

**FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT
FOR**

Columbus Viaducts Project
Platte County, Nebraska

RRZ-TMT-6065(5), RRZ-TMT-6061(8) and RRZ-TMT-6059(7)
Control Numbers: 31924, 31925, and 31927

The Federal Highway Administration (FHWA) has determined that the Columbus Viaduct Project will have no significant impact on the human environment or natural environment. This Finding of No Significant Impact (FONSI) is based on the attached Final Environmental Assessment, which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an EIS is not required. The FHWA takes full responsibility for the accuracy, scope, and content of the attached Environmental Assessment.

7/12/2011

Date



Division Administrator

FINAL ENVIRONMENTAL ASSESSMENT

Columbus Viaducts Project Platte County, Nebraska

Project Nos. RRZ-TMT-6065(5), RRZ-TMT-6061(8), and RRZ-TMT-6059(7)
Control Nos. CN 31924, CN 31925, and CN 31927

7/12/11
Date of Approval


For City of Columbus, Nebraska

7/12/2011
Date of Approval


For Nebraska Department of Roads

7/12/2011
Date of Approval


For Federal Highway Administration

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This environmental assessment has been prepared in accordance with provisions and requirements of 42 USC 4332(2)(c) and 23 CFR 771, 772, and 774, relating to the implementation of the National Environmental Policy Act (NEPA) of 1969. Project Sponsor Signature indicates verification that the content of the document/errata sheet attached accurately reflects the scope of this project.

Abstract: The City of Columbus, Platte County, Nebraska, is proposing to construct three grade-separated crossings and close six at-grade crossings along the Union Pacific Railroad mainline within City limits. A pedestrian overpass will be constructed at 18th Avenue, and vehicular viaducts will be constructed at 12th Avenue and 3rd Avenue. Vehicular at-grade crossings will be closed at 25th, 21st, 18th, 12th, and 3rd Avenues, and a pedestrian at-grade crossing will be closed at 17th Avenue.

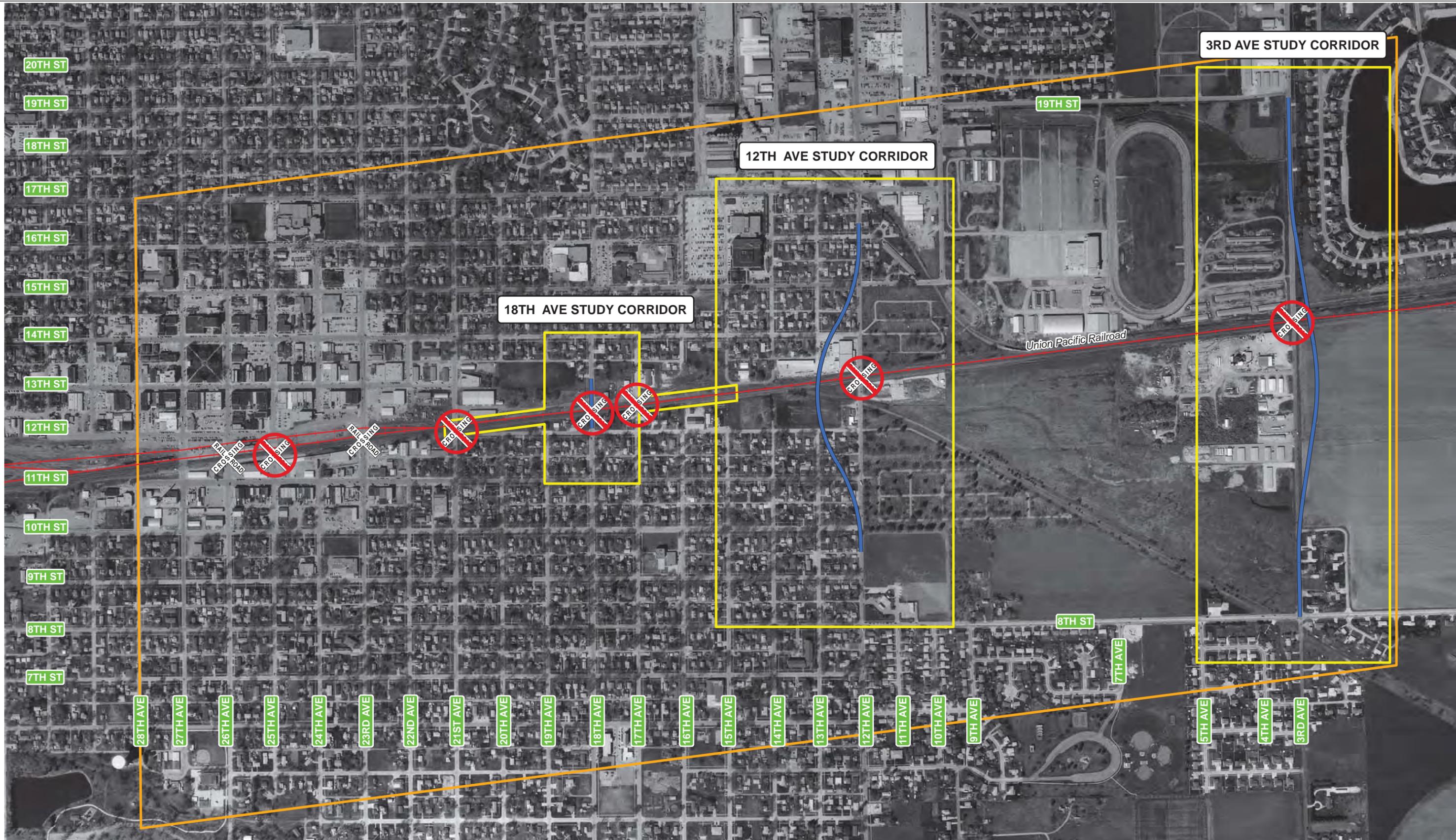
SUMMARY FINAL ENVIRONMENTAL ASSESSMENT – ERRATA TO DEA

A Draft Environmental Assessment (DEA) for the Columbus Viaducts Project was developed by the City of Columbus in coordination with the Nebraska Department of Roads (NDOR) and approved by the Federal Highway Administration (FHWA) on April 5, 2011. The DEA was made available for public and agency comment on April 27, 2011. The DEA was available at the following locations:

- City of Columbus Website at <http://www.columbusne.us/viaduct/index.htm>
- Columbus Public Library, 2504 14th Street, Columbus, Nebraska
- NDOR District 3 Office, 408 N 13th St, Norfolk, Nebraska
- NDOR District 2 Office, 302 Superior Street, Lincoln, Nebraska
- FHWA Nebraska Division, 100 Centennial Mall North, Room 220, Lincoln, Nebraska
- NDOR Headquarters, 1500 Highway 2, Lincoln, Nebraska

A Public Hearing for the DEA was held on Thursday, May 26, 2011, from 6:00 to 8:00 p.m. at the Columbus City Council Chambers. The purpose of the public hearing was to present the preliminary design and DEA for the proposed construction of two vehicular viaducts and one pedestrian overpass in Columbus (the Columbus Viaducts Project). **Figure 1** shows the location of the Study Area, locations of the proposed viaducts and pedestrian overpass, and locations for closing six at-grade crossings. Representatives of the City, NDOR and FHWA were available at the hearing to answer questions and receive comments regarding the proposed project. The meeting was attended by approximately 50 members of the public as well as City, NDOR and FHWA staff and representatives of the City's design consultant, HDR. The comment period for written and verbal comments on the DEA concluded on June 10, 2011.

This Final Environmental Assessment – Errata Sheet (FEA) includes comments from the Public Hearing and any other written comments received during review of the DEA and provides responses to comments received. Additionally, this FEA provides revisions to the EA where necessary for content corrections; no changes were made to the DEA as a result of public, agency, or tribal comments. This document, in conjunction with the April 5, 2011, DEA document, constitutes the completed National Environmental Policy Act (NEPA) Document.



Legend

- Existing At-Grade Crossings
- Crossing Closure
- Railroad
- Proposed Viaduct
- Study Area
- Study Corridor

Aerial Photography - Western Air Maps, 2007



Preferred Alternative

Columbus Viaducts
Platte County, Nebraska
Environmental Assessment



DATE
June 2011

FIGURE
1

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ACRONYMS, ABBREVIATIONS, AND SHORT FORMS

AST	aboveground storage tank
BMPs	best management practices
BTEX	benzene, toluene, ethylbenzene, and xylenes
CFR	Code of Federal Regulations
City	City of Columbus, Nebraska
dB	decibel
DCE	dichloroethene
DEA	Draft Environmental Assessment
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
NAICS	North American Industry Classification System
NDEQ	Nebraska Department of Environmental Quality
NDOR	Nebraska Department of Roads
Nebraska DNR	Nebraska Department of Natural Resources
Nebraska SHPO	Nebraska State Historic Preservation Office
NGPC	Nebraska Game and Parks Commission
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSHS	Nebraska State Historical Society
OSHA	Occupational Safety and Health Administration
Project	Columbus Viaducts Project
PRRIP	Platte River Recovery Implementation Program
REC	recognized environmental concern
ROW	right-of-way
SWPPP	Stormwater Pollution Prevention Plan
TCE	trichloroethylene
TCLP	Toxicity Characteristic Leaching Procedure

UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USDA NRCS	United State Department of Agriculture Natural Resources Conservation Service
USFWS	U.S. Fish and Wildlife Service
VOCs	volatile organic compounds

CHAPTER 1

CONTENT CORRECTIONS/ERRATA
TO THE DEA

CHAPTER 1 CONTENT CORRECTIONS/ERRATA TO THE DEA

This chapter lists corrections (errata) made to the DEA of the Columbus Viaducts Project to correct errors and omissions and to incorporate new information developed since the DEA was prepared. Text with ~~striketrough~~ formatting was removed from the DEA; text with *italic* formatting was added.

1.1 UNIVERSAL CHANGES

All uses of "would" in the DEA have been changed to "will," and any use of "would" with regards to the contractor's responsibilities has been changed to "shall."

1.2 CHAPTER 1

Revisions to page 1-5 of Section 1.5.1, Delay.

The following revisions correct erroneous calculations of current and future delays for traffic on project roadways caused by incorrect conversions. Although hours of delay noted in the DEA were higher than the correct numbers listed below, the at-grade rail crossings in Columbus still cause substantial daily delay for the travelling public.¹ The daily delay, coupled with the other project needs identified in the DEA, clearly demonstrate a need for the Project.

Daily vehicular delay (the total time of crossing blockages) was estimated for the crossings based on the existing and projected vehicular and train traffic, as shown in Table 1-3. At present, a combined total of almost ~~3,000~~ 43 hours of vehicular delay occurs each day at the crossings listed in Table 1-3. As noted above, train volumes are projected to increase in the future, and UPRR is planning future construction of one or two additional tracks by the year 2035. If these crossings remain open in 2035, the delay is expected to *more than* double if UPRR has added one track (triple track) and increase ~~more than two and one half~~ *approximately* 2.75 times if UPRR has added two tracks (quadruple track).

¹ The correct delay numbers were presented at the public hearing on May 26, 2011 and there were no comments from the public concerning the lower delay values.

**Table 1-3
Daily Existing and Future Delay**

At-Grade Crossing	Existing (2007) (Hours)	Future (2035)	
		Triple Track (Hours)	Quadruple Track (Hours)
26 th Avenue	350 5.3	1,000 14.9	1,250 18.7
25 th Avenue	175 2.0	250 3.3	313 4.1
23 rd Avenue	613 9.1	1,000 15.3	1,250 19.1
21 st Avenue	263 3.0	375 5.1	469 6.4
18 th Avenue	350 5.6	625 10.2	781 12.7
12 th Avenue	700 11.2	1,375 21.5	1,719 26.9
3 rd Avenue	438 6.2	1,375 22.9	1,719 22.9
TOTAL	2,888 42.4	6,000 93.2	7,500 116.5

1.3 CHAPTER 2

Content revisions were not necessary for this chapter.

1.4 CHAPTER 3

Revisions to Chapter 3 figures.

Figure 3-3 was updated to reflect changes in businesses within the 12th Avenue corridor.

Figure 3-4 was updated using 2010 aerial photos that show the additional buildings constructed along 3rd Avenue for Deckert Enterprises LLC and Viking Storage. Impacts to these businesses are discussed under revisions to Section 3.9.3, Impacts of Build Alternative [Economics].

Revisions to page 3-5 of Section 3.2.1, Existing Conditions [Land Use].

Minor revisions were made to this section resulting from changes to the existing environment.

A 10-acre lot at the northeast corner of 12th Avenue and 8th Street is zoned as commercial. Cuzzins Corner, a convenience store with a gas station and car wash operates at this location. There ~~are two~~ *is one* small businesses along the west side of 12th Avenue: ~~Apria Healthcare and~~ the Horn Shop ~~are~~ *is* located north of 12th Street.

Revisions to page 3-5 of Section 3.5.3, Impacts of Build Alternative [Social].

The source and date of traffic counts were added to Table 3-2 of this section.

**Table 3-2
Traffic Volumes**

Road	Crossing Type	2007 Average Daily Traffic	2035 Average Daily Traffic
33 rd Avenue	Grade Separated	22,200	22,200
26 th Avenue	At-grade	2,080	4,600
23 rd Avenue	At-grade	3,570	7,300
12 th Avenue	At-grade	4,400	7,400
3 rd Avenue	At-grade	2,440	6,300
East 14 th Avenue	At-grade	1,400	1,400

Source: *The 2007 Average Daily Traffic volumes were developed from traffic counts conducted by HDR Engineering in July 2007 and September 2007. The 2035 Average Daily Traffic volumes were developed by HDR Engineering and documented in HDR Engineering, Inc. (HDR), February 18, 2009, Memo regarding Traffic Analysis with the Construction of the 3rd [Avenue] and 12th [Avenue] Viaducts;*

Revisions to pages 3-26 [18th Avenue Study Corridor], 3-27 [12th Avenue Study Corridor], and 3-28 [3rd Avenue Study Corridor] of Section 3.6.3, Impacts of Build Alternative [Environmental Justice].

The description of visual impacts for all residents was changed from minor to moderate. The DEA incorrectly identified impacts as minor based on the impact after proposed mitigation; the impacts should have been identified as moderate, reflecting the pre-mitigation impact.

[pg. 3-26] Visual impacts ~~would~~ will be ~~minor~~ moderate for all residents and will be mitigated with aesthetic treatments for the proposed structures (see Section 3.21, Visual). Visual impacts ~~and~~ would not disproportionately affect racial minority populations.

[pg. 3-27] Visual impacts ~~would~~ will be ~~minor~~ moderate for all residents and will be mitigated with aesthetic treatments for the proposed structures (see Section 3.21, Visual). Visual impacts ~~and~~ would not disproportionately affect racial minority and vulnerable age group populations.

[pg. 3-28] Visual impacts ~~would~~ will be ~~minor~~ moderate for all residents and will be mitigated with aesthetic treatments for the proposed structures (see Section 3.21, Visual). Visual impacts ~~and would~~ will not disproportionately affect racial minority populations.

Revisions to page 3-38 of Section 3.9.1, Existing Conditions [Economics].

Minor revisions were made to this section resulting from changes to the existing environment.

Table 3-6 lists the businesses, including category and North American Industry Classification System (NAICS), that are present in each of the study corridors as well as near the proposed crossing closure locations.

**Table 3-6
Businesses in the Study Corridors/Closed Crossing Locations**

Business	NAICS Code	Business Description	Corridor/ Crossing	Business Category (Impulse or Destination)
Central Business District		Mix of retail, eating and drinking places, churches, office buildings, banking, and city services	25 th Avenue	Multiple impulse and destination businesses
Continental Oil Company	454311	Heating oil dealer	21 st Avenue	Destination
Bill's Tires	423100	Motor vehicle parts dealer	21 st Avenue	Destination
Green Door Self Store	531130	Miniwarehouse and self-storage unit lessor	18 th Avenue	Destination
Ebner Siding and Construction	238170	Siding contractor	17 th Avenue	Destination
Woerth Cabinet and Storage	337110	Wood kitchen cabinet manufacturer	17 th Avenue	Destination
The Horn Shop	811490	Musical instrument sales and repair	12 th Avenue	Destination
Apria Health Care	423450	Medical and hospital equipment wholesale	12th Avenue	Destination
Midland Resources LLC	493110	General warehousing and storage	12 th Avenue	Destination
Cuzzins Corner	447110	Gasoline station and convenience store	12 th Avenue	Impulse
Morys Haven	623110	Nursing care facility	12 th Avenue	Destination
Central Valley Ag Cooperative	424910	Farm supplies merchant wholesale	3 rd Avenue	Destination
U Lock It Storage	531130	Miniwarehouse and self-storage unit lessor	3 rd Avenue	Destination ¹
Otto Electric	238210	Electrical contractor	3 rd Avenue	Destination
Ferrell Gas	221210	Natural gas distributor	3 rd Avenue	Destination
Storage Options	531130	Miniwarehouse and self-storage unit lessor	3 rd Avenue	Destination ¹
J&B Storage	531130	Miniwarehouse and self-storage unit lessor	3 rd Avenue	Destination ¹
Viking Storage/ Deckert Enterprises LLC	531130	Miniwarehouse and self-storage unit lessor	3 rd Avenue	Destination ¹
3 rd Avenue Storage	531130	Miniwarehouse and self-storage unit lessor	3 rd Avenue	Destination ¹
Husker Storage	531130	Miniwarehouse and self-storage unit lessor	3 rd Avenue	Destination ¹

Table Note:

- ¹ Because of the close proximity and the homogeneous nature of the service offered by the storage facilities, these storage facilities are both a destination and an impulse business. Their customers are intent on finding a storage business. However, the close proximity along 3rd Avenue and the selection of storage businesses could result in the storage facilities being impulse decisions for new customers.

Revisions to page 3-41 of Section 3.9.3, Impacts of Build Alternative [Economics].

Minor revisions were made to this section resulting from changes to the existing environment.

Businesses potentially affected by closure of the 12th Avenue crossing include:

- ***The Horn Shop; ~~Apria Health Care~~; Midland Resources LLC; Morys Haven (destination businesses)*** – Minor impacts on revenue may result from access issues related to out-of-distance travel associated with realignment of the 12th Avenue viaduct and neighborhood road. The viaduct is likely to reduce signage visibility. The destination nature of the businesses may offset access issues for customers, minimizing the potential impact on business revenue.
- ***Cuzzins Corner (impulse business)*** – No impact on revenue is likely. There ~~would~~ will be no access impacts for customers and no impairment of business visibility.

Businesses potentially affected by closure of the 3rd Avenue crossing include:

- ***Central Valley Ag Cooperative; Otto Electric; Ferrell Gas (destination businesses)*** – Minor impacts on revenue are possible. Access issues and out-of-distance travel associated with realignment of the 3rd Avenue viaduct and neighborhood road could reduce customer trips. However, the destination nature of the businesses may offset access issues for customers, minimizing the potential impact on business revenue.
- ***U Lock It Storage; Storage Options; J&B Storage; Viking Storage; (destination businesses)*** – Minor impacts on revenue are possible. Access issues, out-of-distance travel, and reduced visibility of businesses associated with realignment of the 3rd Avenue viaduct and neighborhood roads could result in customers choosing alternate businesses.
- ***Deckert Enterprises LLC (destination business)*** – *this recently constructed building serves as offices for Deckert Enterprises LLC as well as a warehouse for Frito Lay products. The site currently uses a non-standard driveway across the entire frontage of the property to provide access for semi-trailers onto the site (trailers must back from 3rd Avenue). The full frontage driveway does not meet City standards, does not provide safe semi-trailer access, and will not be rebuilt. The 3rd Avenue viaduct improvements will provide a standard driveway for Deckert Enterprises that will allow access for single-unit trucks; however, semi-trailer access will not be possible. Lack of semi-trailer access may limit potential lessees of the warehouse.*
- ***3rd Avenue Storage and Husker Storage (destination businesses)*** – No impact on revenue is likely. There ~~would~~ will be no access impacts for customers and no impairment of business visibility.

Revisions to page 3-42 of Section 3.9.4, Avoidance, Minimization, and Mitigation [Economics].

Minor revisions were made to this section resulting from changes to the existing environment.

Economic impacts *on all businesses except Deckert Enterprises LLC (warehouse lessor)* will be negligible to minor, and no mitigation is proposed. *The City is not proposing any mitigation for Deckert Enterprises LLC related to site circulation impacts because the current driveway does not meet City standards.* Mitigation related to construction access is addressed in the economics discussion in Section 3.22.3.

Revisions to page 3-73 of Section 3.17.4, Avoidance, Minimization, and Mitigation [Archaeological Resources].

The following revisions reflect the need to communicate with Native American tribes regarding archaeological resources.

The preliminary design of the proposed pedestrian overpass and the two vehicular viaducts with their approaches avoids known archaeological sites. In the event that previously unsuspected archaeological remains are uncovered during construction, the contractor ~~would~~ *shall* notify Nebraska SHPO immediately so that the remains can be evaluated and recommendations can be provided for further action (NSHS, September 16, 2008). *Native American tribes will also be notified of unexpected discoveries as appropriate.*

Revisions to Section 3.20, Regulated Materials

A preliminary discussion regarding foundation alternatives was included in the DEA. The following revision markings show the change from impacts identified in the DEA to those identified based on the preliminary foundation design for each of the two foundation alternatives. Revisions were made to portions of the Regulated Materials text on several pages; additionally affected pages are noted below as appropriate.

Revisions to page 3-100 through 3-103 of Section 3.20.3, Impacts of Build Alternative [Regulated Materials].

The following revisions begin at the top of page 3-100.

18th Avenue Study Corridor

In addition to the easements, construction of the foundations for the pedestrian overpass ~~would~~ *will* be required in areas potentially affected by RECs. Two foundation options are being considered to minimize potential impacts on these RECs:

- Spread footing foundation – This type of foundation ~~would~~ *will* consist of a relatively large reinforced concrete mass under each column that could distribute the weight of the structure over a large area. The size of the footing is dependent on the magnitude of the column loads and the geotechnical properties of the underlying soils near the ground surface such as the type of soil material, its shear strength, moisture content, and allowable bearing pressure. For large column loads and weaker supporting soils, the footing size and depth ~~would~~ *will* increase. ~~This foundation type would require large~~

~~excavations that could require acquisition of additional construction easements or permanent ROW beyond the 18th Avenue ROW. Based on the bearing loads of the soils and underlying alluvium, the bottom of the footings should be placed at a depth of 10 feet. Additional excavation (up to 3.5 feet deeper) may be needed to remove clay that extends to a depth of approximately 13 feet. Excavations for the foundations will require, at a minimum, a 1:1 slope – for every foot of depth, the excavation will extend 1-foot horizontally in each direction. Consequently, a 10-foot excavation will extend 10 feet horizontally from each side of the spread footings.~~

Vertical and lateral loads were estimated for the pedestrian bridge columns as part of the preliminary design. Four columns, aligned north to south, will be needed on the north approach ramp. A 17-foot by 15-foot spread footing will be required for each column (see **Figure 2**). A single excavation measuring approximately 118 feet (north to south) by 37 feet (east to west) will be needed for these footings.

The two piers supporting the prefabricated steel truss spanning over the UPRR mainline will each consist of two columns. For a spread footing alternative, the footings for each column of the piers will overlap; consequently, a combined footing will be required measuring 33 feet by 21 feet. Two excavations (one north and one south of the UPRR mainline), each measuring approximately 53 feet by 41 feet, will be needed.

For the south ramp approach, the size of individual spread footings will have overlapped, so a combined mat footing for all the columns will be required. It is estimated that a 37-foot by 60-foot combined footing will be required. An excavation measuring approximately 80 feet by 57 feet will be needed.

An estimated 2,525 cubic yards of excavation will be required for the spread footing foundations.

- ~~Pile-supported foundation – This type of foundation would will consist of either concrete or steel piles measuring approximately 1-foot in diameter or 1-foot square that would will be driven into the ground to the depth of a competent layer of bearing soil. The length of the piles is dependent on the geotechnical properties of the deeper soils. but, at this time, would be expected to be approximately 70 feet long based on soil information provided by previous soil borings for monitoring wells. The piles would be topped with a 5- to 6-foot thick reinforced concrete cap, which, in turn, would support the columns for the pedestrian overpass. The footprint of the reinforced concrete cap would be smaller than for a spread footing foundation option and would be expected to be confined to within the limits of the existing 18th Avenue ROW. The piles will be topped with a 3-foot- thick reinforced concrete cap, which, in turn, will support the columns for the pedestrian overpass. The bottom of the concrete caps will be located at a depth of approximately 4.5 feet.~~

For the columns on the north approach ramp, either a 6-foot by 6-foot or 7-foot by 7-foot pile cap will be required, depending on whether precast concrete piles or steel pipe piles were used. Each pile cap will have four piles under it. The north approach ramp will require a total of four columns and foundations. Each of the excavations for the north approach ramp columns will extend out approximately 17 feet by 17 feet, assuming a 5-foot deep excavation (see **Figure 3**).

The two piers supporting the prefabricated steel truss spanning over the UPRR will each consist of two columns; 6-foot by 6-foot or 7-foot by 7-foot pile caps will be required for

each column. Because of the proximity of these pile caps, a single excavation measuring approximately 34 feet by 17 feet will be required.

For the south ramp approach, pile caps for each of the six columns (arranged in two rows of three columns and caps) will measure either 11 feet by 11 feet or 11.5 feet by 11.5 feet, depending on the type of pile used. The excavated area for each pile cap will be approximately 21 feet by 21 feet (total excavation of approximately 66 feet by 43 feet).

An estimated 443 cubic yards of excavation will be required for the pile-supported foundations.

~~At this time, insufficient geotechnical and foundation design information is available to determine a more precise estimate of the size and depth of either foundation type. Therefore, potential impacts on RECs are estimated for both foundation types. Selection of a preferred foundation method will be determined after additional design information is available to more accurately determine impacts, but prior to finalizing the EA.~~

Potential impacts on RECs were estimated for both foundation types and were used to determine the preferred foundation method to be included in the Preferred Alternative.

The following revisions begin at the fourth bullet on page 3-101.

NOTE: discussion of groundwater and upper and lower aquifers is provided in the DEA on pages 3-54 and 3-88

10th Street Superfund Site

The following paragraphs discuss the potential impacts from construction of the proposed pedestrian overpass on the contamination plumes and remediation program, and the potential impacts of the contamination on construction of the proposed pedestrian overpass.

