

APPENDIX D: Water Resources

TOPIC: US 54/East Kellogg Expansion – Water Features Delineation Report

AUTHOR: David Partridge

DATE: 06/28/2022

1.0 INTRODUCTION

Burns & McDonnell was retained by the Kansas Department of Transportation (KDOT) to provide wetland delineation services for the proposed US 54/US 400/East Kellogg (US 54/East Kellogg) expansion (Project) in Sedgwick and Butler Counties, Kansas (Figure A-1, Appendix A). The following summarizes the proposed Project and the results of the wetland delineation. The Project has potential to impact wetlands or other waterbodies that may be under the jurisdiction of the U.S. Army Corps of Engineers (USACE) as designated by Section 404 of the Clean Water Act. Burns & McDonnell conducted a wetland delineation to evaluate the Project for the presence of wetlands and other waterbodies, including streams, drainages, and ponds within and adjacent to the NEPA Clearance Boundary defined for the Project including a 100-foot-wide construction buffer (Survey Area). The Survey Area included in this report and displayed on the accompanying figures encompasses approximately 1,538 acres.

2.0 Methods

Burns & McDonnell reviewed available background information for the Survey Area prior to conducting a site visit. This available background information included the 2019 U.S. Geological Survey (USGS) 7.5 minute topographic maps, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), National Agriculture Imagery Program (NAIP) aerial photography (2019), USGS National Hydrography Data (NHD), and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Sedgwick and Butler Counties, Kansas. Figures A-2 and A-3 in Appendix A depict this data. The USACE Antecedent Precipitation Tool was used to evaluate climate conditions for the period before the field efforts (Appendix D).

Wetland presence based only on NWI maps cannot be assumed to be a wholly accurate assessment of potentially occurring jurisdictional wetlands. Wetland identification criteria differ between the USFWS and the USACE. As a result, wetlands shown on an NWI map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional wetlands may not be included on NWI maps. Therefore, a field visit was conducted to identify any wetlands or other waterbodies that may be present within the proposed Project.

2.1 Wetland Delineation Field Survey

Burns & McDonnell wetland scientists completed an onsite wetland delineation from May 31st – June 1st, 2022. The delineation was completed in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation*

Manual: Great Plains Region – Version 2.0 (Regional Supplement). Sample plots were established at multiple locations, and Wetland Determination Data Forms from the Regional Supplement were completed to characterize the Survey Area (Appendix B). Vegetation, soil conditions, and hydrologic indicators were recorded at each of these sample plots. Locations of sample plots and other identified features were recorded using a sub-meter accurate global positioning system (GPS) unit. Natural color photographs were taken onsite and are included in Appendix C (Photographs C-1 through C-67).

3.0 Results

The following sections describe the results of the existing data review and the completed wetland delineation.

3.1 Existing Data Review

The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography of the Survey Area and potential locations of wetlands and other waterbodies (Figure A-2). The USGS topographic maps indicate the Survey Area crosses relatively flat topography. The NHD data indicates that the Survey Area crosses two named streams, Fourmile Creek and Republican Creek.

The 2010 FEMA Flood Hazard Rate maps for Sedgwick and Butler Counties indicate the Survey Area is within the FEMA Floodplain.

The NWI data indicates that the Survey Area crosses palustrine emergent (PEM), palustrine unconsolidated bottom (PUB), and palustrine forested (PFO) wetlands. The 2020 aerial photograph indicates that the Survey Area consists primarily of developed, urban areas. (Figure A-3 and Figure A-4).

The NRCS SSURGO digital data indicates that the Survey Area crosses 16 soil map units (Figure A-3). Of these map units, 18 of them are included on the national hydric soil list.

The USACE Antecedent Precipitation Tool indicates that the region near Survey Area experienced wetter than normal precipitation conditions the three months before the field efforts (Appendix D).

3.2 Wetland Delineation Field Survey

From May 31st – June 1st, 2022, a two-person team comprised of a wetland scientist and a GPS specialist, both with Burns & McDonnell, conducted a wetland delineation of the Survey Area. The wetland specialist determined the location of wetlands and streams, and the GPS specialist recorded the location and extent of features identified within the Survey Area. The land cover and delineated wetlands and other waterbodies are discussed below.

Vegetation. The Survey Area was comprised largely of a developed, urban environment. Typical vegetation in the upland areas included callery pear (*Pyrus calleryana*), coral berry (*Symphoricarpos orbiculatus*), Bermuda grass (*Cynodon dactylon*), hackberry (*Celtis occidentalis*), osage orange (*Maclura pomifera*), Canada wildrye (*Elymus canadensis*), eastern red cedar (*Juniperus virginiana*), hairy woodland brome (*Bromus pubescens*), Canada goldenrod (*Solidago canadensis*), Johnson grass (*Sorghum halepense*), green ash (*Fraxinus pennsylvanica*), poison-ivy (*Toxicodendron radicans*), boxelder (*Acer negundo*), eastern cottonwood (*Populus deltoides*), American elm (*Ulmus americana*), and smooth brome (*Bromus inermis*). Common vegetation

observed within delineated wetland areas is described below and species are indicated on the Data Forms in Appendix B.

