic volume increases on the alternate routes would be a secondary impact from the increased delay and traffic due to road closures during train crossings. The increased driving time and associated traffic delays would negatively impact community cohesiveness and access to employment centers in the area. Transportation access to the businesses and economic development would not improve under the No Build Alternative.

Cumulative Effects. There are no reasonably foreseeable cumulative effects anticipated to be caused by the No Build Alternative other than those discussed under secondary effects.

V.4 Environmental Impacts of the Preferred Alternative

Secondary Effects. No reasonably foreseeable secondary effects are anticipated to be caused by better connectivity as a result of improvements to the roadway corridor. Improvements to East 29th Avenue would provide increased vehicular volume resulting from new regional sources of energy development, expanding markets, and new industrial and/or commercial development. However, it is also likely to result in an expansion of economic development within the industrial park. When the improvements to the roadway and the construction of the viaduct are completed, the land southwest of the East 29th Avenue corridor is likely to attract new and rising industry due to the improved connection, traffic flow, and traffic reliability in the area.

The impacts from increased development due to increased access to the industrial park from this project are most likely to occur within the immediate surroundings (and within the extraterritorial jurisdiction of the City of Columbus), as most of the rest of the area is sparsely populated and has minimal infrastructure for development. The City has a comprehensive plan (City of Columbus, October 2005; referred to in **Section B**), and zoning maps that would help guide new development within the City of Columbus and Platte County. Nonetheless, the timeframe for further industrial and economic development is not known at this time but is considered ongoing and beyond 10 years in the future.

Industrial development may occur in areas that are currently in agricultural production within the immediate vicinity of the project; however, potential expansion into these areas is consistent with current zoning and future land use plans. As a result, potential secondary effects on agricultural land are expected to be minimal.

Cumulative Effects. None of the resources evaluated are considered to have strong or lasting negative cumulative effects, and all are expected to benefit in the long term from construction of the project due to better connectivity as a result of improvements to the roadway corridor.

The area of East 29th Avenue in the immediate vicinity of the US 30 corridor and close proximity to the City of Columbus has been the site of several past and proposed future industrial and commercial development projects. Additional industrial growth and development pressure on agricultural land, beyond what is planned and accounted for by the City of Columbus and Platte County is not expected as a result of this project. Although construction of the viaduct and roadway improvements may facilitate planned industrial development or expansion in the immediate vicinity of the project, the rate at which development encroaches on agricultural lands is not expected to increase.

Construction of the viaduct and roadway improvements would not result in a loss of habitat for species of concern. Suitable habitat within the study area exists for the northern long-eared bat, which is a federally listed as threatened. This species may roost in trees or under bridges or culverts that are present within the study area. However, habitat losses from construction of the viaduct and associated roadway improvements would be minor and, would be replaced with additional habitat in the form of the viaduct structure itself. Future land use changes as a result of project are not expected to impact species of concern or result in additional habitat loss. Future developments are likely to occur in areas currently devoid of native habitat currently used for row crop production. Wetlands impacts would result from the project; however, these impacts would be mitigated as required by NDEQ. Additional impacts to wetlands and other WOUS due to future land use changes would likely occur. These impacts would be permitted through the USACE and NDEQ, and mitigated if appropriate.

The Preferred Alternative is expected to have strong positive effects on neighborhood continuity and community cohesion, especially in combination with:

- The 33rd Avenue viaduct constructed in 2009
- The proposed 3rd-18th Avenue Viaducts, Project No. RRZ-TMT-6065(5),
- The UPRR/12th Avenue Viaduct, Project No. RRZ-TMT-6061(8).

These projects would construct viaducts at 3rd Avenue and 12th Avenue, as well as a pedestrian overpass near 18th Avenue. Furthermore, the construction of an additional viaduct at either 23rd Avenue or 25th Avenue is currently being studied (UPRR/23rd Avenue and UPRR/25th Avenue Viaduct, Project No. RRZ-TMT-6057(2)). This project would include the closure of both the 23rd Avenue and 25th Avenue at-grade crossings, and the construction of a grade-separated viaduct.

Completion of these proposed projects would provide an uninterrupted railway corridor through the City of Columbus extending from 70th Avenue on the west side of the Loup River to East 44th Avenue beyond the Loup Canal; a distance of approximately 7.5 miles. Combined, these project would provide five grade-separated vehicular crossing, one dedicated grade-separated pedestrian crossing, and would close 10 existing at-grade crossings (see **Figure 2.1**). In combination, these projects would:

- Create a quiet zone potentially extending over 7 miles in length throughout the City of Columbus and surrounding areas. This would greatly improve the quality of life in City of Columbus residential neighborhoods adjacent to the UPRR mainline.
- Eliminate at-grade vehicle and train conflicts along 7.5 miles of the UPRR mainline corridor, including the extent of the UPRR mainline within the City of Columbus
- Eliminate traffic backups and delays due to passing trains; delays that are expected to increase in duration and frequency due increases in rail traffic associated with the planned UPRR mainline expansion and local industrial expansion requiring rail services.
- Provide the traveling public, police, fire, and emergency services with consistent routes and predictable travel times.
- Long term, neighborhood continuity and community cohesion would benefit as traffic circulation is improved and overall travel times decrease even with some minimal out-of-distance travel. Increases in travel time that are realized would be offset by the reliability and safety afforded by grade-separated crossings of the UPRR mainline.

Completion of the proposed viaduct projects along the UPRR corridor would ultimately improve the overall access and circulation issues with the City of Columbus and surrounding vicinity; however, temporary short-term impacts affecting access and circulation may result from construction of the Preferred Alternative and other future projects. Construction of the Preferred Alternative is expected in 2019-2020, coinciding with the planned construction of the viaduct on 12th Avenue. East 29th Avenue would remain open to traffic during construction of the Preferred Alternative, with the most likely alternate routes being East 14th Avenue or East 44th Avenue. During construction, 12th Avenue is anticipated to be closed to traffic for 6 months. The most likely alternate routes for the closure of 12th Avenue include the completed 3rd Avenue viaduct and the existing at-grade crossings at 21st, 23rd, 25th, and 26th Avenues that would remain open during the project. Concurrent construction of these two project is not expected to significantly affect circulation, access, or create significant delays; however, coordination between Platte County and the City of Columbus would be needed to provide adequate circulation and access options should these alternative not be available, or the construction of an additional project results in a conflict.

V.5 Summary of Impacts

Table 4.10 summarizes the environmental consequences and assigns a relative ranking for the two alternatives carried forward for detailed evaluation. A rank assignment of high, medium, or low indicates how one alternative ranks relative to the other in impacts on the environmental consideration (such as land use or materials management issues). For instance, a rank of high in the land use category indicates that a particular alternative would result in larger impacts on land use relative to the other alternative. A rank assignment of negative, neutral, or positive is also used to further define the impact.

Table 4.10 – Summary of Environmental Consequences

Environmental Consideration	No Build Alternative	Preferred Alternative
Section 4(f) Resources	None	None. No known 4(f) properties.
Section 6(f) Resources	None	None. No known 6(f) properties.
Wild and Scenic Rivers	None	None. No Wild or Scenic Rivers within the project vicinity
Title VI/Environmental Justice	None	None. No relocations would be necessary. The project would not adversely impact a low-income or minority community.
Land Ownership, Jurisdiction and Land Use	None	Low Negative: Acquisition of approximately 9.91 acres of ROW expected. No relocations would be necessary.
Socioeconomic Considerations	Moderate Negative: Decline in region due to congestion, delay, and time lost. Less desirable for new employers, no accommodation for oversized trucks or passing lanes. Continued degradation of roadway asset.	Moderate Positive: Would provide more reliable transportation facility through region, improve transportation movement through the area, and encourage development/new employers to area.
Neighborhood Continuity & Cohesion	High-Negative: High traffic area with no reliability and long delays.	High Positive: New viaduct would enhance connectivity and improve traffic movements, flow, and reliability.
Cultural Resources	None	None. No effects determination.
Noise	Low Negative: Likely increases in traffic.	Low Negative: Increases in traffic, but no noise impacts predicted.
Air Quality	Low Negative: Increased traffic and delay, increasing idling time and traffic congestion resulting in higher emission factors for the area.	Moderate Positive: Would provide more reliable transportation facility through the region and improve transportation movement through the area.
Utilities	None	Low Negative: Would require minor utility adjustments.
Land Resources and Vegetation	None	Low Negative: Approximately 0.6 acre of wetland impacts, 0.4 acre of dryland cropland, and 8.91 acres of developed industrial and residential land.
Streams, Drainage, and Floodplains	None	None. A floodplain permit is not required.
Groundwater and Wellhead Protection Areas	None	None. No known wells located within the limits of construction.
Wetlands, Waters of the US, and Waters of the State	None	Low Negative: Impacts to approximately 0.75 acres of wetlands that have been determined to be Waters of the State, but not WOUS. Wetland impacts would be mitigated.
Impaired/Unique Waters	None	None. No impaired or unique waters within the project area.

Environmental Consideration	No Build Alternative	Preferred Alternative
Platte River Depletions and Borrow	None	None with proposed environmental commitments regarding borrow sites.
Noxious Weeds	None	Low Positive: Proposed standard specifications for revegetation.
Endangered & Threatened Species, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act	None	No Effect for most T&E species. "May affect, not likely to adversely affect" northern long-eared bat with conservation conditions. Not likely to adversely affect eagles or migratory birds with proposed mitigation following the Avian Protection Plan.
Farmland	None	Low Negative: 0.4 acre of dryland cropland, and up to 6 acres of land designated as prime farmland or farmland of statewide importance currently used for other purposes (i.e., industrial development).
Hazardous Materials	Neutral: Known regulated sites are located in the area.	Neutral: Known regulated sites are located in the area. Proposed mitigation measures if impacted soil or groundwater is encountered during construction.
Material Sources and Waste Materials	None	None, with proposed environmental commitments regarding borrow sites; and, Low-negative, disposal of excess material would require the Contractor to follow mitigation measures for disposal.
Temporary Construction Impacts	None	Minor disruption to the traveling public during construction with proposed temporary access plan and phasing. Construction noise would be minor and temporary. Standard provisions address dust suppression.
Airports	None	None. The Columbus Municipal Airport is approximately 2.5 miles from the proposed viaduct. The viaduct and construction equipment are not expected to exceed Federal Aviation Administration (FAA) or Nebraska Department of Aeronautics (NDOA) height zoning regulations.
Secondary and Cumulative Impacts	Moderate Negative: Increased travel time for personal and commercial vehicles, impacting access to industrial operations and business.	Moderate Positive: Would provide more reliable transportation facility and access to the area, improve transportation movement through the area, and encourage development/new employers/economic growth to the area.

5. PUBLIC INVOLVEMENT / PROJECT COORDINATION

Opportunities were provided for the public and other stakeholders to be involved in the identification of social, economic, and environmental impacts associated with the project. The intent of the public involvement process was to identify the project scope, educate the public and other stakeholders regarding the project need and proposed solutions, incorporate public comments to evaluate and refine the project, and achieve consensus among affected parties.

In the City of Columbus, the percentage of people who speak Spanish and also speak English "Less than Very Well" is about 5.5 percent. This figure indicates the presence of a Limited English Proficiency (LEP) population that reaches the NDOR LEP outreach triggers of 5 percent or 1,000 persons. As a result:

- Any written information that is dispersed to the community about this project was translated into Spanish.
- For public meetings held in regard to this project, the written information at the meeting was translated into Spanish and a Spanish/English interpreter was present. There were also sign-in sheets at the entrance to collect data, including racial/demographic data, on meeting participants, *though signing in or giving information at public meetings was always optional and not a requirement to participate*. Finally, a clear notice was posted in Spanish indicating that an interpreter is available.

These LEP procedures would be followed for any future public meeting or hearing regarding the proposed project. **Appendix D** includes additional demographic information.

Appendix N contains full notes from the public involvement, coordination, and stakeholder meetings. Summaries of public outreach activities are included below.

A. Union Pacific Railroad and Nebraska Department of Roads Scoping Meeting

Meeting in Omaha: 25 February 2013

An informal overview and discussion of the project was held at the FHU offices in Omaha, Nebraska. The attendees included representatives from UPRR, Platte County, NDOR, and the project consultant team. The discussion included project history, the design and environmental process, and the proposed schedule. The relationship of this design and environmental project to the needs of the railroad operations in the area was distinguished. The consultant team presented preliminary concept plans and described potential detours that would be necessary during construction. The UPRR representative provided insight into temporary improvements to the crossings on detour routes that may be required during construction. Other preliminary design assumptions were discussed and feedback from UPRR was elicited for inclusion in the design considerations. The grade separation agreements to be executed between the project sponsor and the railroad were also discussed.

B. Area Industry Stakeholders Meeting and Correspondence

On-Site Meeting: 5 March 2013, 1:00 to 3:00 pm CST

An informal overview and discussion of the project was held with the area industry stakeholders at the ADM Training Building in Columbus. The 10 attendees included representatives from Valmont Industries, Loup Public Power District (LPPD), ADM, and the project consultant team.

The discussion included project history, preliminary design concepts, the environmental process, and the schedule. The design team was particularly interested in current truck activity, circulation, and projected expansion plans for the stakeholders. The stakeholders from each represented company provided their truck details and circulation needs:

- ADM stated that truck activity ranges from 1,000 to 1,500 trucks per day, which is a decrease from the previous year. Their activity is relative to crop production. If crop production is high, then they are more active. They receive 100 carloads per day by rail.
- Valmont indicated that their activity at the former Katana Summit plant primarily involves manufacturing transmissions poles. They generate up to 150 to 200 flatbed loads per week. They perform pole testing near the southwest corner of their property. While currently no rail activity takes place, Valmont would like to keep open the option for future use. They requested that the project not disturb the three retention ponds (industrial stormwater ponds) along East 29th Avenue.
- LPPD stated that they own the tract of land just east of East 14th Avenue and north of East 8th Street and would like to develop the land into an industrial site due to the rail access. However, the railroad crossing at East 14th Avenue would be closed as part of the funding agreement with NDOR and UPRR.

Two preliminary concept plans were presented to the stakeholders. Feedback included statements about the proximity of the concepts to the Paige Electric and Columbus Steel properties, and stakeholders asked for an alternative that shifted the roadway to the west. Stakeholders also wanted the design team to consider alternatives that bypassed the businesses on either the east or the west side of the area. Additional meetings were scheduled and attendance of more stakeholders was encouraged.

Paige Electric Telephone Discussion: 15 March 2013

Paige Electric's Executive Vice President and the project consultant team's Project Manager engaged in an informal telephone discussion about the project. The discussion revolved around potential off-alignment alternatives and access to their property. The need for Paige Electric to circulate their trucks was discussed and options for maintaining the flow on-site were discussed. Options included a circulation road versus maintaining two driveways. These access options to the Paige Electric property would also take into account the handling of heavy truck traffic associated with other area industries, such as ADM. An off-set alignment to the west of 29th Avenue was discussed and the consultant Project Manager indicated that it would be added to the alternatives considered. Another stakeholder meeting would be held in April to allow stakeholders to discuss the design concepts and provide additional feedback at that time.

C. Formal Public Outreach

Public Information Meeting: 5 March 2013, 4:30 to 7 pm CST

A public information meeting in open house format was held on the proposed project at AG Park at 822 15th Street in Columbus. The meeting was held in the banquet room of the facility, which is Americans with Disabilities Act compliant. A public notice was published in the *Columbus Telegram* on 19 February 2013. The public notice was published in English and in Spanish. Project notification information sheets were also mailed to the 12 key area stakeholders. A public notice was included in the *Columbus Telegram* on 6 March 2013.

Six persons attended the meeting, not including NDOR officials, Platte County officials, and consultants. The meeting was conducted in an open house format with informational displays and stations throughout the room. The project design team was available to answer questions and take comments. Thirteen written comments were received. All handouts were available in both English and Spanish and a Spanish translator was available.

Local residents were not vocal in either their support or their opposition for improving the 29th Avenue crossing. Most attendees were middle-aged to older, and there were no foreign language speakers. Some attendees mentioned they learned about the meeting from the newspaper and/or the direct mailing. **Appendix N** provides documentation of the public information meeting**,** including information on advertising, venue, support materials, and attendance. No public comments were received following the meeting. A more focused stakeholder outreach was initiated based on the outcome of this initial public involvement outreach. At the time of the public meeting, the names of the alternatives were as follows:

- Alternative 1 – Viaduct Structure on the Existing East 29th Avenue Alignment with Detour (3% grade)
- Alternative 2 – Viaduct Structure Offset to the East of the Existing Alignment (5% grade)

D. Chamber of Commerce Meeting

On-Site Meeting: 17 April 2013, 12:00 to 1:00 pm CST

The Chamber of Commerce Transportation Committee met to discuss the East 29th Street Viaduct project. The Platte County Highway Superintendent briefed the committee on the project status to date, introduced the preliminary design concepts, and described the purpose and need for the project, as stated on the hand-out provided to the committee. The public involvement that has occurred was described for the committee. The local officials provided insight into development that is likely to occur in the near future and expressed their concerns for traffic safety along the corridor, particularly as it relates to large truck movements. They wanted the consultant project team to consider a 4-lane configuration for the viaduct design. They also wanted to know if the project would include any improvements at the US 30 and East 29th Avenue intersection. The County Highway Superintendent indicated that it is not included in this project but could be considered in the future as a separate project.

E. Area Industry Stakeholders Meeting #2

On-Site Meeting: 25 April 2013, 1:00 to 3:00 pm CST

An informal overview and discussion of the project was held with the area industry stakeholders at the ADM Training Building in Columbus. The 20 attendees included representatives from Valmont Industries, LPPD, Sidump'r Trailer, Husker Steel, ADM, Platte County, and the project consultant team. The discussion included an update on project status, preliminary design concepts, the environmental process, and the schedule. Seven alternative design concepts were presented to the group and a discussion of the pros and cons of each alternative commenced.

At the time of the public meeting, the names of the alternatives were as follows:

- Alternative 1 – This On Alignment concept requires a closure of East 29th Avenue for most of the construction schedule with a detour to a temporary crossing about 100 feet

west of East 29th or to East 44th Avenue. Both sides of the existing roadway would have some impacts.

- Alternative 2 – Offset Alignment to the east avoids closure during most of the construction schedule. This alternative would have fairly tight turns for trucks on the south side of the tracks and would have East 18th Street passing under the viaduct.
- Alternative 3 – Offset Alignment to the east similar to Alternative 2 but with wider turns for trucks and circulation access to Valmont along the east and north sides of Paige Electric passing under the viaduct.
- Alternative 4 – Offset Alignment to the west addresses concerns of Paige Electric and Columbus Steel with Alternatives 2 and 3 being too close to their operations. The alignment attempts to avoid encroaching on Valmont's employee parking lot and holding ponds.
- Alternative 5 – This concept is similar to that of Alternative 4, shifting the roadway west, and provides connections to Valmont under the bridge. It also takes East 29th Avenue west of the ADM training building, creating an offset alignment at East 8th Street. A new east-west roadway would be provided in one of two ways between East 29th Avenue and East 32nd Avenue in lieu of taking East 18th Street under the viaduct.
- Alternative 6 – This alternative depicts a concept submitted by Steve Dewald (ADM) after the last stakeholder meeting. It requires a 5% grade on the north leg of the intersection of East 15th Street, which is steep for trucks negotiating turns with a load.
- Alternative 7 – This concept is an Offset alignment clear west of Valmont Industries, which would allow it to be constructed while traffic remains on East 29th Avenue.

The next steps in the project (environmental field work, completion of the traffic study report, and concept refinement) were outlined for the group.

F. One-on-One Stakeholder Meetings

Paige Electric On-Site Meeting: 14 May 2013

A one-on-one meeting with Bob Niedblaski of Paige Electric was held 14 May 2013 because Mr. Niedblaski could not attend the 25 April 2013 stakeholder meeting. An overview of the seven alternatives was provided. Mr. Niedblaski found Alternatives 4 and 5 the most favorable to Paige Electric. He stated that Paige Electric was planning an addition to their building, which would extend up to 150 feet east of the current building. Their storage yard would need to be relocated a similar distance. The design consultant agreed to add this plan to the base design plans to avoid future additions. Mr. Niedblaski stressed the need to maintain two driveways to provide the access and circulation Paige Electric needs for their operations. Overall, he was optimistic about the project and was satisfied that the alternatives presented would handle the heavy truck traffic in the area.

CAMACO On-Site Meeting: 14 May 2013

An informal overview and a discussion of the project was held with the manager of CAMACO. The County indicated in the meeting that due to the low turnout at the public meeting it was assumed that there was no controversy with the project and that the project team was focused on reaching out to the area industries potentially benefited as well as impacted by the proposed

project. The CAMACO representatives (Mike Niemann and Bill McCann) thought the direct east-west connection north of Columbus Steel would be beneficial to their employees. They noted the cut-through traffic that is traveling across the back of Columbus Steel already and few employees seem to travel south to use East 18th Street. The new east-west circulation road could also be mixed with various alternatives south of the tracks. The other alternatives were presented and Mike and Bill indicated that they favored the concept showing the direct east-west connection between East 29th Avenue and East 32nd Avenue because it would provide another option for their employees to safely enter US 30 at the East 29th Avenue traffic signal. This proposed project would also help with traffic during shirt changes. CAMACO has adjusted it hours of operations from 6:45 AM to 3:25 PM to avoid the Behlen shift traffic from 7:00 AM to 3:30 PM.

G. Chamber of Commerce Correspondence

Letter: 17 October 2013

The Chamber of Commerce sent a letter to the Platte County Board of Supervisors summarizing their stance since the genesis of the proposed project in 2008. The Chamber of Commerce shares the County's concern over crossing conflicts with the railroad and traffic delay and congestion caused by the railroad crossing closures throughout the work week. Based on conversations between the committee members and the nine Chamber-member businesses in the corridor regarding the proposed number of lanes, the Chamber letter stated that "[i]n summary, the results from our member survey show strong support for construction of a four-lane viaduct on East 29th Avenue." Additionally, the letter indicated that four of the nine member companies projected an increase in traffic volumes across that rail crossing and none projected a decrease. Also of note, the Columbus Economic Council is pursuing a plan to develop land southwest of the crossing as another industrial site, which could impact future traffic volume, depending on the type of industry that develops. The discussion included concerns about impacts to member-company properties during construction; however, the Columbus Chamber of Commerce supports the overall need for the viaduct and proposed project.

H. Area Industry Stakeholder Meeting #3

On-Site Meeting: 22 April 2014, 1:00 to 2:30 pm CST

An informal overview and discussion of the project was held with the area industry stakeholders at the ADM Training Building in Columbus. The 17 attendees included representatives from Valmont Industries, LPPD, Sidump'r Trailer, Paraclipse, Paige Electric, Husker Steel, Industrial Engineering, ADM, Flat River, Platte County, NDOR, and the project consultant team. The discussion included a summary of activity since the last stakeholder meeting a year ago on 25 April 2013. The meeting discussed the narrowed down alternatives for preliminary design concepts, the environmental process, and the schedule. Alternative Concept 3 has surfaced to the top based on traffic analysis, access and circulation, roadway design constructability, and environmental investigations to date. Adjustments to the design concepts were in large part based on stakeholder input. Some of the key features of this concept include:

- Alignment offset to the west staying just east of the Valmont retention pond
- Circulation road on the north connecting East 29th Avenue to East 32nd Avenue
- Circulation road on the south under the viaduct to provide access to Valmont

- Preliminary Typical Bridge and Roadway Section (see attached: Three lanes [2 SB, 1 NB] – Shoulders No Pedestrian Walkways because there are no existing sidewalks
- The project also includes the closure of the East 14th Avenue at-grade crossing in addition to the East 29th Avenue crossing. Dave Bell asked if that closure was necessary. FHU responded that it was part of the funding agreement with UPRR and NDOR. That closure would provide a clear uninterrupted UPRR corridor from East 44th Avenue to downtown Columbus after the Columbus Viaducts are complete.

Open discussion during the meeting among stakeholders included the following comments and responses:

- Jerel Engel of Industrial Engineering did not see the need for the east-west connection to East 32nd Avenue and was concerned about the traffic cutting through. Mike Maguire of Columbus Steel also did not see a need to extend the road beyond their front access.
- FHU explained the benefit would be to allow those vehicles wanting to go west on US 30 to enter the highway at the traffic signal at East 29th Avenue rather than taking chances making a left turn at East 32nd Avenue. He traced the alternate route that was considered. That alternate route would require a longer structure to allow vehicles to use East 18th Street to go under East 29th Avenue and access the median break on the west side. Drivers would then have to make a left turn to go north on East 29th Avenue rather than making a right turn.
- ADM representatives discussed their current truck traffic flow and the flow under Concept 3. Their main concern was conflict regarding the crossing of trucks leaving the ADM east gate and turning west on East 8th Street with southbound trucks crossing East 8th Street entering the ADM facility. After further discussion, it was agreed that this could not be prevented because the outbound trucks are going to follow the most direct route.
- Bob Niedbalski of Paige Electric asked that they be allowed to keep the access to their parking lot to separate cars and trucks. FHU responded that should not be a problem because access would be on the frontage road.
- ADM discussed the location of their four wellheads between East 29th Avenue and East 32nd Avenue. They agreed to provide a copy of their well and utility plans to assist with designing around them.
- Valmont indicated that they would provide whatever drawings they have on their retention ponds. Valmont has also been considering an expansion of their employee parking lot toward East 29th Avenue. Under Concept 3, there would not be enough room for them to expand east but they could expand to the south where the access is being closed.
- There was a discussion about the need for pedestrian accommodations, and the consensus was that it would not be a good idea to encourage pedestrians given the number of loaded trucks using East 29th Avenue. It was noted that there are currently no sidewalks in the area.
- The condition of the existing pavement was expressed as a concern by all. Terry Wicht indicated that Platte County was also concerned about the amount of panel rocking that

has occurred over the past couple of months, but they do not have a solution at this time.

- There was a question as to funding and if there would be private assessments for the improvements constructed on private property. The answer was no because the improvements shown are necessary to leave each property whole with regard to access and circulation.

The next steps in the project (submittal of the draft environmental document and scheduling the Plan-In-Hand meeting) were outlined for the group.

The stakeholders were given until 2 May 2014 to submit further comments. Platte County received the following comments:

- The comments made previously by Industrial Engineering and Columbus Steel were reiterated by President/General Manager of Industrial Engineering in a formal response to the County.
- Concern was expressed over the existing condition of East 29th Avenue, and there was a question as to funding improvements to the roadway in the meantime. The County responded that the base would have to be reworked for foundation stability and could not be funded by this project.
- Paige Electric submitted a formal notification of their expressed concern over the portion of Concept 3 that would eliminate their access driveway off East 29th Avenue. Their concern is in regard to access and traffic flow into their loading docks. The design team responded that the driveway could remain in its current location.
- ADM submitted a comment to the County stating that the most convenient option for their loaded feed trucks is to exit the ADM facility from the north and go west on 8th Street and then turn north on East 29th Avenue. ADM asked the design team to consider the turning radius need for trucks leaving ADM where East 29th Avenue ties into 8th Street.

I. Public Hearing

NDOR will hold a public hearing on the proposed project and DEA. It is anticipated that the hearing will be held at Centennial Elementary School in Columbus on or around 20 December 2016. Public notices, letters, and news releases will be developed to inform members of the public and interested agencies of the upcoming meeting details. The first legal notice of the hearing will be provided approximately 31 days before the hearing and again 14 and 7 days before the hearing.

NDOR will provide an accessible meeting facility for all persons. Reasonable accommodation will be made for people who are hearing and visually challenged or who have LEP. Materials will be provided in English and in Spanish. NDOR will specifically invite all those who would be directly affected by the proposed project.

Design information will be displayed and NDOR personnel will be present to answer questions and receive comments about the project. This hearing will be held for coordination and fact-gathering on the NEPA document, as well as to provide and receive information about

environmental impacts. The project study team will be present to receive design input about the project. Design plans and the DEA will be developed further after the public hearing.

The DEA will be available for public review at the hearing. Copies of the DEA will be available at the following locations:

City of Columbus – City Clerk	2424 14th Street	Columbus, Nebraska
City of Columbus Public Library	2504 14th Street	Columbus, Nebraska
Platte County Highway Department	2610 14th Street	Columbus, Nebraska
NDOR District 3 Maintenance Office	3303 12th Street	Columbus, Nebraska
NDOR Headquarters	1500 Highway 2	Lincoln, Nebraska
FHWA Nebraska Division	100 Centennial Mall North	Lincoln, Nebraska

Before the public hearing, the DEA will also be available on the NDOR website at www.transportation.Nebraska.gov/projects/ and clicking on the “Columbus East Viaduct” link.

There will be a 30-day comment period for the DEA, after which the Final EA will be prepared in errata format.

6. MITIGATION MEASURES

A. Summary

To comply with all applicable federal, state, and local legislation, as well as any general or special conditions required by pending permits, the following mitigation measures/environmental commitments have been incorporated into the Preferred Alternative. These commitments would be implemented during the appropriate project phase. The mitigation measures are presented in association with the resource for which they most directly act to avoid or minimize impacts. Although some of the listed measures apply to multiple resources, they are listed only once, under the resource that they most directly benefit.

In addition to the mitigation measures, NDOR Standard Specifications and Special Provisions would be applied to the Preferred Alternative to provide specific methodology.

B. Land Ownership, Jurisdiction, and Land Use

Mitigation measures

- Access to individual businesses, residences, and other facilities in the area would be maintained during construction (Platte County, Contractor).
- ROW acquisition would be conducted by paying fair market value for the property rights and damages that may occur as a result of the taking. ROW acquisition would be completed in conformance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended (42 USC 4601 et seq.), and the Nebraska Relocation Assistance Act (Nebraska Revised Statute Section 76-1214 et seq. 2009).

Standard Specifications

- Standard Specification 105.12 – Control of Work – Use of Land (NDOR, 2007). State's Contractor must have consent and leave the property in a neat and presentable condition.
- Standard Specification 104.08 – Scope of Work – Final Clean Up (NDOR, 2007). Requires the Contractor to clean up the construction area prior to acceptance and final payment.
- Standard Specification 107.12 – Legal Relations and Responsibility to the Public – Responsibility for Damage, Injury, or Other Claims (NDOR, 2007). Requires the Contractor to be responsible for property damage and injuries associated with the prosecution of work.
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, and prevent damage to all public and private property.

C. Socioeconomic Considerations

Mitigation Measures

- Per Standard Practice, NDOR shall notify the public at the start of construction by placing notices in the newspaper 14 calendar days before construction. Electronic message boards may be used before beginning construction activities. The Project

Sponsor shall also notify emergency services such as police and fire departments before construction activities begin, as well as maintain continued coordination throughout construction. Emergency services providers would be invited to the pre-construction meeting for this project. (Platte County).

- For each impacted county road, except East 12th Street, access would be constructed in phases to maintain access at all times. A note would be included on the construction plans indicating that access is to be maintained. Furthermore, per NDOR's Standard Specifications, the Contractor shall at all times, to the extent practicable, provide private dwellings, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, and public facilities. During those periods when a road is closed, even for a short duration, limited access must be maintained for authorized local traffic. If access is to be closed longer than one day, the Contractor shall coordinate with the affected property owners to address temporary access issues. Access details shall be coordinated among the Project Sponsor's Project Manager, the Contractor, and property owners. (Contractor, Platte County).

Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public (NDOR, 2007). Requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.

D. Cultural Resources

Mitigation Measures

No pre-construction mitigation is required.

- If archaeological or paleontological materials are discovered during construction, NDOR Standard Specifications for Highway Construction 107.10 (NDOR, 2007 pg. 60) states, "The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation" (Platte County, Contractor).

Standard Specifications

- Standard Specification 107.10 – Legal Relations and Responsibility to the Public – Archaeological and Paleontological Discoveries (NDOR, 2007). In the event of a late discovery of archaeological materials, this specification states, "The Engineer would be promptly notified when any such articles are uncovered and the Contractor shall suspend operations in the area involved until such time that arrangements are made for their removal and preservation."
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, and prevent damage to all public and private property.

E. Noise

Mitigation Measures

No receptors in the project corridor were found to be impacted by traffic noise. Therefore, no noise abatement actions were evaluated or recommended for the Preferred Alternative.

F. Air

Mitigation Measures

No increase in MSAT levels are expected as a result of the project. No mitigation is required.

G. Utilities

Mitigation Measures

- The Contractor shall follow the guidelines of NDOR's Policy for Accommodating Utilities on State Highway ROW (NDOR, 2001). It is the Project Sponsor's responsibility to notify utility companies of the need for relocation during the design stage of the project. The Project Sponsor would coordinate utility agreements with the utility companies before construction. It is the Contractor's responsibility to notify utility companies of relocation needs during the construction phase of the project for utilities that were not relocated before construction. If utility relocations using federal funds are located outside the environmental study area, those locations would be evaluated before construction. (Platte County, Contractor, Utility Provider(s)).

Standard Specifications

- Standard Specification 105.06 – Control of Work – Cooperation with Utilities (NDOR, 2007). This states that the Department would notify all utility companies, pipeline owners, railroads, or other parties affected by the work.
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, and prevent damage to all public and private property.
- Standard Specification 107.12 – Legal Relations and Responsibility to the Public – Responsibility for Damage, Injury, or Other Claims (NDOR, 2007). Requires the Contractor to be responsible for property damage and injuries associated with the prosecution of work.
- Standard Specification 107.16 – Legal Relations and Responsibility to the Public – Contractor's Responsibility for Utility Property and Services (NDOR, 2007). Requires the Contractor to verify the location of existing utilities.

H. Land Resources and Vegetation

Mitigation Measures

- Upland vegetation disturbed by road construction would be seeded with appropriate seed mixtures. NDOR Standard Specifications would be followed (Platte County).

Standard Specifications

- Standard Specification Division 800 – Roadside Development and Erosion Control (NDOR, 2007)

- Standard Specification Section 805 – Certified noxious weed free mulch (NDOR, 2007)

I. Streams, Drainage, and Floodplain Considerations

Mitigation Measures

This project does not require a floodplain development permit.

- The Project Sponsor would obtain a CSW permit from NDEQ and produce an associated project-specific SWPPP. The Project Sponsor would incorporate soil erosion and sediment control practices as detailed in the CSW permit and SWPPP. Permanent drainage and water quality facilities (that is, BMPs) may be included with the final design to mitigate adverse impacts caused by stormwater runoff. These BMPs would protect water quality and provide a discharge velocity that is equal to or better than the current conditions. The project would comply with construction stormwater permit requirements. (Platte County)
- The project-specific SWPPP would outline mitigating measures during construction and maintenance requirements for all permanent BMPs. The SWPPP would include a detailed Erosion and Sediment Control Plan as part of the roadway design set. These plans would show temporary measures, such as silt fences, hay bales, soil retention blankets, inlet protection, and stabilized construction entrances. The design of measures to be taken would be determined during final design. (Platte County, Contractor)

Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public (NDOR, 2007). Requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.

Special Provisions

- Special Provision – Temporary Water Pollution Control (NDOR, 2007; B-3-0509). Establishes the required documentation included in the Environmental Commitment Document and Project Erosion and Sediment Control Inspection.
- Special Provision – Storm Water Pollution Prevention Plan (NDOR, 2007; A-20-0307). Requires the Contractor to understand the terms and conditions of the general NPDES.
- Special Provision – Storm Water Discharges (NDOR, 2007; A-43-0408). Requirements associated with storm water discharges from construction sites to Waters of the State of Nebraska.
- Legal Relations and Responsibility to the Public (NDOR, 2007; A-43-0210). Requirements if Contractor violates any governing federal, state, or local environmental quality regulations and/or is in noncompliance with any environmental commitment.

J. Groundwater and Wellhead Protection Areas

Mitigation Measures

- A portion of the project has been identified as being located within the City of Columbus WPA. NDOR's Standard Specifications 107.01, 107.09, and 107.16 address the Contractor's responsibility to keep fully informed of, observe, and comply with all federal, state, and local laws and ordinances that affect the conduct of the work (Contractor).

- The Project Sponsor would coordinate with the owners of wells that would be directly impacted by the proposed project. If the well is actively used, the Project Sponsor would get estimates to have the property owner hire their own contractor to replace the well. The Project Sponsor would then have an independent contractor decommission the well after ROW negotiations and acquisitions are complete. If the well is not in use, the Contractor would decommission the well after negotiations with the owner (Platte County, Contractor).
- A licensed water well contractor would decommission any wells in accordance with the Nebraska DHHS regulations under Nebraska Administrative Code Title 178, Water Well Standards, Chapter 12, Water Well Construction, Pump Installation, and Water Well Decommissioning Standards (Nebraska DHHS, 12 February 2005) (Platte County).

Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public (NDOR, 2007). Requires the Contractor to be aware of and observe federal, state, and local laws and ordinances.
- Standard Specification 107.09 – Legal Relations and Responsibility to the Public – Preservation and Restoration of Property, Trees, Monuments, etc. (NDOR, 2007). Requires the Contractor to preserve, protect, replace, or restore private property.
- Standard Specification 107.16 – Contractor's Responsibility for Utility Property and Services (NDOR, 2007). Requires the Contractor to notify utilities and determine locations of underground facilities to ensure that utility service is relocated, restored, and interruption is kept at minimum. The Contractor must protect and keep operational all encountered utilities.

K. Wetlands, Waters of the US, and Waters of the State

Mitigation Measures

- Before any construction work, The Poject Sponsor would obtain a Letter of Opinion of Non-Degradation from NDEQ for Impacts to Waters of the State (NDEQ, 22 March 2009) (Platte County). Although not anticipated, a Section 404 permit from the USACE would be obtained if impacts include WOUS (USACE, 2012).
- At the discretion of NDEQ, impacted wetlands occurring within roadside ditches may be mitigated on-site at a 1:1 ratio, if the project design allows the creation of new ditch wetlands adjacent to the impacted areas. Appropriate mitigation sites would require adequate hydrology and would be seeded with a mix of hydrophytic grasses and sedges appropriate for the region to create in-kind replacement. Monitoring the progress of vegetation establishment and evaluating hydrology would be required to ensure the success of the mitigation wetland areas (Platte County).

L. Impaired/Unique Waters

Mitigation Measures

- The Project Sponsor would obtain a CSW permit from NDEQ under NPDES and would produce an associated SWPPP before submitting the NOI. Additionally, the City of Columbus is required as part of their MS4 permit to report annually to NDEQ on the status of post-construction activities within its jurisdiction. NPDES requirements include

the evaluation of impaired and unique waters as part of the CSW NOI, SWPPP preparation, and MS4 compliance (Platte County, City of Columbus).

Standard Specifications

- Standard Specification 107.01 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to be aware of any observed federal, state, and local laws and ordinances.

Special Provisions

- Special Provision – Storm Water Pollution Prevention Plan (A-20-0307). Requires the Contractor to understand the terms and conditions of the general NPDES construction stormwater permit.

M. Platte River Depletions

Mitigation Measures

- The Contractor would be required to provide the needed borrow material and would identify a source of material that does not include dredging Platte River sediment. The Contractor shall try to obtain borrow material from an upland site to prevent depletion issues and would be required to submit a Materials Source Site Identification and Evaluation form to the Project Sponsor, NDOR, and USACE. After receiving the form, the Project Sponsor would forward the Material Source Form to the USFWS, NGPC, Department of Natural Resources (DNR), and HAP-NSHS (Platte County, Contractor).
- If the borrow site is located within a depletion area of concern and it is identified that it would pond water after excavation, The Project Sponsor would determine project-related impacts by calculating the evaporated loss of water at the borrow site, by using the Natural Resource Conservation Service (NRCS) – US Department of Agriculture (USDA) Consumptive Use Calculator. For borrow sites/detention basins that would result in the exposure of groundwater in the North Platte River Basin, the Project Sponsor would submit the borrow site request information to the NGPC and USFWS. This would be done to determine ways to avoid depletions or provide offsets if depletions are to occur. Requests for borrow sites that occur outside the Platte River watershed would be submitted to the DNR for tracking surface water depletions (Platte County, Contractor).
- Borrow sites that expose groundwater and are obtained outside the PRRIP areas would be offset according to the Biological Opinion prepared by NGPC in accordance with the Nebraska Nongame and Endangered Species Conservation Act (Nebraska Revised Statute 37-806 et seq. 2008). Borrow sites that pond water and occur outside the PRRIP area and the Platte River watershed would be calculated using the NRCS Consumptive Use Calculator and submitted to the DNR to be included in the report to the Governance Committee (Platte County, Contractor).

Standard Specifications

- Standard Specification 205.02 – Excavation and Embankment – Material Requirement (NDOR, 2007). Contractors are required to provide clean earth fill that is of approved suitable materials for roadbed and embankments.

Special Provisions

- Special Provision – Borrow Site Approval (NDOR, 2007; B-1-0408). Requirements associated with the embankment materials, and borrow site approval.

N. Noxious Weeds

Mitigation Measures

No mitigation is required.

Standard Specifications

- Standard Specification 202.01(4)(d) – Clearing and Grubbing (NDOR, 2007). The Contractor shall dispose of trash, dead trees, and vegetation in the ROW limits and beyond the limits of construction.
- Standard Specification 803.02 – Seeding – Material Requirements (NDOR 2007). Requirements associated with seeding methods, rates of application, and seed mixtures.
- Standard Specification 803.03 – Seeding – Construction Methods (NDOR, 2007). Requirements associated with planting season and methods.
- Standard Specification 806.02(4)(c) – Sodding – Material Requirements (NDOR, 2007). Requirements associated with sod material and placement.
- Standard Specification 807 – Erosion Control (NDOR, 2007)

O. Endangered Species Act, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act

Mitigation Measures

The concurrence package for the project includes the following conservation conditions and survey protocol that would be required based on the Programmatic Agreement for Endangered and Threatened Species (and covering BGEPA and MBTA) (**Appendix K**). The Responsible Party for the measure is found in parentheses.

- **A-1 Changes in Project Scope**. If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from FHWA. (District Construction, Contractor)
- **A-2 Conservation Conditions**. Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. (District Construction, Contractor)
- **A-3 Early Construction Starts**. Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle timeframes. Work in these timeframes would require approval from FHWA and could require consultation with the USFWS and NGPC. (District Construction, Contractor)
- **A-4 E&T Species**. If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. (NDOR Environmental, District Construction, Contractor)

- **A-5 Refueling**. Refueling would be conducted outside those sensitive areas identified on the plans, in the contract, and/or marked in the field. (Contractor)
- **A-6 Restricted Activities**. The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the ROW designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.

  For activities outside the project limits, the Contractor should refer to the NGPC website to determine which species ranges occur within the off-site area. The Contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site or other off-site activities. The Contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

  Any project-related activities that occur outside the project limits must be environmentally cleared/permitted with the NGPC as well as any other appropriate agencies by the Contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The Contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of four different ground photos showing the existing conditions at the proposed activity site, depth to groundwater and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager would notify NDOR Environmental, which would coordinate with FHWA for acceptance, if needed. The Contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (NDOR Environmental, District Construction, Contractor).
- **A-7 Waste/Debris**. Construction waste/debris would be disposed of in areas or in a manner that would not adversely affect state and/or federally listed species and/or designated critical habitat. (Contractor)
- **S-2 Platte River Depletions**. If within the Platte River watershed (including the Elkhorn, Salt Creek, Loup, Calamus, and Lower Platte drainage basins), include the following for all detention basins/retention basins and borrow sites:

  All efforts would be made to design the project and select borrow sites to prevent depletions to the Platte River. If there is any potential to create a depletion, NDOR (during design) and the Contractor (for borrow sites) shall follow the current Platte River depletion protocols for coordination, minimization, and mitigation. In general, the following are considered *de minimis* depletions, but may still require agency coordination; a project which: a) creates an annual depletion less than 0.1 acre feet, b) creates a detention basin that detains water for less than 72 hours, c) any diverted water would be returned to its natural basin within 30 days, or d) creates a one-time

depletion of less than 10 acre feet (NDOR Environmental, District Construction, Contractor).

- **S-3 Revegetation**. All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed plants were identified during the survey, any seed mix requirements identified during resource agency consultations shall be used for the project. (NDOR Environmental)
- **NLEB-1** Tree clearing, bridge deck joint replacements over the bridge deck, bridge/>5-ft box-culvert removal activities would be scheduled to occur between 1 October through 31 March to avoid impacts to the northern long-eared bat roosting period. (NDOR Environmental, District Construction, Contractor)

  OR

  NLEB-2 If tree clearing, bridge deck joint replacement over the bridge deck, or removal of bridge/>5-ft box-culvert structures occurs during the northern long-eared bat maternal roosting period (1 April – 30 September), NDOR or a qualified biologist would perform surveys prior to the start of these activities at the location of suitable habitat. If the species is absent, work may proceed. If the species is found, NDOR Environmental Section would consult with the USFWS, NGPC, and FHWA prior to the start of construction. (NDOR Environmental, District Construction, Contractor)

Bald and Golden Eagle Protection Act

- NDOR would use the Bald Eagle Survey Protocol to determine when a survey for nests/roosts should be conducted. If the survey identifies nest(s) are present within 0.5 mile of the project area, NDOR would notify FHWA as well as NGPC and the Service, and construction would not commence prior to their approval. (NDOR Environmental, District Construction, Contractor)

Migratory Bird Treaty Act

NDOR has developed an Avian Protection Plan (APP) to reduce conflicts between construction of NDOR projects and the laws governing migratory birds. This procedure is designed to protect and conserve avian populations and reduce avian conflicts through changes in project scheduling (that is, tree clearing outside primary nesting period), increased migratory bird surveys, and changes in project construction timelines. NDOR would use its APP to reduce conflicts with migratory birds on this project.

- If the proposed construction project is planned to occur during the primary nesting season or at any other time that may result in the “take” of nesting migratory birds, the USFWS recommends that the project proponent (or construction contractor) arrange to have a qualified biologist conduct a field survey of the affected habitats and structures to determine the absence or presence of nesting migratory birds. Surveys must be conducted during the nesting season. USFWS further recommends that field surveys for

nesting birds, along with information regarding the qualifications of the biologist(s) performing the surveys, be thoroughly documented and that such documentation be maintained on file by the project proponent (and/or construction contractor) until such time as construction on the proposed project has been completed. (NDOR Environmental, District Construction, Contractor)

Special Provisions

- Special Provision – Environmental Commitment Document (NDOR, 2007; B-3-0509). Establishes the required documentation included in the Environmental Commitment Document and Project Erosion and Sediment Control Inspection.
- Special Provision – Special Prosecution and Progress – Migratory Bird Responsibility (NDOR, 2007; A-42-0807). The Project Sponsor would be responsible for migratory birds on this project until the execution of the contract; at which time, the Contractor shall assume the responsibility for meeting all requirements for migratory birds.

P. Farmland

Mitigation Measures

No mitigation is required.

Q. Hazardous Materials

Mitigation Measures

- If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material would stop until NDOR/FHWA is notified and a plan to dispose of the hazardous materials has been developed. Then NDEQ shall be consulted and a remediation plan shall be developed for this project. The potential exists to have contaminants present resulting in minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the NDEQ shall be contacted for consultation and appropriate actions be taken. The Contractor is required by NDOR's Standard Specification Section 107 (legal relations and responsibilities to the public) (NDOR, 2007) to handle and dispose of contaminated material in accordance with applicable laws. (Contractor)
- Project plans and specifications would identify relocation of the overhead electrical utility lines and pole-mounted transformers, which may or may not contain polychlorinated biphenyl (PCB). Performance of the work set forth in the project plans and specifications would be conducted in accordance with any easement agreement among the utility companies, Platte County, and/or private landowners. Platte County or their representative would contact the utilities to schedule performance of the work and would coordinate the work with the project construction activities per NDOR's *Standard Specifications for Highway Construction*, Subsections 105.06 and 107.16 (NDOR, 2007). (Platte County, Contractor)
- The shallow soil (from ground surface to 3 feet bgs) showed low levels of arsenic and chromium contamination while the deeper soil showed very low levels of VOC contamination. During construction, any shallow soil that is excavated should either be returned to the excavation or be disposed of as a special waste under a special waste

permit. No shallow soil should be hauled off for reuse somewhere else. (Platte County, Contractor).

- The SVOC contamination in groundwater exceeded EPA's MCL for bis(2-ethylhexyl)phthalate (di(2-ethylhexyl)phthalate [DEHP]). Any groundwater recovered from this site during the construction should be containerized and discharged at a wastewater treatment plant. Coordination with the wastewater treatment plant would be required. (Platte County, Contractor).
- Nebraska Air Quality Regulations (NDEQ, 13 May 2014) state that no person may cause or permit a road being constructed or repaired without applying reasonable measures to prevent particulate matter (commonly referred to as dust) from becoming airborne and remaining visible beyond the premises where it originates. Slight wetting of the soil during demolition and earthwork activities to prevent dust from impacting on-site workers and any potential off-site migration is recommended. Additionally, EPA suggests the need for dust suppression when dry and dusty conditions are present to reduce the inhalation of dust, including the recommended use of dust masks by contractors. The Contractor is required by NDOR's Standard Specification Section 309 for dust control during construction. (Contractor)
- It is acceptable for pile to be driven into the confining clay layer so long as the pile does not pierce through the lower depths of the clay, potentially creating a preferential pathway for the contaminated groundwater to spread to another aquifer. Pier design and construction shall be restricted to the depths of the confining clay later at approximately 70 to 90 feet bgs. (Project Sponsor, Contractor)
- Prior to construction activities, a Preconstruction Meeting would be held as required by Section 103.01 of the 2002 NDOR Construction Manual (NDOR, 2002). The purpose of the meeting is to discuss pertinent information to the project before construction begins, including hazardous materials reviews and health and safety issues. (Platte County, Contractor)

<u>Standard Specifications</u>

- Nebraska Administrative Code Title 178, Chapter 23. Regulations regarding the training, certification, and work practices associated with the removal of lead-based paint (Nebraska Department of Health and Human Services, 10 April 2005).
- Standard Specification 701.01 – General Requirements – Description (NDOR, 2007). Describes procedures and equipment associated with the construction of structures.
- Standard Specification 203.01 – Removal of Structures and Obstructions – Description (NDOR, 2007). Requirements associated with the removal and disposal of structures and obstructions.
- Standard Specification 203.02 – Removal of Structures and Obstructions – Construction Methods (NDOR, 2007). Requirements associated with the construction methods associated with the removal of structures and obstructions.
- Standard Specification 203.03 – Removal of Structures and Obstructions – Method of Measurement (NDOR, 2007). Specifies how to measure removal of structures and obstructions.

- Standard Specification 107.01 as Amended A-43-0210 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered

R. Material Sources and Waste Materials

Mitigation Measures

- The following project activities would, to the extent possible, be restricted to the beginning and ending points of the project (stationing, reference posts, mile markers, and/or section-township-range references), within the ROW designated on the project plans: borrow, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage areas. The Contractor must environmentally clear/permit any project-related activities that occur outside these areas with the USFWS and NGPC, as well as any other appropriate agencies and submit those clearances/permits to the District Construction Project Manager before the start of the above listed project activities. The Contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan sheet or drawing showing the location and dimensions of the activity site, a minimum of four ground photos showing the existing conditions of the proposed activity site, depth to groundwater and depth of the planned pit, and the "Platte River depletion status" of the site. The District Construction Project Manager would notify NDOR Environmental, which would coordinate with FHWA for acceptance, if needed. The Contractor must receive notice of acceptance from NDOR before starting the above-listed project activities. (Platte County, Contractor).

Standard Specifications

- Standard Specification 732.01 – Lead-Based Paint Removal – Description (NDOR, 2007). Requirements associated with the removal of lead-based painted structural steel members.
- Standard Specification 732.02 – Lead-Based Paint Removal – Material Requirements (NDOR, 2007). Requires that all materials used must be in compliance with all applicable laws and regulations.
- Standard Specification 732.03 – Lead-Based Paint Removal – Construction Methods (NDOR, 2007). Requirements associated with construction methods for removal of lead-based paint.
- Standard Specification 701.01 – General Requirements – Description (NDOR, 2007). Describes procedures and equipment associated with the construction of structures.
- Standard Specification 203.01 – Removal of Structures and Obstructions – Description (NDOR, 2007). Requirements associated with the removal and disposal of structures and obstructions.
- Standard Specification 203.02 – Removal of Structures and Obstructions – Construction Methods (NDOR, 2007). Requirements associated with the construction methods associated with the removal of structures and obstructions.

- Standard Specification 203.03 – Removal of Structures and Obstructions – Method of Measurement (NDOR, 2007). Specifies how to measure removal of structures and obstructions.
- Standard Specification 107.01 as Amended A-43-0210 – Legal Relations and Responsibility to the Public – Laws to be Observed (NDOR, 2007). Requires the Contractor to notify the Engineer if previously unidentified hazardous materials are encountered.
- Standard Specification 205.02 – Excavation and Embankment – Material Requirement (NDOR, 2007). Requirements associated with the embankment materials, and borrow site approval.
- Standard Specification 208 – Borrow and Waste Site Restoration (NDOR, 2007). Requirements associated with the restoration of Department provided sites from which borrow is obtained.

S. Visual Resources

Mitigation Measures

No mitigation is required.

T. Temporary Construction Impacts

Mitigation Measures

- Access would be maintained for the traveling public during the project construction. The public and emergency services would be notified of road closures prior to them occurring. Message boards may be used to alert the public of road closures and detours. (Platte County, Contractor)
- For each impacted county road, except East 12th Street, access would be constructed in phases to maintain access at all times. A note would be included on the construction plans indicating that access is to be maintained. Furthermore, per NDOR's Standard Specifications, the Contractor shall at all times, to the extent practicable, provide private dwelling, commercial properties, businesses, and public facilities access to and from the nearest intersecting public road or street (NDOR, 2007). Accommodations shall be made to ensure local traffic passing within the limits of the project has access to all private dwellings, commercial properties, businesses, and public facilities. If a road is closed, limited access must be maintained for authorized local traffic. If access is closed longer than one day, the Contractor would meet with the property owners to address temporary access issues. Access details shall be coordinated by the Project Sponsor, the Contractor, and property owners. (Platte County, Contractor)
- Nebraska Air Quality Regulations (NDEQ, 13 May 2014) state that no person may cause or permit a road being constructed or repaired without applying reasonable measures to prevent particulate matter (commonly referred to as dust) from becoming airborne and remaining visible beyond the premises where it originates. Slight wetting of the soil during demolition and earthwork activities to prevent dust from impacting on-site workers and any potential off-site migration is recommended. Additionally, the EPA suggests the need for dust suppression when dry and dusty conditions are present to reduce the inhalation of dust, including the recommended use of dust masks by contractors. The

Contractor is required by NDOR's Standard Specification Section 309 for dust control during construction. (Contractor)

Standard Specifications

- Standard Specification 301.02(1a, 1b) General Requirements – Equipment (NDOR, 2007). Requires that all equipment shall be kept in satisfactory working condition and shall be operated within the manufacturer's specifications.
- Standard Specification 309 – Calcium Chloride Treatment (NDOR, 2007)
- Standard Specification 312 – Removal and Processing of Concrete (NDOR, 2007)

U. Airports

Mitigation Measures

- Because of the proximity to the Columbus Municipal Airport in Columbus, NE, the height of any equipment used in the construction of the project (or any antennae installed on the equipment) shall not exceed the local airport's Height Restriction Zoning. Any Contractor involved in the project shall use the Notice Criteria Tool available at https://oeaaa.faa.gov/oeaaa/external/portal.jsp . If required, the Contractor shall file a 7460-1 Form with the Federal Aviation Administration (FAA). The form shall be required if the Contractor uses any equipment over 200' tall, or the equipment breaks a 100:1 slope from a public-use airport. This includes any trucks or equipment used during the construction of the project. The Project Sponsor shall verify clearance for permanent construction in the controlled zone from the Nebraska Department of Aeronautics (NDOA) and FAA. The Project Sponsor shall identify those contracts that shall require the special provision concerning the Contractor's responsibility to gain FAA and NDOA clearance for temporary encroachments due to construction operations. NDOR's Plans, Specification & Estimates (PS&E) / Contracts shall include the special provision in the appropriate project contracts. (Contractor)

V. Public Involvement/Project Coordination

Mitigation Measures

- Any written information that is dispersed to the community about this project must be translated into Spanish.
- For public meetings held in regard to this project, the written information at the meeting must be translated into Spanish and there must be a Spanish/English interpreter present. There should be sign-in sheets at the entrance to collect data, including racial/demographic data, on meeting participants, *though signing in or giving information at public meetings was always optional and not a requirement to participate*. Finally, there must be a clear notice posted in Spanish indicating that an interpreter is available.

7. CONCLUSION

This DEA has been prepared in accordance with the regulations of CEQ (40 CFR 1500–1508), as well as FHWA's implementing regulations (23 CFR 771.119 and 23 CFR 771.135). After reviewing and studying this DEA, FHWA has determined that the document adequately and accurately discusses the environmental issues and impacts of the proposed project. Based on the analysis to-date, adverse impacts are considered minor and can be mitigated.

A public hearing for the project will be scheduled. FHWA will make a determination based on the public hearing comments and the Final EA as to whether the project may be carried forward with a Finding of No Significant Impact, or whether an Environmental Impact Statement may be required.

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33 CFR 1251 et seq. Federal Pollution Control Act (Clean Water Act)

36 CFR 800. Protection of Historic Properties.

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40 CFR 1502. Environmental Impact Statement.

40 CFR 1503. Commenting.

40 CFR 1504. Predecision Referrals to the Council of Proposed Federal Actions Determined to be Environmentally Unsatisfactory.

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Appendix A List of Preparers

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LIST OF PREPARERS

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Appendix B Traffic Study

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FELSBURG HOLT & ULLEVIG
connecting and enhancing communities

November 26, 2013

MEMORANDUM

TO: Mr. Fred Liss
Platte County Highway Department

FROM: Mark Meisinger, PE, PTOE
Rick Haden
Felsburg Holt & Ullevig

SUBJECT: Columbus East 29th Avenue Viaduct
Project No. RRZ-71(33) Control No. 32190
FHU Reference No. 12-308

Felsburg Holt & Ullevig (FHU) has completed traffic operations analyses for the proposed East 29th Avenue Viaduct, in Columbus, Nebraska. The purpose of the proposed project is to improve efficiency of the County Road Network by reducing traffic congestion and delay, to improve safety by minimizing the potential for collisions, and to improve accessibility by providing a grade separated crossing in the area of East 29th Avenue and the mainline of the Union Pacific Railroad (UPRR). The East 29th Avenue crossing is located approximately 2,000 feet south of US Highway 30 and 3,000 feet north of East 8th Street. The main area that was analyzed spans from East 8th Street north to US-30 along East 29th Avenue. Historic industrial growth in the area from East 3rd Avenue to the Loup Power Canal was also analyzed to develop future traffic forecasts. The analyzed areas plus surrounding roadways are shown in **Figure 1**.

The analyses were completed at the following intersections:

- East 29th Avenue with US Highway 30
- East 29th Avenue with East 15th Street
- East 29th Avenue with East 8th Street
- ADM Gates B & C with East 8th Street, just east of East 29th Avenue

The analyses were completed for the following time periods:

- Existing (2013) weekday morning and evening peak hours
- Future (2040) weekday morning and evening peak hours

Analysis was done on all specified intersections for Existing and Future weekday morning and evening peak hours for five alternatives.

Study Area Traffic Characteristics

Train traffic on the existing double-track main line of the UPRR is approximately 70-80 trains per day in the study area. These trains are generally unit trains up to 135 cars (1.5 miles) in length traveling at speeds up to 70 miles per hour. Each of the crossings is thus blocked by the crossing

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gates for two minutes or greater while through trains travel through the corridor. Switching activity also occurs several times daily on the adjacent siding track south of the UPRR main line, from 3rd Avenue to East 44th Avenue, serving the adjacent industries. These slower moving trains can block the crossings for longer periods as they move rail cars in and out of adjacent industrial sidings. It is estimated that the East 29th Avenue crossing is blocked 2.5 to 3 hours per day.

The crossing blockages cause roadway traffic congestion, delays, and potential for vehicle crashes on East 29th Avenue, US Highway 30 and East 8th Street as vehicles stack at the crossing. East 29th Avenue experiences the greatest queuing since it serves as the primary entrance into the truck scales for the ADM Columbus Corn Processing, 800 feet south of the UPRR mainline. The plant and other adjacent industries are served by hundreds of trucks each day with peaks of over 30 trucks per hour counted using the East 29th Avenue crossing. Trucks bring raw materials and grain into the plants and deliver manufactured products to markets.

Highway-Rail Crossing Crash History

Crash records from the Federal Railroad Administration (FRA) for the highway-rail grade crossing of East 29th Avenue with the UPRR for the most recent 25-year period (1988-2013) are summarized in **Table 1** and provided in **Appendix A**. These records indicate that three vehicle-train collisions have occurred at the East 29th Avenue highway-rail grade crossing since 1988. The FRA crossing database had one reported vehicle-train collision (PDO in 1995) at the East 14th Avenue & UPRR highway-rail grade crossing.

Table 1. East 29th Ave & UPRR Crossing – Crash Data by year (1988-2013)

Year	Fatal	Injury	PDO	Total
2012	0	0	1	1
1995	0	0	1	1
1992	1	0	0	1
Total	**1**	**0**	**2**	**3**

Intersection Crash Analysis

Crash records from NDOR for the intersection of US 30 with East 29th Avenue are shown in **Table 2** for the most recent three-year period (2010-2012). These records were converted to crash rates per million entering vehicles (MEV) as shown in **Table 3**. The average crash rate for the intersection is 0.96 crashes per million entering vehicles (MEV), which is generally higher than the crash rates for other signalized intersections in Nebraska. Based on this comparison, crash records for the intersection indicate that this location far exceeds the average crash rates for similar signalized intersections, and justifies the need for intersection improvements.

Table 2. US Highway 30 & East 29th Avenue – Crash Data by Intersection (2010-2012)

Year	Fatal	Injury	PDO	Total
2010	1	2	3	6
2011	1	6	6	13
2012	0	0	3	3
Total	**2**	**8**	**12**	**22**

Table 3. US Highway 30 & East 29th Avenue – Crash Rates by Intersection (2010-2012)

Intersection	Crashes By Severity				Daily Traffic	3-Year (MEV)*	Crash Rate Per MEV*
	Fatal	Injury	PDO	Total			
US 30 & E 29th Ave	2	8	12	22	20,920	22.9074	0.96

*MEV = MILLION ENTERING VEHICLES

A summary of the crash history at the intersection of US 30 with East 29th Avenue is shown in **Table 4**. Detailed reviews of the crash history at the intersection indicates a pattern of right-turning and rear-end crashes due to right-turns off of US 30 originating from a shared through lane. Right-turning crashes represent 27% of the total crashes during this three-year period, and rear-end crashes comprise 32% of the total.

The two fatal crashes were rear-end crashes involving westbound semi-trucks on approach to the intersection. This is the first traffic signal in the westbound direction in the Columbus area, and it is 1.25 miles east of the next traffic signal in Columbus (East 11th Avenue). An advance warning system with warning signs and beacons have been deployed along US 30 on both the eastbound and westbound approaches to the intersection to alert drivers to the upcoming traffic signal at East 29th Avenue. Overall 62% of the crashes involved at least one semi-truck.

Table 4. Summary by Type (2010-2012)

CRASH PATTERN	2010	2011	2012	TOTAL
Right Angle	1	5	0	6
Left Turning Leaving	1	2	1	4
Rear-end	2	5	0	7
Sideswipe	2	0	0	2
Backing	0	0	1	1
N/A	0	1	1	2
Total	6	13	3	22

Existing (2013) Traffic Volumes

From NDOR and Platte County data, the current (2013) estimated traffic volume on East 14th Avenue is 790 vehicles per day (VPD) at the UPRR crossing and 1,710 north of the UPRR corridor, the traffic volume on East 29th Avenue is approximately 3,700 VPD, and the volume on East 44th Avenue is 850 VPD. The 2012 ADT on US Highway 30 near 3rd Avenue is 23,080.

Peak period turning movement counts were conducted by Platte County for both the AM and PM peak periods at the three study intersections in May and June of 2013. The morning peak hour was determined to be 6:30 AM to 7:30 AM, and the PM peak hour was 4:30 PM to 5:30 PM.

2013 Traffic Count Normalization

Archer Daniels Midland (ADM) provided 2012 and 2013 truck traffic counts for their Columbus plant, which is located directly south of the intersection of East 8th Street with East 29th Avenue. ADM indicated that a significant percentage of 2013 corn deliveries have been occurring by rail rather than truck due to a poor growing season in the immediate area. As such, the 2013 traffic counts conducted by Platte County needed to be normalized to 2012 levels to account for the variance in truck deliveries.

In order to add adequate 2013 truck volumes to the peak hour counts, 2012 yearly truck volumes (provided by ADM as shown in **Appendix B**), were analyzed. Monthly data for each year was

broken down into three categories: Trucks through the Main Gate (East 29th Avenue), Corn Trucks Crossing (Gate B), and Feed Trucks Crossing (Gate C). A daily volume for each gate was tabulated by dividing by the number of weekdays in that particular month. Based upon information provided by ADM, it was assumed that 95% of Corn Trucks arrive at the facility during weekdays between the hours of 6 AM and 6 PM; the daily volume was multiplied by 95% to achieve a 2013 Daily Corn Truck volume.

The average weekday truck volume for the first six months of 2013 was 710 trucks compared to 932 trucks for the same period in 2012. Therefore a factor of 1.31 (932/710) was applied to the 2013 manual truck counts to establish a base level representative of the truck activity in a normal year.

Exposure Factor

Typically, grade separations are considered when the exposure factor (ADT x daily train volume) exceeds 50,000. In 2013 the daily train volume along the UPRR corridor was estimated to be approximately 80 trains per day and the ADT of East 29th Avenue was estimated at 3,700 vpd. This equates to an exposure rating of 296,000.

The adjacent crossing at East 14th Avenue is also expected to be closed as part of the proposed East 29th Avenue viaduct project. In 2013, the ADT of the East 14th Avenue crossing was 790 vpd. Assuming all of the traffic from those two crossings is diverted to the viaduct, NDOR estimates that the viaduct ADT would be 4,545 vpd, which equates to an exposure factor of 363,600.

As such, it has been determined that a grade separation will greatly exceed NDOR's minimum exposure factor requirement at the East 29th Avenue highway-rail grade crossing.

Alternative Concepts

The East 29th Avenue Viaduct over the UPRR mainline presents an opportunity to evaluate the traffic operations and safety for various alternative concepts. Five alternative "build" concepts were developed for evaluation to determine the best configuration with regard to accommodating future traffic volumes, and providing safe and efficient traffic operations. The alternative concepts include the Current Configuration (No Build), Current Alignment (Alt. 1), Offset East Alignment (Alt. 2), Offset West Alignment (Alt. 3), Diagonal Offset East (Alt. 4), and New Alignment West (Alt. 5).

Current Configuration (No Build)

The first alternative is a no build option, which would leave the highway-rail grade crossing of East 29th Avenue with the UPRR tracks in place. This concept may need to include some modifications to East 29th Avenue to address pavement conditions. It would not address any safety or operational problems that may exist.

Current Alignment (Alt. 1)

This alternative uses the current alignment of East 29th Avenue for the viaduct. This concept includes the addition of a 500' eastbound right-turn lane and a 500' westbound left-turn lane at the signalized intersection of East 29th Avenue with US 30. The intersection of East 18th Street would be removed; East 18th Street would be re-aligned to run under the viaduct and parallel as a frontage road on the west side of East 29th Avenue, connecting with a new intersection approximately 500' south of US 30. The intersection of East 29th Avenue with East 15th Street / Valmont would be closed; frontage roads would be constructed on both the east and west sides of East 29th Avenue, connecting to a new four-way intersection at East 12th Street. The intersection of

East 29th Avenue with East 8th Street would be widened to accommodate an exclusive southbound left-turn lane. This alternative would require a detour to East 44th Avenue, or construction of a shoofly and temporary at-grade crossing of the UPRR tracks approximately 100 feet west of the current crossing.

Offset East Alignment (Alt. 2)
This alternative shifts East 29th Avenue approximately 100' east for the viaduct. This concept includes the addition of a 500' eastbound right-turn lane and a 500' westbound left-turn lane at the signalized intersection of East 29th Avenue with US 30. The intersection of East 18th Street would be removed; East 18th Street would be re-aligned to run under the viaduct and parallel as a frontage road on the west side of East 29th Avenue, connecting with a new intersection approximately 500' south of US 30. The intersection of East 29th Avenue with 15th Street / Valmont would be closed; frontage roads would be constructed on both the east and west sides of East 29th Avenue, connecting to a new four-legged intersection at East 12th Street. The intersection of East 29th Avenue with East 8th Street would be widened to accommodate an exclusive southbound left-turn lane.

The primary advantage of this configuration is the ability to construct the viaduct over the UPRR tracks while the existing crossing remains open to traffic. It also provides a perpendicular crossing of the railroad, which reduces the length of the bridge.

Offset West Alignment (Alt. 3)
This alternative shifts of East 29th Avenue approximately 100' west for the viaduct. This concept includes the addition of a 500' eastbound right-turn lane and a 500' westbound left-turn lane at the signalized intersection of East 29th Avenue with US 30. A new intersection would be constructed approximately 500' south of US 30; service roads would be constructed on both the east and west sides of East 29th Avenue to provide access for the businesses between the UPRR tracks and US 30. The intersection of East 18th Street would be removed. The intersection of East 29th Avenue with East 15th Street / Valmont would be closed; a frontage road would be constructed on the east and side of East 29th Avenue, running under the viaduct to Valmont and connecting to a new four-legged intersection at East 12th Street. The intersection of East 29th Avenue with East 8th Street would be widened to accommodate an exclusive southbound left-turn lane.

The primary advantage of this configuration is the ability to construct the viaduct over the UPRR tracks while the existing crossing remains open to traffic. It also provides a perpendicular crossing of the railroad, which reduces the length of the bridge and improves access to East 29th Avenue for the businesses between US 30 and the UPRR tracks.

After looking at the proposed geometrics and subsequent study area roadway network modifications associated with each alternative, we deduced that Alternatives 1, 2 and 3 would perform nearly identically at the three target intersections: East 29th Avenue with US Highway 30, East 29th Avenue with 15th Street, and East 29th Avenue with East 8th Street. For this reason, Alternatives 1, 2, and 3 were analyzed as one scenario.

Diagonal Offset East (Alt. 4)
This alternative stays on the existing alignment of East 29th Avenue until a point approximately 1500' south of US 30, where the road would turn east for a diagonal viaduct. The south side of the viaduct would touch down approximately 500' east of East 29th Avenue at a T-intersection with East 15th Street. East 15th Street would be re-constructed from the viaduct touchdown to East 29th Avenue, and East 29th Avenue would be re-constructed on alignment between East 15th Street and East 8th Street to complete the roadway system.

This concept includes the addition of a 500' eastbound right-turn lane and a 500' westbound left-turn lane at the signalized intersection of East 29th Avenue with US 30. A new intersection would be constructed approximately 500' south of US 30; service roads would be constructed on both the east and west sides of East 29th Avenue to provide access for the businesses between the UPRR tracks and US 30. The intersection of East 18th Street would be removed.

The primary advantage of this configuration is the ability to construct the viaduct over the UPRR tracks while the existing crossing remains open to traffic. It also provides minimal disruption to the existing intersections south of the UPRR tracks and improves access to East 29th Avenue for the businesses between US 30 and the UPRR tracks.

The primary disadvantage of this alternative is the 5% grade on the south viaduct approach to the T-intersection with East 15th Street where all vehicles must negotiate turns, including loaded trucks. This alternative also breaks the continuity and reduces the efficiency of the county road network by adding a series of turns between the viaduct and existing E. 29th Avenue.

New Alignment West (Alt. 5)
This alternative shifts the location of the viaduct to a new roadway approximately 2,000' west of East 29th Avenue. The new roadway would extend from US 30 to East 8th Street. A new signalized intersection would be provided with US 30, with a 500' eastbound right-turn lane and a 500' westbound left-turn lane, and frontage roads to connect the existing businesses on the north and south side of US 30. This concept would close the East 29th Avenue highway-rail grade crossing with the UPRR tracks, but otherwise East 29th Avenue would remain in its existing configuration north of East 15th Street.

East 12th Street would be reconstructed on alignment between the new road and East 29th Avenue. East 29th Avenue would be re-constructed on alignment between 15th Street and East 8th Street to complete the roadway system. Exclusive left-turn lanes would be provided on East 29th Street on the northbound approach at East 12th Street and the southbound approach at East 8th Street to accommodate turning movements.

The primary advantage of this configuration is the ability to construct the viaduct over the UPRR tracks while the existing crossing remains open to traffic and provides a perpendicular crossing of the railroad.

The primary disadvantage of this alternative is the span to allow for the potential future siding to Valmont which increases the length of the bridge structure and shifts the touchdown point further south. This alternative also adds several turning movements between the viaduct and existing E. 29th Avenue.

Traffic Operations Analysis Methodology
Traffic operations were analyzed for the study intersections using procedures documented in the *Highway Capacity Manual*, Transportation Research Board, 2010. From the analyses, a key measure or "level of service" rating of the traffic operational condition was obtained. In general, level of service (LOS) is a qualitative assessment of traffic operational conditions within a traffic stream in terms of the average stopped delay per vehicle at a controlled intersection. Levels of service are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, and LOS F representing a breakdown of traffic flow with noticeable congestion and delay. Unsignalized, or stop sign controlled, intersection capacity analyses

produce LOS results for each movement which must yield to conflicting traffic at the intersection. **Table 2** summarizes LOS criteria for intersections.

Table 5. Level of Service (LOS) Criteria

Level of Service	Average Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Stop Sign / Roundabout Controlled Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

The Synchro traffic analysis software program was utilized to analyze traffic operations at the study intersections.

Existing (2013) Traffic Operations Analysis Results

The 2013 existing traffic volumes shown take into account the previously mentioned ADM truck count normalization procedure. Turning movement counts for Alternatives 1, 2, and 3 were used as a baseline to develop counts for Alternative 4 and Alternative 5.

With each of the Alternatives, the highway-rail grade crossing of the UPRR at East 14th Avenue would be closed. Traffic currently using this crossing was reassigned to East 29th Avenue to utilize the viaduct. All of the Alternatives were analyzed for the same morning and evening peak hours. The truck percentages for the study area roadways can be seen on the capacity analyses worksheets in **Appendix C**.

Figures 2 and 3 show the turning movement counts, lane geometry, traffic control, and levels of service for existing 2013 traffic conditions with Alternatives 1, 2, and 3. The signalized intersection of US 30 with East 29th Avenue currently operates at LOS C or better in each peak period, and all critical movements at the other study intersections operate at LOS B or better. Capacity analysis worksheets for existing traffic conditions are included in the **Appendix C**.

Figures 4 and 5 display turning movement counts, lane geometry, traffic control, and levels of service for 2013 Alternative 4 traffic conditions. Volumes taken from Alternatives 1, 2, and 3 were used, redistributed to fit the Alternative 4 alignment, and then analyzed. The main signalized study intersection at East 29th Avenue with US-30 is expected to operate at LOS B or better in each peak period in 2013, and all critical movements are expected to operate at LOS B or better in each peak period.