- *A large excavation will be required for the spread footing foundation option that would will likely extend into the smear zone (contaminated soil at and near the top of the groundwater zone) and could possibly will likely extend into and expose contaminated groundwater where excavation is needed to 13.5 feet (to remove clay material). Exposure of contaminated groundwater will pose a safety and health risk for workers and may require appropriate disposal as a hazardous waste. ~~The footprint of the spread footings would require a large excavation,~~ Excavation would will likely require relocation of the EPA fiber optic cable and water pipeline associated with Extraction Well 04. Additionally, the spread footing foundation will likely require excavation outside of the existing ROW south of the UPRR mainline, east of 18th Avenue. The excavations for the foundations supporting the prefabricated steel truss spanning the UPRR will extend into UPRR ROW and temporary easements will be required.*
- *The pile-supported foundation option would will require a smaller excavation footprint and would will not affect the EPA fiber optic line and water pipeline, or the soil vapor extraction wells. Excavation for the pile caps will be approximately 5 feet deep and the limits of excavation will be within existing ROW with the exception of the piers supporting the prefabricated steel truss spanning the UPRR mainline; excavations for these pile caps will encroach on UPRR ROW and temporary easements will be required. The excavation for the north pier will be approximately 6 to 8 feet north of the EPA fiber optic cable and water line. These items will be designated on the final plans as “Do Not Disturb,” will be marked in the field prior to the start of construction activities, and the*

contractor will be required to avoid impacting them. The pile driven supports ~~would~~ will temporarily displace the contamination plumes in a localized area around the piles. Given the size of the piles (*approximately 1 foot by 1 foot*) as compared to the extent of the contamination plumes, the displacement ~~would~~ will be negligible, *will not cause migration of contaminants between the upper and lower aquifer*, and ~~would~~ will not affect remediation efforts. The presence of the pilings ~~would~~ will negligibly affect future migration of the contaminant plume. Based on preliminary geotechnical borings, *taken in January and February 2011*, indicating a sand layer to a depth of at least 100 feet, ~~the piles would not penetrate the clay layer dividing a confining clay layer is not present between the upper and lower aquifers (Thiele Geotech, Inc., February 24, 2011).~~ The pile caps and other structures ~~would~~ will be located above the groundwater level and ~~would~~ will not affect the contaminant plume. No contaminated soils ~~would~~ will be expected to be excavated or exposed with a pile-supported foundation. The smear zone of contaminated soils near the top of the groundwater zone ~~would~~ will not likely be encountered; however, isolated pockets of contaminated soil could be encountered. Any removal of contaminated soil or groundwater ~~would~~ will temporarily negligibly affect contaminant plumes (based on the size of the excavations and the extent of the contaminant plume); the groundwater ~~would~~ will reach equilibrium a short time after displacement.

The following revisions begin at the second bullet on page 3-103.

Former Deyke and Pollard Oil Site

The following paragraphs discuss the potential impacts from construction of the proposed pedestrian overpass on the benzene contamination plume and the remediation program and the potential impacts of the contamination on construction of the proposed pedestrian overpass.

- The spread footing foundation option *will likely* require excavation outside of existing ROW *south of the UPRR mainline, east of 18th Avenue.* ~~If additional ROW is required, the Deyke Pollard petroleum remediation site may be affected, including additional monitoring wells, soil vapor extraction wells, and the contaminant plume.~~ *Excavation for the spread footings is not expected to affect any additional monitoring wells, the soil vapor extraction system, or the area within the contaminant plume. Isolated pockets of benzene or free product could be encountered during excavation; if benzene or free product are encountered, excavated soil would need to be tested for contaminants and disposed of properly. Due to the higher probability of encountering contaminated soils above the thresholds of hazardous waste associated with this site, all workers would need to complete the 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard course.*
- The pile-supported foundation option ~~would~~ will require a smaller footprint excavation and ~~would~~ will not likely encounter contaminated soil during pile driving based on the latest sampling results and the trends of sample results over the last 3 to 4 years. *Excavations for pile caps will reach a depth of approximately 5 feet (8 to 9 feet above the depth to groundwater).* Pile driven ~~driving~~ supports for the pedestrian overpass could temporarily displace isolated pockets of benzene or free product in a localized area around the piles. Given the extent of any isolated pockets of benzene or free product that could be encountered, the displacement ~~would~~ will be negligible, *will not cause additional contamination of groundwater through intermixing of shallow and deeper aquifers*, and ~~would~~ will not affect remediation efforts. Any removal of contaminated soil or groundwater ~~would~~ will temporarily negligibly affect the benzene plume (based on the

size of the excavations and the extent of the benzene plume); the groundwater ~~would~~ will reach equilibrium a short time after displacement. The presence of the pilings ~~would~~ will negligibly affect future migration of the benzene plume and remediation efforts. The pile caps and other structures ~~would~~ will be located above the groundwater level and ~~would~~ will not affect the contaminant plume.

Based on the preliminary foundation design and associated impacts discussed above, the pile-supported foundation (either concrete piles or steel pipe piles) will have fewer impacts on both the 10th Street Superfund and the Deyke-Pollard Oil sites because pile-supported foundations will minimize removal of potentially contaminated soil and will not impact contaminated groundwater. Both EPA and NDEQ concurred that the pile-supported foundations would have fewer impacts (EPA, June 10, 2011; NDEQ, June 15, 2011). As a result, the pile supported foundations will be included as a required construction technique and will be included as a mitigation measure in this document.

Revisions to page 3-106 through 3-107 of Section 3.20.4, Avoidance, Minimization, and Mitigation [Regulated Material].

Revisions resulting from agency coordination and technical analysis of foundation design were made to this section.

The following revisions begin before the sixth paragraph of page 3-106

The foundation design for the 18th Avenue pedestrian overpass will use pile-supported footings for the bridge foundations. These footings will utilize either concrete or steel piles.

The City will ~~shall~~ continue to coordinate with EPA and NDEQ during final design activities regarding the final pile material selection (concrete or steel) and the final dimensions of the pile-supported foundations, and prior to construction regarding the affect of on-going remediation by EPA and NDEQ on the extent of groundwater contamination. ~~during final design activities.~~ Additionally, the City will include the location of extraction and monitoring wells on the plans, and wells in the vicinity of construction activities will be marked in the field prior to construction activities.

The City ~~shall~~ will inform construction contractors of the presence of Superfund and petroleum remediation sites with a high-risk of contamination, including groundwater contamination, within and near the preliminary impact area for the proposed 18th Avenue pedestrian overpass at a pre-bid meeting. The City will provide the contractor with the most current information from EPA and NDEQ regarding the extent of contamination.

The contractor shall develop and implement a worker health and safety plan addressing the risk associated with encountering contaminated groundwater through both dermal and inhalation exposure. If groundwater is encountered, the contractor shall collect and analyze samples in accordance with NDEQ procedures to determine whether any constituents require disposal as a hazardous waste. If a sample is determined to be a hazardous waste, the contractor shall develop a plan for collecting and disposing of the contaminated groundwater.

The excavation for the north pier for the 18th Avenue pedestrian overpass will be approximately 6 to 8 feet north of the fiber optic cable and water line associated with Extraction Well 04 for the EPA 10th Street Superfund site. ~~To avoid impacts on the water pipeline and fiber optic cable associated with Extraction Well 04, for the 10th Street Superfund site, these components shall be identified by the City during the utility review process, surveyed, and marked on the final design drawings.~~ To avoid impacts, these items will be designated on the final plans as "Do Not Disturb." ~~the~~ The contractor shall mark the location of the pipeline and cable in the field (both

the position and the depth of the cable) prior to construction of the proposed 18th Avenue pedestrian overpass and the associated fencing, and prior to removal of the 25th, 21st, and 17th Avenue at-grade crossings, *and the contractor will be required to avoid impacting the pipeline and cable.*

The construction contractor shall avoid monitoring wells associated with remediation of the former Deyke and Pollard Oil site during construction of the proposed 18th Avenue pedestrian overpass and associated fencing to the extent practicable. Five monitoring wells ~~will~~ ~~would~~ likely require abandonment, and three ~~will likely~~ ~~would~~ need to be replaced in coordination with NDEQ. Replacement of a monitoring well typically costs approximately \$2,000 (replacing three wells ~~would~~ ~~will~~ cost approximately \$6,000). Plugging and abandoning multiple monitoring wells typically costs approximately \$400 per well (plugging and abandoning five wells ~~would~~ ~~will~~ cost approximately \$2,000) (Kennedy/Jenks Consultants, October 26, 2010 – see Appendix B). The final design drawings ~~will~~ ~~shall~~ include information on the well locations that ~~would~~ conflict with construction. The City shall coordinate with NDEQ regarding the need to abandon wells prior to the pre-bid meeting to be held with contractors. The City ~~will contact~~ ~~would coordinate with~~ NDEQ *to coordinate the plugging and abandoning of designated wells by the remediation consultant/contractor in accordance with applicable regulations and drill new wells as needed; at that time, the City and NDEQ will determine which of the two agencies will be responsible for the cost of abandoning and plugging wells.* ~~to have the consultant conducting site remediation plug and abandon the designated wells in accordance with applicable regulations and drill new wells as needed. In a telephone conversation (see Appendix B), the NDEQ project manager for the Deyke Oil Site stated that NDEQ would reimburse the contractor for plugging and abandoning existing monitoring wells affected by construction and for replacement monitoring wells (NDEQ, October 27, 2010).~~ Other monitoring wells within approximately 20 feet of proposed construction that ~~would~~ ~~will~~ not need to be plugged and abandoned shall be marked on final design drawings and in the field prior to construction. These wells shall be avoided during construction.

The following revisions begin at the third paragraph of page 3-107.

As part of ROW compensation (prior to construction), the City and Loup Power District shall coordinate the removal of the two ASTs, fuel pumps, and piping at the Loup Power District building east of 12th Avenue. ~~The City shall pay Loup Power District to move the ASTs and associated piping, and~~ Loup Power District shall be responsible for removal of any contaminated soils and for compliance with handling and disposal requirements. Loup Power District shall move the ASTs and complete any necessary remediation prior to ROW purchase.

Areas known to contain contaminated soils above regulatory cleanup standards will be marked on the construction plans. The construction contractor shall avoid excavation in these contaminated soils. *If excavation is required in areas known to contain contaminated soils, the contractor shall coordinate with the City regarding remediation prior to start of construction excavation.* ~~to the extent practicable.~~ *If previously unknown, but suspected hazardous materials (including contaminated groundwater) are encountered during construction, the contractor shall cease work at that location and shall contact the City engineer to arrange for proper assessment, treatment, or disposal of those materials. The contractor shall decontaminate equipment as needed by rinsing off contamination at the excavation site (the rinse water ~~would~~ ~~will~~ be dilute enough to dispose of in excavation areas or in a sanitary sewer).*

Revisions to page 3-109 of Section 3.21.4, Mitigation [Visual].

The following revisions reflect clarification of required mitigation for visual impacts, beginning after the first full paragraph of the section.

The aesthetic themes and enhancements developed by the Aesthetics Design Working Group will be incorporated into the final design for the viaducts and pedestrian overpass to the greatest extent practicable.

~~The 18th Avenue pedestrian overpass would provide the opportunity for detailed aesthetic treatments because the users would be different from most users for the 12th and 3rd Avenue viaducts. The graphics below were presented to the public and illustrate the types of enhancements planned for the pedestrian overpass. The proposed lighting on the pedestrian overpass would~~ *will* be designed to provide security and visibility of the overpass, but not to flood into or adversely affect the surrounding land uses.

[graphics deleted]

~~Along the 12th and 3rd Avenue vehicular viaducts, context sensitive treatments are proposed for the pier structures, barrier rails, retaining walls, fencing, and lighting to establish an identifiable theme. The graphics below were presented to the public and illustrate the types of enhancements planned for the vehicular viaducts. For example, the~~ *The proposed railing to be used along the 12th and 3rd Avenue viaducts was selected to will* complement the existing railings around the cemeteries. Additionally, along the 3rd Avenue viaduct, new tree plantings ~~are proposed~~ *will* buffer the view from the adjacent residences. ~~Renderings of the proposed aesthetic treatments are shown in Figures 2-4, 2-5, and 2-7.~~

[graphics deleted]

Where at-grade crossings ~~would~~ *will* be closed, visual cues ~~would~~ *will* be provided to indicate that the street ends. In addition to the required signage, improvements such as landscaping at these closings ~~would~~ *will* help define the closing and visually enhance the end of the street where views are intended to be interrupted.

The aesthetic treatments included in the completed structures at 18th Avenue, 12th Avenue, and 3rd Avenue will soften the visual intrusion of large primarily concrete structures by incorporating texture and color through the use of form liners, specialty pier shapes and color staining of concrete elements. Decorative fencing and light standards on the structures will also provide color and variety to the visual landscape. In addition, vegetative plantings will be used in City ROW to shield views of the structures from adjacent residences.

The City will develop an aesthetic treatment plan during final design and will present the plan to the public for review at the design public hearing. The City will coordinate development of the plan with FHWA and NDOR.

Revisions to page 3-115 Section 3.22.3, Impacts of Build Alternative [Construction].

Minor revisions resulting from changes to the existing environment were made to this section.

In the 3rd Avenue study corridor, ~~seven~~ *eight* existing businesses can be accessed from only 3rd Avenue while the remaining businesses can be accessed from other roads. All of the potentially

affected businesses (including self-storage facilities and agricultural cooperative) are destination businesses that ~~would~~ will not be affected by a perceived inconvenience resulting from construction.

Revisions to Section 3.23, Cumulative Impacts

The cumulative impacts discussion was expanded to include discussion of potential cumulative impacts related to future closure of at-grade crossings at 26th and 23rd avenues and construction of a pedestrian overpass at 25th Avenue and a viaduct at 23rd Avenue. This discussion was added based on a comment received from the public.

Revisions to pages 3-120 through 3-123 of Section 3.23.1, Existing Conditions [Cumulative Impacts].

The following revisions begin after the eighth bullet of page 3-120.

In November 2009, reconstruction of the 33rd Avenue viaduct was completed and the viaduct was opened to traffic. The presence of this viaduct, with grade-separated traffic movement, will be considered when evaluating cumulative impacts.

In addition, the City and Platte County are planning the following projects:

- The City plans to construct storm sewers from 22nd to 10th Avenues in the vicinity of 19th and 18th Streets.
- Platte County plans to construct a concrete road within an industrial area near 12th Avenue from US 30 to 17th Street.
- Platte County plans to reconstruct 8th Street from approximately 0.2 mile east of 3rd Avenue to the Loup Power Canal.

As discussed in Section 2.1, the City, in coordination with NDOR and UPRR, has proposed a grade-separation project for 23rd Avenue (*identified as the "second viaduct project"*), with no commitment for construction. The *second viaduct* project would include construction of a pedestrian overpass at 25th Avenue and a vehicular viaduct at 23rd Avenue. Existing at-grade crossings at 26th and 23rd Avenues would be closed as part of this project. This is a separate project of independent utility from the Columbus Viaducts Project; the ~~23rd Avenue second viaduct~~ project is not necessary for the successful construction and operation of the grade-separated structures proposed for 18th, 12th, and 3rd Avenues. Approval of ~~this~~ *the second viaduct* project by Columbus voters is required, but this vote has not yet taken place. ~~Construction of the proposed 23rd Avenue viaduct is considered speculative based on the need for regulatory approvals and substantial funding beyond the commitment of funds for the other grade separation projects. Consequently, the cumulative impacts of this project are not specifically assessed in this EA.~~ *Although a vote is required and substantial funding would be needed, the second viaduct project was considered in the assessment of cumulative impacts based on public comment regarding potential cumulative impacts on traffic circulation. The specific location, design and impacts of the second viaduct project have not yet been determined, consequently, potential impacts of the second viaduct project are only qualitatively addressed.* [Figure 1 of the FEA shows the locations of all existing at-grade crossings within the Study Area and identifies the closures and construction included in the Columbus Viaducts Project].

~~In November 2009, reconstruction of the 33rd Avenue viaduct was completed, and the viaduct was opened to traffic. The presence of this viaduct, with grade separated traffic movement, will be considered when evaluating cumulative impacts.~~

The following revisions begin at the second paragraph of page 3-121.

~~Cumulative impacts of planned development regardless of the proposed pedestrian overpass and vehicular viaducts Project~~ were evaluated for both the No-Build Alternative and the Build Alternative. The key cumulative impact issues associated with the ~~proposed overpass and viaducts Project~~ and other referenced projects were determined to be the following:

- Social resources (public services and facilities, *community cohesion and continuity*, and traffic circulation)
- *Environmental justice*
- Railroads and utilities
- Noise related to rail and traffic changes
- Regulated materials sites
- Visual

The following revisions begin at the sixth bullet of page 3-121.

- Land use – As noted above, land use changes as a result of the Project are not anticipated. Additionally, reasonably foreseeable future projects are not anticipated to result in marked changes in local land use. *The second viaduct project could result in some acquisition of land and conversion to a transportation use, but the land use surrounding the grade separated structures would not be expected to change.*
- Land resources – The topography, soils, geological setting, and mineral resources of the Study Area ~~would~~ *will* be minimally affected by the Project. Borrow ~~would~~ *will* be required for the Project as well as for some of the reasonably foreseeable future projects (*such as the second viaduct project*), but suitable borrow sites are plentiful.

The following revisions begin at the ninth bullet of page 3-121.

- ~~Environmental justice – Although environmental justice populations exist in the study corridors and at the proposed crossing closure locations, no disproportionate impacts from noise, relocations, visual, out of distance travel, or other resources are projected to occur from the Project. Reasonably foreseeable future projects are being planned to benefit all local residents with improved access, services, mobility, and cleanup of contaminated sites. Consequently, no disproportionately adverse cumulative impacts on racial minority, ethnic minority, vulnerable age group, or low income populations are anticipated.~~
- Acquisitions and relocations – Several relocations ~~would~~ *will* be required for the Project. It is possible that a few of the reasonably foreseeable future projects may require relocations, but the different time frames and locations of the projects are not anticipated to cause any adverse cumulative impacts. *The second viaduct project would require acquisition of property for conversion to a transportation use and most likely require some relocations. However, acquisitions and relocations for the two viaduct projects would have no spatial or temporal overlap. The different timeframes of development of the first and second viaduct projects (if the second project is approved by voters, funded, and constructed) minimize the potential for cumulative impacts.*

- Economics – The Project ~~would~~ will result in some economic benefits to the Columbus area from an infusion of construction funding and some minimal impacts from a temporary decrease in tax base; reasonably foreseeable future projects ~~would be~~ are anticipated to have similar effects. *The second viaduct project may have positive or negative economic impacts; however, these impacts would be localized to the area directly affected by the second viaduct project and would not overlap spatially with the first viaduct project.* Impacts of the Project and reasonably foreseeable future projects ~~would~~ will be individually minor as well as cumulatively minor.
- Pedestrian, bicycle, and recreation facilities – The Project ~~would~~ will improve safe transport over the UPRR mainline. Road improvements from reasonably foreseeable future projects, many with associated sidewalks, would also improve opportunities for pedestrian/bicyclist transport. *The second viaduct project would provide an additional grade-separated crossing at 25th Avenue for specific use by pedestrians and bicyclists, and the 23rd Avenue Viaduct would also facilitate pedestrian and bicycle traffic; these additional facilities would benefit pedestrians and bicyclists by providing passage free of train conflicts.* No recreation facilities are known to be affected by the reasonably foreseeable future projects.

Revisions to page 3-123 of Section 3.23.2, No-Build Alternative [Cumulative Impacts].

The following revisions begin at the first bullet of page 3-123.

- Historic properties – The Project as planned ~~would~~ will result in no effect on historic properties for the 18th Avenue and 3rd Avenue components of the Project (*including the Columbus Commercial Historic District*), and no adverse effect on historic properties for the 12th Avenue component of the Project. *The second viaduct project, with construction of the 23rd Avenue viaduct and 25th Avenue pedestrian overpass within the Columbus Commercial Historic District, has the potential to impact the District as well as individually listed properties on the NRHP, or properties eligible for listing on the NRHP. Specific impacts are unknown at this time. The closure of the 25th Avenue at-grade crossing by the Project (“first viaduct project” according to Section 2.1) and construction of the 25th Avenue pedestrian overpass by the second viaduct project would occur in the same area, but would not lead to cumulative historic property impacts because of the no effect determination for the Project. The distance between the 12th Avenue impact area for the first viaduct project (which was determined to have no adverse effect on historic property) and the potential impact area associated with the second viaduct project is approximately 0.6 mile and has no spatial overlap, thus minimizing the potential for any cumulative historic impacts. Consequently, although reasonably foreseeable future projects could affect historic properties, the Project ~~would~~ will not contribute to cumulative impacts.*

The following revisions begin at the second paragraph of page 3-123.

Public Services and Facilities, Community Cohesion and Continuity, and Traffic Circulation

Although the proposed ~~pedestrian overpass and vehicular viaducts~~ Project would not be constructed under the No-Build Alternative, the other projects identified in Section 3.23.1, Existing Conditions, could proceed independently.

Public facilities would be expected to improve with any facility project, however, public services (such as fire, police, and other emergency responses) and access to public facilities would

continue to be adversely affected because of ongoing delays at at-grade crossings. Community cohesion in the City would continue to be high, but the existing UPRR mainline would continue to adversely affect continuity because of traffic delays at at-grade intersections.

The following revisions begin after the second paragraph of page 3-123.

Environmental Justice

Under the No-Build Alternative, existing conditions would continue and existing crossings would remain open. However, delays caused by trains and the potential for train-vehicle crashes and train-pedestrian crashes would increase. The No-Build Alternative would not disproportionately affect racial minority, ethnic minority, vulnerable age group, or low-income populations. Other reasonably foreseeable projects could occur, but the projects are not anticipated to disproportionately impact human health or the environment for any population group; traffic patterns, noise, relocations, visual impacts, out-of-distance travel, and impeded access to public services and facilities would affect all residents in the study corridors and near the proposed crossing closure locations.

Revisions to pages 3-124 through 3-125 of Section 3.23.3, Build Alternative [Cumulative Impacts].

The following revisions begin after the fourth paragraph of page 3-124.

Public Services and Facilities, Community Cohesion and Continuity, and Traffic Circulation

The following revisions begin after the fifth paragraph of page 3-124.

Community cohesion and continuity for areas both north and south of the UPRR mainline, will improve as traffic circulation improves and travel time to public facilities decreases. Increases in travel time for some residents will be offset by safer and more reliable crossings over the UPRR mainline. The second viaduct project would further improve community cohesion and continuity by eliminating extended traffic delays near the downtown business district. Other reasonably foreseeable projects may result in some minor, temporary impacts to continuity during construction but are not be expected to impact cohesion and continuity in the long term.

Environmental Justice

Although environmental justice populations exist in the study corridors and at the proposed crossing closure locations, no disproportionate impacts from noise, relocations, visual, out-of-distance travel, or other resources are projected to occur from the Project. Long-term noise in the Study Area will decrease due to a reduction in train horn noise. The second viaduct project would further reduce traffic noise in the Study Area due to a reduction in train horn noise from eliminating two more at-grade crossings.

Reasonably foreseeable future projects are being planned to benefit all local residents with improved access, services, mobility, and cleanup of contaminated sites. Consequently, no disproportionately adverse cumulative impacts on racial minority, ethnic minority, vulnerable age group, or low-income populations are anticipated.

Railroads and Utilities

The planned UPRR siding and mainline expansion ~~would~~ will increase UPRR capacity through the City to support local and regional growth in rail traffic. Construction of the proposed pedestrian overpass and vehicular viaducts ~~would~~ will reduce the existing traffic delays by providing two grade-separated routes. The 23rd Avenue viaduct project would provide a third grade-separated route. Construction of the siding and mainline expansion ~~would~~ will not substantially impact access to public facilities, emergency response time, and travel time. The

design of the proposed overpass and viaducts avoids UPRR ROW and ~~would~~ will not conflict with construction of the UPRR siding and mainline expansion.

The following revisions begin at the second paragraph of page 3-125.

Noise Related to Rail and Traffic Changes

Patterns of noise generated from road and rail traffic ~~would~~ will increase in proportion to traffic growth in the City and southeastern Platte County. With increased rail traffic in the City, trains ~~would~~ will generate higher levels of noise in areas adjacent to the UPRR mainline. Under the Build Alternative, noise generated from train horns ~~would~~ will be reduced in the vicinity of 25th, 21st, 18th, 17th, 12th, and 3rd Avenues because trains ~~would~~ will no longer sound horns at these crossings. *If the second viaduct project was constructed, a further reduction in train horn noise would occur, with no horns being sounded between East 14th Avenue (the eastern city limit) and the western city limit.* The higher levels of noise from increased train traffic ~~would~~ will be less than the decrease in train horn noise. Increased noise from train operations ~~would~~ will continue to affect a small number of ~~additional~~ residences, businesses, parks, and public facilities in the City and southeastern Platte County.

Regulated Materials Sites

As discussed in Section 3.20, Regulated Materials Sites, cleanup of the 10th Street Superfund site is anticipated to be ongoing for another 10 to 15 years. A current timeframe for restoration of the former Deyke and Pollard Oil site has not been established. Restoration of the Minnegasco FMGP site is underway, but a cleanup date has not been estimated. *Construction of the Project will not adversely affect cleanup activities at the 10th Street Superfund Site or the Deyke and Pollard Oil site. The Project is not anticipated to affect or be affected by the Minnegasco FMGP site.*

Construction of storm sewers from 22nd and 10th Avenues in the vicinity of 19th and 18th Streets ~~would~~ will affect cleanup of the 10th Street Superfund site but not the former Deyke and Pollard Oil site or the Minnegasco FMGP site. Construction of the proposed pedestrian overpass and vehicular viaducts ~~would~~ will occur in a different area than the storm sewers. Any cumulative impacts ~~would~~ will be minor.

Construction of the second viaduct project would include a viaduct at 23rd Avenue and a pedestrian overpass at 25th Avenue; the 23rd Avenue viaduct is within the current extent of the 10th Street Superfund site groundwater plume and the overpass location is near but potentially outside the plume. Based on the anticipated remediation schedule of 10 to 15 years, it is possible that remediation would be completed by the time the second viaduct project would be constructed or that the construction footprints would be outside the diminishing dimensions of the plume at that time. The second viaduct project would involve construction near but west of the Minnegasco FMGP site, and would not likely intersect the associated groundwater plume that is moving southeast of the site.