Figures 6 and 7 display turning movement counts, lane geometry, traffic control, and levels of service for 2013 Alternative 5 traffic conditions. Volumes taken from Alternatives 1, 2, and 3 were used, redirected to fit the Alternative 5 alignment, and then analyzed. Alternative 5 includes a new alignment west of East 29th Avenue, so there are additional study intersections associated for this

alternative. Both signalized study intersections are expected to operate at LOS A or better in each peak period in 2013, and all critical movements at the other study intersections are expected to operate at LOS B or better.

2040 Baseline Traffic Volumes

Historic NDOR ADT counts were compiled for the study area, as shown **Appendix B**. Traffic projections from NDOR Project RD-30-5(1044) (resurfacing US 30 between 35th Avenue and East 6th Avenue) were also obtained. From the project public information flyer, NDOR estimates ADTs on US 30 to be 24,255 in 2014 and 26,715 in 2024, with 7% heavy trucks.

Based upon the NDOR projections and historic ADT counts on US 30, and information provided by ADM, it was estimated that the study area has a 1.0% annual growth rate. Estimated peak hour turning movements for 2040 were developed for the study area based on guidelines documented in NCHRP Report 255. The resultant 2040 Baseline traffic volumes are reported in **Figure 8**.

Figure 8 displays forecasted traffic turning movement volumes for 2040 Baseline traffic conditions. This figure is included to establish a baseline to show the traffic in the area if no additional industrial development occurs, and existing traffic levels increase based on a straight-line background growth rate. This is the figure that is later combined with trip generation for industrial growth to obtain total traffic volumes for 2040.

Future Traffic Forecast Methodology - Trip Generation

In order to project future traffic volumes along the East 29th Avenue corridor historic growth and expansion in the east industrial area was reviewed over the 17-year period of 1994-2011. An average of 105,000 square feet per year of expansion or new construction was noted from historic aerial photos.

Trip generation rates from the Institute of Transportation Engineers' (ITE) *Trip Generation*, Eighth Edition, 2008, were utilized to estimate traffic generated by continued industrial development in the study area. Industrial development was assumed on both the north (Area 1) and south (Area 2) sides of the Union Pacific Railroad between East 14th Avenue and East 29th Avenue. Area 1 consists of 824,000 SF of potential industrial park space remaining. Area 2 would accommodate 2,141,500 SF of industrial park space. The two separate areas as represented on **Figures 9 and 10.**

Tables 6 and 7 summarize the estimated vehicle-trips that would be generated by the continued development in the area to the year 2040. As shown below, it is estimated that the Area 1 will generate approximately 4,790 vehicle-trips per day with a total of 500 and 673 vehicle-trips during the AM and PM peak hours, respectively. It is estimated that the Area 2 will generate approximately 11,364 vehicle-trips per day with a total of 1,063 vehicle-trips during the AM peak hour and 1,701 vehicle-trips during the PM peak hour.

Table 6. 2040 Area 1 of Potential Industrial Development - Trip Generation

Land Use Description	ITE Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Industrial Park	130	824 KSF	4,790	410	90	500	141	532	673
2040 PROJECT TOTAL TRIPS			**4,790**	**410**	**90**	**500**	**141**	**532**	**673**
KSF = 1,000 square feet									

Table 7. 2040 Area 2 of Potential Industrial Development - Trip Generation

Land Use Description	ITE Code	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Industrial Park	130	2141.5 KSF	11,364	872	191	1,063	357	1,344	1,701
2040 PROJECT TOTAL TRIPS			**11,364**	**872**	**191**	**1,063**	**357**	**1,344**	**1,701**
KSF = 1,000 square feet									

Trip Distribution and Traffic Assignment

The estimated distribution of site generated traffic was based upon existing traffic patterns and projected growth in the project area. Trip distribution scenarios have been developed for 2040 traffic conditions.

The following distribution percentages were used to assign site generated vehicle-trips to the adjacent roadway network for 2040 traffic conditions in the study area. Different percentages were assigned to cars and trucks:

Cars

- 50% oriented to/from the west via US-30 in the AM & PM
- 30% oriented to/from the east via US-30 in the AM & PM
- 19% oriented to/from the west via East 8th Street in the AM & PM
- 1% oriented to/from the east via East 8th Street in the AM & PM

Trucks

- 33% oriented to/from the west via US-30 in the AM & PM
- 60% oriented to/from the east via US-30 in the AM & PM
- 1% oriented to/from the west via East 8th Street in the AM & PM
- 6% oriented to/from the east via East 8th Street in the AM & PM

Area 1 trips were all directed to and departed from a point on East 14th Avenue north of the railroad tracks specified to be the Area 1 entrance, as shown on **Figure 9**. Area 2 trips were directed to and departed from a point on East 8th Street specified to be the Area 2 entrance, as shown on **Figure 10**.

To determine volumes for Area 2, it was assumed that of all trips entering the study area from intersections along US-30 en route to the proposed development, 75% would take the “short trip” and travel immediately south at either East 3rd Avenue or East 29th Street towards the specified entrance, and 25% would take the “long trip” and continue along US-30 and then head southbound along either East 3rd Avenue or East 29th Avenue towards the entrance point. The same assumptions were used for vehicles leaving the development, with 75% taking the “short trip” to their departure point along US-30 and 25% taking the “long trip” to their departure point.

Trips from Area 1 and Area 2 were combined and are shown on **Figure 11** to show all trip generation for the proposed industrial park development west of East 29th Avenue. The trip distribution patterns identified above are graphically shown on **Figure 11**. The 2040 site generated traffic volumes identified in Tables 1 and 2 were assigned to the study intersections according to these distribution patterns. The resulting 2040 total traffic volumes are provided on **Figure 12**.

Future (2040) Traffic Operations Analysis Results

Figures 12 and 13 display lane geometry, traffic control, and levels of service for 2040 Total Traffic Alternatives 1, 2, and 3. Each of the study intersections are expected to operate at LOS C or better in each peak period in 2040, and most critical movements are expected to operate at LOS C or better, as well. Under stop control, north-south movements at the intersection of East 29th Avenue with East 8th Street are expected to operate at LOS E or F for both peak periods in 2040. Under traffic signal control, the intersection would operate at LOS B for both peak periods. Capacity analysis worksheets for 2040 traffic conditions are included in the **Appendix C**.

Figures 14 and 15 display lane geometry, traffic control, and levels of service for 2040 Total Traffic-Alternative 4 traffic conditions. The main study intersection at East 29th Avenue with US-30 is expected to operate at LOS C or better in each peak period in 2040, and most critical movements are expected to operate at LOS C or better, as well. Under stop control, the north-south movements at the intersection of East 29th Avenue with East 8th Street are expected to operate at LOS E or F for both peak periods in 2040. Under traffic signal control, the intersection would operate at LOS B for both peak periods.

Figures 16 and 17 display lane geometry, traffic control, and levels of service for 2040 Total Traffic-Alternative 5 traffic conditions. Both signalized study intersections are expected to operate at LOS B in each peak period in 2040, and all critical movements are expected to operate at LOS C or better.

Alternative traffic control arrangements at the intersection of East 29th Avenue with East 8th Street were considered as part of the analysis procedure. It was found that when analyzed as a four-way stop, all turning movements are expected to perform at LOS C or better, besides the eastbound left-turn movement during the PM peak which is expected to perform at LOS F. When the intersection is changed to a two-way stop for eastbound/westbound East 8th Street, turning movements perform at LOS C or better, besides the eastbound left-turn during the AM and PM peaks, which perform at LOS E and F, respectively. Operations at the intersection of East 8th Street with East 29th Avenue should be monitored to determine if traffic signalization is appropriate at a future date depending on area industrial development.

Auxiliary Turn Lane Lengths

An evaluation of auxiliary turn lane lengths was performed at the study intersections to determine vehicle storage requirements with 2040 traffic conditions. The expected 95th percentile queue lengths according to the Synchro analyses are shown in **Table 8**.

As previously mentioned, Alternatives 1, 2 and 3 would perform nearly identically when analyzing the three study intersections: East 29th Avenue with US Highway 30, East 29th Avenue with East 15th Street, and East 29th Avenue with East 8th Street. As such, Alternatives 1, 2, and 3 were analyzed as one scenario. Alternatives 4 and 5 were analyzed independently as many of the intersection locations were shifted and lane arrangements were different from Alternatives 1, 2, and 3.

As part of the design project, storage bays should be provided to accommodate these expected queues for 2040 traffic conditions. In addition to vehicle storage, standard tapers should be provided on all turn lanes. It should be noted that minimum turn lane storage lengths are reported, and NDOR design standards should be followed to determine design turn lane lengths along US 30. County standards should be followed to determine design turn lane lengths along other roadways.

Table 8. 95% Queue Length Summary – 2040 AM / PM Peak Hour

Location	Critical Movements	95% Queue Length (ft)		
		Alts. 1, 2, & 3	Alt. 4	Alt. 5
East 29th Ave & US 30	NB Left-Turn	90* / 220*	70* / 190*	35 / 95
	NB Thru/RT	85* / 215*	70* / 195*	35 / 50
	EB Right-Turn	105 / 0*	55 / 0	35 / 0
	WB Left-Turn	230 / 115*	125 / 55	25 / 25
East 29th Ave & 12th St / 15th St	SB Left-Turn	25 / 25	NA	NA
	EB Shared	25 / 25	25 / 65**	NA
	WB Left-Turn	25 / 25	NA	25 / 25
	WB Thru/RT	25 / 25	0 / 0	NA
East 29th Ave & 8th St	SB Left-Turn	25 / 35	25 / 35	25 / 25
	SB Thru/RT	55 / 50	60 / 50	25 / 25
	NB Shared	45 / 40	50 / 40	25 / 25
	WB Shared	50 / 85	55 / 85	0 / 0

* dual turn lane
**shared lane

Viaduct Cross Section

Based upon the 2040 ADT projections and potential industrial development, East 29th Avenue is projected to carry approximately 13,500 vpd on the viaduct over the UPRR. The viaduct is planned to be approximately 2,000 feet long, with approach and descent grades of up to a maximum of 5% in both the northbound and southbound directions. About 125 feet of the viaduct will be at the maximum grade of 5% on either side of the vertical crest.

Based on information from the 2011 AASHTO Green Book, heavy trucks are able to accelerate from a stop to a speed of 35 MPH in approximately 500 feet. Assuming an average grade of 2%, trucks entering East 29th Avenue at either the 12th Street intersection (south touchdown) or the 18th Street intersection (north touchdown) would need approximately 1,000 feet to accelerate from a stop to the proposed speed limit of 35 MPH. The Green Book also indicates that climbing lanes or passing lanes are not feasible in situations with truck running speeds in the 25-40 MPH range, and with maximum grades of less than 750 feet. Accelerating trucks would not be expected to cause unreasonable delays for other vehicles; additionally vehicles passing accelerating trucks would likely have to stop at the intersections of East 29th Avenue with either East 8th Street or US 30. As such it was determined that acceleration lanes are not necessary.

Based upon the truck acceleration analyses and the traffic analyses, it is recommended that the proposed viaduct should be constructed with a 52-foot cross-section, providing one 12-foot through lane in both the northbound and southbound directions, a center lane for left turning movements, and 8-foot shoulders on both sides. East 29th Avenue would then widen to accommodate the recommended lane geometry at the intersections with East 8th Street and US 30.

Conclusions:

1. Based on these analyses, any of the five alternative concepts are expected to operate with satisfactory traffic operations under year 2040 traffic conditions with a three lane overpass and the intersection lane configurations shown in **Figures 13, 15, and 17**.
2. For each alternative, each signalized study intersection is expected to operate at LOS C or better in both the AM and PM peak periods in 2040. With recommended improvements, all critical movements are expected to operate at LOS C or better in the AM peak period and LOS D or better in the PM peak period with one exception.
3. Operations at the intersection of East 8th Street with East 29th Avenue should be monitored to determine if traffic signalization is appropriate at a future date depending on area industrial development.
4. Alternative 4 would have a 5% grade on the south viaduct approach to the T-intersection with East 15th Street where all vehicles must negotiate turns, including loaded trucks. This alternative also breaks the continuity and reduces the efficiency of the county road network by adding a series of turns between the viaduct and existing E. 29th Avenue.
5. Alternative 5 also adds indirect travel and several turning movements between the viaduct and existing E. 29th Avenue.

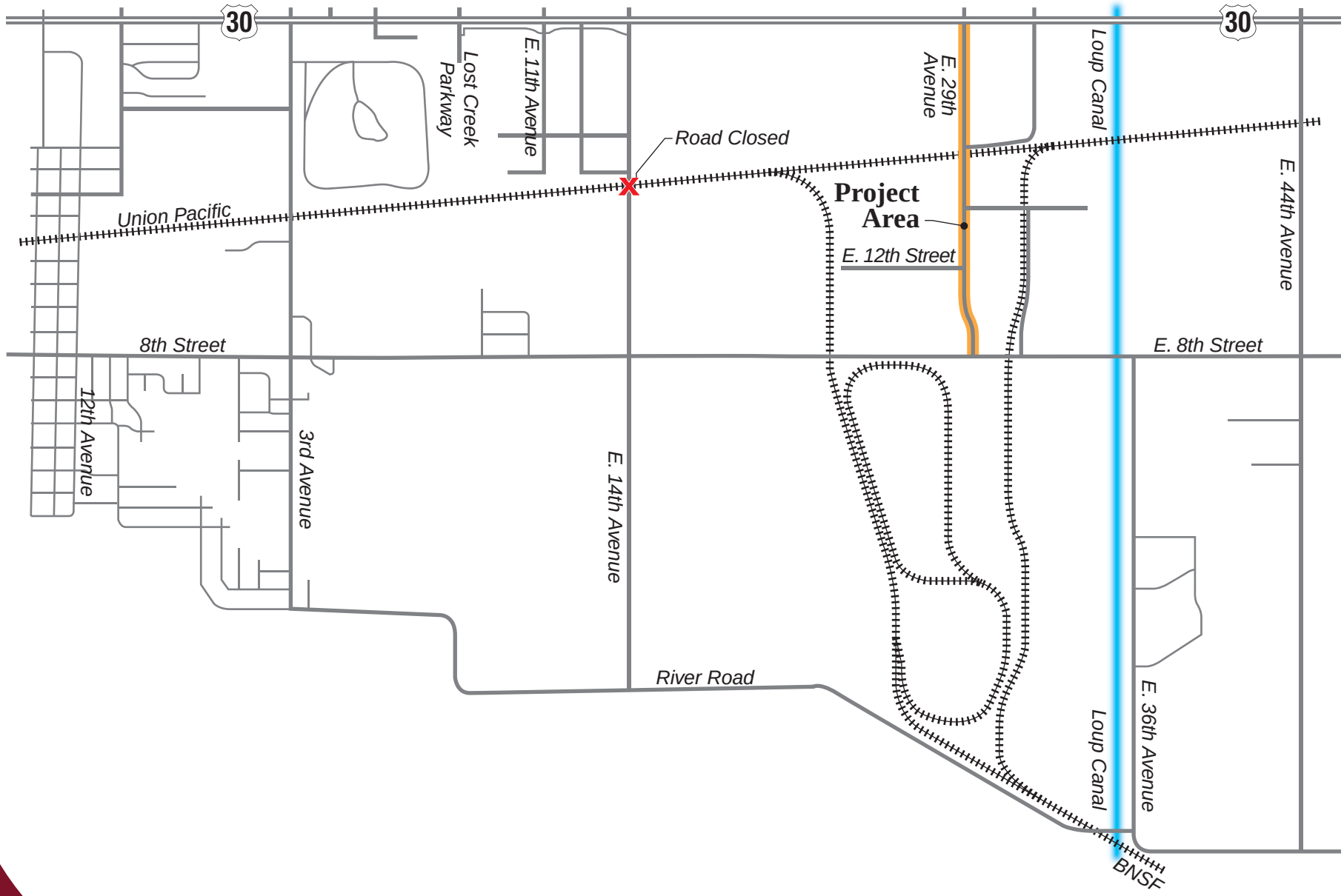
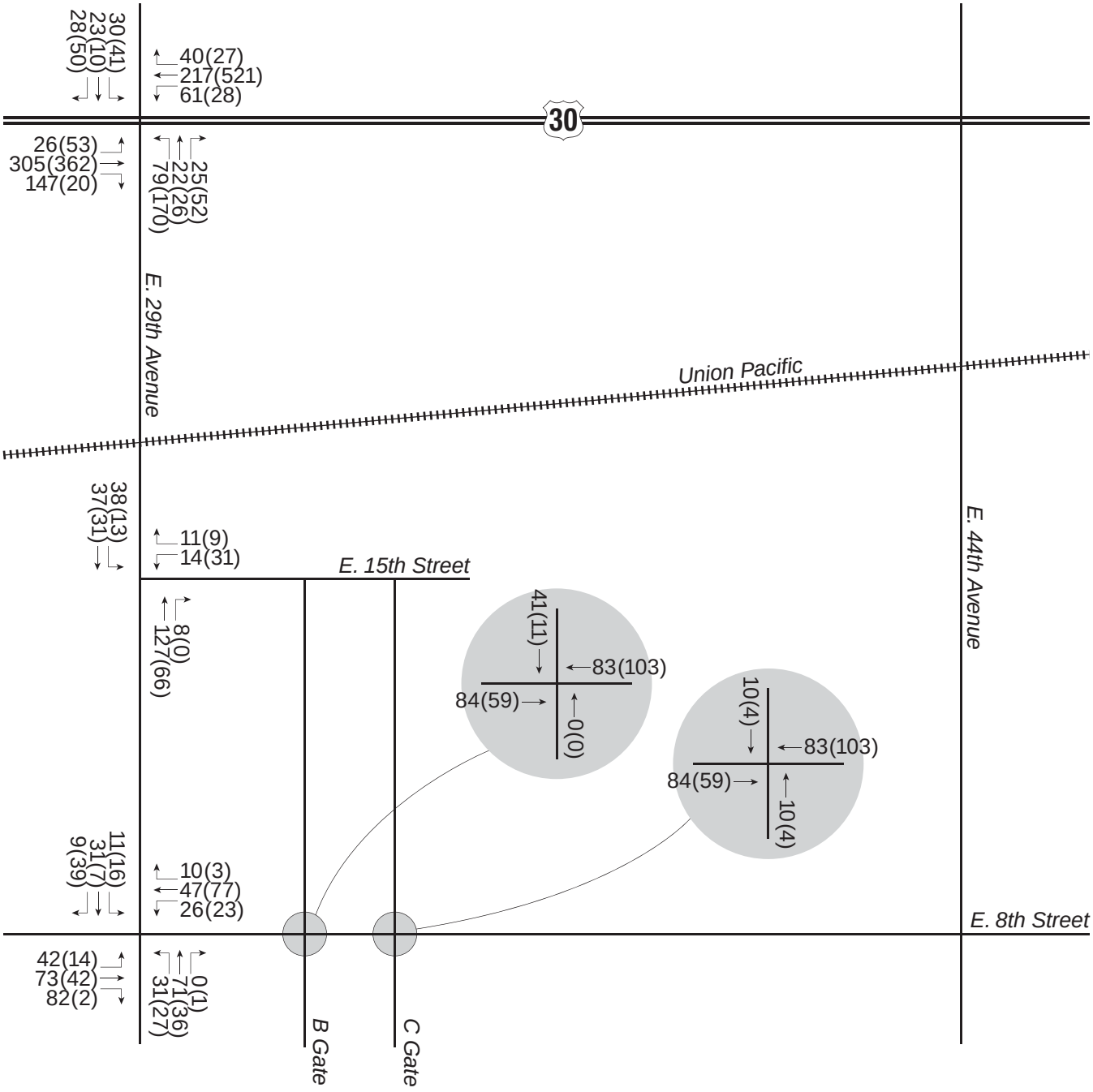


Figure 1
Vicinity Map

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

Figure 2
2013 Existing Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH

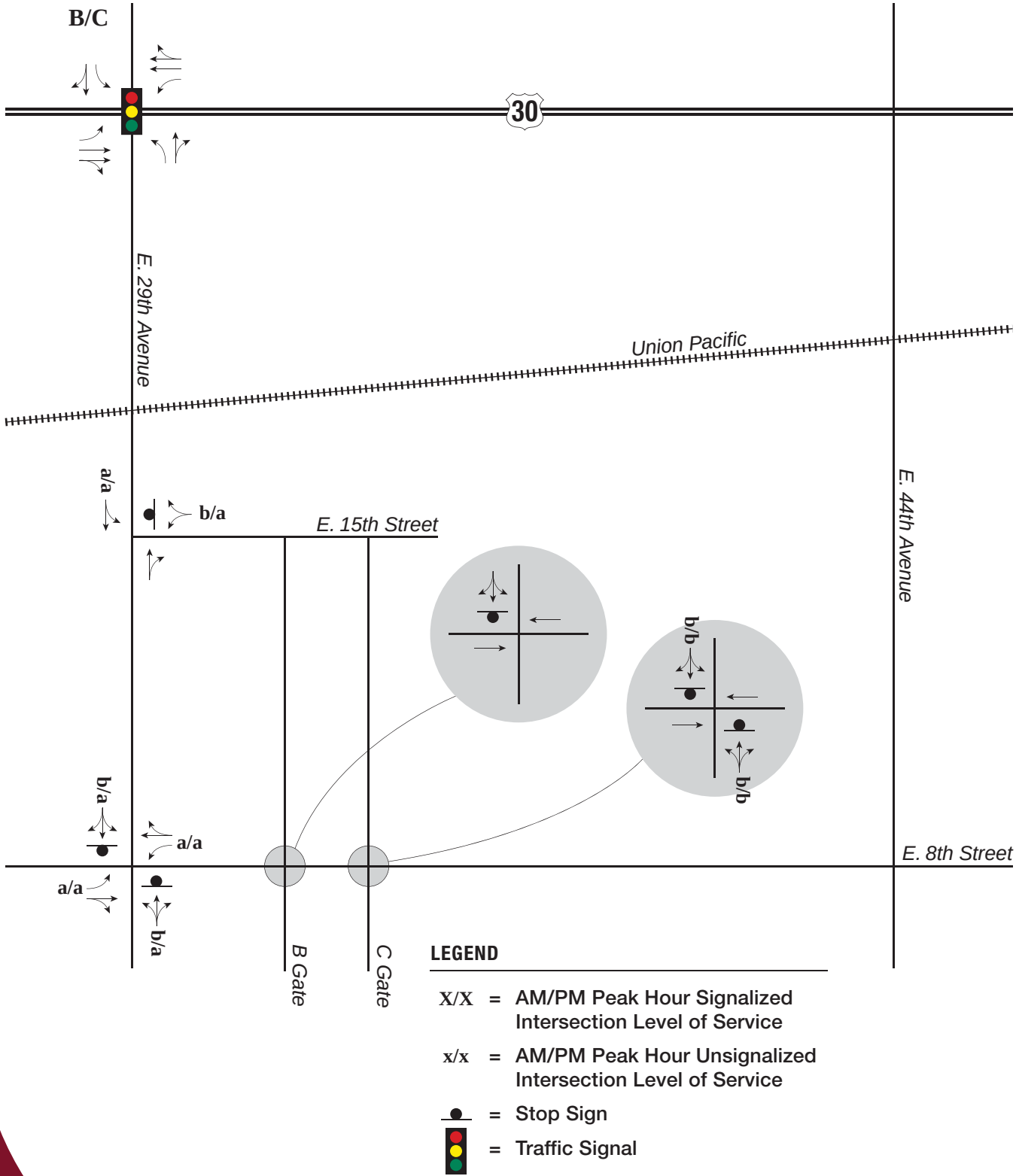
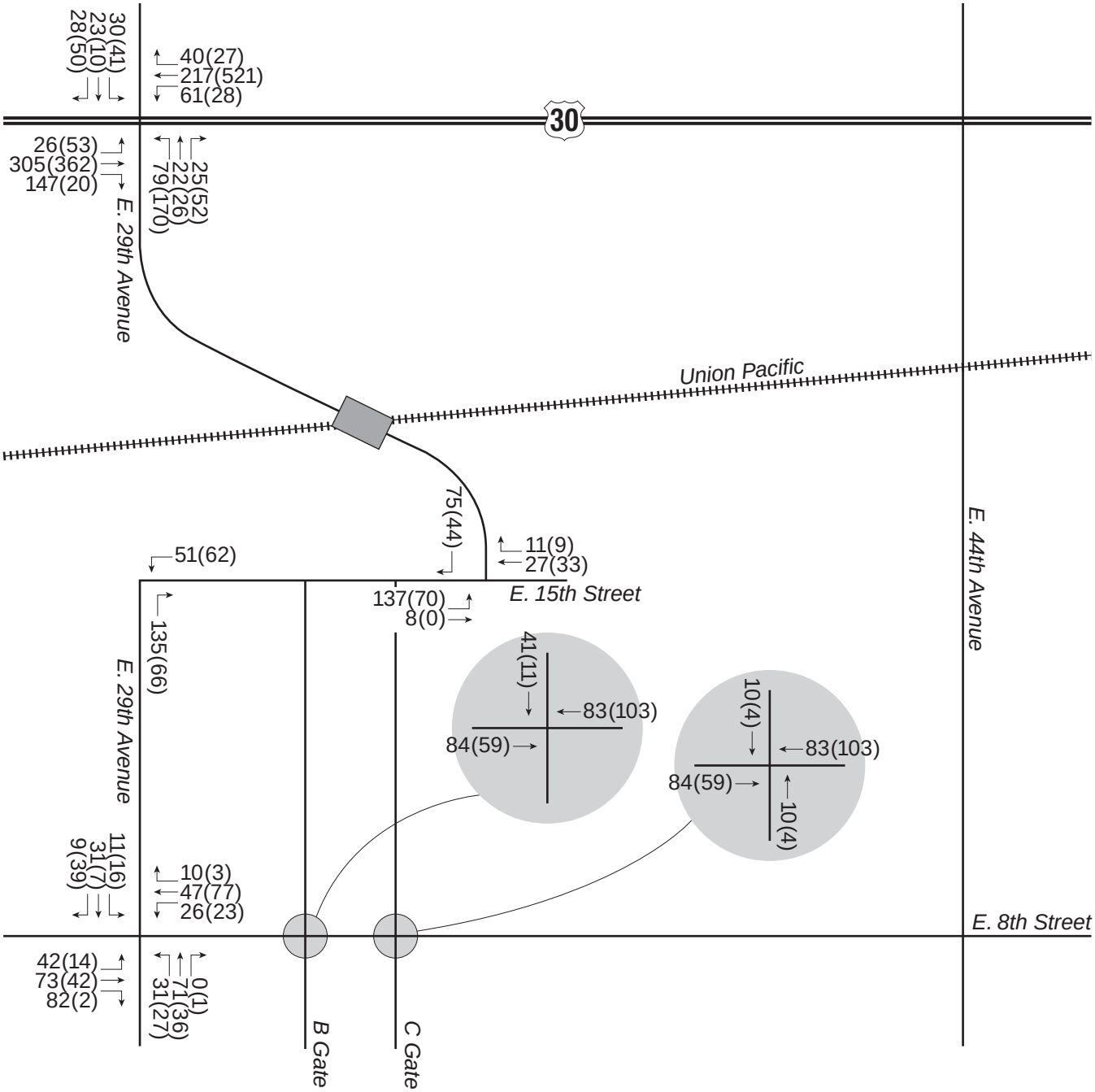


Figure 3
2013 Existing Levels of Service

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

Figure 4
Alternative 4
2013 Existing Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH

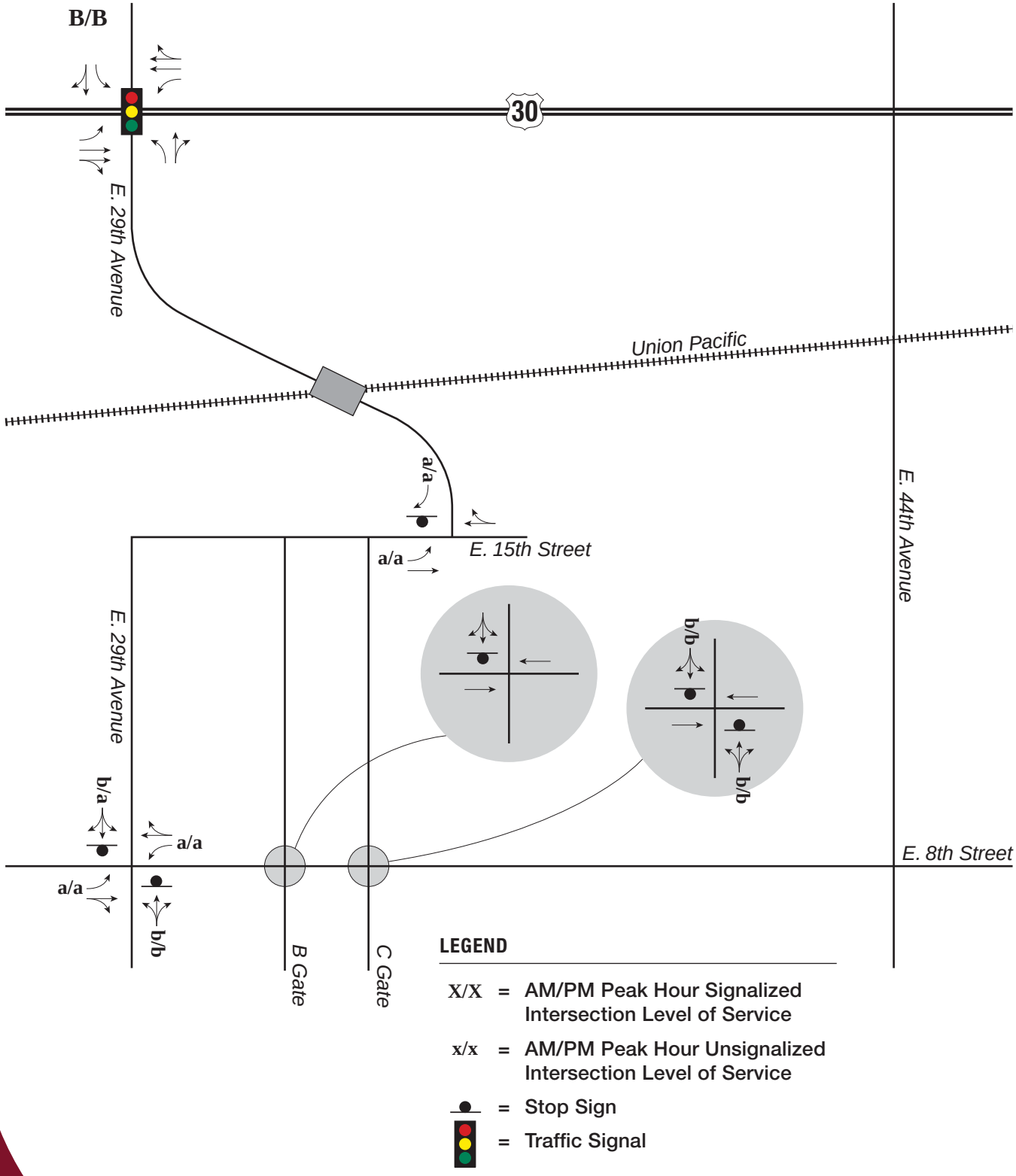
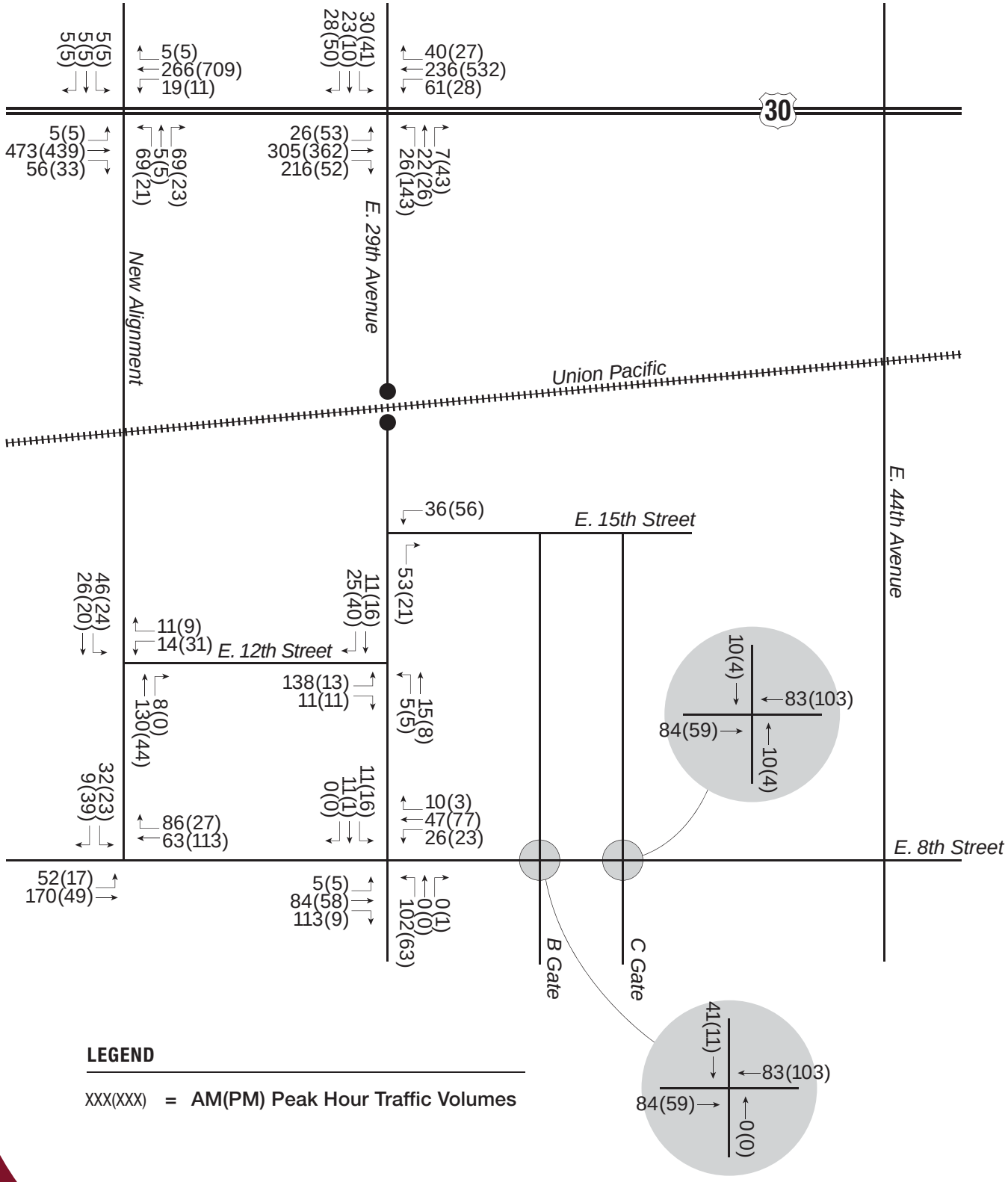


Figure 5
Alternative 4
2013 Existing Levels of Service

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

XXX(XXX) = **AM(PM) Peak Hour Traffic Volumes**

Figure 6
Alternative 5
2013 Existing Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH

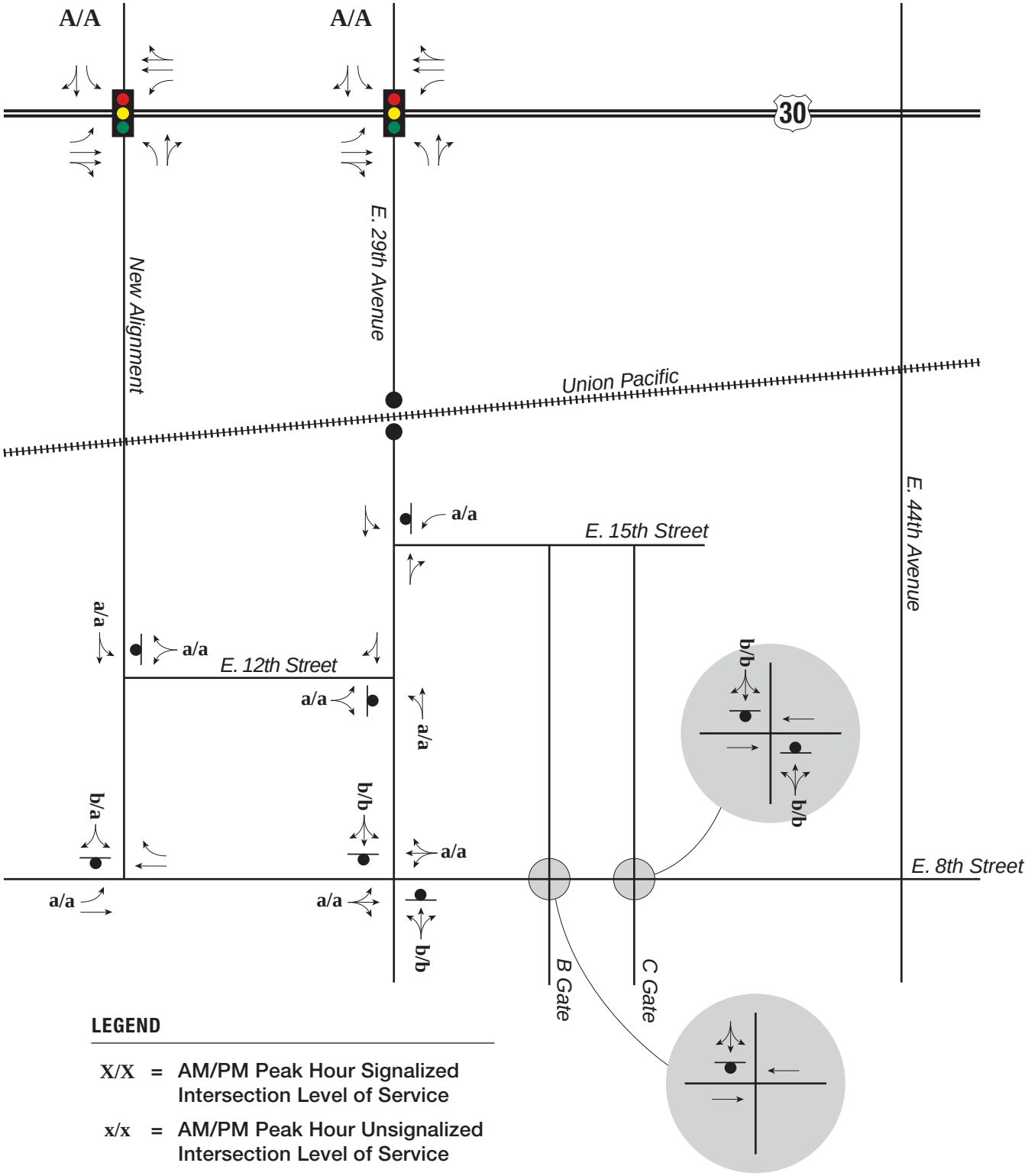
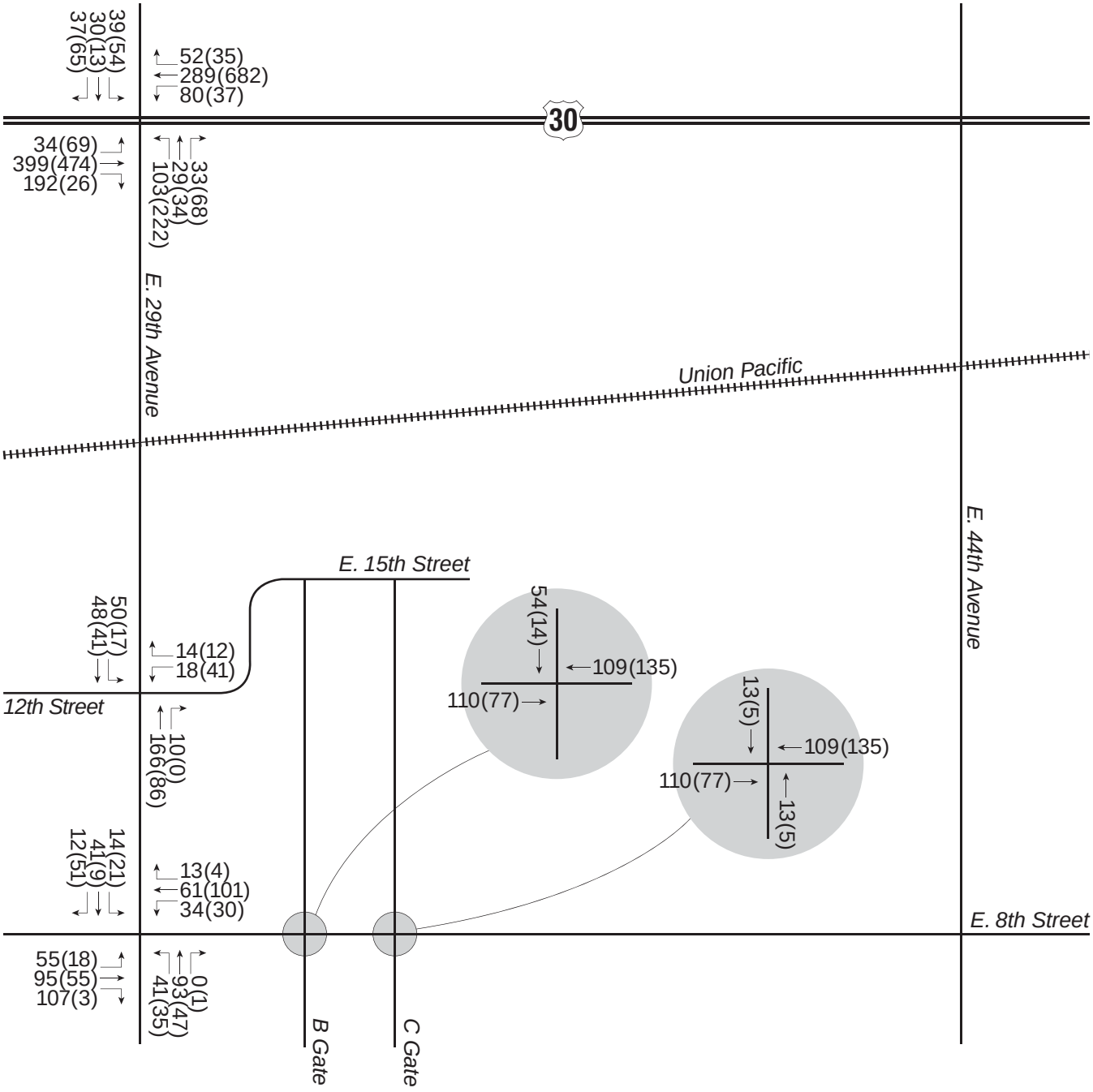


Figure 7
Alternative 5
2013 Existing Levels of Service

FELSBURG HOLT & ULLEVIG

NORTH



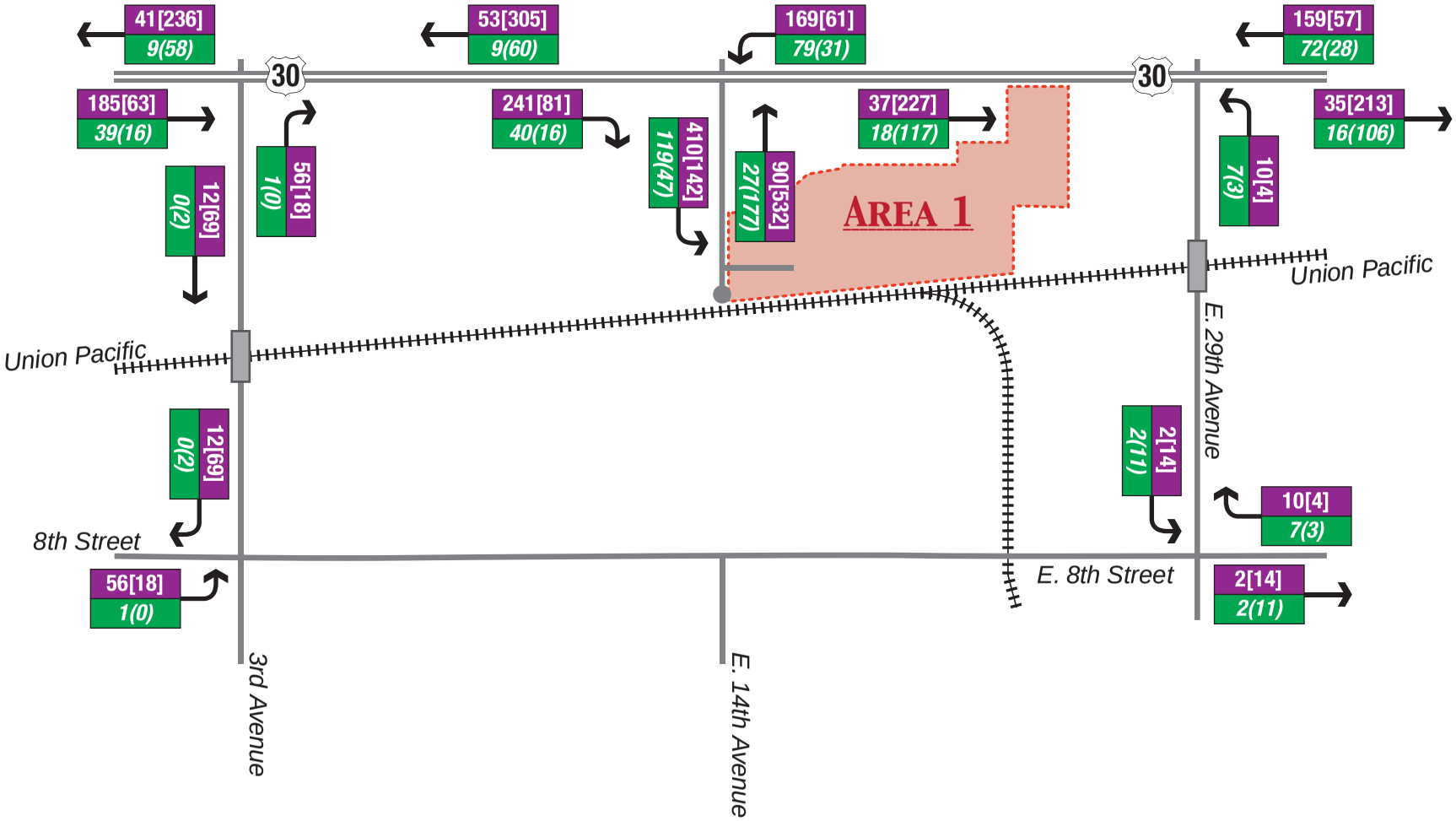
LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

Figure 8
2040 Baseline Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

= Existing Undeveloped Industrial Ground

XXX[XXX] = AM Total[PM Total]

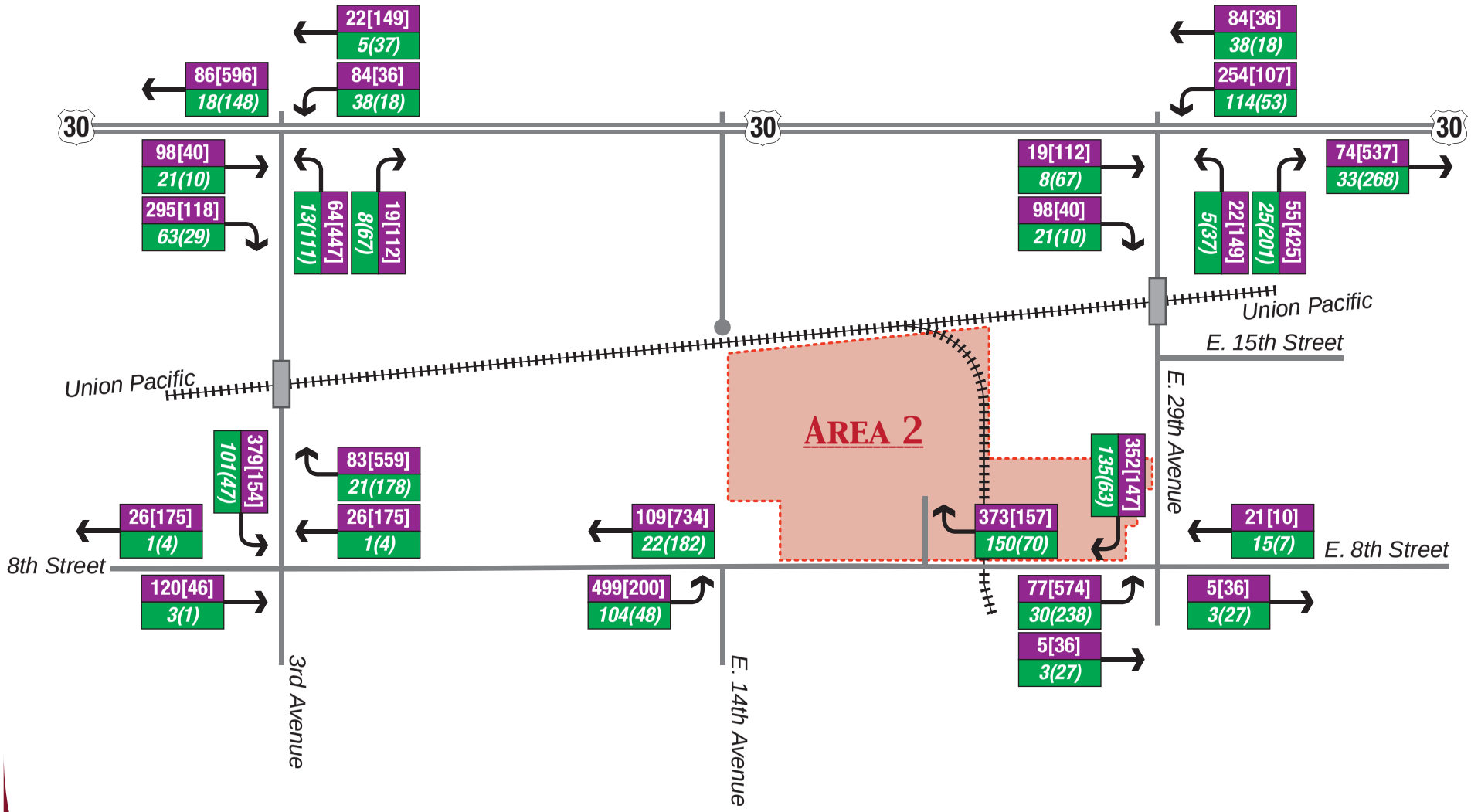
XXX(XXX) = AM Trucks(PM Trucks)

Figure 9

Area 1 Trip Generation

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

= Existing Undeveloped Industrial Ground

XXX[XXX] = AM Total[PM Total]

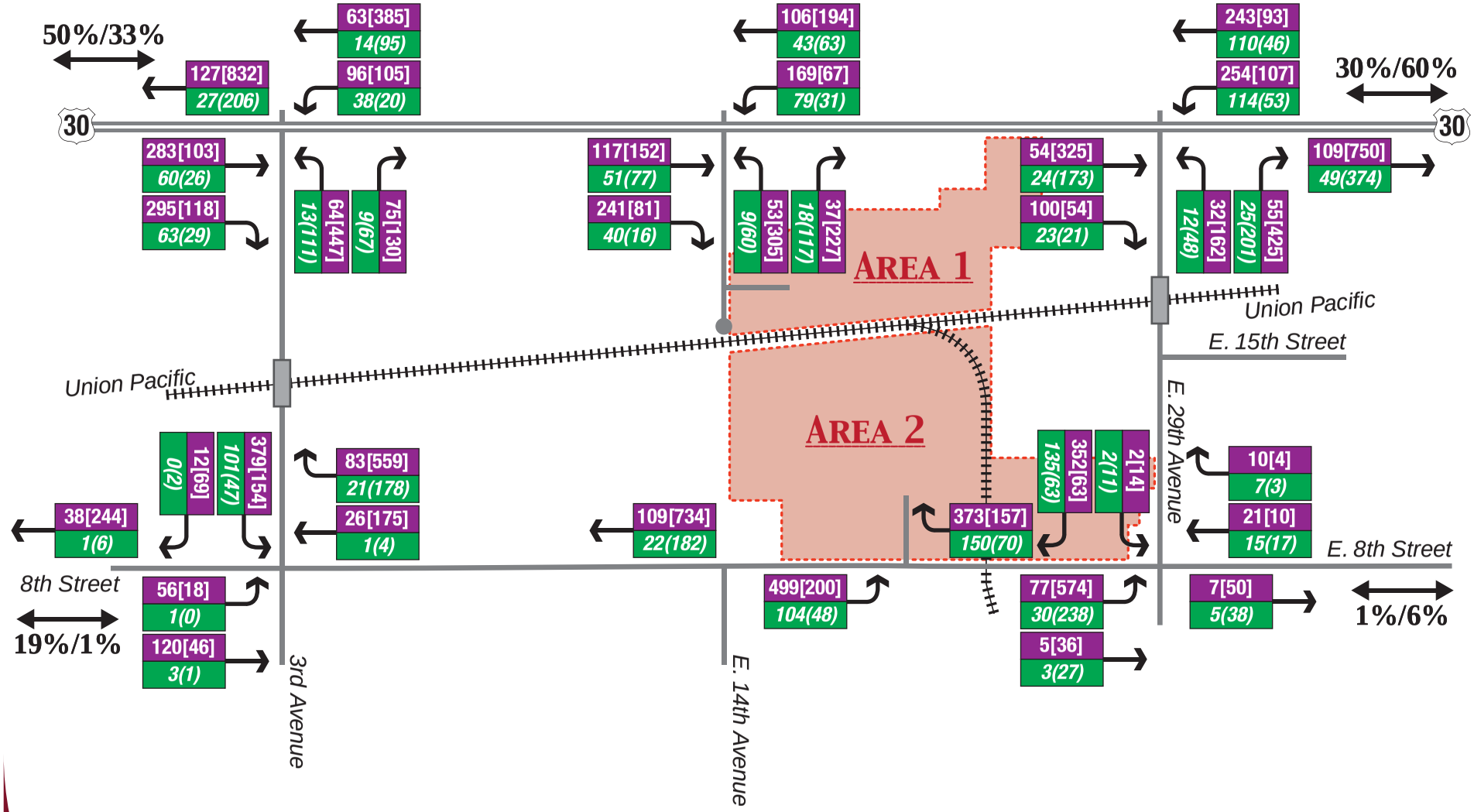
XXX(XXX) = AM Trucks(PM Trucks)

Figure 10

Area 2 Trip Generation

FELSBURG HOLT & ULLEVIG

NORTH



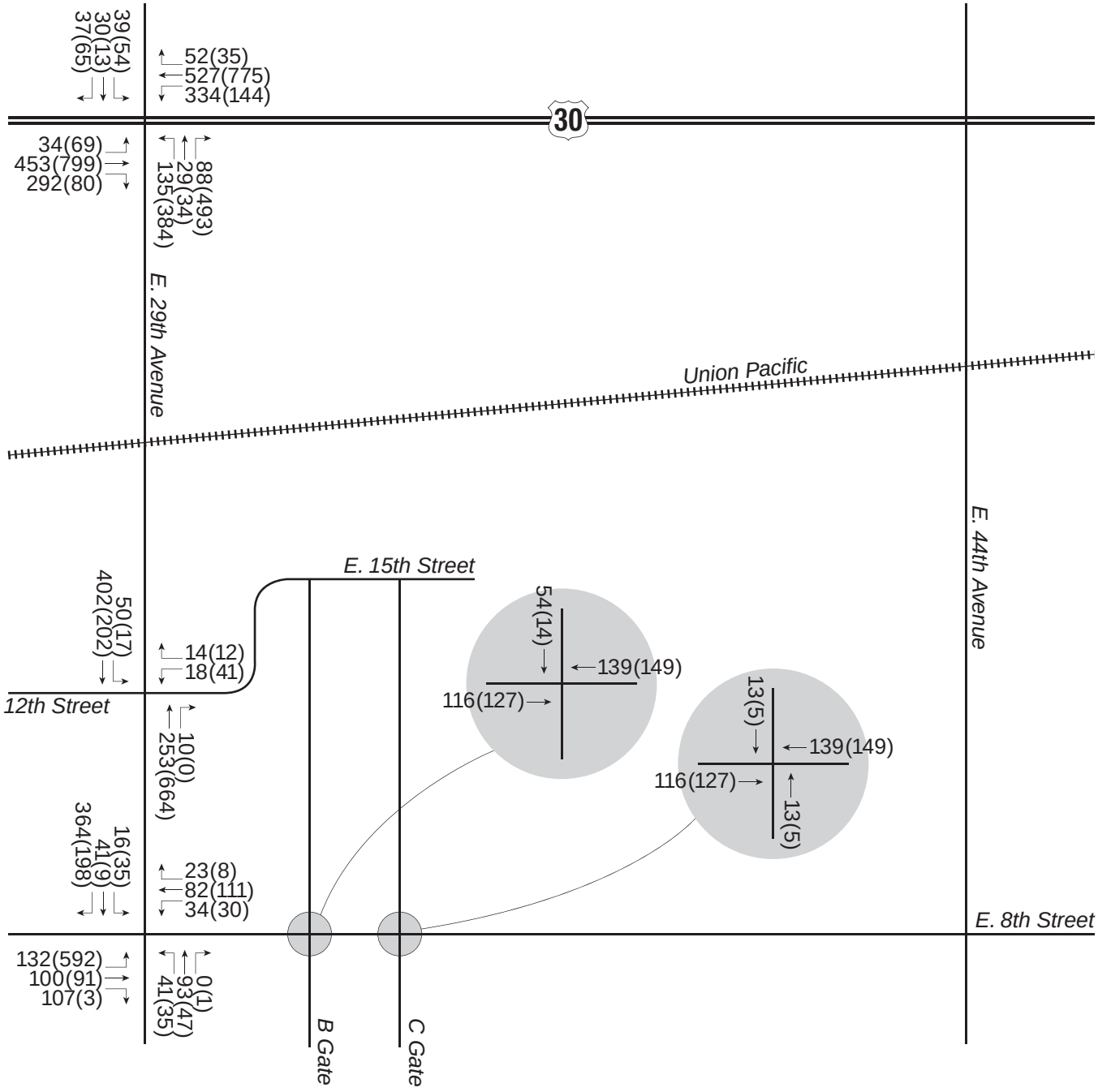
LEGEND

	=	Existing Undeveloped Industrial Ground
XXX[XXX]	=	AM Total[PM Total]
XXX(XXX)	=	AM Trucks(PM Trucks)
XX%/XX%	=	Cars/Trucks Distribution

Figure 11
Total Area Trip Generation

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

Figure 12
2040 Total Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH

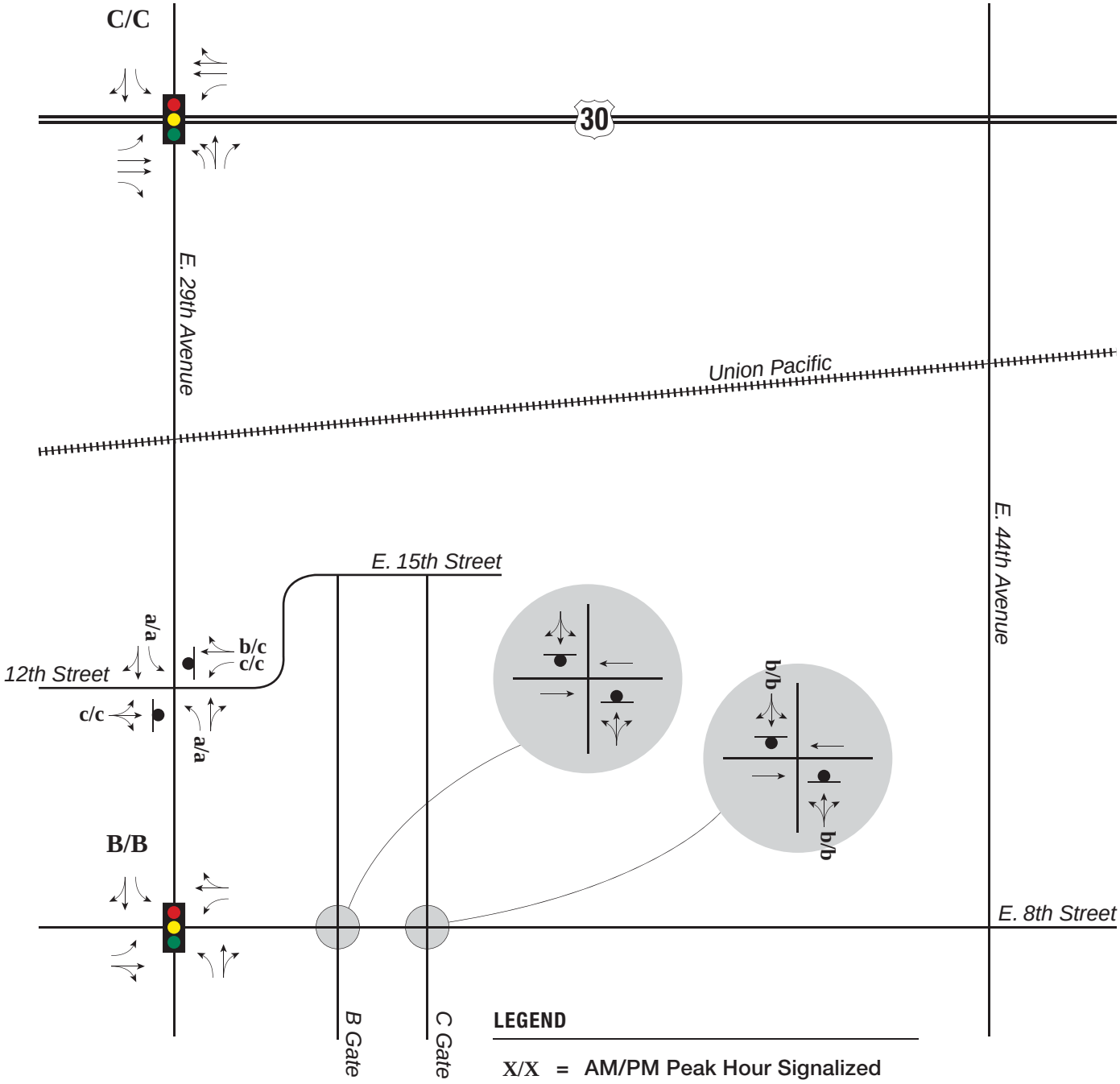
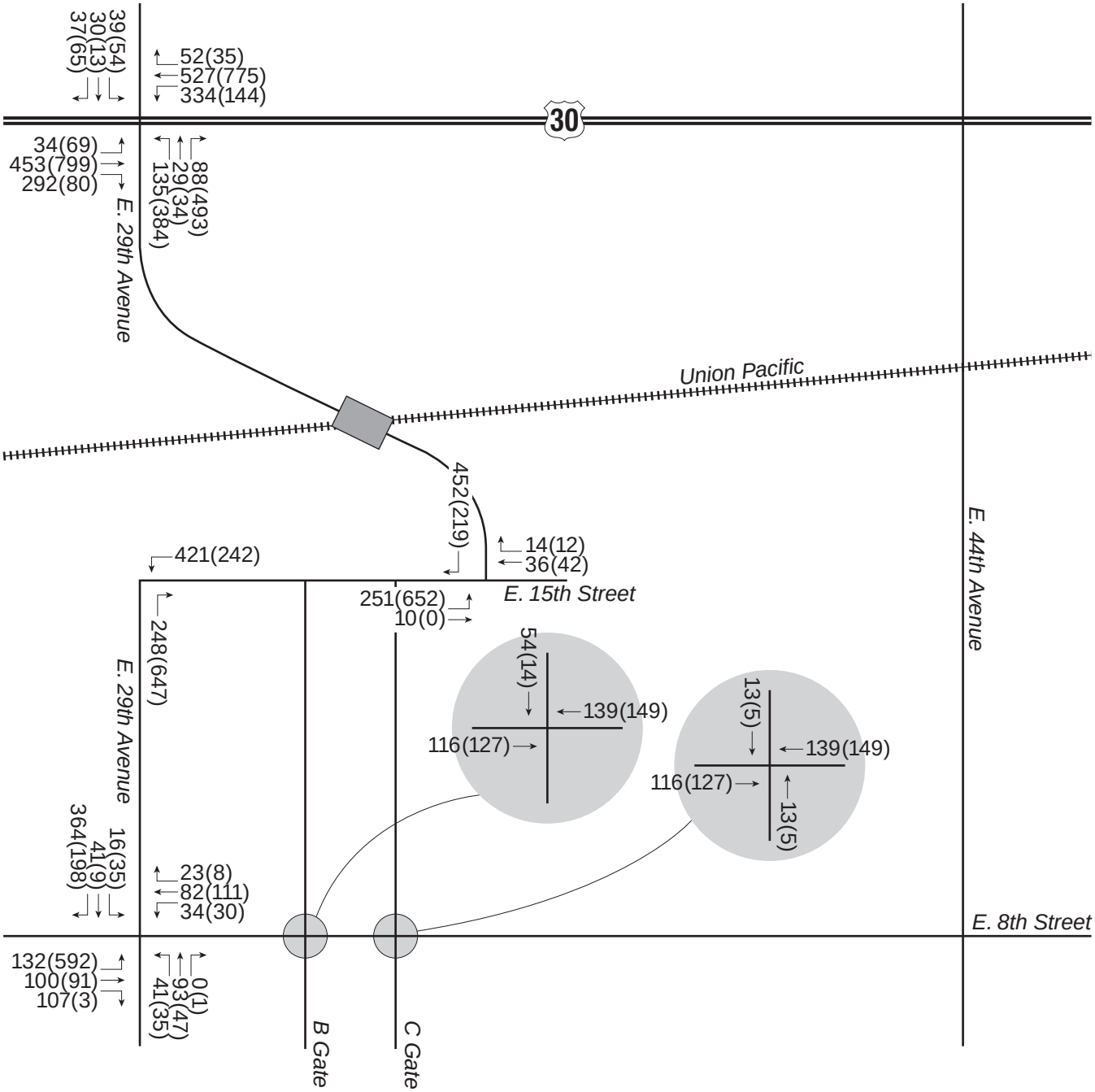


Figure 13
2040 Total Levels of Service

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

XXX(XXX) = **AM(PM) Peak Hour Traffic Volumes**

Figure 14
Alternative 4
2040 Total Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH

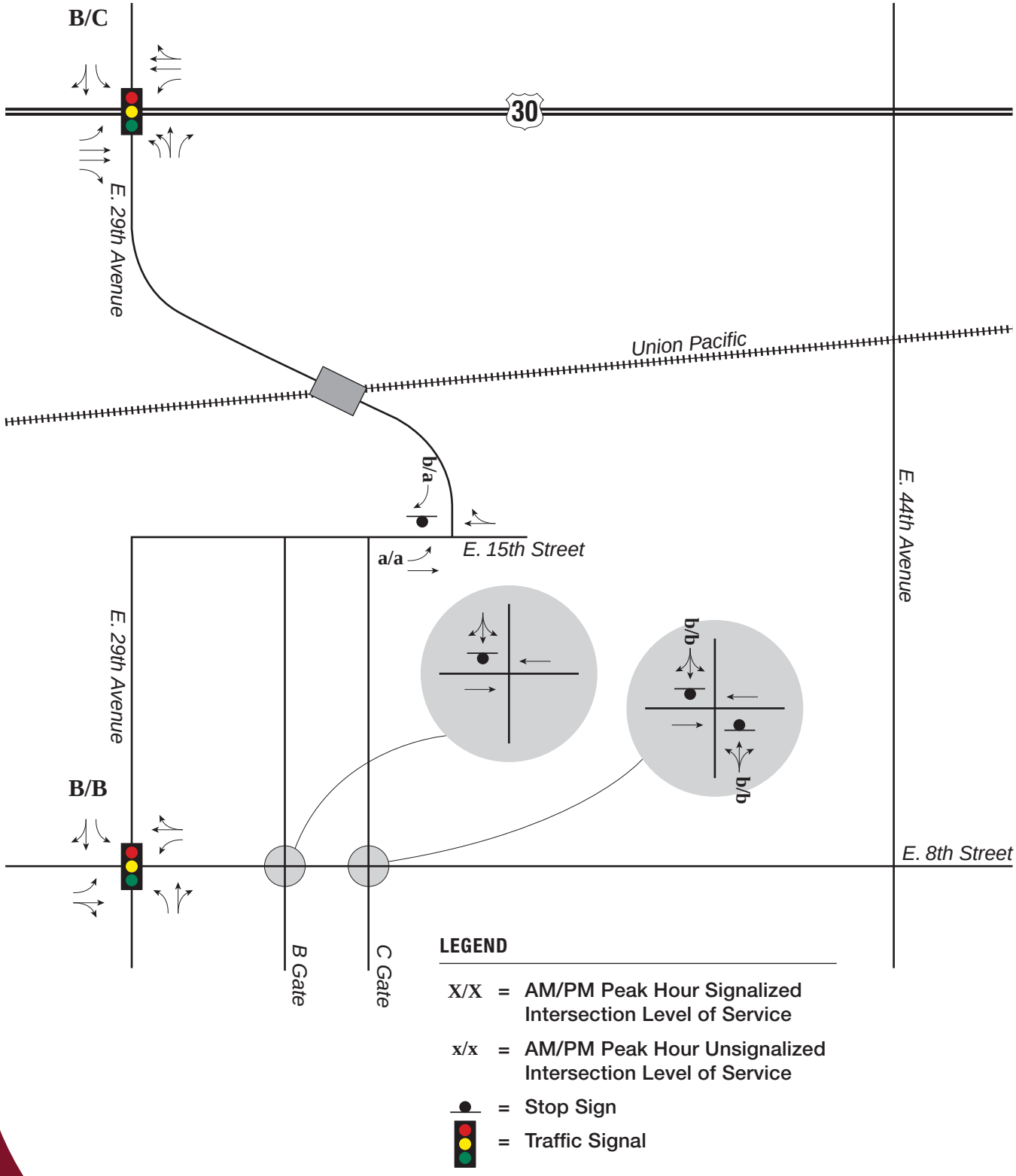
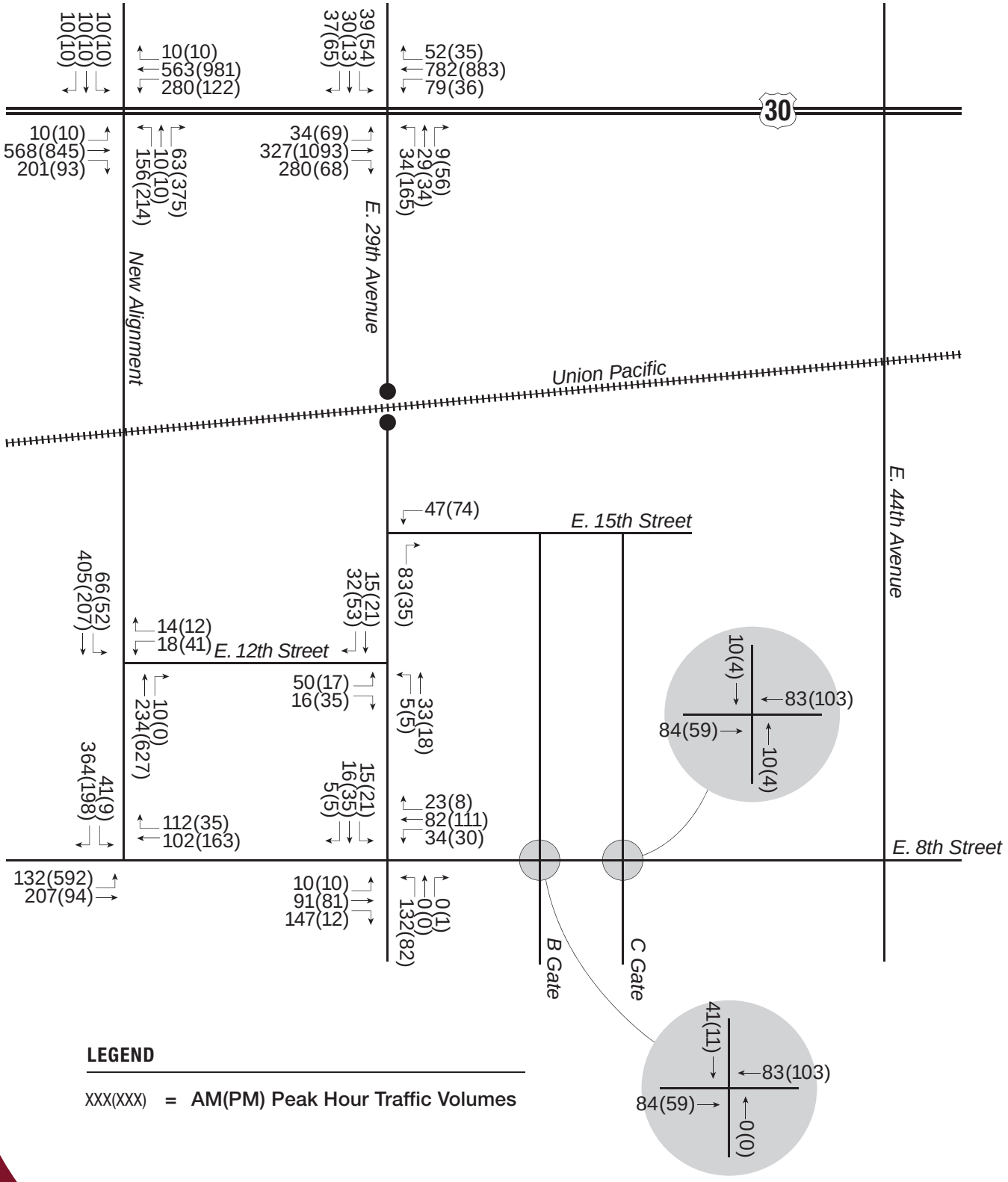


Figure 15
Alternative 4
2040 Total Levels of Service

FELSBURG HOLT & ULLEVIG

NORTH



LEGEND

XXX(XXX) = **AM(PM) Peak Hour Traffic Volumes**

Figure 16
Alternative 5
2040 Total Traffic Volumes

FELSBURG HOLT & ULLEVIG

NORTH

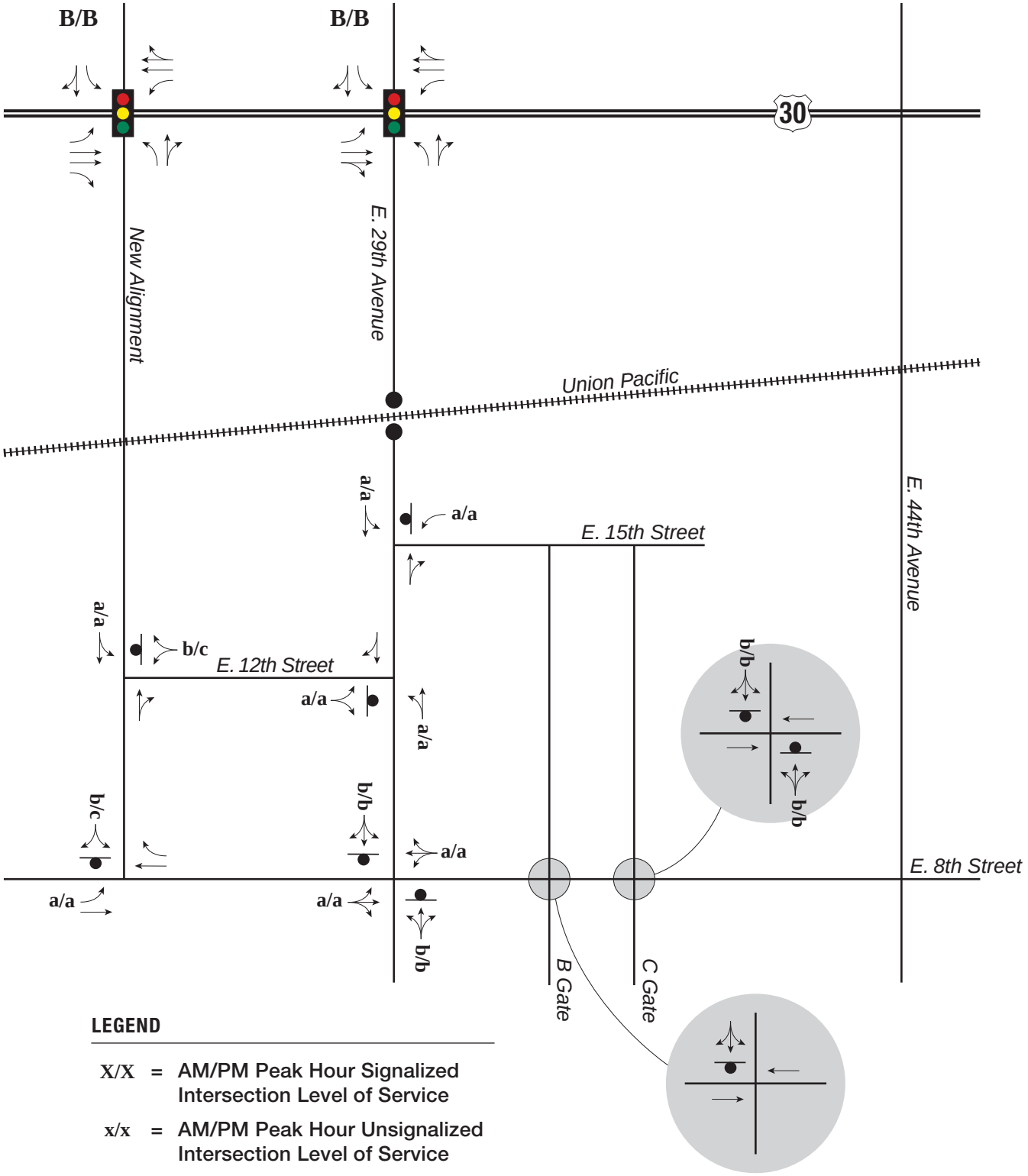


Figure 17
Alternative 5
2040 Total Levels of Service

FELSBURG HOLT & ULLEVIG

NORTH

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Appendix C East 14th Avenue Crossing Closure Documentation

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AGREEMENT

CONSTRUCTION OF HIGHWAY GRADE SEPARATION
UNION PACIFIC RAILROAD COMPANY
PLATTE COUNTY, NEBRASKA

This Agreement (Agreement) is made and entered into as of the effective date herein defined by and between Platte County, Nebraska ("County") and Union Pacific Railroad Company, a Delaware Corporation ("Railroad") and the State of Nebraska, Department of Roads ("State") State, County and Railroad are hereinafter sometimes referred to collectively as the "Parties".

RECITALS

A. The County has plans for the construction of a highway grade separation (Overpass) project over the Railroad's tracks on the Columbus Subdivision in Platte County, Nebraska in the vicinity of East 29th Avenue at Railroad Milepost 85.01 at DOT 816722N. The location of the Overpass is shown on the location map marked **Exhibit "A"**, attached hereto and made a part hereof.

B. In connection with construction of the Overpass the following existing public at-grade crossings will be permanently closed and removed:

   1. East 29th Avenue at Railroad Milepost 81.00, DOT No. 816722N.
   2. East 14th Avenue at Railroad Milepost 82.00, DOT No. 816724C.

C. The location of the street closures is also shown on **Exhibit "A".**

D. The Parties are agreeable to provide funding for the Overpass project including preliminary engineering, right of way acquisition, utilities, construction engineering and construction of said Overpass for eligible project costs as detailed under project phasing and project funding.

AGREEMENT

NOW, THEREFORE, It is mutually agreed to by and between the Parties hereto as follows:

P P0922

Section 1. East 29th Avenue Overpass Project Phasing

1.1 Subject to the provisions of Section 5, the East 29th Avenue Overpass will be placed in the State's program after completion of final construction plans and availability of Federal and/or State rail safety funding. The project will also include the closure of the East 29th Avenue and East 14th Avenue at-grade rail-highway grade crossings.

Subject to the provisions of Section 5, the State shall prepare a construction and maintenance agreement among the Parties covering all the East 29th Avenue Overpass project work with such agreement proving for:

a. The East 29th Avenue closure to occur after the project is let to contract and construction begins.
b. The East 14th Avenue closure to occur upon completion of the East 29th Avenue Overpass project and the East 29th Avenue Overpass is open to traffic.

Section 2. Estimated Project Construction Costs and Funding Apportionment

2.1 The estimated construction costs for the project based on 2009 dollars and the funding share for the parties is as follows:

East 29th Avenue Overpass Project = $4,600,000.00

State Share	= 85%	= $3,910,000
County Share	= 5%	= $230,000
Railroad Share	= 10%	= $460,000

2.2 Prior to execution of the construction and maintenance agreement for the project, the County and State will update the estimates described in Section 2.1 to provide current project estimates and provide copies of the detailed estimate to the Railroad. The Railroad shall have the opportunity to review and approve the updated estimates. At such time the State shall calculate and provide to the Railroad and County the cap for the project of State and/or Federal Rail Safety funds and Railroad funds, **i.e.**, the amount of actual costs incurred by the Parties under the project that, when such amount is exceeded, all actual costs exceeding such cap amount shall be borne one hundred (100%) by the county (cap amount). The State and Railroad shall confer and agree on the cap amount utilized in the construction and maintenance agreement. Based on 2009 dollars a cap of $$4,200,000.00 of State and/or Federal Rail Safety funds would be placed on the project.

The construction and maintenance agreement for the project shall detail the allowable cost for the project; detail the funding share for all the Parties, billing procedure for the County and Railroad and the ownership of the structure including all maintenance

details and responsibilities.

The State and County confirm that the Railroad's cost participation under the project exceeds statutory requirements under 23 C.F.R. 646.210(3).

Actual costs incurred by the Railroad to be apportioned among the Parties as set forth in this Section shall include, without limitation, all actual costs of engineering and design review, removal, construction inspection, flagging, procurement of materials, equipment rental, manpower and deliveries to the job site and all direct and indirect overhead and labor costs and including Railroad's then standard labor additive.

Section 3. Work Responsibilities and/or Obligations of Parties for the Project

The State, County and Railroad with project costs apportioned among the Parties as set forth in Section 2 shall perform the following work and/or have the following obligations:

3.1 The State shall:

A. Prepare the construction and maintenance agreement that will describe in detail all the work and responsibilities of the Parties and project scheduling.
B. Subject to the provisions of Section 5, the State will schedule and let to contract the project. The contractor will complete construction unless certain items are to be performed by the County or Railroad. Due to the uncertainty of State and Federal Rail Safety funding no specific time frame for placing the project in the State's program can be set at this time.

3.2 The Railroad shall:

A. Perform its portion of the crossing closures work as set forth in Section 4.
B. Perform all flagging, preliminary engineering, design review, inspection and any other work such as, but not limited to, relocating signal lines or other Railroad owned facilities.

3.3. The County shall perform or have their consultant perform the following:

A. Develop and prepare, or cause to be developed and prepared, all preliminary and final design detailed plans and specifications including cost estimates for the Overpass and street closures. The County shall submit such items to the State's Engineer and Railroad's Assistant Vice President Engineering Design (or his/her authorized representative) for their prior review and approval. Said plans shall be approved by the State and Railroad prior to execution of the construction and maintenance agreement for the project. Said plans shall include, without

limitation, shoring, sheeting and excavation for bents and/or abutments adjacent to Railroad's tracks and, if applicable, all demolition and removal plans for existing structures. Plans shall include all utility adjustments, reinforcements or relocations including, without limitation, work that will affect existing fiber optic lines and facilities. The Parties agree the Overpass project plans must be approved by the State and Railroad prior to execution of the construction and maintenance agreement. The Parties agree the County shall bear initially all costs associated with the work described in this subsection (A) but that such costs shall be later apportioned among the Parties as set forth in Section 2 upon the start of the project.

B. The County shall provide construction inspection.
C. The County shall perform its portion of the Street closures as set forth in Section 4.

3.4 The County, at its sole cost with such costs not to be apportioned among the Parties, shall perform the following work and/or have the following obligations:

A. Pass and adopt an Ordinance that authorizes and directs the closure of the East 29th Street grade crossing prior to execution by the Parties of this agreement.
B. Request that an ordinance be passed by the City of Columbus that authorizes and directs the closure of the East 14th Street grade crossing prior to execution by the Parties of this agreement.
C. A copy of the ordinance passed by the county and City of Columbus will be attached to this agreement as Exhibit "B" and made a part hereof.
D. The County shall prepare, or cause to be prepared, and submit to the Railroad for its review and written approval, surveys and legal descriptions of the portions of Railroad's property needed for temporary construction purposes or as permanent easements.
E. The County shall be responsible for paying the Railroad the fair market value of the temporary and permanent easement use areas that are needed from the Railroad for the Overpass Structure as mutually agreed upon by the County and Railroad or as determined by a court having proper jurisdiction. The County shall pay such consideration to Railroad simultaneously with the execution of the construction and maintenance agreement.
F. The activities by the County in Section "D" and "E" above shall be included in the overall project cost with such cost to be apportioned among the Parties based on funding for the project.

Section 4. Street Closures

Under the Overpass project, and as a project cost to be apportioned among the Parties as set forth in Section 2, the Street closures shall include, without limitation the following:

A. The Railroad shall provide flagging protection, preliminary engineering, design review and removal of the rail, ties and rail signal equipment and shall retain all salvage and salvage credits resulting from such removal.
B. The County shall provide traffic control including, without limitation, advance warning signs, pavement markings and barricades in compliance with the then-current requirements contained in the Manual on Uniform Traffic Control Devices, or any such successor publication.
C. The County shall remove the approaches to each crossing, design the new approach treatment and complete the approach treatment including any street and approach resurfacing and construction of barricades.

Section 5. Conditions Precedent to Commencement of the Overpass Project

Notwithstanding all other obligations set forth in this Agreement, before work can commence on the project, the following conditions precedent shall have first occurred for the project.

A. The State, County and Railroad shall have indicated in writing to the other Parties that sufficient Federal and/or State, County and Railroad funding for the project is available and has been allocated for the project.
B. The State shall indicate in writing to the County and Railroad that the State has obtained all necessary approvals in scheduling the project for the fiscal year it is scheduled in.
C. The Parties have executed the construction and maintenance agreement for the project.
D. The Railroad has provided written approval to the State and County of the final one hundred percent (100%) completed plans for the Overpass and street closures.
E. The County and Railroad have agreed upon the amount of consideration to be paid by the County to Railroad for the Overpass project for the permanent and temporary easements that are needed from the Railroad.
F. Each contractor hired by the County to perform any project work has agreed to the indemnification and insurance clauses related to work on **Union Pacific Railroad's Property** included in the bid specifications and detailed in the construction and maintenance agreement.

Section 6. Conflict of Provisions Contained in Agreements

If there is a conflict of terms involving this Agreement and the construction and maintenance agreement for the project, the terms and conditions of the construction and maintenance agreement shall govern.

Section 7. Effective Date

The effective date of this agreement shall be the date of execution of the State as shown on the execution page of this Agreement.

Section 8. Assignment

None of the Parties may assign this Agreement without prior written consent of the other two non-assigning Parties.

Section 9. Successors and Assigns

Subject to the provisions of Section 8, this Agreement shall be binding upon and inure to the benefits of the Parties hereto and their respective successors and assigns.

EXECUTED by the County this 18 day of August, 2009.

Attest: Platte County, Nebraska

County Clerk BY County Board Chairman

EXECUTED by Railroad this 14th day of October, 2009

Attest: UNION PACIFIC RAILROAD COMPANY

Assistant Secretary BY AVP ENGINEERING

EXECUTED by the State this 10th day of November, 2009

Attest: State of Nebraska, Department of Roads

BY

Rail and Public Transportation Engineer

PPO122

Acknowledgment

STATE OF NEBRASKA)
) ss.
COUNTY OF LANCASTER)

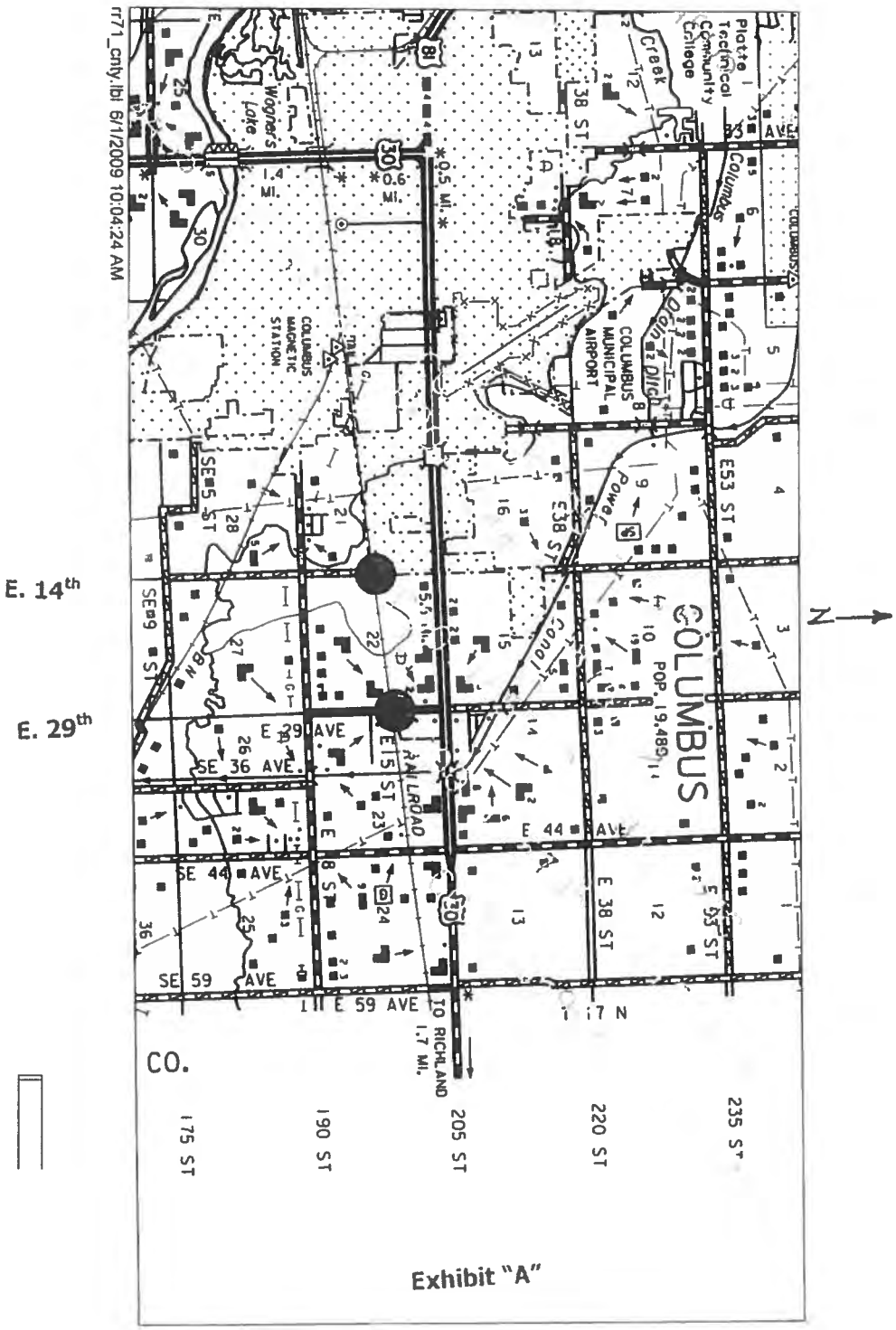
The foregoing instrument was acknowledged before me this 10th day of November, 2009, by Ellis Tompkins, Rail and Public Transportation Engineer for the State of Nebraska, Department of Roads.

GENERAL NOTARY - State of Nebraska
TWILA AVEY
My Comm. Exp. Dec. 24, 2011

Notary Public

(Seal)

P P09 2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Platte Technical Community College
Columbus
Wagners Lake
COLUMBUS MUNICIPAL AIRPORT
COLUMBUS MAGNETIC STATION
COLUMBUS
POP. 19,489
E. 14th
E. 29th
N
E 53 ST
E 38 ST
E 44 AVE
E 59 AVE
SE 44 AVE
SE 59 AVE
SE 36 AVE
E 29 AVE
E 38 ST
E 53 ST
E 8 ST
E 15 ST
RAILROAD
TO RICHLAND 1.7 MI.
1.7 N
CO.
175 ST
190 ST
205 ST
220 ST
235 ST

Exhibit "A"

PLATTE COUNTY HIGHWAY DEPARTMENT

Courthouse, 2610 14th Street, Columbus, Nebraska
Telephone (402) 563-4909 Fax (402) 563-0305

Frederick M. Liss
County Highway Supt.

Jane L. Cromwell
Administrative Asst.

January 14, 2009

Ellis Thompkins, P.E.
N.D.O.R. Railroad Liaison
P.O. Box 94759
Lincoln, NE 68509-4759

RE: Columbus (East 29th Ave. Viaduct)

Dear Mr. Thompkins,

Enclosed for your file is Platte County Resolution 08-57 and a copy of the proceedings of the Columbus City Council dated December 1, 2008 concurring on the closure of East 14th Avenue Rail crossing in conjunction with the East 29th Avenue viaduct proposal.

Please advance the programming aspects of this project and advise me of when the county may proceed with obtaining RFP's for the E.A.

Should you require additional information, please feel free to let me know.

Sincerely,

Frederick M. Liss
Platte County Highway Superintendent

FML/jc

enclosures

RESOLUTION NO. 08-57

WHEREAS, The County of Platte, a governmental subdivision of the State of Nebraska, desires to pursue construction of a viaduct located at the railroad crossing at East 29th Avenue utilizing State, Federal, Local and private funding; and

WHEREAS, a requirement of using said funding includes the closure of a second at grade crossing; and

WHEREAS, The City of Columbus Council on December 1st, 2008 agreed to allow the closure of East 14th Avenue rail crossing as part of said project; now therefore,

BE IT RESOLVED that in addition to closure of East 29th Avenue crossing, the East 14th Avenue crossing shall be closed as part of said viaduct project, provided said closure shall not occur until the East 29th Avenue viaduct is completed and open to traffic.

COUNTY CLERK OF PLATTE COUNTY NEBRASKA

Adopted this 16th day of December, 2008, at Columbus, Nebraska

Platte County Clerk, Diane Pinger

Platte County Board of Supervisors

Robert Lloyd, Chairman

Supervisor Martens Moved and
Supervisor Fruehen Seconded the adoption of the above Resolution.

Roll Call 7 Yea 0 Nay

Resolution adopted, signed and adopted.

CERTIFICATION

I, Janelle Kline, Assistant City Clerk of the City of Columbus, Nebraska hereby certify the attached is a true and accurate reproduction of a portion of the Proceedings of City Council from December 1, 2008 with regard to the request from Platte County for closure of East 14th Avenue railroad crossing as part of the proposed East 29th Avenue viaduct construction project as the same appears on file and on record in this office.

In testimony whereof, I hereunto set my hand and affixed the corporate seal of said City this 14 day of January, 2009.

Janelle Kline
Assistant City Clerk
City of Columbus, Nebraska

A regular meeting of the Mayor and City Council of the City of Columbus, Nebraska was convened in open and public session on December 1, 2008 at 7 p.m. in the Council Chambers, 1369 25th Avenue, Columbus, Nebraska.

Notice of this meeting was given in advance thereof by publication in the Columbus Telegram on November 26, 2008, with a copy of the proof of publication being on file in the office of the City Clerk. Notice of this meeting was given simultaneously to the Mayor and members of the City Council, with a copy of the acknowledgement of receipt of notice being on file in the office of the City Clerk. Availability of the agenda was communicated in the advance notice and in the notice to the Mayor and City Council of this meeting. All proceedings hereafter shown were taken while the convened meeting was open to the public.

STATEMENT OF COMPLIANCE WITH OPEN MEETINGS ACT: Mayor Moser read the following statement: "In compliance with the Open Meetings Act, Legislative Bill 898, Second Session Ninety-Ninth Legislature of Nebraska, a current copy of the Act is posted in this meeting room".

OATH OF OFFICE: City Clerk Linda Walters administered the Oath of Office to Mayor-elect Michael L. Moser and Council Members-elect Charlie Bahr, James "Jim" Bulkley, Ron Schilling and John F. Lohr.

ROLL CALL: Present were Mayor Michael Moser and Council Members Joe Held, Charlie Bahr, Ron Bogus, Jim Bulkley, Ron Schilling, Joe Jarecke, John Lohr and Chuck Whitney.

City staff members present included City Administrator Joseph Mangiamelli, City Clerk Linda Walters, City Engineer Merlin Lindahl, City Attorney Stephen Hansen, Police Chief William Gumm, Finance Director Anne Kinnison and Interim Public Works/Environmental Services Director Chuck Sliva.

PRAYER: Mayor Moser asked all to rise and Council Member Bulkley led in prayer.

NATIONAL ANTHEM AND PLEDGE OF ALLEGIANCE: Mayor Moser asked all to remain standing and join him in the National Anthem and Pledge of Allegiance.

APPOINTMENT OF CITY OFFICERS: Mayor Moser submitted the name of Joseph A. Mangiamelli for appointment as City Administrator. Moved by Bulkley, seconded by Schilling, to approve the Mayor's appointment of Joseph A. Mangiamelli as City Administrator and waive the two-week notification period. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay." Motion carried. Mayor Moser submitted the name of Stephen C. Hansen for appointment as City Attorney. Moved by Bulkley, seconded by Bahr, to approve the Mayor's appointment of Stephen C. Hansen as City Attorney and waive the two-week notification period. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay." Motion carried. Mayor Moser submitted the name of Linda L. Walters for appointment as City Clerk-Assistant Finance Director. Moved by Bulkley, seconded by Schilling, to approve the Mayor's appointment of Linda L. Walters as City Clerk-Assistant Finance Director and waive the two-week notification period. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay." Motion carried. Mayor Moser submitted the names of Merlin E. Lindahl for appointment as City Engineer and Matthew S. Cox for appointment as City Engineer. Moved by Bulkley, seconded by Lohr, to approve the Mayor's appointments of Merlin E. Lindahl as City Engineer and Matthew S. Cox as City Engineer and waive the two-week waiting period. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay." Motion carried. Mayor Moser submitted the name of Anne Kinnison for appointment as Finance Director-City Treasurer. Moved by Bulkley, seconded by Bahr, to approve the Mayor's appointment of Anne Kinnison as Finance Director-City Treasurer and waive the two-week waiting period. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay." Motion carried. Mayor Moser

Moved by Whitney, seconded by Bogus, Resolution No. R08-116 be passed and adopted. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay". Motion carried.

RESOLUTION NO. R08-117 WAS INTRODUCED BY COUNCIL MEMBER JARECKE.

RESOLUTION NO. R08-117
ADOPTED: DECEMBER 1, 2008

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF COLUMBUS, NEBRASKA, TO AWARD A CONTRACT TO GENERAL EXCAVATING, LINCOLN, NE, IN THE AMOUNT OF $213,190, BEING THE LOWEST RESPONSIBLE BID RECEIVED, FOR LIFT STATION RENOVATION–BEHLEN (NORTH OF 23RD STREET/HIGHWAY 30 AND EAST OF LOUP POWER DISTRICT CANAL).

Moved by Jarecke, seconded by Bogus, Resolution No. R08-117 be passed and adopted. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay". Motion carried.

RESOLUTION NO. R08-118 WAS INTRODUCED BY COUNCIL MEMBER LOHR.

RESOLUTION NO. R08-118
ADOPTED: DECEMBER 1, 2008

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF COLUMBUS, NEBRASKA, TO AWARD A CONTRACT TO GENERAL EXCAVATING, LINCOLN, NE, IN THE AMOUNT OF $684,965, BEING THE LOWEST RESPONSIBLE BID RECEIVED, FOR WATER EXTENSION DISTRICT NO. 59 (33RD AVENUE AND 66TH STREET; AND CENTRAL COMMUNITY COLLEGE-COLUMBUS).

Moved by Lohr, seconded by Schilling, Resolution No. R08-118 be passed and adopted. In response to Mayor Moser, City Engineer Lindahl clarified that the 24-inch Water Main Project as well as the Behlen Lift Station Renovation Project will be funded by water and sewer revenues. He explained that with Water Extension District No. 59, the cost of the internal water mains as well as the cost of the 6" water main on 66th Street will be assessed to Central Community College and the City will issue bonds for the remainder of the project costs. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay". Motion carried.

RESOLUTION NO. R08-119 WAS INTRODUCED BY COUNCIL MEMBER BOGUS.

RESOLUTION NO. R08-119
ADOPTED: DECEMBER 1, 2008

A RESOLUTION OF THE MAYOR AND COUNCIL OF THE CITY OF COLUMBUS, NEBRASKA TO APPROVE THE AGREEMENT FOR PROFESSIONAL SERVICES WITH HDR ENGINEERING, INC. FOR THE SOLID WASTE TRANSFER STATION AND RECYCLE CENTER STUDY, A COPY OF WHICH IS ATTACHED HERETO AND INCORPORATED HEREIN BY THIS REFERENCE; AND TO AUTHORIZE THE MAYOR TO EXECUTE THE SAME ON BEHALF OF THE CITY OF COLUMBUS, NEBRASKA.

Moved by Bogus, seconded by Schilling, Resolution No. R08-119 be passed and adopted. In response to Mayor Moser, City Engineer Lindahl explained the consultant selection process used by the City. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay". Motion carried.

UNFINISHED BUSINESS – REQUEST OF PLATTE COUNTY FOR CLOSURE OF EAST 14TH AVENUE RAILROAD CROSSING AS PART OF PROPOSED EAST 29TH AVENUE VIADUCT CONSTRUCTION PROJECT: A memorandum was presented

from City Administrator Mangiamelli concerning the review of a request from Platte County for closure of the East 14th Avenue railroad crossing as part of a proposed East 29th Avenue viaduct construction project. It was noted that the City Council previously considered the request of Platte County for this crossing closure and the matter was removed from the agenda pending additional information. It was further noted that HDR Engineering, Inc., consultant for the County, has performed additional traffic counts and analysis of the area and details of these results were included in the Council's agenda packet. City Administrator Mangiamelli pointed out that the following communications were also included in the Council's packets: a letter from Neal Suess and David Bell, Co-Chairmen of the Columbus Economic Council, asking for the Council's support on their recommendation to close East 14th Avenue as part of the overall negotiations to construct a viaduct on East 29th Avenue; and a letter from Matt Gotschall, Chairman, K.C. Belitz, President and Dennis Grennan, Transportation Committee Chair of the Columbus Area Chamber of Commerce, stating that the Transportation Committee feels there is a need for the viaduct on East 29th Avenue and advocating that the City Council and the Platte County Board of Supervisors follow the recommendations of HDR, as well as the City and County staff, and agree to close East 14th Avenue to allow the negotiations to move forward.

Ron Pfeifer, representing District 4 of the Platte County Board of Supervisors and current chair of the Road and Bridge Committee, introduced Myron Franzen and Bob Lloyd, Supervisors serving on the Road and Bridge Committee, as well as Fred Liss, County Highway Superintendent. Ron Pfeifer referred to the fact that the County has approached the City in the past and said they are still requesting the closure of the East 14th Avenue at-grade crossing for the purpose of building a viaduct on East 29th Avenue to serve current and future industries in the area. He noted that the County Board feels this viaduct would serve the City as well as the County as it relates to safety and movement of traffic. Ron Pfeifer pointed out that construction of a grade separation would require the closing of an additional crossing and the County is recommending that East 14th Avenue be closed as opposed to East 44th Avenue. Discussion followed on which entity is responsible for making the decision to close the East 14th Avenue crossing and Ron Pfeifer said the County is making an effort to partner with the City in this joint venture. In response to Mayor Moser, City Engineer Lindahl clarified that the city limits along East 14th Avenue only extend to the south property line of the Union Pacific Railroad tracks, which includes the crossing, while the remainder of East 14th Avenue south is under the County's jurisdiction. In response to Council Member Whitney, City Attorney Hansen verified that the decision to close the East 14th Avenue crossing lies with the City Council as this portion of East 14th Avenue is within the City limits.

Council Member Jarecke referred to the safety issue and pointed out that East 44th Avenue carries more traffic. Lisa Richardson, Project Manager with HDR, referred to the supplemental study conducted by HDR and said an additional consideration for closing the East 14th Avenue crossing includes the railroad's plan for a spur line that would extend across this crossing in order to serve the industrial tract, which includes ADM Co. Inc, and Katana Summit LLC. She said with the spur line, as well as speculation of a third mainline through all crossings, the amount of time the East 14th Avenue crossing would be blocked is expected to increase and with more tracks to cross, the potential for train-vehicle exposure would be higher at East 14th Avenue. Lisa Richardson also pointed out that the closure of the East 14th Avenue crossing would create a longer corridor through the City without an at-grade crossing.

Tom Martens, 3473 East 14th Avenue, said he avoids using East 14th Avenue due to the condition of the gravel road south of the railroad tracks and he, as well as a number of his neighbors, support the closure. Diane Klug, 4872 Southeast 16th Street, representing others in attendance at the Council meeting, spoke in support of closing the East 14th Avenue crossing, referred to the trucks as well as farm equipment that utilize East 44th Avenue and said the closure of East 44th Avenue would have a negative effect on them. Jerry Jaixen, 3295 East 44th Avenue, spoke in support of closing the East 14th Avenue crossing and pointed out that the closure of East 44th Avenue would force heavy farm equipment to cross the proposed East 29th Avenue viaduct.

In response to Council Member Bulkley, Lisa Richardson explained that at least two crossing closures, the crossing being replaced by the structure and at least one adjacent crossing, are required by the Nebraska Department of Roads and Union Pacific Railroad for state and railroad funding. She said the state and railroad contributions typically amount to at least 80 percent of the project cost, which could equal approximately $3.7 million in funding for the $4.6 million cost of the proposed East 29th Avenue viaduct. David Bell, 3014 39th Street, explained that Loup Power District either owns or controls land on the east side of East 14th Avenue and said they have always envisioned that this crossing would be closed at some point. He stated that the planned construction in 2009 of a 9,000 foot parallel east-west track adjacent to the UPRR mainline to serve ADM, Katana Summit and future companies will extend across the East 14th Avenue intersection and they anticipate some increase in crossing blockage by unit trains. David Bell pointed out that the proposed East 29th Avenue viaduct is a critical issue from an industrial development standpoint and this is a community issue that affects the City as well as the County.

Moved by Whitney, seconded by Lohr, that the City cooperate with the closing decision made by the County. City Administrator Mangiamelli asked Council Member Whitney if his motion would allow for the County Board to make the decision to officially declare that East 14th Avenue would be the additional closure required for the viaduct construction on East 29th Avenue and by virtue of the County Board taking that action, the issue would not have to be brought back to the Council and Council Member Whitney concurred. City Engineer Lindahl pointed out that when a final decision is made, an agreement would be drafted for consideration by the City and the County. Council Member Jarecke said he felt the Council should make the decision as to whether or not to close the East 14th Avenue crossing. Council Member Lohr referred to Council Member Whitney's motion and said the City is displaying a spirit of cooperation with the County. In response to a question from Council Member Bahr regarding the motion, City Administrator Mangiamelli clarified that the City Council will support Platte County's decision to close either East 14th Avenue or East 44th Avenue. He said adoption of this motion will allow the County to move forward on agreements with the State and Railroad relative to programming the East 29th Avenue viaduct, with additional discussion on the specifics to be held at a later date. Roll call and Council Members Held, Bogus, Bulkley, Schilling, Lohr and Whitney voted "Aye" and Bahr and Jarecke voted "Nay". Motion carried.

Moved by Schilling, seconded by Bulkley, the meeting be adjourned. Roll call and Council Members Held, Bahr, Bogus, Bulkley, Schilling, Jarecke, Lohr and Whitney voted "Aye" and none voted "Nay". Motion carried and the meeting was adjourned at 8:34 p.m.

Presented and approved this 15 day of December, 2008.

Michael L. Moser
MAYOR

ATTEST:

Linda L. Walters
CITY CLERK

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Appendix D Civil Rights Analysis

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To: Anthony Marshall, Highway Environmental Specialist, NDOR
From: Chris Hassler, Highway Civil Rights Specialist, NDOR
RE: Civil Rights Analysis, CN 32190, RRZ-71(33), Columbus East Viaduct
Date: 24 July 2013

Civil Rights Analysis for CN 32190

This project and its potential detours are located in a single Census tract just to the east of Columbus, NE.

Limited English Proficiency Analysis:

In the City of Columbus, the percentage of people who speak Spanish, and also speak English "Less than Very Well," is about 5.5%. This figure indicates the presence of an LEP population that reaches the NDOR LEP outreach triggers of 5% or 1,000 persons. The following LEP outreach is required for this project:

1. Any written information that is dispersed to the community regarding this project must be translated into Spanish.

2. If a public meeting is held regarding this project, the written info at the meeting must be translated into Spanish and there must be a Spanish/English interpreter present. There should be sign-in sheets at the entrance in order to collect data, including racial/demographic data, on meeting participants, *though signing in or giving information at public meetings is always optional, and is not a requirement to participate*. Finally, there must be clear notice posted in Spanish that the interpreter is available.

Environmental Justice Analysis:

The population of minority persons in the Census tract in which the project and detour routes are located is about 15.2%. The Hispanic population is about 14.8%. In the City of Columbus, the population of minority persons is about 17% and the Hispanic population is about 14.6%. Most of the minority and/or Hispanic population in the Census tract resides to the west of the project area, within the City of Columbus. Block level US Census data does not indicate any concentrations or populations of minority persons on the project site or along the potential detour routes. In fact, the project site is overwhelmingly comprised of industry/agricultural areas and businesses.

The population living below the poverty level in the Census tract in which the project lies is about 3.3%. This figure is lower than the Nebraska average of 12%, and is also lower than the City of Columbus at 8.8% and Platte County at 9.1%.

There will be no disproportionately high and adverse human health or environmental effects visited upon minority and low-income populations, as defined in USDOT Order 5610.2(a), for the following reasons:

A low-income population is not present in the project area.

A minority population is not present in the project area.

Though there will be small detours in the project area, the detours will not travel through minority/Hispanic populations, nor will they restrict access to essential services.

Essential services in the vicinity of the project include only one location:

Good Neighbor Community Health Center
2282 E 32nd Ave.
Columbus, NE 68601

This service is located at the corner of US-30 and East 32nd Street, which is in the vicinity of the project site, but access to and from the Center will be unaffected by the project or potential detours.

Appendix D Title VI/Environmental Justice

AD.1 Summary

Title VI of the Civil Rights Act of 1964 ensures that individuals are not excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, and disability (42 United States Code [USC] 2000d et seq.). The President signed Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Population*, in 1994 (59 Federal Register [FR] 7629). EO 12898 focuses the attention of federal agencies on human health and environmental conditions in minority and low-income communities. Environmental justice analyses are performed to identify the potential for disproportionately high and adverse impacts on minority and low-income populations from proposed actions and to identify alternatives that might mitigate these impacts. This Appendix includes a Nebraska Department of Roads civil rights analysis memo.

The analysis of environmental justice impacts relies primarily on 1997 definitions as follows.

Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Current Population Reports of the Bureau of the Census.

Minority individuals are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic/Latino origin; or Hispanic/Latino.

A minority population should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (Council on Environmental Quality [CEQ], December 1997). Note: The 2000 Census updated minority definitions to include Black or African American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; Some other race; and Two or more races (United States Census Bureau [USCB], 2000).

Minority populations included in the Census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Some other Race, and Two or More Races. Hispanic/Latino populations, which can be of any race, are also considered.

Poverty status, used in this Draft Environmental Assessment to define low-income status, is reported as the number of people with income below the poverty level. The 2010 Census defines the poverty level as a weighted average threshold of $11,139 or less for an individual and a weighted average of $22,314 or less for a family of four (USCB, 2010). The poverty weighted average threshold for a family of four in 2013, the latest year available, was $24,028 (USCB, 2013). However, portions of this analysis used demographics and income data from the 2010 Census of Population and Housing. Data from the 2000 and 2010 Census are the latest reliable and consistent data regarding the ethnic composition and poverty status of the population, especially for sub-county divisions such as towns. Later estimates from various sources may use different methodologies and do not provide accurate comparisons.

These definitions and assessment methodology follow the CEQ's *Environmental Justice Guidance under the National Environmental Policy Act* (CEQ, December 1997).

AD.2 Affected Environment

To be consistent with the requirements of Title VI of the Civil Rights Act of 1964 and EO 12898, the demographic characteristics of the project and environmental study area were examined to determine whether the project would disproportionately affect minority or low-income populations. **Table 1** shows minority and Hispanic/Latino populations, as well as vulnerable age populations, median household income, and poverty status throughout the study area.

The project area is routed through an industrial use area and, as a result, is not heavily populated. Census Tract 9655 Block Group 2, which covers the vast majority of the project area, exhibits a 65 years of age and over population of 12.0 percent (**Figure D-1**). This is a lower percentage than that of Platte County with 14.9 percent, Nebraska with 13.5 percent, and the United States with 13.0 percent. Areas with higher percentages are not concentrated along the study area but rather closer to the city limits. In addition, this study area does not exhibit a disproportionate number of persons under 18 years of age. The percentage of the population under 18 years of age in the study area is 21.4 percent; Platte County is 26.4 percent; Nebraska is 25.1 percent; and the United States is 24.0 percent.

The analysis also considered and reviewed income and poverty status along the alignment for each study area. The percentage of individuals below the poverty line in the census tract in which the project lies is about 3.4 percent. This figure is lower than that of the City of Columbus at 9.1 percent and Platte County at 8.8 percent, which also reflects lower poverty levels than those of Nebraska at 12.9 percent and those of the United States at 15.3 percent.

Environmental justice analyses also identified the potential for impacts on minority populations throughout the study area. **Table D-1** shows 2010 Census data for race and ethnicity for Census Tract 9654 Block Group 1 and Census Tract 9655 Block Group 2, as well as for the City of Columbus and for Platte County. Approximately 15.7 percent of the population in Platte County was of racial minorities, compared to 27.6 percent for the United States. Platte County's Hispanic/Latino population was 13.8 percent, Nebraska's was 9.2 percent, and the United States' was 16.3 percent.

As of 2010, the percentage of individuals below the poverty level in the City of Columbus was 9.1 percent, and the percentage of individuals below the poverty level in Platte County was 8.8 percent, both lower percentages than those of Nebraska at 12.9 percent and the United States at 15.3 percent. A low-income housing area is located adjacent to the northeast side of the project area, along the north side of US 30, nearest to East 44th Avenue. This area would be avoided during construction.

Figure D-1 – Extent of Census Tracts Used for Title VI/Environmental Justice Analysis

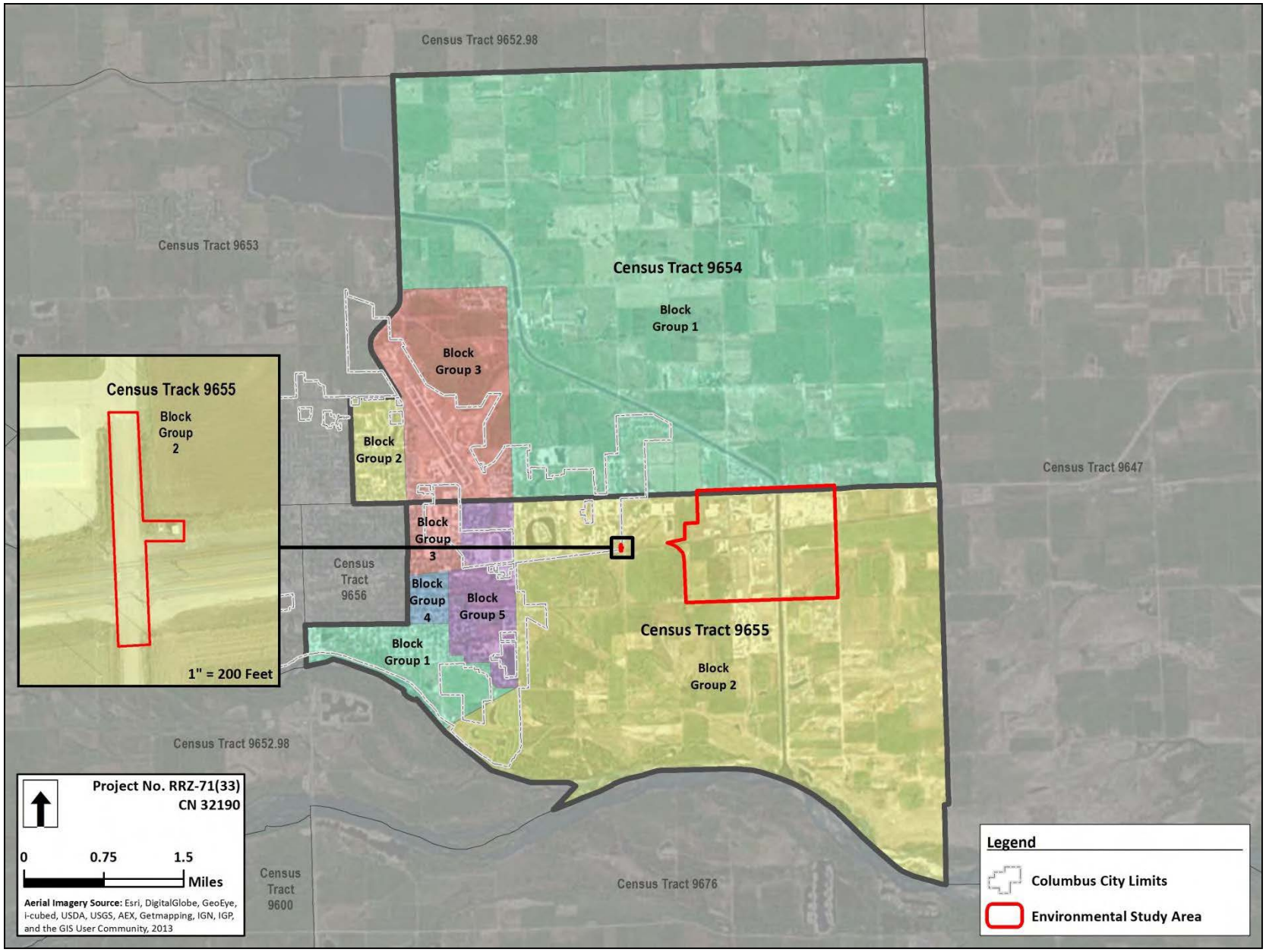


Table D-1 – Demographics in the Project Vicinity

2010 US Census Data						
Population Designation	Tract 9654, Block Group 1	Tract 9655, Block Group 2[9]	Tract 9654	Tract 9655	City of Columbus	Platte County
Income Below Federal Poverty Level[1]	13.0%	3.4%	11.0%	4.5%	9.1%	8.8%
Minority[2]	38.7%	20.4%	31.0%	16.7%	18.5%	15.7%
Hispanic/Latino[3]	37.2%	15.6%	29.6%	14.5%	16.3%	13.8%
Spanish Speaking[4]	23.5%	3.3%	13%	3.6%	5.5%	5.4%
Limited English Proficiency[5]	23.5%	3.3%	13.0%	4.0%	6.0%	5.7%
Median Household Income[6]	$46,023	$64,732	$54,744	$55,833	$48,123	$51,395
Vulnerable Age (Under 18) [7]	29.9%	21.4%	30.3%	26.6%	26.4%	26.4%
Vulnerable Age (65 and over) [8]	8.8%	12.0%	12.1%	12.7%	15.3%	14.9%

Source Information:
*Average Household (HH) Size (2012) for Columbus is **2.45***
*Average HH Size (2012) for Platte County is **2.55***
*Average HH Size (2012) for Tract 9654 is **2.64***
*Average HH Size (2012) for Tract 9655 is **2.81***

[1] Poverty Status extracted from American Community Survey (ACS) 2012 5-Year Table B17017
[2, 3] Minority Population extracted from 2010 Census SF 1, Table P5
[4] Spanish Speaking extracted from 2008–2012 ACS 5-year Tables B16001 & B16004
[5] Limited English Proficiency extracted from ACS 2008–2012 5-year Table B16004
[6] Median Household Income extracted from ACS 2008–2012 5-Year Table B19013
[7, 8] Vulnerable Age extracted from 2010 Census SF 1, Table P12
[9] Most of the proposed project area, including all construction activity and potential detour routes, is located within Census Tract 9655 Block Group 2

Environmental justice analyses also identified the potential for impacts on minority populations throughout the study area. Approximately 20.4 percent of the population of Census Tract 9655 Block Group 2 and 38.7 percent of the population of Census Tract 9654 Block Group 1 are made up of racial minorities. The percentage in these census tracts is higher than that of Platte County with 15.7 percent and that of Nebraska with 13.9 percent. The percentage of minority populations in the United States, with 27.6 percent, is higher than that of Census Tract 9655 Block Group 2 and lower than that of Census Tract 9654 Block Group 1. In addition, the project area has approximately 15.6 percent Hispanic/Latino population, compared to 13.8 percent in Platte County overall, 9.2 percent in Nebraska, and 16.4 percent in the United States.

In general, minority and low-income populations constitute a slightly higher percentage of the total population in Columbus, Platte County, and Nebraska. However, this may be skewed due

to the actual number of residents in the area because, as previously described; the project study area is overwhelmingly an industrial area.

In the City of Columbus, the percentage of people who speak Spanish, and also speak English "Less than Very Well," is about 5.5 percent. This figure indicates the presence of a Limited English Proficiency (LEP) population that reaches the NDOR LEP outreach triggers of 5 percent or 1,000 persons.

Essential services in the vicinity of the project include the Good Neighbor Community Health Center at 2282 East 32nd Avenue. This service location is in the southwest corner of US 30 and East 32nd Avenue, which is in the vicinity of the project area, but access to and from the Center would be unaffected by the project or potential detours (shown on **Figure D-2**).

AD.3 Environmental Impacts of the No Build Alternative

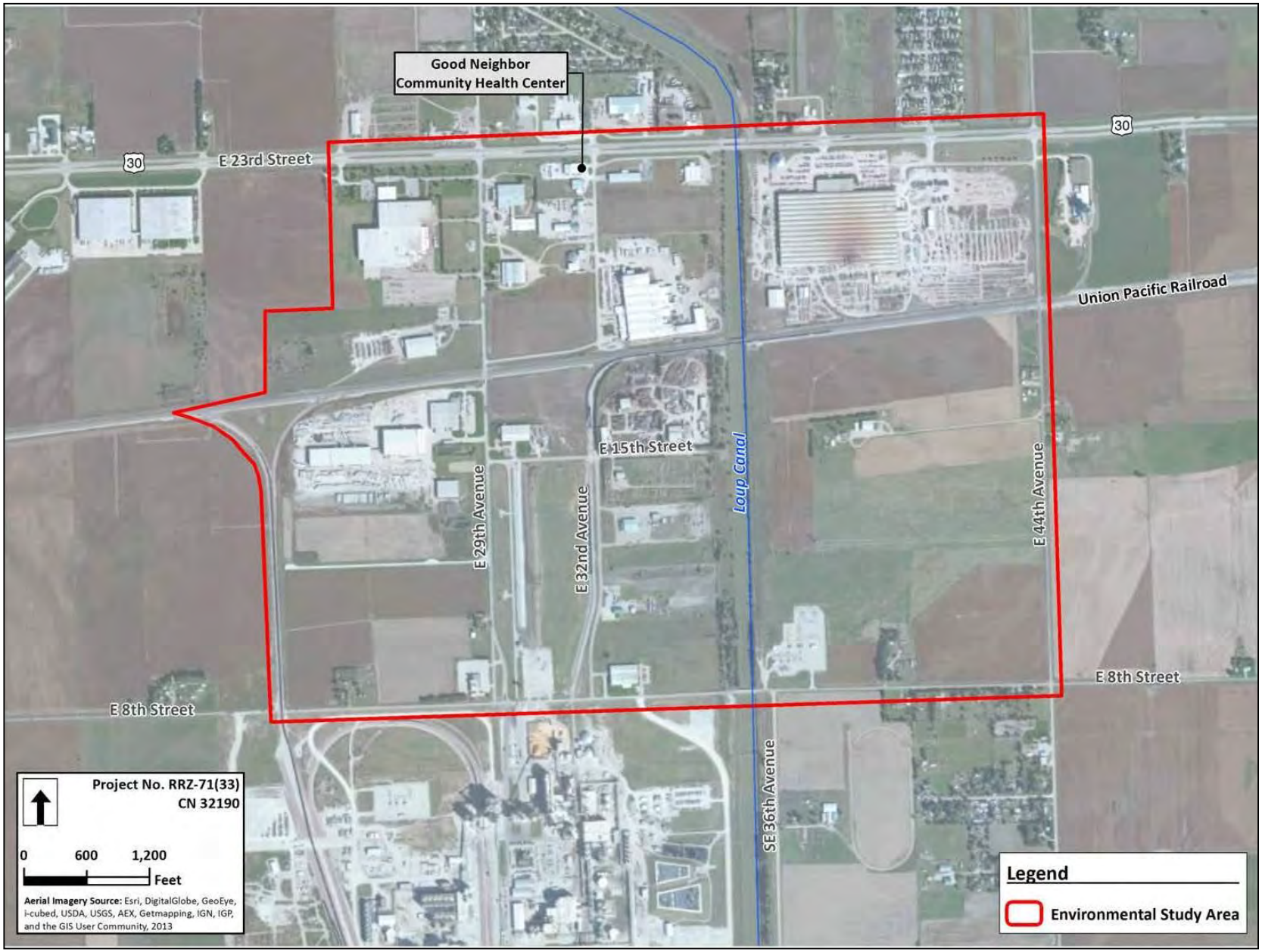
The No Build Alternative would not result in disproportionate impacts on low-income, minority, or vulnerable age populations relative to the general population.

AD.4 Environmental Impacts of the Preferred Alternative

The Preferred Alternative would not adversely impact any minority or low-income populations as determined above. Therefore, in accordance with the provisions of EO 12898 and Federal Highway Administration [FHWA] Order 6640.23 (FHWA, 2 December 1998), no further environmental justice analysis is required.

The permanent impacts on low-income, minority, or vulnerable age populations due to completion of the project would include benefits to the community within the corridor. The citizens who are employed at the industry manufacturers within the project area or who live nearby would experience less delay in the traffic corridor, and incidents of train-vehicle collisions would be eliminated. The project would provide a reliable transportation system in the community and contribute to continued economic growth and productivity of the region. There would be a significant reduction in train horn noise due to the closure of the East 14th Avenue and East 29th Avenue crossings. There would be no disproportionate impact to protected populations or community cohesion due to the closing of the East 14th Avenue crossing. There are only two residences along the entire frontage of East 14th Avenue from the UPRR corridor south to its terminus at River Road.

Figure D-2 – Essential Services Located Within the Study Area



AD.5 Mitigation

- Any written information that is dispersed to the community about this project must be translated into Spanish. (Platte County)
- For public meetings held in regard to this project, the written information at the meeting must be translated into Spanish and a Spanish/English interpreter must be present. There should be sign-in sheets at the entrance to collect data, including racial/demographic data, on meeting participants, *though signing in or giving information at public meetings is always optional and is not a requirement to participate*. Finally, a clear notice must be posted in Spanish indicating that an interpreter is available. (Platte County)

AD.6 Bibliography

42 USC 2000d et seq. Title VI of the Civil Rights Act of 1964.

59 FR 7629. 11 February 1994. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.

Council on Environmental Quality (CEQ). December 1997. "Environmental Justice – Guidance Under the National Environmental Policy Act." Available online at http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf

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Federal Highway Administration (FHWA). 2 December 1998. Order 6640.23, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.

US Census Bureau (USCB). 2000. 2000 Census of Population and Housing. http://www.census.gov/.

USCB. 2010. 2010 Census of Population and Housing. http://www.census.gov/.

USCB. 2013. Poverty Thresholds. http://www.census.gov/hhes/www/poverty/data/threshld/index.html.

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Appendix E Comprehensive Plan Zoning Maps

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CAD DRAWING
DO NOT REVISE MANUALLY

FUTURE LAND USE

- R-1 Single - Family Residential
- R-3 High - Density Residential
- O/LC Office/Limited Commercial
- UC Urban Commerical
- B-2 Major Commerical
- ML/C1 Industrial
- Park and Public Facilities

NO SCALE

LEGEND

10/23/07	ZONING CHANGE
DATE	REVISIONS

ZONING MAP

CITY LIMITS
COLUMBUS, NEBRASKA

DRAWN BY	DATE	CHECKED BY	APPROVED BY
BU	11/02/12		
SCALE: NO SCALE		DRAWING NO.	CITY

CAD DRAWING
DO NOT REVISE MANUALLY

N

NO SCALE

"R-1"
"R-2"
"R-3"
"B-1"
"B-2"
"C-1"
"ML"
"MH"
CITY LIMITS
2 MILE LIMIT

* Note
R-2b is an R-2 with Agricultural Overlay District

DATE	REVISIONS
03/16/10	UPDATE CITY LIMITS & ZONING
02/14/02	UPDATE CITY LIMITS & ZONING
06/27/01	UPDATE CITY LIMITS & ZONING
07/11/00	UPDATE CITY LIMITS
08/03/99	UPDATE CITY LIMITS
05/23/97	UPDATE CITY LIMITS

ZONING MAP

COVER SHEET
COLUMBUS, NEBRASKA
ZONING

DRAWN BY:	DATE	CHECKED BY:	APPROVED BY
BLI	11-08-2013		
SCALE: NO SCALE		DRAWING NO. COVERcityLim	

Appendix F Section 106/Cultural Resources Coordination

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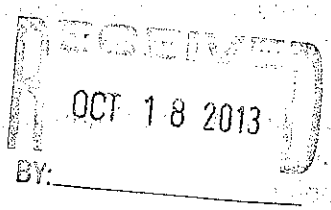
U.S. Department of Transportation
Federal Highway Administration

NEBRASKA DIVISION

100 Centennial Mall North
Room 220
Lincoln, NE 68508
(402)742-8460

October 9, 2013



In Reply Refer To:
HDA-NE

L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historical Society
P.O. Box 82554
Lincoln, NE 68508

HP# 1310-046-01
County PT
STR. X ARCHEO. X
Resp. SPO Date 20131022

Dear Mr. Puschendorf:

Project RRZ-71(33), CN 32190
Columbus East Viaduct
Platte County
Cultural Resources Evaluation

Please review this document on historic resources for the subject projects as required under Section 106 of the National Historic Preservation Act of 1966 as amended and implementing regulations at 36 CFR Part 800.

An evaluation of the potential for cultural resources, both archeology and standing structures, is included below [and in enclosures].

Project Description
The proposed project is located just east of the City of Columbus, outside of the corporate limits (Enclosure 1). The project involves construction of a grade-separation on East 29th Avenue over the existing double-track main line of the UPRR. The study area is generally centered along the East 29th Avenue corridor, and is bounded by US 30 on the north, East 8th Street on the south, East 14th Avenue on the west, and East 44th Avenue on the east.

The project involves construction of a new two-lane grade separation (viaduct) over the East 29th Avenue UPRR mainline crossing. The viaduct is anticipated to consist of a pier and abutment configuration using the existing East 29th Avenue alignment; however, off alignment alternatives are being considered. Proposed viaduct sections would generally be 55 feet wide and would likely include two 14-foot wide lanes with six-foot wide shoulders separated by a 12-foot wide painted median. The viaduct would conform to UPRR design standards and provide adequate vertical clearance for continued use of the UPRR mainline. Viaduct approach grades of three to five percent are expected. As a result, multiple access points would be cut off from East 29th Avenue. Additional access points would need to be constructed or relocated accordingly.

Detours would be required should the bridge be constructed on the existing East 29th Avenue alignment. Potential detour options include a temporary at-grade UPRR crossing adjacent to the

East 29th Avenue alignment, or the use of East 44th Avenue, East 8th Street, and East 32nd Avenue. Temporary signals, pavement improvement and widening, improved intersection radii, and bridge reinforcement may be required. Additional right-of-way (ROW) and utility relocations would be required. No relocations or acquisitions of structures are expected. Coordination with the railroad would be required.

The proposed project includes the following:
- Survey and staking
- Clearing and grubbing
- Pavement removal
- Major grading (beyond the hinge point)
- Culvert new, replacement, extension, repair
- Earth shoulder construction
- Shoo-fly
- Curb and flume
- Piers and Pile driving (impact)
- Construction of a bridge superstructure and substructure / overpass
- Rock or gravel surfacing
- Paving
- Crack sealing and joint sealing
- Retaining walls (not in water/wetlands)
- Guardrail repair with soil disturbance
- Signs with soil disturbance
- Pavement marking
- Erosion and sediment control (barriers, post-construction erosion control, and vegetation)

Area of Potential Effects (APE)
The APE for archeological properties and standing structures was chosen to adequately identify any historic properties that may be potentially altered by this undertaking (Enclosure 2). The APE for direct physical impacts consists of all construction areas described above and in the enclosed maps for each of the alternatives, and includes resources adjacent to the limits of construction. This APE also encompasses the potential detours, as construction activities are planned for these routes. The APE for standing structures is further expanded to consider any possible visual or atmospheric (auditory and vibratory) impacts resulting from this project. This visual and atmospheric APE extends approximately one-half mile out from the proposed viaduct location and continues east to include the potential detours.

Archeological Evaluation
An archeological evaluation was conducted by Highway Archeologist Courtney Ziska between July 15 and August 29, 2013. A review of the Nebraska State Historical Society Cultural Resources Geographic Information System (NCRGIS) database and historic maps indicated that there are no previously recorded archeological sites within the APE. On July 16 and August 28, an archeological field reconnaissance was completed of the entire APE for each of the three alternatives. As a result of this reconnaissance, all accessible areas of the APE not previously disturbed by road construction and development were intensively pedestrian surveyed with negative results (Enclosure 3). There are no archeological historic properties in the APE.

Standing Structures

A standing structure evaluation was conducted by Preservation Associate Megan Akerstrom in August and September 2013 (Enclosure 4). Historic properties were investigated through the Nebraska State Historic Preservation Office inventory and site files, National Register Evaluation of Nebraska Bridges 1947 to 1965 (including the reassessment of select pre-1947 bridges), Nebraska Historic Bridge Inventory of 1991, Platte County Assessor's Office website, Historic Building Survey of Platte County (1996), National Register Nomination Form *Walter and Ruby Behlen House* (2003), Behlen Company 70th Anniversary History Brochure (2006), and Google Maps. An on-site survey and evaluation was completed by Akerstrom in August and September 2013.

Within the APE of the alternatives and detours for this undertaking, eight properties were identified. Of these properties, two (FN7 and PT00-062) are recommended eligible for listing on the National Register. FN7, the Kosch Company Building, is recommended eligible for listing under Criterion C, for Vernacular Architecture, with Criteria Consideration G (Properties that have Achieved Significance within the last Fifty Years) applied. PT00-062, the Behlen Manufacturing Factory, is recommended eligible under Criterion A for association with local Industry and Business, Criterion B for association with Walter Behlen, and Criterion C for Engineering and Architecture. The remaining five properties are not recommended eligible for listing on the National Register due to a lack of integrity and/or a lack of historic or architectural association.

The Columbus East Viaduct project includes the construction of a new two-lane grade separation (viaduct) over a railroad crossing, with the proposed viaduct measuring 55 feet wide and 32-35 feet in height at the crest. The Kosch Company Building (FN7) and the Behlen Manufacturing Factory (PT00-062) will not be affected by these activities as planned. Both properties are approximately one-half mile from the construction limits along the existing East 29th Avenue alignment, and at least one-quarter mile from the potential detours, and will therefore not be affected by any direct physical impacts. Visually and atmospherically, both properties will not be affected due to the previously altered nature of the landscape and the preexisting conditions of the industrial setting in which they were built. Modern buildings have been constructed between the project site and these structures, creating pre-existing visual barriers between the properties and the proposed viaduct location, and the construction of a viaduct one-half mile to the west will not introduce any visual elements to the immediate landscape of these properties. Noise and vibratory impacts are not expected given the existing conditions of the industrial setting in which the properties are located, including high heavy truck traffic on the existing East 29th Avenue alignment one-half mile to the west, current rail traffic along the existing double-track main line of the UPRR to the south, and vehicle traffic along the four-lane Highway 30 to the north.

It is recommended that the Columbus East Viaduct project will have no effect to structural or architectural historic properties.

Recommended Effect

The proposed undertaking will not affect historic properties and the Federal Highway Administration recommends a finding of "no historic properties affected" and respectfully requests NeSHPO concurrence with these eligibility and effects determinations.

If you have any questions regarding this information, please do not hesitate to contact me at your earliest convenience.

Sincerely yours,

for Melissa Maiefski
Program Delivery Team Lead

Enclosures

CONCUR:

Deputy State Historic Preservation Officer — Date 10/29/13

U.S. Department of Transportation
Federal Highway Administration

NEBRASKA DIVISION

100 Centennial Mall North
Room 220
Lincoln, NE 68508
(402)742-8460

October 9, 2013

In Reply Refer To:
HDA-NE

Lance Foster, THPO
Iowa Tribe of Kansas and Nebraska
3345 Thrasher Road
White Cloud, KS 66094

Dear Mr. Foster:

Project RRZ-71(33), CN 32190
Columbus East Viaduct
Platte County
Cultural Resources Evaluation

Please review this document on historic resources for the subject projects as required under Section 106 of the National Historic Preservation Act of 1966 as amended and implementing regulations at 36 CFR Part 800. 36 CFR Part 800.2 (c)(2) specifically addresses consultation between Tribes and federal agencies. The Nebraska State Historic Preservation Office (NeSHPO) is also a consulting party for this undertaking.

An evaluation of the potential for cultural resources, both archeology and standing structures, is included below [and in enclosures].

Project Description
The proposed project is located just east of the City of Columbus, outside of the corporate limits (Enclosure 1). The project involves construction of a grade-separation on East 29th Avenue over the existing double-track main line of the UPRR. The study area is generally centered along the East 29th Avenue corridor, and is bounded by US 30 on the north, East 8th Street on the south, East 14th Avenue on the west, and East 44th Avenue on the east.

The project involves construction of a new two-lane grade separation (viaduct) over the East 29th Avenue UPRR mainline crossing. The viaduct is anticipated to consist of a pier and abutment configuration using the existing East 29th Avenue alignment; however, off alignment alternatives are being considered. Proposed viaduct sections would generally be 55 feet wide and would likely include two 14-foot wide lanes with six-foot wide shoulders separated by a 12-foot wide painted median. The viaduct would conform to UPRR design standards and provide adequate vertical clearance for continued use of the UPRR mainline. Viaduct approach grades of three to five percent are expected. As a result, multiple access points would be cut off from East 29th Avenue. Additional access points would need to be constructed or relocated accordingly.

Detours would be required should the bridge be constructed on the existing East 29th Avenue alignment. Potential detour options include a temporary at-grade UPRR crossing adjacent to the East 29th Avenue alignment, or the use of East 44th Avenue, East 8th Street, and East 32nd Avenue. Temporary signals, pavement improvement and widening, improved intersection radii, and bridge reinforcement may be required. Additional right-of-way (ROW) and utility relocations would be required. No relocations or acquisitions of structures are expected. Coordination with the railroad would be required.

The proposed project includes the following:
- Survey and staking
- Clearing and grubbing
- Pavement removal
- Major grading (beyond the hinge point)
- Culvert new, replacement, extension, repair
- Earth shoulder construction
- Shoo-fly
- Curb and flume
- Piers and Pile driving (impact)
- Construction of a bridge superstructure and substructure / overpass
- Rock or gravel surfacing
- Paving
- Crack sealing and joint sealing
- Retaining walls (not in water/wetlands)
- Guardrail repair with soil disturbance
- Signs with soil disturbance
- Pavement marking
- Erosion and sediment control (barriers, post-construction erosion control, and vegetation)

Area of Potential Effects (APE)

The APE for archeological properties and standing structures was chosen to adequately identify any historic properties that may be potentially altered by this undertaking (Enclosure 2). The APE for direct physical impacts consists of all construction areas described above and in the enclosed maps for each of the alternatives, and includes resources adjacent to the limits of construction. This APE also encompasses the potential detours, as construction activities are planned for these routes. The APE for standing structures is further expanded to consider any possible visual or atmospheric (auditory and vibratory) impacts resulting from this project. This visual and atmospheric APE extends approximately one-half mile out from the proposed viaduct location and continues east to include the potential detours.

Archeological Evaluation

An archeological evaluation was conducted by Highway Archeologist Courtney Ziska between July 15 and August 29, 2013. A review of the Nebraska State Historical Society Cultural Resources Geographic Information System (NCRGIS) database and historic maps indicated that there are no previously recorded archeological sites within the APE. On July 16 and August 28, an archeological field reconnaissance was completed of the entire APE for each of the three alternatives. As a result of this reconnaissance, all accessible areas of the APE not previously

disturbed by road construction and development were intensively pedestrian surveyed with negative results (Enclosure 3). There are no archeological historic properties in the APE.

Standing Structures

A standing structure evaluation was conducted by Preservation Associate Megan Akerstrom in August and September 2013 (Enclosure 4). Historic properties were investigated through the Nebraska State Historic Preservation Office inventory and site files, National Register Evaluation of Nebraska Bridges 1947 to 1965 (including the reassessment of select pre-1947 bridges), Nebraska Historic Bridge Inventory of 1991, Platte County Assessor's Office website, Historic Building Survey of Platte County (1996), National Register Nomination Form *Walter and Ruby Behlen House* (2003), Behlen Company 70th Anniversary History Brochure (2006), and Google Maps. An on-site survey and evaluation was completed by Akerstrom in August and September 2013.

Within the APE of the alternatives and detours for this undertaking, eight properties were identified. Of these properties, two (FN7 and PT00-062) are recommended eligible for listing on the National Register. FN7, the Kosch Company Building, is recommended eligible for listing under Criterion C, for Vernacular Architecture, with Criteria Consideration G (Properties that have Achieved Significance within the last Fifty Years) applied. PT00-062, the Behlen Manufacturing Factory, is recommended eligible under Criterion A for association with local Industry and Business, Criterion B for association with Walter Behlen, and Criterion C for Engineering and Architecture. The remaining five properties are not recommended eligible for listing on the National Register due to a lack of integrity and/or a lack of historic or architectural association.

The Columbus East Viaduct project includes the construction of a new two-lane grade separation (viaduct) over a railroad crossing, with the proposed viaduct measuring 55 feet wide and 32-35 feet in height at the crest. The Kosch Company Building (FN7) and the Behlen Manufacturing Factory (PT00-062) will not be affected by these activities as planned. Both properties are approximately one-half mile from the construction limits along the existing East 29th Avenue alignment, and at least one-quarter mile from the potential detours, and will therefore not be affected by any direct physical impacts. Visually and atmospherically, both properties will not be affected due to the previously altered nature of the landscape and the preexisting conditions of the industrial setting in which they were built. Modern buildings have been constructed between the project site and these structures, creating pre-existing visual barriers between the properties and the proposed viaduct location, and the construction of a viaduct one-half mile to the west will not introduce any visual elements to the immediate landscape of these properties. Noise and vibratory impacts are not expected given the existing conditions of the industrial setting in which the properties are located, including high heavy truck traffic on the existing East 29th Avenue alignment one-half mile to the west, current rail traffic along the existing double-track main line of the UPRR to the south, and vehicle traffic along the four-lane Highway 30 to the north.

It is recommended that the Columbus East Viaduct project will have no effect to structural or architectural historic properties.

Recommended Effect
The proposed undertaking will not affect historic properties and the Federal Highway Administration recommends a finding of "no historic properties affected" and respectfully requests Iowa Tribe of Kansas and Nebraska concurrence with these eligibility and effects determinations.

If you have any questions regarding this information, please do not hesitate to contact me at your earliest convenience.

Sincerely yours,

for Melissa Maiefski
Program Delivery Team Lead

Enclosures

CONCUR:

_____ _____

Tribal Historic Preservation Officer Date

Appendix G Noise Study

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STATE OF NEBRASKA
DEPT. OF ROADS
APPROVED:

DATE: 1-14-14

Traffic Noise and Vibration Impact Assessment for Columbus East 29th Street Viaduct Highway 30 to 8th Street

December, 2013

Prepared for:

Platte County
Nebraska Department of Roads
Federal Highway Administration

Federal Aid Project No.: RRZ-71(33)
NDOR Control No.: 32190

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APPENDICES

APPENDIX A TNM Model Input and Results

1.0 INTRODUCTION

The National Environmental Policy Act (NEPA) of 1969 established a mandate for federal agencies to consider the potential environmental consequences of their proposed actions, to document the analysis, and to make the information available to the public for comment prior to implementation. Partial federal funding has been secured for widening of East 29th Avenue and construction of a viaduct over the Union Pacific Railroad (UPRR) near Columbus, Nebraska. The prospective improvements to E. 29th Avenue are generally between U.S. Highway 30 (US 30) and 8th Street (**Figure 1**) in Columbus.

In accordance with NEPA and related regulations, the Federal Highway Administration (FHWA), as the Lead Agency, in cooperation with the Nebraska Department of Roads (NDOR) as a Joint Lead Agency, is preparing a NEPA environmental decision document for this project. The project is sponsored by NDOR in cooperation with Platte County.

The purpose of the analyses presented in this report was to conclude whether noise or vibration levels from the proposed improvements at properties near the prospective road improvements (i.e., receptors) may exceed applicable thresholds according to NDOR and FHWA guidelines. This report presents the overall analysis that was performed to evaluate existing and future traffic noise levels as well as assess potential impacts to properties near the road improvements from noise and vibration from road traffic.

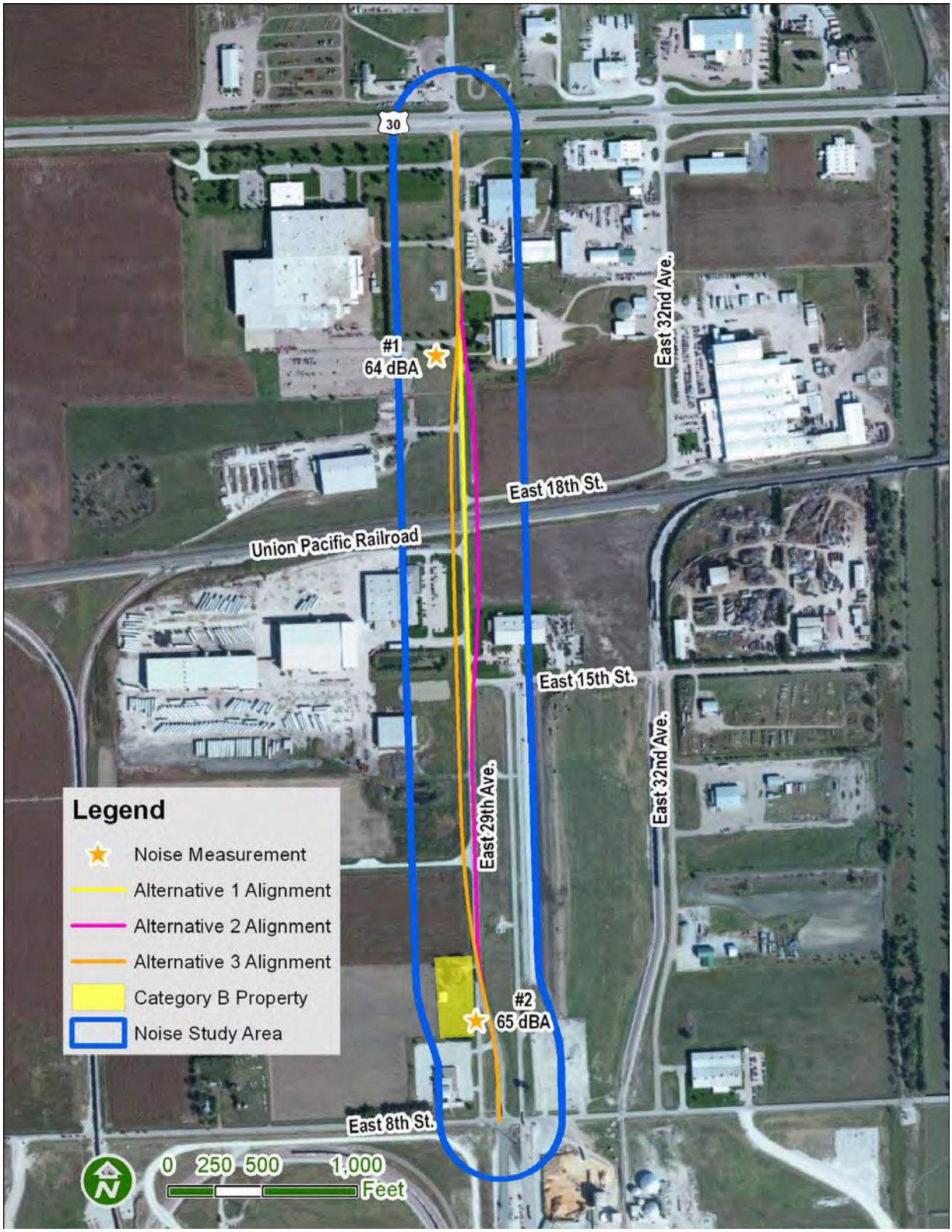
1.1 Project Description

The primary improvements being proposed through the project are to E. 29th Avenue between approximately US 30 and 8th Street (**Figure 1**). Currently, E. 29th Avenue in the project corridor is a two-lane street with an at-grade crossing of the UPRR and does not include auxiliary lanes for left turns except at major intersections. The proposed improvements would change E. 29th Avenue in the project corridor from the current two lanes to three lanes with left turns supported from the center lane. A viaduct would be constructed to grade-separate the UPRR. Because of vertical changes caused by the viaduct, several local access roads would need to be realigned but no access points to E. 29th Avenue would be added or removed by the proposed project.