None of the planned road construction projects (other than the *first viaduct project and second viaduct project* ~~proposed overpass and viaducts~~) ~~would~~ will impact the cleanup sites. *Based on the timing of the construction and the ongoing cleanup activities, it is not anticipated that adverse cumulative impacts to regulated material sites will result.* No other cumulative impacts are anticipated.

Visual

The impacts of the Project on the visual character and quality of the Study Area are considered negligible *based on aesthetic enhancements proposed as mitigation.* Impacts such as lighting from the Project and reasonably foreseeable future projects ~~would~~ will not substantially change the visual effects from the existing conditions because vehicle lights as well as street lighting and

lighting at the railroad crossings in this urban environment already exist. The 12th and 3rd Avenue vehicular viaducts ~~would~~ will be long and tall structures, visible from several blocks away in relatively flat-lying Columbus. The 18th Avenue pedestrian overpass ~~would~~ will be shorter in length than the other two proposed structures, but ~~would~~ will be similar in height and effect on the viewshed because of the requirement for clearance of UPRR trains. The Project ~~vehicular viaducts and pedestrian overpass would have~~ will include aesthetic treatments to mitigate the visual impact ~~the views~~ of the structures. The 23rd Avenue viaduct and 25th Avenue pedestrian overpass would likely be similar in dimensions to the viaducts and overpass proposed for construction in the first viaduct project and would have similar visual impacts; however, the first and second viaduct projects do not affect the same neighborhoods, thus the cumulative effect would be minor. Additionally, it is likely that aesthetic treatments would also be included in the second viaduct project to mitigate any visual impacts that may occur. The 33rd Avenue viaduct is not as long as the 12th and 3rd Avenue viaducts ~~would~~ will be, but residents and travelers ~~could~~ will likely see the viaducts, as well as industrial and other tall structures, from several blocks away. The proposed East 29th Avenue viaduct would be approximately 1.5 miles from the 3rd Avenue viaduct and would primarily affect a viewshed to the east not accustomed to viaducts; however, this viewshed includes industrial and agricultural buildings and structures. The citizens of Columbus currently have a viaduct in the viewshed of the western portion of the City; therefore, the appearance of a grade-separated structure and its visual impacts are not unique to the citizens of Columbus, and additional grade-separated structures with aesthetic treatments ~~would~~ will not present an adverse cumulative impact.

1.5 CHAPTER 4

Revisions to page 4-6 of Section 4.1.2, Additional Agency Coordination.

The following text was added to this section to summarize additional agency coordination that took place after publication of the DEA.

As a result of comments from EPA and NDEQ regarding impacts to potentially hazardous materials sites in the vicinity of the 18th Avenue pedestrian overpass, preliminary design of two foundation sites in the vicinity of the 18th Avenue pedestrian overpass, preliminary design of two foundation options was conducted, including geotechnical investigations. A memorandum was prepared to document the additional design effort and the expected impacts of each foundation type on the hazardous materials sites. Additionally, the memorandum identified the pile-supported foundation type proposed for the 18th Avenue pedestrian overpass. The memorandum was sent to EPA and NDEQ on May 27, 2011, requesting comments on the foundation analysis and concurrence on the recommended foundation option.

EPA concurred with the proposed pile-supported foundation via letter dated June 10, 2011. NDEQ concurred via e-mail dated June 15, 2011.

Additional comments from the EPA and NDEQ letters are discussed, and responses provided, in Chapter 2, Agency and Tribal Comments, of this FEA. The technical memorandum regarding foundation design for the proposed 18th Avenue pedestrian overpass is attached to this FEA as Appendix A, Post DEA Additional Agency Correspondence.

1.6 CHAPTER 5

Content revisions were not necessary for this chapter.

1.7 CHAPTER 6

Content revisions were not necessary for this chapter.

1.8 CHAPTER 7

The following references were added to Chapter 7:

City of Columbus. May 27, 2011. Memo from the City of Columbus to EPA and NDEQ regarding Foundation Design for the Proposed 18th Avenue Pedestrian Overpass.

EPA. June 10, 2011. Letter from Nancy J. Swyers, Remedial Project Manager, Iowa/Nebraska Remedial Branch, Superfund Division, EPA, to Dave Goedecken, City Engineer, Columbus, Nebraska.

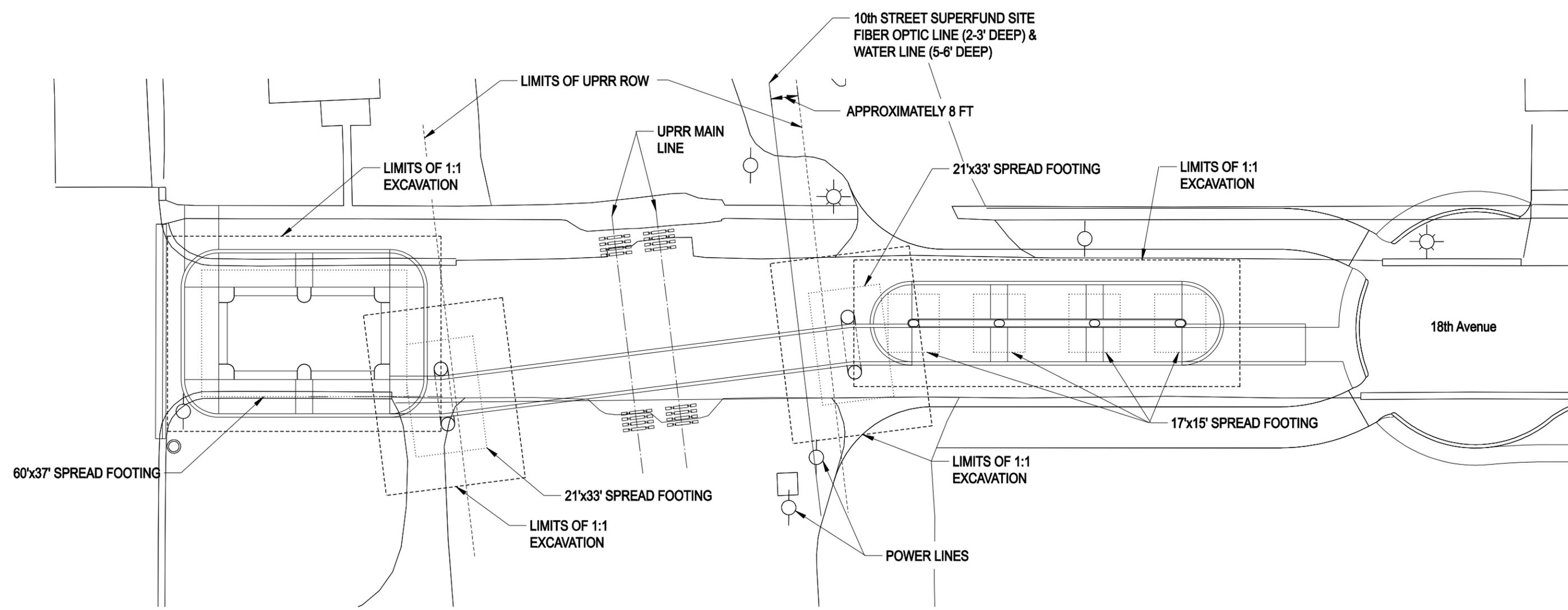
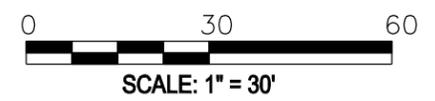
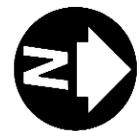
NDEQ. June 16, 2011. Personal communication between Julie L. Ward, Field Services and Assistance, NDEQ, and Lisa Richardson, HDR.

Thiele Geotech, Inc. February 24, 2011. Geotechnical Exploration Report Columbus Viaducts (18th Avenue) 12th Street and 18th Avenue Columbus, Nebraska. TG Project Number 11021.00. Prepared for HDR, Inc.

1.9 APPENDICES

Appendix B, Agency Correspondence, of the DEA, incorrectly included two superseded letters of concurrence on the determination of effects from Nebraska SHPO. These superseded letters were dated October 24, 2008. The correct concurrence letter, dated December 2, 2010 has been included in the FEA in Appendix B, SHPO Concurrence Letter.

Revisions were not necessary for Appendices A, C and D.



Note: Depth of excavation is 10 Feet

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE



**18th Avenue
Spread Footing Foundation**

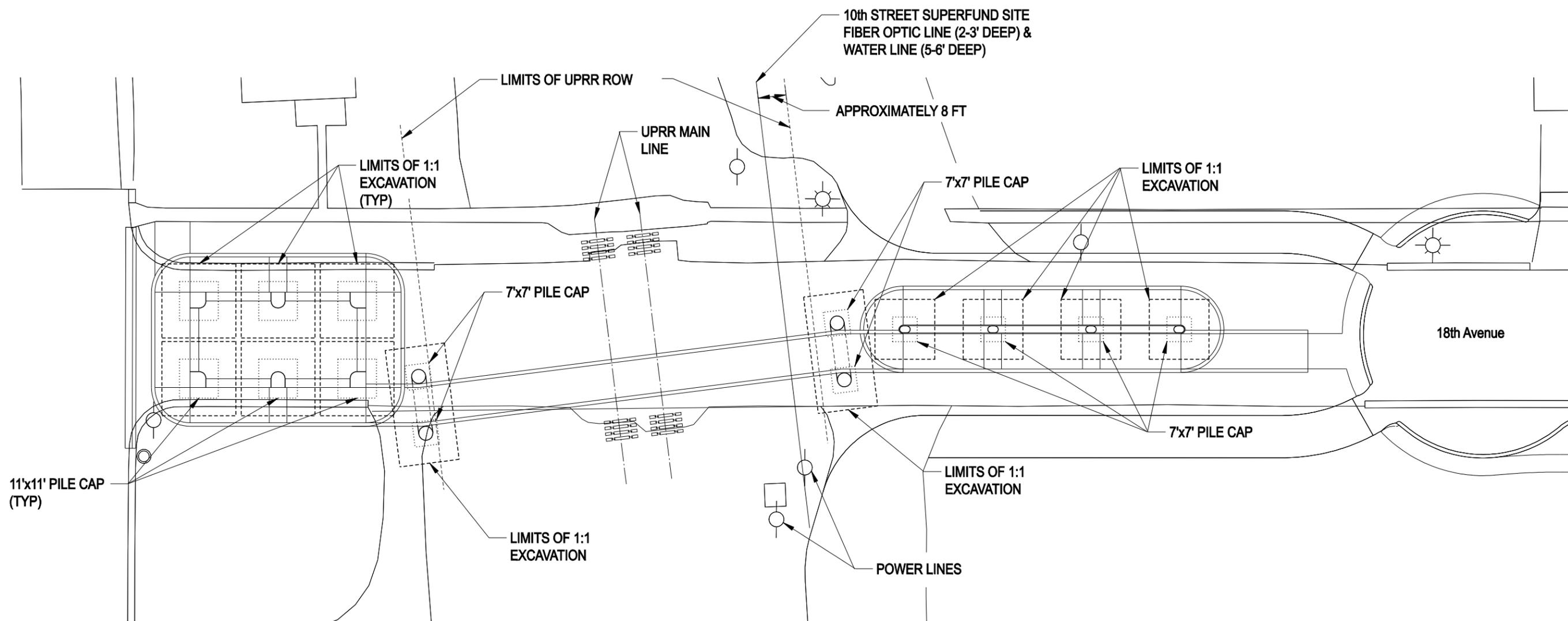
Columbus Viaducts
Platte County, Nebraska



DATE	May 2011
FIGURE	2



SCALE: 1" = 30'



Note: Depth of excavation is 5 Feet

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE



**18th Avenue
Pile Supported Foundation**

Columbus Viaducts
Platte County, Nebraska



City of Columbus

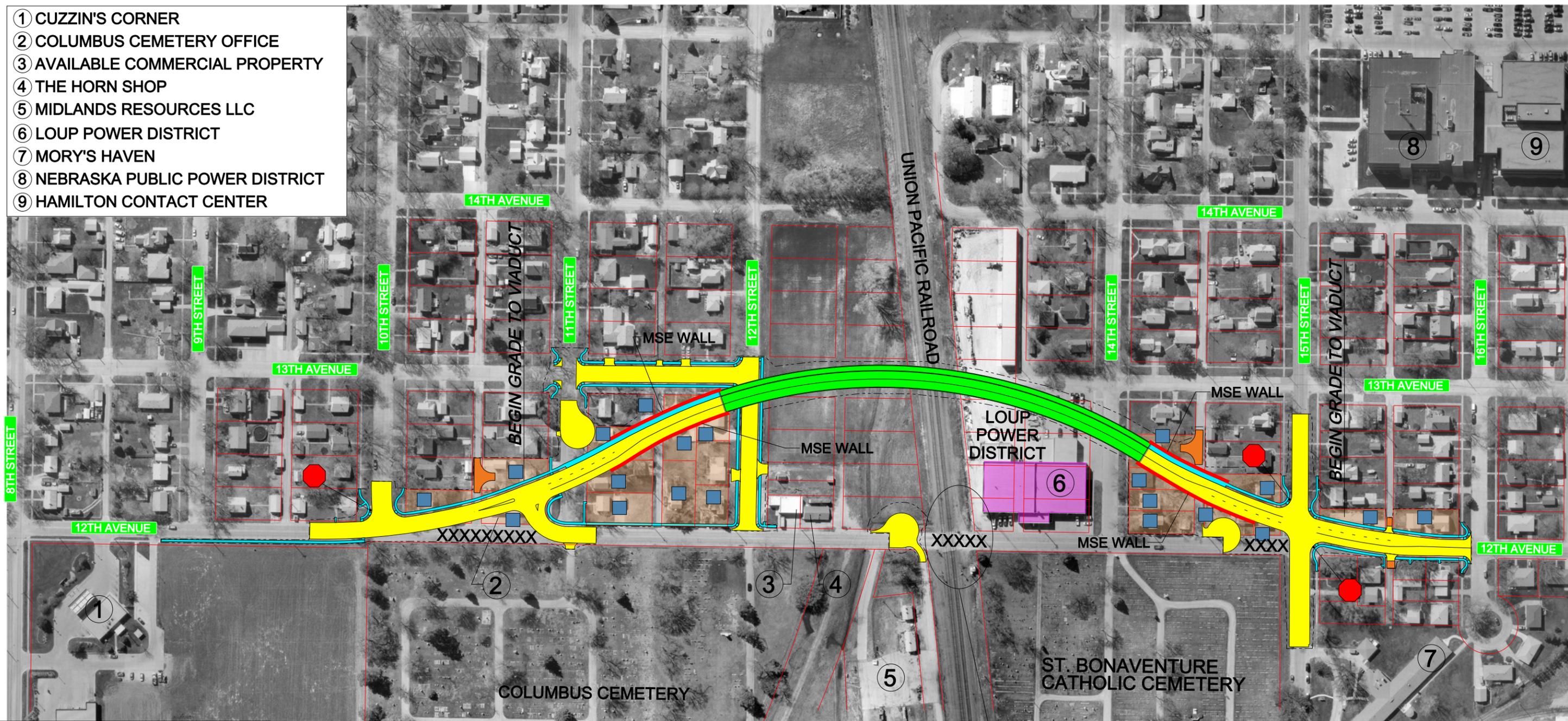
DATE

May 2011

FIGURE

3

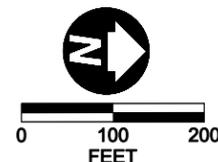
- ① CUZZIN'S CORNER
- ② COLUMBUS CEMETERY OFFICE
- ③ AVAILABLE COMMERCIAL PROPERTY
- ④ THE HORN SHOP
- ⑤ MIDLANDS RESOURCES LLC
- ⑥ LOUP POWER DISTRICT
- ⑦ MORY'S HAVEN
- ⑧ NEBRASKA PUBLIC POWER DISTRICT
- ⑨ HAMILTON CONTACT CENTER



AT-GRADE RAILROAD CROSSING TO BE REMOVED

LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED VIADUCT
- PROPOSED GRAVEL SURFACING
- PROPOSED SIDEWALK
- PROPOSED MSE WALL
- XXXXX PAVEMENT OR CROSSING TO BE REMOVED
- PRELIMINARY IMPACT AREA
- PROPERTY LINES
- TOTAL PROPERTY ACQUISITION (PARTIAL ACQUISITIONS NOT SHOWN)
- BUILDING ACQUISITION
- NRHP-ELIGIBLE / SECTION 4(f) PROPERTY
- STOP SIGN



Sources:
 Aerial Photography - Western Air Maps, 2007
 Property Lines - Platte County Assessors Database, March 2009

PRELIMINARY PLAN
 NOT FINAL - SUBJECT TO CHANGE



**12th Avenue Viaduct
 Environmental Impacts**

Columbus Viaducts
 Platte County, Nebraska
 Environmental Assessment

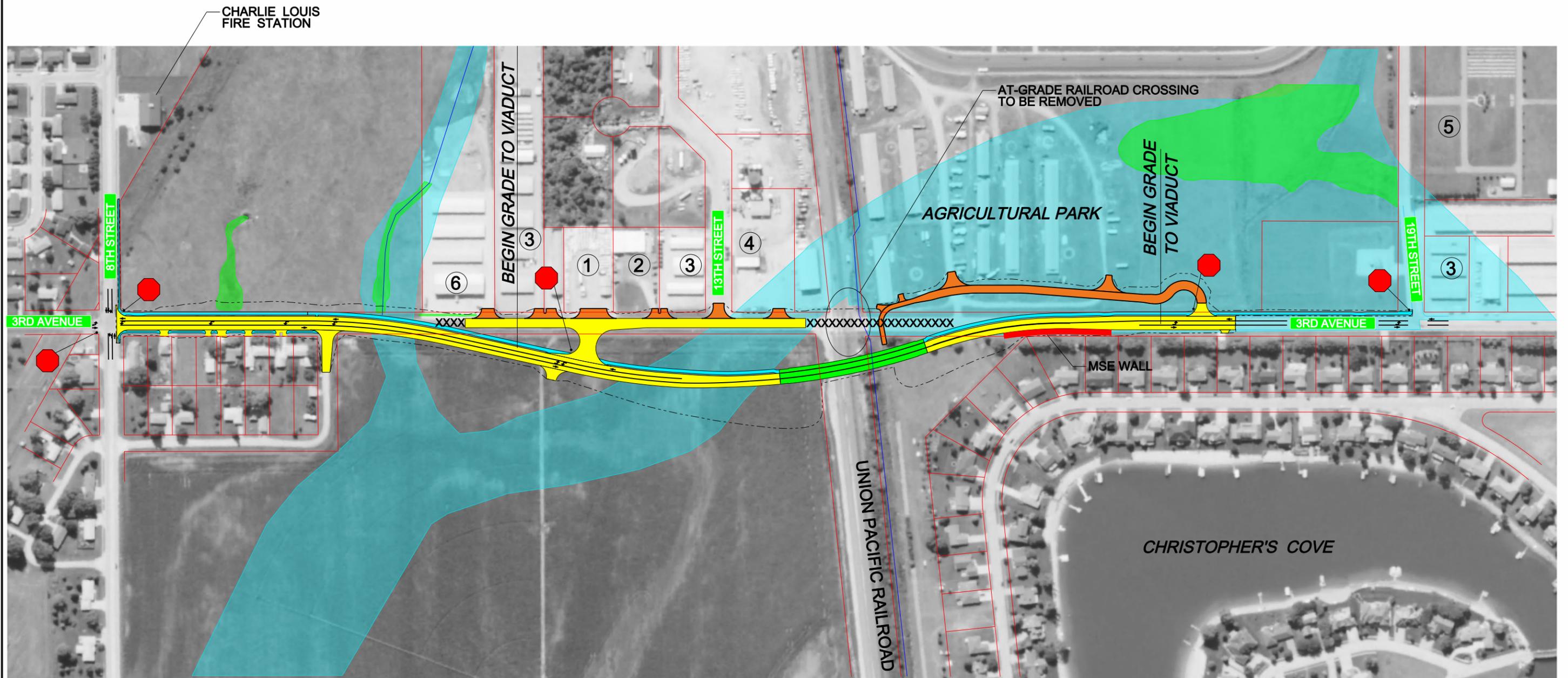


City of Columbus

DATE
 June 2011

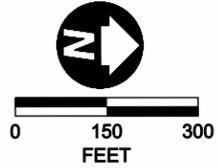
FIGURE
 3-3

3rd_Ave_Exhibit_2009-04-16.dgn
6/20/2011
drupiper



LEGEND	
	PROPOSED CONCRETE PAVEMENT
	PROPOSED VIADUCT
	PROPOSED GRAVEL SURFACING
	PROPOSED SIDEWALK
	PROPOSED MSE WALL
	PAVEMENT OR CROSSING TO BE REMOVED
	PRELIMINARY IMPACT AREA
	PROPERTY LINES
	WETLANDS
	100 YEAR FLOODPLAIN
	OTHER WATERS OF THE U.S.
	STOP SIGN

- ① FERRELL GAS
- ② OTTE ELECTRIC
- ③ STORAGE FACILITIES
- ④ CENTRAL VALLEY AG
- ⑤ ALL SAINTS CEMETERY
- ⑥ DECKERT ENTERPRISES LLC



Sources:
Aerial Photography - NAIP - National Agricultural Inventory Project, 2010
Property Lines - Platte County Assessors Database, March 2009

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE



**3rd Avenue Viaduct
Environmental Impacts**

Columbus Viaducts
Platte County, Nebraska
Environmental Assessment

City of Columbus

DATE	June 2011
FIGURE	3-4

CHAPTER 2

AGENCY AND TRIBAL COMMENTS

CHAPTER 2 AGENCY AND TRIBAL COMMENTS

Notice of availability of the DEA and request for comments was provided to the following federal, state and local agencies on April 27, 2011. Native American tribes were also provided notice of the availability of the DEA. Agencies shown in **bold** provided comments. Agency and tribal comments and responses are summarized in Table 2-1 and included in Appendix C, Agency and Tribal Comments.

Federal

- **U.S. Army Corps of Engineers**
- **U.S. Department of Agriculture – Natural Resource Conservation Service**
- U.S. Department of Housing and Urban Development
- **U.S. Department of Interior – Fish and Wildlife Service**
- U.S. Department of Interior – Office of Environmental Policy
- **U.S. Environmental Protection Agency**
- U.S. Small Business Administration
- **Federal Aviation Administration**
- Federal Emergency Management Agency
- Federal Railroad Administration

State

- Nebraska Commission on Indian Affairs
- Nebraska Department of Aeronautics
- **Nebraska Department of Environmental Quality**
- Nebraska Department of Health and Human Services
- Nebraska Department of Natural Resources
- **Nebraska Game and Parks Commission**
- **Nebraska State Historical Society**

Local

- Columbus Public Schools
- Lower Loup Natural Resources District
- Platte County - Highway Department and Board of Supervisors
- Platte County Extension Office

Tribes

- Iowa Tribe of Oklahoma
- Pawnee Nation of Oklahoma
- **Omaha Tribal Council**
- Ponca Tribe of Nebraska
- Winnebago Tribal Council.

Table 2-1. Federal Agency Comments

Agency	Comment	Response
Federal Aviation Administration (FAA) (5/17/2011)	"The project may require formal notice and review for airspace review under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. If you determine that filing with FAA is required, we recommend a 120-day notification to accommodate the review process and issue our determination letter."	Coordination with FAA regarding Objects Affecting Navigable Airspace will occur by filing Form 7460-1 during final design and the Mitigation Section of the FEA includes notification of FAA.
Natural Resources Conservation Service (NRCS) (4/29/2011)	"NRCS has determined that your project was found to be cleared of FPPA significant concerns."	No response needed.
United States Army Corps of Engineers (USACE) (5/13/2011)	<p>"Your plans should be coordinated with the U.S. Environmental Protection Agency, which is currently involved in a program to protect groundwater resources. If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the Nebraska Game and Parks Commission regarding fish and wildlife resources. In addition, the Nebraska State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area."</p> <p>Noted the need to comply with floodplain regulations regarding impacts on existing floodplains and floodways. Suggested contact with Nebraska DNR to determine if the project area is a FEMA special flood hazard area.</p>	<p>Agencies noted have been included in project coordination and were notified of the availability of the DEA.</p> <p>Nebraska DNR has been included in project coordination, and a floodplain permit will be obtained as noted in the Mitigation Section of the FEA.</p>

Agency	Comment	Response
USACE continued	"Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information."	Based on preliminary plans and a wetland determination, the Project is expected to impact less than 0.10 acre of wetland. A wetland delineation will be completed and a Section 404 Permit will be obtained. It is anticipated that the Project will qualify for authorization under Nationwide Permit 14. A permit application will be submitted to USACE as noted in the Mitigation Section of the FEA.
United States Environmental Protection Agency (EPA) (6/10/2011)	<p>"Our comments are in regard to the pedestrian crossing on the 18th Avenue Viaduct. We do not anticipate any potential impacts for the vehicle crossings at 3rd Avenue or 12th Avenue on the 10th Street Site."</p> <p>"We agree with HDR's recommendation to use pile-supported footings. These footings would be our preference as well due to fewer potential impacts to the 10th Street Site water line and fiber optic cable."</p> <p>"In regard to your reported groundwater results for cis 1,2 dichloroethene (cis 1,2 DCE) at PZ-2 of 39 ug/L, the EPA data from nearby monitoring wells that were sampled in October 2010, contained concentrations of cis 1,2 DCE between 92 and 120 ug/L. These results indicated that cis 1,2 DCE is present in shallow groundwater at concentrations that exceed the MCL of 70 ug/L in this area. This is the basis for the EPA's request to place the pilings at as shallow depth as possible to limit migration of contaminants into the deeper groundwater. Please refer to the enclosed Figure 2.12 which shows the October 2010, cis 1,2 DCE data."</p>	<p>No response needed.</p> <p>No response needed.</p> <p>Comment noted. The City will continue to coordinate with EPA regarding groundwater contamination that may exist in the 18th Avenue corridor prior to construction as noted in the Mitigation Section of the FEA.</p>

Agency	Comment	Response
EPA continued	<p>"The pile-supported footings must not penetrate the confining clay layer separating the shallow and middle aquifers....the EPA would prefer that the pilings be placed at a depth less than 70 feet if possible. We've noted that concrete piles are being considered as an option to approximately 50 feet below grade. This would be our preference over pipe piles which need to be placed approximately 70-90 feet below grade. We understand that other factors need to be considered and would like to review this again during the design."</p> <p>"The EA proposes use of a chain-link fence on both sides of the tracks, approximately 1,000 feet in each direction to encourage use of the pedestrian foot bridge. Our comment on this is that the EPA as well as the EPA's contractors and the city will need unrestricted access to extraction well EW-04 and monitoring wells MW-15A and MW-15B for well sampling and well maintenance activities. Extraction well EW-04 is located on the west side of 16th Avenue within</p>	<p>Based on geotechnical borings conducted for design of the 18th Avenue pedestrian overpass, a confining clay layer does not exist in the vicinity of the overpass. Six borings were completed that encompassed the entire length of the bridge. All borings were drilled to a depth of 100 feet. One boring showed a 4-foot thick lean clay layer at 88 feet. One boring showed a 6-inch clay seam at 19 feet. No clay was found in the other four borings and all other soil classifications were granular sands and gravels down to a 100-foot depth. From these borings it can be concluded that at the bridge site there are no continuous clay seams that will prevent existing contaminants from freely flowing within the granular soils. Based on this, either 50-foot ± concrete piles or 70- to 90-foot± steel pipe piles will be viable without impacting the existing sand /gravel aquifer.</p> <p>A gate will be provided in the fence to allow Union Pacific Railroad (UPRR) access to their ROW. With respect to EPA access for extraction and monitoring wells within UPRR ROW, EPA and their contractor will be able to obtain access via the gate when they coordinate with UPRR regarding access to railroad property.</p> <p>With regard to locations of monitoring wells, the City is in receipt of the GPS coordinates of the well locations from EPA and will include well location information on</p>

Agency	Comment	Response
EPA continued	the Union Pacific Railroad right of way on the north side of the tracks. Monitoring wells MW-15A and MW-15B are located on the west side of 21st Avenue which also appears to be within this 1,000-foot distance. The monitoring wells are on the north side of the tracks on the city right of way and would be expected to be outside this fence, but their locations should be noted and marked prior to installing the fence to make sure they do not get damaged during construction. We will also provide you information on the GPS locations of the wells."	the plans. Additionally, wells will be marked in the field prior to construction activities as noted in the Mitigation Section of the FEA.
United States Fish and Wildlife Service (FWS) (6/10/2011)	"The Service has reviewed the DEA and concurs that the information provided to date is adequate, and the project can be advanced to the next stage of project development."	No response needed.