The improvements would enhance safety and operations by removing the at-grade UPRR crossing. The added center turn lane would remove traffic stopped to make a left turn (especially large trucks) from the through traffic, which would improve safety and operations. The improvements would also modernize other related infrastructure, such as drainage, to comply with current requirements. These prospective improvements will require more street right-of-way.

Four future (2040) alternatives are being evaluated in the NEPA process for the project. The No Build Alternative is included and would make no substantive improvements to E. 29th Avenue in the corridor, although routine street maintenance may occur in the future such as pavement resurfacing. Three alternative alignments are being considered for E. 29th Avenue (**Figure 1**) that would consist of the three-lane street profile and associated improvements described above. The same street section is being considered for E. 29th Avenue for all three alternatives; the differences would be in the alignments: on the current alignment (Alternative 1); shifted approximately 65 feet east (Alternative 2); or, shifted approximately 65 feet west (Alternative 3).

Figure 1 Project Corridor and Noise Measurement Results

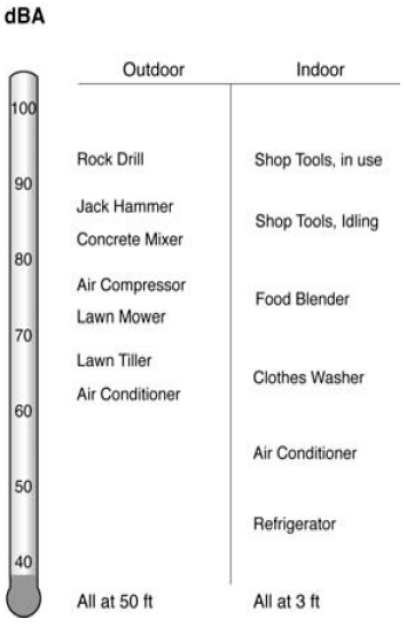


1.2 Basics of Sound

Sound is created when an object vibrates and radiates part of that energy as acoustic pressure changes or waves through a medium, such as air or water. Noise is commonly defined as unwanted sound. Sound and noise have many characteristics that are important to consider for impacts, including loudness (energy intensity), frequency, and fluctuations over time.

Sound and noise intensities are measured in units of decibels (dB). The dB scale is logarithmic. To illustrate this, consider that two identical noise sources, each producing 60 dB, would produce 63 dB when added together. A 10-dB increase in sound levels represents ten times more sound energy. The human ear can accommodate a wide range of sound energy levels, with the maximum of these levels having more than a million times the sound energy of the minimum levels. Examples of common sound levels are shown in **Figure 2**.

Figure 2 Typical Sound Levels



Source: Federal Transit Administration, 2006

The human ear is not equally sensitive to all frequencies of sound. To represent this trait numerically, mathematical adjustments to raw sound levels are often used. Adjustments of the sound frequency octave bands using the “A” weighting curve is frequently used to approximate how the human ear perceives sounds. This weighting consists of reducing the contributions from low and extremely high sound frequency bands by specified amounts. Sound levels that have been weighted this way are reported in dBA. FHWA and NDOR guidance specify sound units in dBA. Research has shown that most people do not notice a difference in loudness between sound levels of less than 3 dBA, which is a two-fold change in the sound energy. Most people relate a 10-dBA increase in sound levels to a doubling of sound loudness.

Noise often fluctuates over time because of the characteristics of the source. Traffic noise will fluctuate over short time frames from changes in traffic volumes, vehicle types and vehicle speeds. This frequent fluctuation can make it difficult to describe the noise conditions fully through a single value.

FHWA and NDOR use the one-hour equivalent sound level (L_{eq}) as the metric for assessing traffic noise impacts (NDOR, 2011). In simple terms, the L_{eq} is the "average" of the fluctuating noise levels over the time period (usually one hour). More specifically, the L_{eq} is the constant sound level that would produce the same amount of sound energy as the naturally fluctuating noise levels.

Sound levels decrease with distance from the source because of acoustic spreading, atmospheric absorption, interferences from objects and ground effects. "Hard" ground (such as asphalt) and "soft" ground (such as grass) affect sound transmission differently. "Hard" ground is more reflective and will result in louder sound levels farther from the source.

Using traffic noise passing over "hard" ground as an example, a 3-dBA increase in noise levels could be caused by either doubling the traffic volume or cutting the distance from the listener to the roadway in half. Note that such a change would be barely noticeable to most people. On busy roads and highways, the loudest traffic noise generally occurs when the largest traffic volume can travel at the highest speed, which is not necessarily the peak of rush hour when the traffic volume can be so high that the roads become congested and vehicle speeds slow. This noisiest traffic condition generally corresponds to Level of Service (LOS) C or D for a highway (FHWA, 2010). Another potentially noisy condition is when the highest volume of heavy trucks is present.

1.3 Basics of Vibration

Ground-borne vibration is the oscillatory motion of the ground about its equilibrium position. There are no federal or state requirements directed specifically to traffic-induced vibration. Studies that have been done to assess the impact of traffic vibrations have shown that both measured and predicted traffic vibration levels are less than any known criteria for causing structural damage to buildings (FHWA, 2010). Often, normal indoor activities like closing doors have been shown to create greater levels of vibration in homes than nearby highway traffic. Because of these findings, vibration from road traffic has been concluded not to be a concern within the NEPA decision document and will not be examined further in this analysis.

Vibration from road construction could be a concern if high-vibration construction techniques such as pile driving or blasting are used. Issues with construction-generated vibrations would depend on high-vibration activities occurring close to vibration-sensitive locations. At present, it is not known if these types of construction techniques would be necessary or occur near sensitive properties. If such construction techniques are necessary at a specific location, the vibration concerns will be addressed during construction planning on a case-by-case basis and appropriate abatement action taken for the specific situation. Therefore, vibration from road construction will not be examined further in this analysis.

1.4 Noise Analysis Approach

The overall purpose of the following noise analysis was to conclude whether noise levels at any sensitive receptors within a minimum distance of 300 feet from potential project improvements may exceed applicable impact thresholds because of the project alternatives. If so, noise abatement actions for the impacted receptors would be considered for the project.

Roads of concern for the analysis were those that would be changed by the project, would have substantially different traffic volumes because of an alternative, or are locally significant noise sources. For this project that consists of E. 29th Avenue; US 30, 8th Street and 15th Street were included for completeness. Currently, there is one residence in the noise study area (**Figure 1**)—no other noise-sensitive land uses were identified in the project corridor. There are several businesses and some undeveloped parcels present. Computer modeling was used to examine

existing and expected future traffic noise conditions, focusing on potential impacts to the most sensitive and nearest receptors.

2.0 ANALYSIS METHODS

Noise impacts for the project from automobile traffic were evaluated through a combination of measurements and computerized modeling. The specific methods used for each part of the analysis are described below.

Because streets are the focus of the project noise analysis, the appropriate governing noise impact criteria are the state and federal highway noise guidelines. FHWA has defined Noise Abatement Criteria (NAC) for seven land use categories (**Table 1**) that apply to its projects (FHWA, 2011), and directed the states to define their own thresholds where traffic noise levels "approach" the NAC and cause noise impacts. NDOR has established an "approach level" for each FHWA NAC that is 1 dBA below the FHWA NAC (NDOR, 2011). Therefore, NDOR has the more restrictive requirements and traffic noise impacts were assessed by comparing the calculated traffic noise levels to the relevant NDOR "approach level" (**Table 1**). For further comparison, typical noise levels are shown in **Figure 2**.

Land Use Categories B, C and E (**Table 1**) are frequent traffic noise concerns on road projects. The NDOR approach level for residences (Category B) and other common noise-sensitive land uses (Category C) is an exterior L_{eq} of 66 dBA. The approach level for sensitive commercial areas (Category E) is an exterior L_{eq} of 71 dBA. Note that these apply to exterior areas of frequent human use.

Under NDOR guidelines, equaling or exceeding the approach level is a noise impact and triggers an investigation of noise abatement measures. A "substantial" noise increase from a prospective project is also a noise impact and also leads to evaluation of traffic noise abatement actions. A "substantial" noise increase is defined by NDOR as the future noise level increasing by 15 dBA or more over existing levels.

Table 1 NDOR NAC Approach Levels

Land Use Category	NAC Approach Level (L_{eq})	Description of Land Use Category
A	56 dBA (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is to continue to serve its intended purpose.
B	66 dBA (Exterior)	Residential
C	66 dBA (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, Section 4(f) sites, trails, trail crossings, and television studios
D	51 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools and television studios
E	71 dBA (Exterior)	Hotels, motels, offices, restaurants, bars and other developed lands, properties or activities not included in A-D or F.
F	Not Applicable	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, ship yards, utilities (water resources, water treatment, electrical), and warehousing
G	Not Applicable	Undeveloped lands that are not permitted for development

Source: NDOR, 2011

For the noise impact discussion, the "peak hour" refers to the highest traffic noise hour, which may or may not correspond to the hour of largest traffic volume. Overall traffic noise can decrease during rush hour due to lower vehicle speeds from overloaded and congested roads (**Section 1.2**). Traffic noise can be higher during high heavy truck traffic periods.

2.1 Traffic Noise Measurements

Traffic noise measurements were taken at two locations in the project corridor (**Figure 1**) on August 21, 2013 using an NTI XL2 Type 1 sound level meter calibrated at the site with a Larson-Davis CAL200 calibrator. This equipment conforms to American National Standards Institute Standard S1.4 for Type 1 sound level meters. Calibrations traceable to the U.S. National Institute of Standards and Technology were performed in the field before and after each set of measurements using the acoustical calibrator. The measurement microphone was protected by a windscreen and located on a tripod approximately 5 feet above the ground. The microphone was positioned at each site to characterize the exposure to the dominant noise sources in the area.

Noise measurements were made during weather conditions, including wind speed, that were acceptable according to FHWA guidance (FHWA, 1996). Weather conditions were monitored during the measurements. The traffic noise measurements were spread across the project corridor (**Figure 1**). A continuous15-minute traffic noise measurement was performed at each location to document existing ambient conditions in the project corridor. Traffic counts, including the numbers of large trucks, were collected during the noise measurement periods for model verification. The measurement results were also used to evaluate the performance of the computer models.

2.2 Traffic Noise Modeling Methods

Modeling is used because day-to-day variations in traffic or weather conditions that affect noise levels cannot be captured or quantified by brief noise measurements alone, and because the future noise levels cannot be measured now. In addition, the modeling can evaluate many more locations than can reasonably be field measured. The modeling results represent predicted typical average traffic conditions during peak noise periods.

Computer modeling was performed for current conditions (2013) and the four alternatives for Year 2040. The traffic noise modeling software used was FHWA's Traffic Noise Model (TNM) Version 2.5. The main purposes of the models was to examine whether traffic noise levels from the project would equal or exceed the NDOR approach levels, and whether noise abatement should be provided for any such impacts within the project corridor.

Traffic is an important noise source in the project corridor. The modeled roadways were the roads that would be built or changed by the build alternatives or were important local noise sources. Locomotive horn noise from the UPRR at the crossing is also an important local noise source, but was not examined under this analysis. Note that constructing any of the build alternatives would create a railroad noise benefit by eliminating the horn noise associated with the E. 29th Avenue crossing.

In addition, approximately forty other model points were dispersed through the project corridor (**Appendix A**) to evaluate general traffic noise conditions in the remainder of the study area and develop information for the local agencies for undeveloped properties (**Section 5.1**). For these model points, 2013 conditions, 2040 No Build and 2040 Alternative 1 were modeled. Note that Alternative 1 also represents Alternatives 2 and 3 because the road sections and traffic volumes would be the same for all three alternatives. The distances from the future road to the specified noise levels would be the same for these alternatives. The alignments differ in areas where only Category F and G properties are present (**Figure 1**).

None of the buildings in the project corridor had upper floors with exterior spaces (i.e., balconies), so all the modeled points were at ground level.

The existing traffic conditions model included the 2013 road configurations and traffic volumes. The No Build Alternative model included the 2013 road configurations and 2040 traffic volumes. The future build alternatives were modeled for their respective 2040 conditions (**Section 1.1**) as was described above. Note that the build alternatives would include widening E. 29th Avenue and constructing the viaduct, as previously described.

The traffic on E. 29th Avenue is expected to have a high percentage of heavy trucks. For that reason, the hour with the largest volume of truck traffic was chosen for modeling. Based on the traffic analysis for the project, the hour was determined to be 8-9 AM, which was not the morning peak overall traffic hour (6:30-7:30 AM). The 8-9 AM overall traffic volumes were calculated to be approximately 95 percent of the morning peak volume north of 15th Street, and approximately 57 percent of the morning peak volume south of 15th Street (based on traffic counts). Heavy trucks during the 8-9 AM hour would be as much as 67percent of the traffic. This was the basis for the traffic volumes modeled (**Appendix A**).

3.0 AFFECTED ENVIRONMENT

The current traffic noise conditions in the project corridor were assessed through a combination of measurements and modeling. Only one noise-sensitive receptor (a home) is present in the project corridor (**Figure 1**). No public use areas identified as being noise sensitive were within the project corridor. There are several industrial/commercial properties and undeveloped properties (Categories F and G) in the project corridor (**Figure 1**), but these are not considered for traffic noise impacts (NDOR, 2011). The existing conditions for traffic noise for these areas are presented below.

3.1 Traffic Noise Verification Model

As a check on the TNM noise model parameters, the traffic conditions observed during the noise measurements were used to construct a verification model in TNM. The intent was to check the accuracy of the noise levels calculated through a model that mimics the road alignment, traffic volumes and model points at the time of field measurement. A close match between model results and field measurements ensures that the models are providing accurate noise results (NDOR, 2011).

The verification model covers the areas where noise level measurements were made (**Figure 1**). The model was constructed in TNM using the same approach as the alternatives models (**Section 2.2**).

The verification results for Locations 1 and 2 were in close agreement (**Table 2**), as the measured and modeled results differed by 3 dBA or less. These results were acceptable according to FHWA guidelines (FHWA, 2010), which require the difference to be no more than 3 dBA.

Table 2 Verification Noise Model Results

Location Number	Location	Measurement L_{eq} (dBA)	Verification Model Result (dBA)	Difference (dBA)
1	2200 block E. 29th Ave.	64	62	2
2	1000 block E. 29th Ave.	65	63	2

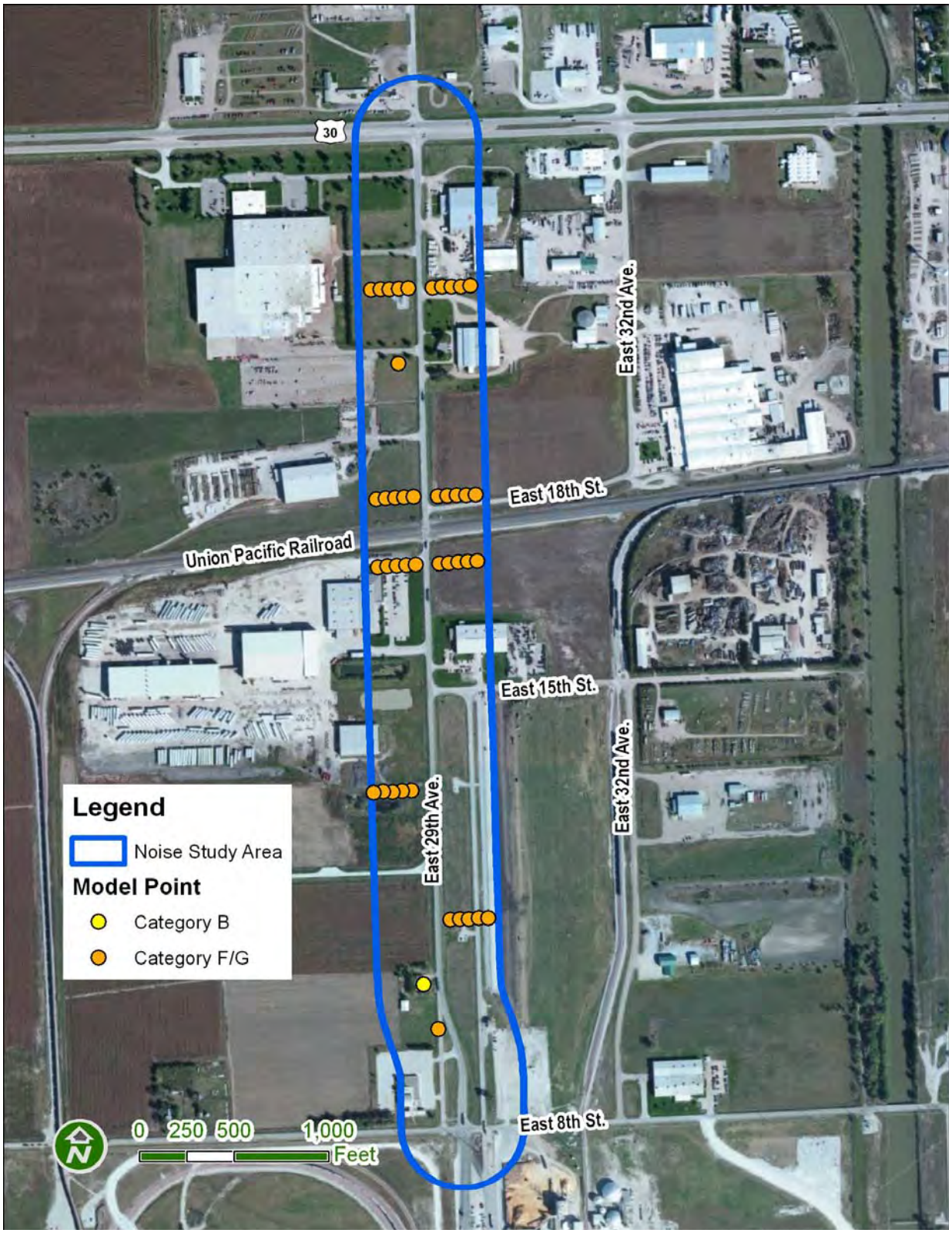
Source: Project modeling results, 2013

3.2 Traffic Noise Impact Model Results

A noise model was developed (**Section 2.2**) to evaluate existing (2013) conditions on a broader basis than allowed by the field measurements alone. The existing conditions model included the major existing roads that may be affected by the project, with existing traffic volumes and road layouts. Approximately 40 points were modeled for traffic noise (**Figure 3** and **Appendix A**).

The calculated result for each model point is presented in **Appendix A**. Overall, the calculated noise level range for the modeled points was 51-66 dBA. None of the model points had existing traffic noise levels at or above the respective NAC approach level during the peak noise hour, so there are no noise impacted areas in the project corridor for existing conditions. These results are tabulated in **Section 4.0** with the 2040 results.

Figure 3 Traffic Noise Model Points



4.0 ENVIRONMENTAL CONSEQUENCES

The future alternatives being considered for the project were described in **Section 1.1**. The traffic noise modeling effort was conducted as described in **Section 2.0** to assess whether 2040 noise levels would equal or exceed the relevant NDOR NAC approach levels and whether noise levels would increase substantially. If so, abatement measures to alleviate the predicted noise impacts would be considered and evaluated for the build alternatives following NDOR guidelines.

Traffic noise models were developed as described in **Section 2.2** for each alternative. The models included the major project roads using predicted future (2040) traffic volumes and road layouts. The modeled points are illustrated in **Figure 3**.

4.1 No Build Alternative 2040 Results

For this noise analysis, the No Build Alternative was defined as maintaining the existing layout of E. 29th Avenue through the project corridor. The model noise results are summarized in **Table 3** and tabulated in **Appendix A**.

As with existing conditions, the modeling results indicated that no receptors would be impacted by noise under No Build in 2040. Traffic noise levels would be higher than existing conditions due to the predicted traffic growth through 2040. Overall, the calculated noise level range for the model points was 55-72 dBA. No noise-sensitive receptors were expected to experience a 15-dBA increase; the largest overall increase was predicted to be 6 dBA. Therefore, it was concluded that no noise impacts will occur for the No Build Alternative in 2040.

Table 3 Summary of Receptors Impacted by Traffic Noise

Land Use Category	Existing Conditions (2013)	No Build (2040)	Alternative 1 (2040)	Alternative 2 (2040)	Alternative 3 (2040)
Category B	0	0	0	0	0

Source: Project modeling results, 2013.

4.2 Alternatives 1, 2 and 3 2040 Results

Noise levels from the three potential build alternatives were evaluated through two models (**Section 2.2**)—Alternatives 1 and 2 had the same alignment near the Category B receptor (**Figure 1**). The two models provided very similar results as there are relatively minor differences between the build alternatives near the Category B property (**Figure 1**). The model noise results are summarized in **Table 3** and tabulated in **Appendix A**.

As with existing conditions and No Build, the modeling results indicated that no receptors would be impacted by noise under any of the build alternatives in 2040. Traffic noise levels would be higher than existing conditions due to the predicted traffic growth through 2040 and the proposed changes to E. 29th Avenue. Overall, the calculated noise level range at the model points was 58-71 dBA. No receptors were expected to experience a 15-dBA increase; the largest overall increase was predicted to be 10 dBA (in an undeveloped area). Therefore, it was concluded that no noise impacts will occur for the Preferred Alternative in 2040.

4.3 Detour Noise

During construction of the viaduct for the Preferred Alternative, E. 29th Avenue will need to be closed at the UPRR. This will cause traffic to be detoured. Local traffic includes a comparatively high percentage of heavy trucks. To estimate the change in traffic noise levels during the detour periods, a TNM model was constructed (**Section 2.2**) for the 2013 detour conditions.

The detour model consisted of the existing road layouts with 2013 detour traffic volumes that were developed as part of the traffic analysis. Because of predicted shifts in traffic, some areas would see traffic noise increase while others would see noise decrease. The modeled detour results are summarized in **Figure 4**.

In general, the noise levels are not expected to change dramatically (less than 2 dBA) during the detour, except at the UPRR crossing where traffic will be prohibited. That is because traffic will still be accessing the commercial sites in the study area; the directions will just be altered. Noise from E. 29th Avenue traffic is expected to decrease slightly. Noise from 8th Street traffic is expected to increase slightly. Noise from US 30 traffic is not expected to be affected substantively.

4.4 Construction Noise

Adjoining properties in the project corridor could be exposed to noise from construction activities from the Preferred Alternative. Construction noise differs from traffic noise in several ways:

- Construction noise lasts only for the duration of the construction event, with most construction activities in noise-sensitive areas being conducted during hours that are least disturbing to adjacent and nearby residents.
- Construction activities generally are short term and, depending on the nature of the construction operations, could last from seconds (e.g., a truck passing a receptor) to months (e.g., constructing a bridge).
- Construction noise is intermittent and depends on the type of operation, location, and function of the equipment, and the equipment usage cycle.

Construction noise is not assessed like operational traffic noise; there are no FHWA or NDOR NACs for construction noise. Construction noise would be subject to relevant local regulations and ordinances, and any construction activities would be expected to comply with them. No construction or detour noise abatement actions are being proposed at this time; however, typical best management practices should be employed where possible. The project corridor abuts residential areas. To address the temporary elevated noise levels that may be experienced during construction, standard abatement measures should be incorporated where it is feasible to do so. These measures may include:

- Notify neighbors in advance when construction noise may occur and its expected duration so that they may plan appropriately.
- Manage construction activities to keep noisy activities as far from sensitive receptors as possible.
- Exhaust systems on equipment would be in good working order. Equipment would be maintained on a regular basis, and equipment may be subject to inspection by the construction project manager to ensure maintenance.
- Properly designed engine enclosures and intake silencers would be used where appropriate.
- Use temporary noise barriers where appropriate and possible.
- New equipment would be subject to new product noise emission standards.
- Stationary equipment would be located as far from sensitive receptors as possible.
- Perform construction activities in noise sensitive areas during hours that are least disturbing to adjacent and nearby residents.

Figure 4 Estimated Change in Traffic Noise During Construction Detour

5.0 SUMMARY

A traffic noise analysis was performed for a road improvement project that would construct a viaduct over the UPRR and widen E. 29th Avenue between US 30 and 8th Street in Columbus. The results from the traffic noise analysis indicated that no receptors in the project corridor will be impacted by noise from any of the four future alternatives that were examined for 2040. Because no noise impacts were identified, no traffic noise abatement measures were evaluated for the project.

5.1 Information for Local Officials

For informational purposes and planning by local governments, the distance from the proposed future street curbs to peak-hour L_{eq}s of 66 dBA (Categories B and C) and 71 dBA (Category E) in 2040 was estimated for E. 29th Avenue north and south of 15th Street. North of 15th Street, the distances were approximately 120 feet and 40 feet, respectively. South of 15th Street, the distances were approximately 60 feet and 15 feet, respectively. Note that these are generalized distances and may vary by street segment according to the traffic volumes or speeds. Any future noise-sensitive development in the project corridor that is within the applicable setback distance may experience traffic noise impacts.

5.2 Statement of Likelihood

The analysis described above concluded that there would not be noise impacts within the study area corridor under the scenarios examined. Therefore, no noise abatement actions are recommended for inclusion in the proposed project.

6.0 REFERENCES

Federal Highway Administration. 1996. Measurement of Highway-Related Noise, May.

Federal Highway Administration. 2011. Highway Traffic Noise: Analysis and Abatement Guidance, December.

Nebraska Department of Roads. 2011. Noise Analysis and Abatement Policy, July 13.

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APPENDIX A
TNM Model Input and Results

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TNM Models E. 29th Avenue Traffic Volumes

Existing Conditions (2013)

Traffic Segment	# of Cars	# of Large Trucks	Speed (MPH)
15TH	22	45	35
EB 30 East	263	79	55
EB 30 West	354	100	55
EB 8th East	36	11	35
EB 8th West	84	28	35
NB 29TH A	27	43	35
NB 29TH B	53	67	35
SB 29th A	72	147	35
SB 29th B	23	6	35
WB 30 East	233	69	55
WB 30 West	240	68	55
WB 8th East	34	14	35
WB 8th West	36	13	35

Detour Conditions (2013)

Traffic Segment	# of Cars	# of Large Trucks	Speed (MPH)
15TH	22	45	35
EB 30 East	393	111	55
EB 30 West	250	75	55
EB 8th East	51	16	35
EB 8th West	108	36	35
NB 29TH A	23	29	35
NB 29TH B	21	35	35
SB 29th A	94	191	35
SB 29th B	31	8	35
WB 30 East	221	65	55
WB 30 West	201	56	55
WB 8th East	41	17	35
WB 8th West	58	22	35

No Build Alternative (2040)

Traffic Segment	# of Cars	# of Large Trucks	Speed (MPH)
15TH	29	59	35
EB 30 East	430	121	55
EB 30 West	577	163	55
EB 8th East	50	16	35
EB 8th West	145	48	35
NB 29TH A	57	93	35
NB 29TH B	105	134	35
SB 29th A	206	418	35
SB 29th B	192	48	35
WB 30 East	668	199	55
WB 30 West	511	153	55

WB 8th East	56	23	35
WB 8th West	203	75	35

Alternatives 1, 2 & 3 (2040)

Traffic Segment	# of Cars	# of Large Trucks	Speed (MPH)
15TH	29	59	35
EB 30 East	430	121	55
EB 30 West	577	163	55
EB 8th East	50	16	35
EB 8th West	145	48	35
NB 29TH @ 30	49	62	35
NB 29TH A	57	93	35
NB 29TH B	105	134	35
NB 29TH LT @ 30	56	72	35
SB 29TH LT @ 8TH	7	2	35
SB 29TH RIGHT @ 8TH	185	46	35
SB 29TH Through A	126	256	35
SB 29TH Truck Turn	16	32	35
WB 30 East	668	199	55
WB 30 West	511	153	55
WB 8th East	56	23	35
WB 8TH West	203	75	35

Verification Conditions (2013)

Traffic Segment	# of Cars	# of Medium Trucks	# of Large Trucks	Speed (MPH)
NB 29TH	36	0	72	35
NB 29TH B	221	0	109	35
SB 29th A	34	4	64	35
SB 29th B	52	0	8	35

TNM Model Points Map 1

TNM Model Points Map 2

TNM Model Results

Model Point	Category	No. of Receptors	NDOR Level (dBA)	Existing (2013) L_{eq} (dBA)	No Build (2040) L_{eq} (dBA)	Alternative 1 (2040) L_{eq} (dBA)	Alternative 3 (2040) L_{eq} (dBA)
CatB-1	B	1	66	59	64	64	64
AE50	F	0	NA	61	66	67	NA
AE100	F	0	NA	57	62	64	NA
AE150	F	0	NA	55	59	62	NA
AE200	F	0	NA	53	57	61	NA
AE250	F	0	NA	52	56	59	NA
BE50	G	0	NA	67	71	67	NA
BE100	G	0	NA	63	67	66	NA
BE150	G	0	NA	60	64	64	NA
BE200	G	0	NA	59	63	63	NA
BE250	G	0	NA	57	61	62	NA
CE50	G	0	NA	67	71	66	NA
CE100	G	0	NA	63	67	66	NA
CE150	G	0	NA	60	64	65	NA
CE200	G	0	NA	59	63	63	NA
CE250	G	0	NA	57	61	62	NA
DE50	F	0	NA	67	71	70	NA
DE100	F	0	NA	63	67	67	NA
DE150	F	0	NA	61	65	65	NA
DE200	F	0	NA	59	63	63	NA
DE250	F	0	NA	58	62	62	NA
AW50	G	0	NA	58	62	68	NA
AW100	G	0	NA	55	60	65	NA
AW150	G	0	NA	54	58	63	NA
AW200	G	0	NA	53	57	61	NA
AW250	G	0	NA	52	56	60	NA
BW50	F	0	NA	68	73	67	NA
BW100	F	0	NA	64	68	66	NA
BW150	F	0	NA	61	65	65	NA
BW200	F	0	NA	59	63	63	NA
BW250	F	0	NA	58	62	62	NA
CW50	G	0	NA	68	73	69	NA
CW100	G	0	NA	64	68	67	NA
CW150	G	0	NA	61	65	65	NA
CW200	G	0	NA	59	63	64	NA
CW250	G	0	NA	58	62	63	NA
DW50	G	0	NA	68	73	71	NA
DW100	G	0	NA	64	69	68	NA
DW150	G	0	NA	62	66	65	NA
DW200	G	0	NA	60	64	63	NA
DW250	G	0	NA	58	62	62	NA
Measurement 1	G	0	NA	63	67	68	NA
Measurement 2	G	0	NA	61	66	66	NA

NA=not applicable

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Appendix H MSAT Memorandum

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NDOR
Nebraska
Department of Roads

Memorandum

DATE February 13, 2014

TO Allison Sambol, Sr. Environmental Scientist

FROM Sean Schulz, Environmental Specialist, Planning and Project Development

SUBJECT Mobile Source Air Toxins (MSAT) Memo for CN 32190, Columbus East 29th Street Viaduct, RRZ-71(33)

The purpose of this project is to increase traffic flow by constructing a viaduct. This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

Sean Schulz
Environmental Specialist
Nebraska Dept. of Roads

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Appendix I USACE Jurisdictional Determination

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NEBRASKA REGULATORY OFFICE - WEHRSPANN
8901 SOUTH 154TH STREET, SUITE 1
OMAHA, NEBRASKA 68138-3621

http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/Nebraska.aspx

April 17, 2014

Mary Schroer
Nebraska Department of Roads
1500 Highway 2
PO Box 94759
Lincoln, Nebraska 68509

RE: 2013-1789-WEH / Platte County Columbus East Viaduct RRZ-71(33) CN 32190 – Preliminary Jurisdictional Determination

Dear Ms. Schroer:

This letter pertains to correspondence received in our office on November 12, 2013, requesting a preliminary jurisdictional determination be completed for the above referenced project. The proposed project will involve the construction of an above-grade railroad crossing of East 29th Avenue at the Union Pacific Railroad mainline crossing, located within the City of Columbus, Nebraska. The project is located in the vicinity of 41.432604°, -97.291187°, in Sections 22/23, Township 17 North, Range 1 East in Platte County, Nebraska.

We have prepared a preliminary jurisdictional determination (JD) for the site which is a written indication that waterways within your project area may be waters of the United States. Such waters have been treated as jurisdictional waters of the U.S. for purposes of computation of impacts and compensatory mitigation requirements. If you concur with the findings of the enclosed preliminary JD, please sign it and return it to the letterhead address within two weeks.

If you believe the preliminary JD is inaccurate, you may request this office complete an approved JD prior to your commencement of any work in a water of the U.S. An approved JD is an official determination regarding the presence or absence of waters of the U.S. Completion of an approved JD may require coordination with the U.S. Environmental Protection Agency.

Based on the information provided, resources utilized within our office, and the site visit conducted on September 24, 2013; we have reviewed the areas in question identified in your submittal and have made a preliminary jurisdictional determination.

1) **The following features may be jurisdictional wetlands and waters of the U.S.: Loup Canal and abutting wetlands (WOUS-112, S-112, S-113) located in the vicinity of 41.424327°, -97.282411°, in Sections 23/26, Township 17 North, Range 1 East in Platte County, Nebraska.**

If, in the future, you plan to place fill material in any waters of the United States, please provide this office with an application for review for possible permit requirements.

The Omaha District, Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer

Service Survey found on our website at http://per2.nwp.usace.army.mil/survey.html. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

If you have any questions concerning this jurisdictional determination, please contact Mr. Phil Rezac at the above address, by phone at (402) 896-0896, or by email at phil.m.rezac@usace.army.mil and refer to file number **2013-1789-WEH.**

Sincerely,

John L. Moeschen
Nebraska State Program Manager

Enclosures

Copy Furnish w/ Enclosures:
(FHU) Baumert
(NDEQ) Garber

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

A. Report Completion Date for Preliminary Jurisdictional Determination:
April 17, 2013

B. Name and Address of Person Requesting Preliminary JD:
Mary Schroer
Nebraska Department of Roads
1500 Highway 2
PO Box 94759
Lincoln, Nebraska 68509

C. District Office, File Name and Number:
Omaha District, Platte County Columbus East Viaduct RRZ-71(33) CN 32190, 2013-1789-WEH

D. Project Location and Background Information:
(Use the attached table to document multiple water bodies at different sites)
State: Nebraska County: Platte City: Columbus

Center coordinates of site (lat/long in degree decimal format):
Lat: 41.432604° Long: -97.291187° Universal Transverse Mercator: 14
S-T-R: Sections 22/23, Township 17 North, Range 1 East

Name of nearest water body: Loup Canal

Identify (estimate) amount of waters at the review area:

Non-wetland waters:
- linear feet: ~ 300 feet
- width: N/A
- acres: N/A
- Cowardin class: R2UBGx, riverine channel
- stream flow: perennial

Wetland waters:
- linear feet: N/A
- width: N/A
- acres: ~ 0.40 acres
- Cowardin class: PEMA/C, riverine channel wetlands

E. Review Performed for Site Evaluation (Check all that apply):
X Office (Desk) Determination Date: April 17, 2014
X Field Determination Date: September 24, 2013

Site Number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource impacted	Class of aquatic resource
WOUS-112 / S-112, S-113 (Loup Canal)	41.424327°	-97.282411°	R2UBGx / PEMA/C	Unknown	Riverine Channel Wetlands

F. Supporting Data -- Data reviewed for preliminary JD (check all that apply)
(Checked items should be included in case file and, where checked and requested, appropriately reference sources below)
X Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant
X Data sheets prepared/submitted by or on behalf of the applicant/consultant

X Office concurs with data sheets/delineation report
Office does not concur with data sheets/delineation report
Data sheets prepared by the Corps
Corps navigable waters study
US Geological Survey Hydrologic Atlas
X USGS NHD data Platte County
X USGS 8 and 12 digit HUC maps Lower Platte - Shell 10200201
X US Geological Survey map(s). Cite scale & quad name: Columbus 1:24,000
X USDA Natural Resources Conservation Service Soil Survey. Citation: Platte County Soil Survey
X National wetlands inventory map(s). Cite name: Columbus
State/Local wetland inventory map(s)
FEMA/FIRM maps
X 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
X Photographs Provided by applicant; also taken by Corps on Site Visit
X Aerial (Name & Date): ArcGIS: Columbus, 199x B&W Ortho & 2012 USDA Color Ortho
X Other (Name & Date): Google Earth Pro: Columbus, 1993 to 2013
Previous determination(s). File number and date of response letter:
Other information (please specify): Photos and Wetland Delineation submitted by applicant/agent. Site Visit conducted on September 24, 2013.

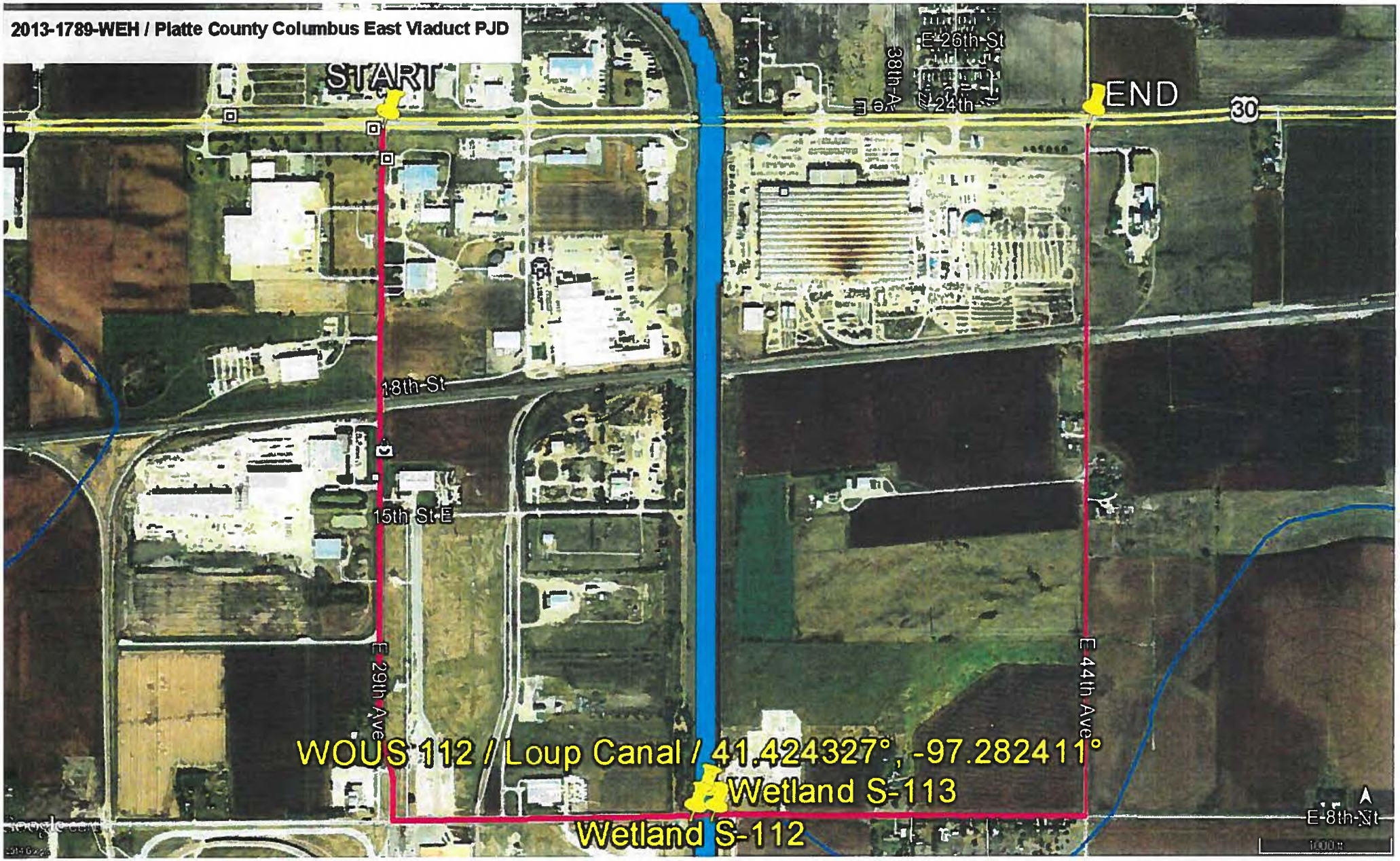
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

17 Apr 2014

Signature of Regulatory Project Manager (Required) Date

Signature of Person Requesting Preliminary JD (Required unless obtaining signature is impracticable) Date

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.


2013-1789-WEH / Platte County Columbus East Viaduct PJD
START
END
E 26th St
38th Ave
24th
30
18th St
15th St E
E 29th Ave
E 44th Ave
WOUS 112 / Loup Canal / 41.424327°, -97.282411°
Wetland S-113
Wetland S-112
E 8th St

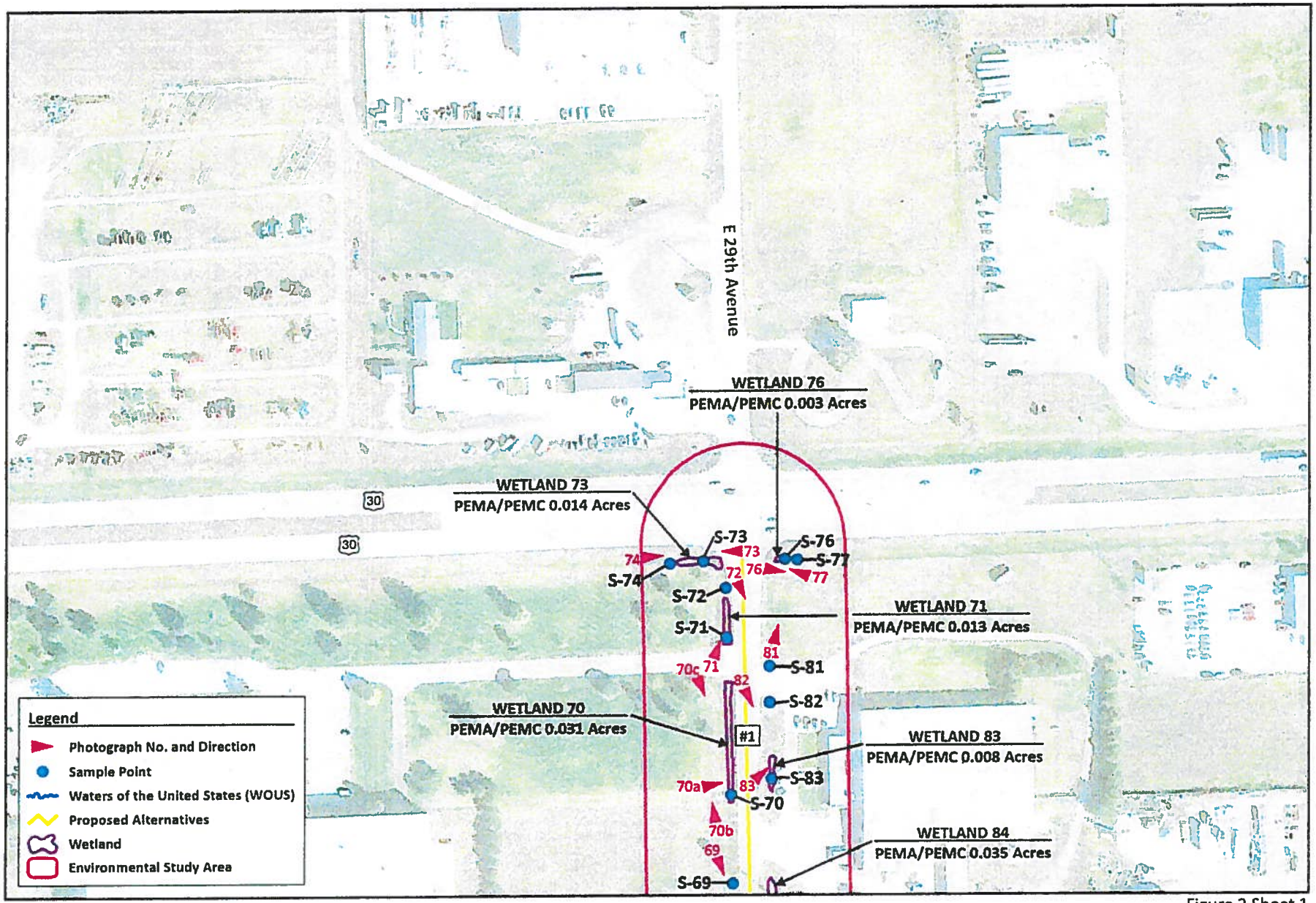


Figure 2 Sheet 1

Resource Map

Columbus East

Platte County, Nebraska

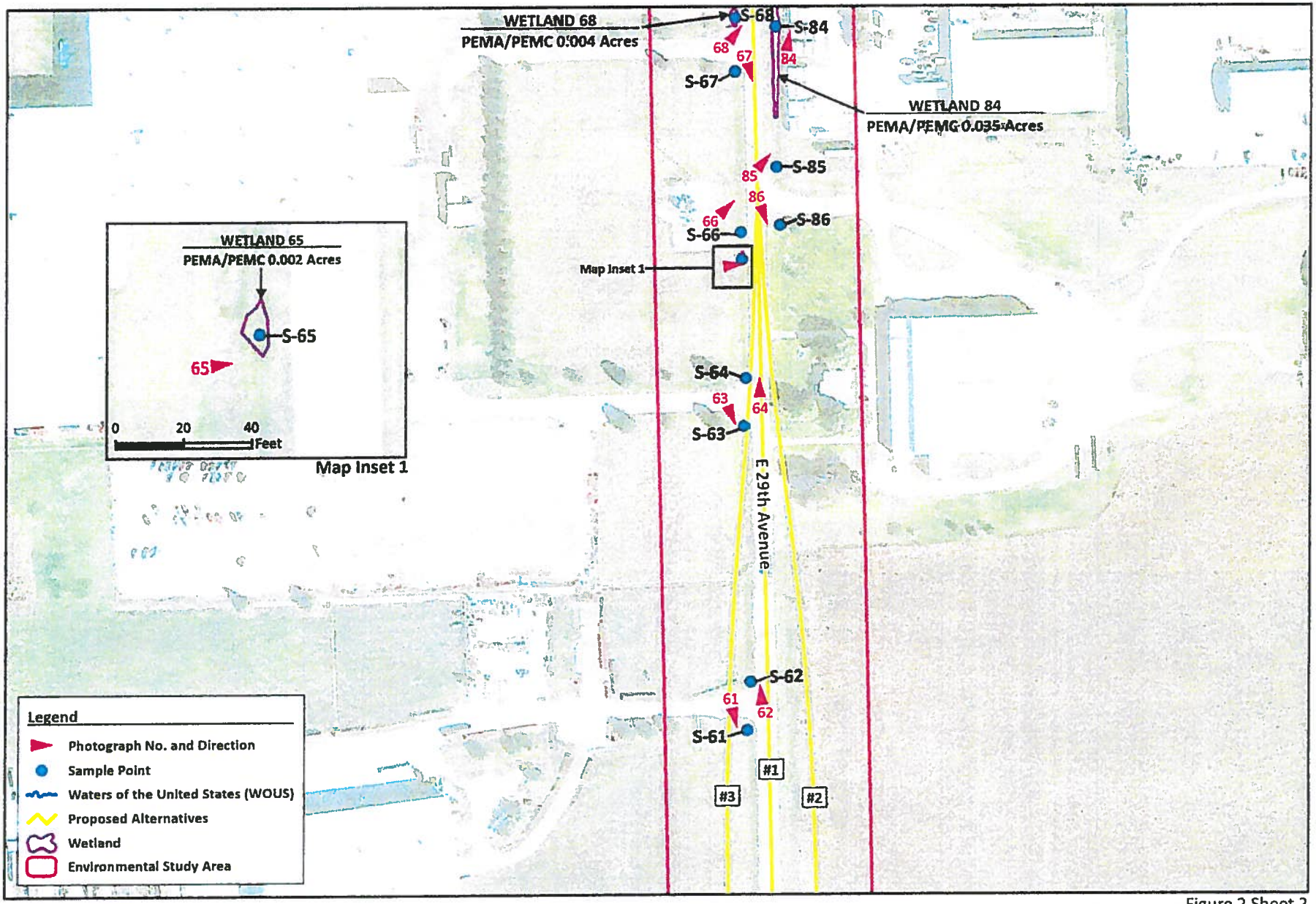


Figure 2 Sheet 2

Resource Map

Columbus East

Platte County, Nebraska

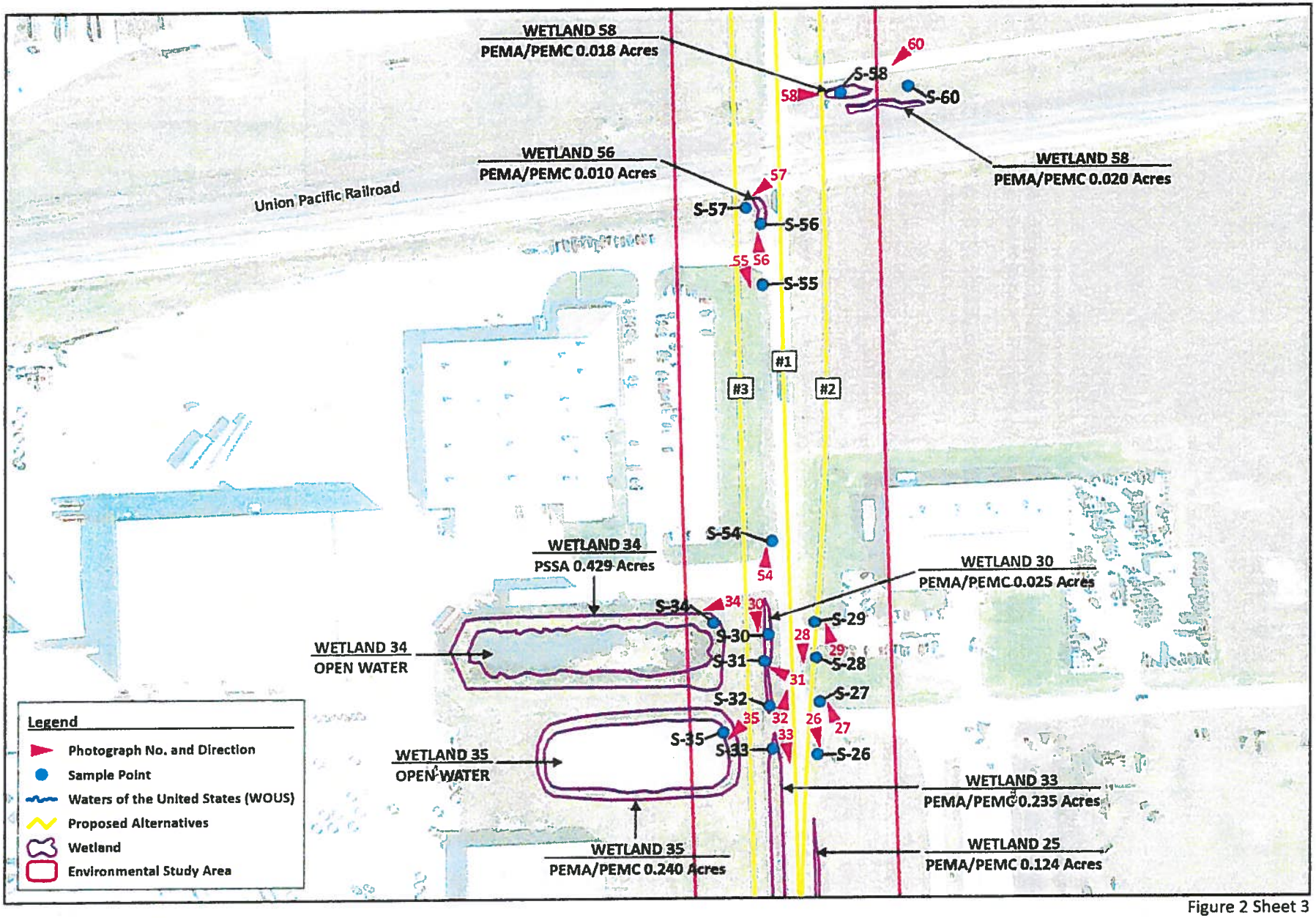
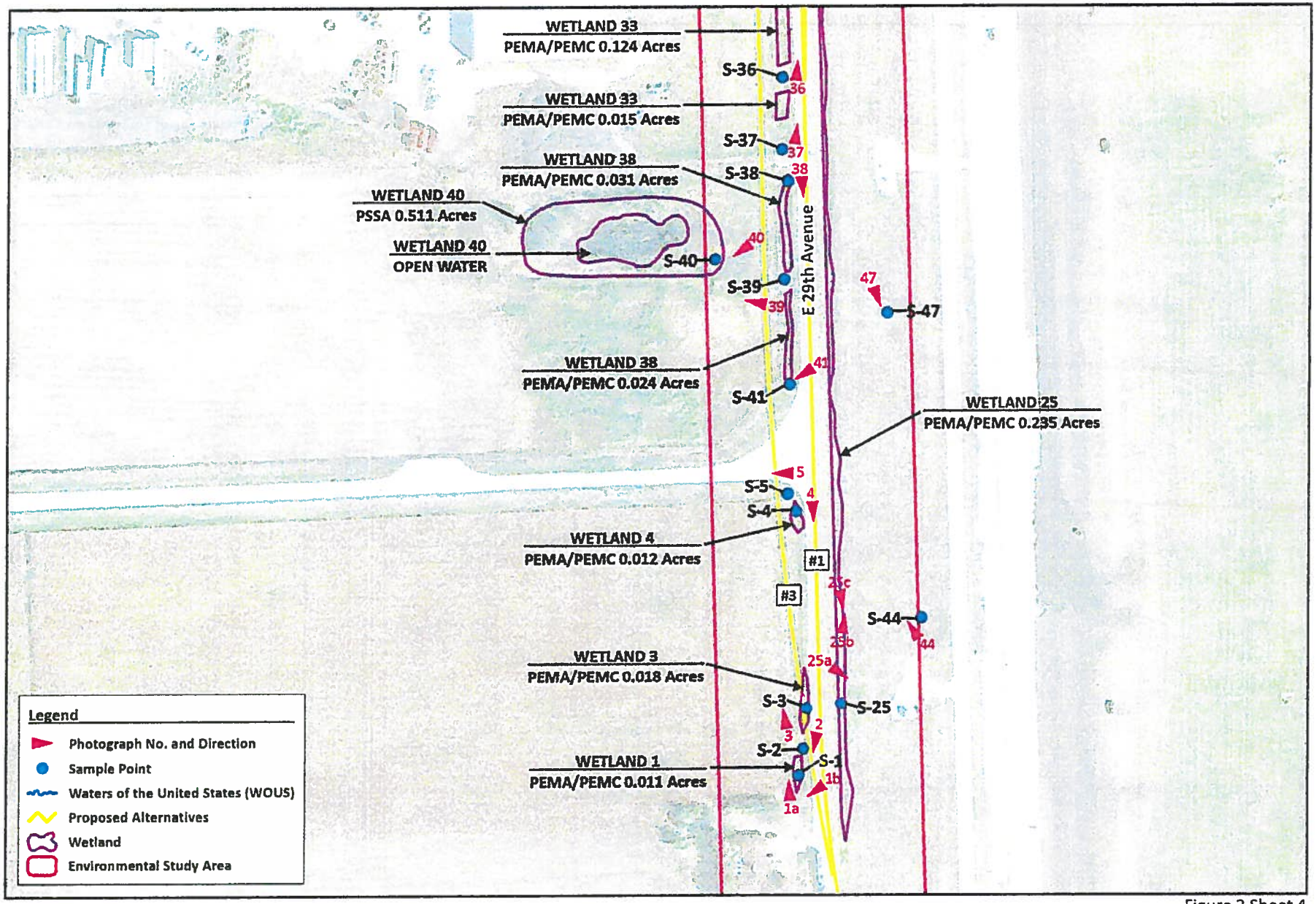


Figure 2 Sheet 3

Resource Map

Columbus East

Platte County, Nebraska



North

0 100 200
Feet

1 inch = 200 feet

Figure 2 Sheet 4

Resource Map

Columbus East

Platte County, Nebraska

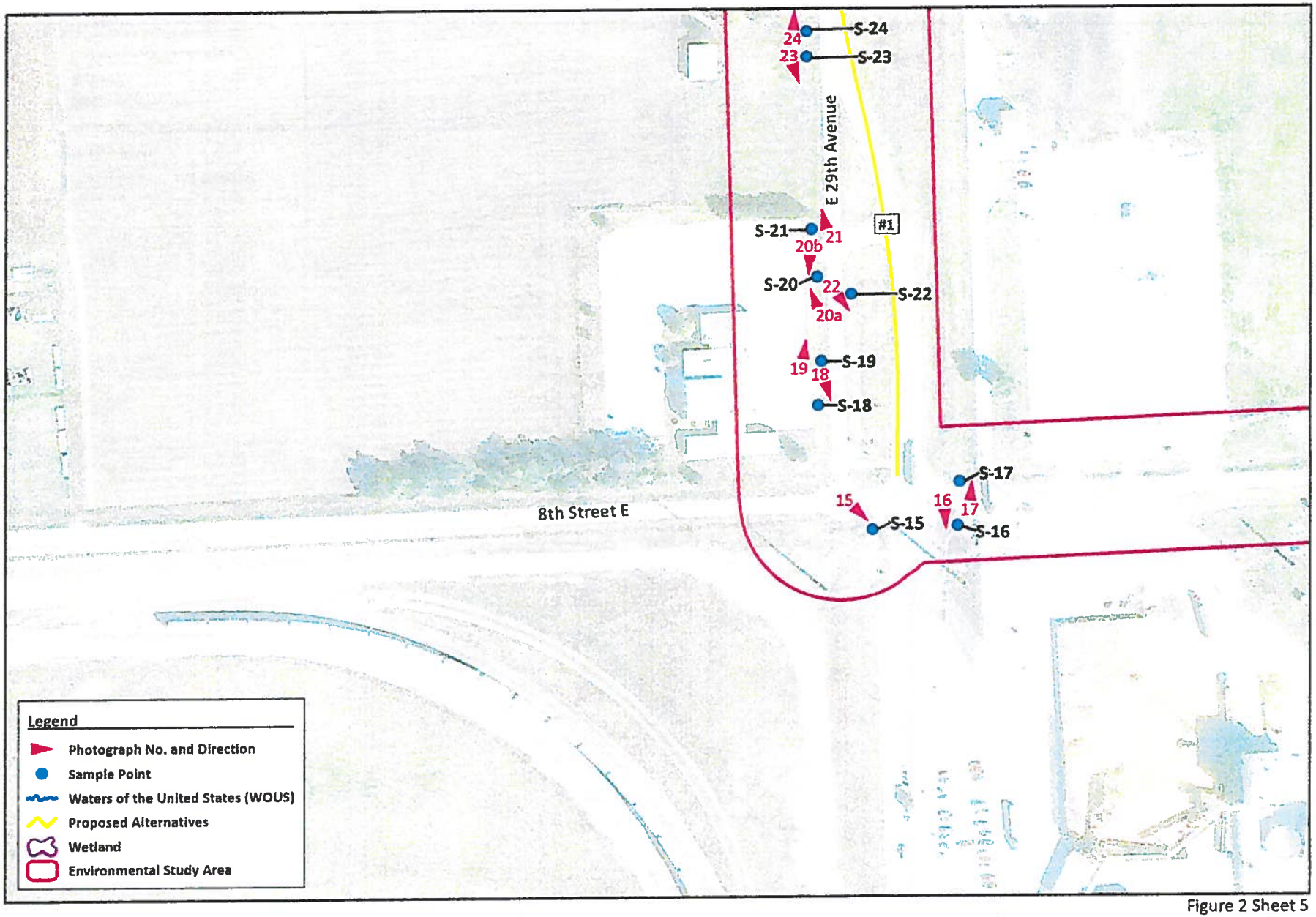


Figure 2 Sheet 5

Resource Map

Columbus East

Platte County, Nebraska

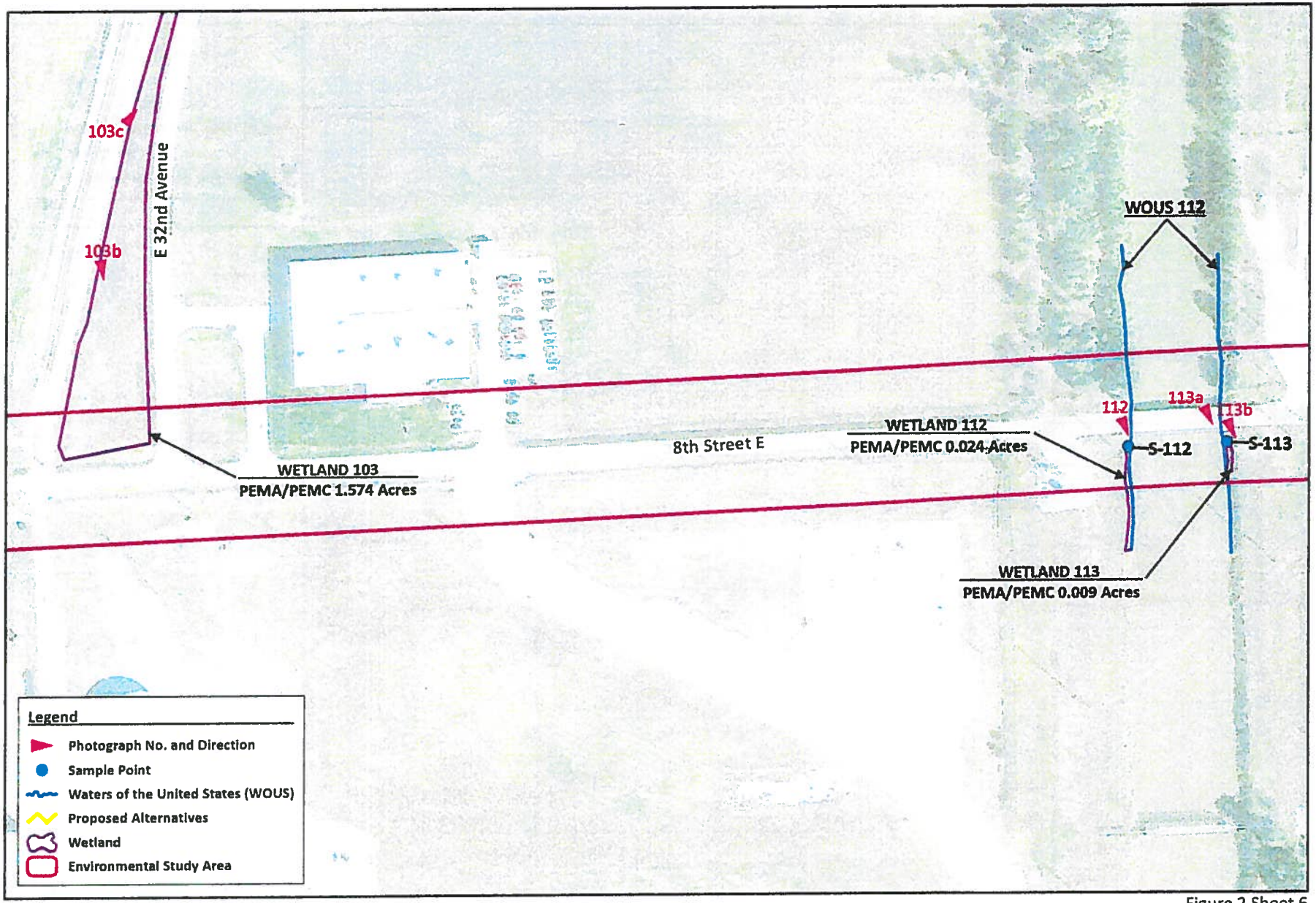


Figure 2 Sheet 6

Resource Map

Columbus East

Platte County, Nebraska

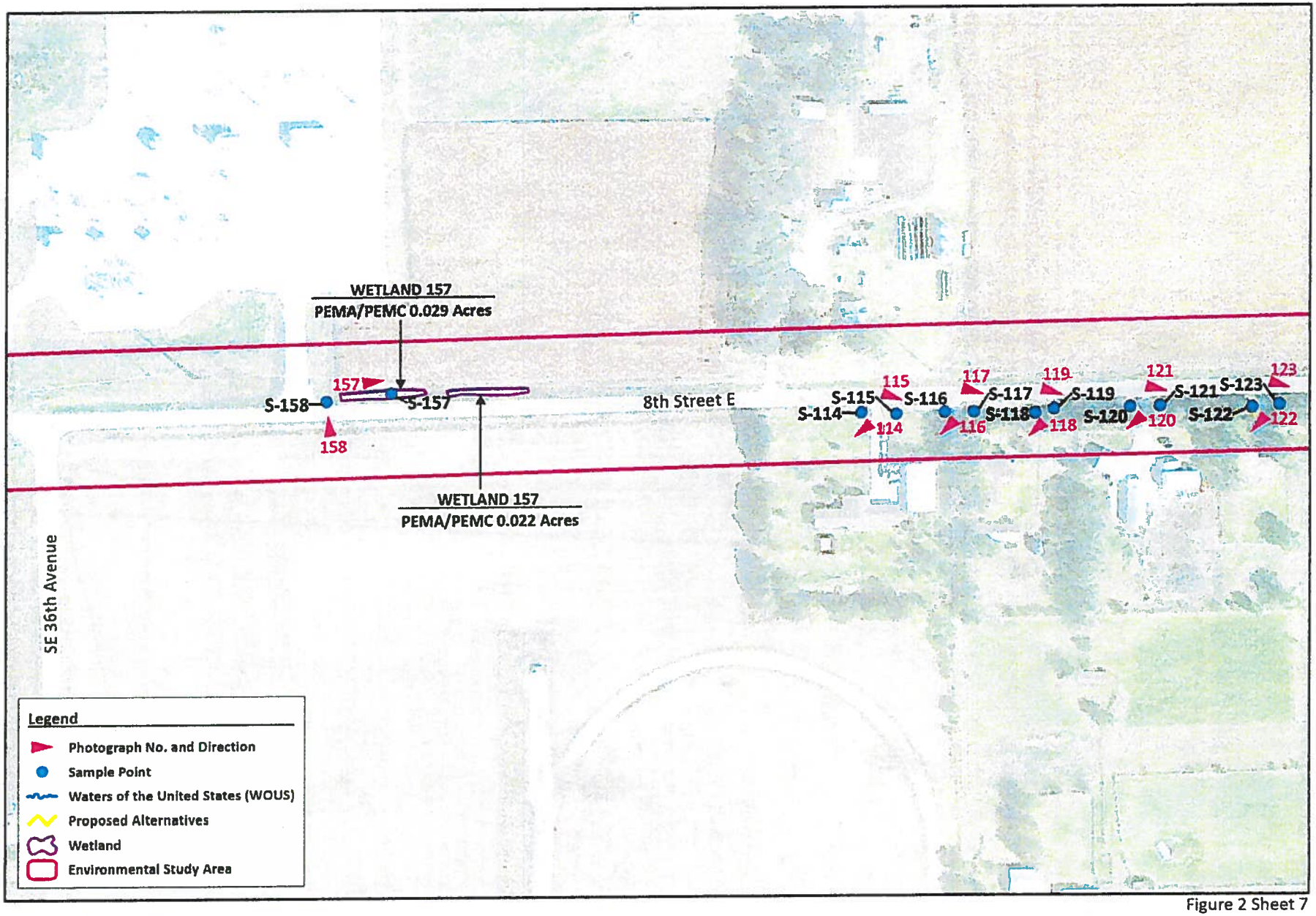


Figure 2 Sheet 7

Resource Map

Columbus East

Platte County, Nebraska

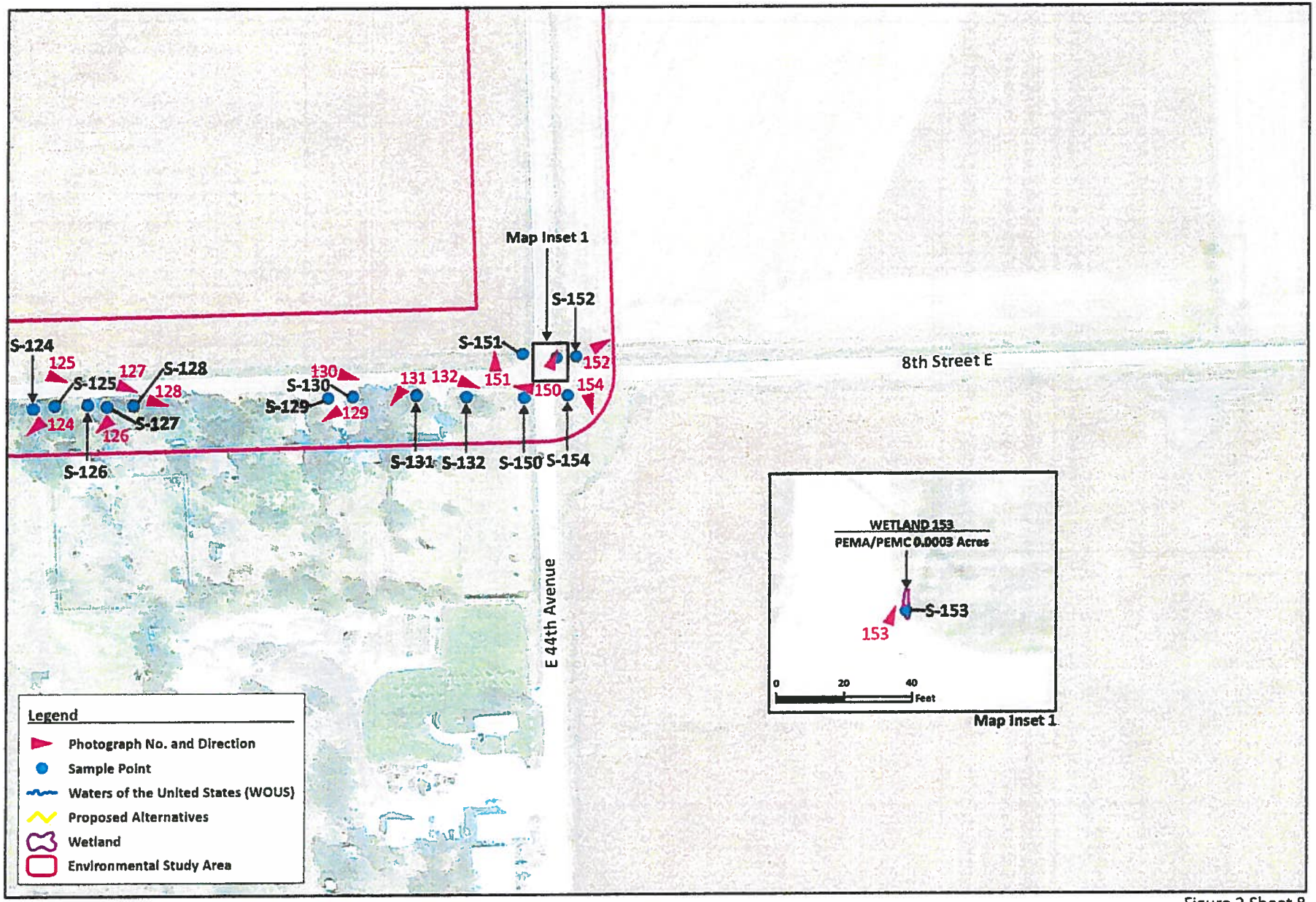


Figure 2 Sheet 8

Resource Map

Columbus East

Platte County, Nebraska

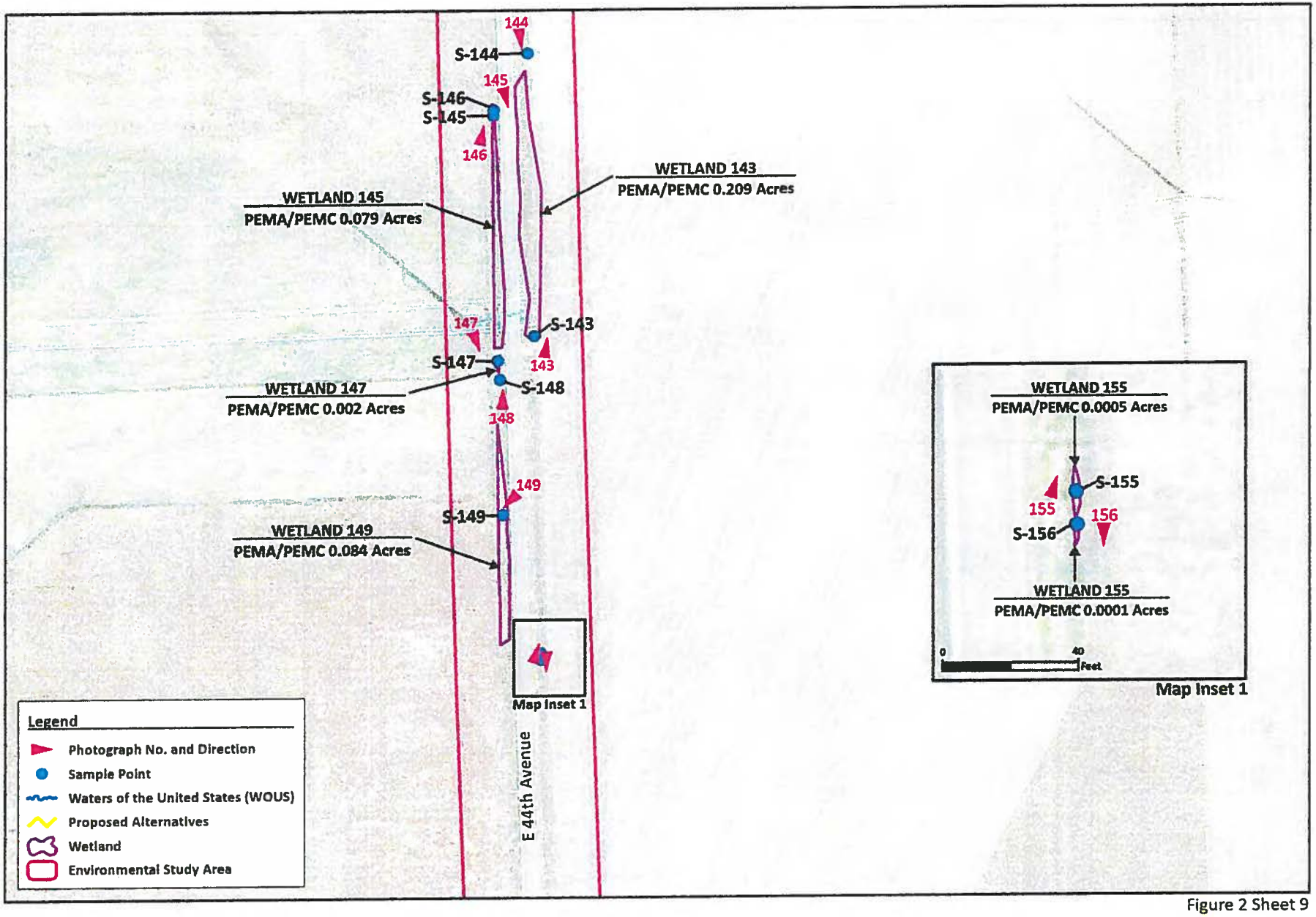


Figure 2 Sheet 9

Resource Map

Columbus East

Platte County, Nebraska

Figure 2 Sheet 10

Resource Map

Columbus East

Platte County, Nebraska

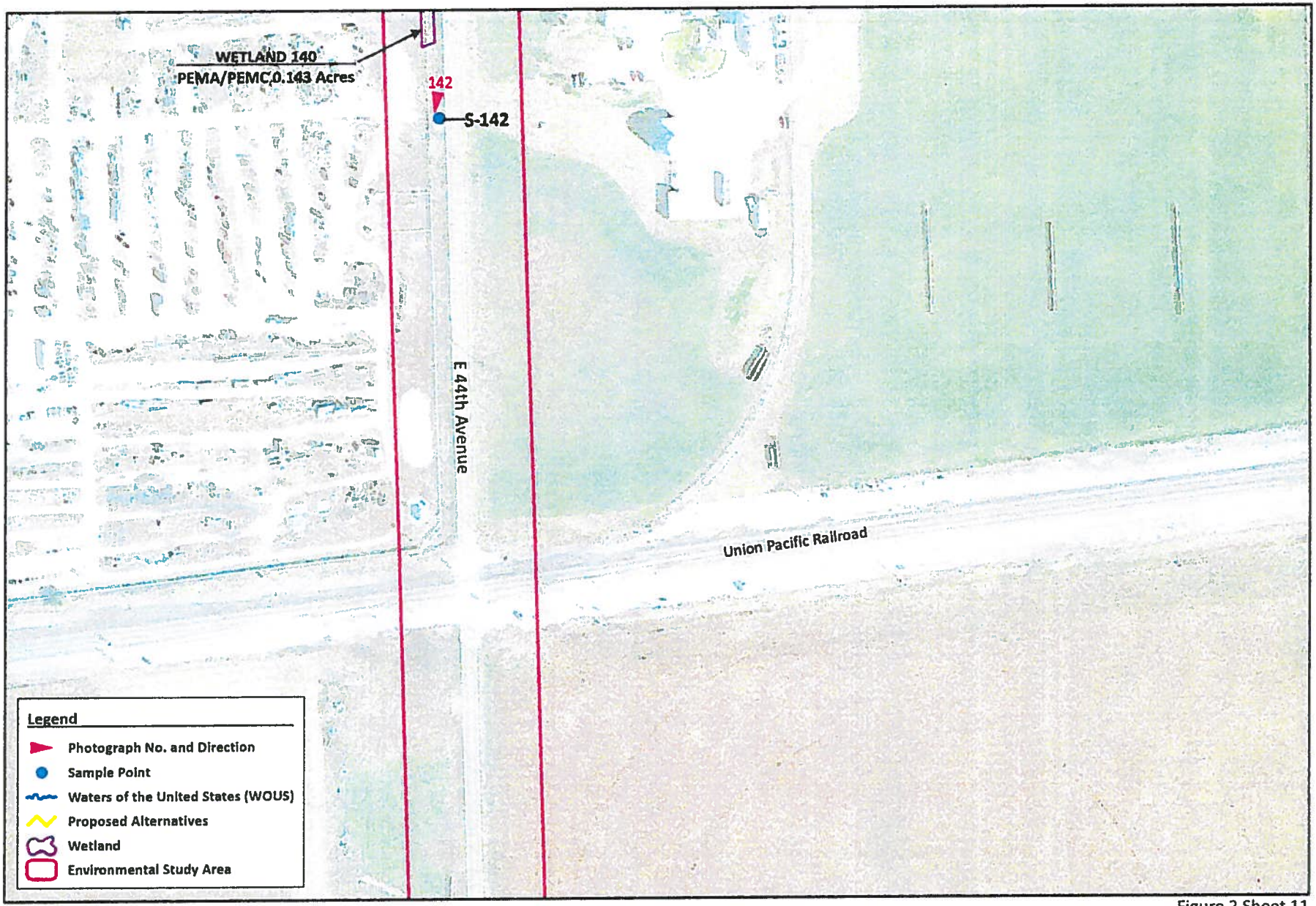


Figure 2 Sheet 11

Resource Map

Columbus East

Platte County, Nebraska

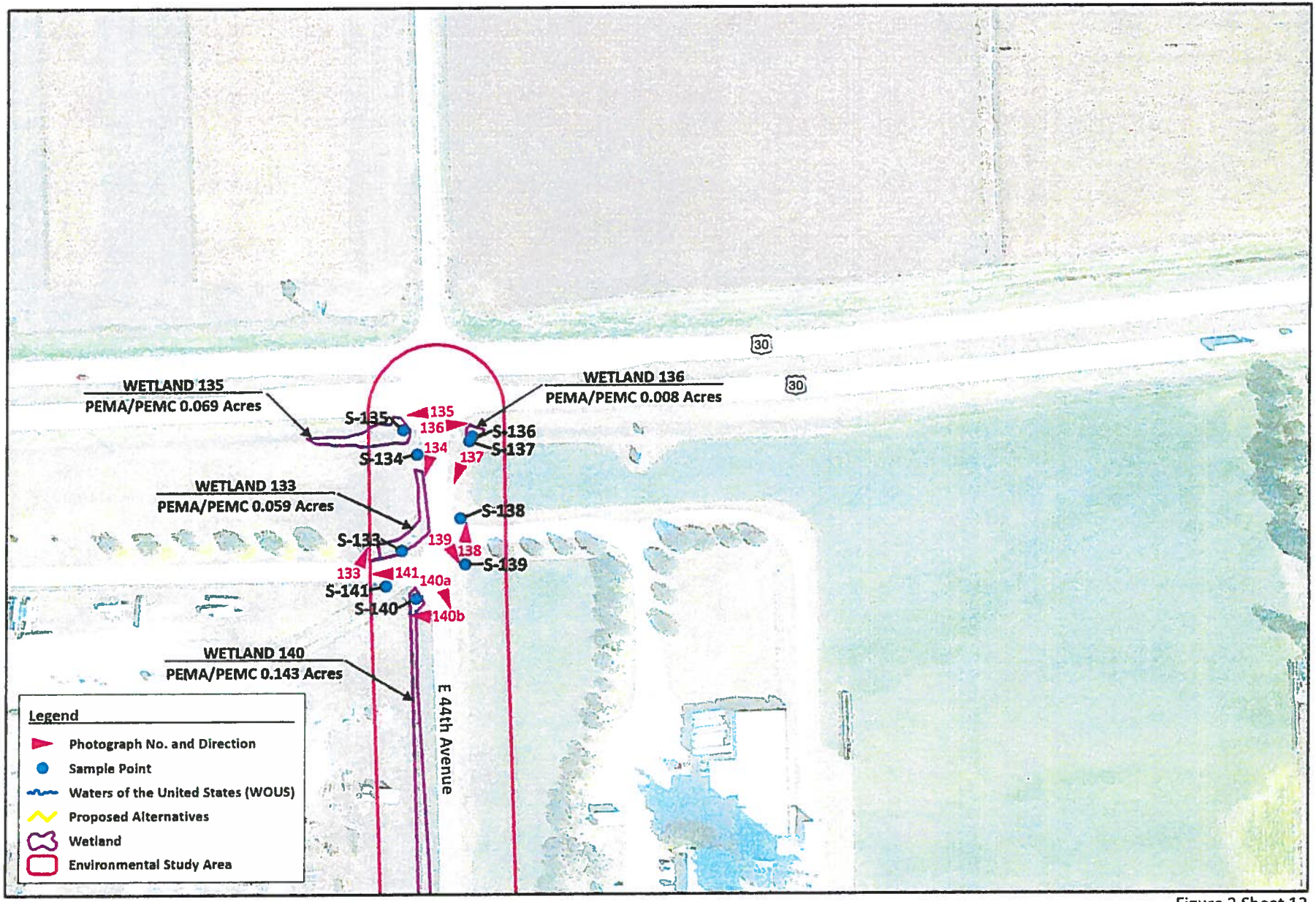


Figure 2 Sheet 12

Resource Map

Columbus East

Platte County, Nebraska

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Appendix J MS4 Program Correspondence

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From:	Allison.Sambol
To:	Fred Liss
Cc:	Anthony.Baumert
Subject:	RE: CN32190 Columbus East Viaduct - MS4 requirements?
Date:	Tuesday, February 04, 2014 2:48:59 PM
Attachments:	image001.jpg

Thanks!

From: Fred Liss [mailto:pchwy2@megavision.com]
Sent: Tuesday, February 04, 2014 2:38 PM
To: Allison.Sambol
Cc: Anthony.Baumert
Subject: RE: CN32190 Columbus East Viaduct - MS4 requirements?

Allison:
Yes, I concur with the conversation regarding the MS4 post-construction requirements on this project. Mike is absolutely correct. Historically the City has not imposed any requirements on County projects adjacent to or within their zoning areas.
Thanks,
Fred

From: Allison.Sambol [mailto:Allison.Sambol@fhueng.com]
Sent: Tuesday, February 04, 2014 1:15 PM
To: pchwy2@megavision.com
Cc: Anthony.Baumert
Subject: FW: CN32190 Columbus East Viaduct - MS4 requirements?

Fred,
I'd like to have documentation of our conversation in the hallway at NDOR on 1-29-14, regarding the question of MS4 post-construction requirements for the project. You had confirmed what Mike said below about the County not having post-construction requirements imposed on them for projects within the City of Columbus' jurisdictional zone. Please respond that you concur with this record of conversation for the EA project file or state any clarification necessary. Thank you and I hope you have a great day!

Allison Sambol
Environmental Scientist
fhu logo_new_tagline
11422 Miracle Hills Drive, Suite 115
Omaha, Nebraska 68154
P: (402) 445-4405
F: (402) 445-4394
E: allison.sambol@fhueng.com
www.linkedin.com/in/allisonsambol

From: Middendorf, Michael [mailto:mmidden@columbusne.us]
Sent: Monday, January 27, 2014 8:58 AM
To: Allison.Sambol
Subject: RE: CN32190 Columbus East Viaduct - MS4 requirements?

Hi Allison
Yes it has been a while. I need to contact Jesse about the NEH2O program also so I will say a howdy myself.

We are in the process of finishing up the 3rd Avenue viaduct plans with Andy at HDR, so they may be able to help with any regs that they had to consider. Since this is a county project and you are outside the city limits, I would ask the county what they would like to see. I know that this is a grey area, since it falls within our zoning jurisdiction, but outside the city limits. We have not been regulating sites unless there is a direct influence to the storm water inside city limits, but that was mainly concerned with job site controls. This site should outfall over at the canal if it is flowing down the ditches along the tracks. Otherwise, the outfall should still remain outside the city line in any case.

Let me know if this helps, or if you need more information from me.

Thanks
Michael D. Middendorf, PE
Assistant City Engineer
City of Columbus, 2424 14th Street
PO Box 1677, Columbus, NE 68602-1677
PH 402.562.4237, FAX 402.562.4265

From: Allison.Sambol [mailto:Allison.Sambol@fhueng.com]
Sent: Friday, January 24, 2014 3:26 PM
To: Middendorf, Michael
Cc: Anthony.Baumert; Rick.Haden
Subject: CN32190 Columbus East Viaduct - MS4 requirements?

Hello Mike,
We are working with Platte County and NDOR on the design and Environmental Assessment for the proposed E. 29th Avenue Viaduct over the UPRR, just east of Columbus. I was wondering if the proposed viaduct project would have any post-construction MS4 requirements or any other special provisions that the City might require for stormwater?

Hope all is well with you. It's been a long time! Jesse says hello. ☺

Allison Sambol
Environmental Scientist

11422 Miracle Hills Drive, Suite 115
Omaha, Nebraska 68154
P: (402) 445-4405
F: (402) 445-4394
E: allison.sambol@fhueng.com
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Appendix K Endangered and Threatened Species Coordination

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NDOR
Nebraska
Department of Roads

Memorandum

DATE 10/29/13

TO Local Public Agency

FROM Zach Cunningham, HWY Environmental Biologist

THRU Glen Steffensmeier - Local Projects Section

SUBJECT Columbus East Viaduct, RRZ-71(33), 32190
Threatened & Endangered Species Concurrence

The attached concurrence package signed on 10/28/13 by NDOR is the documentation required for threatened & endangered species concurrence in the NEPA document.

The project, as proposed has been determined to have "**no effect**" to all state or federally listed species or their designated critical habitat.

Below are the Conservation Conditions and survey protocol (if applicable) that will be required for this project. They must be included verbatim in the "green sheet" **and** NEPA document.

General Conservation Conditions for All Projects (Responsible Party for the measure is found in parentheses):

A-1 **Changes in Project Scope**. If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the Federal Highway Administration. *(District Construction, Contractor)*

A-2 **Conservation Conditions**. Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. *(District Construction, Contractor)*

A-3 **Early Construction Starts**. Request for early construction starts must be coordinated by the Project Construction Engineer with NDOR Environmental for approval of early start to ensure avoidance of listed species sensitive lifecycle timeframes. Work in these timeframes will require approval from the Federal Highway Administration and could require consultation with the USFWS and NGPC. *(District Construction, Contractor)*

A-4 **E&T Species**. If federal or state listed species are observed during construction, contact NDOR Environmental. Contact NDOR Environmental for a reference of federal and state listed species. *(NDOR Environmental, District Construction, Contractor)*

A-5 **Refueling**. Refueling will be conducted outside of those sensitive areas identified on the plans, in the contract, and/or marked in the field. *(Contractor)*

A-6 **Restricted Activities**. The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the right-of-way designated on the

project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.

For activities outside the project limits, the contractor should refer to the Nebraska Game and Park Commission website to determine which species ranges occur within the off-site area. The contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site, or other off-site activities. The contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

Any project related activities that occur outside of the project limits must be environmentally cleared/permitted with the Nebraska Game and Parks Commission as well as any other appropriate agencies by the contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of 4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental which will coordinate with FHWA for acceptance if needed. The contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (*NDOR Environmental, District Construction, Contractor*).

A-7 **Waste/Debris**. Construction waste/debris will be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. *(Contractor)*

S-2 **Platte River Depletions**. If within the Platte River watershed (including the Elkhorn, Salt Creek, Loup, Calamus, and Lower Platte drainage basins) include the following for all detention basin/retention basins, and borrow sites:

All efforts will be made to design the project and select borrow sites to prevent depletions to the Platte River. If there is any potential to create a depletion, NDOR (during design) and the contractor (for borrow sites) shall follow the current Platte River depletion protocols for coordination, minimization, and mitigation. In general the following are considered de minimis depletions, but may still require agency coordination; a project which: a) creates an annual depletion less than 0.1 acre feet, b) creates a detention basin that detains water for less than 72 hours, c) any diverted water will be returned to its natural basin within 30 days, or d) creates a one-time depletion of less than 10 acre feet.

S-3 **Revegetation**. All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed **plants** were identified during survey, any seed mix requirements identified during resource agency consultations shall be used for the project. (NDOR Environmental)

Bald Eagle

This project was also reviewed for potential impacts to bald and golden eagles. It appears that the environmental study area contains suitable nesting and winter roosting habitat for eagles. According to the Natural Heritage Database, there are records of eagles and eagle nests within five miles, and that suitable habitat does exist within 0.5 miles of the Environmental Study Area. NDOR will utilize the Bald Eagle Survey Protocol to determine when a survey for nests/roosts should be conducted. If the survey identifies nest(s) are present within 0.5 miles of the project area, NDOR will notify FHWA as well as NGPC and the Service, and construction will not commence prior to their approval.

Project Name: Columbus East Viaduct *Updated 1/2/13*
Federal-aid Number: RRZ-71(33)
Control Number: 32190

Overview of Effects and Required Conservation Conditions

Threatened and Endangered Species Effect Determination:

☒ This project will have "no effect" to all listed species and their habitats.
**If an IPLE was written to justify the no effect determination, the BA is sent to FHWA for concurrence.*

☐ A "may affect, not likely to adversely affect" determination is made for the following species/critical habitat with the conservation conditions listed below *(and will have "no effect" on all other listed species, except for any listed in the 3rd check box)*:

☐ A "may affect, likely to adversely affect" determination is made for the following species/critical habitat with the conservation conditions listed below *(and will have "no effect" on all other listed species, except for any listed above)*:

Platte River Flow Depletions and Borrow:
If the excavation of borrow sites will occur within the Platte River Basin and result in open water that could constitute a depletion to the Platte River system, upstream of the Loup confluence, the Nebraska Department of Natural Resources will be contacted. If a borrow site will result in a depletion to the Platte River system, downstream of the Loup confluence, NDOR will coordinate with the Nebraska Game and Parks Commission.

Migratory Bird Treaty Act:
NDOR has developed an Avian Protection Plan (APP) to reduce conflicts between construction of NDOR projects and the laws governing migratory birds. This procedure is designed to protect and conserve avian populations and reduce avian conflicts through changes in project scheduling (i.e. tree clearing outside of primary nesting period), increased migratory bird surveys, and changes in project construction timelines. NDOR will utilize its APP to reduce conflicts with migratory birds on this project.

Bald and Golden Eagle Protection Act:
This project was also reviewed for potential impacts to bald and golden eagles. It appears that the environmental study area contains suitable nesting and winter roosting habitat for eagles. According to the Natural Heritage Database, there are records of eagles and eagle nests within five miles, and that suitable habitat does exist within 0.5 miles of the Environmental Study Area. NDOR will utilize the Bald Eagle Survey Protocol to determine when a survey for nests/roosts should be conducted. If the survey identifies nest(s) are present within 0.5 miles of the project area, NDOR will notify FHWA as well as NGPC and the Service, and construction will not commence prior to their approval.

Fish and Wildlife Coordination Act:
This project will result in a range from 0.61 to 0.79 acres of wetland impacts depending on the alternative selected. A Section 404 permit from the US Army Corps of Engineers will be required.

Conservation Conditions: *Responsible Party for conservation condition shown in parentheses.*

Listed below are the required Conservation Conditions that apply to this project. These measures are not subject to change without the prior written approval of the Federal Highway Administration. **Copy and paste the conditions listed below verbatim in the NEPA document, the Green Sheet, and in the contract documents:**

A-1 **Changes in Project Scope**. If there is a change in the project scope, the project limits, or environmental commitments, the NDOR Environmental Section must be contacted to evaluate potential impacts prior to implementation. Environmental commitments are not subject to change without prior written approval from the Federal Highway Administration. *(District Construction, Contractor)*

A-2 **Conservation Conditions**. Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. *(District Construction, Contractor)*

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A-6 **Restricted Activities**. The following project activities shall, to the extent possible, be restricted to between the beginning and ending points (stationing, reference posts, mile markers, and/or section-township-range references) of the project, within the right-of-way designated on the project plans: borrow sites, burn sites, construction debris waste disposal areas, concrete and asphalt plants, haul roads, stockpiling areas, staging areas, and material storage sites.

For activities outside the project limits, the contractor should refer to the Nebraska Game and Park Commission website to determine which species ranges occur within the off-site area. The contractor should plan accordingly for any species surveys that may be required to approve the use of a borrow site, or other off-site activities. The contractor should review Chapter 11 of the Matrix (on NDOR's website), where species survey protocol can be found, to estimate the level of effort and timing requirements for surveys.

Any project related activities that occur outside of the project limits must be environmentally cleared/permitted with the Nebraska Game and Parks Commission as well as any other appropriate agencies by the contractor and those clearances/permits submitted to the District Construction Project Manager prior to the start of the above listed project activities. The contractor shall submit information such as an aerial photo showing the proposed activity site, a soil survey map with the location of the site, a plan-sheet or drawing showing the location and dimensions of the activity site, a minimum of

4 different ground photos showing the existing conditions at the proposed activity site, depth to ground water and depth of pit, and the "Platte River depletion status" of the site. The District Construction Project Manager will notify NDOR Environmental which will coordinate with FHWA for acceptance if needed. The contractor must receive notice of acceptance from NDOR, prior to starting the above listed project activities. These project activities cannot adversely affect state and/or federally listed species or designated critical habitat. (*NDOR Environmental, District Construction, Contractor*).

A-7 **Waste/Debris**. Construction waste/debris will be disposed of in areas or a manner which will not adversely affect state and/or federally listed species and/or designated critical habitat. *(Contractor)*

S-2 **Platte River Depletions**. If within the Platte River watershed (including the Elkhorn, Salt Creek, Loup, Calamus, and Lower Platte drainage basins) include the following for all detention basin/retention basins, and borrow sites:

All efforts will be made to design the project and select borrow sites to prevent depletions to the Platte River. If there is any potential to create a depletion, NDOR (during design) and the contractor (for borrow sites) shall follow the current Platte River depletion protocols for coordination, minimization, and mitigation. In general the following are considered de minimis depletions, but may still require agency coordination; a project which: a) creates an annual depletion less than 0.1 acre feet, b) creates a detention basin that detains water for less than 72 hours, c) any diverted water will be returned to its natural basin within 30 days, or d) creates a one-time depletion of less than 10 acre feet.

S-3 **Revegetation**. All permanent seeding and plantings (excluding managed landscaped areas) shall use species and composition native to the project vicinity as shown in the Plan for the Roadside Environment. However, within the first 16 feet of the road shoulder, and within high erosion prone locations, tall fescue or perennial ryegrass may be used at minimal rates to provide quick groundcover to prevent erosion, unless state or federally listed threatened or endangered plants were identified in the project area during surveys. If listed **plants** were identified during survey, any seed mix requirements identified during resource agency consultations shall be used for the project. (NDOR Environmental)

The overall Biological Assessment package was prepared by:

Signature	Zach Cunningham *Printed Name*	Biologist/NDOR *Title and Agency/Firm*	10/28/13 *Date*

Approved by the following qualified NDOR biologist:

Signature	MELISSA MARINOVICH *Printed Name*	10/25/13 *Date*

☐ Check if FHWA signature required *(NDOR Environmental use only).*
Approved by FHWA Environmental *(FHWA signature only needed when an Individual Project Level Evaluation, modified Conservation Conditions, or Individual BA is required.):*

_____	_____	_____
Signature	*Printed Name*	*Date*

☐ Check if USFWS and/or NGPC concurrence is required *(NDOR Environmental use only).*

☐ Check if the project occurs on federal or tribal land *(NDOR Environmental use only).*
If yes, provide federal or tribal agency name: _____

From: Steffensmeier, Glen
To: Anthony.Baumert
Cc: Allison.Sambol
Subject: FW: Reevaluation - Columbus East Viaduct, RRZ-71(33), 32190
Date: Thursday, April 17, 2014 9:51:35 AM

Please review and comment if you need. Forward to anyone I may have missed. See email below.

Glen Steffensmeier
Local Projects Division
Urban Off-System Coordinator
1400 Highway 2
Lincoln, NE 68509

From: Cunningham, Zach
Sent: Tuesday, April 15, 2014 1:05 PM
To: Steffensmeier, Glen; Fitzpatrick, Caitlin
Cc: Barber, Jon
Subject: Reevaluation - Columbus East Viaduct, RRZ-71(33), 32190

I have reevaluated the project: Columbus East Viaduct, RRZ-71(33), 32190 due to the recent proposed federal listing of the northern long-eared bat.
The NDOR Activity Checklist indicated that clearing and grubbing and culvert work will be included as part of this project. These activities have the potential to impact northern long-eared bats.
The project, as proposed has been determined to "**may affect, not likely to adversely affect**" the **northern long-eared bat**, and will have "no effect" to all other state or federally listed species.

Below are the conservation conditions that must be included for this project.

Northern Long-Eared Bat:

NLEB-1 Tree clearing, bridge deck joint replacements over the bridge deck, bridge/>5-ft box-culvert removal activities will be scheduled to occur between October 1st – March 31th to avoid impacts to the northern long-eared bat roosting period. (NDOR Environmental, Construction, Contractor)

OR

NLEB-2 If tree clearing, bridge deck joint replacement over the bridge deck, or removal of bridge/>5-ft box-culvert structures occurs during the northern long-eared bat maternal roosting period (April 1st – September 30th),NDOR or a qualified biologist will perform surveys prior to the start of these activities at the following locations:

__length of project_ (location of suitable habitat). If the species is absent, work may proceed. If the species is found, NDOR Environmental Section will consult with the USFWS, NGPC, and FHWA prior to the start of construction. (NDOR Environmental, Construction, Contractor)

Zach Cunningham
Environmental Biologist
Nebraska Department of Roads
1500 Highway 2
P.O. Box 94759
Lincoln, NE 68509-4759
Phone: 402-479-4464
E-mail: zach.cunningham@nebraska.gov

Appendix L Farmland Conversion Impact Rating Form

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U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request **4/30/14**	4. Sheet 1 of **1**
1. Name of Project **Columbus East Viaduct (CN32190)**	5. Federal Agency Involved **FHWA**	
2. Type of Project **Transportation**	6. County and State **Platte County, NE**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated | Average Farm Size
5. Major Crop(s)	6. Farmable Land in Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Maximum Points	Alternative Corridor For Segment: Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		9.9			
B. Total Acres To Be Converted Indirectly, Or To Receive Services		0			
C. Total Acres In Corridor		9.9			
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*					
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*					
1. Area in Nonurban Use	15	8			
2. Perimeter in Nonurban Use	10	1			
3. Percent Of Corridor Being Farmed	20	2			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	0			
6. Creation Of Nonfarmable Farmland	25	25			
7. Availablility Of Farm Support Services	5	5			
8. On-Farm Investments	20	0			
9. Effects Of Conversion On Farm Support Services	25	25			
10. Compatibility With Existing Agricultural Use	10	5			
TOTAL CORRIDOR ASSESSMENT POINTS	160	71	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	0	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	71	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	71	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?
A	**9.9**	**4/30/14**	YES ☐ NO ☑

5. Reason For Selection:

Corridor A - Concept 3A (Preferred Alternative)

Signature of Person Completing this Part: DATE **4/30/14**

NOTE: Complete a form for each segment with more than one Alternate Corridor

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Appendix M Hazardous Materials Technical Report and Supporting Documents*

***Complete documents with appendices, attachments, and data sheets available upon request**

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STATE OF NEBRASKA
DEPT. OF ROADS
APPROVED: Sean Sullivan
4-30-14
DATE:

HAZARDOUS MATERIALS TECHNICAL REPORT

COLUMBUS EAST (EAST 29th AVE) VIADUCT AND RELATED ROADWAY IMPROVEMENTS PLATTE COUNTY, NEBRASKA

FEDERAL AID PROJECT RRZ-71(33) CONTROL NUMBER 32190

Prepared for:

Federal Highway Administration, Nebraska Division
Federal Building, Room 220
100 Centennial Mall North
Lincoln, NE 68508-3803

Nebraska Department of Roads
1500 Highway 2
P.O. Box 64759
Lincoln, NE 68509-4759

Version 1.0 August 2013
Version 2.0 February 2014
Version 3.0 April 2014

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LIST OF ACRONYMS

A	AAI	All Appropriate Inquiry
	amsl	above mean sea level
	AOC	Administrative Order of Consent
	AST	aboveground storage tank
	ASTM	American Society for Testing and Materials
B	bgs	below ground surface
C	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
	CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
	CFR	Code of Federal Regulations
	CME	Comprehensive Monitoring Evaluation
	COCs	chemicals of concern
	CORRACTS	RCRA corrective action
E	EA	Environmental Assessment
	EDR	Environmental Data Resources, Inc.
	EPA	US Environmental Protection Agency
	ERNS	Emergency Response Notification System
F	FHWA	Federal Highway Administration
	FHU	Felsburg Holt & Ullevig
	FINDS	Facility Index System
	ft	feet
H	HMTR	Hazardous Materials Technical Report
I	ICIS	Integrated Compliance Information System
	IMS	Integrated Mapping System
L	LAST	leaking aboveground storage tank
	LF	landfill
	LQG	large quantity generator
	LUST	leaking underground storage tank
N	NAC	Nebraska Administrative Code
	NDEQ	Nebraska Department of Environmental Quality
	NDNR	Nebraska Department of Natural Resources
	NDOR	Nebraska Department of Roads
	NEPA	National Environmental Policy Act
	NFA	No Further Action
	NFRAP	no further remedial action planned
	NPDES	National Pollution Discharge Elimination System

	NPL	National Priorities List
O	OSHA	Occupational Safety and Health Administration
P	PCB	polychlorinated biphenyl
	PCS	Permits and Compliance
	PREC	Potential Recognized Environmental Condition
	PRR	Petroleum Release Remediation
R	RA	Release Assessment
	RCRA	Resource Conservation and Recovery Act
	RCRIS	Resource Conservation and Recovery Information System
	REC	recognized environmental condition
	ROW	right-of-way
S	SARA	Superfund Amendments and Reauthorization Act
	SF	Superfund
	SHWS	State hazardous waste site
	SQG	small quantity generator
T	TSDF	RCRA treatment, storage, or disposal facility
U	UIC	Underground Injection Control
	UPRR	Union Pacific Railroad
	US 30	US Highway 30
	USGS	United States Geological Survey
	UST	underground storage tank
V	VCP	NDEQ Voluntary Clean-up Program
	VOCs	volatile organic compounds

1.0 INTRODUCTION

A Hazardous Materials Technical Report (HMTR) was completed for the proposed Columbus East viaduct and related improvements project in Columbus, Platte County, Nebraska. Established in 1969, the National Environmental Policy Act (NEPA) mandates federal agencies to consider the potential environmental consequences of their proposed actions, to document the analysis, and to make the information available to the public for comment prior to implementation. In accordance with NEPA and related regulations, NDOR is preparing an Environmental Assessment (EA) on behalf of the Federal Highway Administration (FHWA), as the Lead Agency. The EA is for the proposed viaduct construction and related improvements at the intersection of East 29th Avenue and the Union Pacific Railroad (UPRR) main line in Columbus, Nebraska. This HMTR was performed in support of this NEPA documentation.

The purpose of this HMTR is to assess sites within the hazardous materials study area (**Section 1.1**) that could cause a potential materials management or worker health and safety issue during project construction. This HMTR does not assess potential hazardous substances that could be encountered during demolition of buildings acquired for right-of-way (ROW). Contaminated soils and groundwater and other hazardous materials require special consideration for worker health and safety, ROW acquisition, remediation, and materials management, handling, and disposal practices. If soil and groundwater contamination are encountered during construction or present a liability concern, avoidance or mitigation measures will be implemented when reasonably possible. Encountering soil and groundwater contamination during the construction process without prior knowledge of contamination has the potential to affect the project in terms of mitigation, cost, schedule, and project personnel health and safety issues.

This HMTR identifies sites with known or potential hazardous materials concerns associated within the hazardous materials study area, as defined in **Section 1.1**. Acquisition of portions of property parcels adjacent to East 29th Avenue and the UPRR main line for project ROW is anticipated based on the conceptual alternatives.

1.1 Project Description

The proposed project is located just east of the City of Columbus in Sections 22 and 23, Township 17 North, Range 01 East in Platte County, Nebraska (**Figure 1.1**). The project involves the construction of a new two-lane grade-separation viaduct on East 29th Avenue over the existing double-track main line of the UPRR. The study area for the project is generally centered along the East 29th Avenue corridor, and is framed by US Highway 30 (US 30) on the north, East 8th Street on the south, East 14th Avenue on the west, and East 44th Avenue on the east. The UPRR crossing on East 14th Avenue is proposed for permanent closure and was included in the analysis (**Figure 1.2**).

The viaduct is anticipated to consist of a pier and abutment configuration using the existing East 29th Avenue alignment; however, off alignment alternatives are being considered. The EA further discusses the proposed alternatives and alternative evaluation process. Proposed viaduct sections would generally be 40 to 44 feet (ft) wide and would likely include two 12-ft wide through lanes with 3- to 5-ft wide shoulders and a 10-ft wide southbound left turn lane. The viaduct would conform with UPRR design standards and provide adequate vertical clearance for continued use of the UPRR mainline. Viaduct approach grades of 3 to 5 percent are expected. As a result, multiple access points would be cut off from East 29th Avenue. Additional access points would need to be constructed or relocated accordingly.

Detours would be required should the bridge be constructed on the existing East 29th Avenue alignment. Potential detour options include a temporary at-grade UPRR crossing adjacent to the East 29th Avenue alignment, or the use of East 44th Avenue, East 8th Street, and East 32nd Avenue. Temporary signals, pavement improvement and widening, improved intersection radii, and bridge reinforcement may be required. The EA further discusses the proposed temporary construction detour.

Additional acquisition of property for ROW and utility relocations would be required. No relocations or acquisitions of structures are expected as a result of the proposed project. Coordination with the UPRR will be required.

The proposed project includes the following:

- Survey and staking
- Clearing and grubbing
- Pavement removal
- Major grading (beyond the hinge point)
- Crack sealing and joint sealing
- Culvert new, replacement, extension, repair
- Earth shoulder construction shoo-fly
- Construction of a bridge superstructure and substructure / overpass
- Paving
- Curb and flume
- Piers and pile driving (impact)
- Retaining walls (not in water/wetlands)
- Rock or gravel surfacing
- Erosion and sediment control (barriers, post-construction erosion control, and vegetation)
- Guardrail repair with soil disturbance
- Signs with soil disturbance
- Pavement marking

Figure 1.1. Columbus East Viaduct Project Vicinity Map

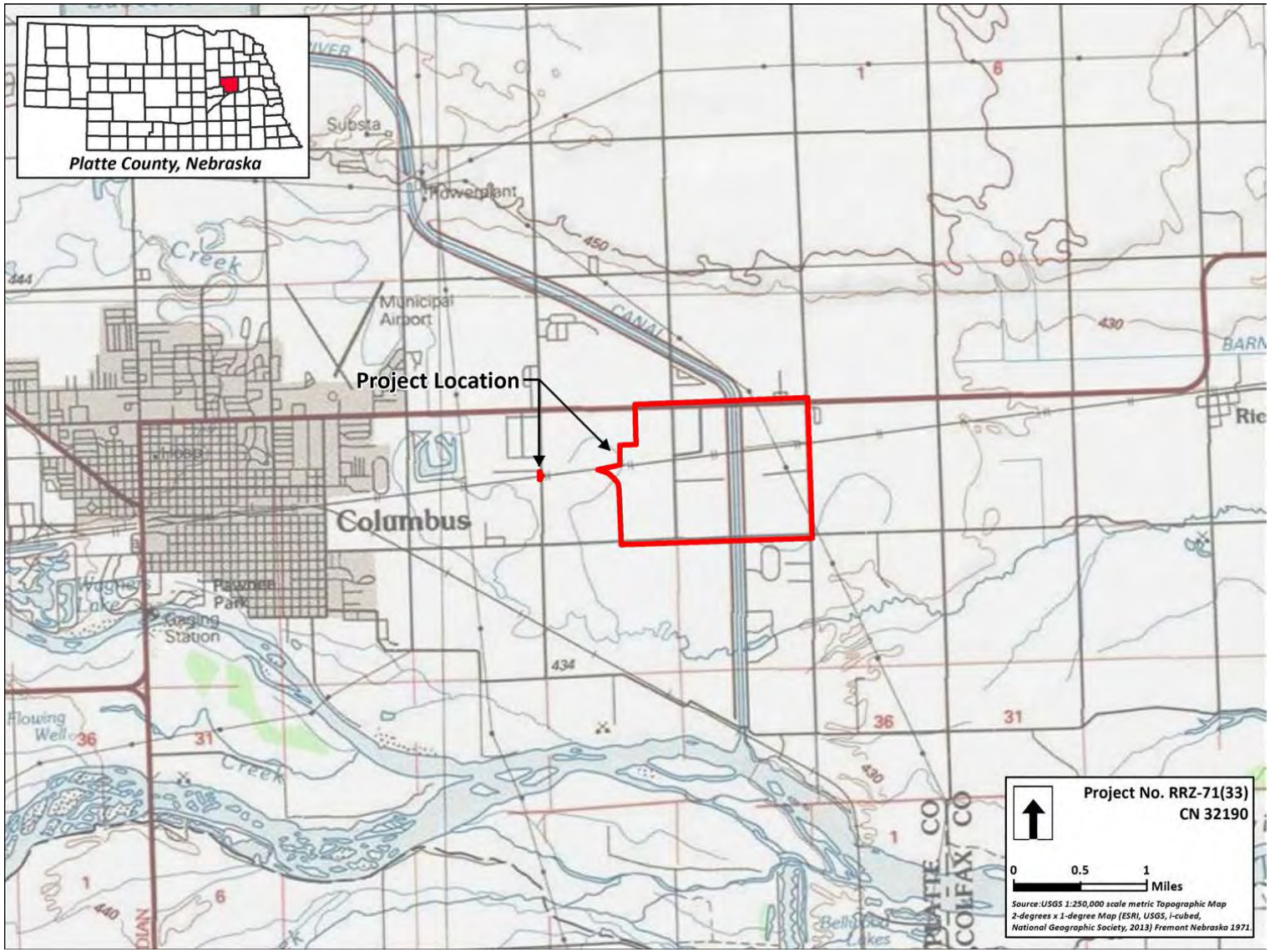
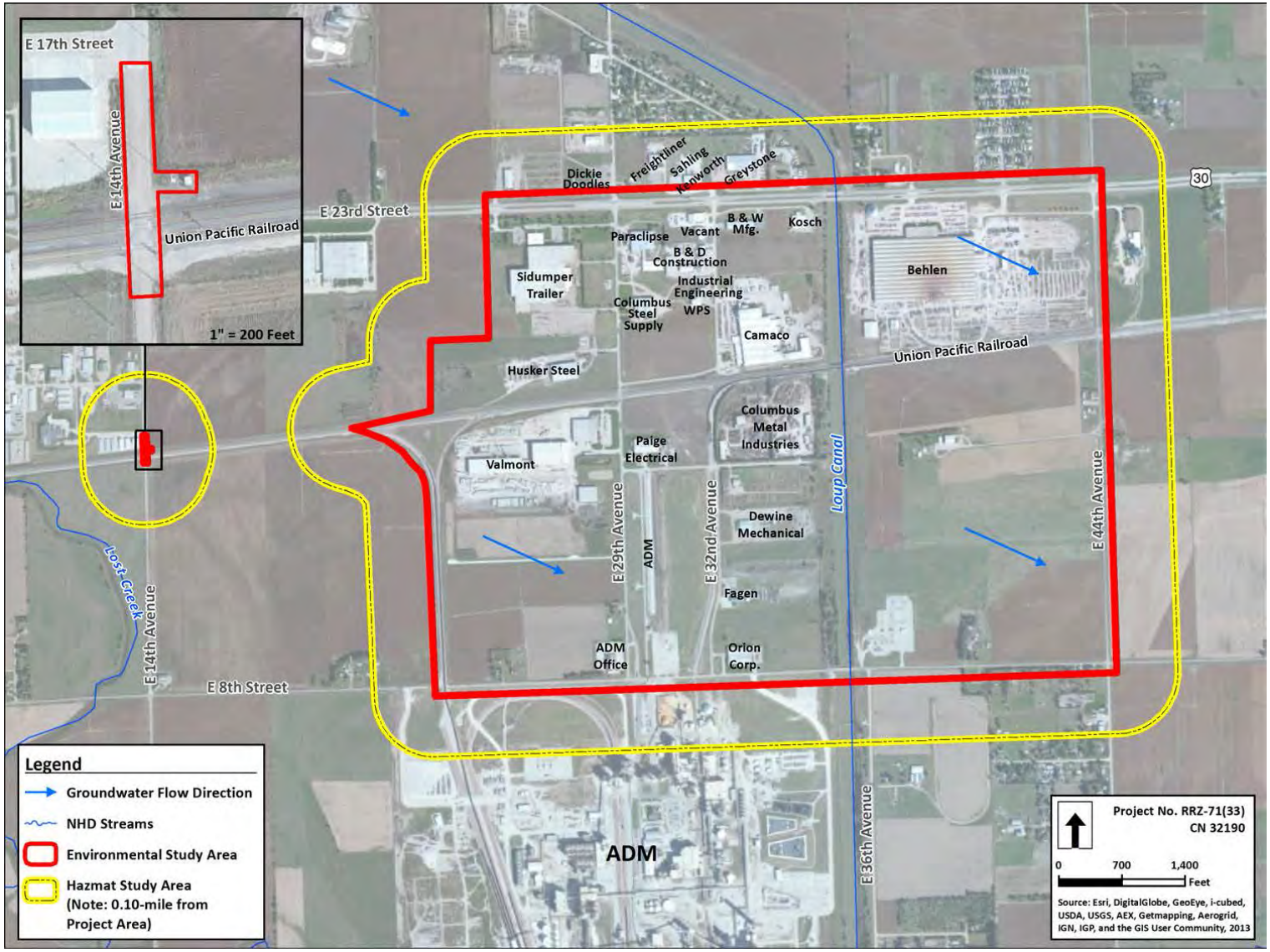


Figure 1.2. Hazardous Materials Study Area



1.2 Methodology, Guidance and Limitations

This HMTR was prepared for the purposes of helping NDOR staff identify potential existing hazardous materials issues during the advanced planning and environmental documentation stages of project development and to facilitate alternative selection.

The methodology to assess sites for releases that could migrate into the project footprint by evaluating the presence of sites with recognized environmental conditions (RECs) and sites with potential recognized environmental conditions (PRECs) within the hazardous materials study area included the following steps:

- Perform a limited site reconnaissance ("windshield survey") of properties within the hazardous materials study area from public ROW to identify site activities;
- Review readily available standard historical sources, such as aerial photographs, city directories, and US Geological Survey (USGS) topographic maps to identify historical uses of properties within the hazardous materials study area;
- Review readily available local, state, and federal environmental agency databases.
- Review previous Nebraska Department of Environmental Quality (NDEQ) records and other available records from local, state, and federal agency records for properties within the hazardous materials study area; and,
- Identify properties within the hazardous materials study area requiring additional evaluation or investigation to assist in ROW acquisition, project design, and specific-materials management or institutional controls required during construction.

Common limitations for NDOR projects include:

- Due to the large number of sites involved in corridor or other large projects, it is typically not practical for NDOR to obtain site access and interview individual property owners. Therefore, assessments generally do not include interviews of current and/or past owners and occupants of properties located within the project area, unless a full property acquisition is anticipated.
- Assessments generally do not include a search for environmental cleanup liens or activity use limitations.
- Visual site assessments are generally limited to areas visible from public ROW and do not include access to fenced-in areas, interiors of buildings, rear lots (alley side portion of adjacent sites), or areas not visible from public ROW.
- Assessments generally are not able to detect the presence of potential environmental contamination that may exist in areas that could not be visually inspected.

1.3 Terminology

This section provides a brief explanation of some of the common terminology utilized within the HMTR.

- Hazardous Materials – The term hazardous materials is an all-inclusive term for materials that are regulated as solid waste, hazardous waste, and other wastes contaminated with hazardous substances, radioactive materials, petroleum fuels, toxic substances, and pollutants.
- Hazardous Materials Study Area – The hazardous materials study area is defined as 0.10 mile from the project area (**Figure 1.1**). However, sites with the potential for large-scale contamination are evaluated up to 0.25 mile from the project area.
- Sites with Recognized Environmental Conditions (RECs) – For this HMTR, sites within the hazardous materials study area that were identified as having known (current and historic) soil or groundwater contamination and are distinguished in this report as sites with RECs that may affect the project area. RECs, as defined by ASTM (2005), include sites with "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property".
- Sites with Potential Recognized Environmental Conditions (PRECs) – This report distinguishes sites within the hazardous materials study area identified as having potential soil or groundwater contamination that may have an impact on the project but could not be confirmed without additional inspection or investigation as sites with potential hazardous materials concerns.

2.0 ENVIRONMENTAL SETTING

2.1 Surface Water

The project and environmental study area is located in a relatively flat area in the Platte River Valley. The Platte River Valley is a broad alluvial valley with numerous braided channels characterized by alluvial soils containing sand and silt deposits. The drainages and tributaries in the project area flow toward the Loup Canal and into the Platte River. The Loup Canal is mapped approximately 0.5 miles east of the project area and flows south before its confluence with the Platte River approximately 2 miles downstream of the project area.

2.2 Groundwater

The topography in the vicinity of the project, beginning at the intersection of the UPPR main line and East 29th Avenue, is relatively flat with a topographic gradient generally to the south/southeast. Topographic relief across the project area is approximately 10 feet; however, the roadway corridor has been leveled to meet road safety requirements. Elevations in the vicinity of the project range from approximately 1,430 ft above mean sea level (amsl) at US 30 to approximately 1,420 ft amsl at East 8th Street. Based on the topography and the locations of the Loup Canal and Platte River, groundwater flow is presumed to be to the east southeast (UNL CSD 1995). Sites north and west of the East 29th Avenue and UPRR are assumed to be potentially up-gradient relative to the project area. Confirmation of the direction of groundwater flow beneath the subject property was beyond the scope of this HMTR.

There are many registered active groundwater wells within the hazardous materials study area (NDNR, 2013). Based on cursory review of those wells' static water level, depth to the first occurrence of groundwater within the hazardous materials study area is approximately 10 to 20 ft below ground surface (bgs).

2.3 Geology and Soils

The US Department of Agriculture Natural Resource Conservation Service indicates that the soils in the environmental study area are classified as silty (Grigston), silty clay (Gibbon-Gayville) and sandy loam (Janude). (NRCS Web Soil Survey 2014)

The bedrock strata underlying the environmental study area consists of Quaternary-aged Pleistocene and Holocene alluvial fan deposits. These deposits are predominantly silt and clay deposits with some areas overlying deeper sandy sediments. Some areas contain well-preserved, large-scale meanderbelt scars and abandoned oxbow lakes (UNL CSD 2007).

3.0 SITE RECONNAISSANCE

Kevin Maddoux and Carin Richardson, environmental scientists with FHU, conducted a limited site reconnaissance on June 5, 2013. The purpose of the site reconnaissance was to identify any known or potential hazardous materials concerns associated with current land use and observable site activities within the hazardous materials study area that could cause a materials management or worker health and safety issue related to project construction. **Appendix A** includes photographs taken during the site reconnaissance.

Based on preliminary design information, minimal ROW acquisitions or easements from portions of some properties are anticipated for this project. Please refer to **Table 3.1** below detailing anticipated ROW and easement needs based on the current preliminary design and may be refined during the final engineering design phase of the project.

Table 3.1. Anticipated Right-of-Way and Easement Acquisitions

Tract	Property Address	Right-of-Way (ROW) / Easement
1	2154 E. 32nd Ave, Columbus, NE (B&D Construction)	Partial ROW & Temporary Easement
2	2070 E. 32nd Ave, Columbus, NE (Industrial Engineering)	Partial ROW & Temporary Easement
3	2500 E. 29th Ave, Columbus, NE (Sidumper Trailer)	Partial ROW & Temporary Easement
4	1864 29th Ave, Columbus, NE (Husker Steel)	Partial ROW & Temporary Easement
5	1600 E. 29th Ave, Columbus, NE (Valmont)	Partial ROW & Temporary Easement

The limited site reconnaissance consisted of a "windshield survey" from public ROW of the hazardous materials study area. The visual inspection assessed the hazardous materials study area for evidence of potential hazardous materials use, storage, and disposal activities, such as:

- Presence of above ground storage tanks (ASTs) and secondary containment for spill prevention;
- Evidence of underground storage tanks (USTs), including fill ports, vent pipes, and fueling facilities;
- Disposal of solid waste, waste management practices, and general good housekeeping of waste storage/disposal areas;
- Evidence of on-site dumping and land-filling;
- Presence of types of equipment that have been historically associated with the use of polychlorinated biphenyls (PCBs) as a dielectric fluid coolant and stabilizer;
- Handling and storage of hazardous materials, such as the presence of 55-gallon drums, tote containers, etc.; and
- Presence of drains, sumps, septic systems, wastewater discharges, pits, ponds, or lagoons.

Twenty-three (23) sites were observed and evaluated within the hazardous materials study area. **Figure 1.2** includes the site locations. Those sites that required further review are carried forward for detailed evaluation and discussed further in **Section 5.0** of this report. Photographs of the site reconnaissance are available in **Appendix A**.

4.0 HISTORICAL USE INFORMATION

FHU conducted a historical review of aerial photographs and USGS topographic maps to evaluate the past uses within the hazardous materials study area and identify sites with known and potential hazardous materials concerns. **Table 5.1** summarizes the historical records reviewed.

Table 4.1. Summary of Historical Records Reviewed

Historical Record	Years Reviewed
USGS 7.5-Minute Topographical Maps[1]	1899, 1958, 1976, 1988
Aerial Photographs[2]	1951, 1966, 1976, 1988, 1994
City Directories[3]	1963, 1967, 1992, 1998

NOTES:
(1) USGS Topographic Maps were obtained from the USGS website: www.store.usgs.gov and EDR.
(2) Aerial photographs were obtained from EDR, Douglas County GIS, and Google Earth.
(3) City directories were obtained from EDR.

USGS topographic maps have been prepared since the 1800s as part of the USGS mission to map the United States and survey its resources. The topographic maps show prominent and cultural features. These resources are useful in identifying topographic and cultural features and site development over a period of time. The historical topographic map review indicated that the project area and surrounding areas have historically been developed as agricultural land use. Industrial land uses were developed in the project area beginning in the 1960s through present-day.

Aerial photographs have been collected for the continental United States since the mid-1930s, with variable coverage and frequency (generally based upon an area's importance to national defense). Aerial photographs offer an opportunity for direct observation of site conditions through a period of time. These observations may include the locations of tanks, drums, pits, ponds, lagoons, stained/stressed vegetation, or other site development features that can indicate potential contaminant sources. Available aerial photographs for the project area were reviewed in approximately five to ten-year intervals.

City Directories have been compiled for larger metropolitan areas since the 1920s, primarily as a method of contacting individuals for marketing purposes. These directories provide cross-referenced information, indexed by property owner's name, street address, telephone number, and often, business name. These resources are useful in determining dates and types of businesses by using either the address or the business name index. Similar to the aerial photograph review, a review of city directories provides insight as to business operations that may have adversely impacted the project area in the past.

The aerial review for this HMTR addresses the properties located within the environmental study area, with particular attention to adjoining properties to the project area. Major features were noted within each parcel for each year and changes to the land use are discussed over time (**Table 5.2**). The objective of the historical review is to "*establish a history of the previous uses of the property and surrounding area, in order to help identify the likelihood of past uses having led to recognized environmental conditions*" (ASTM 2005).

Table 4.2. Historical Review

Date of Aerial Photo	Predominant Features
1951 (electronic PDF)	The project area consists primarily of undeveloped agricultural land, with various plots visible from the aerials. There are a cluster of structures southeast of the US 30 and E 29th Ave intersection and southeast of the US 30 and Loup Canal intersection, which appear to be more residential/agricultural in nature; however specific building uses could not be determined from the aerial photographs.
1966 (electronic PDF)	Overall land uses appear to be unchanged compared to the 1951 aerial photographs; however, the structures southeast of the US 30 and E 29th Ave intersection have been demolished and cleared. Also, a large and newly-built industrial structure appears on the aerial photographs where present-day CAMACO is located (1851 E 32nd Ave). Imagery east of the Loup Canal was not available.
1976 (electronic PDF)	Overall land use appears to be unchanged compared to the 1966 aerial photograph for the portion of the project area east of E 29th Ave; however, multiple structures (present-day: Greystone, Kosch, B & W Mfg, Paraclipse, B & D Construction, Columbus Steel Supply) were newly built in the portion of the project area located west of E 29th Ave and north of the UPRR. The properties appear to be industrial land uses; however, specific building uses could not be determined from the aerial photograph. Also the property at 1851 E 32nd Ave (CAMACO) is further developed with additional industrial activity and buildings.
1988 (electronic PDF)	Conditions appear similar in 1988 as depicted in the 1976 aerial photograph. A few properties in the project area depicted in the 1976 aerial photo appear to be further developed with additional industrial activity and buildings (CAMACO and B & D Construction). New industrial structures in the project area appear on the 1988 aerial photograph as well (Dickie Doodles, Douglas Holdings, Husker Steel, Paige Electric, Orion Corp. and Columbus Metal).
1994 (electronic PDF)	Land uses appear to be unchanged compared to the 1988 aerial photograph.

5.0 AGENCY RECORDS REVIEW AND DETAILED FILE REVIEW

FHU contracted Environmental Data Resources, Inc. (EDR) to conduct a database search of local, state, and federal environmental records for information relating to sites extending up to 1.0 mile from the project alignment, as dictated by the ASTM Standard E1527-05 (**Table 5.1**). FHU also cross-referenced the EDR Report with the NDEQ Integrated Mapping System (IMS) to identify any additional sites with known or potential hazardous materials concerns.

Table 5.1. Database Description and Approximate Minimum Search Distances

Database	Approximate Minimum Search Distance (mile)
Federal National Priorities List (NPL) – US Environmental Protection Agency (EPA)'s database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund Program.	1.0
Federal Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) – Compilation by the EPA of sites at which the potential exists for contamination originating from on-site hazardous substance storage or disposal. Sites designated as "NFRAP" indicate that No Further Remedial Action is Planned.	0.5
Federal Resource Conservation and Recovery Act (RCRA) treatment, storage, or disposal (TSD) facilities – RCRA permitted TSD facilities	0.5
Federal Resource Conservation and Recovery Information System (RCRIS) – Facilities that are regulated based on current hazardous waste generation management activities.	0.25
Federal RCRA Corrective Action (CORRACTS) facilities – Sites identified as needing Corrective Action after a release of a hazardous waste or constituent into the environment from a RCRA facility.	1.0
Federal/State Emergency Response Notification System (ERNS) List – Database of public complaints and reports of unverified releases or incidents.	0.25
State Voluntary Cleanup Programs (VCP) and State Hazardous Waste (SHWS) sites – Sites being addressed under Nebraska Department of Environmental Quality (NDEQ) oversight.	0.5
State Solid Waste Disposal (SWF) and/or Landfill (LF) sites – Inventory of solid waste and landfill facilities.	0.5
State Historical Landfills sites – Inactive landfill sites (including sites known to generate methane) and illegal dump sites.	0.5
State Above Ground Storage Tank (AST)/Underground Storage Tank (UST) – List of sites that registered the presence of ASTs/USTs with the Nebraska State Fire Marshal and NDEQ.	0.5
State Leaking Underground Storage Tanks (LUST) – List of closed or unremediated reported LUSTs.	0.5

Sites identified in the EDR database report and/or IMS database were screened to determine which sites would have the potential to impact the project in terms of materials management or worker health and safety based on distance from the project area, direction of groundwater flow, and type of site.

Table 5.2 and Figure 1.2 include facilities that are listed in the regulatory databases related to hazardous substance and/or petroleum product use, storage, or transfers. These types of sites may include UST, leaking underground storage tank (LUST), Petroleum Release Remediation (PRR), Release Assessment (RA), Resource Conservation and Recovery Act (RCRA) sites with reported violations, and Tier 2 Chemical Reporting/Superfund Amendments and Reauthorization Act (SARA) Title III sites. These types of sites were reviewed and included in **Table 5.2** and **Figure 1.2** if they are located adjacent to and/or within 1/10 mile of the project environmental study area.

Table 5.2 and the **Figure 1.2** also include sites with indications of a known existing or past release of any hazardous substances or petroleum products into the ground (soil), groundwater, or surface water and the possibility for large-scale migration from the contaminant source, such as National Priority List (NPL) or Superfund (SF) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), RCRA Corrective Action (CORRACTS), and Brownfields (BR) sites if they are located adjacent to and/or within 0.25 mile (at a minimum) of the hazardous material study area. None of these sites were identified outside the hazardous material study area.

Sites with minimal indications of an existing release, past release, or material threat of a release of any hazardous substances or petroleum products into the ground (soil), groundwater, or surface water were not included in this hazardous materials assessment. Specifically, the following types of facilities were assumed to be low risk sites related to transportation projects: Facility Index System (FINDS), National Pollution Discharge Elimination System (NPDES) Permits and Compliance (PCS), Underground Injection Control (UIC), and Integrated Compliance Information System (ICIS). Typically these sites are not related to hazardous waste or petroleum products and are not included as part of the hazardous materials summary, unless an exception is found during the site reconnaissance. These facilities are considered low risk related to transportation projects.

Regulated facilities that were identified as having potential hazardous materials concerns located adjoining to or nearby the project area are summarized in **Table 5.2** below. The remaining facilities identified during the site reconnaissance and/or listed facilities in the database search were considered unlikely to impact the project based on either regulatory status, topographic position relative to the project area or distance from the project area.

Table 5.2. Sites Identified in the Regulatory Review

Site Name/Address	Environmental Database Results (EDR or NDEQ IMS) Gradient Relative to UPRR/ East 29th Ave.	Description of Concern	Selected for Detailed Review
B & D Construction 2154 E. 32nd Ave.	Leaking Underground Storage Tank (LUST) (closed) **Cross-gradient**	Low levels of petroleum hydrocarbon contamination in soils. Status is closed to No Further Action; however, site was closed with	Yes

Site Name/Address	Environmental Database Results (EDR or NDEQ IMS) Gradient Relative to UPRR/ East 29th Ave.	Description of Concern	Selected for Detailed Review
		contamination.	

Behlen Manufacturing Company 4025 E. 23rd St.	LUST (closed), Leaking Above Ground Storage Tank (LAST) (closed), Emergency Surface Spill List (SPILLS), RCRA – Facility that Treat, Store, or Dispose of Waste (TSDF), RCRA Corrective Action (CORRACTS), RCRA Conditionally Exempt Small Quantity Generator (CESQG), MINES, Toxic Chemical Release Inventory System (TRIS), Facility Index System (FINDS), Clean Air Act (AIRS), EPA WATCH LIST, and 2020 COR ACTION **Cross-gradient**	Residual levels of petroleum hydrocarbon and volatile organic contamination in soils and groundwater. Site under ongoing remedial investigation. See discussion below in Section 5.1.	Yes
Dickie Doodles 2820 E. 23rd St.	Not listed on the EDR report. Identified on the NDEQ IMS as Tier II Chemical Reporting site (TL3) (Inactive) **Up- to Cross-gradient**	Associated activities with filling stations include surficial spills or releases of petroleum hydrocarbons. Two (2) underground storage tanks are located at the site. See discussion below in Section 5.1.	Yes
Sidumper Trailer/Douglas Holdings/EGS Electrical Group/Appleton Electric 2500 E. 23rd St.	Comprehensive Environmental Response, Compensation, and Liability System No Further Remedial Action Planned (CERCLIS-NFRAP), State/Tribal Equivalent CERCLIS (SHWS), LUST (Closed), LAST (Closed), RCRA non-generator, Above Ground Storage Tank (AST) and historical AST, FINDS, National Pollution Discharge Elimination System (NPDES), TRIS, Tier 2 **Up-gradient**	See discussion below in Section 5.1.	Yes
Husker Steel 1864 29th Ave.	LUST (Closed), FINDS, AIRS **Up-gradient**	Low levels of petroleum hydrocarbon contamination in soils. Status is closed to No Further Action. See discussion below in Section 5.1.	Yes
Industrial Engineering Co. 2070 E. 32nd Ave.	RCRA-SQG with reported violations, FINDS **Cross-gradient**	See discussion below in Section 5.1.	Yes
Valmont/Katana Summit Inc./1600 E. 29th Ave.	RCRA large quantity generator (LQG) and TL3. The site is also listed as a FINDS, NPDES, and AIRS. **Up-gradient**	See discussion below in Section 5.1.	Yes
RCRA CESQG - A conditionally-exempt SQG generates 100 kilograms or less of hazardous waste per month, and accumulates less than1000 kg of hazardous waste onsite. RCRA SQG - A SQG generates more than100 kilograms but less than 1,000 kilograms of hazardous waste per month, and accumulates less than 6000 kg of hazardous waste onsite. RCRA LQG - A LQG generates 1,000 kilograms or more of hazardous waste per month (no limit on accumulation).			

5.1 Detailed Review of Selected Sites

A detailed regulatory records review was conducted for sites with known or potential hazardous materials concerns located in the hazardous materials study area. The objective of the regulatory records review was to examine available information regarding a facility's potential to cause a materials management or worker health and safety issue related to project construction. When a detailed review was deemed necessary, individual NDEQ records were reviewed to assess the extent of current on-site environmental conditions and the potential presence of soil and groundwater contamination due to an existing or past release of a hazardous substance or petroleum product.

The remaining listed facilities in the EDR database and/or NDEQ IMS database search report were located either down-gradient, cross-gradient, and/or distant from the project area and determined to not likely impact the project area.

The following subsections summarize the findings of the detailed NDEQ regulatory file review.

5.1.1 B & D Construction

The B & D Construction facility is a closed LUST site that is located within the hazardous materials study area (**Figure 5.1**). According to the EDR report, three USTs were removed from the site. No information was available regarding the date of the removal. The LUST was closed to No Further Action (NFA) in February 1995. Under NDEQ's Title 118 Remedial Action Protocol for petroleum releases, localized residual contamination at NFA-designated sites do not pose a threat to groundwater quality or public health and welfare when undisturbed.

The proposed alternatives may include soil disturbance in the area of the B&D Construction property and temporary easement and/or partial ROW acquisition is anticipated. Therefore, based on review of the NDEQ regulatory file, observations during the site reconnaissance, and the proximity of the facility to proposed construction activities, this site is considered a moderate risk to construction activity and is a recognized environmental condition (REC) for the project. Please refer to **Table 6.1** below.

5.1.2 Behlen Manufacturing Company

The Behlen Manufacturing Company facility is a closed LUST and RCRA corrective CORRACTS site located within the hazardous materials study area, north of the UPRR and east of E. 29th Avenue (**Figure 5.1**). The site is also listed in the NDEQ IMS under other programs (see **Table 5.2**) that are not discussed in detail below because they are considered low risk to transportation projects.

Behlen Manufacturing Company began operations in 1954 and fabricates steel metal products such as metal buildings and grain handling, storage and conditioning equipment, and products for livestock. A variety of chemical and mechanical processes are used such as shearing, deformation, welding, grinding. Chemical processes include hot dip galvanizing, zinc electroplating, conversion coating and finishing with water-based and oil-based paints. Other operations include maintenance of plant equipment and vehicles and operation of a wastewater treatment plant.

According to a review of NDEQ files, two bentonite-lined surface impoundments installed in 1970 on-site were declared a hazardous waste treatment facility in 1982. Surface impoundment closure activities were completed and accepted by NDEQ in 1988.

In June 1998, NDEQ completed a Comprehensive Monitoring Evaluation (CME) for the facility. Among other things, the NDEQ indicated the need to further delineate the groundwater plume

associated with the closed surface impoundments and to install additional monitoring wells. Since 1987, Behlen has been conducting routine groundwater monitoring of several site monitoring wells related to the surface impoundments closure. Monitoring results indicated elevated concentrations of three volatile organic compounds (VOCs), which were considered RCRA chemicals of concern (COCs) by NDEQ in April 2000. The results indicated that a groundwater plume involving the three COCs most likely extended onto property east of the Behlen facility.

In June 2000, three 55-gallon drums and contaminated soils were uncovered during excavation work on the eastern side of the site, near the property boundary.

In March 2005, EPA and Behlen signed an Administrative Order of Consent (AOC) which called for completing definition of the groundwater plume, establishment of sentry wells beyond the outside edge of the plume, interim measures, ongoing operation of the groundwater clean-up system and sampling to determine the results. In 2005, Behlen discovered contamination in residential wells that were being monitored.

The EPA issued a letter on June 13, 2013, in response to the groundwater monitoring work plan that Behlen proposed on June 4, 2013. The work plan, which proposes groundwater sampling using direct push technology to collect groundwater samples at two locations on an 18 month frequency, was approved with the stipulation of changing the sampling frequency to every 12 months.

Known petroleum impacted groundwater and residual petroleum impacted soil are present on the site. Therefore, this facility is considered a PREC, as defined in **Section 1.3** above. However, based on the scope of the proposed project, the Behlen facility is located outside the proposed limits of construction, and is topographically divided and down-gradient from the proposed project by the Loup Canal. One of the proposed alternatives may require roadway improvements to the detour route along South 44th Avenue which would include grinding up the existing pavement and overlaying with new asphalt to reinforce the roadway for the increased traffic. Though work beyond the existing edge of pavement is not anticipated, if it were to occur, it may cause a materials management or worker health and safety issue related to the proximity of the roadway to the Behlen facility.

5.1.3 Dickie Doodles

The Dickie Doodles site is an inactive Tier II Chemical Reporting site according to the NDEQ IMS database. The site is located within the northern portion of the hazardous materials study area and north of Highway 30 and West of East 23rd Street (**Figure 5.1**) and is considered topographically cross- to up-gradient relative to the proposed project. Associated activities with filling stations include the occurrence of minor leaks from vehicles and surficial spills from overfilling vehicle fuel tanks. According to a review of NDEQ files, two USTs are located immediately east and north of the pump islands. No known spills or releases have been reported for this site. Identifying the condition and construction of the USTs, integrity testing records, and spill protection procedures was beyond the scope of this review.

Based on the above information, this site is considered a low risk to project construction because soil disturbance in the area of Dickie Doodles is not anticipated based on the scope of the proposed project.

5.1.4 Sidumper Trailer/Douglas Holdings/EGS Electrical Group/Appleton Electric

The Sidumper Trailer (Douglas Holdings/EGS Electrical Group/Appleton Electric) facility is a closed LUST, leaking aboveground storage tank (LAST), and RCRA non-generator site located

within the hazardous materials study area, north of the UPRR and west of E. 29th Avenue (**Figure 5.1**).

The EGS Electrical Group formerly manufactured industrial bulk conduit fittings and industrial lighting fixtures at the facility. Operations included machining, grinding, plating, painting, assembly, packing and shipping. Appleton Electric (former owner of the property) was purchased by Emerson in 1982. Appleton became part of EGS Electrical Group, a joint venture between Emerson and General Signal Corporation in 1997. Production at the facility ceased in January 2011, when the company moved operations to Monterey, Mexico. NDEQ issued a Review of Investigation Work Plan letter on June 25, 2013, in response to the Investigation Work Plan sent on June 18, 2013, requesting their comments be addressed in a revised work plan and that the proposed investigation of the source area, as well as recommending additional groundwater sampling be completed to assess the full nature and extent of contamination. Investigation by NDEQ is ongoing at this facility.

Based on review of the NDEQ regulatory file, observations during the site reconnaissance, and the proximity of the facility to proposed construction activities, this site considered a REC for the project.

5.1.5 Husker Steel

The Husker Steel facility is a closed LUST site located within the hazardous materials study area, in the northwest quadrant of the intersection of the UPRR and E. 29th Avenue (**Figure 5.1**).

According to a review of NDEQ files, activities at this site previously included burning waste, brush, and trees on-site. Ash from the burning process was reported as disposed of off-site at a permitted landfill. Two USTs were removed from the property in February 1990, including a 2,000-gallon tank containing gasoline and a 4,000-gallon tank containing diesel. Contamination of soils surrounding the USTs was discovered during the removal activities. The contamination was attributed to a leak in the manhole connections to the USTs. An initial site assessment was conducted in April 1990. Groundwater contamination was not detected during the initial site assessment. The LUST was closed to No Further Action in June 1990. Under NDEQ's Title 118 Remedial Action Protocol for petroleum releases, localized residual contamination at NFA-designated sites do not pose a threat to groundwater quality or public health and welfare when undisturbed.

The proposed alternatives may include soil disturbance in the area of the Husker Steel property and temporary easement and/or partial ROW acquisition is expected. Therefore, based on review of the NDEQ regulatory file, observations during the site reconnaissance, and the proximity of the facility to proposed construction activities, this site is considered a moderate risk to construction activity and is a REC for the project. Please refer to **Table 6.1** below.

5.1.6 Industrial Engineering Co.

The Industrial Engineering Co. facility is a RCRA SQG with reported violations within the hazardous materials study area, north of the UPRR and east of E. 29th Avenue (**Figure 5.1**). Notice of violation was issued to the facility in 1997 as result of an EPA inspection. The facility is listed as achieving compliance in 1998.

Production equipment for industry is designed and built on-site which includes designing, machining, assembly, and testing activities. Unknown waste material was buried on site prior to 1997, which may have included municipal and industrial debris. According to the EDR report

(2013), ignitable hazardous wastes, spent non-halogenated solvents, and corrosive hazardous wastes are used at this facility.

Based on review of the NDEQ regulatory file, observations during the site reconnaissance, and the proximity of the facility to proposed construction activities, this site is considered a REC for the project.

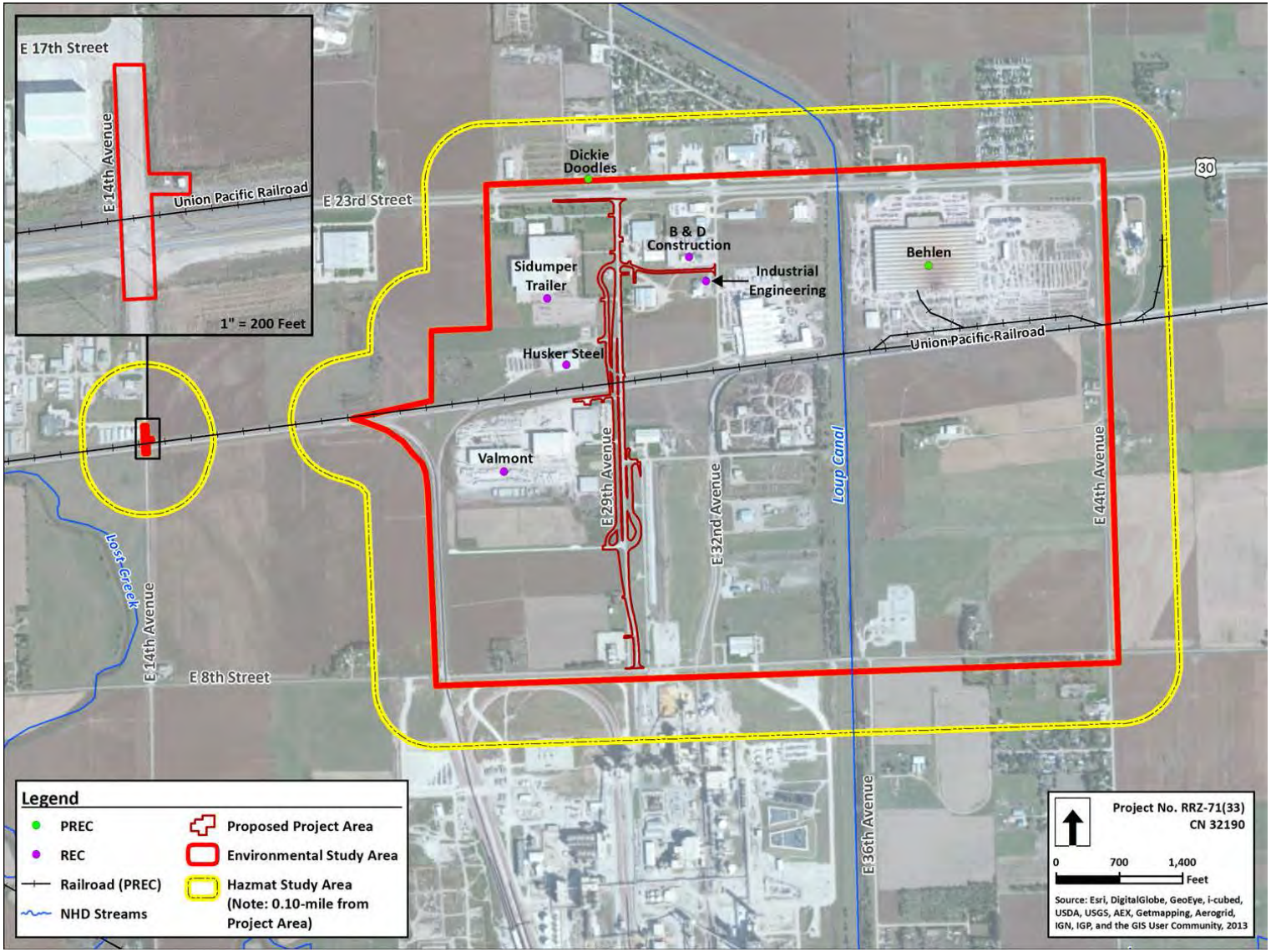
5.1.7 Valmont (formerly Katana Summit)

Valmont is a RCRA large quantity generator (LQG) and Tier II chemical reporting facility located within the hazardous materials (**Figure 5.1**). According to the EDR report (2013), ignitable hazardous wastes, methyl ethyl ketone, and spent non-halogenated solvents are used at this facility. No violations have been reported. No spills or releases have been reported.

Three process water ponds are located in the eastern portion of the site and fall under the facility's industrial stormwater permit. Details regarding the constituents in the process water were not available; however, associated waste materials (potential pollutants) with steel manufacturing include but are not limited to spent solvents, petroleum products, pH, and metal shavings. Operations at the facility, in particular historical practices under Katana Summit and construction specifications of the ponds, could not be verified.

Based on review of the NDEQ regulatory file, observations during the site reconnaissance, and the proximity of the facility to proposed construction activities, this site is considered a REC for the project.

Figure 5.1. Sites with Potential Impacts to the Project



6.0 HMTR FINDINGS AND RECOMMENDATIONS

6.1 Findings

The project area is located in an area with a long history of industrial and commercial land use. The UPRR was constructed through the project area in the late 1800s. The UPRR mainline railroad and several railroad sidings are located in the project area. No evidence of potential soil and groundwater impacts were identified with the railroad tracks during the site reconnaissance; however, impacts to soil and groundwater along the railroad corridor may exist due to undocumented events and an accumulation of hydrocarbon exhaust, drips, leaks, and spills over time.

Industrial and commercial land use has been located in the area since the 1950s. Although scattered residences are located throughout the project area, the project area has been primarily influenced by historical industrial processes.

Three (3) properties with PRECs and five (5) RECs were identified within the project area or in the vicinity of the project during the site reconnaissance, historical review, or regulatory records search. Sites with RECs are sites with known existing or past releases of any hazardous substances or petroleum products into structures on the site or into the ground, groundwater, or surface water of the site. Sites with PRECs are sites where a REC may be present but could not be confirmed without additional inspection or investigation, which was beyond the scope of this HMTR. **Figure 5.1** depicts the properties with PRECs and RECs.

6.2 Recommendations

Based on the findings of the HMTR, FHU makes the following recommendations for groundwater and soil man.

6.2.1 Property Specific Recommendations

Based upon the information provided in **Section 5** of this report a Limited Phase II Environmental Subsurface Investigation is recommended in the areas that will be excavated or will require dewatering of groundwater during construction activities, such as caisson installation. The Limited Phase II Environmental Subsurface investigation should include analysis of the following constituents:

- Petroleum Compounds
- RCRA metals
- Semi-volatile organic compounds
- Volatile organic compounds

Sampling results will be used to determine if those locations and concentration will influence the alternative selection process, to ensure the proper avoidance/mitigation strategies are implemented, to ensure full disclosure to the public during the NEPA process, and to determine if human health risks exist from the construction of operation of the proposed transportation facility. The findings and analysis from the sampling effort will be summarized with the NEPA environmental document.

Moreover, soil should be managed so that it does not leave the site and essentially remains in the same location (i.e. in project area) to remain considered by NDEQ as soil (NDEQ, 2005). This includes soil that is moved around within the project area, utility work where the soil is

backfilled, and etc. The current preliminary alternative designs require fill material to be brought on-site and may require more once final design is completed. No soil is planned to leave the site.