Table 2-2. State Agency Comments

Agency	Comment	Response
<p>Nebraska Department of Environmental Quality (NDEQ) (6/15/2011)</p>	<p>"The Groundwater Remediation Section of NDEQ has reviewed the data submitted by HDR in regard to foundations for the 18th Street Pedestrian Overpass and its potential impact on the Columbus 10th Street Superfund Site. We concur with using driven pilings for the foundation at this location. If possible, we would prefer the use of concrete driven pilings for this project because they only go to 50 foot bgs depth versus the 70-90 foot bgs depth necessary for pipe driven pilings; however, because the previously mentioned clay layer appears to pinches out and is absent below this location, we could also concur with the use of pipe driven pilings for this construction project. Please contact Nancy Harris at NDEQ Groundwater Remediation at the number provided above if you have additional questions."</p> <p>"Regarding wastewater, this project may involve disposal of contaminated ground water, if excavation sites for footings need to be dewatered. The project should apply for NPDES Dewatering permits. Please contact Chuck Duerschner at the number above if you have questions."</p> <p>"Until further along in the planning process, it is unknown whether there may be additional regulatory requirements. We strongly urge the project sponsors to make contact with the Department."</p>	<p>The City will continue to coordinate with NDEQ regarding groundwater contamination and monitoring well locations during the final design process as noted in the Mitigation Section of the FEA.</p> <p>The foundation for the 18th Avenue pedestrian overpass will use pile-supported footings. A determination of the type of pile to use, concrete piles or steel pipe piles, will be made during final design. The City will coordinate with NDEQ once the pile materials and size has been determined.</p> <p>If hazardous wastes are encountered, including contaminated groundwater, construction activities will cease at that location and the contractor and the City Engineer will arrange for proper disposal as noted in the Mitigation Section of the FEA.</p> <p>The City will continue to coordinate with NDEQ during the final design process as noted in the Mitigation Section of the FEA.</p>
<p>Nebraska Department of Natural Resources (NDNR) (5/13/2011)</p>	<p>"NDNR has no further comment than those previously submitted."</p> <p>Previously submitted comment: "The 3rd Avenue viaduct project has the potential to disturb a regulated floodplain area... if construction will disturb this regulated area, then a floodplain development permit will be required from the City."</p>	<p>No response needed.</p> <p>As noted in Section 3.25 of the DEA, Mitigation Measures, and the Mitigation Section of the FEA, a City of Columbus Floodplain Development Permit will be obtained.</p>

Agency	Comment	Response
Nebraska Game and Parks Commission (NGPC) (5/15/2011)	"Based on our review of the draft Environmental Assessment, we concur that it is satisfactory, that the project information provided to date is adequate, and the project can be advanced to the next stage of project development."	No response needed.
Nebraska State Historical Society (NSHS) (5/10/2011)	"We concur with the statements included in Chapter 3 regarding the eligibility of historic properties and the potential effects of the project."	No response needed.

Table 2-3. Tribal Comments

Tribe	Comment	Response
Omaha Tribe (5/9/2011)	"The Omaha Tribe does not object to said project, however, if any evidence of our occupation is discovered through construction, please notify this office immediately."	As noted in Section 3.17.4, Avoidance, Minimization, and Mitigation [Archaeological Resources], Native American tribes will be notified in the event that previously unsuspected archaeological remains are uncovered during construction.

CHAPTER 3

PUBLIC COMMENTS

CHAPTER 3 PUBLIC COMMENTS

Notice of availability of the DEA for public review was published in the Columbus Telegram on April 25, 2011 and May 19, 2011. The DEA was available for review on the City of Columbus website and at the Columbus Public Library, NDOR offices and FHWA headquarters. A Spanish language notice was published in the Columbus Telegram on May 19, 2011. A public hearing to present the findings of the DEA and receive public comment was held May 26, 2011. The public comment period ended on June 10, 2011.

The following comments on the Columbus Viaducts Project and the DEA were received from members of public. Recorded comments and responses are included in Table 3-1, informal comments and responses provided at the hearing are summarized in Table 3-2 and written comments and responses are provided in Table 3-3. A summary of the public hearing, including transcript of recorded comments, is included in Appendix D, Public Hearing Summary. All written public comments are included in Appendix E, Public Comments.

Table 3-1. Verbal Comments Recorded at the Hearing

Comment Number	Comment	Response
1	<p>Commenter asked if there will be any crossings left open when all the viaducts are completed. Specifically, commenter asked if the 26th Avenue crossing will remain open after project completion.</p> <p>Commenter acknowledged the safety issues that necessitate the project but expressed concern that the project will divide the city, causing traffic congestion by requiring residents who live between the highway and 10th Avenue to use only two access routes to get to the schools, businesses, and jobs in the northern part of the city. Commenter also expressed concern that emergency response vehicles, because of the reduced number of crossings, will be slowed in assisting southern residents.</p>	<p>23rd Avenue and 26th Avenue will remain open at-grade upon completion of the Project.</p> <p>Additional Clarification – the original response to this commenter at the hearing was that ultimately, all of the crossings will be closed at grade between 3rd and 33rd Avenues. The original response considered a potential future project to construct a viaduct at 23rd Avenue that is not part of this Project and is not currently funded or being studied.</p> <p>The issues of traffic congestion, city division, accessibility, and emergency response were taken into consideration during the initial planning stages of the project and were discussed in detail in Section 3.5.3, Impacts of the Build Alternative [Social], on pages 3-18 through 3-21 in the DEA. Upon completion of the Project, there will be five north-south vehicular crossings: 33rd Avenue viaduct, 26th Avenue at-grade, 23rd Avenue at-grade, 12th Avenue viaduct, and 3rd Avenue viaduct. Although some traffic rerouting would occur with closure of the 25th, 21st, 18th, 12th and 3rd avenue at-grade crossings, the proposed viaducts and remaining at-grade crossings have adequate capacity to handle the rerouted traffic. Additionally, the three grade-separated viaducts will provide better accessibility and emergency response times than the current at-grade crossings because delays associated with trains blocking the crossing will be eliminated.</p>

Comment Number	Comment	Response
1 continued		Additional Clarification – this response at the hearing also initially referenced the additional viaduct at 23 rd Avenue and closure of the 26 th Avenue at-grade crossing. It was noted that eventually the viaduct crossings (33 rd , 23 rd , 12 th , and 3 rd avenues) will be spaced about every ten blocks and that inaccessibility should not be an issue.
2	Commenter expressed support for the project because he believes transporting goods via rail is more fuel efficient than doing so by semitruck. Commenter believes fuel prices are too high to effectively transport goods via semi trucks.	Comment noted.
3	Commenter asked how soon after the construction of the 3rd Avenue viaduct the residents of 12 th Avenue would be contacted about land acquisition. Commenter wanted to avoid a “window of no action” between viaduct constructions.	The City will coordinate with NDOR and FHWA to identify a possible timetable for contacting 12 th Avenue residents that will allow construction of the 12 th Avenue viaduct to begin in 2015. Also, early acquisition is potentially available for residents who may suffer a hardship by waiting for acquisition.
4	Commenter asked what was planned for the aesthetics of the viaducts because the project will be very near or on his property. Commenter also asked if there will be a wall on the 12 th Avenue overpass.	12 th Avenue will have retaining walls on each end to shorten the amount of bridge structure. Also, there are a number of aesthetic options regarding the viaducts: patterned panels can be installed on viaduct walls to improve aesthetics.

Comment Number	Comment	Response
4 continued	<p>Commenter asked if the aesthetic options increase construction costs and, if so, whether that would prevent them from being installed.</p> <p>Commenter asked which side of the overpass on 3rd Avenue will have the pedestrian walkway.</p>	<p>Aesthetic options are built into the plan and are expected to account for approximately 10 percent of total cost. The aesthetic design presented in the DEA is subject to change; a public hearing will be held at a later date when design is further along and aesthetics will be identified at that time.</p> <p>Additional Clarification – since aesthetic treatments are included in the FEA as mitigation for visual impacts, they will not be eliminated from the Project; however, as noted in the original response, the final enhancements may differ from those presented in the DEA.</p> <p>The pedestrian walkway will be on the west side of the viaduct.</p>
5	<p>Commenter has a pivot whose spray will reach the 3rd Avenue viaduct. He wanted to know who will pay to have the pivot moved so it does not impact the roadway.</p> <p>Commenter asked if rain water will flow into a storm sewer or back up into his field.</p> <p>Commenter said southeast drainage backs up into his field, causing unwanted plants to grow there. Commenter expressed concern that the drainage in his field may not drain and that trees would eventually grow there.</p>	<p>The pivot will have to be shifted so that it will not impact the improvements on the road. Relocating the pivot will be included as a Project cost and will be handled during ROW acquisition.</p> <p>The existing drainage system and drainage patterns will be maintained.</p> <p>The project will attempt to improve drainage in the project area but will at the very least maintain existing conditions. Also, because Columbus is very geographically flat, drainage can be a problem for the area.</p>
6	<p>Commenter requested more information regarding 17th Avenue.</p>	<p>The vehicular crossing at 17th Avenue was previously closed and the pedestrian crossing will be closed as part of the project. Also, fencing will be installed along the right-of-way to prevent pedestrians from crossing the tracks at-grade.</p>

Comment Number	Comment	Response
7	<p>Commenter asked if the fence will extend 1,000 feet on each side of 18th Avenue.</p> <p>Commenter asked if ambulances will have access to the fenced area of the railroad right-of-way in the event of an emergency.</p>	<p>Yes, the fence will extend approximately 1,000 in each direction from the pedestrian overpass on both sides of the UPRR ROW.</p> <p>A gate is planned near the 18th Avenue overpass to provide UPRR access to their ROW, the gate will likely be locked but emergency responders could cut the lock if necessary.</p>
8	<p>Commenter asked whether using 13th Avenue or 10th Avenue as a main road was considered in the planning process.</p>	<p>Various alternatives for viaducts and pedestrian overpasses were considered early on in the planning process, records of which should be available through the city. Also, public meetings were held to evaluate said alternatives.</p> <p>Additional clarification—multiple viaduct studies were conducted by the City between 1988 and 2001; these studies evaluated numerous viaduct locations, including 13th Avenue and 10th Avenue.</p>

Table 3-2. Informal Comments Received at Hearing

Comment Number	Comment	Response
1	Spanish speaking resident near 12 th Avenue and 15 th Street asked how his property would be impacted. He used the Spanish interpreter and was very appreciative of the assistance.	The interpreter explained that the property in question will not be directly affected by the Project but that streets to the west and the south of the property will be reconstructed and improved.
2	Resident near 26 th Avenue asked why he had received a postcard notice of the hearing.	It was explained that residents and businesses in the vicinity of the crossing closures (25 th & 21 st Streets) were also sent notifications and that is likely why he received it.
3	Owner of Deckert Enterprises LLC on 3 rd Avenue indicated that he had recently made improvements to his property and asked how his property would be affected. He was specifically concerned about truck traffic into and out of his warehouse and drainage along the front of his property.	Site circulation for semi-tractor trailers delivering product to the warehouse will be affected by limiting access to the north end of the property. The site currently uses a non-standard driveway across the entire frontage of the property to provide access for semi-trailers onto the site (trailers must back from 3 rd Avenue). The full frontage driveway does not meet City standards, does not provide safe semi-trailer access, and will not be rebuilt. The 3 rd Avenue viaduct improvements will provide a standard driveway for Deckert Enterprises that will allow access for single-unit trucks; however, semi-trailer access will not be possible. With respect to drainage along the front of the property, existing drainage patterns will be maintained with a culvert pipe under the new driveway and an open ditch along the front of the property.
4	Resident asked whether truck traffic would increase along 12 th Avenue.	Traffic on 12 th Avenue is expected to increase approximately 25 percent and truck traffic will be expected to increase proportionately.

Comment Number	Comment	Response
5	<p>Two residents who live near the proposed 18th avenue pedestrian bridge had a number of questions regarding the pedestrian bridge:</p> <p>From what streets would you access the pedestrian bridge?</p> <p>Who would maintain the fencing regarding litter control along the UPRR ROW?</p> <p>How long are the approach ramps for the pedestrian bridge?</p> <p>They expressed general concern with safety and whether the pedestrian bridge would be the target of graffiti.</p>	<p>The pedestrian overpass will be constructed in the 18th Avenue ROW and thus will be accessed from 18th Avenue.</p> <p>Fencing will be on City ROW and the City will be responsible for maintaining the fence and surrounding area.</p> <p>Approach ramps on both ends of the overpass are approximately 500 feet long.</p> <p>The span over the UPRR will be fully enclosed with fencing (sides and top) and the approach ramps will have 42 inch tall railings. The aesthetics will help to defray graffiti by providing a nice addition to the neighborhood. It was also noted that anti-graffiti coatings could be added to the concrete surfaces to facilitate graffiti cleanup.</p>
6	<p>Resident asked why underpasses had not been considered instead of overpasses.</p>	<p>Options considered for grade separations included construction of underpasses. Underpasses were determined to be not feasible for various reasons, including drainage concerns associated with the high water table in the City.</p>
7	<p>Two residents in the 12th Avenue area indicated they are very interested in having their properties acquired as soon as possible due to their age and physical limitations in climbing steps in their existing homes.</p>	<p>The City will discuss potential early acquisitions with NDOR ROW as soon as the environmental process is complete and ROW acquisition can begin.</p>

Comment Number	Comment	Response
8	Resident along 3 rd Avenue expressed concern about the aesthetics of the viaduct retaining wall related to his property. He wants to make sure that the form liners and coloring are done as promised. He was very relieved that the trail was on the west side of the street. He was also very relieved that the overhead transmission lines along both sides of the street would not be moved closer to his residence.	Aesthetic enhancements are on the 3 rd Avenue viaduct included in the Project. Although the aesthetic design presented in the DEA is subject to change, aesthetic treatments are included in the FEA as mitigation for visual impacts and will not be eliminated from the Project.
9	Property owner along 18 th Avenue inquired about potential impacts to property value for a specific vacant lot near the pedestrian overpass that is currently for sale.	Comment noted. The City indicated that property values in the area of the viaducts may or may not change with viaduct construction.

Table 3-3. Written Comments Received

Comment Number	Comment	Response
1	Commenter requested information concerning the viaduct's impact on her property on 12 th Ave.	Commenter was informed of some encroachment on her property and was encouraged to attend the May 26 th public hearing.
2	Commenters requested information regarding a rumor that 18 th Avenue was going to be a vehicular viaduct; commenters don't want a vehicular viaduct; they prefer pedestrian only.	Commenters were informed that a pedestrian overpass, not a vehicular viaduct, was planned at 18 th Avenue. Commenters were also encouraged to attend the May 26 th public hearing.
3	<p>Commenter provided a written comment form and also followed up with a phone call to FHWA. Responses to the written and verbal comments are provided below.</p> <p>1) An underpass on 3rd Avenue would require less space and provide more potential for economic development than the current plan.</p> <p>2) An overpass with a maximum grade of 10% and a design speed of 25 mph on 3rd Avenue would require less right-of-way, construction cost, and maintenance cost than the current plan.</p>	<p>As discussed in Chapter 2 of the DEA, various alternatives for viaducts and pedestrian overpasses were considered during studies completed prior to initiation of the EA. These studies considered a wide range of locations (including 14th Avenue), alignments, and options to address the City's needs. The locations and alignments of grade-separated crossings were selected through a public involvement process led by the City and supported by the public that resulted in public support of the Project as demonstrated on January 15, 2008, when the public voted in favor of the Project by almost a 4:1 ratio.</p>
	<p>3) A straight overpass on 14th Avenue with a maximum grade of 10% and design speed of 25 mph would require less right-of-way, construction cost, and maintenance cost than the planned construction for 12th Avenue.</p>	<p>Options considered for grade separations included construction of underpasses. Underpasses were determined to be not feasible for various reasons, including drainage concerns associated with the high water table in the City. Underpasses were also determined to be more costly than viaducts for the following reasons:</p> <ul style="list-style-type: none"> • Bridge costs for a railroad bridge are higher than for a roadway viaduct (approximately 7.3 million dollars compared to 5.8 million dollars at 12th Avenue

Comment Number	Comment	Response
3 continued	<p>4) Leaving 18th Avenue open to traffic and constructing an underpass for pedestrians and bicyclists would prevent the need for a permanent traffic detour and require less construction and maintenance cost than the current plan.</p> <p>5) Traffic volumes noted in the DEA are contradictory to traffic volumes noted in reports from previous studies.</p>	<ul style="list-style-type: none"> • Construction of a railroad bridge would require a detour for the UPRR tracks that would cost approximately one million dollars • High water table in Columbus would require continuously capturing and pumping groundwater • Pump station would be required for the stormsewer system in order to keep the underpass free of water during storm events <p>The grade of the viaducts was considered during the design process. The maximum grade allowed by the Nebraska Board of Classifications & Standards' Minimum Design Standards for counties, Municipalities, State is 6.5 percent. The viaducts were designed with a maximum grade of 5 percent to meet the standards of the Americans with Disabilities Act. Additionally, steeper grades are not desirable because of snow and ice in the winter and associated safety concerns and maintenance costs.</p> <p>Maintaining vehicular access at 18th Avenue does not meet the purpose and need to reduce delay and improve safety. Additionally, pedestrian underpasses present unique safety and drainage concerns.</p> <p>Traffic volumes at crossings along the UPRR mainline have fluctuated over time and there has been variation in the volumes reported in the various viaduct alignment studies conducted over the years. As an example, traffic counts conducted for the DEA in July of 2007 were lower than 2001 counts reported in a previous study. The study team recognized this discrepancy and conducted a second set of counts in September 2007 to confirm that traffic volumes had in fact gone down since 2001.</p>

Comment Number	Comment	Response
3 continued	6) Noted that the City has an agreement with NDOR and UPRR regarding a future project to build a viaduct at 23 rd Avenue and close the at-grade crossings at 23 rd and 26 th avenues [and construct a pedestrian overpass at 25 th Avenue]. Commenter expressed concern that 23 rd Avenue would not be able to handle the traffic resulting from crossing closures related to the 18 th , 12 th and 3 rd avenue viaducts/overpasses as well as closures associated with the future project.	<p>The City has entered into an agreement with NDOR and UPRR to close at-grade crossings at 26th and 23rd avenues and construct a viaduct at 23rd Avenue and a pedestrian overpass at 25th Avenue (see Appendix F). However, this agreement is contingent on a vote by the citizens of Columbus to approve the proposed project. The agreement also states that once the project is approved by the voters, a Construction and Maintenance Agreement will be executed between the three parties. Section 3.23, Cumulative Impacts, of the DEA briefly discussed the 23rd Avenue project but noted that it was not reasonably foreseeable since a public vote has not approved the project. The Cumulative Impacts section of the FEA has been revised to include the 23rd Avenue project as reasonably foreseeable and discussion of potential cumulative impacts has been added to this FEA in response to the public comment [revisions are identified in Chapter 1 of this FEA, beginning on page 1-13].</p> <p>Based on the additional review of construction of a 23rd Avenue viaduct, 25th Avenue pedestrian overpass, and closure of the at-grade crossings at 26th Avenue and 23rd Avenue, the conclusion of no significant cumulative impacts remains unchanged.</p>
4	Commenter noted the project was well planned and asked when to expect progress.	Comment noted. Upon completion of the environmental phase of the Project, the City will coordinate with NDOR regarding the specific availability of funding and timing of construction for the Columbus Viaducts Project.

Comment Number	Comment	Response
4 continued	Commenter asked if early acquisition of her property could take place if she were to buy an alternate residence before the scheduled acquisition period.	Property acquisition for a Federal-funded project is conducted according to the Uniform Relocation Act and Real Property Acquisition Final Rule. A property owner may request early acquisition if it can be demonstrated that waiting until the formal ROW process begins will be a hardship. FHWA must approve requests for early acquisition and funding must be available to make the payment.

CHAPTER 4

MITIGATION MEASURES

CHAPTER 4 MITIGATION MEASURES

4.1 MITIGATION MEASURES

The following mitigation measures were presented in the DEA and are listed here in their final version. These mitigation measures will be implemented by the City of Columbus and NDOR by incorporating them into either the project construction documents or the final design. These mitigation measures supersede any of those identified in the DEA. The following mitigation measures and commitments are not subject to modification without the prior written approval of the Federal Highway Administration.

Each mitigation measure is presented in association with the resource for which it most directly applies; although some of the listed measures apply to multiple resources, they are listed only under the resource that they most directly benefit.

In addition to the mitigation measures listed herein, NDOR Standard Specifications will be applied to the Build Alternative and will result in impact avoidance and minimization on resources including, but not limited to, the following: vegetation, migratory birds (Migratory Bird Treaty Act), groundwater, water quality, archaeological properties, and hazardous materials (NDOR, 2007).

Farmland

- The City shall compensate the landowner or current leaseholder for impacts on the center pivot irrigation system in the 3rd Avenue study corridor. Compensation shall include, but not be limited to, relocating the center pivot system, modifying the center pivot equipment, and/or relocating the well used by the center pivot system. The City shall coordinate with the landowner to move the center pivot irrigation system to the south and east to allow the system to remain in operation.

Airports

- The proposed pedestrian overpass and vehicular viaducts will exceed 14 CFR 77 standards, and construction of these structures will require FAA notification. Prior to finalizing construction plans, the City shall notify FAA by filing Form 7460-1.

Acquisitions and Relocations

- The City shall conduct an acquisition and relocation program for the proposed 12th Avenue vehicular viaduct. The program shall be in accordance with the Uniform Act (42 USC 4601 et seq.) and the Nebraska Relocation Assistance Act (Neb. Rev. Stat. Section 76-1214 et seq.).

Railroads and Utilities

- The excavation for the north pier for the 18th Avenue pedestrian overpass will be approximately 6 to 8 feet north of the fiber optic cable and water line associated with Extraction Well 04 for the EPA 10th Street Superfund site. To avoid impacts, these items will be designated on the final plans as "Do Not Disturb," the contractor shall mark the location of the pipeline and cable in the field (both the position and the depth of the cable) prior to construction of the proposed 18th Avenue pedestrian overpass and the associated fencing, and prior to removal of the 25th, 21st, and 17th Avenue at-grade crossings, and the contractor will be required to avoid impacting them.
- Before construction, the construction contractor and the City shall coordinate with utility service providers and shall conduct a utility survey.
- The construction contractor shall install replacement utility lines during construction. The contractor shall keep utility outages during construction brief (several minutes) and temporary. Prior to outages, the utilities shall coordinate with their customers.
- During the design and construction phases of the Project, the City and the construction contractor shall determine specific mitigation measures to minimize disruption of utility service.
- The contractor shall tie stormwater drainage into existing systems.

Economics

- Economic impacts on all businesses except Deckert Enterprises LLC (warehouse lessor) will be negligible to minor, and no mitigation is proposed. The City will coordinate with the warehouse lessor during final design to address site circulation issues associated with the change in access; additionally, any unmitigated impacts on this property will be addressed during the right-of-way (ROW) acquisition process.

Water Quality

- The City shall obtain Clean Water Act Section 401 Water Quality Certification prior to construction. This certification is required as part of the Section 404 permit issuance (see Wetlands and Other Waters of the U.S., below).

Wetlands and Other Waters of the U.S.

- The City shall obtain a Clean Water Act Section 404 permit and Section 401 Water Quality Certification prior to construction. The proposed 3rd Avenue viaduct is expected to qualify for Nationwide Permit 14 (wetland impacts less than 0.5 acre); Section 401 Water Quality Certification will be included in Nationwide Permit 14. All

general and special conditions associated with these authorizations ~~would~~ will be adhered to.

- If, in reviewing the Project's Pre-Construction Notification, USACE determines that Project-specific compensatory wetland mitigation is required, the City shall develop an appropriate wetland mitigation plan and shall enact the plan at a scale that provides a mitigation ratio determined appropriate by USACE.

Floodplains

- Where encroachment on floodplains is required, the City's engineering consultant shall design the roadway profile, along with engineered ditches and culverts, to adequately convey flood flows along existing drainage patterns and to ensure that increases in the 100-year flood elevation are less than 1.0 foot.
- A City of Columbus Floodplain Development Permit will be obtained prior to construction, and all conditions of the permit shall be adhered to during construction.

Threatened or Endangered Species

- All permanent seeding and landscaping shall use species and composition native to project vicinity as shown in the Plan for the Roadside Environment. (NDOR Environmental, District Construction)
- If species surveys are required for this project, results will be sent by NDOR to the USFWS, NGPC, and if applicable USACE. FHWA will be copied on submittals. (NDOR Environmental, District Construction)
- 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)
- Environmentally sensitive areas will be marked on the plans, in the field, or in the contract by NDOR Environmental for avoidance. (NDOR Environmental, District Construction)
- Conservation conditions are to be fully implemented within the project boundaries as shown on the plans. (District Construction, Contractor)
- 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. Any project related activities that occur outside of these areas must be environmentally cleared/permitted with the U. S. Fish and Wildlife Service and 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 will not adversely affect state and/or federally listed species or designated critical habitat. (NDOR Environmental, District Construction, Contractor)

- 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)
- 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)
- 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)
- Refueling will be conducted outside of those sensitive areas identified on the plans, in the contract, and/or marked in the field. (Contractor)
- The contractor shall try to obtain borrow from an upland site to prevent depletion issues. Borrow sites that expose groundwater outside of the PRRIP area will be offset according to the Biological Opinion prepared by NGPC in accordance with the Nebraska Nongame and Endangered Species Conservation Act. However, if the material site is located within the Platte River basin and it is identified that it will pond water after excavation, NDOR will determine Project-related impacts by calculating the evaporated loss of water at the material site by using the USDA NRCS Consumptive Use Calculator. Results of the impacts shall then be submitted to Nebraska DNR, and the construction contractor shall be responsible to offset the depletion impacts in accordance with the PRRIP.

- The contractor shall obtain all environmental clearances and permits required for the borrow site prior to obtaining borrow material for the Project.

Archaeological Resources

- In the event that previously unsuspected archaeological remains are uncovered during construction, the contractor shall avoid and protect the site and notify NDOR of the discovery. NDOR will then contact FHWA to initiate consultation with Nebraska SHPO so that the remains can be evaluated and recommendations can be provided for further action (NSHS, September 16, 2008). In compliance with regional permit conditions, the City will also inform USACE of the discovery. *Native American tribes will also be notified of unexpected discoveries as appropriate.*
- In the event that the Project results in direct or indirect impacts on any of the archaeological sites eligible for listing on the NRHP or standing residential structures that merit protection under the American Indian Religious Freedom Act, the City shall provide for mitigation through a program of archival research, ethnographic studies, archaeological testing, and/or data recovery excavations. Implementation of the proposed mitigation, including development of an MOA between the City and agencies such as FHWA, NDOR, and the Native American tribe will reduce the impact of the Project. Cultural resources affected by the Project shall be treated in accordance with the Final MOA to ensure that the Project follows the Secretary of the Interior's Standards for the Treatment of Historic Properties (NPS, November 2, 2005).
- If previously unidentified cultural resources were encountered during activity related to the construction of the Project, the contractor shall stop work immediately at that location and shall take all reasonable steps to secure the preservation of those resources. The process for dealing with an unanticipated discovery is addressed under NDOR Standard Specification 107.10 (NDOR, 2007).

Historic Properties and Section 4(f)/6(f) Properties

- The contractor shall use seismic monitoring equipment and monitor vibrations of pier construction near the Loup Power District building at 1350 12th Avenue to make sure that vibrations are below industry-accepted thresholds (a PPV of 0.2 inch per second, or 90 dB). An alarmed monitoring system shall be installed to signal any vibration event that equals or exceeds a threshold of 80 percent of the PPV level.

Regulated Materials Sites

- The foundation design for the 18th Avenue pedestrian overpass will use pile-supported footings for the bridge foundations. These footings will utilize either concrete or steel piles.

- The City shall continue to coordinate with EPA and NDEQ regarding foundation design during final design activities regarding the final pile material selection (concrete or steel) and the final dimensions of the pile-supported foundations and prior to construction regarding the affect of on-going remediation by EPA and NDEQ on the extent of groundwater contamination. Additionally, the City will include the location of extraction and monitoring wells on the plans and wells in the vicinity of construction activities will be marked in the field prior to construction activities.
- The City will inform construction contractors of the presence of Superfund and petroleum remediation sites with a high-risk of contamination, including groundwater contamination, within and near the preliminary impact area for the proposed 18th Avenue pedestrian overpass at a pre-bid meeting. The City will provide the contractor with the most current information from EPA and NDEQ regarding the extent of contamination.
- The contractor shall develop and implement a worker health and safety plan addressing the risk associated with encountering contaminated groundwater through both dermal and inhalation exposure. If groundwater is encountered, the contractor shall collect and analyze samples in accordance with NDEQ procedures to determine whether any constituents require disposal as a hazardous waste. If a sample is determined to be a hazardous waste, the contractor shall develop a plan for collecting and disposing of the contaminated groundwater.
- The excavation for the north pier for the 18th Avenue pedestrian overpass will be approximately 6 to 8 feet north of the fiber optic cable and water line associated with Extraction Well 04 for the EPA 10th Street Superfund site. To avoid impacts, these items will be designated on the final plans as "Do Not Disturb." The contractor shall mark the location of the pipeline and cable in the field (both the position and the depth of the cable) prior to construction of the proposed 18th Avenue pedestrian overpass and the associated fencing, and prior to removal of the 25th, 21st, and 17th Avenue at-grade crossings, and the contractor will be required to avoid impacting the pipeline and cable.
- The construction contractor shall avoid monitoring wells associated with remediation of the former Deyke and Pollard Oil site during construction of the proposed 18th Avenue pedestrian overpass and associated fencing to the extent practicable. Five monitoring wells will likely require abandonment, and three will need to be replaced in coordination with NDEQ. Replacement of a monitoring well typically costs approximately \$2,000 (replacing three wells will cost approximately \$6,000). Plugging and abandoning multiple monitoring well typically costs approximately \$400 per well (plugging and abandoning five wells will cost approximately \$2,000) (Kennedy/Jenks

Consultants, October 26, 2010 – see Appendix B). The final design drawings shall include information on the well locations that will conflict with construction. The City shall coordinate with NDEQ regarding the need to abandon wells prior to the pre-bid meeting to be held with contractors. The City will contact NDEQ to coordinate the plugging and abandoning of designated wells by the remediation consultant/contractor in accordance with applicable regulations and drill new wells as needed; at that time, the City and NDEQ will determine which of the two agencies will be responsible for the cost of abandoning and plugging wells. Other monitoring wells within approximately 20 feet of proposed construction that will not need to be plugged and abandoned shall be marked on final design drawings and in the field prior to construction. These wells shall be avoided during construction.

- As part of a health and safety plan for work on the 18th Avenue overpass and 12th Avenue viaduct, the construction contractor shall monitor the air in the vicinity of excavations and drilling for VOCs, and shall provide worker protection as needed to avoid impacts on workers. Due to the overall presence and potential for the contractor to encounter contaminated media and health and safety concerns, personnel with the 40 hour OSHA training shall be utilized. Personnel with the 40-hour training and 8-hour supervisor training are allowed to oversee activities of non-trained personnel. An on-site safety briefing shall include potential contaminants and safety issues related to personal protective equipment, limiting exposure to soil and groundwater, and other items. The contractor's Health and Safety Officer shall be responsible for establishing an acceptable program, and construction shall not be initiated until an appropriate plan has been certified by a Certified Industrial Hygienist, and reviewed by NDOR or its designee for acceptability.
- As part of ROW compensation (prior to construction), the City and Loup Power District shall coordinate the removal of the two ASTs, fuel pumps, and piping at the Loup Power District building east of 12th Avenue. Loup Power District shall be responsible for removal of any contaminated soils and for compliance with handling and disposal requirements. Loup Power District shall move the ASTs and complete any necessary remediation prior to ROW purchase.
- Areas known to contain contaminated soils above regulatory cleanup standards will be marked on the construction plans. The construction contractor shall avoid excavation in these contaminated soils. If excavation is required in areas known to contain contaminated soils, the contractor shall coordinate with the City regarding remediation prior to start of construction excavation. If previously unknown, but suspected hazardous materials (*including contaminated groundwater*) are encountered during construction, the contractor shall cease work at that location and shall contact the City engineer

to arrange for proper assessment, treatment, or disposal of those materials. The contractor shall decontaminate equipment as needed.

Visual

- The aesthetic themes and enhancements developed by the Aesthetics Design Working Group will be incorporated into the final design for the viaducts and pedestrian overpass to the greatest extent practicable.
- The lighting on the pedestrian overpass will be designed to provide security and visibility of the overpass, but not to flood into or adversely affect the surrounding land uses.
- The proposed railing along the 12th and 3rd Avenue viaducts will be selected to complement the existing railings around the cemeteries. Additionally, along the 3rd Avenue viaduct, new tree plantings near the retaining walls will buffer the view from the adjacent residences.
- Where at-grade crossings will be closed, visual cues will be provided to indicate that the street ends. In addition to the required signage, improvements such as landscaping at these closings will help define the closing and visually enhance the end of the street where views are intended to be interrupted.
- The aesthetic treatments included in the completed structures at 18th Avenue, 12th Avenue, and 3rd Avenue will soften the visual intrusion of large, primarily concrete structures by incorporating texture and color through the use of form liners, specialty pier shapes and color staining of concrete elements. Decorative fencing and light standards on the structures will also provide color and variety to the visual landscape. In addition, vegetative plantings will be used in City ROW to shield views of the structures from adjacent residences
- The City will develop an aesthetic treatment plan during final design and will present the plan to the public for review at the design public hearing. The City will coordinate development of the plan with FHWA and NDOR.

Temporary Construction Impacts

- Traffic and Safety – During construction, the construction contractor shall keep 12th and 3rd Avenues open to traffic to the extent practicable; these two streets will be closed for about 6 months. The City shall notify the public one to two weeks prior to these closings. During final design of the proposed viaducts, the City shall develop a traffic control plan using standard safety measures. This plan shall be designed to minimize traffic disruption and shall include the use of appropriate signage and construction barriers to alert motorists to temporary traffic conditions and provide for their safety. The contractor shall place steel girders during non-business hours. The contractor shall maintain access to the Loup Power District building through staging of construction work; access shall be interrupted only

for placement of steel girders. The contractor shall coordinate any interruption in access to Loup Power District with Loup Power District to avoid adversely affecting its operations.

- Airports – Any contractor involved in the Project shall use the FAA Notice Criteria Tool, and if required, the City shall file FAA Form 7460-1. This form is required if the contractor uses any equipment over 200 feet tall, or if the equipment breaks a 100:1 slope from a public-use airport. This includes any trucks or equipment used during construction.
- Economics – The contractor shall at all times, to the extent practicable, provide commercial properties and businesses with access to and from the nearest intersecting public road or street. The contractor shall make accommodations to ensure that local traffic passing within the limits of the Project has access to all commercial properties, businesses, and public facilities. If a road is closed, the contractor shall maintain limited access for authorized local traffic. If access is closed longer than one day, the contractor shall meet with the property owners to address temporary access issues.
- Pedestrian, Bicycle, and Recreation Facilities – During construction, the contractor shall provide access from 3rd Avenue (north of the UPRR mainline) to Agricultural Park throughout mid-July for animal exhibitors at the Platte County Fair.
- Air Quality – The construction contractor shall implement the following BMPs to minimize air quality impacts during construction:
 - Avoid concentration of equipment at locations near any sensitive receptor sites.
 - Comply with the statutory regulations for state air pollution control and obtain permits, as needed.
 - Adhere to requirements regarding open burning of grubbed vegetation, fugitive dust, visible emissions, and permits. Construction contracts shall stipulate adherence to the requirements, and an open burning permit is required if any open burning were to occur in Nebraska as a result of the Project.
 - Develop a water-sprinkling schedule and follow it to control dust.
- Noise – The contractor shall use BMPs to minimize any potentially adverse effects related to construction. BMPs will include enforcing source and site control as well as time and activity constraints. Source control will involve reducing the noise impacts associated with construction by controlling noise emissions at their source. The City shall monitor contractors to ensure that mufflers and other noise-reduction equipment are used and are in proper working condition. Site control shall involve the specification of certain areas where additional precautions are warranted to minimize noise and vibration impacts. Construction impacts could be reduced through site control by placing machinery as far away from noise-sensitive receivers as

possible or by placing barriers between machinery and noise-sensitive receivers. Time and activity constraints will limit working hours to daylight hours, typically 6 a.m. to 6 p.m. Equipment operating at the Project sites shall conform to contractual specifications requiring the contractor to comply with all local noise control rules, regulations, and ordinances.

The BMPs listed below are proposed to reduce construction vibration near the historic Loup Power District building near 12th Avenue and 14th Street; the appropriate BMPs will be determined at the time of construction:

- Seismic monitoring – Conduct seismic monitoring of pile-driving operations to ensure that ground vibrations do not exceed industry thresholds (a PPV of 0.2 inch per second, or 90 dB) for damage to historic structures. An alarmed monitoring system shall be installed to signal any vibration event that equals or exceeds a threshold of 80 percent of the PPV level.
- If the 0.2 inches per second PPV threshold is reached, alternative construction methods shall be used to reduce vibrations. Alternate methods include: restricting the size or energy level of the pile driver – Use a lighter hammer or energy level for the pile driver to reduce vibration. A hydraulic static press-in pile driver, which typically produces much lower vibration levels than impact pile drivers, could also be considered.
- Water Quality – The City shall acquire an NPDES Construction General Permit and shall prepare an associated SWPPP. It is likely that plans ~~would~~ will include installation of silt fences, detention basins, buffer strips, or other features used in various combinations as well as the placement of drums of petroleum products in secondary containment to prevent leakage onto ground surfaces. After completion of grading, the construction contractor shall seed disturbed areas. The contractor shall maintain erosion controls until the newly seeded grasses become established.
- Visual – The construction contractor shall revegetate the ROW after construction.

APPENDIX A

POST DEA ADDITIONAL AGENCY
CORRESPONDENCE

From: [Richardson, Lisa \(Omaha\)](mailto:Richardson.Lisa@omaha.com)
To: Cothorn.Joe@epamail.epa.gov; julie.l.ward@nebraska.gov
Cc: Swyers.Nancy@epamail.epa.gov; neal.heil@nebraska.gov; [Zach, Allison M](mailto:Zach.Allison.M@dot.gov); raegan.ball@dot.gov; [Goedeken, David](mailto:Goedeken.David@tigeris.com); [Tigeris, Raitis](mailto:Tigeris.Raitis@tigeris.com); [Wiest, Andy](mailto:Wiest.Andy@tigeris.com)
Subject: Columbus, Nebraska Viaduct Project
Date: Wednesday, June 01, 2011 2:31:31 PM
Attachments: [mNDEQ.110527.RegMat_wFigures.pdf](#)
[LNDEQ.110601.Foundation_Review.pdf](#)
[Nepa.101228.Reg_Mat.pdf](#)
[FW_NDEQ_NEPA_Review_of_Columbus_Viaducts_project.msg](#)
[Columbus_Nebraska_Viaducts_Project.msg](#)

Ms. Ward & Mr. Cothorn,

Each of your agencies provided comments on the potential impact of the 18th Avenue Pedestrian Overpass in Columbus, Nebraska on two regulated materials sites: 10th Street Superfund Site (EPA) and Deyke-Pollard Oil Site (NDEQ). Attached please find a cover letter and memorandum regarding the foundation design for the 18th Avenue Pedestrian Overpass and how the two designs considered may affect each of these sites. Also attached are the comments you provided via e-mail as well as notes from a meeting held with EPA and FHWA to discuss the 10th Street Superfund Site.

The Final EA and NEPA decision document for this project are on a fast track to be completed no later than July 13th, 2011. Therefore, we are requesting your comments and concurrence on the preferred foundation design by June 14th, 2011.

If you have questions about the attached memorandum, please don't hesitate to contact me at (402) 926-7026. If it would be helpful for your review, we would be happy to have a conference call with you to discuss any comments you may have so your concerns can be fully addressed in the Final EA.
Thanks,

Lisa

Lisa M. Richardson, P.E.
Associate Vice President
Professional Associate

HDR One Company | Many Solutions

8404 Indian Hills Drive
Omaha, NE 68114-4049
Phone: 402.926.7026
Cell: 402.618.9865
Fax: 402.399.1111



June 1, 2011

Julie Ward
Nebraska Department of Environmental Quality
1200 N Street, Suite 400
P.O. Box 98922
Lincoln, NE 68509

AND

Joe Cothorn
NEPA Team Leader
Environmental Services Division Region VII
901 North 5th Street
Kansas City, KS 66101-2670

Re: City of Columbus Viaducts Project
Regulated Materials/Environmental Assessment
NDOR Project Nos. RRZ-TMT-6065(5), RRZ-TMT-6061(8), and RRZ-TMT-6059(7)

Dear Ms. Ward and Mr. Cothorn:

On April 27, 2011, via letter, the City of Columbus provided notice to your agencies of the availability of the Draft Environmental Assessment (EA) for the above noted project. Prior to completing the Draft EA (in December 2010 and January 2011), we had coordinated with your agencies regarding potential impacts to the following hazardous materials sites in the vicinity of the proposed pedestrian overpass at 18th Avenue:

- 10th Street Superfund Site
- Deyke-Pollard Oil Site

In our earlier discussions, you had requested an opportunity to review the preliminary foundation design to provide a better understanding of potential impacts to the hazardous materials sites. The City has completed the additional geotechnical and design work and has identified the pile-supported foundation as the preferred foundation alternative for the 18th Avenue pedestrian overpass. The results of the design and analysis of impacts is documented in the attached memorandum.

On behalf of the City of Columbus, I am requesting your concurrence with the City's preferred foundation alternative.

Lisa Richardson
Lisa.richardson@hdrinc.com
HDR Engineering, Inc.
8404 Indian Hills Drive
Omaha, Nebraska 68114-4098

Please provide your comments by June 14th. If you have any questions or comments, please feel free to contact me at (402) 926-7026.

Sincerely,
HDR ENGINEERING, INC.

A handwritten signature in blue ink that reads "Lisa M. Richardson". The signature is fluid and cursive, with the first name "Lisa" being the most prominent.

Lisa Richardson, PE
NEPA Project Manager

Enclosure (Regulated Materials Review Memorandum Package)

cc (w/o enclosures):

Dave Goedeken, City of Columbus
Raitis Tigeris, NDOR
Allison Zach, NDOR
Nancy Swyers, EPA (10th Street Superfund Site)
Neal Heil, NDEQ (Deyke-Pollard Oil Site)

To: U.S. Environmental Protection Agency Nebraska Department of Environmental Quality	
From: City of Columbus, Nebraska	Project: Columbus Viaducts
CC: Nebraska Department of Roads Federal Highway Administration	Client Project No: RRZ-TMT-6065(5), CN 31924 RRZ-TMT-6061(8), CN 31925 RRZ-TMT-6059(7), CN 31927
Date: May 27, 2011	HDR Project No: 80759

RE: Foundation Design for the Proposed 18th Avenue Pedestrian Overpass

On December 9, 2010, the City of Columbus (the City) prepared a regulatory review package consisting of the Regulated Materials sections from the Columbus Viaducts preliminary Draft Environmental Assessment (EA) for review by the U.S. Environmental Protection Agency (EPA) Region 7, Nebraska Department of Environmental Quality (NDEQ), Federal Highway Administration (FHWA), and the Nebraska Department of Roads (NDOR). Comments on the review package were requested and received. The EA included a discussion of existing conditions at the proposed viaduct sites (18th Avenue, 12th Avenue, and 3rd Avenue) based on EPA documentation regarding the 10th Street Superfund Site and NDEQ documentation of the Deyke-Pollard Oil Site.

The purpose of this memorandum is to update EPA, NDEQ, and FHWA on efforts to address agency comments and concerns related to Regulated Materials in the vicinity of 18th Avenue. The City’s consultant performed geotechnical investigations in January and February 2011 and preliminary foundation design was completed in May 2011 for the proposed pedestrian overpass at 18th Avenue. This memorandum provides updated information related to impacts of the pedestrian overpass on regulated materials in the 18th Avenue corridor.

Comments Received by Reviewing Agencies

EPA Region 7 provided written comments on the regulatory review package on December 21, 2010. EPA identified no regulated materials concerns related to the proposed improvements at 12th Avenue and 3rd Avenue. EPA noted the following in their comments:

- Depth to groundwater is approximately 12 feet in the vicinity of 18th Avenue (the site of the proposed pedestrian overpass)
- Concern that the depth of footings for the proposed pedestrian overpass may intrude in the zone of contamination related to the 10th Street Superfund site
- Concern that foundation construction may result in the spread of contaminants between the upper and middle aquifers by potentially opening a pathway for contaminants in the upper aquifer to migrate to the lower non-contaminated layer.
- Concern about safeguarding a fiber-optic cable and high-density polyethylene (HDPE) piping running parallel to the Union Pacific Railroad (UPRR), within railroad right-of-way (ROW).

EPA also requested an opportunity to review preliminary foundation design to further evaluate potential impacts.

A telephone conference was held December 28, 2010 between EPA Region 7, FHWA, and HDR to discuss the December 21, 2010 EPA comments. The result of the conference call was a request to evaluate two foundation options prior to approving a Final EA for the pedestrian overpass:

- A shallow spread footing foundation; and
- A pile-supported foundation

In order to evaluate these foundation options, it was determined that additional structural design and geotechnical testing would be required to more precisely determine foundation size requirements and potential impacts to groundwater. Additionally, it was decided that groundwater sampling be completed to determine the absence or presence of contaminants at the proposed pedestrian overpass site, since the 10th Street Superfund Site contaminant plume boundaries in the vicinity of 18th Avenue are based on monitoring wells located 300 to 500 feet from the proposed pedestrian overpass site,

NDEQ concurred with EPA comments on January 18, 2011 and did not provide any additional comments.

Response to Comments Received

A preliminary discussion regarding the alternatives of a spread footing foundation and a pile supported foundation was added to the Draft EA that was approved by FHWA on April 5, 2011. The Draft EA also noted that additional geotechnical investigation and preliminary design was needed to more clearly assess the environmental impacts of the proposed pedestrian overpass construction related to regulated materials.

Geotechnical Investigation

As decided on the December 28, 2010 conference call, a preliminary geotechnical investigation was performed for the proposed 18th Avenue pedestrian overpass. Six geotechnical borings were completed and two temporary piezometers were installed at the proposed 18th Avenue site between January 27, 2011 and February 4, 2011. The depth to groundwater was determined to be 12 to 14.5 feet. The soils encountered in the test borings generally consisted of pavement and shallow man-placed fill underlain by alluvium that continued to the bottom of the 100-foot deep borings. The man-placed fill (asphalt, concrete, clay, and silt) generally extended to depths of 2.5 to 8 feet below the surface of the street. Alluvium encountered below the fill consisted of clay (to a depth of 9 to 13.5 feet), silt, silty sand, poorly graded sand, and well graded gravel to the maximum boring depth of 100 feet. The clay layer reaching a depth of up to 13.5 feet does not constitute a confining layer between aquifer layers because of its position above groundwater. One boring encountered a thin layer of clay from 70 to 70.5 feet below the ground surface. None of the other borings encountered clay below 13.5 feet from the ground surface. Although well logs for the EPA 10th Street Superfund monitoring wells identified a confining clay layer several hundred feet to the west of 18th Avenue, based on the January/February 2011 investigation at the six boring locations at 18th Avenue, it was determined that a clay confining layer does not exist in the 18th Avenue corridor to a depth of at least 100 feet below ground surface.

The geotechnical study completed by Thiele Geotech Inc. provided geotechnical properties of the underlying soils such as the type of soil material, its shear strength, moisture content, and allowable bearing pressure for use in developing preliminary design of the two foundation types. Additionally, the geotechnical report commented on the applicability of shallow foundations (spread footings) and deep foundations (driven steel pipe or precast concrete piles). In the opinion of the geotechnical subconsultant, a pile foundation “is much more likely for this project.”

Groundwater Sampling

The 10th Street Superfund Site plume consists of chlorinated solvents from dry cleaning operations. The proposed 18th Avenue pedestrian overpass is within the southeastern portion of the groundwater plume emanating from the source area (as estimated from the network of EPA monitoring wells). Groundwater within the vicinity of the proposed pedestrian overpass has been found to contain trichloroethene (TCE) and breakdown products including cis- and trans- DCE. DCE was above the federal maximum contaminant level (MCL) at monitoring wells located approximately 300 feet southwest, 450 feet south, and 280 feet southeast of the proposed pedestrian overpass location. The third quarter 2010 groundwater extraction and treatment system report for the 10th Street Superfund Site indicated no substantial changes from the second quarter 2010.

As noted in the EA, constituents included in the groundwater potentially include benzene, toluene, ethyl benzene and xylenes (BTEX) and other aromatic and aliphatic compounds associated with the Deyke-Pollard Oil Site. Fuel constituents have a density less than water and tend to float on the surface. The consultant operating the soil vapor extraction (SVE) system indicated the SVE system would require an additional two to three years of operation to complete cleanup (until approximately 2014).

The fourth quarter 2010 groundwater monitoring report (the most recent results available) for the Deyke-Pollard Oil Site indicated that there were no substantial changes in conditions at the site. Free product (fuel) was detected at NDEQ monitoring wells 24 and 29, both located approximately 440 feet west of 18th Avenue. The concentration of dissolved benzene in the center of the plume corridor was higher in the fourth quarter compared to the second quarter, but the plume is moving in a south-southwest direction, away from the footprint of the proposed pedestrian overpass. The concentration of dissolved benzene at monitoring well 9, located just south of 12th Street approximately 80 feet west of 18th Avenue (approximately 90 feet west-southwest of the pedestrian overpass footprint) decreased from 487 ug/L to 27.7 ug/L.

Two piezometers were installed for the January 2011 geotechnical investigation. A groundwater sample was collected from each of the piezometers and submitted for analytical testing. The groundwater sample collected at piezometer 1 (see Figure 1) at a depth of 20 feet was analyzed for petroleum hydrocarbons (the EPA 8260 OA list). Sample results indicated 24 µg/L total purgeable hydrocarbons and 66 µg/L total extractable hydrocarbons as diesel. An MCL has not been established for either of these contaminants. Other petroleum hydrocarbons (including benzene, toluene, ethylbenzene, and total xylenes) were not detected.