Lastly, NDOR's standard commitment regarding hazardous materials is as follows:

> If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material will stop until NDOR/Federal Highway Administration (FHWA) is notified and a plan to dispose of the Hazardous Materials has been developed. Then NDEQ will be consulted and a remediation plan will be developed for this project. The potential exists to have contaminants present resulting from minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the NDEQ will be contacted for consultation and appropriate actions be taken. The contractor is required by NDOR's Standard Specification section 107 (legal relations and responsibilities to the public) to handle and dispose of contaminated material in accordance with applicable laws (Contractor).

Based on the finding of the HMTR, **Table 6.1** includes specific recommendations for each property with PRECs or RECs located adjacent to the East 29th Avenue project area (**Figure 5.1**.

Table 6.1. Hazardous Materials Review Recommendations

Site Address	Description of Property	Recommendations
1. B&D Construction, Inc. 2154 E. 32nd Avenue	REC. LUST site, contaminated soil may be present. Unknown material in apparent burn pile. Materials management during construction is expected. Temporary easement and/or partial ROW acquisition is expected.	The facility building (where potential activities would occur) is considered to be up- to cross-gradient in relation to the proposed locations of temporary easement and permanent ROW, necessary for road construction. Soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
2. Behlen Manufacturing Company	PREC. LUST, LAST, SPILLS, RCRA TSDF, CORRACTS site. Residual levels of petroleum hydrocarbon and volatile organic contamination in soils and groundwater. Site under ongoing remedial investigation. No ROW acquisition is expected.	Beheln is located along the proposed detour route (within the environmental study area boundary), but outside the project limits of construction. The facility is topographically (hydrologically and elevation) cross-gradient from the project. If improvements to the detour route occur, work would likely remain within the edge of pavement. Based on this information the Behlen facility is unlikely to be impacted by the viaduct project and vice versa. No further assessment is required.

3. Dickie Doodles 2820 E. 23rd Street	PREC. Impacts to soil and groundwater at the property may exist due to undocumented events. However, no reported releases are on record for this facility. No ROW acquisition is expected.	Dickie Doodles was not listed in the EDR report as a regulated facility. It is located on the environmental study area boundary, outside the project limits of construction and topographically (hydrologically and elevation) cross-gradient from the project. Based on this information the Dickie Doodles facility is unlikely to be impacted by the viaduct project and vice versa. No further assessment is required.
4. Sidumper Trailer/Douglas Holdings/EGS Electrical Group/Appleton Electric 2500 E. 23rd Street	REC. SHWS, CERCLA-NFRAP, LAST, LUST site closed to No Further Action Based on review of the NDEQ regulatory file the facility operations formerly included activities such as machining, grinding, plating, and painting. NDEQ issued a notice to reviews an investigation work plan in 2013 and appears to be ongoing. Temporary easement and/or partial ROW acquisition is expected.	The facility is located topographically up-gradient from the proposed viaduct project. Therefore, soil or groundwater contamination, if found at the facility, could potentially impact construction and vice versa. Soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
5. Husker Steel 1864 29th Avenue	REC. LUST site closed to No Further Action Two (2) USTs were pulled in 1990. The tanks were reported to be in good condition and over-excavation to clean soils was done to remove contaminated soils that were limited to the area immediately under the tanks. Additionally, groundwater contamination was not detected in an April 1990 investigation. Temporary easement and/or partial ROW acquisition is expected.	The proposed locations of temporary easement and permanent ROW, necessary for road construction were reviewed in relation to the facility building (where potential activities would occur), and are considered topographically cross-gradient. However, based on the proximity to the proposed project soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
6. Industrial Engineering Co. 2070 E. 32nd Avenue	REC. RCRA-SQG with reported violations. Unknown waste buried on-site and unknown material handling, storage, and disposal practices. Potential materials include: ignitable and halogenated hazardous waste, and spent solvents Temporary easement and/or partial ROW acquisition is expected.	The facility building (where potential activities would occur) is considered to be down- to cross-gradient in relation to the proposed locations of temporary easement and permanent ROW, necessary for road construction. However, based on the unknown on-site waste disposal locations or general land use practices, soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.

7. Valmont / Katana Summit 1600 E. 29th Avenue	REC. RCRA-LQG, NPDES Multi-Sector General Permit Impacts to soil and groundwater at the property may exist due to undocumented events. However, no reported releases are on record for this facility. Temporary easement and/or partial ROW acquisition is expected.	Valmont is located within the proposed project limits of construction and topographically (hydrologically and elevation) up-gradient from the project. Based on this information the Valmont facility is likely to be impacted by the proposed viaduct project and vice versa. Soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
8. Union Pacific Railroad (UPRR) Adjacent and perpendicular to E. 29th Avenue	PREC. Impacts to soil and groundwater along the railroad corridor may exist due to undocumented events and an accumulation of hydrocarbon exhaust, drips, leaks, and spills over time. No ROW acquisition is expected, however temporary construction easement or a railroad agreement may be necessary.	Based on topography and low risk conditions along a railroad track, this property requires no further assessment.

6.3 Additional Corridor-Wide Issues of Concern

6.3.1 Right-of-way (ROW) Acquisition

This HMTR process of identifying, evaluation, and mitigating hazardous materials and/or waste may be helpful during the ROW process. Some properties are planned for partial acquisition during the ROW acquisition process. No further assessment or investigation regarding hazardous materials is recommended at this time, and results of the Limited Phase II Environmental Subsurface Investigation shall be shared with the NDOR ROW Division upon completion.

6.3.2 Removal of Structures/Obstructions

Pole-mounted electrical transformers were observed throughout the project area and environmental study area. Since some of this equipment was not labeled, this electrical equipment is assumed to be “PCB contaminated equipment” per EPA regulation. In general, legal and financial responsibility for PCB-containing equipment lies with the equipment owner; however, if another party causes the equipment to fail, financial and legal responsibility may be transferred to the responsible party. Relocation of the overhead electrical utility lines and pole-mounted transformers will be identified in the project plans and specifications and completed by the local utility providers.

6.3.3 Worker Health and Safety

Prior to construction activities, a Preconstruction Meeting shall be held as required by Section 103.01 of the 2002 *NDOR Construction Manual*. The purpose of the meeting is to discuss pertinent information to the project before construction begins. Requirements related to actions to be taken if hazardous materials are encountered during construction are located in Section 107.01 of the Standards Specifications for Highway Construction (NDOR 2007) and are applicable during the construction of this project.

Additionally, the recommended commitment regarding worker health and safety is as follows:

> The potential exists for low levels of petroleum contamination to be encountered on or near pavement or ground surfaces. Worker notification would be required for this project. The EPA states conducting sanitation practices, such as washing hands and face before ingesting food or water and before smoking or tobacco chewing, is important for contractor safety. The EPA also suggests the need for dust suppression when dry and dusty conditions are present to reduce the inhalation of dust/lead particles, including the use of dust masks by contractors. (Contractor)

7.0 PHASE II ENVIRONMENTAL SITE ASSESSMENT

Based on the findings of the HMTR a subsurface investigation was completed by Benesch Associates, March 10, 2014. The result of the Phase II Environmental Site Assessment (subsurface investigation) is attached to this document. See **Appendix B**. Based on the findings of the Phase II the above listed RECs are considered low risk to project construction, and worker health and safety.

8.0 REFERENCES

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APPENDIX A SITE PHOTOGRAPHS

Photograph 1: View of East 29th Avenue from the south toward the UPPR railroad lines. Columbus Steel Supply is visible in the background to the right (east) of East 29th Avenue.

Photograph 2: View of Valmont/Katana Summit LLC property from the east.

Photograph 3: View of residence along East 29th Avenue from the southeast. The UPRR railroad lines are located toward the north in the background.

Photograph 4: View from the east of vacant ADM offices located at the northwest corner of East 29th Avenue and East 8th Street.

Photograph 5: View from the north of the ADM facility located south of East 8th Street.

Photograph 6: View from the southwest of the Paige Electric facility at the northeast corner of East 15th Street and East 29th Avenue.

Photograph 7: View of from the west of the Columbus Metal Industries facility at the northeast corner of East 15th Street and East 32nd Avenue. The access road to the ADM weigh station is visible in the foreground.

Photograph 8:View from the west of the Camaco facility along east 32nd Avenue.

Photograph 9: View from the northeast of the Columbus Steel Supply facility located along East 29th Avenue.

Photograph 10: View from the northeast of the Industrial Engineering facility located along East 32nd Avenue.

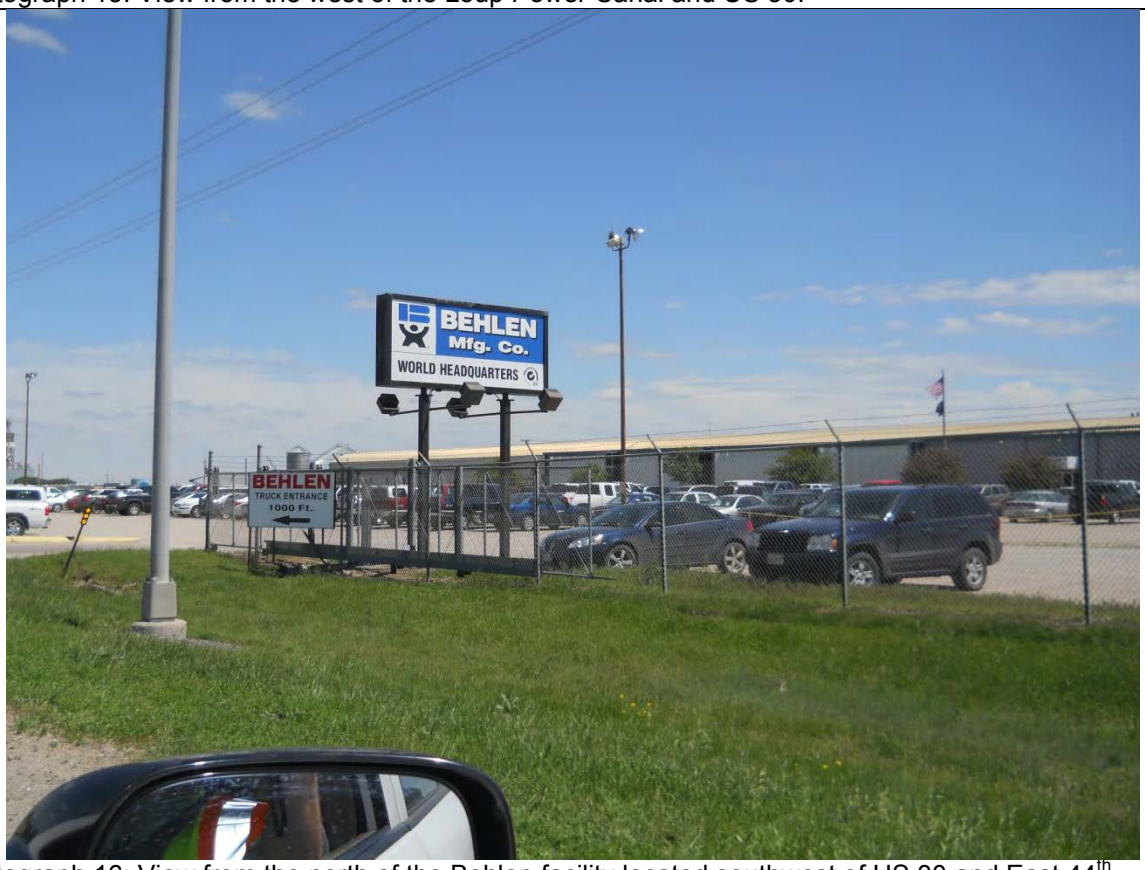
Photograph 11: View from the south of the WDS distribution warehouse located along East 32nd Avenue.

Photograph 12: View from the southeast of the B&D facility along East 32nd Avenue. US 30 is visible in the background.

Photograph 13: View from the north of the vacant B&W Manufacturing facility located at the southeast corner of US 30 and East 32nd Avenue.

Photograph 14: View from the north of the Kosch facility located at the southwest corner of US 30 and the LPPD canal.

Photograph 15: View from the west of the Loup Power Canal and US 30.

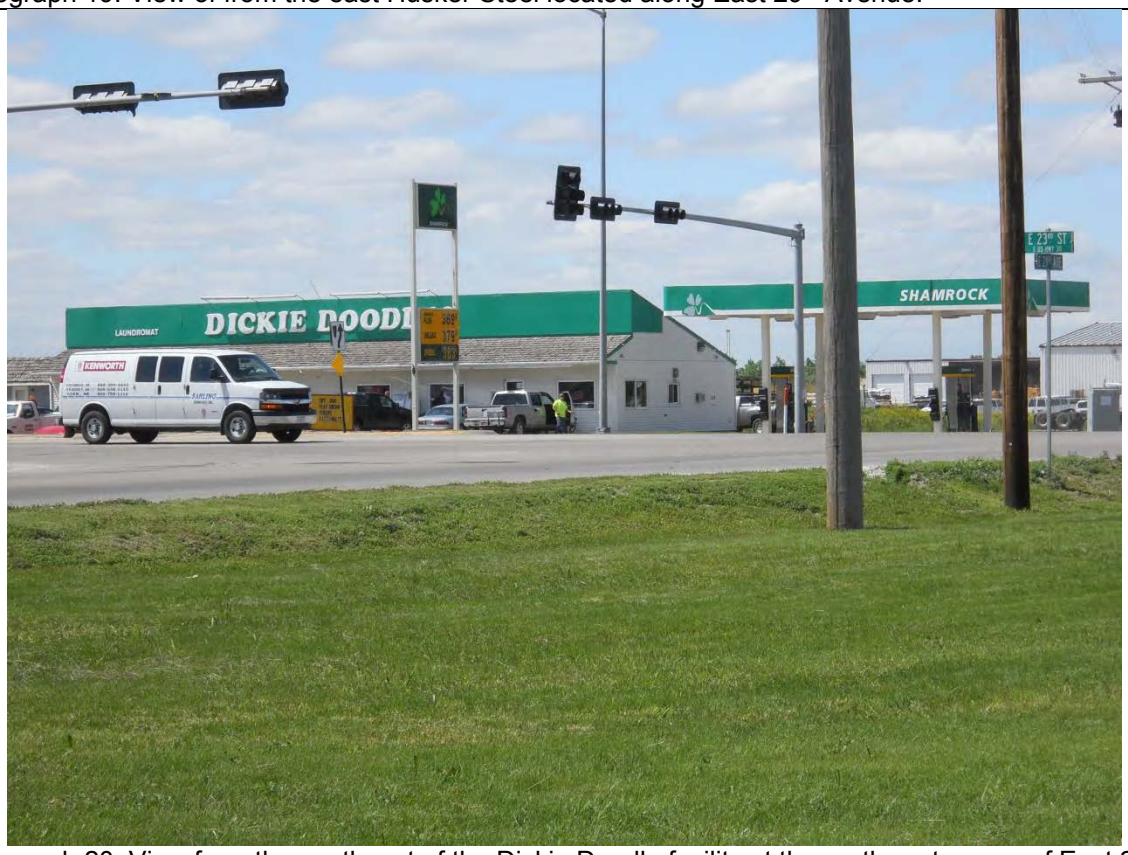


Photograph 16: View from the north of the Behlen facility located southwest of US 30 and East 44th Avenue.

Photograph 17: View from the southwest of the Orion Corporation facility at the northeast corner of East 32nd Avenue and 8th Street.

Photograph 18: View from the west of the vacant Fagen facility on East 32nd Avenue.

Photograph 19: View of from the east Husker Steel located along East 29th Avenue.



Photograph 20: View from the southeast of the Dickie Doodle facility at the northwest corner of East 29th Avenue and US 30.

Phase II
Environmental Site Assessment

Proposed Columbus East Viaduct

Columbus, Nebraska

Project No. RRZ-71(33)

Control No. 32190

PREPARED FOR:

Nebraska Department of Roads

1500 Highway 2

P.O. Box 64759

Lincoln, NE 68509-4759

April 14th, 2014

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1.0 INTRODUCTION

On February 14, 2014, Nebraska Department of Roads (NDOR) contracted Alfred Benesch & Company (Benesch) to perform a Phase II Environmental Site Assessment at the proposed Columbus East Viaduct site in Columbus, Nebraska (see Figures 1 and 2). The purpose of the Phase II assessment was to determine the presence of heavy metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs), if any, that might be present at this site as the results of the industrial operations located along the site. This report summarizes the results of the site assessment.

1.1 Site Description

The proposed Columbus East Viaduct site is centered along the East 29th Avenue corridor and is bounded by US Highway 30 on the north and East 8th Street on the south (see Figure 2). It is surrounded by industrial facilities on all four directions. The site is located in Sections 22 and 23, Township 17 North, Range 1 East, Platte County, Nebraska.

1.2 Background Information

In August of 2013, Felsburg Holt & Ullevig (FHU) completed a Hazardous Materials Technical Report (HMTR) on behalf of Platte County and the Nebraska Department of Roads for the proposed Columbus East Viaduct and related improvements project in Columbus, Platte County, Nebraska. The purpose of the HMTR is to assess sites within the hazardous materials study area that could cause a potential materials management or worker health and safety issue during project construction.

The HMTR have identified sites with known or potential hazardous materials concerns within the study area. As the results of the finding of the HMTR, NDOR contracted Benesch to perform a Phase II Environmental Site Assessment at this site to assess the presence of heavy metals, VOCs, and SVOCs that might be present at the site as the results the industrial operations located adjacent to the site.

2.0 SITE ASSESSMENT

In order to assess the presence of the subsurface soil and groundwater contamination, soil and groundwater samples were collected from seven (7) locations along the right-of-way with a GeoProbe unit. The location of the borings are shown in Figure 2. At each location, 2-inch diameter soil core samples were collected at four (4) foot intervals and screened for the presence of organic vapors with a photo-ionization detector (PID). The soil samples were containerized and allowed to stand for a set period of time. The vapor headspace was then measured using the PID. PID responses ranging from 1.5 to 9.4 response units were detected in the soil samples.

Two (2) soil samples that exhibit the highest PID readings in each boring were collected and submitted to the Keystone Laboratories, Inc. of Newton, Iowa for VOCs and SVOCs analyses with EPA Methods 8260 and 8270, respectively. In addition, one (1) soil sample was also collected from the top three (3) feet of each boring and analyzed for RCRA Metals (arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver) with EPA Method 6010.

A total of twenty one (21) soil samples from different depths were submitted for laboratory analysis and they are summarized as follow:

Table 1
Soil Sample Locations

Soil Boring	Soil Sample Depths (Feet Below Ground Surface)		
	RCRA Metals Analysis	VOCs & SVOCs Analysis	
SB-1	2 - 3	8 - 12	16 - 18
SB-2	1 - 2	4 - 8	8 - 12
SB-3	1 - 2	0 - 4	4 - 8
SB-4	1 - 2	8 - 12	12 - 16
SB-5	1 - 2	8 - 12	12 - 16
SB-6	1 - 2	12 - 16	20 - 24
SB-7	1 - 2	8 - 12	16 - 20

All borings were advanced to twenty (20) feet below ground surface except SB-6 where it was advanced to twenty four (24) feet below ground surface. Groundwater was encountered at approximately eighteen (18) feet at this site. A groundwater sample was collected from each boring and submitted to the Keystone Laboratories, Inc. for heavy metals, VOCs, and SVOCs analysis with EPA Methods 6010, 8260, and 8270, respectively.

In addition to screening with a PID, the geologic characteristics of the soil samples were also described and logged. The boring logs of the borings are attached in Appendix A.

3.0 FINDINGS

Analytical laboratory results of the soil samples showed low level of metal contaminations except for arsenic and chromium, and low levels of VOCs contamination in one location (SB-4 at 12' - 16' below ground surface). Low levels of metal contaminations and one VOC – trichloroethylene and one SVOC – bis(2-ethylhexyl)phthalate (also known as di(2-ethylhexyl)phthalate or DEHP) were detected in the groundwater samples. The analytical results of the soil and groundwater samples above the detection limits are summarized in Tables 2 through 5. The analytical laboratory reports are attached in Appendix B.

Table 2

Metals Detected in the Soil Samples

	SB-1 (2'-3') (mg/kg)	SB-2 (1'-2') (mg/kg)	SB-3 (1'-2') (mg/kg)	SB-4 (1'-2') (mg/kg)	SB-5 (1'-2') (mg/kg)	SB-6 (1'-2') (mg/kg)	SB-7 (1'-2') (mg/kg)	EPA Screening Levels		Hazardous Waste (mg/kg)
								Residential (mg/kg)	Industrial (mg/kg)	
Arsenic	1.8	2.4	3.2	3.5	2.5	3.4	4.4	0.61	2.4	100
Barium	59.5	83.9	117	154	130	123	232	1,500	19,000	2,000
Cadmium	-	-	-	-	-	-	0.6	7.0	80	20
Chromium	4.7	6.2	9.7	9.7	6.6	8.8	7.5	0.29	5.6	100
Lead	3.5	4.6	6.6	15.9	5.6	9.0	4.9	400	800	100

Items in red denote RSL exceedance

Table 3

VOCs Detected in Soil Samples

	SB-4 (12'-16') (mg/kg)	EPA Screening Levels	
		Residential (mg/kg)	Industrial (mg/kg)
1,2-Dichlorobenzene	0.002	190	980
1,3-Dichnorobenzene	0.002	-	-
1,4-Dichlorobenzene	0.002	2.4	120

Table 4

Metals Detected in the Groundwater Samples

	SB-1 (ug/L)	SB-2 (ug/L)	SB-3 (ug/L)	SB-4 (ug/L)	SB-5 (ug/L)	SB-6 (ug/L)	SB-7 (ug/L)	MCL (ug/L)
Arsenic	0.0045	-	-	-	0.0421	0.0126	0.0046	10
Barium	0.563	0.456	0.427	0.412	0.354	0.221	0.0016	2,000
Chromium	0.0784	0.044	0.108	0.0836	0.0112	0.0665	-	100
Lead	0.0294	0.0196	0.0186	0.0406	0.0085	0.0412	-	15
Selenium	0.0131	-	-	0.0075	-	-	0.0137	50
Silver	-	-	-	-	0.008	-	-	-

Table 5

VOCs & SVOCs Detected in the Groundwater Samples

	SB-1 (ug/L)	SB-5 (ug/L)	MCL (ug/L)
Trichloroethylene	-	1	5
Bis(2-ethylhexyl) Phthalate	72	12	6

Items in red denote MCL exceedance

The metal contaminations detected in the soil and groundwater samples were compared to the United States Environmental Protection Agency (USEPA) Region 9's Regional Screening level (RSL) for residential site and industrial site and Maximum Contaminant Levels (MCLs). The RSL is a risk-based screening level used by the USEPA to determine whether level of contamination found at a site warrant further investigation, cleanup, or no further action in relation of the site classification (residential or industrial) while the MCLs are the maximum level of contaminants that can be present in the drinking water.

Comparing the metal concentrations detected in the soil samples to the RSL revealed arsenic and chromium contaminations that exceeded the RSL. The metal concentrations were also compared to the levels where they will be classified as hazardous waste. Even though the arsenic and chromium concentrations exceeded the RSL, they were well below the hazardous waste levels. Barium, cadmium, and lead are the other metals detected in the soil samples and they are all below their respective RSL. No other RCRA metals (mercury, selenium, and silver) were detected above the detection limits.

0.02 mg/kg of 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene were detected in the soil samples. As shown in Table 2, the 1,2-dichlorobenzene and 1,4-dichlorobenzene have an RSL for industrial site of 980 µg/L and 120 µg/L, respectively. No RSL was established for 1,3-dichlorobenzene. The 1,2-dichlorobenzene and 1,4-dichlorobenzene concentrations detected in the soil samples are much lower than their respective RSL. No other volatile and semi volatile organic compounds were detected in the soil samples.

Arsenic, barium, chromium, lead, selenium, and silver were detected in the groundwater samples. Other than silver, where an MCL is not available, the other metals were well below their respective MCL. One VOCs (trichloroethylene) and one SVOCs (bis(2-ehtylhexyl)phthalate) were also detected in the groundwater samples. Comparing to the MCL, trichloroethylene concentration was below the MCL but the bis(2-ethylhexyl)phthalate concentrations were 2 – 6 times higher than the MCL (6 µg/L).

4.0 CONCLUSIONS & RECOMMENDATIONS

This site assessment reached the following conclusions and recommendations:

1. The shallow soil (from ground surface to 3' below ground surface) showed low levels of arsenic and chromium contamination while the deeper soil showed very low level of VOCs contamination. During construction, any shallow soil that is excavated should either be returned to the excavation or be disposed of as a special waste under a special waste permit. No shallow soil should be hauled off for reuse somewhere else.

2. The metal contaminations in the groundwater were all below the MCLs while one SVOCs compound, bis(2-ehtylhexyl)phthalate exceeded the MCL. Any groundwater recovered from this site during the construction should be containerized and discharged at a waste water treatment facility.

FIGURES

1" ~ 2,000'

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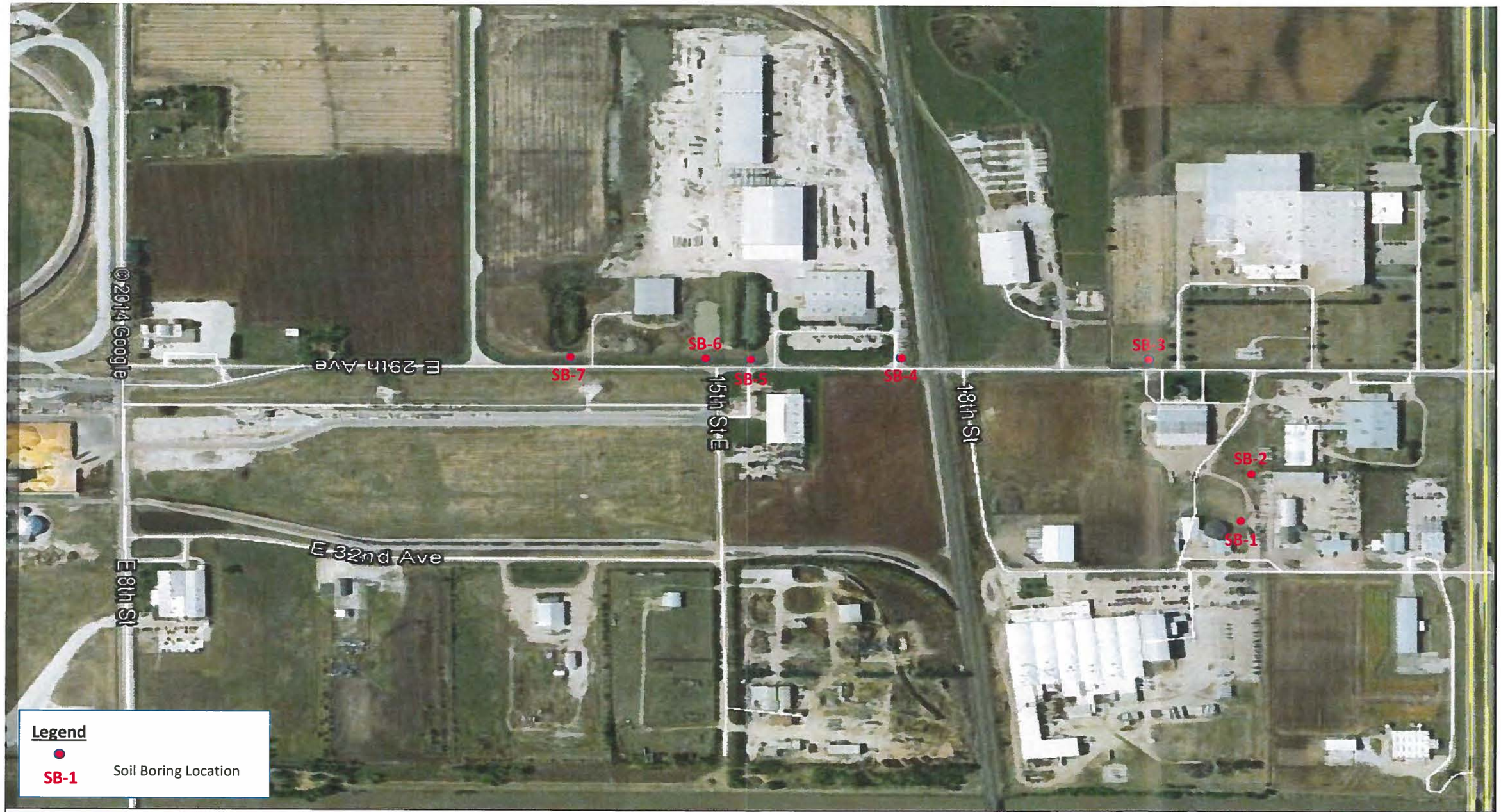
USGS QUAD MAP

COLUMBUS, NEBRASKA

Columbus East Viaduct **Phase II Environmental Site Assessment**	**Figure 1** **Topographic Map**



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Columbus East Viaduct
Phase II Environmental Site Assessment
Figure 2 - Site Map

Groundwater Sampling & Analysis Report

Columbus East Viaduct

Columbus, Nebraska

Project No. RRZ-71(33)

Control No. 32190

PREPARED FOR:

Nebraska Department of Roads

1400 Highway 2

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February 10, 2016

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APPENDIX B ANALYTICAL LABORATORY REPORT AND CHAIN-OF-CUSTODY FORM

1.0 INTRODUCTION

On December 16, 2015, Nebraska Department of Roads (NDOR) contracted Alfred Benesch & Company (Benesch) to perform a groundwater sampling and analysis of the groundwater beneath the areas where pier construction is anticipated at the Columbus East Viaduct site in Columbus, Nebraska (see Figures 1 and 2). The purpose of the groundwater sampling and analysis is to determine the presence/absence of trichloroethylene (TCE) in the groundwater near the proposed depth of the piers, which is approximately eighty (80) feet below ground surface. This Groundwater Sampling and Analysis Report summarizes the results of the groundwater sampling and analysis.

1.1 Site Description

The Columbus East Viaduct site is centered along the East 29th Avenue corridor and is bounded by US Highway 30 on the north and East 8th Street on the south (see Figure 2). It is surrounded by industrial facilities on all four directions. The site is located in Sections 22 and 23, Township 17 North, Range 1 East, Platte County, Nebraska.

1.2 Background Information

In April of 2014, Benesch completed a Phase II Environmental Site Assessment (ESA) on behalf of Platte County and the Nebraska Department of Roads for the proposed Columbus East Viaduct and related improvements project in Columbus, Platte County, Nebraska. The purpose of the ESA was to assess the presence of heavy metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) that might be present at the site as the results of the industrial operations located adjacent to the site.

Seven (7) borings were cored using a direct push GeoProbe unit. Figure 3 shows the locations of the borings. A total of twenty one (21) soil samples and seven (7) groundwater samples were collected from these borings. The samples were submitted to Keystone Laboratories, Inc. of Newton, Iowa and analyzed for heavy metals, VOCs, and SVOCs. Analytical laboratory results of the soil samples showed low level of metal contaminations except arsenic and chromium. Low level of VOCs contamination was also detected in one location (SB-4 at 12' - 16' below ground surface). Low levels of metal contaminations and one VOC – trichloroethylene and one SVOC – bis(2-ethylhexyl)phthalate (also known as di(2-ethylhexyl)phthalate or DEHP) were detected in the groundwater samples.

The metal contaminations detected in the soil and groundwater samples were compared to the United States Environmental Protection Agency (USEPA) Region 9's Regional Screening level (RSL) for residential site and industrial site and Maximum Contaminant Levels (MCLs). The RSL is a risk-based

screening level used by the USEPA to determine whether level of contamination found at a site warrant further investigation, cleanup, or no further action in relation of the site classification (residential or industrial) while the MCLs are the maximum level of contaminants that can be present in the drinking water.

Comparing the metal concentrations detected in the soil samples to the RSL revealed arsenic and chromium contaminations that exceeded the RSL. The metal concentrations were also compared to the levels where they will be classified as hazardous waste. Even though the arsenic and chromium concentrations exceeded the RSL, they were well below the hazardous waste levels. Barium, cadmium, and lead are the other metals detected in the soil samples and they are all below their respective RSL. No mercury, selenium, and silver were detected above the detection limits.

1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene were detected in the soil samples. No RSL was established for 1,3-dichlorobenzene while the 1,2-dichlorobenzene and 1,4-dichlorobenzene concentrations detected in the soil samples were lower than their respective RSL.

Arsenic, barium, chromium, lead, selenium, and silver were detected in the groundwater samples. Other than silver, where an MCL is not available, the other metals were well below their respective MCLs. One VOCs (trichloroethylene) and one SVOCs (bis(2-ehtylhexyl)phthalate) were also detected in the groundwater samples. Comparing to the MCL, trichloroethylene concentration was below the MCL but the bis(2-ethylhexyl)phthalate concentrations were 2 – 6 times higher than the MCL (6 µg/L).

The ESA recommended any shallow soil (from ground surface to 3' below ground surface) excavated from this site during construction should either be returned to the excavation or be disposed of as a special waste under a special waste permit and any groundwater recovered from this site during the construction should be containerized and discharged at a waste water treatment facility.

2.0 GROUNDWATER SAMPLING

Based on the findings of the ESA, groundwater samples were collected from the areas where pier construction is anticipated to assess the presence/absence of TCE contamination in the groundwater. The groundwater samples were collected near the bottom of the location of the piers at approximately fifty (50) feet below ground surface.

Two groundwater samples (identified as GW-1 and GW-2) were collected from locations depicted in Figure 4. One (1) groundwater sample was collected from the north side of the railroad tracks that intersect East 29th Street and the other from the south side of the railroad tracks, to the west of East 29th Street. The north boring (GW-1) was located approximately twenty five (25) feet north of the railroad fence and fifty (50) feet west of the edge of East 29th Street. The south boring (GW-2) was located approximately twenty (20) feet north of the access road to the adjacent industrial facility and fifty (50) feet west of the edge of East 29th Street.

At each boring location, a direct push GeoProbe unit was used to push a 2-inch diameter probe that houses a 1-inch diameter stainless steel well screen to a depth of approximately fifty (50) feet below ground surface. A groundwater sample was collected at this depth from each location using a peristaltic pump and HDPE tubing. Each groundwater sample was collected in three (3) 40-mL glass vials with hydrochloric acid (HCl) preservative. Upon collection, the groundwater samples was labeled, preserved in ice, and shipped to the Keystone Laboratories, Inc. of Newton, Iowa with a Chain-of-Custody form for TCE analysis using EPA Method 8260.

At the completion of groundwater sampling, each borehole was backfilled with hydrated bentonite chips. Field notes documenting the groundwater sampling activities are included in Appendix A.

3.0 FINDINGS

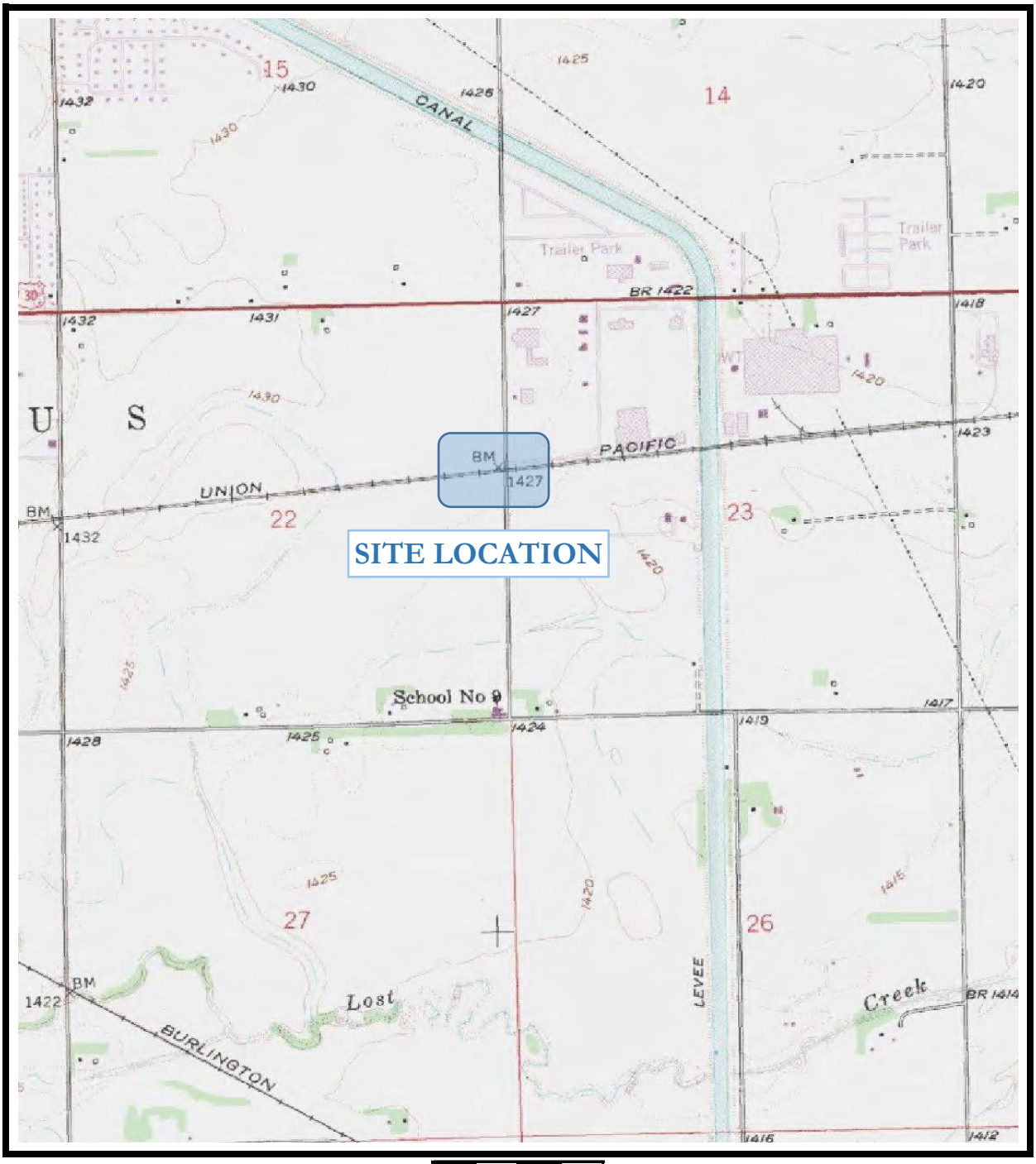
Analytical results of the groundwater samples showed the presence of TCE in the groundwater at the location of the piers. The concentrations of the TCE detected in the groundwater samples are summarized below in Table 1, together with the EPA's Maximum Contaminant Levels (MCLs). The analytical laboratory reports are attached in Appendix B.

Table 1
TCE Concentration in the Groundwater Samples

Boring	TCE (µg/L)
GW-1	2.3
GW-2	3.6
MCL	**5.0**

As shown in Table 1, the TCE concentrations of 2.3 µg/L and 3.6 µg/L in the groundwater samples from GW-1 and GW-2, respectively are both below the MCL of 5.0 µg/L.

FIGURES



1" ~ 2,000'

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USGS QUAD MAP

COLUMBUS, NEBRASKA

Columbus East Viaduct **Groundwater Sampling and Analysis**	**Figure 1** **Topographic Map**

1" ~ 100'

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USGS QUAD MAP

COLUMBUS, NEBRASKA

Columbus East Viaduct **Groundwater Sampling and Analysis**	**Figure 2** **Site Location Map**

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0 200 400 400
1 inch = 400 feet

Columbus East Viaduct
Phase II Environmental Site Assessment
Figure 3 - Site Map

1" ~ 100'

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USGS QUAD MAP
COLUMBUS, NEBRASKA

Columbus East Viaduct **Groundwater Sampling and Analysis**	**Figure 4** **Groundwater Sampling Locations**

Allison.Sambol

Subject: RE: Columbus East Pier Construction Memo?

From: Kevin Arp [mailto:karp@kirkham.com]
Sent: Friday, April 01, 2016 7:03 AM
To: Anthony.Baumert <Anthony.Baumert@fhueng.com>
Cc: Allison.Sambol <Allison.Sambol@FHUENG.COM>; Kyle.Anderson <Kyle.Anderson@FHUENG.COM>; Greg Cabalka <gcabalka@kirkham.com>; Michael Olson <molson@kirkham.com>
Subject: RE: Columbus East Pier Construction Memo?

Anthony, below is my summary of the proposed foundation discussion:

There are predominantly three types of foundations that have been shown to be economically suitable for the construction of bridges in the vicinity of the proposed East 29th Avenue Bridge. These foundation types include spread footings, concrete drilled shafts, and driven steel pile. Spread footings can be a viable solution, unless near-surface rock exists, for the support of short span bridges where the resulting bearing pressure demands do not exceed allowable values. Similarly, drilled concrete shafts are typically used where the foundation is required to transmit large horizontal forces, or the presence of near-surface rock would preclude the used of steel pile due to overstress concerns.

At this bridge site, bedrock was not encountered within the limits of the borings, which in some cases exceeded 130' of depth. The soil strata feature a number of intermittent layers of fat clays and poorly-graded sands, which do not appear to be continuous between adjacent boring sites. At a depth of 80-90', however, there does appear to be a continuous layer of relatively impervious fat clay. This impervious fat clay layer is assumed to provide a separation barrier between a TCE contamination plume at a depth of approximately 20', and the regional water source in an aquifer at a depth below that of the impervious layer.

The selection of a bridge foundation system will also be driven by concerns over the TCE contamination plume, and the desire to minimize the disturbance of this material. For the assumed bridge span lengths, the substructure loads will be sufficiently large as to require, in the case of a spread footing, placement at a depth around that of the plume in order to mobilize adequate bearing resistance. Construction of this spread footing would therefore require extensive excavation within the area of contamination. While concrete drilled shafts and driven steel pile roughly carry foundation loads in the same manner, by a combination of skin friction and end bearing, the construction technique associated with the drilled shaft is more disruptive. To construct the drilled shafts, 3-4' diameter holes are auger-bored to the design depth prior to the insertion of steel reinforcement cages and the placement of concrete.

Based on the preceding factors, the substructures for the proposed East 29th Avenue Bridge over the BNSF Railroad will utilize driven steel H-pile for foundation support. These piles will derive their bearing resistances from a combination of skin friction and end bearing in alluvial sands and clays, based on the findings of the preliminary geotechnical report. Conservatively calculated preliminary substructure loads indicated the suitability of HP12x53 piles, with a factored pile capacity of 194 kips, for use on this project. Using this assumed pile capacity, and the factored resistances of the underlying soil strata, the estimated pile tip elevations to provide the required bearing resistances range from 1348.0 to 1353.9, which place the estimated pile tips within the impervious fat clay layer.

The presence of the shallower compressible clay layers present the challenge of settlement, and the accompanying inducement of downdrag forces on the steel pile. Downdrag force is the result of skin friction imparted to the driven pile as the soil surrounding the pile moves downward with settlement. This action has the compounding negative effects of both increasing the design load on the pile, and reducing the resistance zone proving support through skin friction. Designing the pile to accommodate these effects would push the pile tips to depths of 120-130', fully penetrating the impervious fat clay layer.

In order to address the pile downdrag forces, the piles will be retapped during construction. Retapping involves the partial driving of the steel H-pile, with the completion of driving occurring at a later time when embankment has been placed and, presumably, when most of the settlement due to the embankment surcharge has occurred. Retapping will also make use of setup resistance, which is the effect of a time-dependent increase in skin friction provided particularly by cohesive clays.

Thanks, and let me know if I can provide anything else.

KIRKHAM MICHAEL

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FELSBURG HOLT & ULLEVIG

connecting and enhancing communities

11 April 2016

Mr. Tom Buell
Unit Supervisor, Superfund/VCP Unit
Remediation Section, Waste Management Division
Nebraska Department of Environmental Quality
1200 'N' Street, Suite 400
The Atrium
Lincoln, NE 68508

Hazardous Materials Review
Columbus East Viaduct Project
CN32190
Project No. RRZ-71(33)
Platte County

Dear Mr. Buell,

On behalf of Platte County, Felsburg Holt & Ullevig (FHU) would like to request Nebraska Department of Environmental Quality's (NDEQ) review of this document regarding the hazardous materials review (HMR), recommendations for materials managements and the proposed mitigation commitments for the proposed Columbus East Viaduct Project.

Project Description

Background. The project involves the construction of a new two-lane grade-separation viaduct on East 29th Avenue over the existing double-track main line of the UPRR. The study area for the project is generally centered along the East 29th Avenue corridor, and is framed by US Highway 30 (US 30) on the north, East 8th Street on the south, East 14th Avenue on the west, and East 44th Avenue on the east. (Figure 1 in Attachment 1). The UPRR crossing on East 14th Avenue is proposed for permanent closure and was included in the analysis. The proposed Columbus East Viaduct Project (hereafter referred to as the "project") is being developed as a federal-aid project with Federal Highway Administration (FHWA) as the lead federal agency, and Nebraska Department of Roads (NDOR) and Platte County as project sponsors.

Project Setting. The project is on the outskirts of the City of Columbus and is located in a designated Industrial Park (Figure 2 in Attachment 1). The project and environmental study area are located in a relatively flat area in the Platte River Valley. The drainages and tributaries in the project area flow toward the Loup Canal and into the Platte River. Industries located in the study area include businesses providing trucking, manufacturing, scrap metal recycling and grain processing.

Preferred Alternative: Concept 3A – West Alignment. The Preferred Alternative would be constructed as a three lane rural cross section with open drainage, except for the viaduct structure and approaches

(Figure 2 in Attachment 1). A frontage road would be provided on the northwest side of the viaduct connecting East 29th Avenue to East 18th Street, maintaining adequate access and circulation to area industries. The length of the bridge span over the UPRR would be increased to accommodate the frontage road under East 29th Avenue. The point at which East 29th Avenue gets back down to the existing grade would not change since the clearance over the tracks controls the profile and grades on the viaduct approaches.

The connection on the east side of East 29th Avenue north of the tracks would be a stub right-of-way serving a joint access to Columbus Steel & Paraclipse.

The elevation of the bridge over the UPRR tracks would require reconstruction of the intersection with East 12th Street south of the tracks to tie back into existing streets with reasonable grades for loaded trucks. A larger jug handle design, including one wide lane in each direction to accommodate turning truck traffic, would be provided southeast of the viaduct at the intersection with East 12th Street. A separate right-turn lane would be provided for northbound traffic at East 15th Street to accommodate the large volume of slower moving trucks.

Hazardous Materials Review

A Hazardous Materials Technical Report (HMTR) was completed by FHUin August 2013 to identify and characterize sites and areas that may represent a risk from exposure to hazardous materials. A site reconnaissance was conducted on June 5, 2013, by environmental professionals experienced in conducting Phase I Environmental Site Assessments in accordance with ASTM 1527-13 and All Appropriate Inquiry. The methodology used to identify sites with recognized environmental conditions (RECs) and potential recognized environmental conditions (PRECs) included:

- Limited site reconnaissance from public right-of-way of properties adjacent to the project area to identify activities that could potentially result in hazardous materials contamination,
- Review of readily available historical sources of information of the environmental study area,
- Review of readily available local, state, and federal agency environmental records to identify known contaminated sites and regulated sites,
- Identification of properties within the environmental study area requiring additional evaluation or investigation to assist in right-of-way acquisition, project design, and specific-materials management or institutional controls required during construction.

Based on the HMTR, which NDOR approved April 30, 2014, five (5) RECs and three (3) properties with PRECs were identified within the project area or in the vicinity of the project during the site reconnaissance, historical review, or regulatory records search. Due to topographic gradient, depth of grading relative to depth to groundwater, regulatory status, and/or *de minimis* conditions, three (3) of the eight (8) RECs & PRECs required no further investigation (see table in Attachment 2). The remaining properties were identified as requiring further investigation to determine appropriate materials management during construction. Based on the HMTR, soil sampling for petroleum compounds, Resource Conservation and Recovery Act (RCRA) metals, semi-volatile organic compounds (SVOCs) and volatile organic compounds (VOCs) was conducted.

Phase II Environmental Site Assessment

The purpose of the soil sampling was to determine if those locations and concentrations would influence the alternative selection process, to ensure the proper avoidance/mitigation strategies are implemented, to ensure full disclosure to the public during the National Environmental Policy Act (NEPA) process, and to determine if human health risks exist from the construction or operation of the proposed facility. The field work was conducted by Alfred Benesch & Company (Benesch) on March 10, 2014, to determine the presence of petroleum compounds, RCRA metals, SVOCs and VOCs in the surface soils and groundwater within the project environmental study area. Sampling was conducted in general accordance with the ASTM-1903-11 Standard Practice for Phase II Environmental Site Assessments (ESAs) and the NDOR approved work plan. The Benesch work plan dated October 28, 2013 and Phase II ESA sampling report dated April 14, 2014 are attached to this letter (Attachment 3). The Phase II ESA sampling report attachments, including boring logs and laboratory results with chain-of-custody forms, can be provided at your request.

Seven (7) temporary borings were installed to collect soil and groundwater samples along the right-of-way. The borings were completed using a GeoProbe unit. At each location, 2-inch diameter soil core samples were collected at four (4) intervals and field screened with a photo-ionization detector (PID) for the presence of organic vapors. The two (2) samples which exhibited the highest PID readings in each boring were collected and sent to Keystone Laboratories, Inc. in Newton, Iowa under chain-of-custody for analysis. The submitted soil samples were analyzed for concentrations of VOCs and SVOCs by Environmental Protection Agency (EPA) laboratory Methods 8260 and 8270, respectively. One (1) soil sample was also collected from the top three (3) feet of each boring and submitted to the laboratory for analyzed for the eight RCRA metals (arsenic, barium, cadmium, chromium, mercury, lead, selenium, and silver) used EPA laboratory Method 6010. The borings were advanced to a depth such that a groundwater sample could be obtains from the first occurrence of groundwater. Groundwater was encountered at approximately 18 feet below ground surface (bgs). A groundwater sample was collected from each boring in three (3) 40-milliliter glass vials and hydrochloric acid (HCl) preservative, labeled, preserved in ice, and submitted to Keystone Laboratories, Inc. under chain-of-custody. The samples were analyzed for the eight RCRA metals, VOCs, and SVOCs using EPA laboratory Methods 6010, 8260, and 8270.

The laboratory results are summarized in Tables 1-4 below.

Table 1: Metals Detected in Soil Samples

	SB-1 (2'-3') (mg/kg)	SB-2 (1'-2') (mg/kg)	SB-3 (1'-2') (mg/kg)	SB-4 (1'-2') (mg/kg)	SB-5 (1'-2') (mg/kg)	SB-6 (1'-2') (mg/kg)	SB-7 (1'-2') (mg/kg)	EPA Screening Levels		Hazardous Waste Threshold (mg/kg)
								Residential (mg/kg)	Industrial (mg/kg)	
Arsenic	1.8	2.4	3.2	3.5	2.5	3.4	4.4	0.61	2.4	100
Barium	59.5	83.9	117	154	130	123	232	1,500	19,000	2,000
Cadmium	-	-	-	-	-	-	0.6	7.0	80	20
Chromium	4.7	6.2	9.7	9.7	6.6	8.8	7.5	0.29	5.6	100
Lead	3.5	4.6	6.6	15.9	5.6	9.0	4.9	400	800	100

**Concentrations are listed as milligrams per kilogram (mg/kg).*
Items in red denote RSL exceedance

Table 2: VOCs detected in Soil Samples

	SB-4 (12'-16') (mg/kg)	EPA Screening Levels	
		Residential (mg/kg)	Industrial (mg/kg)
1,2-Dichlorobenzene	0.002	190	980
1,3-Dichlorobenzene	0.002	-	-
1,4-Dichlorobenzene	0.002	2.4	120

**Concentrations are listed as milligrams per kilogram (mg/kg).*

Table 3: Metals Detected in Groundwater Samples

	SB-1 (µg/L)	SB-2 (µg/L)	SB-3 (µg/L)	SB-4 (µg/L)	SB-5 (µg/L)	SB-6 (µg/L)	SB-7 (µg/L)	MCL (µg/L)
Arsenic	0.0045	-	-	-	0.0421	0.0126	0.0046	10
Barium	0.563	0.456	0.427	0.412	0.354	0.221	0.0016	2,000
Chromium	0.0784	0.044	0.108	0.0836	0.0112	0.0665	-	100
Lead	0.0294	0.0196	0.0186	0.0406	0.0085	0.0412	-	15
Selenium	0.0131	-	-	0.0075	-	-	0.0137	50
Silver	-	-	-	-	0.008	-	-	-

**Concentrations are listed as micrograms per liter (µg/L).*

Table 4: VOCs & SVOCs detected in Groundwater Samples

	SB-1 (µg/L)	SB-5 (µg/L)	MCL (µg/L)
Trichloroethylene (TCE)	-	1	5
Bis(2-ethylhexyl) Phthalate	72	12	6

**Concentrations are listed as micrograms per liter (µg/L).*
Items in red denote MCL exceedance

The screening levels for arsenic and chromium concentrations in industrial soil used for the analysis were above these EPA recommended screening levels. The metal concentrations were also compared to hazardous waste classification levels. They were below the hazardous waste levels. The recommendation for soil management in the Phase II was to return excavated soil to the excavation or disposed of as a special waste under a special waste permit. No shallow soil should be hauled off for reuse somewhere else.

The screening levels for metals in groundwater were below EPA recommended screen levels called Maximum Contaminant Levels (MCLs) for drinking water. Other than silver, which a MCL is not established for, the metal concentrations were well below their respective MCL. One VOC (trichloroethylene (TCE)) and one SVOC (bis(2-ethylhexyl)phthalate) were also detected in the groundwater samples. The TCE concentration was below the MCL and the bis(2-ethylhexyl)phthalate concentrations were 2-6 times higher than the MCL of 6 micrograms per liter (µg/L).

Coordination between NDEQ, NDOR and FHWA

Following review of the Phase II report and coordination with NDEQ in August 2015, (meeting minutes included in Attachment 4), FHWA requested that the geotechnical engineering study be completed to better understand the method of construction being proposed. Additionally, NDOR requested further groundwater sampling in conjunction with the geotechnical engineering study to determine the significance of TCE concentrations potentially within the proposed footprint of the piers, as the piers are the most likely location where the scope of construction work could potentially impact existing conditions.

Groundwater Sampling Analysis Report

The purpose of the soil sampling was to determine if those locations and concentrations would influence the alternative selection process, to ensure the proper avoidance/mitigation strategies are implemented, to ensure full disclosure to the public during the NEPA process, and to determine if human health risks exist from the construction or operation of the proposed facility. The field work was conducted by Alfred Benesch & Company (Benesch) on January 21, 2016, to determine the presence of TCE in groundwater within the immediate vicinity of the proposed bridge pier locations. Sampling was conducted in general accordance with the NDOR approved work plan. The Benesch work plan (scope of services) dated December 16, 2015 and Groundwater Sampling Analysis Report dated February 29, 2016 are attached to this letter (Attachment 5). The Phase II ESA sampling report attachments, including laboratory results and chain-of-custody forms, can be provided at your request.

Two (2) groundwater samples were collected from locations specified by NDOR and FHWA. The samples were collected using a GeoProbe unit to push a 2-inch diameter probe that houses a 1-inch diameter stainless steel well screen to a depth of approximately fifty (50) feet bgs. Groundwater was then retrieved using a peristaltic pump and HDPE tubing. Each groundwater sample was collected in three (3) 40-milliliter glass vials and hydrochloric acid (HCl) preservative, labeled, preserved in ice, and sent to Keystone Laboratories, Inc. in Newton, Iowa under chain-of-custody for analysis. The submitted soil samples were analyzed for concentrations of TCE by EPA laboratory Method 8260. The laboratory results are summarized in Table 5 below.

Table 5: Results of Groundwater Analysis

Sample Identification	TCE concentration (µg/L)*
GW-1	2.3
GW-2	3.6
MCL	**5.0**

**Concentrations are listed as microgram per liter (µg/L).*

The groundwater in the near vicinity of the proposed bridge piers showed low levels of TCE contamination is present. The detected TCE concentrations in groundwater were 2.3 and 3.6 micrograms per liter (µg/L) for TCE in groundwater. The reported concentrations for TCE at the project site are below the EPA recommended screening MCL of 5.0 µg/L.

Conclusions

Based on review of the geotechnical report and bridge design by NDOR and consultant engineers, the proposed construction method for the bridge piers is driven H-piles (see pier construction memo in

Attachment 4). This proposed construction method of the piers would generate minimal soil cuttings and would also minimize the need for dewatering. Moreover, soil would be managed so that it does not leave the site and essentially remains in the same location (i.e. in project area) to remain considered by NDEQ as soil. This includes soil that is moved around within the project area, utility work where the soil is backfilled, etc. The current preliminary design requires approximately 124,572 cubic yards of borrow material to be brought on-site and may require more once final design is completed.

Additional Coordination between NDEQ, NDOR and FHWA

Following review of the Groundwater Sampling analysis and the Geotechnical report (March 2016) further coordination with NDEQ and FHWA was conducted to discuss the conclusions above (meeting minutes included in Attachment 4). The result of the water sampling were discussed; specifically that the concentrations of TCE within the vicinity of the proposed pier locations was found to be below the EPA recommended screening MCL of 5.0 µg/L. Furthermore, it was determined that it would be acceptable for pile to be driven into the confining clay layer so long as the pile does not pierce through the lower depths of the clay and creating a preferential pathway for contaminated groundwater to spread to another aquifer. The project is taking the information presented above and addressing the situation through engineering design and construction commitments as outlined below, including that pier construction would be restricted to the depths of the confining clay later at approximately 70-90 feet bgs (see pier construction memo in Attachment 4).

Mitigation

Based on the information provided above and the results of the additional sampling analysis, no further environmental investigation or remedial action is recommended for the project and other areas within the environmental study area. Due to the low level of TCE found in groundwater within the proposed bridge construction footprint, and that the construction method would minimize the risk of exposure to the contractor and would minimize the spread of contamination, there are no concerns for the construction of the proposed viaduct. Additionally, it is considered minimal risk to the human health and safety of workers to encounter contamination due to waste generated during construction, operation or maintenance of the facility, nor health concerns for pedestrians who may travel through the area. Also based on the low levels of contaminants, the need to use specific personal protective equipment (PPE) during construction is not anticipated; however, the general use of PPE is encouraged.

Prior to construction activities, a Preconstruction Meeting would be held as required by Section 103.01 of the 2002 NDOR Construction Manual. The purpose of the meeting is to discuss pertinent information to the project before construction begins, including hazardous materials reviews and health and safety precautions. Requirements related to actions to be taken if hazardous materials are encountered during construction are located in Section 107.01 of the Standard Specifications for Highway Construction (NDOR 2007) and are applicable during the construction of this project.

The following commitments are proposed for use in the NEPA document, and will be determined by your review of this information:

NDOR's standard commitment regarding hazardous materials is as follows:

> If contaminated soils and/or water or hazardous materials are encountered, then all work within the immediate area of the discovered hazardous material would stop until NDOR/FHWA is

notified and a plan to dispose of the hazardous materials has been developed. Then NDEQ would be consulted and a remediation plan would be developed for this project. The potential exists to have contaminants present resulting in minor spillage during fueling and service associated with construction equipment. Should contamination be found on the project during construction, the NDEQ would be contacted for consultation and appropriate actions be taken. The contractor is required by NDOR's Standard Specification Section 107 (legal relations and responsibilities to the public) to handle and dispose of contaminated material in accordance with applicable laws. (Contractor)

The additional proposed commitments regarding materials and construction management are as follows:

The shallow soil (from ground surface to three (3) feet bgs showed low levels of arsenic and chromium contamination while the deeper soil showed very low levels of VOCs contamination. During construction, any shallow soil that is excavated should either be returned to the excavation or be disposed of as a special waste under a special waste permit. No shallow soil shall be hauled off the project construction site for reuse somewhere else. (Contractor)

The metal contamination in the groundwater were all below the MCLs while one SVOC compound, bis(2-ethylhexyl)phthalate exceeded the MCL. Any groundwater recovered from the area during construction (where these samples were taken) should be containerized and discharged at a waste water treatment facility. (Contractor)

It is acceptable for pile to be driven into the confining clay layer so long as the pile does not pierce through the lower depths of the clay, potentially creating a preferential pathway for the contaminated groundwater to spread to another aquifer. Pier design and construction shall be restricted to the depths of the confining clay later at approximately 70-90 feet bgs. (Project Sponsor, Contractor)

We respectfully request NDEQ's concurrence on the adequacy of the review, the recommendations for materials management, and that the proposed mitigation commitments are appropriate for construction of the Columbus East Viaduct project.

CONCUR:

_____ _____

Tom Buell, NDEQ, Unit Supervisor, Superfund/VCP Unit Date

Columbus East Viaduct Project
Platte County, Nebraska
RRZ-71(33); CN 32190

If you have any questions regarding this information do not hesitate to contact me at your earliest convenience.

Sincerely,

Allison Sambol
Felsburg Holt & Ullevig, Environmental Scientist

Cc:
Sarah Jeffrey and Mike Felix, NDEQ
NDOR
FHWA NE Division
Platte County

Attachments
Attachment 1 – Figures
Attachment 2 – PREC/REC table
Attachment 3 – Columbus East Viaduct Sampling Work Plan Proposal and Phase II Environmental Site Assessment Report
Attachment 4 – August 2015 meeting minutes between NDEQ, NDOR, FHWA & Consultants, Kirkham Michael – Construction Methodology Memo, March 2016 meeting minutes between NDEQ, NDOR, FHWA, Platte County & Consultants
Attachment 5 – Work Plan and Groundwater Sampling & Analysis Report

Attachment 1

Figures

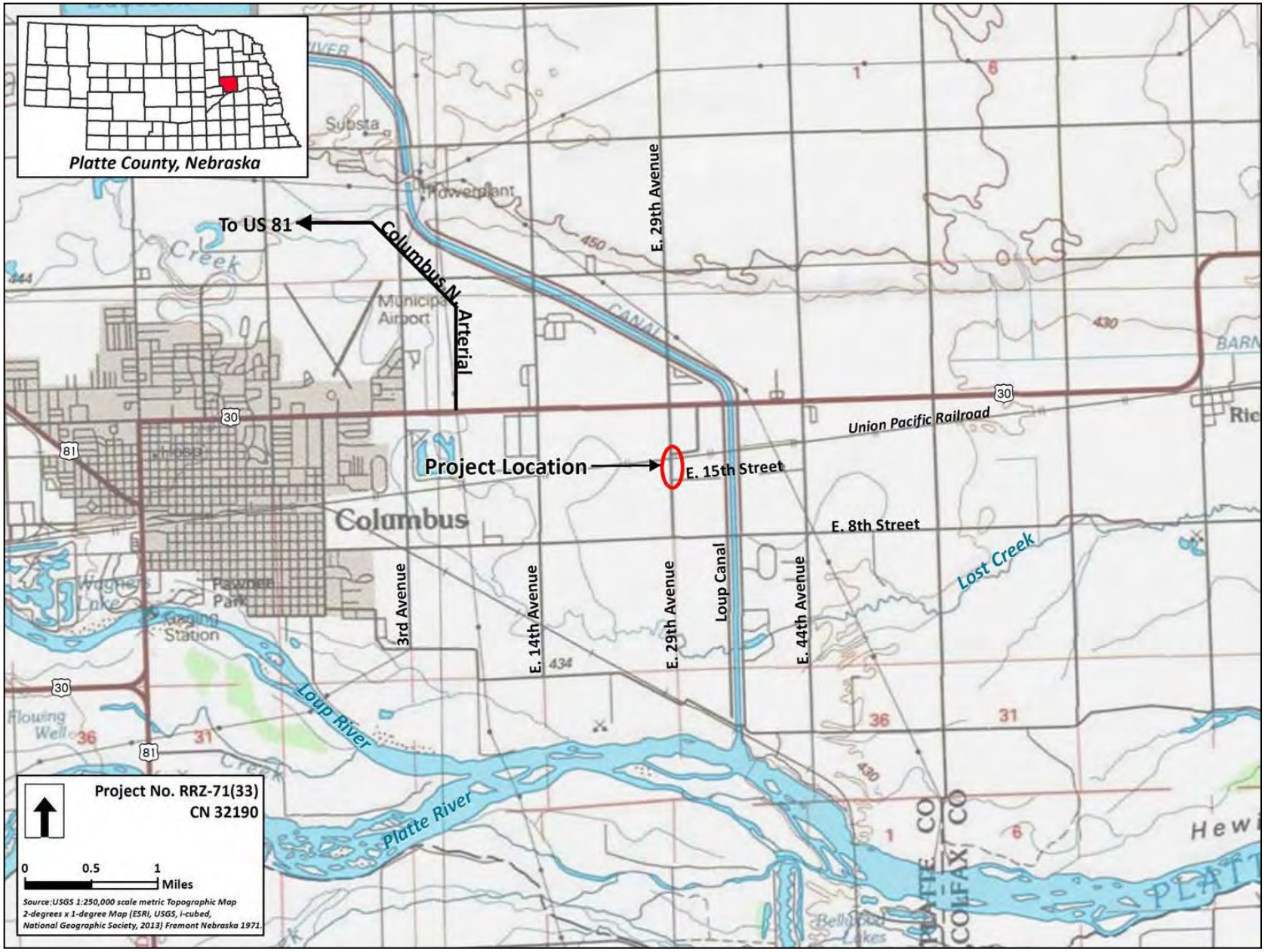

Figure 1 - Vicinity Map

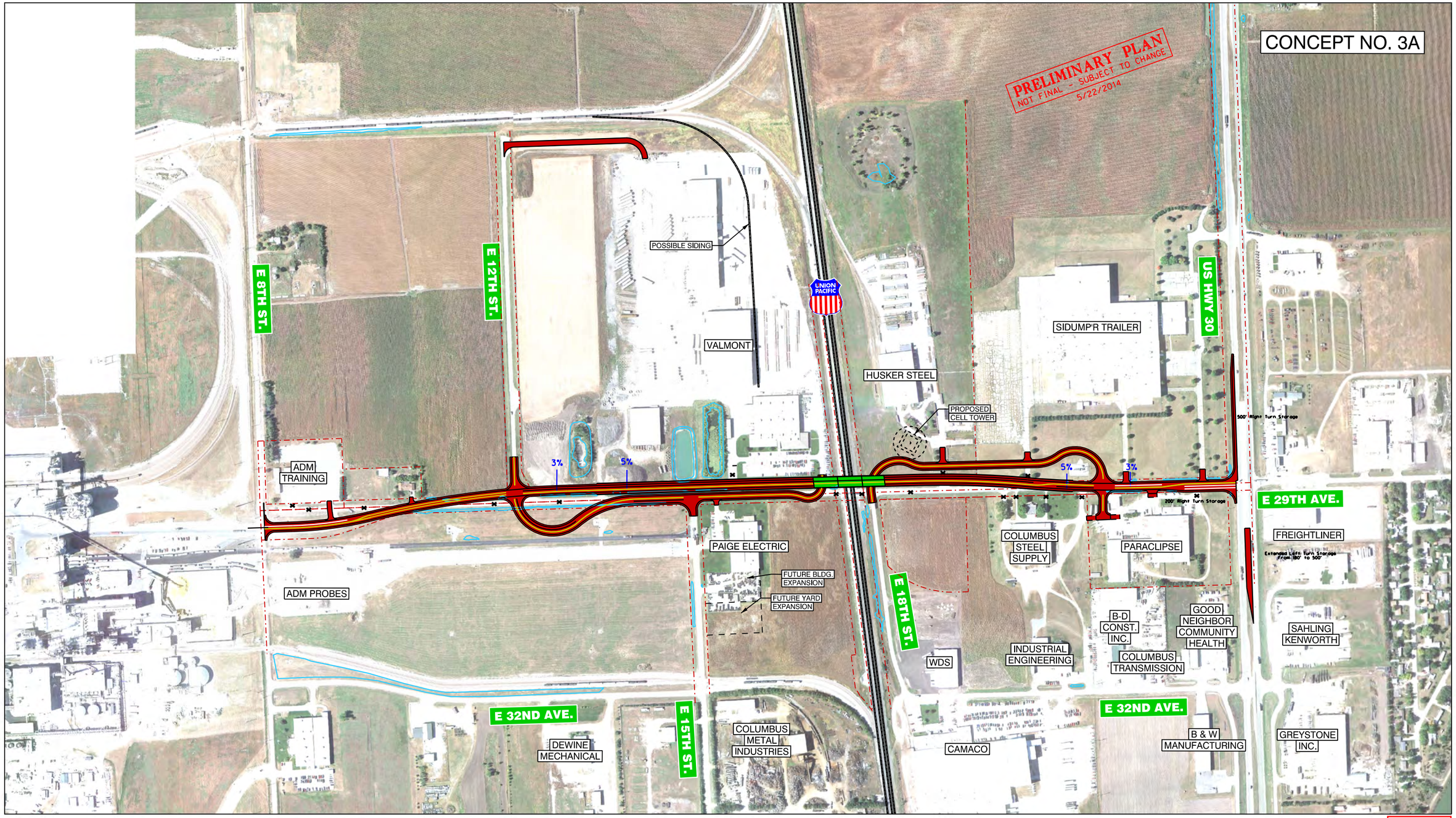

Figure 2

Viaduct offset to the West

Columbus East Viaduct
Platte County, NE

Attachment 2

PREC/REC table

2014 Hazardous Materials Review (HMR) Recommendations

Site Address	Description of Property	Recommendations
1. B&D Construction, Inc. 2154 E. 32nd Avenue	REC. LUST site, contaminated soil may be present. Unknown material in apparent burn pile. Materials management during construction is expected. Temporary easement and/or partial ROW acquisition is expected.	The facility building (where potential activities would occur) is considered to be up- to cross-gradient in relation to the proposed locations of temporary easement and permanent ROW, necessary for road construction. Soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
2. Behlen Manufacturing Company	PREC. LUST, LAST, SPILLS, RCRA TSDF, CORRACTS site. Residual levels of petroleum hydrocarbon and volatile organic contamination in soils and groundwater. Site under ongoing remedial investigation. No ROW acquisition is expected.	Behlen is located along the proposed detour route (within the environmental study area boundary), but outside the project limits of construction. The facility is topographically (hydrologically and elevation) cross-gradient from the project. If improvements to the detour route occur, work would likely remain within the edge of pavement. Based on this information the Behlen facility is unlikely to be impacted by the viaduct project and vice versa. No further assessment is required.
3. Dickie Doodles 2820 E. 23rd Street	PREC. Impacts to soil and groundwater at the property may exist due to undocumented events. However, no reported releases are on record for this facility. No ROW acquisition is expected.	Dickie Doodles was not listed in the EDR report as a regulated facility. It is located on the environmental study area boundary, outside the project limits of construction and topographically (hydrologically and elevation) cross-gradient from the project. Based on this information the Dickie Doodles facility is unlikely to be impacted by the viaduct project and vice versa. No further assessment is required.
4. Sidumper Trailer/Douglas Holdings/EGS Electrical Group/Appleton Electric 2500 E. 23rd Street	REC. SHWS, CERCLA-NFRAP, LAST, LUST site closed to No Further Action Based on review of the NDEQ regulatory file the facility operations formerly included activities such as machining, grinding, plating, and painting. NDEQ issued a notice to reviews an investigation work plan in 2013 and appears to be ongoing. Temporary easement and/or partial ROW acquisition is expected.	The facility is located topographically up-gradient from the proposed viaduct project. Therefore, soil or groundwater contamination, if found at the facility, could potentially impact construction and vice versa. Soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.

5. Husker Steel 1864 29th Avenue	REC. LUST site closed to No Further Action Two (2) USTs were pulled in 1990. The tanks were reported to be in good condition and over-excavation to clean soils was done to remove contaminated soils that were limited to the area immediately under the tanks. Additionally, groundwater contamination was not detected in an April 1990 investigation. Temporary easement and/or partial ROW acquisition is expected.	The proposed locations of temporary easement and permanent ROW, necessary for road construction were reviewed in relation to the facility building (where potential activities would occur), and are considered topographically cross-gradient. However, based on the proximity to the proposed project soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
6. Industrial Engineering Co. 2070 E. 32nd Avenue	REC. RCRA-SQG with reported violations. Unknown waste buried on-site and unknown material handling, storage, and disposal practices. Potential materials include: ignitable and halogenated hazardous waste, and spent solvents Temporary easement and/or partial ROW acquisition is expected.	The facility building (where potential activities would occur) is considered to be down- to cross-gradient in relation to the proposed locations of temporary easement and permanent ROW, necessary for road construction. However, based on the unknown on-site waste disposal locations or general land use practices, soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
7. Valmont / Katana Summit 1600 E. 29th Avenue	REC. RCRA-LQG, NPDES Multi-Sector General Permit Impacts to soil and groundwater at the property may exist due to undocumented events. However, no reported releases are on record for this facility. Temporary easement and/or partial ROW acquisition is expected.	Valmont is located within the proposed project limits of construction and topographically (hydrologically and elevation) up-gradient from the project. Based on this information the Valmont facility is likely to be impacted by the proposed viaduct project and vice versa. Soil and groundwater sampling is recommended to be conducted in order to ascertain the presence of contaminated soil or groundwater within the project area. Results of the sampling will aid in determining appropriate materials management during construction.
8. Union Pacific Railroad (UPRR) Adjacent and perpendicular to E. 29th Avenue	PREC. Impacts to soil and groundwater along the railroad corridor may exist due to undocumented events and an accumulation of hydrocarbon exhaust, drips, leaks, and spills over time. <u>No</u> ROW acquisition is expected, however temporary construction easement or a railroad agreement may be necessary.	Based on topography and low risk conditions along a railroad track, this property requires no further assessment.

STATE OF NEBRASKA

Pete Ricketts
Governor

APR 25 2016

DEPARTMENT OF ENVIRONMENTAL QUALITY
Jim Macy
Director
Suite 400, The Atrium
1200 'N' Street
P.O. Box 98922
Lincoln, Nebraska 68509-8922
Phone (402) 471-2186
FAX (402)471-2909
website: http://deq.ne.gov

Terry Wicth
Platte County Highway Superintendent
Platte County Highway Department
2610 14th Street
Columbus, NE 68601

RE: Columbus East Viaduct
Hazardous Materials Review
Located near former Appleton Electric
IIS: 39131, Prog. ID: 36-336-4947

The Nebraska Department of Environmental Quality (Department) has reviewed the Hazardous Materials Review for the Columbus east viaduct. The Department's primary concern was ensuring that bridge pier construction did not create a preferential pathway through a confining clay layer, which may have led to contamination reaching a previous uncontaminated aquifer.

The Department concurs with the proposed commitments regarding hazardous materials and construction management.

If you have any questions please don't hesitate to contact Sarah Jeffrey, Mike Felix, or myself at (402) 471-4210.

Sincerely,

Tom Buell
Unit Supervisor
VCP/ Superfund Unit
Land Management Division

Cc: Kyle Anderson, Felsburg, Holt & Ullevig
Will Packard, NDOR

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Appendix N Documentation of Public Involvement

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Platte County, Nebraska

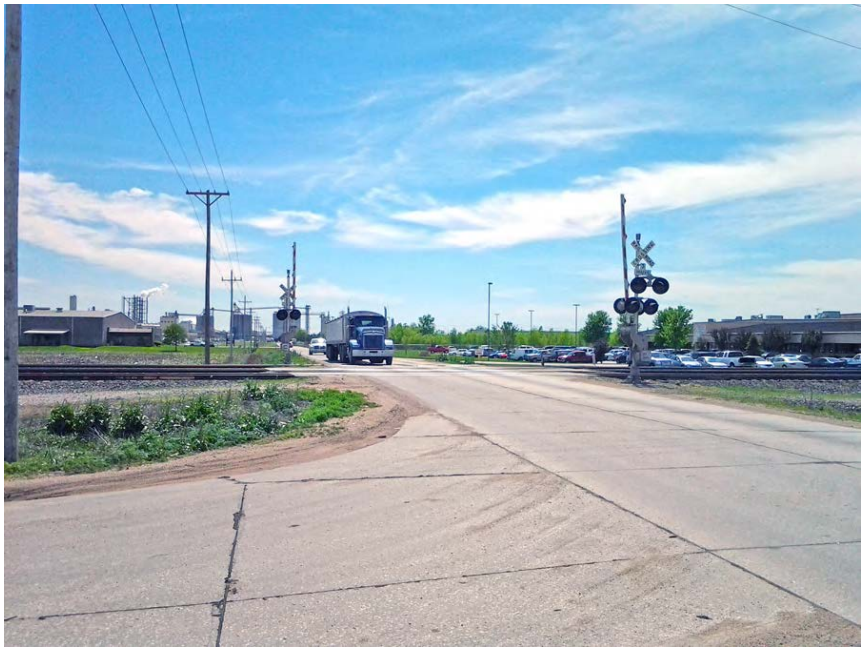
Public Information Meeting

Open House Format

NDOR Project Number: RRZ-71(33)-5057(9)

CN 32190

Platte County, Nebraska Project East Viaduct



March 5, 2013, 4:30 – 7:00 PM

AG Park

Appendix

Advertising

Official Advertising—Legal Notice of Public Information Meeting

Door Handout to Public

VENUE

Floor Plan of Event Set-up

Photos of Venue

SUPPORT MATERIALS

Handouts distributed to the Public

ATTENDENCE

Sign-In Sheets: Public Information Meeting, March 5, 2013, 4:30 – 7:00 PM

Photos of Event

PUBLIC COMMENTS

Design Team Notes Compiled at Public Information Meeting

Sample Citizen Comment Sheet

Comments received prior to March 20, 2013

Advertising

Official Advertising—Legal Notice of Public Information Meeting

Door Handout to Public

PLATTE COUNTY, NEBRASKA
NOTICE OF PUBLIC INFORMATION MEETING
RRZ-71(33)-5057(9), Control No. 32190

Platte County will hold a Public Information Open House concerning the proposed viaduct over the UPRR mainline tracks along the East 29th Avenue corridor. The limits for this project extend from East 8th Street to East 23rd Street (US 30). The project will consist of a new grade separation (viaduct) over the UPRR mainline tracks and modifications to access and circulation for adjacent businesses. Right-of-way acquisition and temporary construction easements will be required as part of this improvement.

Meeting Place: AG Park
822 15th Street
Columbus, NE 68601
Time: 4:30 – 7:00 P.M.
Date: Tuesday, March 5, 2013

The public information "open house" meeting is being held in order to provide information on the proposed project, the possible alternatives, and the impact on the adjacent properties, US 30 and 8th Street. All persons interested in the project are invited to attend and present their views and questions. Design information will be displayed and personnel from Platte County and the design consultant will be present to answer questions and receive comments. The format of this meeting allows the public to come, gather information about the project, speak one-on-one with project personnel, and leave as they wish. Written statements may be presented at the meeting and will be accepted as part of the public meeting record for 15 days after the public meeting.

Information will also be given relative to right-of-way acquisition and contract letting schedules as administered by the Nebraska Department of Roads. A Spanish interpreter will be on hand. Provisions for hearing and visually impaired persons will be made if the Platte County Highway Department is notified by February 27, 2013. Notification should be submitted to: Platte County Highway Department, 2610 14th Street, Columbus, NE. 68601, telephone (402)563-4909, fax (402)563-0305.

CONDADO DE PLATTE, NEBRASKA
REUNION de ANUNCIO de INFORMACIÓN PÚBLICA
RRZ-71(33)-5057(9), Control No. 32190

El Condado de Platte tendrá una reunión de información pública referente al viaducto propuesto sobre las vías de ferrocarril principales de UPRR por el corredor de la Avenida 29. Los límites de este proyecto se extienden desde la calle 8 este a la calle 23 este (US30). El proyecto se consiste de una separación de grado nuevo (viaducto) sobre las vías de ferrocarril principales del UPRR y modificaciones y circulación al acceso para negocios adyacentes. La adquisición de derechos de vía y servidumbres de construcción temporarias serán parte de este mejoramiento.

Lugar de reunión: Parque AG
822 15th Street
Columbus, NE 68601
Hora: 4:30-7:00p,
Fecha: martes, 5 de marzo del 2013

La reunión de información pública se hará para dar información del proyecto propuesto, alternativas posibles y el impacto a las propiedades adyacentes, US30 y Calle 8. Todas las personas interesadas en el proyecto son invitados a asistir y presentar sus opiniones y preguntas. Información del diseño será presentado y empleados del Condado de Platte y el consultor de diseño estarán presentes para responder a preguntas y recibir comentarios. El formato de esta reunión permite que el público venga, reciba información del proyecto, habla uno-a-uno con los empleados del proyecto y salir cuando les sea conveniente. Comentarios escritos pueden ser presentados en la reunión y serán aceptados como parte del record de la reunión para 15 días después de la reunión.

La información también será dada con respeto a correcto de adquisición de manera y contrato que permiten horarios como administrado por el Departamento de Nebraska de Caminos. Un intérprete español estará a la mano. Apropiadas provisiones para la audición y personas visualmente dañadas serán hechas si el Departamento de Carreteras del Condado de Platte es notificada para el 27 de febrero de 2013. La notificación debe ser sometida a: Platte County Highway Department, 2610 14th Street, Columbus, NE. 68601, telephone (402)563-4909, fax (402)563-0305.

COLUMBUS
TELEGRAM

P.O. Box 648 Columbus, NE 68602-0648 (402)5642741 (800)279-1123

AFFIDAVIT OF PUBLICATION

State of Nebraska
Platte County } ss

Amy Bell, being first duly sworn, deposes and says that she is the Controller of the Columbus Telegram, a legal newspaper, having a bona fide subscription list and circulation of more than three thousand copies each day; that said newspaper is published in whole or in part in an office maintained in Columbus, in said county; that the whole of the printed matter therein is in the English language; that same has been published for more than fifty-two consecutive weeks immediately prior to the first date of publication stated in this affidavit; that the advertisement, or notice, a true and correct printed copy of which is hereto attached was printed in each, and in all of each of the regular editions, (and not in supplement) of said paper for successive weeks, more particularly stated as follows:

In the issue of:
February 19, 2013

Printer's Fee, $ 58.09

Amy Bell

Subscribed and sworn to before me this 19 day of Feb, 2013

Cindy Jensen
Notary Public

(SEAL)

P.O. 20309620

PLATTE COUNTY, NEBRASKA
NOTICE OF PUBLIC INFORMATION MEETING
RRZ-71(33)-5057(9), Control No. 32190

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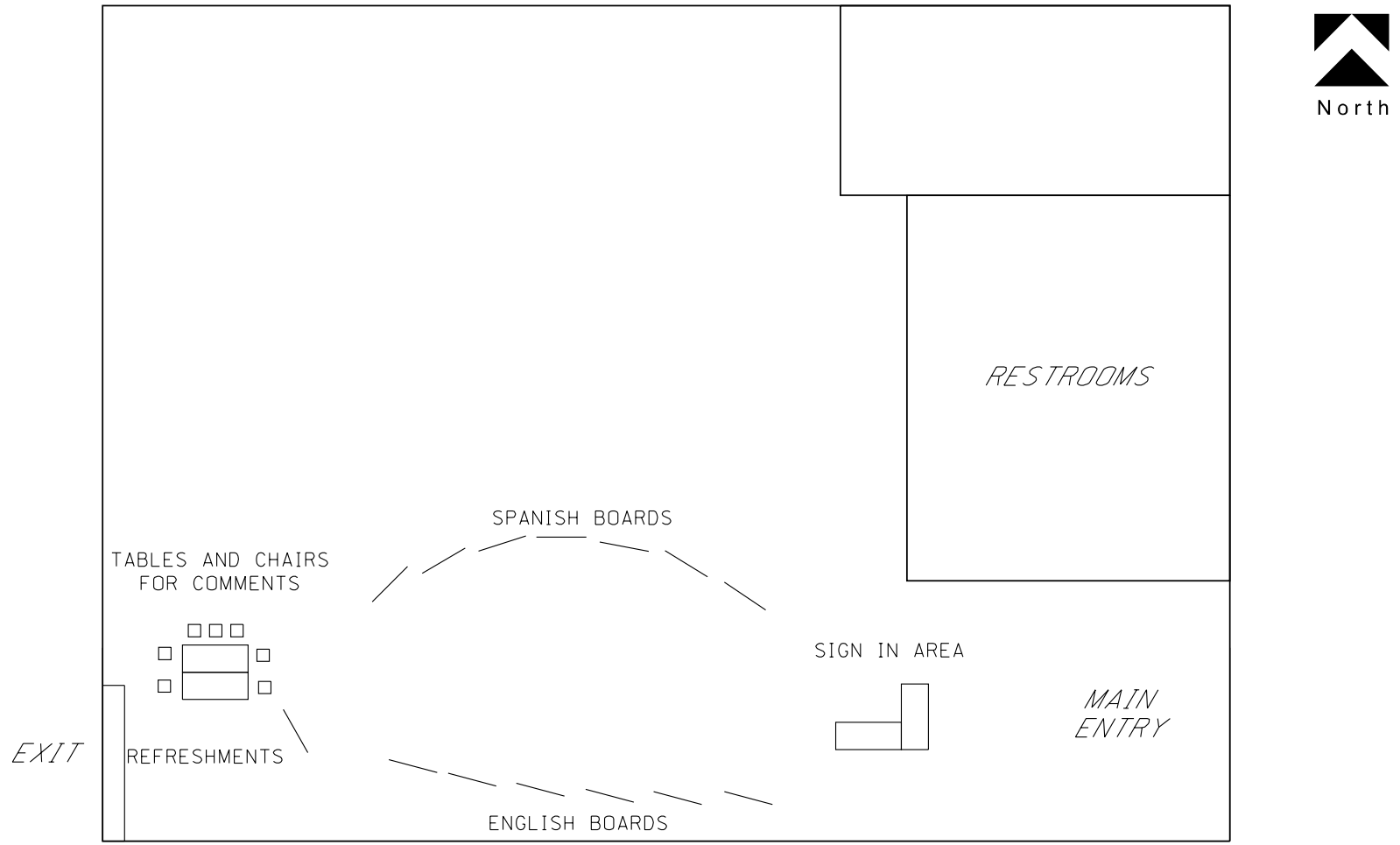
VENUE

Floor Plan of Event Set-up

Photos of Venue

AG PARK

BANQUET ROOM



Photos of Venue

SUPPORT MATERIALS

Handouts distributed to the Public

Public Open House

Columbus East Viaduct

Project No. RRZ-71(33)-5057(9) CN:32190

Welcome!

Please Sign In

Spanish Language Interpreter in Attendance

March 5, 2013 - 4:30 pm to 7:00 pm

AG Park - 822 15th Street, Columbus, NE

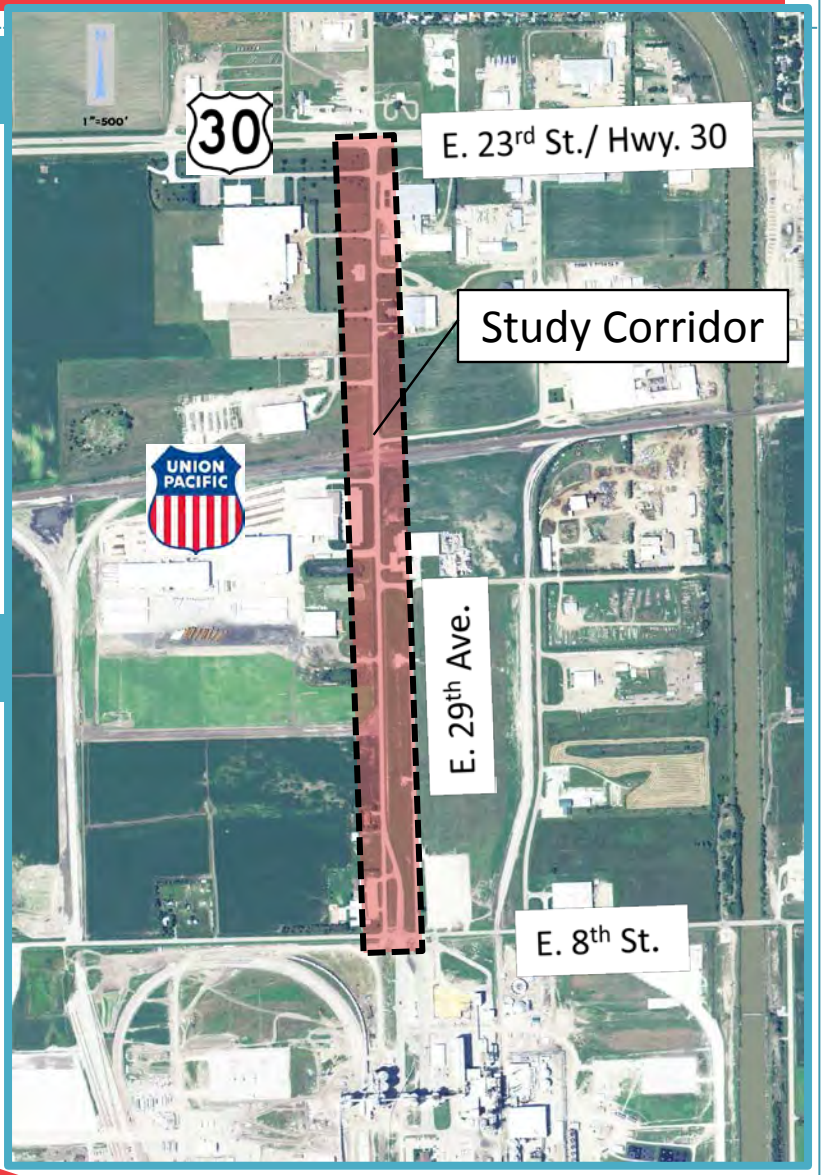
Project Location

Purpose of the Project

- Improve efficiency of the County Road Network by reducing traffic congestion and delay
- Improve safety by minimizing the potential for collisions.
- Improve accessibility by providing a grade separated crossing in the area of East 29th Avenue and the mainline of the Union Pacific Railroad (UPRR).

Need for the Project

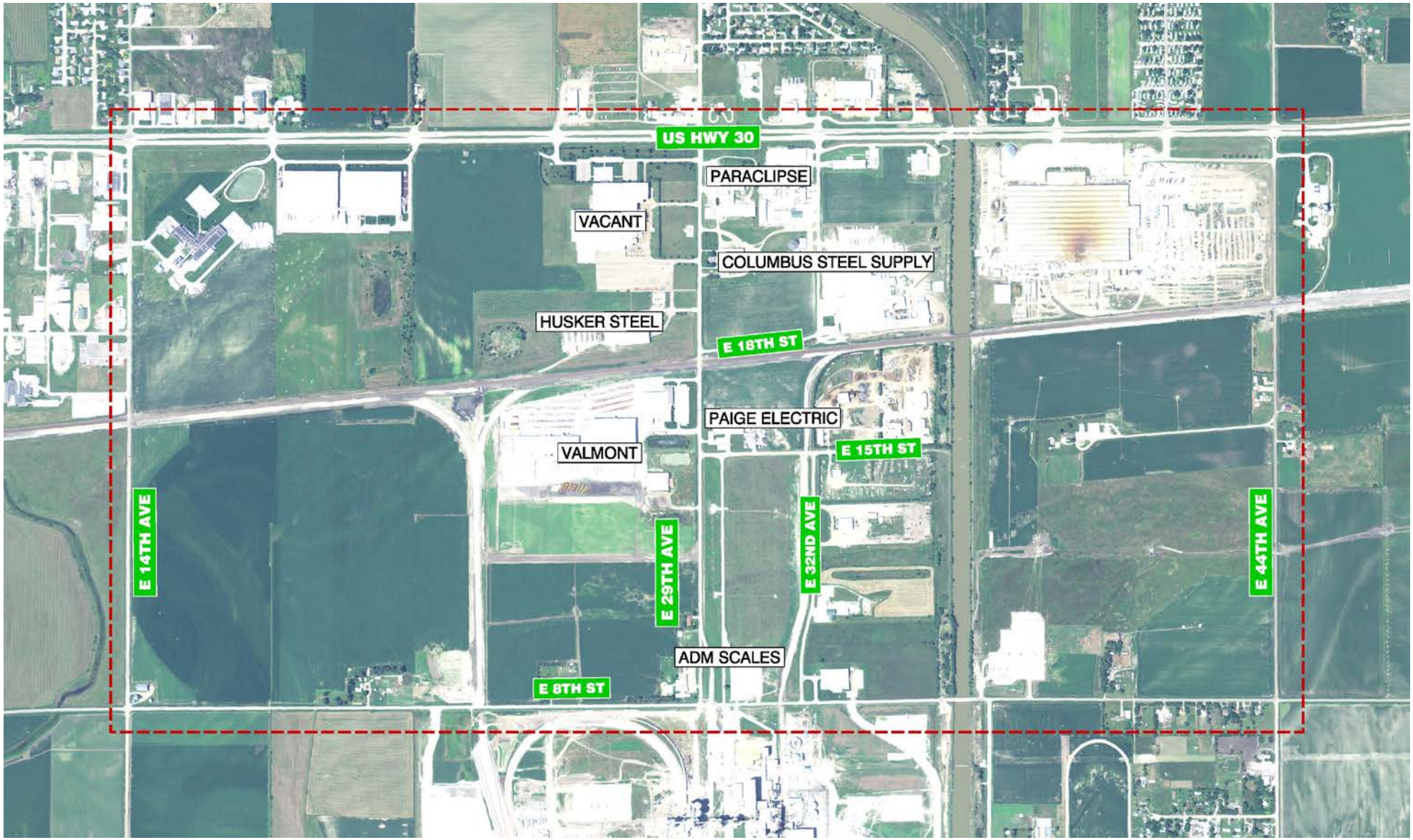
- The need for construction of a grade separation and closing at-grade crossings addresses two critical issues in the study area. These are delay, both existing and projected in the future as train and vehicle volumes increase; and safety, related to potential for train-vehicle collisions based on the exposure from the sheer volume of vehicles and trains sharing the crossings.

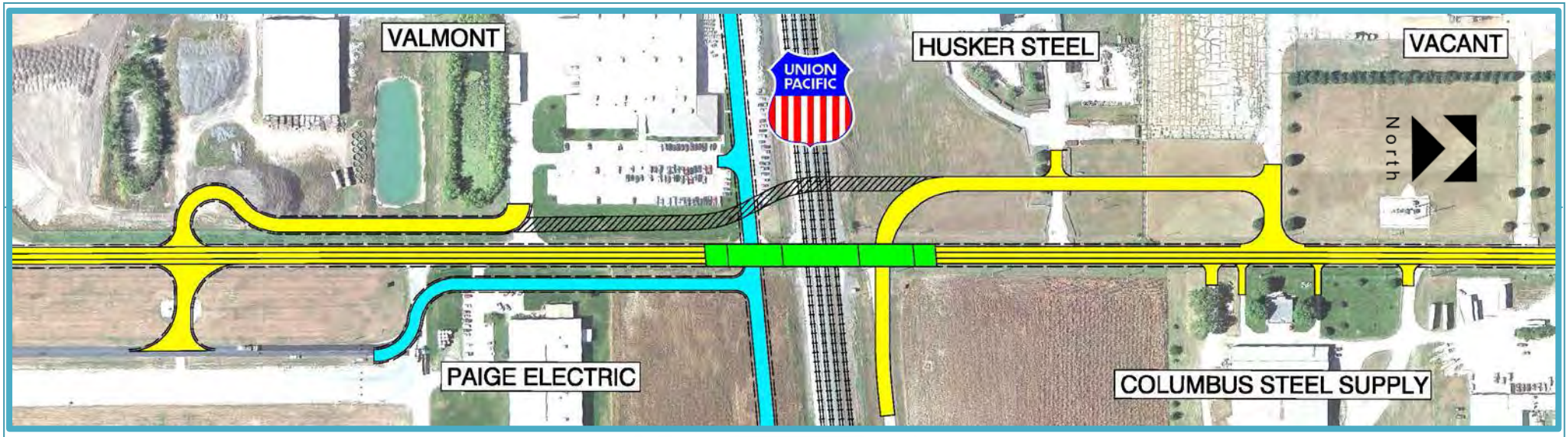


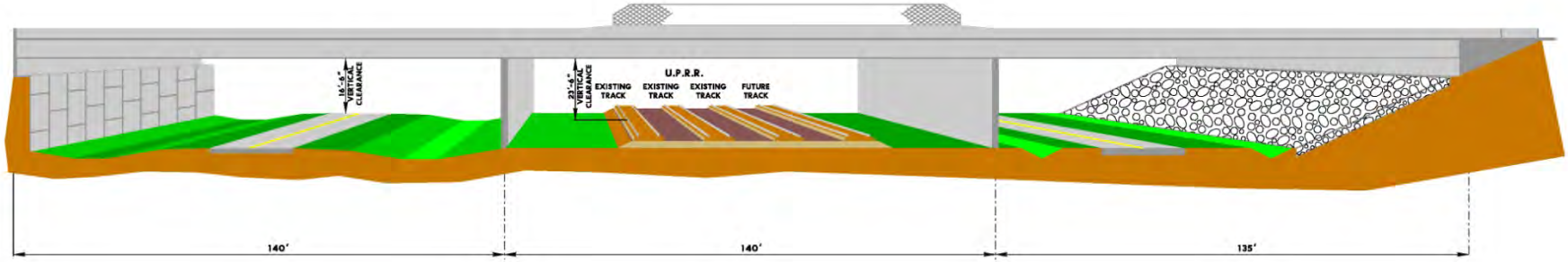
March 5, 2013 - 4:30 pm to 7:00 pm

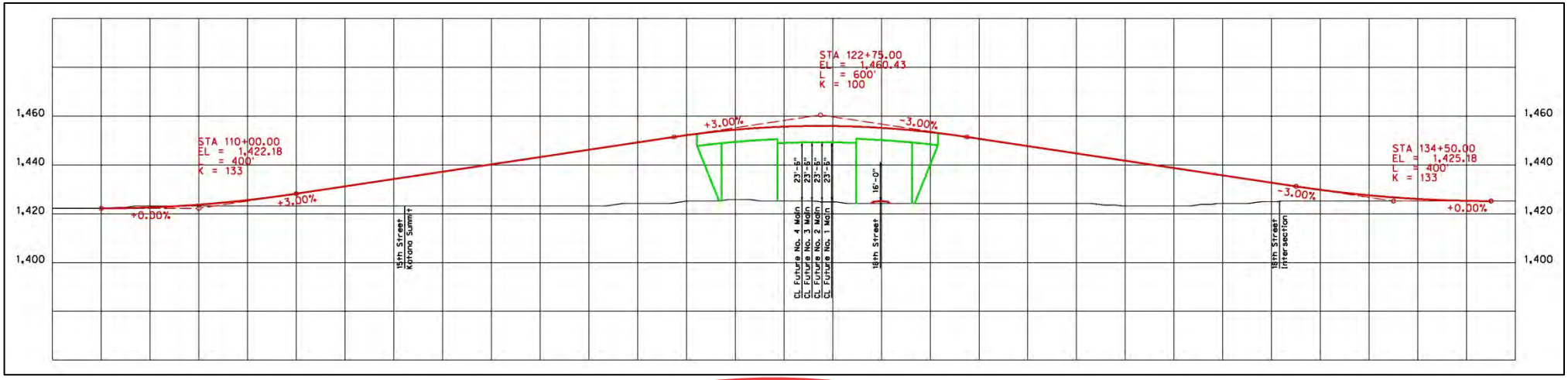
AG Park - 822 15th Street, Columbus, NE

Project Study Area

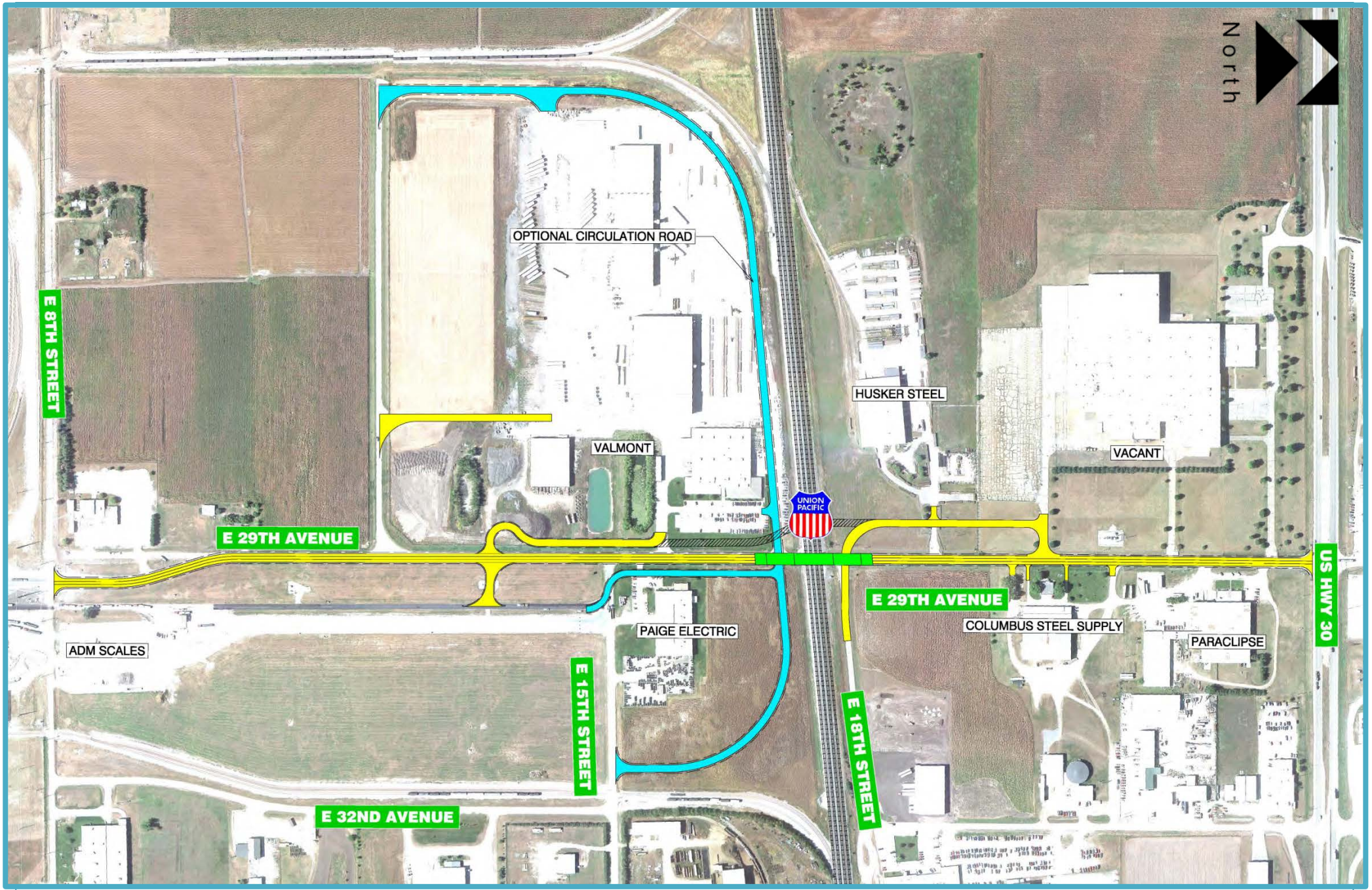




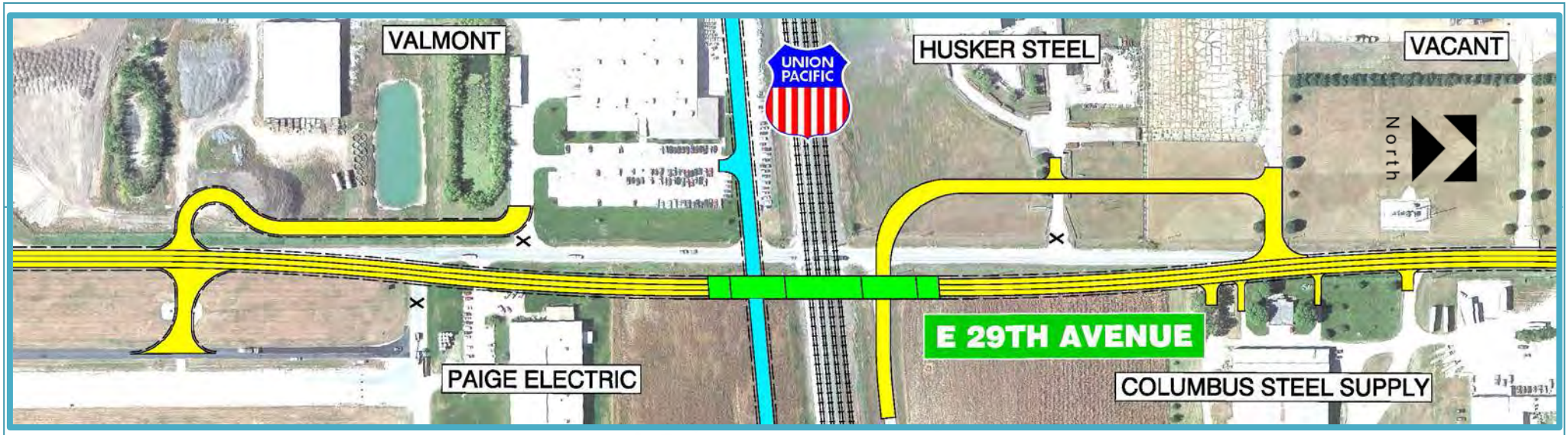


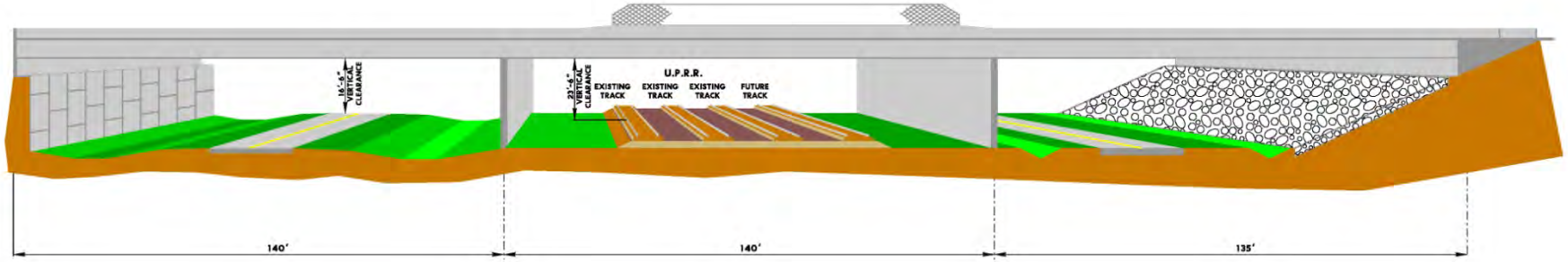


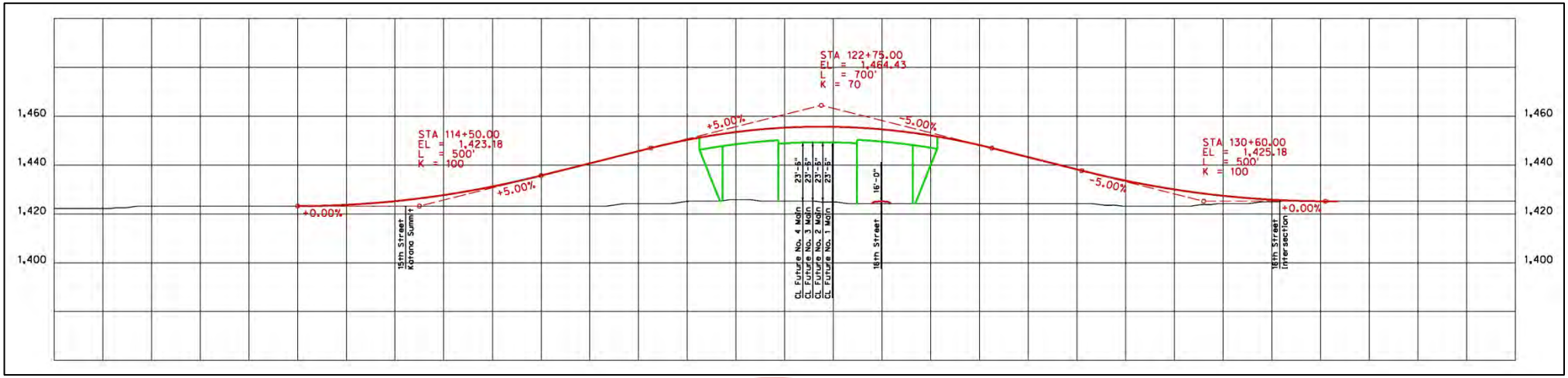
Columbus East Viaduct – Alternative #1 w/ 3% Grades



Columbus East Viaduct – Alternative #1







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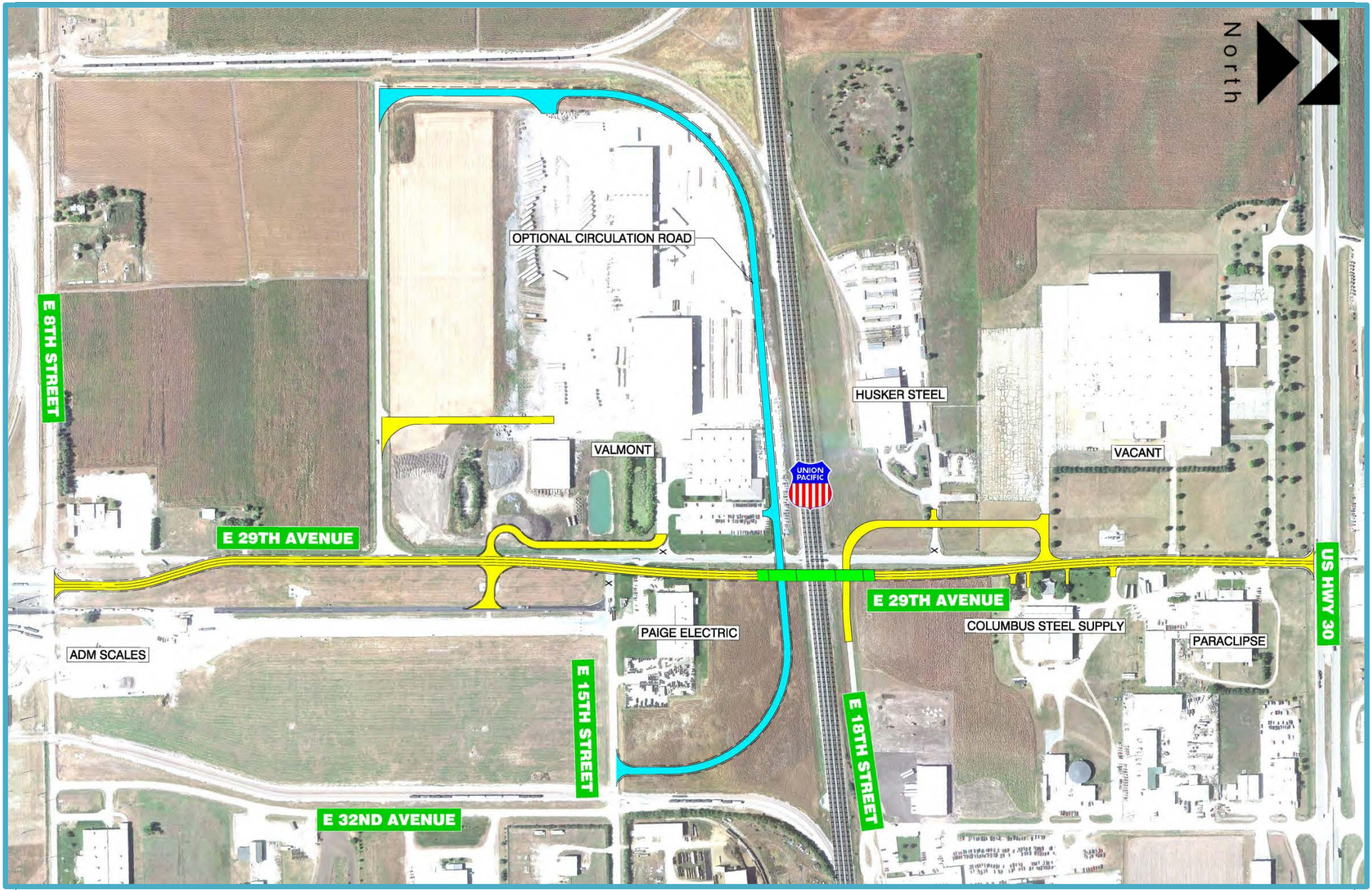
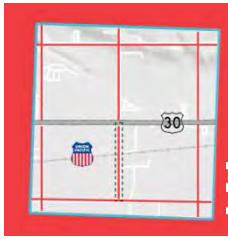


Columbus East Viaduct – Alternative #2



Preliminary Environmental Considerations

Environmental Resource	Considerations
Socioeconomic Considerations	Maintain access to businesses; possible acquisition of ROW & temporary easements
Transportation Considerations	Traffic delays, safety concerns, accessibility
Environmental Justice	Possible impacts to low income and minority populations
Noise	Vertical alignment change +/or detour routing may alter noise impacts in area
Utilities	Some relocations anticipated; no service disruption expected
Drainage	Flat terrain and high groundwater require positive drainage in ditches
Material Sources & Waste Materials	Additional fill material needed
Wetlands	Wetlands if present, need special permitting
Threatened and Endangered Species	Habitat for protected species needs to be evaluated
Platte River Depletions	Location in Lower Platte basin has special requirements for borrow sites
Cultural Resources	Presence of historic or archeological resources need to be determined
Hazardous Materials	Impacts to contaminated areas may require containment, removal, or mitigation
Temporary Construction Impacts	Short-term lane closures & detours; airport height restrictions

Reunión Pública

Viaducto Este de Columbus

No de proyecto RRZ-71(33) -5057(9) CN:32190

Bienvenidos!

Por favor firmen.

Interprete de español presente

5 de marzo de 2013 - 4:30 pm a 7:00 pm

Parque AG - 822 Calle 15, Columbus, NE

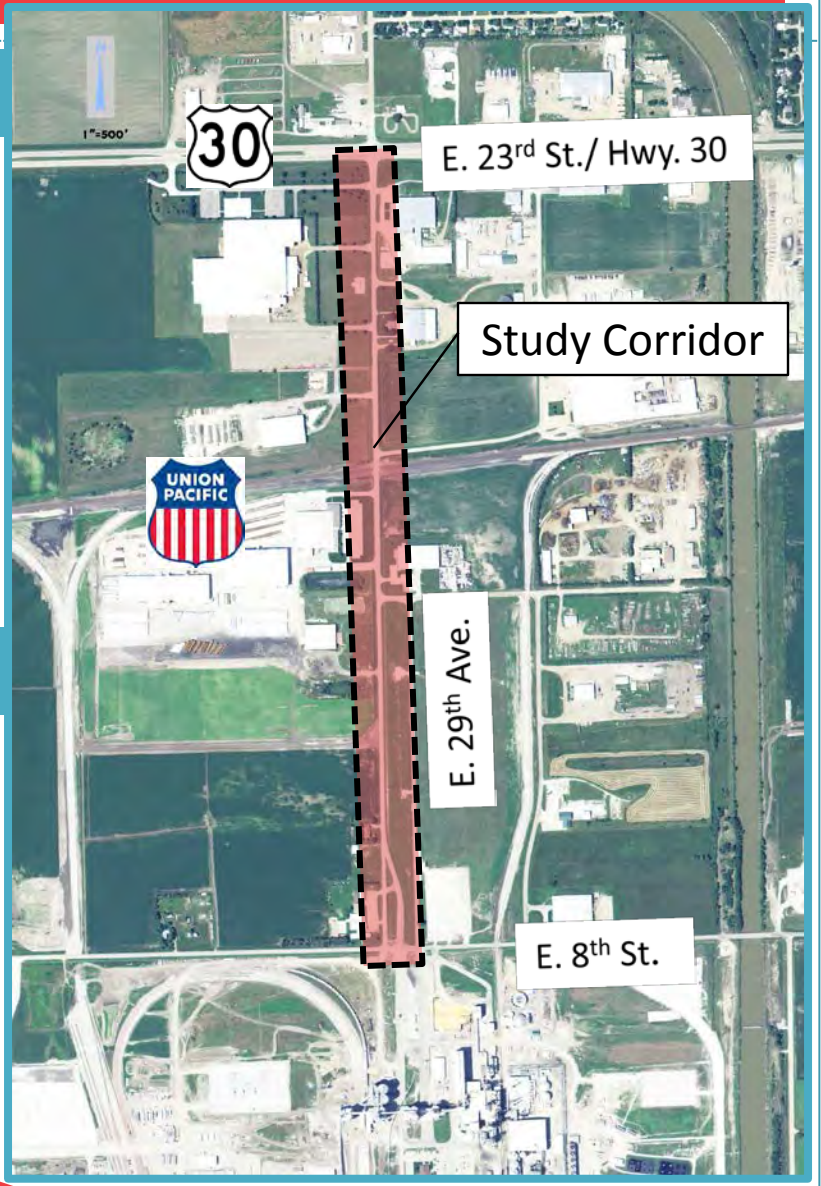
Área de estudio del proyecto

Propuesta del proyecto

- Para mejorar la eficiencia de la Red de las Carreteras del Condado reduciendo la congestión y el retraso de tráfico
- Para mejorar la seguridad minimizando el potencial de accidentes.
- Para mejorar el acceso proveyendo un cruce de grado separado en el área de la Avenida Este 29 y la línea principal del ferrocarril Union Pacific (UPRR).

Necesidad para el proyecto

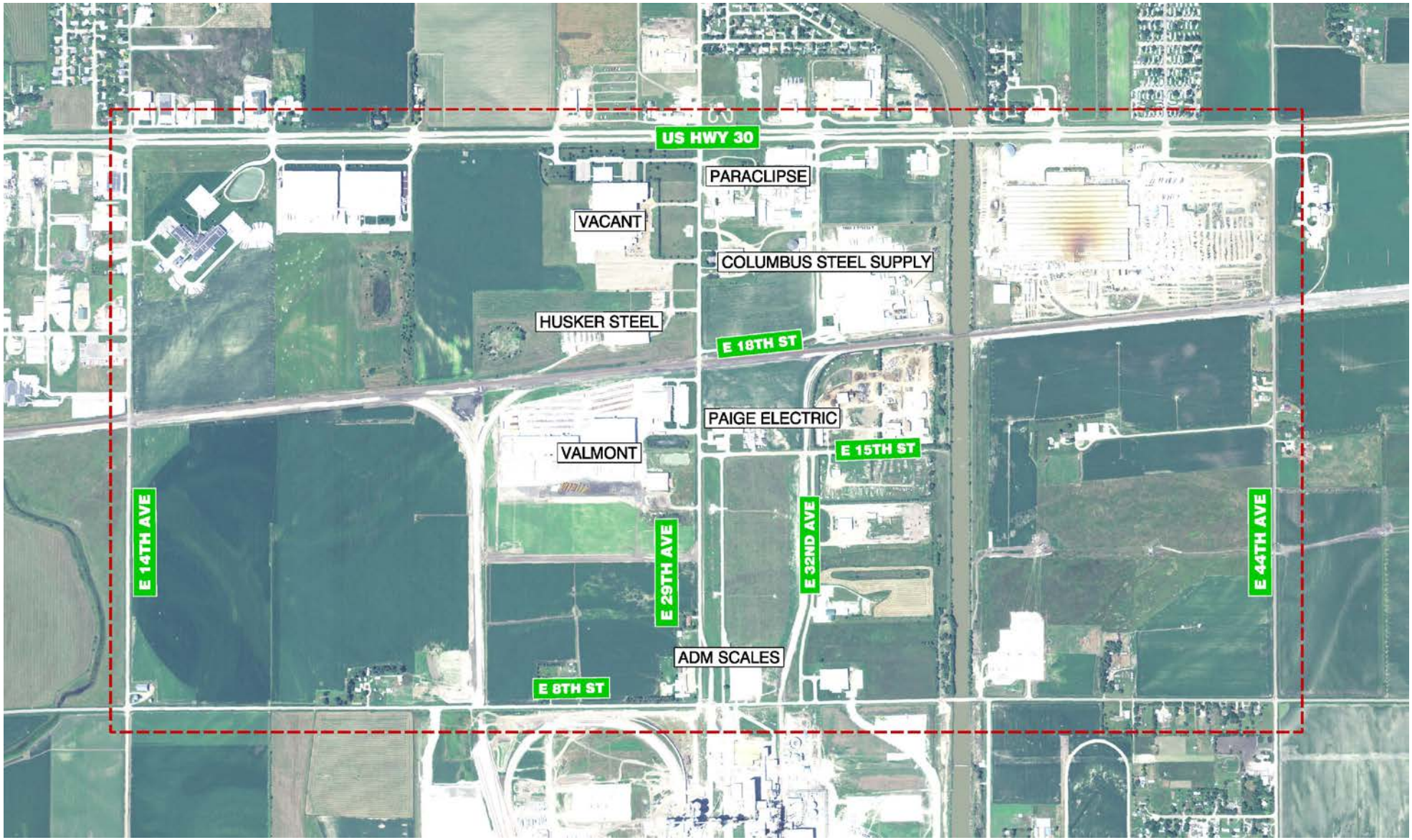
- La necesidad para la construcción de un grado de separación y el cierre de cruces a-grado cubre dos temas críticos en el área de estudio. Estos son atrasos, igualmente los existentes y los proyectados en el futuro mientras el volumen de tren y vehículo incrementa; y seguridad, relacionado al potencial para choques entre trenes y vehículos basado en el contacto del volumen en total de vehículos y trenes compartiendo los cruces.

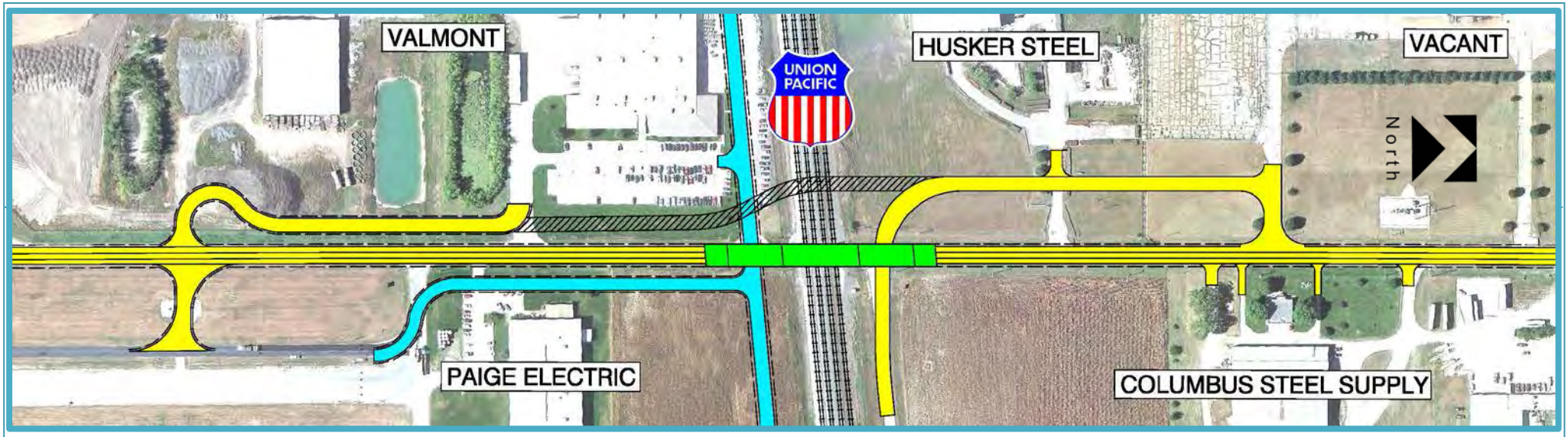


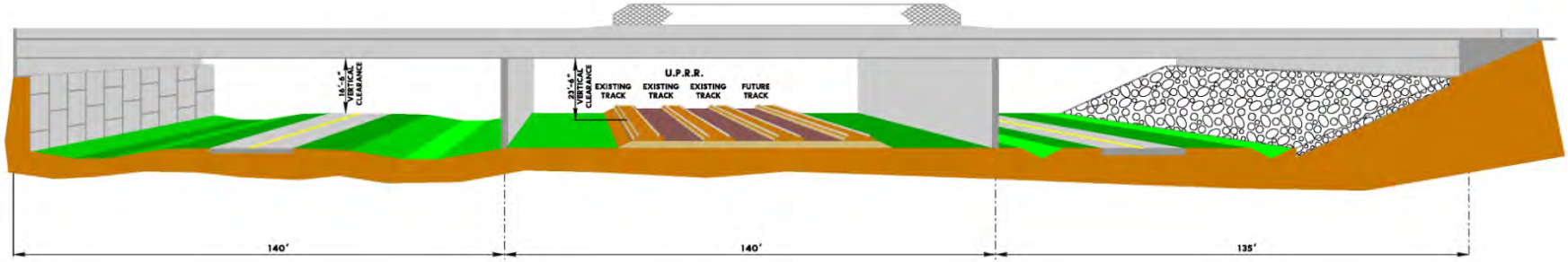
5 de marzo de 2013 - 4:30 pm a 7:00 pm

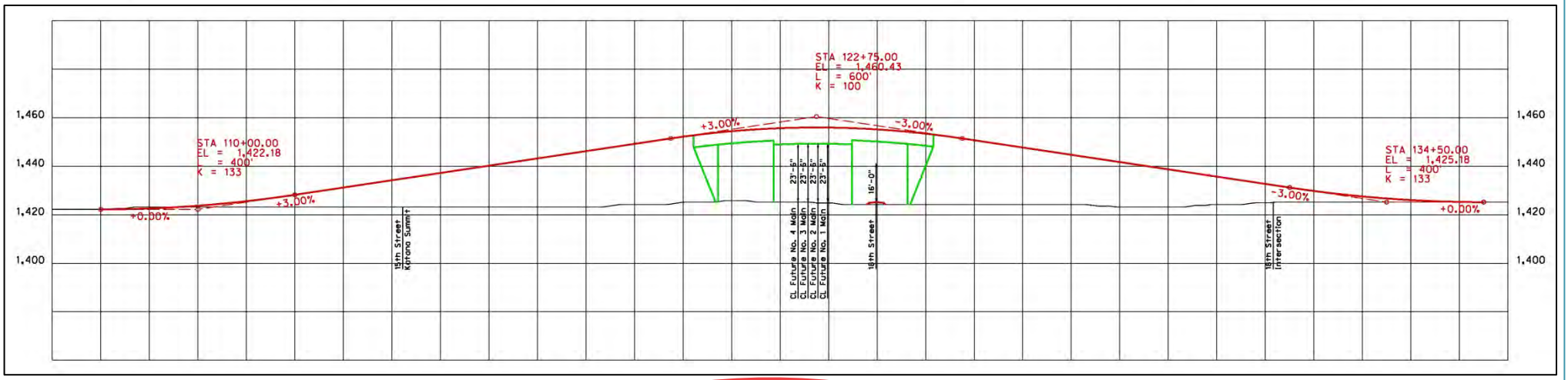
Parque AG - 822 Calle 15, Columbus, NE

Área de estudio del proyecto

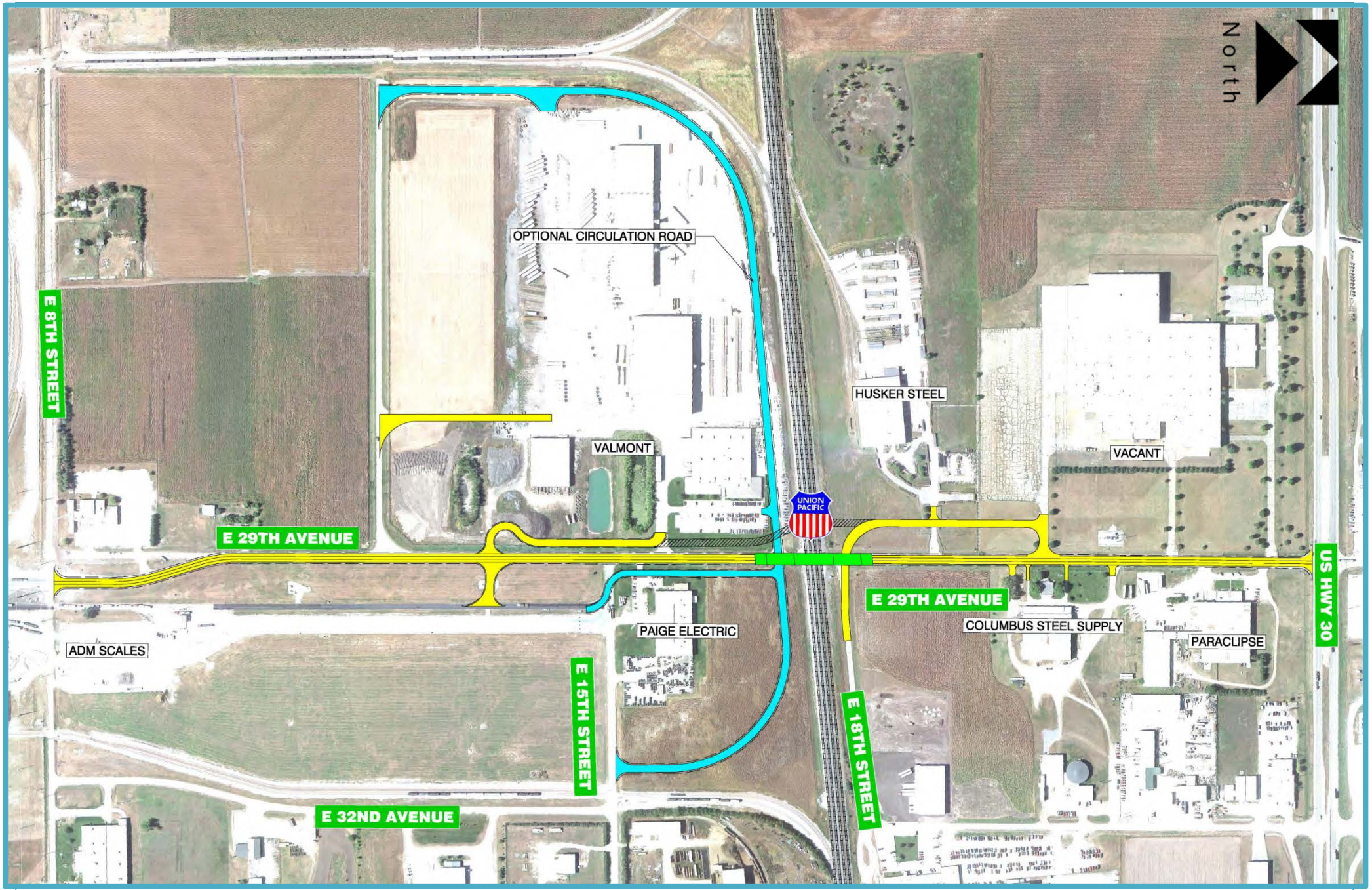




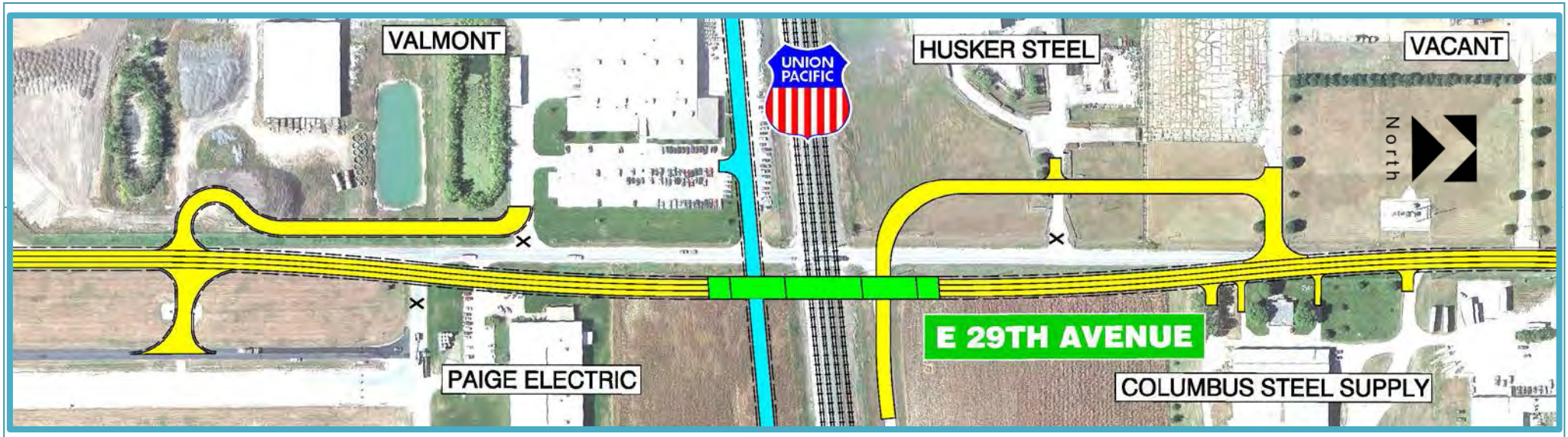


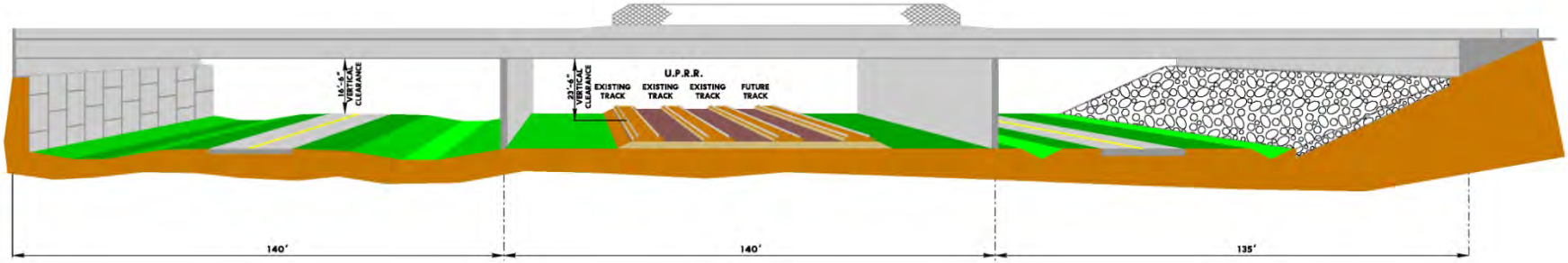


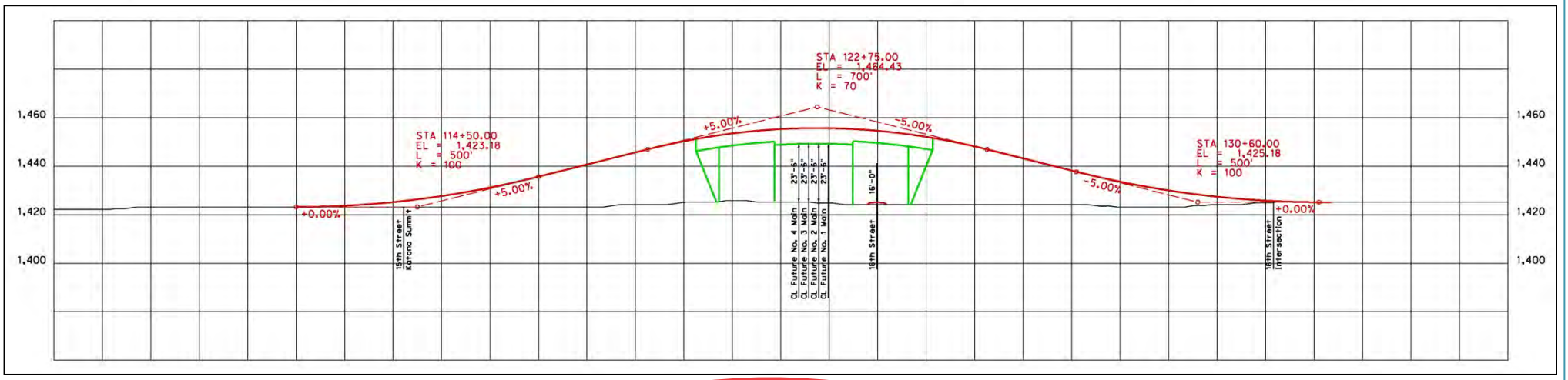
Viaducto Este de Columbus - Alternativa #1 con un grado de 3%



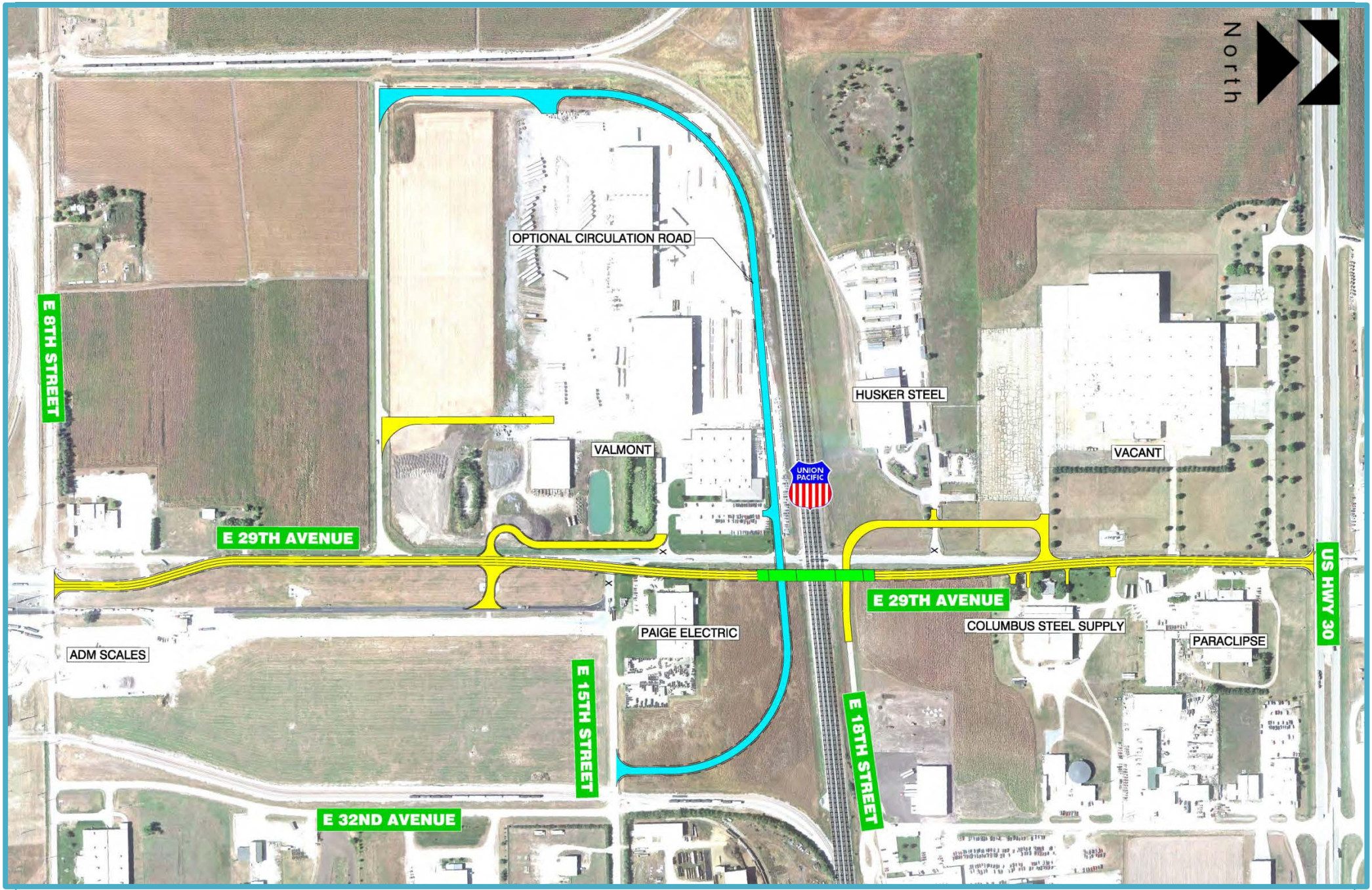
Viaducto Este de Columbus - Alternativa #1







Viaducto Este de Columbus - Alternativa #2 con un grado de 5%



Viaducto Este de Columbus - Alternativa #2

Consideraciones Ambientales Preliminares

Recurso Ambiental	Consideración
Consideraciones socio-económicos	mantener el Access a los negocios; adquisición posible de derechos de vía y servidumbres temporales
Consideraciones de transporte	retrasos de tráfico, preocupaciones de seguridad, accesibilidad
Justicia ambiental	Impactos posibles a poblaciones de bajo recursos y minoridades
Ruido	cambio de alineación vertical y/o desvió de enrutamiento puede cambiar los impactos de ruido en el área
Servicios	Algunos cambios de lugar anticipados; no disrupción de servicio esperado
Drenaje	terreno plano y aguas subterráneas altos requieren drenaje positivo en las zanjas
Origen de material y material de residuos	se necesita material de relleno adicional
Humedales	Si ha presencia de humedales, se necesita permiso especial
Especies amenazadas o en peligro de extinción	se necesita evaluar el hábitat para especies protegidas
Disminución del Rio Platte	el lugar en la cuenca Lower Platte tiene requisitos especiales para sitios de préstamo
Recursos culturales	la presencia de recursos históricos o arqueológicos tiene que ser determinado
Material peligrosa	impactos a áreas contaminados puede requerir contención, eliminación o mitigación
Impactos de construcción temporales	cierres de corto plazo de vías y desvíos; restricciones de altura de aeropuerto

ATTENDENCE

Sign-In Sheets: Public Information Meeting, February 8, 2010, 6:00 – 7:30 PM

Photos of Event

NDOR
Nebraska Department of Roads

RRZ-71(33)-5057(9), Columbus East Viaduct, CN 32190
Public Information Open House Meeting (Informacióen Publica)

Your attendance and participation is appreciated. (Se agradecesu asistencia y participación.)

Name (*Nombre*)	Contact Information (*Domicilio o Direccion Postal*)	Interest (*Interés*)	Please Check (*Por favor marque*)		
			Notification (*Notificación*)	Gender (*Género*)	Ethnicity (*Raza o Etnia*)
Please Print Brayden McLaughlin	Address NDOR Project Coordinator City/Zip 402-479-3645		☐ Mailing (*Correo*) ☒ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☒ M ☐ F	☒ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Fred Liss	Address Platte County R.C. City/Zip 402-563-4909		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print BoB Lloyd	Address Platte County Supt City/Zip 402-495-4552		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Rich Jablonski	Address PO Box 192 City/Zip Columbus NE 68602		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☒ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Delia Roach	Address 4600 25th Ave City/Zip Columbus 68601		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Jesse Lopez-Gomez	Address 2720 27th Avenue City/Zip Columbus NE 68601		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☒ M ☐ F	☐ White ☒ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Joe Mandiamalli	Address 2424 14th Street City/Zip Columbus 68601		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Kyle Anderson	Address FHU Project Manager City/Zip		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Matt McFadden	Address FHU Designer City/Zip		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☒ M ☐ F	☒ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print	Address City/Zip		☐ Mailing (*Correo*) ☐ Web ☐ Newspaper (*Periódico*) ☐ Friend (*Amigo*) ☐ Hwy Sign (Senal) ☐ Other (*Otros*)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other

NDOR Nebraska Department of Roads

RRZ-71(33)-5057(9), Columbus East Viaduct, CN 32190
Public Information Open House Meeting (Informacióen Publica)

Your attendance and participation is appreciated. (Se agradecesu asistencia y participación.)

Name *(Nombre)*	Contact Information *(Domicilio o Direccion Postal)*	Interest *(Interés)*	Please Check *(Por favor marque)* Notification *(Notificación)*	Gender *(Género)*	Ethnicity *(Raza o Etnia)*
Please Print [illegible]	Address Platte County City/Zip Highway		☐ Mailing *(Correo)* ☐ Web ☐ Newspaper *(Periódico)* ☐ Friend *(Amigo)* ☐ Other *(Otros)* ☐ Hwy Sign (Senal)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print Hollie Olk	Address PO Box 555 City/Zip Columbus NE 68602		☐ Mailing *(Correo)* ☐ Web ☐ Newspaper *(Periódico)* ☐ Friend *(Amigo)* ☐ Other *(Otros)* ☐ Hwy Sign (Senal)	☐ M ☑ F	☑ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print DAVE BELL	Address City/Zip Loup Power		☐ Mailing *(Correo)* ☐ Web ☐ Newspaper *(Periódico)* ☐ Friend *(Amigo)* ☐ Other *(Otros)* ☐ Hwy Sign (Senal)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print	Address City/Zip		☐ Mailing *(Correo)* ☐ Web ☐ Newspaper *(Periódico)* ☐ Friend *(Amigo)* ☐ Other *(Otros)* ☐ Hwy Sign (Senal)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print	Address City/Zip		☐ Mailing *(Correo)* ☐ Web ☐ Newspaper *(Periódico)* ☐ Friend *(Amigo)* ☐ Other *(Otros)* ☐ Hwy Sign (Senal)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
Please Print	Address City/Zip		☐ Mailing *(Correo)* ☐ Web ☐ Newspaper *(Periódico)* ☐ Friend *(Amigo)* ☐ Other *(Otros)* ☐ Hwy Sign (Senal)	☐ M ☐ F	☐ White ☐ Latino ☐ Black ☐ American Indian/Alaskan Native ☐ Asian/Pacific Islander ☐ Other
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4:30 - 7:00 PM, Tuesday, March 5, 2013; AG Park, 822 15th Street, Columbus, Nebraska

Photos of Event

PUBLIC COMMENTS

FHU Employee (Personal Notes Compiled at Public Information Meeting)

Sample Citizen Comment Sheet

Comments received prior to March 20, 2013

Public Comment Form
District Three Public Information

RRZ-71(33)-5057(9) COLUMBUS EAST VIADUCT, CN 32190
4:30-7:00 PM; March 5, 2013
AG Park, 822 15th Street, Columbus, Nebraska

Please submit your written questions and comments by **March 20, 2013**.

To the attention of: Fred Liss
Platte County Highway Department
2610 14th Street
Columbus, NE 68601

Email: pchwy2@megavision.com
Phone: (402)563-4909
Fax: (402)563-0305

Please print clearly

The Department of Roads appreciates your participation. Your comments and questions will be taken into account by the respective and appropriate department staff.

Thank you for participating.

Name: _____

Address: _____

City, State, Zip Code: _____

Phone Number: _____

Email Address: _____

Formulario Público de Comentarios

Información Pública del Distrito Tres

RRZ-71(33)-5057(9) COLUMBUS EAST VIADUCT, CN 32190
4:30-7:00 PM; 05 de Marzo, 2013
AG Park, 822 15th Street, Columbus, Nebraska

Por favor envie sus preguntas y comentarios por escrito acerca de este proyecto hasta el dia: 20 Marzo, 2013.

A la direccion de correo:

Fred Liss
Platte County Highway Department
2610 14th Street
Columbus, NE 68601

Email: pchwy2@megavision.com
Teléfono: (402)563-4909
Fax: (402)563-0305

Escribir con letra clara de imprenta por favor

El departamento de caminos y la Comisión de carreteras del estado aprecian su participación.
Sus comentarios y preguntas serán tomados en cuenta por el personal respectivo y apropiado del departamento.

Gracias por participar.

Nombre:

Domicilio:

Ciudad, Estado, Codigo postal *(Zip)*:

Teléfono:

Email:

columbustelegram.com

E. 29th Avenue viaduct advances

6 HOURS AGO • BY JESUS LOPEZ-GOMEZ / JLOPEZ-GOMEZ@COLUMBUSTELEGRAM.COM

COLUMBUS – The public meeting on the East 29th Avenue viaduct Tuesday evening kicked off the first phase of the project, the environmental review.

Acknowledging that time frames could shift as the project advances, consulting firm Felsburg, Holt & Ullevig, Inc. expects to have the data gathered from the review submitted and approved by the end of 2014.

The firm expects to begin the $6.6 million project in 2016.

Platte County will pay 5 percent of the costs with the Nebraska Department of Roads contributing another 5 percent. Union Pacific Railroad Company will pay 10 percent with the Federal Highway Administration picking up the remaining 80 percent.

The Omaha group brought environmental scientists to answer any questions about this process as well a pair of conceptual designs for the viaduct's construction.

The first option would put the viaduct in alignment with East 29th Avenue. With the crossing closed, a temporary one would be built just north of it connecting easements that would be built allowing access to Valmont Industries Inc. and Husker Steel Inc. Access roads also would connect Paige Electric Company and Archer Daniels Midland.

The second option shifts the viaduct's construction slightly east of East 29th Avenue. While this doesn't change the easement structure a lot, this would allow the existing crossing to remain open, eliminating the need to build a new one.

Both plans include closing the 14th Avenue crossing as well.

The conceptual plans were presented with 3 and 5 percent grade elevations. The 33rd Avenue viaduct has a 5.5 percent grade elevation.

So far, the firm said it's been a smooth process.

Environmental Scientist Anthony Baumert said he didn't expect to have anything out of the ordinary arise from this project outside of possible wetland impacts and some drainage issues. Because the project is occurring on land that hosts traffic and already has a disturbed ecosystem, that minimizes the project's exposure to any potential unknowns.

Brayden McLaughlin, project coordinator, said each of the projects' surrounding businesses is in a consensual support of the viaduct.

"It's a whole lot easier when everyone's on the same page," he said.

With the estimated 80 trains and 3,700 vehicles that use the intersection daily, Assistant Highway Superintendent Fred Liss said the viaduct takes one of the riskiest railroad crossings off the books. Three accidents – one of them being a fatality – have been associated with the intersection in the past 20 years.