The groundwater sample collected at piezometer 2 (see Figure 1) at a depth of 30 feet was analyzed for the EPA 8260B volatile organic compounds (VOCs) list. The concentration of TCE detected was 1.2 µg/L (as compared to the MCL of 5 µg/L). The concentrations of cis-1,2 DCE and trans-1,2 DCE, were 39 µg/L and 3.1 µg/L, respectively, were also below the MCLs of 70 and 100 µg/L, respectively. No other 8260B VOCs were detected.

The geotechnical investigation determined that all chemical concentrations in groundwater in the immediate vicinity of the 18th Avenue pedestrian overpass are less than federal MCLs. Concentrations of chlorinated compounds at the proposed pedestrian overpass location also indicate that there is no potential for dense non-aqueous product liquid (DNAPL) formation within the project site. If a DNAPL were to form (> 6,000 µg/L for TCE), there would be a greater potential for the solvents to migrate downward within the aquifer since the density of chlorinated solvents is greater than water. DCE has been found in wells screened between 5 and 30 feet below ground surface, and TCE has been found at depths up to 80 feet below ground surface at locations 700 feet northwest of the proposed pedestrian overpass.

Preliminary Design of Pedestrian Overpass Foundations

Since construction of the foundations for the pedestrian overpass would be required in areas potentially affected by the 10th Street Superfund site and the Deyke-Pollard site, two foundation options were considered in the Draft EA to minimize potential impacts on these sites: spread footing foundation or pile-supported foundations. Both options are described below.

Spread footing foundation – This type of foundation would consist of a relatively large reinforced concrete mass under each column that could distribute the weight of the structure over a large area. The size of the footing is dependent on the magnitude of the column loads and the geotechnical properties of the underlying soils near the ground surface such as the type of soil material, its shear strength, moisture content, and allowable bearing pressure. For large column loads and weaker supporting soils, the footing size and depth would increase. Based on the bearing loads of the soils and underlying alluvium, the bottom of the footings should be placed at a depth of 10 feet. Additional excavation (up to 3.5 feet deeper) may be needed to remove clay that extends to a depth of approximately 13 feet. Excavations for the foundations would require, at a minimum, a 1:1 slope – for every foot of depth, the excavation would extend 1-foot horizontally in each direction. Consequently, a 10-foot excavation would extend 10 feet horizontally from each side of the spread footings.

Vertical and lateral loads were estimated for the pedestrian bridge columns as part of the preliminary design. Four columns, aligned north to south, would be needed on the north approach ramp. A 17-foot x 15-foot spread footing would be required for each column (see figure 2). A single excavation measuring approximately 118 feet (north to south) by 37 feet (east to west) would be needed for these footings.

The two piers supporting the prefabricated steel truss spanning over the UPRR mainline would each consist of two columns. For a spread footing alternative, the footings for each column of the piers would overlap; consequently, a combined footing would be required measuring 33 feet by 21 feet. Two excavations (one north and one south of the UPRR mainline), each measuring approximately 53 feet by 41 feet, would be needed.

For the south ramp approach, the size of individual spread footings would have overlapped, so a combined mat footing for all the columns would be required. It is estimated that a 37-foot by 60-foot combined footing would be required. An excavation measuring approximately 80 feet by 57 feet would be needed.

An estimated 2,525 cubic yards of excavation would be required for the spread footing foundations.

Pile-supported foundation – This type of foundation would consist of either concrete or steel displacement piles measuring approximately 1-foot in diameter or 1-foot square that would be driven into the ground to the depth of a competent layer of bearing soil. The length of the piles is dependent on the geotechnical properties of the deeper soils. The piles would be topped with a 3-foot-thick reinforced concrete cap, which, in turn, would support the columns for the pedestrian overpass. The bottom of the concrete caps would be located at a depth of approximately 4.5 feet.

For the columns on the north approach ramp, either a 6-foot by 6-foot or 7-foot by 7-foot pile cap would be required, depending on whether precast concrete piles or steel pipe piles were used. Each pile cap would have four piles under it. The north approach ramp would require a total of four columns and foundations. Each of the excavations for the north approach ramp columns would extend out approximately 17 feet by 17 feet, assuming a 5-foot deep excavation (see Figure 3).

The two piers supporting the prefabricated steel truss spanning over the UPRR would each consist of two columns; 6-foot by 6-foot or 7-foot by 7-foot pile caps would be required for each column. Because of the proximity of these pile caps, a single excavation measuring approximately 34 feet by 17 feet would be required.

For the south ramp approach, pile caps for each of the six columns (arranged in two rows of three columns and caps) would measure either 11 feet by 11 feet or 11.5 feet by 11.5 feet, depending on the type of pile used. The excavated area for each pile cap would be approximately 21 feet by 21 feet (total excavation of approximately 66 feet by 43 feet).

An estimated 443 cubic yards of excavation would be required for the pile-supported foundations.

Impacts of Foundation Alternatives

The following text is the discussion of impacts of the 18th Avenue Pedestrian Overpass on the 10th Street Superfund and the Deyke-Pollard Oil sites from the Regulated Materials section (Section 3.20.3) of the Draft EA. *The revision markings indicate the change in impacts identified in the Draft EA compared to the impacts identified based on the preliminary foundation design for each of the two foundation alternatives. Figures 3-14a, 3-14b, and 3-15 from the Draft EA are attached for reference.*

10th Street Superfund Site

The following paragraphs discuss the potential impacts from construction of the proposed pedestrian overpass on the [\[10th Street Superfund Site\]](#) contamination plumes and remediation program, and the potential impacts of the contamination on construction of the proposed pedestrian overpass.

- There are no EPA monitoring or extraction wells within the preliminary impact area for the proposed 18th Avenue pedestrian overpass; consequently, no EPA monitoring wells would need to be relocated during construction. Construction of the proposed overpass would not affect operation of these wells.
- Minor grading for construction of gravel driveways and a concrete cul-de-sac would not disturb more than 1 to 2 feet of soil and would not affect existing contamination plumes.
- The water pipeline and EPA fiber optic cable associated with the 10th Street Superfund site would be located prior to construction. The final design drawings would include the location of these facilities, and the construction contractor would mark these in the field before construction begins. The UPRR gravel access road parallel to the UPRR mainline would be reconstructed at the northern edge of the UPRR ROW, in the vicinity of the water pipeline and fiber optic cable. This would likely consist of placing 6 inches of gravel over the existing road and over the northern 10 feet where 18th Avenue pavement would be removed. Construction of the fence extending approximately 1,000 feet to the east and 1,100 feet to the west of 18th Avenue would be in close proximity to the water pipeline and fiber optic cable on the north side of the UPRR mainline. Excavations for construction of the fence (a series of approximately 1-foot-diameter holes about 3 feet deep, spaced approximately 10 feet apart) would not reach groundwater and would not likely encounter contaminated soil.
- A large excavation would be required for the spread footing foundation option that would likely extend into the smear zone (contaminated soil at and near the top of the groundwater zone) and could would likely ~~possibly~~ extend into groundwater where excavation is needed to 13.5 feet (to remove clay material). ~~The footprint of the spread footings would require a large excavation,~~ Excavation would ~~likely~~ require relocation of the EPA fiber optic cable and water pipeline associated with Extraction Well 04. Additionally, the spread footing foundation would likely require excavation outside of the existing ROW south of the UPRR mainline, east of 18th Avenue. The excavations for the foundations supporting the prefabricated steel truss spanning the UPRR would extend into UPRR ROW and temporary easements would be required.
- The pile-supported foundation option would require a smaller excavation footprint and would not affect the EPA fiber optic line and water pipeline, or the soil vapor extraction wells. Excavation for the pile caps would be approximately 5 feet deep and the limits of excavation would be within existing ROW with the exception of the piers supporting the prefabricated steel truss spanning the UPRR mainline; excavations for these pile caps would encroach on UPRR ROW and temporary

easements would be required. The excavation for the north pier would be approximately 6 to 8 feet north of the EPA fiber optic cable and water line. These items would be designated on the final plans as “Do Not Disturb,” would be marked in the field prior to the start of construction activities, and the contractor would be required to avoid impacting them. The pile driven supports would temporarily displace the contamination plumes in a localized area around the piles. Given the size of the piles (approximately 1 foot by 1 foot) as compared to the extent of the contamination plumes, the displacement would be negligible and would not affect remediation efforts. The presence of the pilings would negligibly affect future migration of the contaminant plume. Based on preliminary geotechnical borings, taken in January and February 2011, indicating a sand layer to a depth of at least 100 feet, ~~the piles would not penetrate the clay layer dividing~~ a confining clay layer is not present between the upper and lower aquifers. The pile caps and other structures would be located above the groundwater level and would not affect the contaminant plume. No contaminated soils would be expected to be excavated or exposed with a pile-supported foundation. The smear zone of contaminated soils near the top of the groundwater zone would not likely be encountered; however, isolated pockets of contaminated soil could be encountered. Any removal of contaminated soil or groundwater would temporarily negligibly affect contaminant plumes (based on the size of the excavations and the extent of the contaminant plume); the groundwater would reach equilibrium a short time after displacement.

- Both TCE and DCE are toxic and can harm human health above permissible exposure levels. TCE and DCE contamination in the vicinity of 18th Avenue is associated with groundwater flow. Due to the potential presence of DCE in the shallow groundwater, DCE vapors could be encountered during excavation and pile driving. As part of a health and safety plan, the air in the vicinity of excavations and drilling would be monitored for VOCs to determine the need for worker protection. Any soil from drilling near, at, or below the depth of groundwater would be tested for VOCs. If any dewatering is required during construction, the groundwater would be tested to determine if it is hazardous. If any contamination above regulatory limits is encountered, notification of the proper agencies and proper handling and disposal of any contaminated soil or groundwater (including decontamination of equipment), would be warranted (see Section 3.20.4, Avoidance, Minimization, and Mitigation).

Former Deyke and Pollard Oil Site

The following paragraphs discuss the potential impacts from construction of the proposed pedestrian overpass on the benzene contamination plume and the remediation program [for the Deyke-Pollard Oil Site], and the potential impacts of the contamination on construction of the proposed pedestrian overpass.

- Minor grading for construction of gravel driveways and a concrete cul-de-sac would not disturb more than 1 to 2 feet of soil and would not affect existing contamination plumes.
- Five of the active monitoring wells at this site are located within the preliminary impact area and would be plugged¹ and abandoned during construction. Groundwater sampling at monitoring wells 4 and 5 has not detected BTEX since September 2007, and sampling results from these and other wells indicate that BTEX is not likely to be present or to move into this area. Neither of these wells, located on the east side of 18th Avenue, would need to be replaced. Monitoring wells 6, 8, and 20, located on the west side of 18th Avenue, would need to be replaced in nearby locations to continue to define the eastern edge of the contaminant plume (Kennedy/Jenks Consultants, October 26, 2010). Replacement of these wells would be completed and paid for by NDEQ (NDEQ, October 27, 2010). Replacement of these wells is further discussed in Section 3.20.4, Avoidance, Minimization, and Mitigation. Construction would not affect the other monitoring wells, the soil vapor extraction system, or skimmer wells to the west and southwest of the proposed construction. The final design

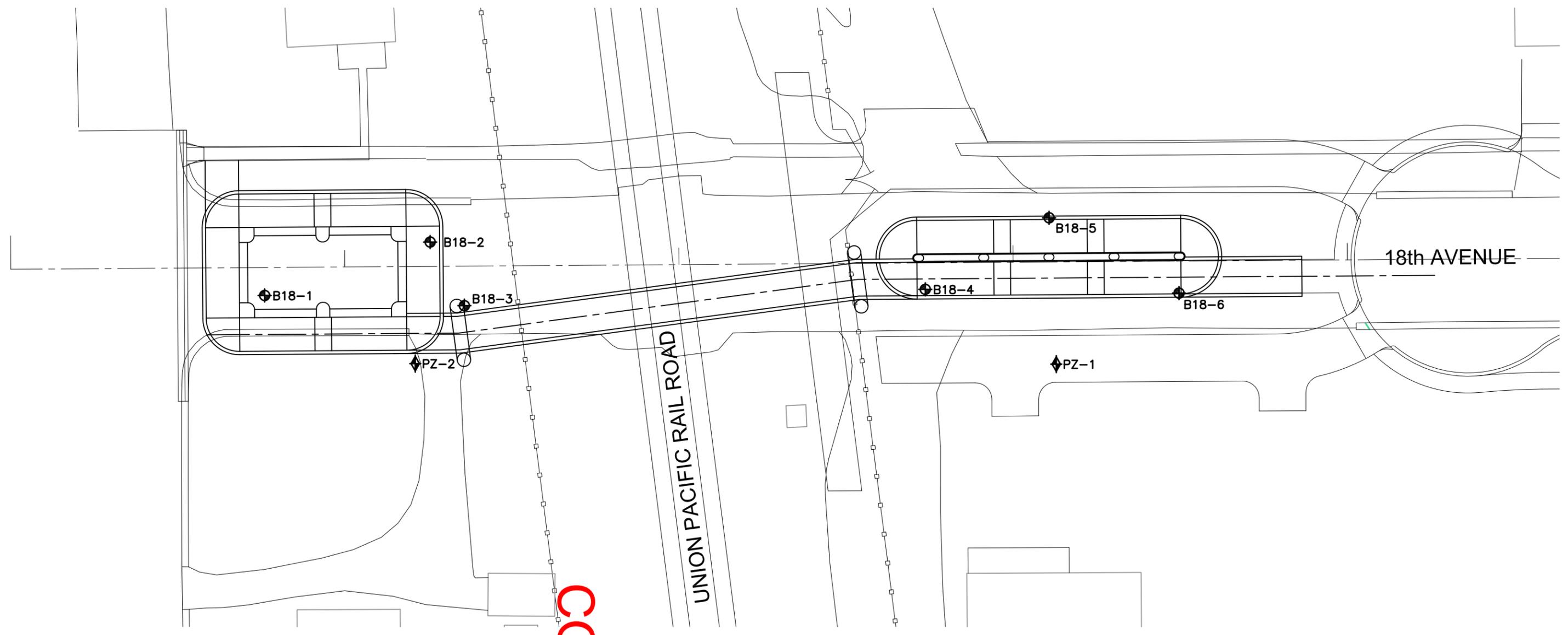
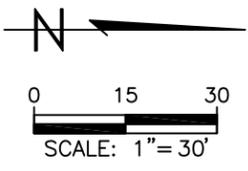
¹ In accordance with Federal, state, and local regulations, the process of plugging is filling a groundwater well with concrete, clay, or other material to prevent its use.

drawings would include the location of monitoring wells in the vicinity of proposed construction, and the construction contractor would mark these in the field before construction begins.

- The spread footing foundation option would likely require excavation outside of existing ROW south of the UPRR mainline, east of 18th Avenue. If additional ROW is required, the Deyke-Pollard petroleum remediation site may be affected, including additional monitoring wells, soil vapor extraction wells, and the contaminant plume. Excavation for the spread footings is not expected to affect any additional monitoring wells, the soil vapor extraction system, or the area within the contaminant plume. Isolated pockets of benzene or free product could be encountered during excavation; if benzene or free product are encountered, excavated soil would need to be tested for contaminants and disposed of properly. ~~Due to the higher probability of encountering contaminated soils above the thresholds of hazardous waste associated with this site, all workers would need to complete the 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response Standard course.~~
- The pile-supported foundation option would require a smaller footprint excavation and would not likely encounter contaminated soil during pile driving based on the latest sampling results and the trends of sample results over the last 3 to 4 years. Excavations for pile caps would reach a depth of approximately 5 feet (8 to 9 feet above the depth to groundwater). Pile driving supports for the pedestrian overpass could temporarily displace isolated pockets of benzene or free product in a localized area around the piles. Given the extent of any isolated pockets of benzene or free product that could be encountered, the displacement would be negligible and would not affect remediation efforts. Any removal of contaminated soil or groundwater would temporarily negligibly affect the benzene plume (based on the size of the excavations and the extent of the benzene plume); the groundwater would reach equilibrium a short time after displacement. The presence of the pilings would negligibly affect future migration of the benzene plume and remediation efforts. The pile caps and other structures would be located above the groundwater level and would not affect the contaminant plume.
- Groundwater monitoring has indicated that an area from approximately 10 to nearly 500 feet west of 18th Avenue, where the proposed fence would be constructed, has groundwater concentrations of benzene above MCL. However, excavations for construction of the fence (approximately 3 feet deep) would not reach groundwater and would not likely encounter contaminated soil. Two monitoring wells (7 and 28) are located approximately 15 feet north of the proposed fencing. Both of these wells would be marked prior to construction and avoided.
- As part of a health and safety plan (also based on contamination from the 10th Street Superfund site), the air in the vicinity of excavations and drilling would be monitored for VOCs to determine the need for worker protection. Any soil from excavations or drilling near, at, or below the depth of groundwater would be tested for BTEX. If any dewatering is required during construction, the groundwater would be tested to determine if it is hazardous. If any contamination is encountered, notification of the proper agencies and proper handling and disposal of any contaminated soil or groundwater above regulatory limits (including decontamination of equipment), would be warranted (see Section 3.20.4, Avoidance, Minimization, and Mitigation).

Conclusion

Based on the preliminary foundation design and associated impacts discussed above, the pile supported foundation would have fewer impacts on both the 10th Street Superfund and the Deyke-Pollard Oil sites. As a result, the City proposes to identify pile supported foundations as part of the preferred alternative for the 18th Avenue pedestrian overpass in the Final EA.



BORING LOCATION PLAN

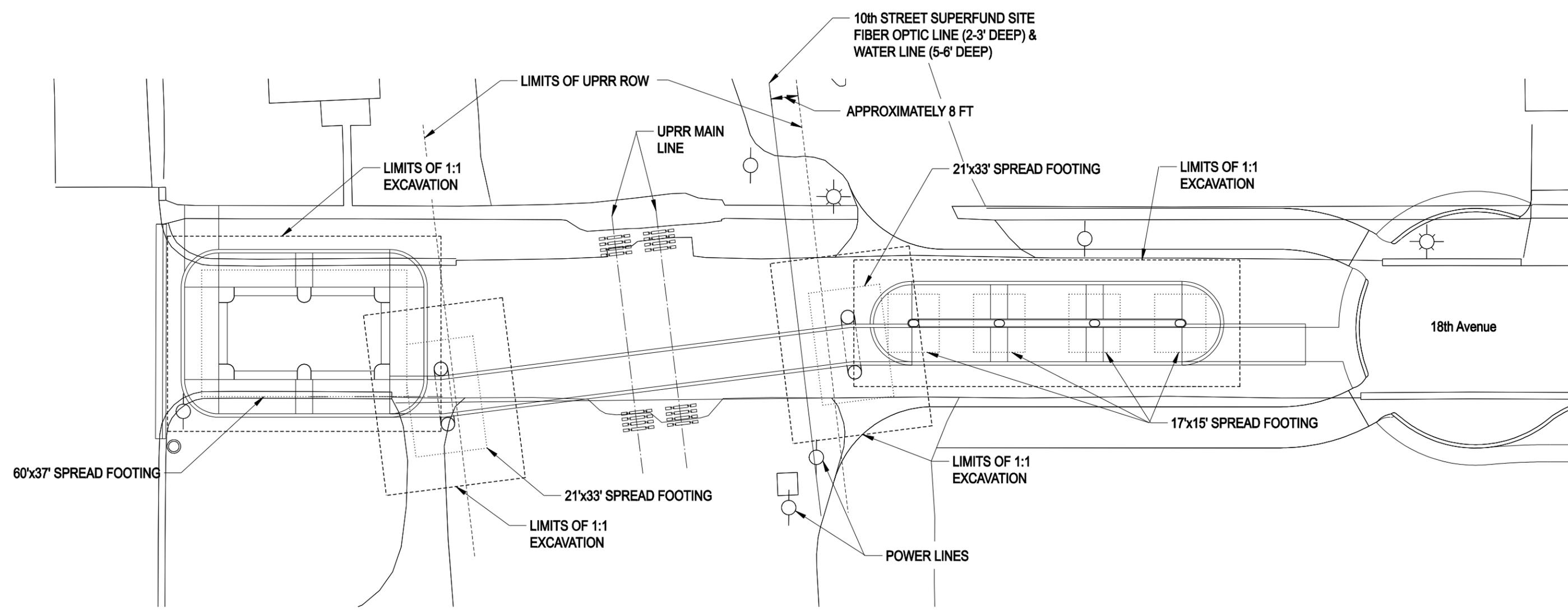
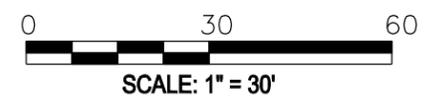
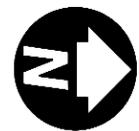
LEGEND

- ◆ BORING LOCATION
- ◆ PIEZOMETER LOCATION



PROJECT
COLUMBUS VIADUCTS 18th AVENUE COLUMBUS, NEBRASKA
JOB # 11021.00 DATE: 2/16/11

Figure 1



Note: Depth of excavation is 10 Feet

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE



**18th Avenue
Spread Footing Foundation**

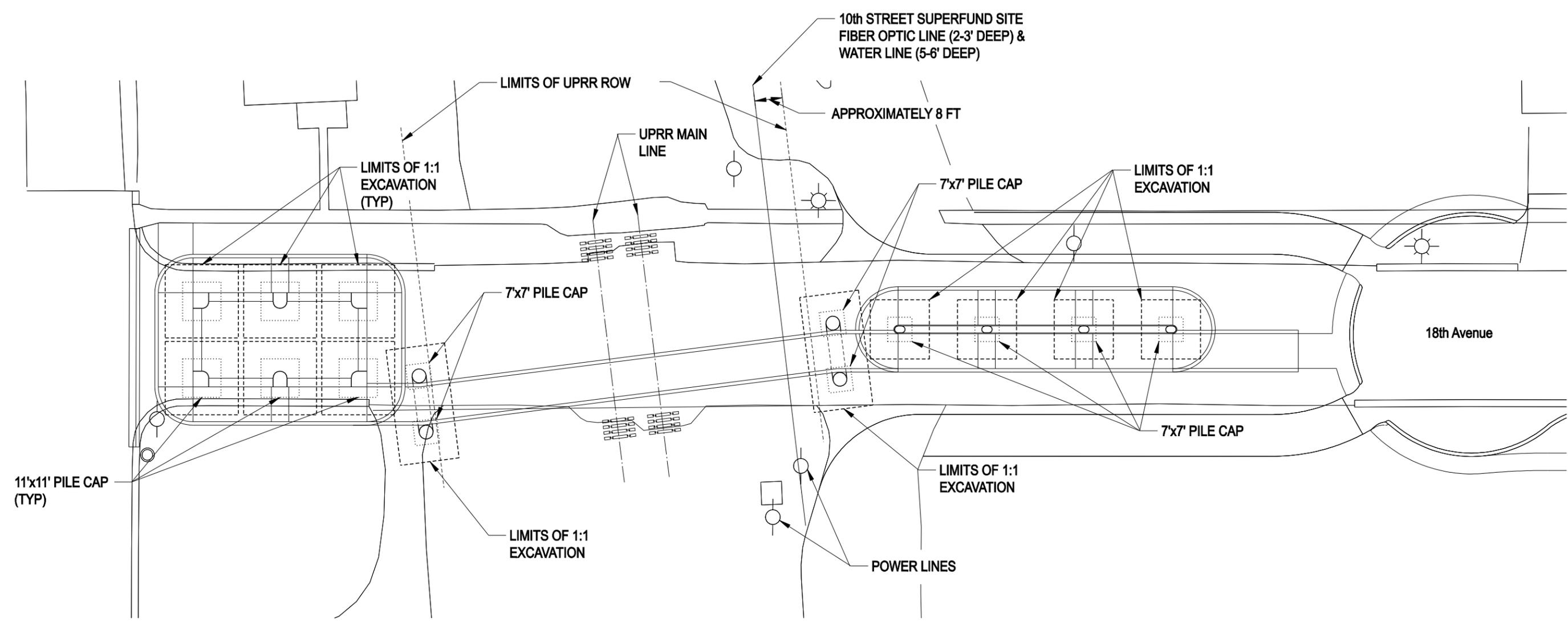
Columbus Viaducts
Platte County, Nebraska



DATE	May 2011
FIGURE	2



SCALE: 1" = 30'



Note: Depth of excavation is 5 Feet

PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE



**18th Avenue
Pile Supported Foundation**

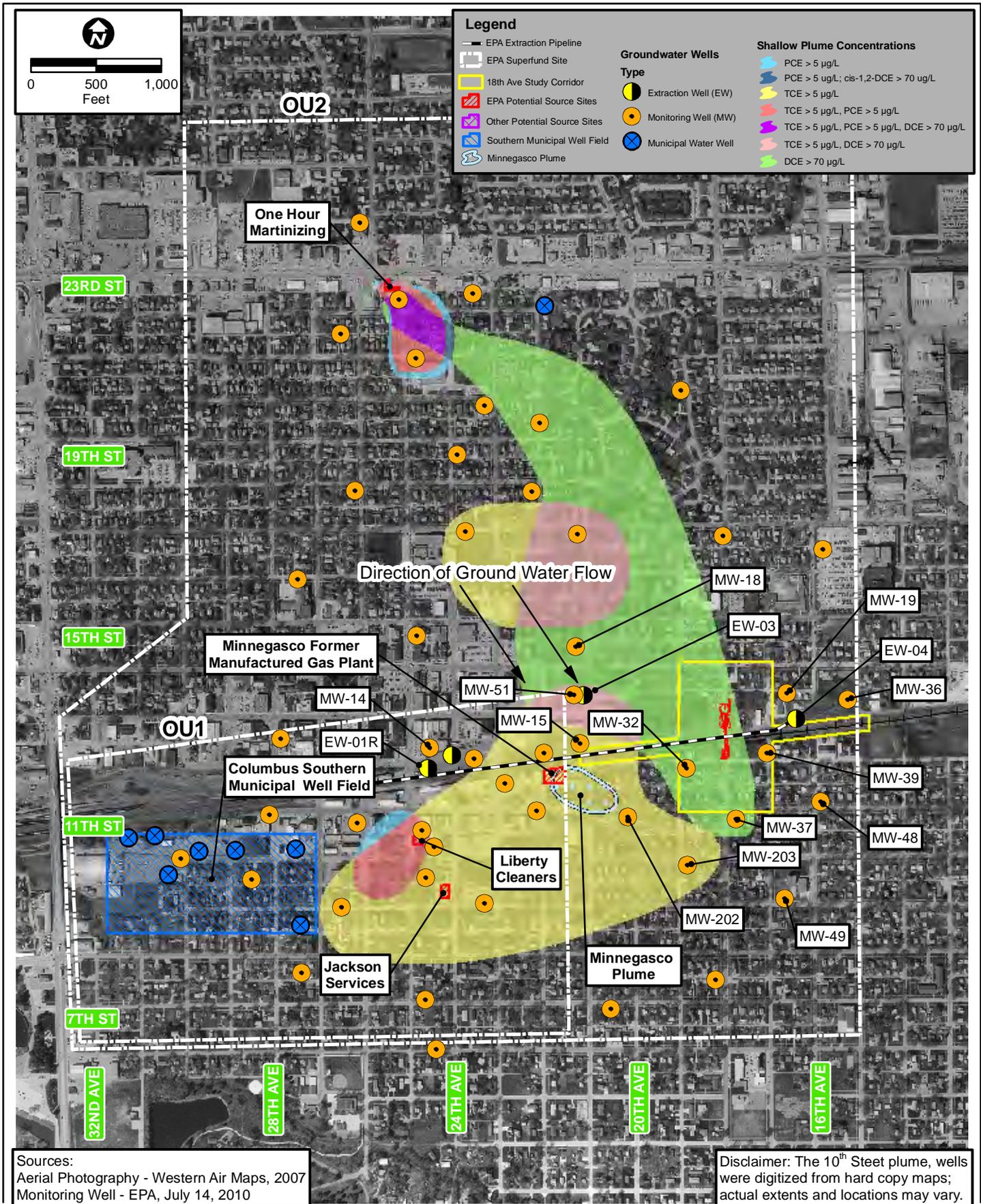
Columbus Viaducts
Platte County, Nebraska



City of Columbus

DATE	May 2011
FIGURE	3

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Sources:
 Aerial Photography - Western Air Maps, 2007
 Monitoring Well - EPA, July 14, 2010

Disclaimer: The 10th Street plume, wells were digitized from hard copy maps; actual extents and locations may vary.