STAKEHOLDER MEETINGS/ CORRESPONDENCE

February 25, 2013 Meeting with UPRR & NDOR

March 5, 2013 Meeting with Area Industries

March 15, 2013 Telephone Discussion with Paige Electric

April 17, 2013 Chamber of Commerce Meeting

April 25, 2013 Meeting with Area Industries

May 14, 2013 Meeting with Paige Electric

May 14, 2013 Meeting with CAMACO

October 17, 2013 Letter from Chamber of Commerce

April 22, 2014 Meeting with Area Industries

FELSBURG HOLT & ULLEVIG

connecting and enhancing communities

MEETING NOTES **February 25, 2013**

Columbus East Viaduct- CN 32190
FHU Reference No. 112308-01

UPRR Meeting
Felsburg Holt & Ullevig Office
11422 Miracle Hills Drive, Suite 115
Omaha, NE

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1. After self-introductions Rick Haden discussed communications protocol with everyone agreeing that email was preferred. Mike Blackley is the point of contact for the UPRR and Ellis Tompkins for NDOR, Fred Liss is the RC and contact for the Platte County, and Kyle Anderson is the project manager for FHU.

2. Scope Review

Rick Haden described the purpose for the project that being to improve efficiency of the Platte County Road network by improving accessibility in the industrial area near East 29th Avenue and the UPRR, reducing traffic congestion and associated delays at the crossing, and decreasing the potential for train-vehicle collisions.

Rick indicated the project is based primarily on the current vehicular and train conflicts at the East 29th Avenue railroad crossing. It was his understanding that the UPRR currently carries on average 70-80 trains daily on the double track mainline, which Mike Blackley indicated was about right. This results in at least 2.5 hours per day that the crossing is blocked to vehicular travel, sometimes backing up as far north as US 30. East 29th Avenue is the primary route connecting US 30 with the industries and businesses south of the railroad crossing. Approximately 60 percent of the traffic is heavy trucks that take more time to clear the tracks which is a concern. Rick indicated that from 1992-2012, three vehicle-train collisions have occurred at the East 29th Avenue at-grade railroad crossing, resulting in one fatality. The most recent occurred on August 19, 2012 involving a disabled grain trailer stopped on the tracks that was struck by westbound and eastbound trains.

3. Matt McFadden presented two preliminary concept plans, one on alignment and one off-set to the east. He indicated that the major controls included access to ADM & Valmont vs. the profiles (3-5%) on the south approach to the viaduct. Potential detours for the on alignment concept include a temporary crossing offset to the west of E. 29th Ave. with temporary flashers & gates. Mike Blackley later (email 3/1/13) provided a very preliminary cost estimate of $500,000 for active crossing devices and $180,000 for 40' wide panels for 3 tracks at temporary crossing. Rick indicated that the costs of this temporary crossing will need to be compared to the costs to upgrade the pavement on E 44th Ave. as an alternate detour route.

4. Matt & Rick review that the preliminary design assumptions
   4.1. Matt indicated that the current track spacing varies between 15' and 25' on the two existing and one siding track.
   4.2. Mike Blackley indicated that future UPRR Track Configuration / Spacing - Mainline, Sidings, & Spurs should be assumed to be 4 tracks with one add to the north of the existing tracks and 25' between centerlines. Mike went on to say that UPRR would want to see their entire R-O-W spanned. Upon questioning as to the width of the R-O-W Mike indicated that he would provide maps (sent by email on (2-26-13).
   4.3. Ellis and Mike indicated that vertical clearances of minimum 23' 4" must be maintained from the top of existing rail. The indicated that there are no plans for future grade corrections of the rail bed.
   4.4. Ellis & Mike confirmed that horizontal clearances of 25' minimum from centerline of future closest track to closest Pier/Footings. Railroad access roads should be assumed on both sides of the tracks.
   4.5. Matt discussed the very preliminary typical bridge and roadway section as being a rural three lane cross section with a center left turn lane and full width shoulders due to the truck volumes. No pedestrian walkways are planned since there is no sidewalk in the area; therefore bridge fencing is anticipated to be straight vertical 8' fence. No one had objections to that cross section.
   4.6. Matt indicated that the drainage would be contained on the structure and released outside of the track area.
   4.7. Rick indicated that, with the on current alignment alternative, any existing utilities would have to be relocated outside of the future structure footprint before work on the viaduct could begin.

5. Rick asked Mike and Ellis if they could provide a recent grade separation agreement, possible the 3rd Avenue in Columbus to be able to anticipate the requirements. (Mike later provided a blank sample agreement by email on 2/26/13).

6. Rick handed out the anticipated project schedule. Ellis indicated that the project was currently anticipated for funding after 2016.

FELSBURG HOLT & ULLEVIG

Job Title UPRR & NDOR STAKEHOLDER MTG By RJH Date 2-25-13 Job No.

Subject PLATTE CO COLUMBUS Checked Sheet of

NAME	AGENCY	EMAIL
Brayden Mclaughlin	NDOR - LPD	brayden.mclaughlin@nebraska.gov
Beverly Vonaske	NDOR - Rail	~~bvonaske~~ beverly.vonaske@nebraska.gov
Abe Anshasi	NDOR	abe.anshasi@nebraska.gov
Todd Palmer	NDOR	todd.palmer@nebraska.gov
Ellis TomyKins	NDOR	ellis.tomykins@nebraska.gov
MikeBlackley	UPRR	MGBLACKL@UP.com
Matt McFadden	FHU	matt.mcfadden@fhueng.com
Rick Haden	FHU	rick.haden@fhueng.com
Rich Robinson	KM (via phone)	RIr@kirkham.com

FELSBURG HOLT & ULLEVIG

connecting and enhancing communities

February 26, 2013

RE: Columbus East Viaduct
Platte County
RRZ-71(33), CN 32190

Dear East 29th Avenue Stakeholder:

Platte County has initiated a railroad grade separation project near East 29th Avenue on the east edge of Columbus. Platte County has hired an engineering consultant team consisting of Felsburg Holt & Ullevig and Kirkham Michael to assist with the design efforts. The area of East 29th Avenue from US Highway 30 to East 8th Street is in need of roadway improvements due to enhance railroad crossing safety as well as reduce traffic congestion and associated delays due to conflicts between trains and increasing 29th Avenue traffic, primarily trucks.

East 29th Avenue provides a critical link for trucks providing direct access to adjoining industries and is frequently interrupted by high speed trains across the UPRR tracks.

As a key stakeholder in the immediate project area, your input is particularly important. We would welcome the opportunity to sit down and discuss your specific needs and concerns related to the project improvements prior to the public information meeting. We have therefore scheduled a stakeholder meeting for area businesses to review potential concepts, discuss with the project team and provide background on your individual operations. The information you provide will greatly assist us in not only determining a preferred grade separation design over the UPRR corridor but also other critical features including access, circulation, and potential detours during construction.

We will be holding an area Stakeholder Meeting on Tuesday, March 5, 2013 between 1:00pm and 3:00pm at the ADM Training Building (use north entrance) at the northwest corner of East 29th Avenue and East 8th Street. If you are unable to have a representative at this meeting you may contact Matt McFadden or Rick Haden at (402) 445-4405 to ask any questions you may have or to schedule another more appropriate meeting time.

A Open House for the general public will also be held on the afternoon / evening of Tuesday March 5, 2013 from 4:30pm to 7:00pm at the AG Park, 822 15th Street in Columbus. You are welcome to attend and participate in the open house as well.

We look forward to receiving your input.

Sincerely,

Rick Haden
Associate
Felsburg Holt & Ullevig

11422 Miracle Hills Drive, Suite 115 Omaha, NE 68154 tel 402.445.4405 fax 402.445.4394
www.fhueng.com info@fhueng.com

Columbus East Viaduct
Platte County
Project No. RRZ-71(33) CN 32190
Private Stakeholders

Stakeholder Mailing List

Name	Industry / Company	Phone #	Email
Steve Dewald	ADM -Plant Manager	402- 562-5006	steve.dewald@adm.com
Dan Smith	ADM	402-564-6353	dan.smith@adm.com
Craig Potthast	ADM	402-564-6353	craig.potthast@adm.com
Louis Lutjelusche	ADM- Transportation Manager	402- 562-5039	louis.lutjelusche@adm.com
Bob Niedbalski	Paige Electric- General Manager	402-563-3545	bniedbalski@paigeelectric.com
Mike Rowe	Husker Steel	402-564-3271	huskstl@megavision.com
Mike Maguire	Columbus Steel Supply	402-564-2853	mmaguire@columbussteelsupply.com
Kevin Strudthoff	Valmont Industries, Inc.	402-563-9318	kevin.strudthoff@valmont.com
Dave Bell	Loup Power District	402-564-3171	dbell@loup.com
Neal Suess	Loup Power District	402-564-3171	nsuess@loup.com
Mike Westfall	ADM	402-562-5048	mike.westfall@adm.com
Jennifer Koepke	Sidump'r Trailer – General Manager	402-582-4830	jkoepke@sidumpr.com

FELSBURG HOLT & ULLEVIG
connecting and enhancing communities

MEETING NOTES **March 5, 2013**

Columbus East Viaduct- CN 32190
FHU Reference No. 112308-01

Stakeholder Meeting # 1
ADM Training Facility
East 29th Street & 8th Avenue
Columbus, NE

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1. Rick Haden led self intros of those in attendance (see sign-in sheet).

2. Rick Haden indicated that FHU was just beginning the design and environmental process and were interested soliciting input from the industries that would directly benefit and could potentially be impacted by the Columbus East Viaduct project. He stated that the design team was particularly interested in learning more on current truck activity, circulation, and projected expansion plans.

3. Steve Dewald and Louis Lutjelusche of ADM provided current truck activity is in the range of 1,000-1,500 trucks per day entering and leaving their facility. That is down considerable from last year due to drought conditions which has forced them to haul more corn in by rail rather than trucking from the surrounding farms. They currently receive 100 carloads a day by rail with 75-80% and some coal delivery from BNSF, leaving 20-30 carloads of grain per day from UPRR. They stated that last year was more typical of their truck activity and they could supply daily logs that would show that (Louis later provided the daily activity for 2012 & 2013 to date).

4. Kevin Strudthoff of Valmont indicated that Valmont has taken over operations at the former Katana Summit plant. Valmont is manufacturing transmission poles rather than wind towers than Katana produced. Valmont generates approximately 150-200 flatbed loads per week, mostly legal dimensions with about 10% overweight or over width. They perform pole testing near the SW corner of their property. Valmont owns the property south to E. 12th Street and all exiting loads go to 12th Street. Valmont's MOU with UPRR has expired so they currently rely on trucking raw steel in from Valley. (Kevin later indicated that Valmont would like to keep open the option of a siding off of the N-S track on the west side of their property). They have three retention ponds along E. 29th Avenue that they would not want disturbed.

5. Dave Bell of Loup Power indicated that Loup owns the tract of ground just east of E. 14th Avenue and north of E. 8th Street and would like to see it develop as an industrial site and transfer facility to take advantage of the great rail access. Dave asked if E. 14th Avenue was still planned to close. Rick responded yes that it was part of the funding agreement with NDOR and UPRR.

11422 Miracle Hills Drive, Suite 115 Omaha, NE 68154 tel 402.445.4405 fax 402.445.4394
www.fhueng.com info@fhueng.com

6. Dave indicated that Sidump'r Trailer has taken over the east half of the formerly vacant (EGS/Appleton) property on the southwest corner of E.29th Avenue and US 30. They own the property and are trying to lease the west half. Dave indicated that he would provide contact information.

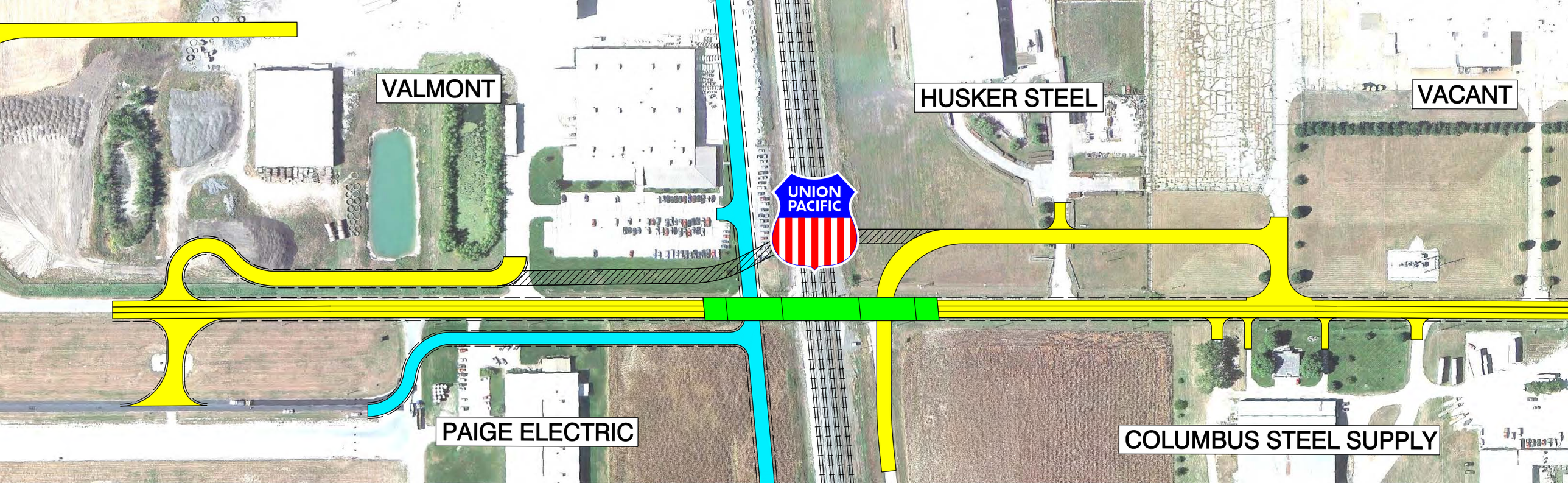
7. Rick & Matt presented two preliminary concept plans- Alternatives 1 & 2 (On & Off-Alignment East) and led a group discussion of the pros and cons of each. They indicated that maintain access during construction is essential concern– UPRR recently estimated that a temporary railroad crossing offset to the west would cost $700,000 just for the railroad flashers, gates, and panels. The alternative would involve an E. 44th Avenue detour with likely pavement upgrades. UPRR has also indicated that the current track configuration and spacing with Mainline, Sidings, & Spurs will need to be accommodated plus a future additional mainline track to the north of the existing mainline for a total clear span of 4 tracks. The preliminary typical bridge and roadway section pending the traffic engineering report is anticipated to be three lanes (2 SB, 1 NB) with shoulders and no pedestrian walkways. The grades would vary between 3-5% and the point where the new viaduct approach gets back down to the existing grade would be near 12th Street in order to avoid shifting loads of trucks turning at the bottom of the ramp.

   Alternative 1 - This On Alignment concept requires a closure of E. 29th Avenue for the majority of construction schedule with a truck detour to a temporary crossing about 100' west of E. 29th or to E. 44th Avenue. It is anticipated that most passenger vehicles would use the proposed new 3rd Avenue viaduct during construction. Some impacts on both sides of existing roadway.
   Alternative 2 – This alternative shifts the viaduct to the east to avoid a closure and detour of trucks during construction.

In the discussion the following comments were made by stakeholders:

1- Alternatives 2 would not likely be acceptable to Paige Electric and Columbus Steel due to the proximity to their buildings located near the front of their properties.
2- An alternative should be considered that shifts the roadway to the west.
3- An alternative should be looked at east of Paige Electric (Steve later provided a sketch-attached).
4- Could an alternative clear west of Sidump'r and Valmont be looked at.

8. Rick outlined the next steps in the process:
   - A public information meeting is schedule later today at Ag Park and the stakeholders are welcome to attend. The same materials will be presented and comment sheets were provided to those at the stakeholders meeting.
   - Begin extensive environmental field work beginning in May.
   - Consider the additional options mentioned today
   - Hold another stakeholders meeting and try to get more people in attendance including Paige, Sidump'r and Columbus Steel.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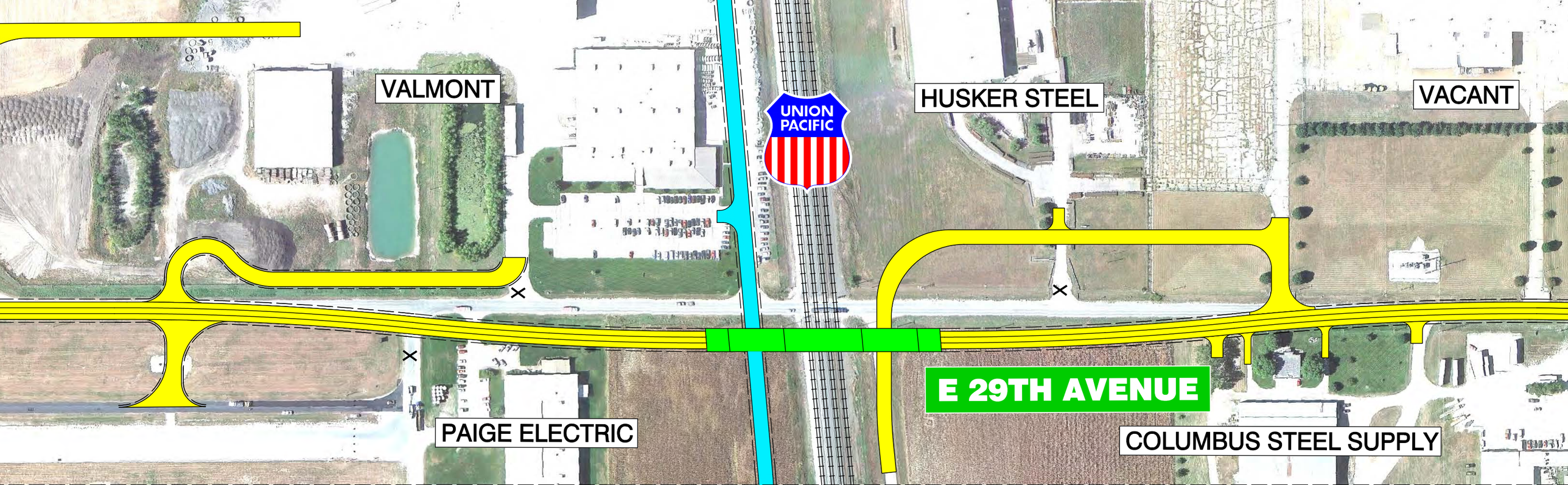
COLUMBUS STEEL SUPPLY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VACANT
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COLUMBUS STEEL SUPPLY

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

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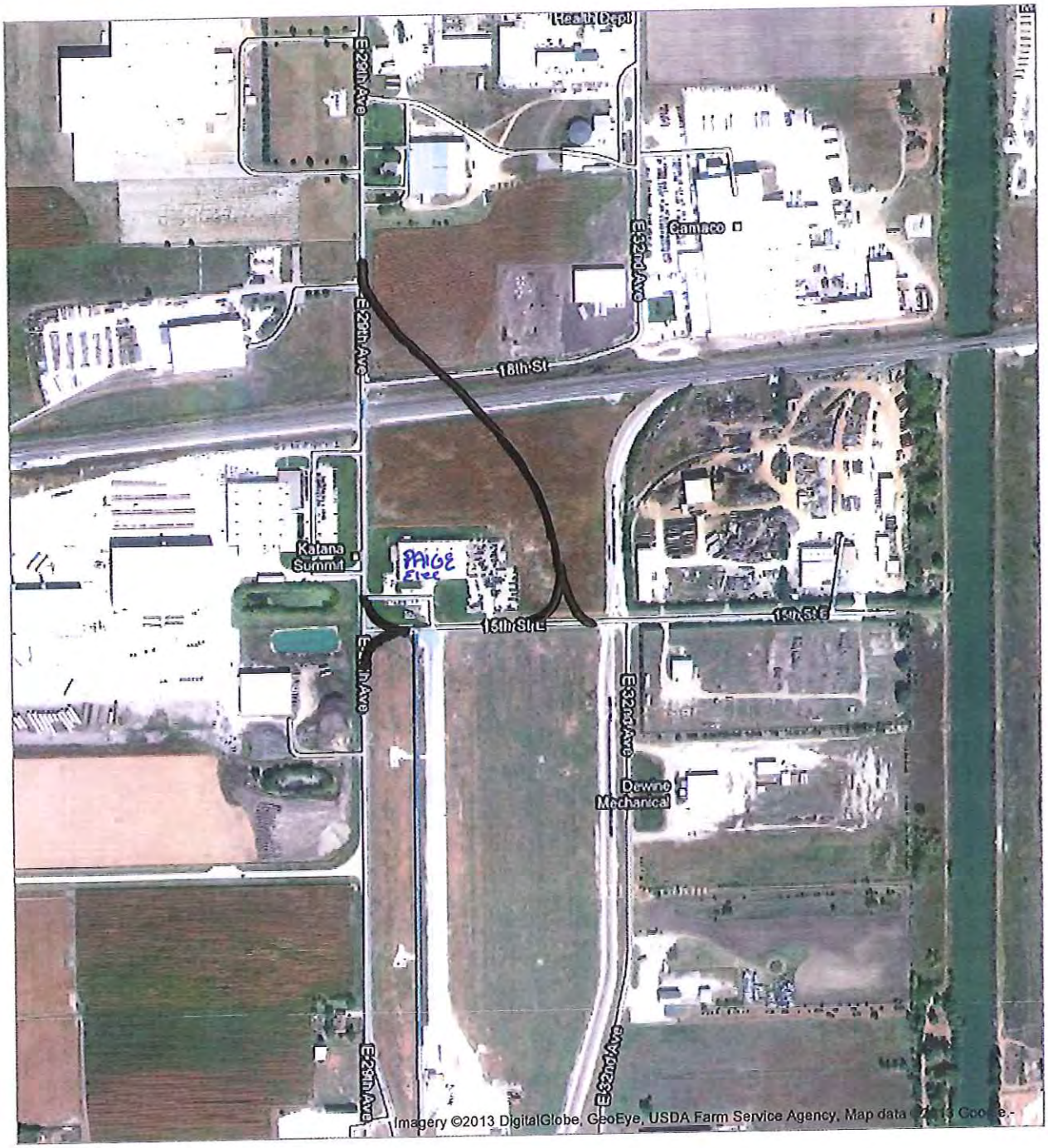

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FELSBURG HOLT & ULLEVIG

Columbus East Viaduct
Project No. RRZ-71(33)-5057(9), CN 32190
Stakeholders Meeting
March 5, 2013

Your attendance is appreciated. Please fill in the following information.

Name	Organization	Phone #	Email
Matt McFadden	FHU	402-445-4405	matt.mcfadden@fhueng.com
Rick Haden	FHU	402-438-7532	rick.haden@fhueng.com
Kevin Strudthoff	Valmont	402-563-9318	kevin.strudthoff@valmont.com
Neal Suess	Loup Power District	402-564-3171	nsuess@loup.com
Dave Bell	Loup Power "	"	dbell@loup.com
Steven Dewald	ADM	402-562-5006	steve.dewald@adm.com
Craig Potthast	ADM	402-564-6353	craig.potthast@adm.com
Dan Smith	ADM	402-564-6353	dan.smith@adm.com
Louis Lutjelusche	ADM	402 562 5039	louis.lutjelusche@adm.com
Mike Westfall Logistics	ADM	402-562-5048	mike.westfall@adm.com

FELSBURG HOLT & ULLEVIG

connecting and enhancing communities

March 15, 2013

PHONE CALL DOCUMENTATION

Project Name: Columbus East Viaduct
FHU Reference No. 112308-01

Subject: Phone Call with Bob Niedbalski, Paige Electric (402-563-3545)

Date of Conversation: March 15, 2013

In attendance: Bob Niedbalski, Paige Electric and Kyle Anderson, FHU

I spoke with Bob Niedbalski, Executive Vice President of Manufacturing at Paige Electric. They are located immediately south of the UPRR mainline tracks, on the east side of East 29th Avenue. Previous, FHU provided a copy of the preliminary concepts that were presented at the Public Meeting and at the Stakeholder's Meeting on March 5, 2013. These materials consisted of Alternative #1 – Existing Alignment and Alternative #2 – East Offset Alignment.

Bob asked about the lack of an alignment that was offset to the west. I told him that these were come preliminary concepts only, and that it didn't preclude the evaluation of other alignments. Initially, the thought was to shift the alignment to the east to provide room for the frontage road connections on the west side. He is concerned about how close the road would come to their building. Both Paige Electric and Columbus Steel Supply have their buildings closest to the road, yet that's the direction the offset alignment went.

He explained their daily operations and how they utilize their two driveways for access and circulation. The driveway on East 29th Avenue is used for employees and visitors to access the parking lots. Trucks also enter their facility using this driveway, travel straight through the parking lots, turn south, then back into their loading docks. When leaving, they pull straight out and turn right onto 15th Street to get back to East 29th Avenue. He stressed the need to maintain two driveways to provide the access and circulation they need for their operations.

Bob mentioned that they own all of the property between 15th Street and the UPRR mainline, and that he sold some property to UPRR when they added the 3rd main line track. He's not opposed to a circulation road providing better access, if that's what is needed to make things work.

He would like to see some concept ideas on how to maintain the access and circulation they need, and still handle the heavy truck traffic associated with ADM. He asked how the process would move forward. I told him that we are taking the input received at the public meeting and the stakeholder meetings to refine the concepts to address concerns. We'll then set up another meeting with the area stakeholders to review those refinements. I told him that we would develop

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a concept with the alignment shifted to the west side of East 29th Avenue for comparison and evaluation with the other alternatives. We will be scheduling another meeting in mid April

These phone call notes were prepared by Kyle Anderson (Felsburg Holt & Ullevig). Please contact me at kyle.anderson@fhueng.com or 402-445-4405 for corrections or clarifications.

Columbus Area Chamber of Commerce
Transportation Committee
April 17, 2013
Chamber office

Present: Dennis Grennan, Jim Scow, Fred Liss, Lloyd Castner, Sheryl Barry, Neil Jensen, Whitey Walgren, Louis Pofahl, Mike Rowe, Jr., Heidi Loop, Fred Bellum, Bob Niedbalski, Don Heimes, Steve Dewald, Dan Smith, Dwayne Smith, Jim Holmberg, Fred Garbers, Rick Zubrod, K.C. Belitz

Call to Order at 12:14pm by Dennis Grennan

Federal – Louis reported that the budget and immigration are the top issues in D.C. this week.

E. 29TH AVENUE VIADUCT: Dennis Grennan reviewed the study of transportation access to the east industrial site. This study included not just rail but also roads in the area. With that background, Dennis introduced Fred Liss with the Platte County Highway Dept.

Fred distributed a hand-out showing two potential lay-outs of the E. 29th viaduct. This currently includes a 3-lane design.

Currently preliminary design and environmental studies are underway on the project.

The NDOR baseline is 50,000 daily exposures to consider a viaduct. E. 29th Avenue currently has 296,000. This makes it a high priority for Union Pacific and NDOR. As a result, Fred said Platte County is moving forward as quickly as possible.

Fred said the purpose and need for the project is outlined on the committee's hand-out.

Platte County is trying to keep the project within the confines of E. 29th Avenue, without needing to make too many improvements on other area roads or structures. As a result, Fred said either a temporary crossing would be needed during construction or the viaduct would need to be off-set from the current avenue. Fred said UP and NDOR were not in favor of a temporary crossing due to the cost.

Fred said U.P. and NDOR are in favor of an offset alignment, but he doesn't know which direction.

Bob said he is concerned about the alignment to the east because it comes very close to Paige Electric's building. He is also concerned about the elimination of one of his entrances.

Fred said there was not a lot of public input received at the open house, which allows the designers to work more directly with stakeholders in the area.

Fred said with an offset design, he does not know if E. 29th Avenue would have to be closed for any time during construction. He said E. 44th Avenue would probably be the only option for detour traffic and that would likely require roadway improvements and temporary traffic signals on the highway to handle the expected traffic. These aspects could be part of the project funding.

Don suggested the design should consider a 4-lane viaduct. Fred said the county's consultant is aware of potential traffic growth.

Steve Dewald said stakeholders' concerns are the ability to run their businesses during construction and good access when it's done. He said ADM is not satisfied that the plan today is yet the best possible solution on those two points.

Lloyd asked if the project should be designed with a 4-lane configuration from the beginning. Fred said the environmental study footprint today would accommodate that. Fred said he felt Platte County would generally be supportive of a four-lane design. Don and Lloyd encouraged Platte County to think in terms of a four-lane viaduct from the beginning.

Fred believes the project is on-track for 2016 construction start. This assumes a final environmental document by November of this year.

Dennis asked that the viaduct planning be done in conjunction with potential development of the east industrial site. Fred assured the group that he will make sure the county's consultant is up-to-date with any information related to the industrial site.

Jim asked if the project will include improvements at Highway 30 and E. 29th Avenue. Fred said this project does not include that work, but it will have to be considered.

Adjourned: 1:00pm

Next meeting: May 15, 12:00pm, New World Inn

Rick.Haden

From: Kyle.Anderson
Sent: Friday, April 19, 2013 6:58 AM
To: Steve.Dewald@adm.com; Steve.Otten@adm.com; David.Rosendahl@adm.com; louis.lutjelusche@adm.com; kevin.strudthoff@valmont.com; bniedbalski@paigeelectric.com; huskstl@megavision.com; dbell@loup.com; mmaguire@columbussteelsupply.com; jkoepke@sidumpr.com; dbell@loup.com; nsuess@loup.com; craig.potthast@adm.com; dan.smith@adm.com
Cc: Fred Liss; Matt.McFadden; Rich Robinson; Amy.Zlotsky; Anthony.Baumert; Rick.Haden; Jane Cromwell
Subject: RE: Columbus East Viaduct- Stakeholder Meeting

East 29th Avenue Stakeholders,

We would like to have another Stakeholder meeting to discuss the access and circulation alternatives associated with the proposed East 29th Avenue viaduct over the UPRR mainline. We have developed some additional concepts based on our previous discussions. The meeting will be held on Thursday, April 25, 2013 at 10:30 am at the ADM Training Facility, located at the northwest corner of East 29th Avenue and East 8th Street. If you are unable to attend this meeting or have a representative present, let us know and we can schedule a phone call or a separate meeting to discuss the concepts and get your input.

I will send a separate meeting invitation shortly.

Kyle

Kyle A. Anderson, PE, PTOE

Felsburg Holt & Ullevig
Connecting and Enhancing Communities

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MEETING NOTES **April 25, 2013**

Columbus East Viaduct- CN 32190
FHU Reference No. 112308-01

Stakeholder Meeting # 2
ADM Training Facility
East 29th Street & 8th Avenue
Columbus, NE

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1. Kyle Anderson led self introductions of those in attendance (see sign-in sheet) and thanked them for coming.

2. Rick Haden outlined previous work, meetings, and input received to date including:
   2.1. Meeting held with NDOR & UPRR on February 25, 2013.
   2.2. NDOR Interagency meeting held on February 25, 2013- State & federal review agencies
   2.3. Stakeholder meeting and discussions were held on March 5, 2013.
   2.4. Public meeting was held March 5, with public comments allowed up to March 20, 2013
   2.5. Additional input and discussions following meetings (UPRR, ADM & Paige Electric).
   2.6. Discussion of the project also took place at Columbus Chamber of Commerce Transportation Committee Meeting April 17, 2013.

3. Kyle then provided a project status update since the last stakeholder meeting:
   3.1. Topographic Survey has been completed.
   3.2. Preliminary Concept Plans- Alternatives 1 & 2 (On & Off-Alignment East) have been expanded to include other alternatives based on input from last stakeholders meeting.
   3.3. Primary design controls identified to date include truck access to ADM & Valmont as well as profiles (3-5%) to accommodate truck maneuvers.
   3.4. Access during construction is essential concern– A temporary railroad crossing offset to the west would cost $700,000 just for the railroad flashers, gates, and panels plus utility relocation and temporary costs. The alternative would involve an E. 44th Avenue detour with pavement upgrades & potential environmental considerations.

4. Rick listed some of the design parameters including:
   4.1. UPRR has indicated that the current track configuration and spacing with Mainline, Sidings, & Spurs will need to be accommodated plus a future additional mainline track to the north of the existing mainline for a total clear span of 4 tracks.
   4.2. A vertical clearance of minimum 23’ 4” must be maintained from the top of the existing and proposed rails.
   4.3. Horizontal clearances of 25’ minimum must be provided from the centerline of future closest track to closest pier/footings. Railroad access roads will also need to be provided on both sides of the tracks.
   4.4. The preliminary typical bridge and roadway section pending the traffic engineering report is anticipated to be three lanes (2 SB, 1 NB) with shoulders and no pedestrian walkways.

4.5. All existing utilities will need to be relocated outside of future structure footprint to accommodate placement of piers.

5. Matt McFadden, Kyle & Rick then presented 7 alternatives (attached) and led a group discussion of the pros and cons of each. They mentioned that various components involving alignment of the bridges and access / circulation could be mixed and matched in certain areas:

   Alternative 1- This On Alignment concept requires a closure of E. 29th Avenue for the majority of construction schedule with a detour to a temporary crossing about 100' west of E. 29th or to E. 44th Avenue. Some impacts on both sides of existing roadway.

   Alternative 2 - Offset Alignment to the east avoids closure during most of the construction schedule. This alternative would have fairly tight turns for trucks on south side of tracks and would have E. 18th Street passing under the viaduct.

   Alternative 3 - Offset Alignment to the east similar to Alternative 2 but with wider turns for trucks and circulation access to Valmont along east and north side of Paige Electric passing under the viaduct.

   Alternative 4 - Offset Alignment to the west addresses concerns of Paige Electric and Columbus Steel with Alternatives 2 & 3 being too close to their operations. The alignment attempts to avoid encroaching on Valmont's employee parking lot and holding ponds.

   Alternative 5 - This concept is similar to Alternative 4 shifting the roadway west and provides connections to Valmont under the bridge. It also takes E. 29th Avenue west of the ADM training building creating an offset alignment at E. 8th Street. A new east-west roadway would be provided in one of two ways between E. 29th Avenue and E. 32nd Avenue in lieu of taking E. 18th Street under the viaduct.

   Alternative 6 - This depicts a concept submitted by Steve Dewald (ADM) after the last Stakeholder meeting. It requires a 5% grade on the north leg of the intersection of E. 15th Street which is steep for trucks negotiating turns with a load.

   Alternative 7 – This concept is an Offset alignment clear west of Valmont Industries which would allow it to be constructed while traffic remains on E. 29th Avenue.

In the discussion the following comments were made by stakeholders:

1- There appeared to be unanimous consensus that alternatives 2 & 3 were similar and would not be acceptable to Paige Electric and Columbus Steel due to the proximity to their office buildings located near the front of their properties.
2- The alignment south of the tracks in Alternative 5 would create an undesirable situation at E. 8th Street requiring trucks entering / exiting ADM's main gate to negotiate two turns.
3- The alignment of Alternative 5 north of the tracks would be an improvement with the direct east-west alignment of the connection to E. 32nd Avenue preferred by Columbus Steel Supply's representative.
4- Alternative 6 would create an undesirable situation of shifting loads for turning trucks at the intersection of E. 15th Street given the 5% downgrade. Fred Liss also indicated that

this breaks the continuity of the county road network by placing a severe jog in E. 29th Avenue.

5- It was noted that Alternative 7 would require rebuilding a portion of E. 12th Street and E. 29th Avenue. It would also create an undesirable situation at E. 8th Street requiring trucks entering / exiting ADM's main gate to negotiate two turns. It would also impact access and circulation around US Highway 30 resulting in the need to reconstruct the medians and provide frontage roads. It also creates a jog in the county road network.

6- Consideration should be given to making E. 29th Avenue a 4–lane roadway rather than a 3-lane roadway.

6. Kyle outlined the next steps in the process:
   6.1. Begin extensive environmental field work beginning in May.
   6.2. Complete a detailed traffic report including 20-year future forecasts.
   6.3. Utilizing the traffic report and public/stakeholder input to screen down to 2-3 options and refine further the remaining concepts.
   6.4. Meet again with NDOR Interagency group (May 28, 2013).

FELSBURG HOLT & ULLEVIG

Job Title Columbus East Viaduct By KAA Date 4-25-13 Job No.

Subject Stakeholder Mtg. Checked Sheet of

Name	Company	Phone	Email
Kyle Anderson	FHU	402-445-4405	kyle.anderson@fhueng.com
Hollie Olk	Platte County	562-9703	hollie.olk@plattecounty.com
Ronald Pfeifer	" "	920-2139	RPfeifer@frontiernet.net
Steve Dewald	ADM	562-5006	steve.dewald@adm.com
Fred Liss	Platte Co. Hwy	563-4909	pchwy@megavision.com
WADE Pfeifer		920-0706	
DAN SMITH	ADM	564-6353	dan.smith@adm.com
Louis Lutjelusche	ADM	564-6353	Louis.Lutjelusche@adm.com
Lloyd Coulson	Retired		
MIKE ROWE SR	HUSKER STEEL	564-3271	HUSKSTL@MEGAVISION.COM
Mike Maguire	Lol. Steel	564-2853	mmaguire@columbussteelsupply.com
Jim Snow	PLATTE Co.	563-1491	Jim Snow @ yahoo.com
Kevin Strudthoff	Valmont	942-3408 / 563-9318	kevin.strudthoff@valmont.com
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Craig Potthast	ADM	402-564-6353	Craig.potthast@adm.com
Dave Rosendahl	ADM	402-564-6353	david.rosendahl@ADM.COM

FELSBURG HOLT & ULLEVIG

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May 16, 2013

MEETING MINUTES

Project Name: Columbus East Viaduct, CN 32190
FHU Reference No. 112308-01

Subject: Stakeholder Meeting with Bob Niedbalski, Paige Electric Office

Date of Meeting: May 14, 2013

In attendance: Bob Niedbalski, Paige Electric, Fred Liss, Platte County and Rick Haden, FHU

Rick Haden gave an overview of the seven alternatives presented at the stakeholders meeting on April 25th which Bob could not attend due to a travel commitment.

Alternates 1 and 2 are refinements of the initial two concepts presented at the public meeting on March 5, 2013. Alternative #1 – Existing Alignment would allow Paige to operate similar to today while Alternative #2 – East Offset Alignment, and Alternative 3 – East Offset without loop around Valmont, would both crowd Paige's building and parking lot and would have serious impacts.

Rick then presented Alternatives 4 & 5, alignments offsetting E. 29th Avenue to the west to address concerns raised by both Paige Electric and Columbus Steel Supply. Rick mentioned the alignments shift the roadway as far to the west as possible while avoiding the holding ponds on Valmont's site and the electric substation north of the tracks across from Columbus Steel Supply. Bob found these alternatives to be more acceptable than the first three.

Rick reviewed Alternative 6 on a diagonal to the east of Paige Electric. Fred mentioned that this alternative was proposed by ADM to provide a more direct connection to their facilities but compromises the continuity of the county road network for the other users.

Bob was not in favor of that alignment and mentioned that Paige is developing plans for a possible addition to their building which would extend up to 150 feet east of the current building. Their storage yard would need to be relocated a similar distance. Rick indicated that FHU will add that to the base plans.

Rick presented Alternative 7 which was a straight north-south alignment west of both Valmont and Husker Steel. This would have virtually no impact on Paige's operation but adds to the county road network. Fred mentioned that Alternatives 6 & 7 may not address the Purpose and Need for the project.

Bob gave a tour of the Paige facility and explained how they utilize their two driveways for access and circulation, with the driveway on East 29th Avenue used for employees and visitors to access

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the parking lots. Large trucks also enter their facility using this driveway, but travel straight through the parking lots, turn south, then back into their loading docks to load and off-load materials. He stressed the need to maintain two driveways to provide the access and circulation they need for their operations. The east driveway to the storage yard could potentially be combined with the truck dock access by providing a driveway parallel to E. 15th Street and a gate in the fence along the west side of the storage yard.

Bob seemed pleased to see some concept ideas on handling the heavy truck traffic associated with ADM while maintaining the access and circulation for Paige Electric and the other E.29th Avenue road users. He indicated that he generally favored Alternative 4.

Fred and Rick indicated that they will be setting up another meeting with the area stakeholders to review refinements to the two or three most reasonable and feasible alternatives. Bob will be notified of the meeting.

These meeting notes were prepared by Rick Haden (Felsburg Holt & Ullevig). Please contact me at rick.haden@fhueng.com or 402-438-7530 for corrections or clarifications.

FELSBURG HOLT & ULLEVIG

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May 16, 2013

MEETING MINUTES

Project Name: Columbus East Viaduct, CN 32190
FHU Reference No. 112308-01

Subject: Stakeholder Meeting at CAMACO Office

Date of Meeting: May 14, 2013

In attendance: Mike Niemann- General Manager and Bill McCann -Manufacturing Engineering Manager of CAMACO, Fred Liss, Platte County and Rick Haden, FHU

Fred Liss gave an overview of the purpose and need for the E. 29th Avenue Project which both Mike and Bill supported.

Fred indicated that since the public meeting held at AG Park on March 5, 2013 was lightly attended by the public it is assumed that there is not any controversy with the project. The project team is therefore focused on reaching out to the area industries potentially benefited as well as impacted by the project.

Rick Haden gave an overview of the seven alternatives presented at a stakeholders meeting on April 25th with representatives of the area industries potentially impacted by the project. Alternates 1 and 2 are refinements of the initial two concepts presented at a public meeting on March 5. Alternative #1 – Existing Alignment would require a temporary crossing or a detour to E. 44th Avenue. Alternative #2 – East Offset Alignment, and Alternative 3 – East Offset without loop around Valmont, would both allow construction without the temporary crossing or detour. Both of these would crowd Paige Electric and Columbus Steel's buildings and parking lots and would have serious impacts. Rick pointed out that each of these concepts includes a connection along the west side of E. 29th Avenue and under the new viaduct to access E. 18th Street.

Rick presented Alternatives 4 & 5, alignments offsetting E. 29th Avenue to the west to address concerns raised by both Paige Electric and Columbus Steel Supply. Rick mentioned the alignments shift the roadway as far to the west as possible while avoiding the holding ponds on Valmont's site and the electric substation north of the tracks across from Columbus Steel Supply. He indicated that these alternatives were more acceptable to Paige and Columbus Steel than the first three. While Alternative 4 is similar the first three north of the tracks, Alternative 5 introduces two distinct circulation road concepts connecting E.29th Avenue to E. 32nd Avenue without going under the new viaduct. These would allow the viaduct structure to be shortened saving significant cost.

Mike and Bill thought that the direct east-west connection north of Columbus Steel would be beneficial to their employees. They noted that there is some current cut-thru traffic that is traveling

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across the back of Columbus Steel in that general path already. Few employees seem to travel south to use E.18th Street. Rick mentioned that this east-west circulation road could also be mixed with the various alternatives south of the tracks.

Rick reviewed Alternative 6 on a diagonal to the east of Paige Electric. Fred mentioned that this alternative was proposed by ADM to provide a more direct connection to their facilities but compromises the continuity of the county road network for the other users. Alternative 6 shows a similar circulation treatment as Alternative 5 north of the tracks.

Rick then presented Alternative 7 which was a straight north-south alignment west of both Valmont and Husker Steel. This would have virtually no impact on adjacent industries and their operation but requires frontage roads and median work in US-30 and adds to the county road network. Fred mentioned that Alternatives 6 & 7 may not address the Purpose and Need for the project.

Mike and Bill indicated that they favored the concept showing a direct east-west connection between E. 29th Avenue and E. 32nd Avenue since it would be provide another option for their employees to safely enter US-30 at the E.29th Avenue traffic signal. They indicated that they have already adjusted their day shift to 6:45 AM – 3:15 PM in order to avoid the Behlen shift traffic from 7:00 AM – 3:30 PM.

Fred and Rick indicated that they will be setting up another meeting with the area stakeholders to review refinements to the two or three most reasonable and feasible alternatives. CAMACO will be notified of the meeting.

These meeting notes were prepared by Rick Haden (Felsburg Holt & Ullevig). Please contact me at rick.haden@fhueng.com or 402-438-7530 for corrections or clarifications.

Columbus
City of Power & Progress

Columbus Area Chamber of Commerce

P.O. Box 515, 753 33rd Avenue • Columbus, Nebraska 68602-0515
Phone: (402) 564-2769 • Fax: (402) 564-2026
Email: chamber@megavision.com • Website: www.thecolumbuspage.com

October 17, 2013

Platte County Board of Supervisors
Chairman Jerry Micek
2610 14th St.
Columbus NE 68601

Supervisors:

The Columbus Area Chamber of Commerce Transportation Committee would like to relate information to you regarding the proposed viaduct on E. 29th Avenue.

Since the early stages of consideration of this project in 2008, the Transportation Committee has been interested and involved in seeing progress made on this important viaduct. We share your concern with the safety risk posed by such a high level of traffic, particularly truck traffic, across the mainline of Union Pacific tracks.

As a result of that on-going involvement with the project, the committee became aware that there was some discussion regarding the number of lanes to be constructed. In light of the committee's concerns about safety and also efficient traffic flow in this critical traffic corridor, we held a series of discussions about this question in our monthly committee meetings. Subsequently, volunteers on the committee conducted a survey of nine Chamber-member businesses/organizations that would be affected by the viaduct construction to gather their input.

In summary, the results from our member survey show strong support for construction of a four-lane viaduct on E. 29th Avenue.

The only negative response to construction of the viaduct related to the alignment of the proposed viaduct impacting that business' property. Certainly the Columbus Area Chamber strongly advocates that design and location of the viaduct be planned to reduce negative impacts on our members in that region. This concern includes providing convenient access to these businesses so they can continue to conduct business in an efficient manner.

Four of the nine businesses that responded projected an increase in traffic volume across that rail crossing. None projected a decrease. Significantly, the Columbus Economic Council is pursuing a strategy to develop land southwest of the crossing as an industrial site, which has the potential to dramatically impact traffic counts. Clearly the survey results point to increased traffic and thus increased exposure to safety hazards until the viaduct is complete. Further, the increased traffic would seem to suggest the reasonable plan of action is to design and build the viaduct with four lanes.

The Transportation Committee believes there is a clear need for the viaduct on E. 29th Avenue and provides these survey findings for your use in designing and constructing the most effective structure for today and in the future.

Sincerely,

Dennis Grennan
Transportation Committee Chair

K.C. Belitz
President

RESPONDENTS: Husker Steel, Paige Electric, Si-Dump'r, ADM, Columbus Steel, Paraclipse, Valmont, CMI, Columbus Economic Council

What do you project for traffic generated by your business in 5 years?
200 trucks/week
Increase of 20-30%
5% increase
5-10 vehicles per day
50 inbound/outbound trucks per day + 225 employees
100 trips per day
No significant change from today

What do you project for traffic generated by your business in 10 years?
Increase of 40%
5% increase
10-15 vehicles per day
100 inbound/outbound trucks per day + 300 employees
100 trips per day
No significant change from today
A large user could increase traffic 500-1,000 vehicles and 50-100 trucks per day

Do you see any negative impacts from construction of a four-lane viaduct as compared to a 3-lane viaduct on E. 29th Avenue?
No – we need it today so trucks don't block my drive
No more negative with a 4-lane than a 3-lane viaduct
Don't know of any negative impacts
No, if they build west of the existing avenue – no room on the east
None
May require more land from our plant and possible relocation of retention ponds
Do not foresee any negative impact
No, need the four lanes regardless of how it is marked to begin

Do you support construction of a four-lane viaduct on E. 29th Avenue?

Yes, and do it now	No	Yes
Yes	Yes	Yes, absolutely
Don't know	Yes	

Any other thoughts or comments to be relayed to the Platte County Board of Supervisors?
The quicker, the better
Concerned about safe access to the building for employees and business associates
Appears the railroad deliberately blocks the crossing 30-45 minutes when switching, maybe to force the viaduct issue?
Need for viaduct is urgent
Condition of E. 29th Avenue is degrading rapidly; we anticipate it won't be rebuilt until the viaduct installation but are concerned if it will remain in suitable condition until then

FELSBURG HOLT & ULLEVIG

connecting and enhancing communities

April 7, 2014

RE: Columbus East Viaduct
Platte County
RRZ-71(33), CN 32190

Dear East 29th Avenue Stakeholder:

Platte County has a proposed railroad grade separation project near East 29th Avenue on the east edge of Columbus. Platte County has hired an engineering consultant team consisting of Felsburg Holt & Ullevig and Kirkham Michael to assist with the design efforts and environmental studies. The area of East 29th Avenue from US Highway 30 to East 8th Street is in need of roadway improvements to enhance railroad crossing safety as well as reduce traffic congestion and associated delays due to conflicts between trains and increasing 29th Avenue traffic, primarily trucks.

East 29th Avenue provides a critical link for trucks providing direct access to adjoining industries and is frequently interrupted by high speed trains across the UPRR tracks.

As a key stakeholder in the immediate project area, your input is particularly important. We would welcome the opportunity to share concept refinements with you since our last stakeholders meetings. We have therefore scheduled a stakeholder meeting for area industries and businesses to review refined concepts, preliminary environment study results, and discuss background on your individual operations. The information you provide will greatly assist us in not only determining a preferred grade separation design over the UPRR corridor but also other critical features including access, circulation, and potential detours during construction.

We will be holding an area Stakeholder Meeting on Tuesday, April 22nd at 1:00 PM at the ADM Training Building (use east entrance) at the northwest corner of East 29th Avenue and East 8th Street. If you are unable to have a representative at this meeting you may contact Rick Haden at (402) 445-4405 to ask questions or provide input.

We look forward to receiving your input.

Sincerely,

Rick Haden
Associate
Felsburg Holt & Ullevig

Columbus East Viaduct
Platte County
Project No. RRZ-71(33) CN 32190
Private Stakeholders

Name	Industry / Company	Phone #	Email
Steve Dewald	ADM -Plant Manager	402- 562-5006	steve.dewald@adm.com
Dan Smith	ADM	402-564-6353	dan.smith@adm.com
Craig Potthast	ADM	402-564-6353	craig.potthast@adm.com
Louis Lutjelusche	ADM- Transportation Manager	402- 562-5039	louis.lutjelusche@adm.com
Bob Niedbalski	Paige Electric- General Manager	402-563-3545	bniedbalski@paigeelectric.com
Mike Rowe	Husker Steel	402-564-3271	huskstl@megavision.com
Mike Maguire	Columbus Steel Supply	402-564-2853	mmaguire@columbussteelsupply.com
Kevin Strudthoff	Valmont Industries, Inc.	402-563-9318	kevin.strudthoff@valmont.com
Dave Bell	Loup Power District	402-564-3171	dbell@loup.com
Neal Suess	Loup Power District	402-564-3171	nsuess@loup.com
Mike Westfall	ADM	402-562-5048	mike.westfall@adm.com
Jennifer Koepke	Sidump'r Trailer – General Manager	402-582-4830	jkoepke@sidumpr.com
Mike Niemann	CAMACO- General Manager	402-563-8843	mniemann@columbus.camacollc.com
Bill McCann	CAMACO- Manufacturing Engr. Manager	402-564-3211 Ext. 305	bmccann@columbus.camacollc.com
R. Brad Harse	Paraclipse - President	402-563-3625	rbh@paraclipse.com

Columbus East Viaduct
Platte County
Project No. RRZ-71(33) CN 32190
Private Stakeholders

Don O'Connor	Industrial Engineering	402-564-1383	oconnor@iecompany.com

MEETING MINUTES

Columbus East Viaduct- CN 32190
FHU Reference No. 112308-01

Stakeholder Meeting April 22, 2014
ADM Training Facility
East 29th Street & 8th Avenue
Columbus, NE

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1. Kyle Anderson began the meeting with self introductions (see attached sign in sheet).

2. Kyle provided a summary of activity since the last stakeholder meetings a year ago (April 25, 2013) including:
   - Follow-up meetings with Paige Electric & Camaco on May 14, 2013
   - Meeting with County Road & Bridge Committee on August 12, 2013
   - Meeting with County Road & Bridge Committee on November 5, 2013
   - Meeting with County Road & Bridge Committee on April 22, 2014

3. Tony Baumert provided a project environmental status:
   - Have completed all the environment investigations, including Haz Mat Phase II. The Phase II results showed some soil contamination that needs to be recognized in design and construction. Any removals of soil or groundwater on the project must be handled properly.
   - Have received decision regarding wetlands from USACE, which were determined to be non-jurisdictional under each concept.
   - Have completed and received approvals for Noise Analysis, Environmental Justice, Cultural Resources, and T&E.
   - There do not appear to be any significant differences as far as environmental impacts between the build concepts.
   - FHU is proceeding with the Draft Preliminary EA document and hopes to submit in early May to NDOR for their review and comments.

4. Rick Haden led a discussion of the project design. He indicated that the five previous build concepts have been narrowed down, primarily based on stakeholder input, to Concept 3 (attached). It has surfaced to the top based on traffic analysis, access and circulation, roadway design, constructability, and environmental investigations to date. Some of the key features of this concept mentioned:
   - Alignment offset to the west staying just east of the Valmont holding ponds
   - Circulation road on the north connecting E. 29th Avenue to E. 32nd Avenue
   - Circulation road on the south under the viaduct to provide access to Valmont.
   - Preliminary Typical Bridge & Roadway Section (see attached: Three lanes (2 SB, 1 NB) - Shoulders No Pedestrian Walkways since there are no existing sidewalks and
   - The project also includes the closure of the E.14th Avenue at-grade crossing in addition to the E. 29th Avenue crossing. Dave Bell asked if that closure was necessary. Rick responded that it was part of the funding agreement with UPRR & NDOR. That closure will provide a clear uninterrupted UPRR corridor from E. 44th Avenue to downtown Columbus after the Columbus Viaducts are complete.

5. It was then opened up to discussion and comments from stakeholders present
   - Jerel Engel of Industrial Engineering did not see the need for the east-west connection to E. 32nd Avenue and was concerned about the traffic cutting through. Jerel also stated that he was not aware that Benesch had permission to be drilling on their property and didn't know until they were

already underway. Mike Maguire of Columbus Steel also did not see a need to extend the road beyond their front access.

- Rick explained the benefit would be to allow those vehicles wishing to go west on US 30 to enter the highway at the traffic signal at E. 29th Avenue rather than taking chances making a left turn at E. 32nd Avenue. He traced the alternate route which was considered. That alternate route would require a longer structure to allow vehicles to use E. 18th Street to go under E. 29th Avenue and access the median break on the west side. Drivers would then have to make a left turn to go north on E. 29th Avenue rather than making a right turn.
- ADM representatives discussed their current flow and the flow under Concept 3. Their main concern was the crossing of trucks leaving the east gate turning west on E. 8th Street across the entering trucks southbound through the center inbound entrance. After further discussion it was agreed that this could not be prevented since the outbound trucks are going to follow the most direct route.
- Bob Niedbalski of Paige Electric asked that they be allowed to keep their access to their parking lot to separate cars and trucks. Rick responded that should not be a problem since access would be on the frontage road.
- ADM discussed the location of their four wellheads between E. 29th Avenue and E. 32nd Avenue. They agreed to provide a copy of their well and utility plans to assist with designing around them.
- Valmont indicated that they would provide whatever drawings they have on their retention ponds. Valmont has also been considering an expansion of their employee parking lot towards E. 29th Avenue. Under Concept 3 there would not be enough room for them to expand east but they could expand to the south where the access is being closed.
- There was discussion about the need for pedestrian accommodations and the consensus was that it would not be a good idea to encourage pedestrians given the number of loaded trucks using E. 29th Avenue. It was noted that there are currently no sidewalks in the area.
- The condition of the existing pavement was expressed as a concern by all. Terry Wicht indicated that Platte County was also concerned on the amount of panel rocking that has occurred over the past couple of months but they do not have a solution at this time.
- There was a question as to funding and would there be private assessments for the improvements constructed on private property. The answer was no, since the improvements shown are necessary to leave each property whole with regard to access and circulation.

6. Next steps-
   - Kyle outlined the tentative schedule. The team will meet again with the NDOR Interagency on April 30, 2014.
   - Submit Preliminary Draft Environmental Assessment - First Week of May.
   - Plan in Hand before the end of June
   - Comment sheets were handed out and requested that further comments would be welcome if submitted to Fred Liss by Friday, May 2, 2014.

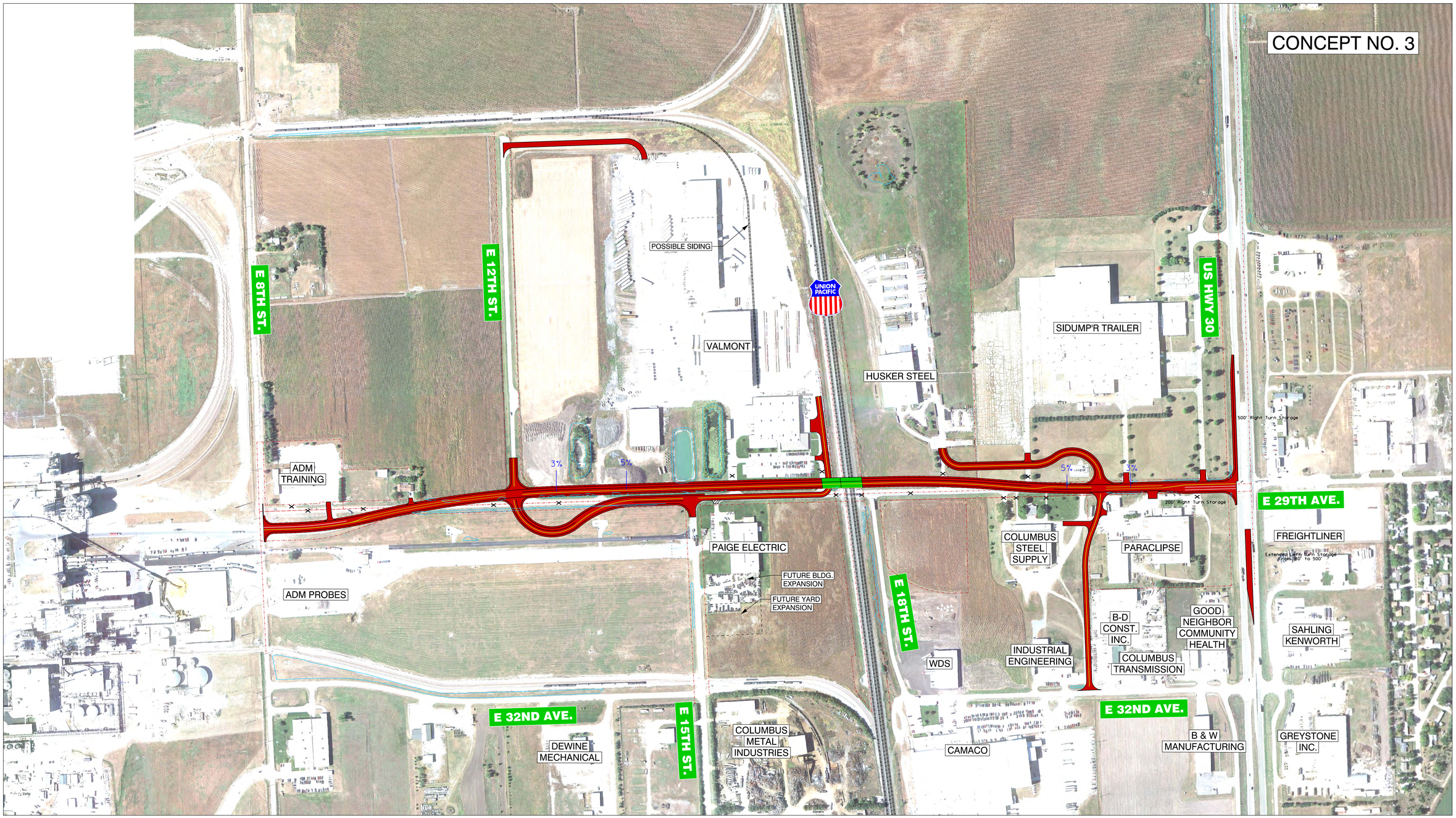
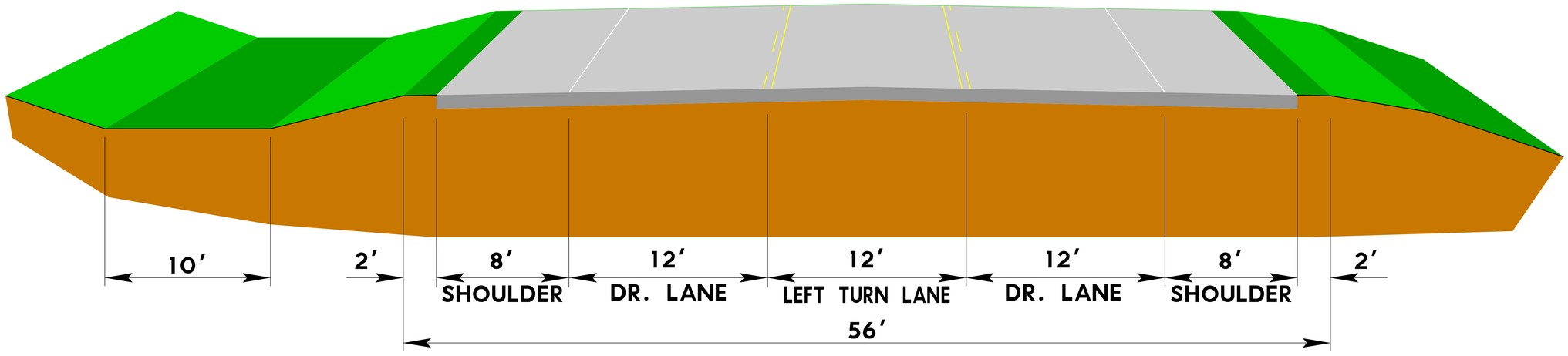
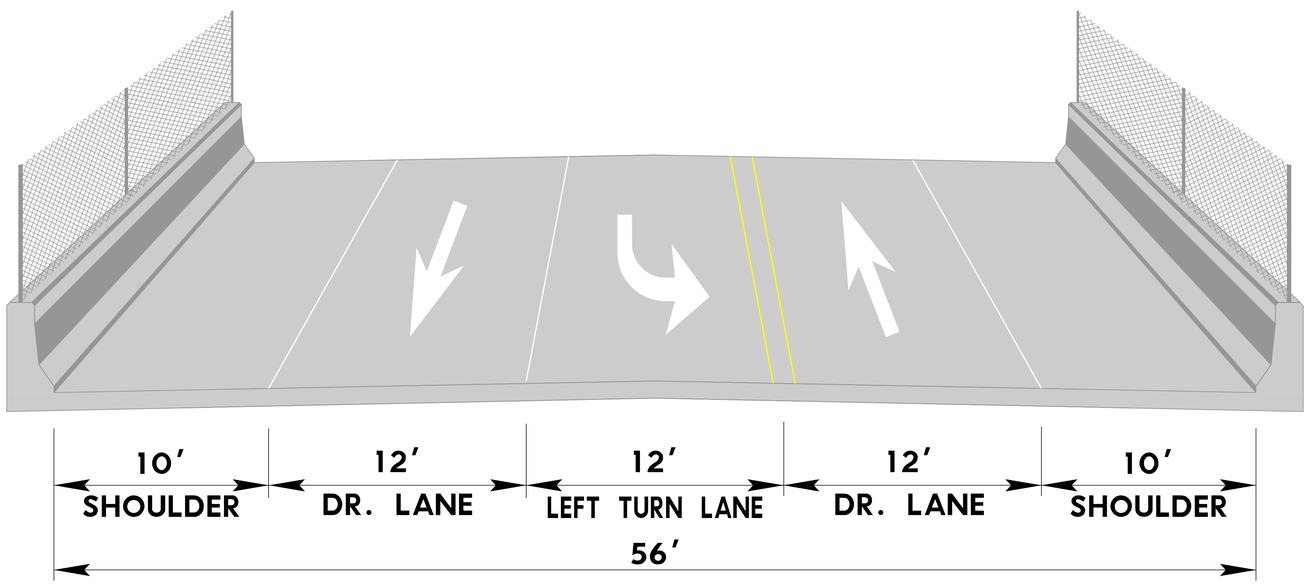


Figure 6
Viaduct offset to the West
Columbus East Viaduct
Platte County, NE



ROADWAY SECTION



BRIDGE SECTION

Columbus East Viaduct
Platte County
Project No. RRZ-71(33) CN 32190
Private Stakeholder Meeting April 22, 2014

Name	Industry / Company	Phone #	Email	
Steve Dewald	ADM -Plant Manager	402- 562-5006	steve.dewald@adm.com	✓
Dan Smith	ADM	402-564-6353	dan.smith@adm.com	✓
Craig Potthast	ADM	402-564-6353	craig.potthast@adm.com	✓
Louis Lutjelusche ✓	ADM- Transportation Manager	402- 562-5039	louis.lutjelusche@adm.com ✓	✓
Bob Niedbalski	Paige Electric- General Manager	402-563-3545	bniedbalski@paigeelectric.com	✓
Mike Rowe ✓	Husker Steel	402-564-3271	huskstl@megavision.com	✓
Mike Maguire ✓	Columbus Steel Supply	402-564-2853	mmaguire@columbussteelsupply.com	✓
Kevin Strudthoff ✓	Valmont Industries, Inc.	402-~~563-9318~~ 562-1700	kevin.strudthoff@valmont.com	✓
Dave Bell ✓	Loup Power District	402-564-3171	dbell@loup.com	✓
Neal Suess	Loup Power District	402-564-3171	nsuess@loup.com	
Mike Westfall	ADM	402-562-5048	mike.westfall@adm.com	
Jennifer Koepke Sidump'r	Sidump'r Trailer – General Manager	~~402-582-4830~~ 402-564-1400	jkoepke@sidumpr.com	✓
Mike Niemann	CAMACO- General Manager	402-563-8843	mniemann@columbuscamacollc.com	
R. Brad Harse	Paraclipse - President	402-563-3625	rbh@paraclipse.com	
Donald O'Connor	Industrial Engineering	402-564-1383	oconnor@iecompany.com	✓
Jerry Eisenmenger Flat River		402-562-6858	MENGER@FLATRIVERCORP.COM	

Columbus East Viaduct
Platte County
Project No. RRZ-71(33) CN 32190
Private Stakeholder Meeting April 22, 2014

Brian Dolesh	Alter Trading – Facility Manager	402-564-2855	Brian.Dolesh@altertrading.com	
Jerel Engel	Operational Manager	402-564-1383	engel@IECompany.com	✓
Wayne Morris	Loup Power Dist.	402 564 3171	Morris@loup.com	✓
Glen Stoltenmier	NDOR	402-479-3875	Glen.Stoltenmier@nebraska.com	✓
Jerry Cummings	Flat River	402-562-6888	MENGER@FLATRIVERCORP.COM	✓
Nathan VanBeheren	ADM	402-465-3215	nathan.vanbeheren@adm.com	✓
Dave Rosendahl	ADM	402-564-6353	david.rosendahl@adm.com	✓

Columbus East Viaduct
Platte County
Project No. RRZ-71(33) CN 32190
Consultant Team & Agency Representatives April 22, 2014

Name	Firm	Phone #	Email	.
Kyle Anderson	Felsburg Holt & Ullevig	402-445-4405	kyle.anderson@fhueng.com	✓
Matt McFadden	Felsburg Holt & Ullevig	402-445-4405	matt.mcfadden@fhueng.com	✓
Rick Haden	Felsburg Holt & Ullevig	402-438-7530	rick.haden@fhueng.com	✓
Tony Baumert	Felsburg Holt & Ullevig	402-438-7530	Anthony.Baumert@fhueng.com	✓
Glen Steffensmeier	Nebraska Department of Roads	402-479-3845	glen.steffensmeier@nebraska.gov	✓
Danny J Wichd	Platte Co Hwy	402-563-4900	pchwy1@megavision.com	✓

NDOR
Nebraska Department of Roads

Public Comment Form
Stakeholder Meeting

RRZ-71(33)-5057(9) COLUMBUS EAST VIADUCT, CN 32190
1:00-2:30 PM April 22, 2014
ADM Training Building, Columbus, Nebraska

Please submit your written questions and comments by May 2, 2014.

To the attention of: Fred Liss
Platte County Highway Department
2610 14th Street
Columbus, NE 68601

Email: pchwy2@megavision.com
Phone: (402)563-4909
Fax: (402)563-0305

This is to notify Platte County of Paige Electric's objection to eliminating our access driveway off of East 29th Avenue under concept 3 of the proposed viaduct; we cannot have our dock entrance as the only access point to our facility. I explained my concerns for safety, access and traffic flow into our loading docks at the stakeholder meeting on Tuesday, April 22, 2014. Rick Haden and his associates from Felsburg Holt & Ullevig present at the meeting saw no problems leaving our driveway as it currently is. Please consider this our formal notification to the County.

Paige Electric Co., L.P.

The Department of Roads appreciates your participation. Your comments and questions will be taken into account by the respective and appropriate department staff.

Thank you for participating.

Please print clearly

Name: Bob Niedbalski
Address: 1679 East 29th Avenue
City, State, Zip Code: Columbus, NE 68601
Phone Number: 402-563-3545
Email Address: bniedbalski@paigeelectric.com

Public Comment Form
Stakeholder Meeting

RRZ-71(33)-5057(9) COLUMBUS EAST VIADUCT, CN 32190
1:00-2:30 PM April 22, 2014
ADM Training Building, Columbus, Nebraska

Please submit your written questions and comments by May 2, 2014.

To the attention of: Fred Liss
Platte County Highway Department
2610 14th Street
Columbus, NE 68601

Email: pchwy2@megavision.com
Phone: (402)563-4909
Fax: (402)563-0305

With the current proposed design of the E 29th Ave viaduct it will be most convenient for the loaded feed trucks exiting ADM's north feed pad to leave by going west on 8th St and turning north on to East 29th ave. Please consider the radius needed for these turning trucks in the design where East 29th ave ties into 8th Street

The Department of Roads appreciates your participation. Your comments and questions will be taken into account by the respective and appropriate department staff.

Thank you for participating.

Please print clearly

Name: Steve Dewald
Address: 3000 E. 8th St
City, State, Zip Code: Columbus, NE 68601
Phone Number: 402-562-3000
Email Address: steve.dewald@adm.com

Fred Liss

From: Fred Liss [pchwy2@megavision.com]
Sent: Monday, April 28, 2014 2:41 PM
To: 'Von Behren, Nathan'
Subject: RE: Columbus viaduct

Nathan:
Sorry I did not get back to you sooner but I have been out of town for seminars. Most of the area that you make reference to will most likely be used for an approach fill section for the viaduct. So the base will have to be reworked for foundation stability. The Feds do not advance funding . They reimburse after the project has been completed to their satisfaction.
If you have any more questions or comments, please feel free to let me know.

Fred Liss
Platte County Highway
402-563-4909

-----Original Message-----
From: Von Behren, Nathan [mailto:Nathan.VonBehren@adm.com]
Sent: Tuesday, April 22, 2014 2:37 PM
To: 'pchwy2'
Subject: Columbus viaduct

Would there be any ability to get an advancement of funds for this project to redo the road from the crossing to 12th street ? Or will the base of it need to be changed prior to construction of the viaduct?

Nathan VonBehren
ADM
402-465-3215

Fred Liss

From: Don O'Connor [oconnor@iecompany.com]
Sent: Wednesday, April 23, 2014 9:50 AM
To: pchwy2@megavision.com; kyle.anderson@fhueng.com
Subject: Industrial Engineering Co. Comments For Stakeholder Meeting RRZ-71(33)-5057(9) Columbus East Viaduct, CN 32190

Good Morning Jerry and Kyle,

Unfortunately, I was unable to attend the Stakeholder meeting yesterday, but Jerel Engel was at the meeting in my place to represent Industrial Engineering Co. From Jerel's description of Plan #3, I understand that part of the Plan #3 is to have a street on the north end of our property, as well as Columbus Steel Supply's (Mike Maguire) property connecting East 29th Ave to East 32nd Ave. This part of Plan #3 is not acceptable to Industrial Engineering Co. and we will not give permission for or sell any of our property for the purpose of a road connecting East 29th Ave to East 32nd Ave. If possible could we get a copy of the Plan #3 for our records?

Also If you would happen to know what company was hired to take soil samples or drill test holes for this project, I would like to have their company name and a contact person's phone number, we was never asked permission to take samples on our property and I would like to express my displeasure to this company that they did the drilling on our property without our permission.

Thank You,
Don

--
Don O'Connor
President/General Manager
Industrial Engineering Co.
2070 E 32nd Ave.
Columbus, NE 68601
402-564-1383 Phone
402-564-1077 Fax

Rick.Haden

From: Kyle.Anderson
Sent: Wednesday, April 23, 2014 11:35 AM
To: Don O'Connor
Cc: Rick.Haden; Matt.McFadden; pchwy2@megavision.com; Anthony.Baumert
Subject: RE: Industrial Engineering Co. Comments For Stakeholder Meeting RRZ-71(33)-5057(9) Columbus East Viaduct, CN 32190
Attachments: ALT 3 Final small.pdf

Hi Don,

Attached is a copy of the Concept #3 that we discussed at yesterday's meeting. As we discussed on the phone, please limit the use and distribution of this drawing for internal purposes only. If others ask for a copy, please direct them to us so we'll have knowledge of the copies that are in circulation. The purpose of this is to limit the number of "preliminary" concepts that are floating around before the final version is developed. The draft of the Environmental Assessment will be submitted to NDOR for review and comment in early May, so we aren't too far away from having a final version of the recommended concept.

Also as we discussed yesterday, we received a lot of input regarding the potential connection between East 29th Ave. and East 32nd Ave. along the north side of your property. Based on that discussion and your comments below, we will be modifying that portion of the plan to remove that connection. We will be working directly with Columbus Steel to develop an access and circulation plan for access to their property from East 29th Avenue.

The soil samples that were recently taken in the project area were for a Phase II Hazardous Materials study that was required for the project by NDOR and FHWA. The contract for that work was between the County and company named Benesch, with offices in Lincoln and Omaha. Since we were not involved in that part of the project, I don't have any contact information at Benesch to provide. When Fred gets back, he should be able to give you that information. The contact from NDOR that was at the meeting yesterday did say that Benesch was required to contact property owners prior to their drilling on private property. They should be able to answer your questions about that.

Let us know if you have any other questions or comments as you review the concept. Thanks again for your input.

Kyle

Kyle A. Anderson, PE, PTOE

11422 Miracle Hills Drive, Suite 115
Omaha, NE 68154
Phone: 402.445.4405
Fax: 402.445.4394
Mobile: 402.680.1325
kyle.anderson@fhueng.com

-----Original Message-----
From: Don O'Connor [mailto:oconnor@iecompany.com]
Sent: Wednesday, April 23, 2014 9:50 AM
To: pchwy2@megavision.com; Kyle.Anderson

Subject: Industrial Engineering Co. Comments For Stakeholder Meeting RRZ-71(33)-5057(9)
Columbus East Viaduct, CN 32190

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Thank You,
Don

--
Don O'Connor
President/General Manager
Industrial Engineering Co.
2070 E 32nd Ave.
Columbus, NE 68601
402-564-1383 Phone
402-564-1077 Fax

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