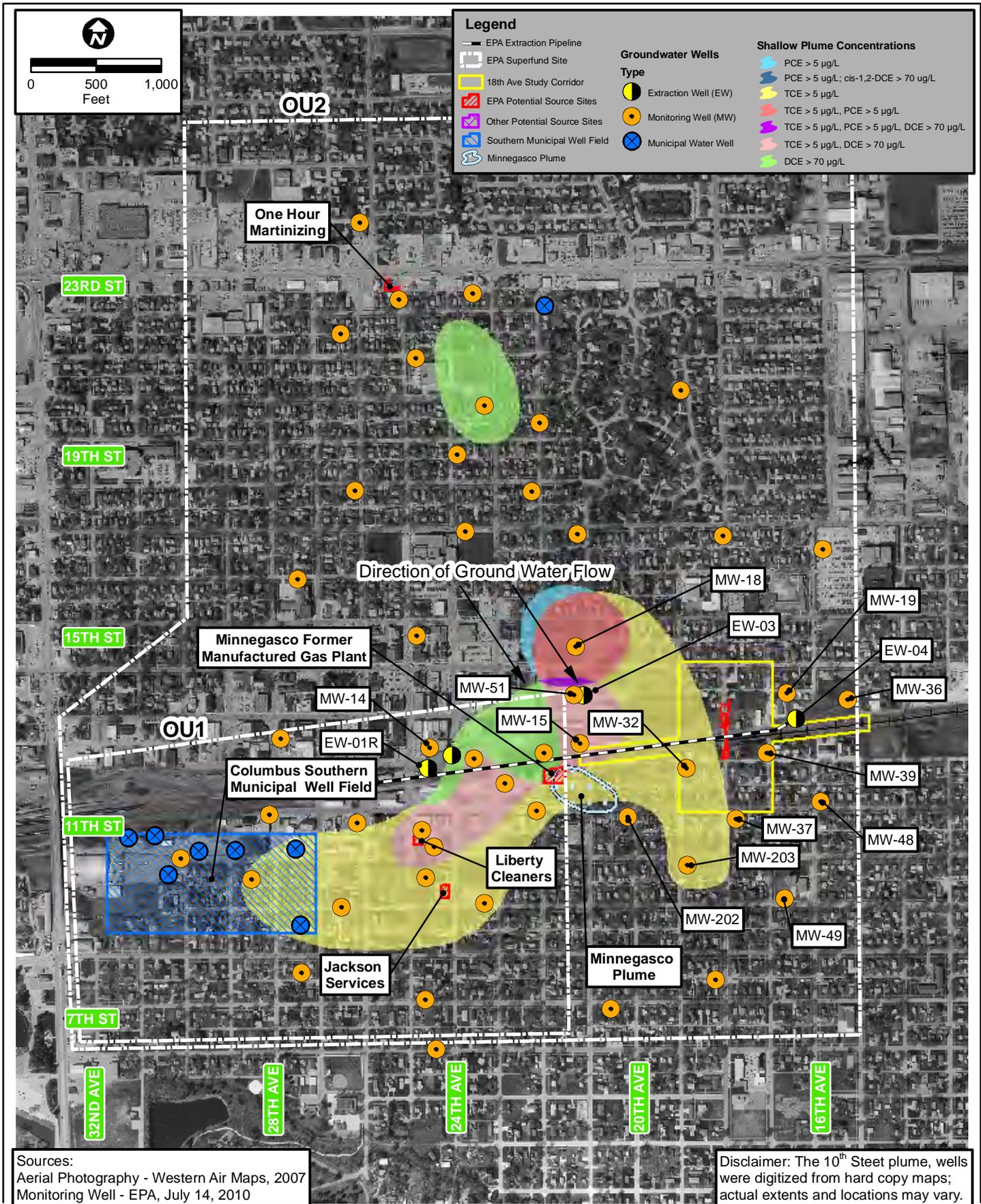


10th Street Superfund Site
Contaminant Plumes Aquifer Layer A
 Columbus Viaducts
 Platte County, Nebraska
 Environmental Assessment

DATE
 March 2011

FIGURE
 3-14a

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10th Street Superfund Site
Contaminant Plumes Aquifer Layer B

Columbus Viaducts
 Platte County, Nebraska
 Environmental Assessment

City of Columbus

DATE
 March 2011

FIGURE
 3-14b

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Sources:
 Aerial Photography - Western Air Maps, 2007
 Monitoring Well: Kennedy/Jenks Consultants, August 13, 2010

Disclaimer: The Deyke Oil benzene concentrations were digitized from hard copy maps; actual extents and locations may vary.



Former Deyke and Pollard Oil Site Benzene Plumes

Columbus Viaducts
 Platte County, Nebraska
 Environmental Assessment

City of Columbus

DATE
 March 2011

FIGURE
 3-15

Subject: Regulated Materials near 18 th Avenue Pedestrian Overpass		
Client: Columbus	Client Project No:	RRZ-TMT-6065(5), CN 31924 RRZ-TMT-6061(8), CN 31925 RRZ-TMT-6059(7), CN 31927
Project: Columbus Viaducts	HDR Project No:	80759
Meeting Date: December 28, 2010	Meeting Location:	Conference Call
Notes by: HDR		

Attendees:	Raegan Ball, FHWA	Phil Rossbach, HDR	
Nancy Swyers, EPA	Andy Wiest, HDR	Joe Shields, HDR	
Joe Cothorn, EPA	Lisa Richardson, HDR		

Meeting Purpose:

A telephone conference was held on December 28, 2010 to discuss EPA comments related to regulated materials sites near the 18th Avenue Pedestrian Viaduct. These comments were received in an email from Joe Cothorn of EPA on December 21, 2010 in response to an information package sent to EPA by HDR on December 9, 2010.

The focus of the telephone conference was comment 2 from Mr. Cothorn –*“Of all of the sites listed, only the 18th Street location gives EPA concerns with respect to contaminated sites. In particular EPA is concerned with the depth at which footings or piers for the pedestrian walkway would be placed. On average, the depth to groundwater is approximately 12 feet. EPA would be interested in seeing the preliminary designs of the foundation for this structure in order to evaluate potential for intrusion into the known extent of the contaminated zone or to discuss the potential for alternative designs that could be placed at higher elevations.”*

Overview:

Phil Rossbach explained the expected approach for the foundation – pilings would typically extend to bedrock if feasible, or to deep sands, depending upon the depth of bedrock. The pilings and foundations would be determined based upon information derived from geotechnical borings. Pile caps would sit on top of the pilings – these caps would extend from 2 feet below ground surface (bgs) to 7 or 8 feet bgs. Soil borings would be needed to determine physical properties of the soils – such as soil strength and density.

The soils stratification based on drilling records from the EPA monitoring wells was discussed. Nancy Swyers stated that bedrock is approximately 140 feet bgs and that there is a layer of clay approximately 70 feet bgs in the general area. Phil stated that it is unlikely that the pilings would go to bedrock, but would likely approach 70 to 80 feet in depth. However, geotechnical studies, including borings, would need to be completed to determine the specific depth of the pilings.

Nancy was concerned about the fiber optic cable and water line within the UPRR ROW at 18th Avenue that is associated with EPA monitoring wells. HDR noted that a utility locate would be

done before commencing boring or construction activities and that the general vicinity of the lines would be noted on the plans.

Other than the potential direct impact to the se lines, EPA noted three primary concerns:

- Spread of contamination
- Worker Health and Safety
- Notification if any contamination is encountered

Spread of Contamination

Nancy Swyers and Todd Davis are concerned about spreading contamination to deeper layers that are presently clean. The groundwater is currently contaminated (from the 10th Street Superfund Site) from approximately 12 feet bgs to 70 feet bgs. Nancy Swyers noted that VOC contamination (trichloroethylene, tetrachloroethylene, and dichloroethene) from the 10th Street Superfund site is currently confined to the “A” and “B” levels of the aquifer. The upper part of the upper aquifer is designated by EPA as the “A” level; the lower portion of the upper aquifer is designated by EPA as the “B” level (NOTE: both the “A” and “B” level are in the same sand and gravel layer; there is no physical separation between levels “A” and “B”). A 5- to 20-foot-thick silty clay layer, generally at a depth of 70 to 80 feet, separates the upper aquifer from the middle aquifer. The middle aquifer (designated by EPA as the “C” aquifer), approximately 6 to 31 feet thick, is generally located 85 to 105 feet bgs. EPA is concerned that the borings could provide a vertical conduit that would allow contamination to move from the upper aquifer to the middle aquifer. Nancy Swyers noted that borings were completed for the EPA monitoring wells.

It was noted that contaminant plumes are based on groundwater sampling from EPA monitoring wells located southwest, southeast, and east of the proposed 18th Avenue pedestrian overpass. HDR noted that the boundary of the contaminant plume is interpolated from these sampling results and that sampling for these contaminants has not been conducted at the 18th Avenue site; thus the presence or absence of contamination at the proposed pedestrian overpass site is not known. EPA, FHWA, and HDR concurred that groundwater sampling should be conducted prior to finalizing the NEPA document to determine if contamination is present.

Worker Health and Safety

EPA noted concern about health and safety impacts to workers during boring and piling activities. Phil Rossbach noted that construction documents would include a requirement for a health and safety plan to protect workers from exposure to hazardous materials. Additionally, a worker health and safety plan would also be required for geotechnical investigations prior to construction. The EA also includes language regarding this.

EPA suggested that the Health & Safety measures from the Clinton, Iowa water project that went through a Superfund site may be applicable to the Columbus viaducts project. HDR will review the Clinton, Iowa project and incorporate mitigation measures as appropriate.

Notification

EPA also noted that appropriate agencies, including EPA, need to be notified if contaminated soil is encountered. HDR noted that the mitigation section in the EA currently includes language that agencies would be notified if contamination is encountered. This requirement would also be implemented for geotechnical investigations prior to construction.

EPA requested that a plan be submitted to them identifying measures to protect worker safety, handle contaminated water, and a plan to demonstrate that contamination won't spread to areas currently unaffected by contaminants.

Avoidance

Joe Cothorn requested that a spread footing foundation alternative be considered first, possibly using lighter materials for the overpass, as a means to avoid impacting the superfund site. The intent with this alternative would be to stay out of contaminated groundwater. If this is not feasible, then a plan for a deep foundation should be developed. A deep foundation should avoid getting into the clay confining layer that separates the upper and middle aquifers to avoid the potential for cross-contamination of the aquifer layers (basically staying within the upper layer of sand extending to a depth of approximately 70 feet).

HDR indicated that at this time, insufficient geotechnical information is available to determine if the sand and gravel soil strata beginning 5 to 6 feet below grade would provide sufficient strength to support spread footings. If low strength soils are encountered, the size of a spread footing foundation would need to be increased in order to limit bearing pressures to acceptable levels. This increase in footing plan dimensions would also require an increase in footing thickness, which could possibly place the bottom of a spread footing at or near the contamination level. However, if the bottom of spread footing elevation could be maintained above the contamination level, this alternative would avoid impacting the contamination.

HDR noted that another option is to develop plans for deeper footings that would remain within the upper aquifer (to an approximate 70-foot depth). More site investigation would be needed to determine if there is sufficient soil strength for spread footing or for a 70-foot deep pile foundation. HDR indicated that pile penetrations below the ground surface could be limited in length to terminate in the upper sands by using a larger cross-section to develop more friction, thus not potentially providing the conduit through the lower clay seam and into the lower coarse sand / gravel strata. Additionally, since piles would be driven, rather than drilled into place and because the bottom of the pilecap is anticipated to be above the level of contamination, no contaminated soils would be expected to be excavated or exposed with a pile supported foundation.

At this time, both the spread footing alternative and an alternative utilizing piles terminating in the upper sand/gravel strata may impact the 10th Street site with regard to potential cross-contamination of the aquifer layers. Depending on the size of the spread footing, the spread footing option also has the potential to impact contaminated soil from the Deyke/Pollard site (west of 18th Avenue and north of UPRR).

Raegan Ball stated that for the Draft EA, both options should be discussed. EPA agreed that both options should be included in the NEPA document.

Mitigation

Raegan noted that the mitigation measures need to be refined in the EA and should also include possible mitigation strategies if sufficient soil strength is not available to avoid the contamination. EPA should be included in mitigation development. The preferred alternative for footing design should include mitigation discussion that clearly explains the limitations of the alternative (ex. a driven pile alternative would need to be designed to avoid impact to the clay layer separating the upper and lower aquifers to avoid possible cross contamination).

Additional information on geologic strata

After the conference call, HDR reviewed the EPA boring information and identified the following:

Based on the boring log for the closest EPA monitoring well (No. 40), located approximately 400 feet northwest of the north end of the proposed pedestrian overpass, the general soil stratification consists of 5 to 6 feet of surficial clays, an underlying layer of sand and gravel extending to about 78 feet below grade, a 1-foot-thick layer of clays, an additional layer of coarse sand and gravel extending to depths from 79 to 103 feet and then another 6-foot-thick layer of clay (see attached sketch). Another EPA monitoring well (202B), located approximately 800 feet southwest of the proposed 18th Avenue pedestrian overpass indicates silty fine sand to a depth of 4 feet bgs, silt from 4 to 8 feet, fine sand from a depth of 8 to 14 feet, sand and gravel from 14 to 71 feet, silty clay from 71 to 75 feet, and sand and gravel from 75 to 77 feet. None of the other well logs in the vicinity of the proposed 18th Avenue pedestrian overpass site documented the presence of clay. The boring log for extraction well 04, approximately 480 feet west of the site indicated clay from the surface to 10 feet bgs, with various grades of sand extending to a depth of 71.5 feet (the bottom of the well casing). Several other wells near the proposed 18th Avenue pedestrian overpass site also encountered clay to a depth of 5 to 13 feet underlain by sand to depths ranging from 18 to 49 feet (the bottom of the well).

Action Items

- HDR will prepare notes of the conference call to get EPA concurrence on the discussion.
- HDR will review the Clinton, Iowa project and incorporate mitigation measures as appropriate.
- HDR will incorporate both foundation options into the EA discussion.
- HDR will revise the EA mitigation measures discussion as needed to clarify activities and roles and responsibilities.

APPENDIX B

SHPO CONCURRENCE LETTER



U.S. Department
of Transportation
**Federal Highway
Administration**

NEBRASKA DIVISION

December 2, 2010

FED HWY ADMIN

NEBRASKA

100 Centennial Mall North
Room 220
Lincoln, NE 68508
(402)742-8460

In Reply Refer To:

HEP-NE



0707-032-01

Mr. L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historical Society
Box 82554
Lincoln, NE 68508

Dear Mr. Puschendorf:

**Projects RRZ-TMT-6065(5), 6061(8), 6059(7)
CN 31924, 31925, 31927
Columbus Viaducts – HP#0707-032-01
City of Columbus, Platte County, Nebraska**

The City of Columbus, Nebraska (the City) is proposing to construct three grade-separated crossings and close six at-grade crossings along the Union Pacific Railroad (UPRR) mainline within City limits as part of the Columbus Viaducts Project (the Project). Because Federal funds would be used to construct the Project, an Environmental Assessment (EA) is being prepared to address the potential environmental impacts of Project construction and operation. A pedestrian overpass would be constructed at 18th Avenue, and vehicular viaducts would be constructed at 12th Avenue and 3rd Avenue; the 18th and 3rd Avenue components of the Project would be constructed first, followed by construction of the 12th Avenue viaduct. Vehicular at-grade crossings would be closed at 25th, 21st, 18th, 12th, and 3rd Avenues, and a pedestrian at-grade crossing would be closed at 17th Avenue. Closure of the 27th Avenue crossing in 2008 did not require Federal approval or funding and was not done as part of the Columbus Viaducts Project.

In support of National Environmental Policy Act (NEPA) and Section 106 requirements of the National Historic Preservation Act, the Nebraska State Historic Preservation Office (NeSHPO) has provided assistance in establishing the Area of Potential Effect (APE) for each of the grade-separated crossing construction locations for the Project, and provided opinions on the eligibility of cultural resources for listing on the National Register of Historic Properties (NRHP) and on the potential effects of the Project on cultural resources. This letter revisits the APE identification, determination of eligibility of historic properties, the historic boundary of the Loup Power District building, planned signage at 25th Avenue within the Columbus Commercial



Historic District, and effects on historic properties (including archaeological sites). A meeting held October 22, 2010 between representatives of FHWA, NDOR, and NeSHPO helped clarify several cultural resource issues, which are addressed in this letter.

APE Identification

Regarding the identification of the APE, the APE was determined through consultation with the NeSHPO and involved defining the APE based on potential corridors for a pedestrian overpass near 18th Avenue, and vehicular viaducts at 12th and 3rd Avenues (NSHS, September 12, 2007). Subsequent to the background investigation, APE determination, and survey, it was determined that 1,000 feet of 8-foot tall chain link fence extending east and west of the 18th Avenue overpass would be required on both the northern and southern sides of UPRR right-of-way (ROW). Although this fencing extended outside the original APE and this area was not surveyed, the NeSHPO indicated that survey of this area was not necessary because the subsurface disturbance for the fence is limited and would occur in a very narrow band along previously disturbed ROW (NDOR, October 22, 2010). Because of the minimal area and depth of disturbance for the at-grade crossing closures, the APEs were not defined to include the at-grade crossings at 25th, 21st, and 17th Avenues; however, the 17th Avenue crossing happens to be included within the 18th Avenue APE.

Determination of Eligibility of Historic Properties

Regarding the eligibility of historic properties, the historic property survey report submitted to NeSHPO in July 2008 identified the Columbus Cemetery, Loup Power District building (documented in the report as 2416 14th Street but actual address is 1350 12th Avenue), and 22 residential properties within the APE (5 within the 18th Avenue study corridor and 17 within the 12th Avenue study corridor) as potentially eligible for listing on the NRHP. At that time, NeSHPO concurred with the eligibility determinations for the cemetery and commercial building, but disagreed with the recommendations for eligibility of all 22 residential properties on the basis that they lack significance in NRHP terms (NSHS, August 18, 2008).

Following additional consultation with NeSHPO on October 22, 2010, and after careful review of Department of Interior guidelines regarding the NRHP eligibility of cemeteries (National Park Service 1998:34-35; Potter and Boland 1992), FHWA does not recommend that the Columbus Cemetery is eligible for NRHP listing. Cemeteries are typically not NRHP-eligible, unless they meet special criteria. Each of the four eligibility criteria and pertinent criteria considerations are discussed below in relation to the property. FHWA also does not believe that the Columbus Cemetery meets the minimum requirements for consideration as eligible as a Traditional Cultural Property (TCP) based on guidelines developed by the Department of Interior (Parker and King 1998, see also King 2003). Rationale for FHWA's determination of ineligibility for the Columbus Cemetery are outlined below according to NPS criteria:

Criterion A—Association with events that have made a significant contribution to the broad patterns of history: Although the cemetery does contain monuments erected to commemorate the lives of individuals that settled in the Columbus area, these objects do not constitute an historic expression of association with local early settlement, which is either unique or atypical of hundreds of local cemeteries throughout Nebraska. In addition, there

are other historical markers, structures, sites, and archival resources that better convey these early settlement patterns.

Criterion B—Association with the lives of persons significant in our past: Several locally and regionally prominent individuals are buried in the cemetery including Frank North (frontier scout and Buffalo Bill’s Wild West Show member) and Edgar Howard (state and national politician). These people, while certainly notable, did not have “an outstanding impact” or were “exceptionally significant” in relation to the patterns of history for which they participated in (National Park Service 1998:34).

Criterion C—Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value: The Columbus Cemetery was developed using the most common Midwestern landscape theme featuring a north-south and east-west grid of roads that are lined with a combination of deciduous and coniferous trees. The cemetery also possesses several non-grave monuments, an interesting front gate and a diversity of headstone forms. The cemetery is a well-preserved example of an otherwise typical style. However, it certainly does not contain sufficient unique design elements to qualify for eligibility consideration under this criterion.

Criterion D—Have yielded, or may be likely to yield, information important in prehistory or history: As with all cemeteries, the Columbus cemetery contains headstone information relating to ethnicity, lifespan, socio-economic status, and demography. While such data might contribute to historical research, it does not exceed the quantity or quality of such information available through archival sources. State and federal burial protection measures, as well as professional ethics, no longer provides for archeological or physical anthropological research at cemeteries, preventing eligibility consideration for anthropological investigation.

The Columbus Cemetery is also not considered eligible for NRHP-listing as a **Traditional Cultural Property (TCP)**. The TCP concept was developed to address places that are associated with cultural practices or beliefs of a living community that: (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community (Parker and King 1998, King 2003). Certainly all cemeteries reflect some level of community history, beliefs, and identity; however, the NRHP is reserved for exceptional and unique examples of a property category, and the Columbus Cemetery is not considered either.

Consequently, there is one NRHP-eligible property (the Loup Power District building) in the Project’s APEs for construction of the grade-separated structures, and there is one NRHP-listed property (Columbus Commercial Historic District) present where a Project-specified crossing closure is proposed. Below is a brief summary of the eligibility of these two properties:

- The Loup Power District building at 1350 12th Avenue was built in 1943 and retains good integrity. The truss roof appears to have been constructed using a unique system that was developed during World War II to deal with critical building material shortages. The roof trusses are built out of shorter wooden members that are bolted together to create full-sized members. The building demonstrates historic events (Criterion A) and architectural

(Criterion C) significance. The historic significance is limited to the original 1943 structure.

- The Columbus Commercial Historic District was listed on the NRHP on November 21, 1996 based on its architecture (Criterion C) and association with the City's origin as a center of commerce and trade (Criterion A). The historic district contains two buildings listed separately on the NRHP and other contributing elements. The District is roughly bounded by 11th and 14th Streets and 23rd and 28th Avenues.

Historic Boundary

Regarding the historic boundary of the Loup Power District building, the historic property boundary is limited to the original 1943 structure, and does not extend to additions, other structures on the lot, or to any aspects of landscaping.

Planned Signage

Regarding planned signage at 25th Avenue within the Columbus Commercial Historic District, barricades and signage are required to meet standards specified in the Manual on Uniform Traffic Control Devices (see attached documentation). The proposed barricades and signage will meet these standards. A determination of "No Effect to Historic Properties" is proposed for the impact of closing 25th Avenue for the Project. During our aforementioned meeting on October 22, 2010, Jill Dolberg indicated no concern with potential effects relevant to the proposed closure and its associated signage. NeSHPO concurred previously with the determinations of "No Historic Properties Affected" (NSHS, November 3, 2008a and November 3, 2008b), including the consideration of potential effects to the Columbus Commercial Historic District.

Effects on Historic Properties

Regarding archaeological properties, a survey report was provided to NeSHPO and indicated that the survey did not result in the identification of any archaeological resources within the APE (Bozell, September 2007). The project concluded with an opinion that the Project would not result in an effect to NRHP archaeological properties and further archaeological resource management work was not recommended. The NeSHPO concurred that the Project would have no effect on archaeological properties (NSHS, September 16, 2008). Based on a recent consultation with NeSHPO, it was also determined that the installation of fencing along UPRR ROW on either side of the 18th Avenue pedestrian overpass would result in no effect to historic properties (NDOR, October 22, 2010).

Regarding effects on historic properties, the 3rd Avenue and 18th Avenue APEs contain no properties listed on or eligible for listing on the NRHP. Consequently, there would be no historic properties affected by this component of the project. In the 12th Avenue APE, the proposed 12th Avenue viaduct is being designed to avoid directly impacting the original 1943 Loup Power District building. Although viaduct piers would be placed in a parking lot adjacent to the Loup Power District building, the Project would not require modifications of the historic building or its additions (the closest pier would be approximately 25 feet from the building but approximately 75 feet from the original 1943 structure). A study of potential vibration impacts from installation of piers was conducted and identified that there is a potential for vibration impacts above the

industry standard for peak particle velocity of 0.2 inches per second (HDR, November 7, 2010; see attached memorandum). Consequently, the best management practices (BMPs) listed below are proposed to reduce construction vibration near the historic Loup Power District building and would be incorporated into the NEPA documentation and special provisions of the construction contract.

- Seismic monitoring – Conduct seismic monitoring of pile-driving operations to ensure that ground vibrations do not exceed industry thresholds (a peak particle velocity (PPV) of 0.2 inch per second, or 90 decibels) for damage to historic structures. An alarmed monitoring system shall be installed to signal any vibration event that equals or exceeds a threshold of 80% of the PPV level.
- If the 0.2 inches per second PPV threshold is reached, alternative construction methods would be used to reduce vibrations. Alternate methods include: restricting the size or energy level of the pile driver – Use a lighter hammer or energy level for the pile driver to reduce vibration. A hydraulic static press-in pile driver, which typically produces much lower vibration levels than impact pile drivers, could also be considered.

Figure 1 is an aerial view of the design of the 12th Avenue viaduct, its preliminary impact area, and the historic property boundary of the Loup Power District building. The historic significance of the Loup Power District building and Columbus Commercial Historic District would not be diminished by the view of construction equipment and activities near 12th Avenue, as well as 3rd Avenue and 18th Avenue, or by the view of the grade-separated structures subsequent to their construction. NeSHPO previously concurred with the determinations of “No Historic Properties Affected” (NSHS, November 3, 2008a and November 3, 2008b). Because of reevaluation of potential vibration impacts to the Loup Power District building and measures to eliminate any effect, a determination of “No Adverse Affect” is warranted, based on the implementation of the above-noted BMP’s.

NeSHPO has responded to all Nebraska Department of Roads requests for eligibility and effect determinations throughout the Project however, in the interest of summarization; NeSHPO concurrence is requested on the following procedures to document Section 106 compliance efforts for the Project:

- Additional historic property and archaeological survey or review is not needed,
- The Columbus Cemetery is not eligible for the NRHP,
- Regarding the Loup Power District building, only the 1943-era component of the Loup Power District building is eligible for NRHP listing,
- With implementation of the BMP’s mentioned above, there will be no adverse affect to the Loup Power District building,
- There would be “No Historic Properties Affected” related to the signage for the 25th Avenue crossing closure within the Columbus Commercial Historic District,
- There would be “No Historic Properties Affected” by the 18th Avenue and 3rd Avenue components of the Project, and

- There would be “No Historic Properties Affected” by the 12th Avenue component of the Project.
- Overall, the project would have no adverse affect to historic properties

Sincerely yours,



Melissa G. Maiefski
Program Delivery Team Lead

Enclosures

cc: Len Sand, NDOR

CONCUR:



L. Robert Puschendorf, Deputy State Historic Preservation Officer

12/3/10
Date

APPENDIX C

AGENCY AND TRIBAL COMMENTS

From: Ward, Julie [<mailto:julie.l.ward@nebraska.gov>]
Sent: Wednesday, June 15, 2011 10:18 AM
To: Richardson, Lisa (Omaha)
Subject: RE: NEPA Review - Columbus, Nebraska Viaduct Project
Importance: High

Dear Ms. Richardson:

RE: NEPA Review – Columbus, Nebraska Viaduct Project

The Nebraska Department of Environmental Quality (NDEQ) has reviewed the above referenced project. In addition to the comments made on January 20, 2011, we provide additional responses below. As with any facility, permits may be required prior to beginning construction or operation. At a minimum, you should be aware of the possible requirement for the following permits:

	<u>Contact</u>	<u>Phone</u>
Nancy Harris	Groundwater Remediation	402-471-3120
On-Site Wastewater Construction Permit	Chuck Duerschner	402-471-4206

The Groundwater Remediation Section of NDEQ has reviewed the data submitted by HDR in regard to foundations for the 18th Street Pedestrian Overpass and its potential impact on the Columbus 10th Street Superfund Site. We concur with using driven pilings for the foundation at this location. If possible, we would prefer the use of concrete driven pilings for this project because they only go to 50 foot bgs depth versus the 70-90 foot bgs depth necessary for pipe driven pilings; however, because the previously mentioned clay layer appears to pinch out and is absent below this location, we could also concur with the use of pipe driven pilings for this construction project. Please contact Nancy Harris at NDEQ Groundwater Remediation at the number provided above if you have additional questions.

Regarding wastewater, this project may involve disposal of contaminated ground water, if excavation sites for footings need to be dewatered. The project should apply for NPDES Dewatering permits. Please contact Chuck Duerschner at the number above if you have questions.

Until further along in the planning process, it is unknown whether there may be additional regulatory requirements. We strongly urge the project sponsors to make contact with the Department. It has been our experience that early and open communication helps facilitate the permitting process.

If you have questions about the permitting process, or any other questions, feel free to contact me at (402) 471-6974. For more information, please visit our website at www.deq.state.ne.us. Thank you, and good luck with your project.

Julie L. Ward
Department of Environmental Quality
Field Services and Assistance
Suite 400, The Atrium
1200 N Street, P.O. Box 98922
Lincoln, NE 68509-8922
402-471-6974



Nebraska Game and Parks Commission

2200 N. 33rd St. / P.O. Box 30370 / Lincoln, NE 68503-0370

Phone: 402-471-0641 / Fax: 402-471-5528 / www.OutdoorNebraska.org

June 15, 2011

Dave Goedeken
City of Columbus, City Engineer
P.O. Box 1677
Columbus, NE 68601

RE: Columbus Viaducts Draft Environmental Assessment, Platte County

Dear Mr. Goedeken:

Nebraska Game and Parks Commission (NGPC) Staff members have reviewed the information for the proposal identified above.

Based on our review of the draft Environmental Assessment, we concur that it is satisfactory, that the project information provided to date is adequate, and the project can be advanced to the next stage of project development.

We appreciate the opportunity to review and comment on the Draft Environmental Assessment for this project. If you have any questions with regard to these comments, please contact me at (402) 471-5423 or carey.grell@nebraska.gov.

Sincerely,

Carey Grell
Environmental Analyst
Environmental Services Division

cc: Brooke Stansberry, USFWS
Raegan Ball, FHWA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

JUN 10 2011

Dave Goedecken
City Engineer
Post Office Box 1677
Columbus, Nebraska 68601

Dear Mr. Goedecken:

The purpose of this letter is to respond to your letter to me, dated April 27, 2011, in regard to the Columbus Viaducts Environmental Assessment (EA). The U.S. Environmental Protection Agency evaluated the EA in regard to any potential impact the viaducts could have on either the 10th Street Superfund Site or the Columbus Former Manufactured Gasification Plant (FMGP) Site in Columbus. We believe that the EA addresses comments we had on the previous documents in regard to the Columbus FMGP Site. We do have some additional comments regarding potential impacts to the 10th Street Site. Our comments are as follows:

1. Our comments are in regard to the pedestrian crossing on the 18th Avenue Viaduct. We do not anticipate any potential impacts for the vehicle crossings at 3rd Avenue or 12th Avenue on the 10th Street Site.
2. We agree with HDR's recommendation to use pile-supported footings. These footings would be our preference as well due to fewer potential impacts to the 10th Street Site water line and fiber optic cable.
3. In regard to your reported groundwater results for cis 1,2 dichloroethene (cis 1,2 DCE) at PZ-2 of 39 ug/L, the EPA data from nearby monitoring wells that were sampled in October 2010, contained concentrations of cis 1,2 DCE between 92 and 120 ug/L. These results indicated that cis 1,2 DCE is present in shallow groundwater at concentrations that exceed the MCL of 70 ug/L in this area. This is the basis for the EPA's request to place the pilings at as shallow depth as possible to limit migration of contaminants into the deeper groundwater. Please refer to the enclosed Figure 2.12 which shows the October 2010, cis 1,2 DCE data.
4. The pile-supported footings must not penetrate the confining clay layer separating the shallow and middle aquifers. Based on the information provided to us we noted that the confining layer is thin or absent at the 65 – 70 foot depth interval, where the clay has been identified in other portions of the site. However, the EPA would prefer that the pilings be placed at a depth less than 70 feet if possible. We've noted that concrete piles are being considered as an option to approximately 50 feet below grade. This would be our preference over pipe piles which need to be placed approximately 70 – 90 feet below grade. We understand that other factors need to be considered and would like to review this again during the design.
5. The EA proposes use of a chain-link fence on both sides of the tracks, approximately 1,000 feet in each direction to encourage use of the pedestrian foot bridge. Our comment on this is that the EPA as well as the EPA's contractors and the city will need unrestricted access to extraction well EW-04 and monitoring wells MW-15A and MW-15B for well sampling and well maintenance activities. Extraction well EW-04 is located on the west side of 16th Avenue within the Union



Pacific Railroad right of way on the north side of the tracks. Monitoring wells MW-15A and MW-15B are located on the west side of 21st Avenue which also appears to be within this 1,000-foot distance. The monitoring wells are on the north side of the tracks on the city right of way and would be expected to be outside this fence, but their locations should be noted and marked prior to installing the fence to make sure they do not get damaged during construction. They are flush-mounted wells. Please refer to the enclosed Figure 1.2 for the locations of the EPA's monitoring wells and extraction well EW-04. We will also provide you information on the GPS locations of the wells.

Should you have any questions or comments regarding this letter or wish to discuss any of the comments, you may contact me at (913) 551- 7703.

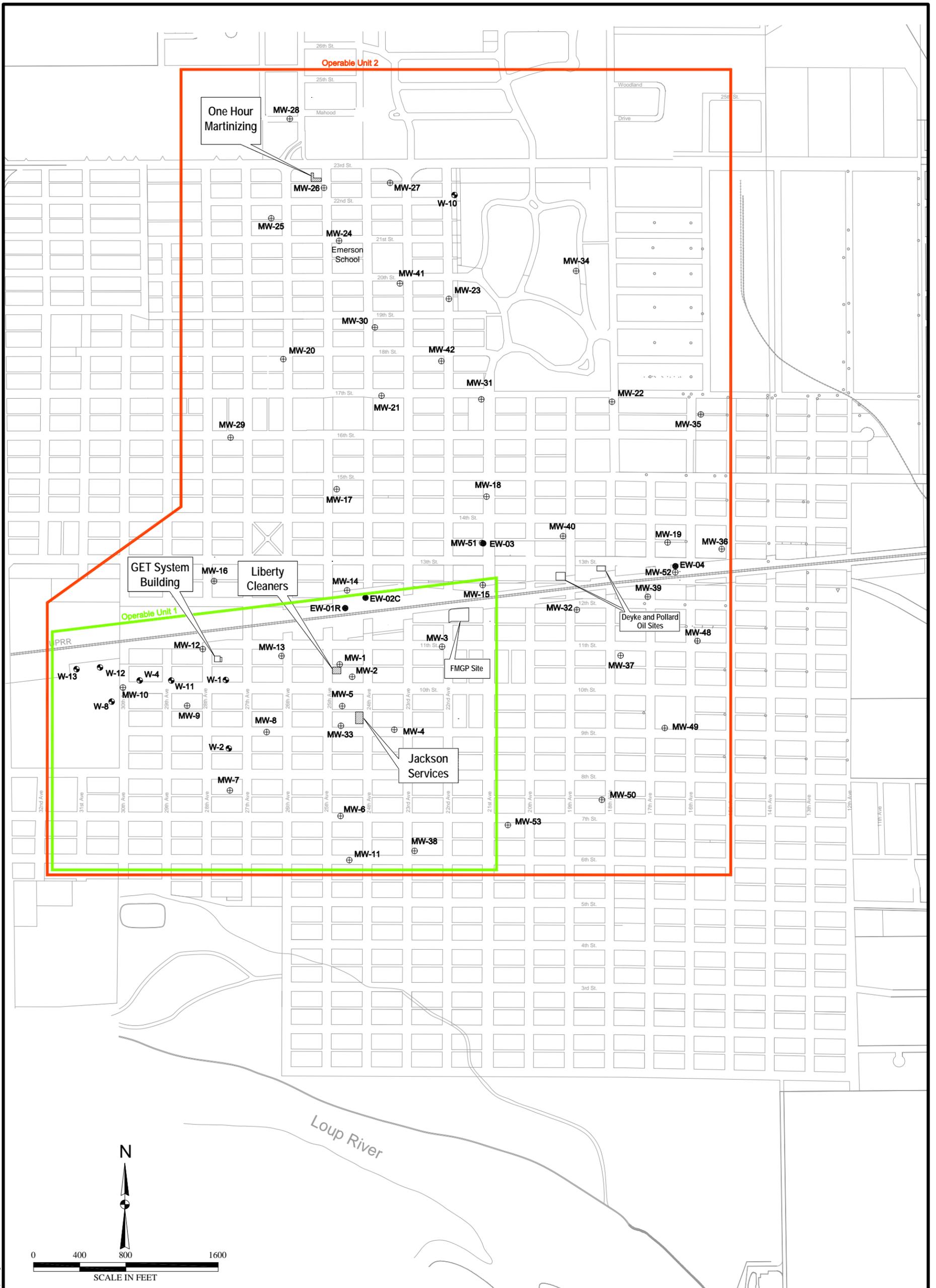
Sincerely,

A handwritten signature in black ink that reads "Nancy J. Swyers". The signature is written in a cursive style with a large, prominent "N" and "S".

Nancy J. Swyers, P.E.
Remedial Project Manager
Iowa/Nebraska Remedial Branch
Superfund Division

Enclosures

cc: Nancy Harris, NDEQ
Lisa Richardson, HDR
Laura Splichal, CDM



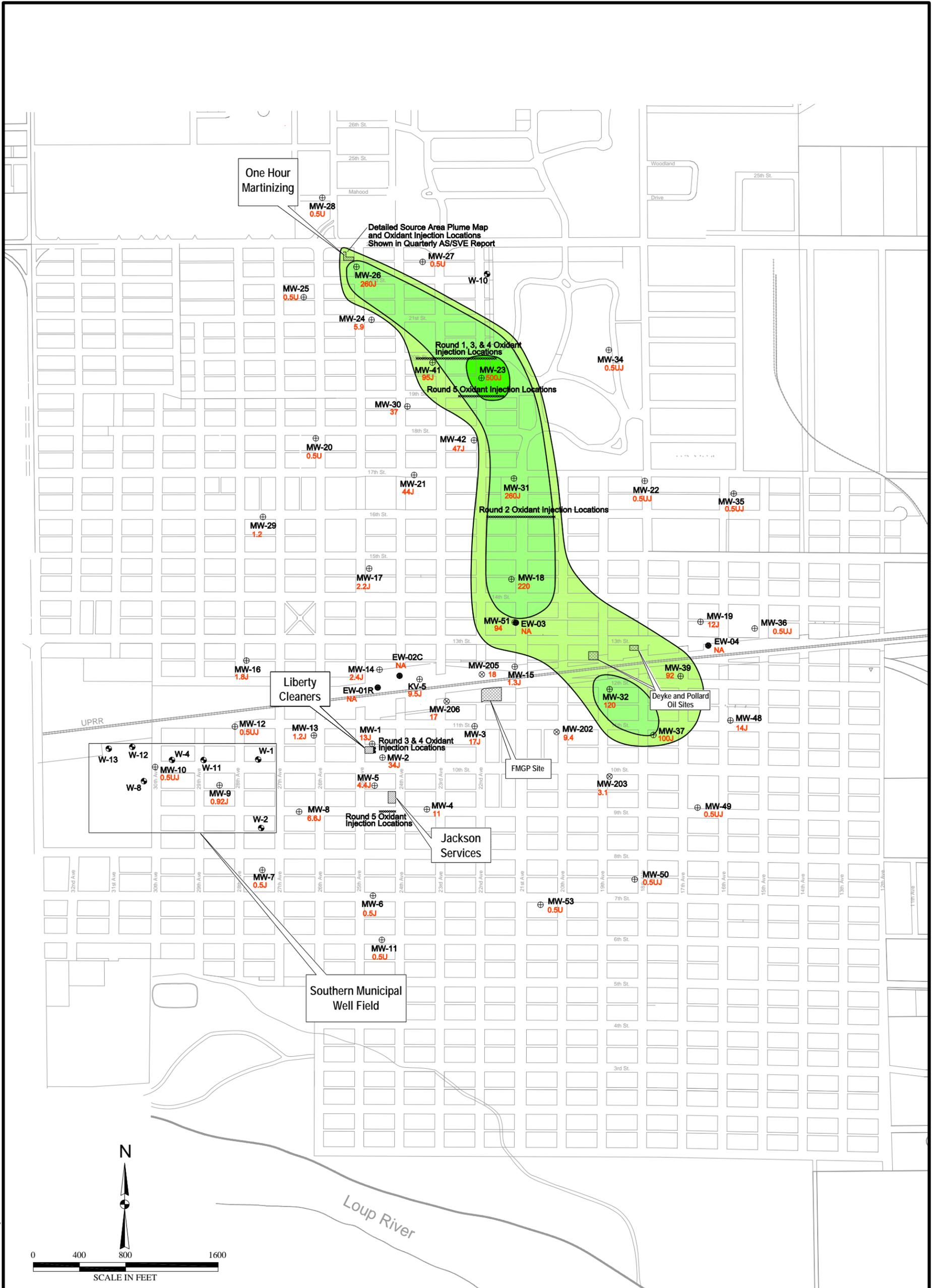
Filename: Fig1-2_SiteMap.dwg
 Task Order Number: 3370-002
 Revised: 2/8/11 MMG

Legend	
	Municipal Well Location
	Monitoring Well Nests
	Extraction Well Location
	Operable Unit 1 Limits
	Operable Unit 2 Limits
	Source Area

Figure 1.2
Site Map



Y:\CAD\Tenth\GETS-PSR-2010\Fig1-2_SiteMap.dwg 04-20-11



C:\CAD\10th Street\GETS-PSR-2010\Fig2-12_A-cis_Oct10.dwg 02-09-11

Filename: Fig2-12_A-cis_Oct10.dwg
 Task Order Number: 3370-002
 Revised: 2/9/11 MMG



- Municipal Well Location
- Monitoring Well Nests
- Extraction Well Location
- FMGP Monitoring Well Location
- Source Area
- Non Site-related Source Area
- U** Undetected above the stated reporting limit
- 39** ug/L cis-1,2-DCE at 'A' Level Wells
- NA** Not Applicable
- J** Estimated

Legend	
	70 - 100 ug/L
	100 - 500 ug/L
	500 - 1,000 ug/L

Figure 2.12
"A" Level Wells
cis-1,2-DCE Plume
Shallow Aquifer
October 2010



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Nebraska Field Office
203 West Second Street
Grand Island, Nebraska 68801

June 10, 2011



FWS-NE: 2011-358

Mr. Dave Goedeken
City Engineer
City of Columbus
P.O. Box 1677
Columbus, NE 68601

RE: City of Columbus Draft Environmental Assessment for Proposed Columbus Viaducts, Platte County, Nebraska, Project Numbers: RRZ-TMT-6065(5), RRZ-TMT-6061(8), and RRZ-TMT-6059(7), Control Numbers: 31924, 31925, and 31927

Dear Mr. Goedeken:

This is in regards to your April 27, 2011, letter requesting that the U.S. Fish and Wildlife Service (Service) review the Draft Environmental Assessment (DEA) for the proposed Columbus Viaducts, (Project Numbers: RRZ-TMT-6065(5), 6061(8), and 6059(7), Control Numbers: 31924, 31925, and 31927). The Service has reviewed the DEA and concurs that the information provided to date is adequate, and the project can be advanced to the next stage of project development. Should you have any questions regarding these comments, please contact Ms. Brooke Stansberry within our office at (308) 382-6468, extension 16 or by email at Brooke_Stansberry@fws.gov.

Sincerely,

Michael D. George
Nebraska Field Supervisor

cc:

FHWA; Lincoln, NE (Attn: Melissa Maiefski)
FHWA; Lincoln, NE (Attn: Raegan Ball)
NGPC; Lincoln, NE (Attn: Carey Grell)
USACE; Omaha, NE (Attn: Phil Rezac)
EPA; Kansas City, KS (Attn: Joe Cothorn)
NDEQ; Lincoln, NE (Attn: John Bender)
NDOR; Lincoln, NE (Attn: Jon Barber)



U.S. Department
Of Transportation

**Federal Aviation
Administration**

Central Region
Iowa, Kansas
Missouri, Nebraska

901 Locust
Kansas City, Missouri 64106-2325

May 17, 2011

Dave Goedeken
City Engineer
PO Box 1677
Columbus, NE 68601

Re: Columbus Viaducts Environmental Assessment
Columbus, Nebraska
NDOR Project Nos. RRZ-TMT-6065(5), RRZ-TMT-6061(8), and RRZ-TMT-6059(7)

Dear Mr. Goedeken:

The Federal Aviation Administration (FAA) reviews other federal agency environmental documents from the perspective of the FAA's area of responsibility; that is, whether the proposal will have negative effects on aviation. We generally do not provide comments from an environmental standpoint. Therefore, we have reviewed the material furnished with your letter dated April 27, 2011 and have no comments regarding environmental matters.

The project may require formal notice and review for airspace review under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. To determine if you need to file with FAA, go to <http://oeaaa.faa.gov> and click on the "Notice Criteria Tool" found at the left-hand side of the page.

If you determine that filing with FAA is required, we recommend a 120-day notification to accommodate the review process and issue our determination letter. Proposals may be filed at <http://oeaaa.faa.gov> (requires free registration). More information on this process may be found at: <http://www.faa.gov/airports/central/engineering/part77/>

If you have questions, please contact me at scott.tener@faa.gov or 816-329-2639.

Sincerely,

Scott Tener, P.E.
Environmental Specialist



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL AVENUE
OMAHA NE 68102-4901

May 13, 2011

Planning, Programs, and Project Management Division

Mr. Dave Goedeken
City of Columbus Engineering Dept.
2424 14th Street
Columbus, Nebraska 68601-1677



Dear Mr. Goedeken:

The U.S. Army Corps of Engineers, Omaha District (Corps) has reviewed your letter dated April 27, 2011, regarding the environmental report on the construction of the Columbus Viaducts project in City of Columbus, Nebraska. The Corps offers the following comments:

Your plans should be coordinated with the U.S. Environmental Protection Agency, which is currently involved in a program to protect groundwater resources. If you have not already done so, it is recommended you consult with the U.S. Fish and Wildlife Service and the Nebraska Game and Parks Commission regarding fish and wildlife resources. In addition, the Nebraska State Historic Preservation Office should be contacted for information and recommendations on potential cultural resources in the project area.

Since the proposed project does not appear to be located within Corps owned or operated lands we are providing no floodplain or flood risk information. To determine if the proposed project may impact areas designated as a Federal Emergency Management Agency special flood hazard area please consult the following floodplain management office.

NFIP Coordinator:
Nebraska Department of Natural Resources
Attention: Shuhai Zheng
301 Centennial Mall South, 4th Floor
P. O. Box 94876
Lincoln, Nebraska 68509-4876
shuhai Zheng@nebraska.gov
T-402-471-3936
F-402-471-2900

Any proposed placement of dredged or fill material into waters of the United States (including jurisdictional wetlands) requires Department of the Army authorization under Section 404 of the Clean Water Act. You can visit the Omaha District's Regulatory website for permit applications and related information. Please review the information on the provided website (<https://www.nwo.usace.army.mil/html/od-r/district.htm>) to determine if this project requires a 404

permit. For a detailed review of permit requirements, preliminary and final project plans should be sent to:

U.S. Army Corps of Engineers
Wehrspann Regulatory Office
Attention: CENWO-OD-R-NE/Moeschen
8901 South 154th Street
Omaha, Nebraska 68138-3621

If you have any questions, please contact Ms. Ruth Bentzinger of my staff at (402) 995-2704.

Sincerely,

A handwritten signature in black ink, appearing to read "Brad Thompson", with a long horizontal flourish extending to the right.

Brad Thompson
Chief, Environmental Resources and Missouri River
Recovery Program Plan Formulation Section

From: Wacker, Craig [<mailto:craig.wacker@nebraska.gov>]
Sent: Friday, May 13, 2011 4:16 PM
To: Goedeken, Dave
Subject: Columbus Viaducts Environmental Assessment

NDNR has no further comment than those previously submitted, if you need another signed letter please let me know and I will send that out otherwise please consider this as our response.

Thank you

Craig Wacker | AICP | LEED AP
Natural Resources Planner Coordinator
Nebraska Department of Natural Resources
Direct Line: (402) 471-3957
Main Line: (402) 471-2363
Fax: (402) 471-2900
Web: www.dnr.ne.gov

From: Dolberg, Jill [<mailto:jill.dolberg@nebraska.gov>]
Sent: Tuesday, May 10, 2011 7:20 AM
To: Goedeken, Dave
Subject: Draft Environmental Assessment - Columbus Viaducts Project

Dear David,

I have read the Draft EA for this project and have no particular comments. We concur with the statements included in Chapter 3 regarding the eligibility of historic properties and the potential effects of the project.

Jill Dolberg

Jill E. Dolberg
Review and Compliance Coordinator
Nebraska State Historical Society
1500 R Street
PO Box 82554
Lincoln, NE 68501-2554

p: (402) 471-4773
f: (402) 471-3316
jill.dolberg@nebraska.gov



Your Nebraska source for the histories we share
www.nebraskahistory.org

From: tony provost [<mailto:omaharedman@yahoo.com>]
Sent: Monday, May 09, 2011 9:55 AM
To: Goedeken, Dave
Subject: Columbus Viaducts Enviro Assessment

Dave,

The Omaha Tribe does not object to said project, however, if any evidence of our occupation is discovered through construction, please notify this office immediately.

Tony Provost - THPO

Omaha Tribe

P.O. Box 368

Macy, Ne. 68039

Ph: 402-837-5391 ext. 137

From: Vanek, Wayne - Lincoln, NE [<mailto:Wayne.Vanek@ne.usda.gov>]

Sent: Friday, April 29, 2011 8:31 AM

To: Goedeken, Dave

Subject: ****COULD BE SPAM**** Columbus, Nebraska Viaducts - NDOR Projects Nos. RRZ-TMT-6065(5), RRZ-TMT-6061(8), and RRZ-TMT-6059(7)

Importance: Low



ATTENTION: Dave Goedeken – City Engineer

I am responsible for the Farmland Protection Policy Act (FPPA) concerns and have reviewed the information you sent regarding the project for which you requested review of impacts. This review only covers FPPA concerns and does not include any other environmental concerns such as wetlands or endangered species. For general conservation concerns or questions relating to wetlands under the jurisdiction of the Food Security Act, contact your local county Natural Resources Conservation Service office.

It has been determined that a Farmland Conversion Impact Rating For Corridor Type Projects form (NRCS-CPA-106) will not be needed on this project since the project sites are completely within the city limits and no additional cropland will be taken out of production, thus, **NRCS has determined that your project was found to be cleared of FPPA significant concerns.** We encourage you to continue to be aware of prime and important farmlands in general and the role they play in current and future projects.

Wayne Vanek
USDA-NRCS
Fed. Bldg. Rm. 152
100 Centennial Mall North
Lincoln, NE. 68508-3866
402.437.4125