3.2.1 Soils

Typical upland soils ranged from (10YR 3/3) brown (10YR 4/3) and silty clay loam in texture. Typical wetland soils were very dark greyish brown (10YR 4/2) and were silty clay loam in texture. Redoximorphic features were present in wetland soils.

3.2.3 Hydrology

The primary source of hydrology for the wetlands was overland flow. Indicators of hydrology within the wetlands included a high-water table, saturation, oxidized rhizospheres on living roots, a positive FAC neutral test, and geomorphic position.

3.3 Delineated Areas

Twenty-seven wetlands were identified during the field survey. The wetlands are described by type below, and their locations are shown on Figure A-4 in Appendix A. Sample plots are included in Appendix B and Appendix C, respectively.

3.3.1 Wetlands

Table 1 provides the type and size of the wetlands delineated within the Survey Area. The delineated wetland types included in the Survey Area were PUB, palustrine aquatic bottom (PAB), PEM, and palustrine scrub-shrub (PSS). One PEM wetland, W-D-27, was delineated via desktop due to lack of access from hazardous conditions caused by excessive flooding.

Two PAB wetlands encompassing an area of approximately 0.42 acre were delineated within the Survey Area. PAB wetlands were characterized by a combined aerial cover of more than 30 percent of vegetation.

Three PEM wetlands encompassing an area of approximately 1.9 acres were delineated within the Survey Area. PEM wetlands were characterized by a 30 percent or greater aerial cover of emergent, herbaceous vegetation. Additionally, the combined aerial cover of shrubs, saplings, and trees in these wetlands was less than 30 percent.

One PSS wetland encompassing an area of approximately 0.04 acre was delineated within the Survey Area. PSS wetlands were characterized by a 30 percent or greater aerial cover in the shrub/sapling stratum and an aerial cover of less than 30 percent in the tree stratum.

Twenty-one PUB wetlands encompassing an area of approximately 35.29 acres were delineated within the Survey Area. PUB wetlands were characterized by a combined aerial cover of less than 30 percent of vegetation.

3.3.2 Streams

Table 2 provides the type and delineated length of each stream recorded within the Survey Area. Delineated stream flow regimes were perennial, intermittent, and ephemeral and are described below.

Sixteen ephemeral streams extending for a delineated length of approximately 5,921 feet, were identified. Ephemeral streams were characterized by a defined bed and bank but had limited or no flow during the site visit, indicating these streams largely carry water only during and after precipitation events. The ephemeral streams ranged from approximately 1 to 5 feet wide and were approximately 0.25 to 0.75 foot in deep at the Ordinary High-Water Mark (OHWM). Banks heights ranged from approximately 0.5 to 3 feet.

Ten intermittent streams extending for a delineated length of approximately 36,534 feet, were identified. Intermittent streams were characterized by the presence of a limited volume of flow at the time of the site visit, indicating the stream is partially fed by groundwater but that the stream may not flow during dry periods. These intermittent stream crossings ranged from approximately 5 to 30 feet wide and were approximately 1.5 to 4 feet deep at the OHWM. Bank heights were approximately 2.5 to 20 feet. Two intermittent streams are named; S-D-4 is Spring Branch and S-D-20 is Republican Creek.

One perennial stream extending for a delineated length 8,553 feet, was identified. Perennial streams are characterized by the presence of substantial flow during the site visit, a likely indicator that the source of much of the water is from groundwater (base flow). This perennial stream was approximately 25 feet wide and was approximately 5 feet deep at the OHWM. The stream's bank height was approximately 10 feet. This perennial stream, S-D-26, is Fourmile Creek.

Table 1: US 54/East Kellogg Expansion: Wetlands

Wetland Number	Wetland Type	Area of Wetland Delineated (acre)	Area of Wetland within Updated Survey Area (acre)	USACE Jurisdictional ^{a, b}	Figure A-4 Page Number
W-D-1	PUB	0.03	N/A	No	5,6
W-D-2	PUB	1.09	1.09	No	6,7,20, 21
W-D-3	PUB	0.10	N/A	No	6,7
W-D-4	PUB	0.77	N/A	No	19,20
W-D-5	PUB	1.14	0.03	No	19,20
W-D-6	PUB	0.94	0.003	No	24,25
W-D-7	PUB	0.94	N/A	Yes	11,12
W-D-8	PUB	0.92	N/A	No	25,26
W-D-9	PEM	0.29	N/A	No	25,26
W-D-10	PUB	0.63	0.63	No	25,26
W-D-11	PSS	0.04	N/A	No	26,27
W-D-12	PUB	1.18	N/A	Yes	27,28
W-D-13	PUB	0.36	N/A	No	13,14
W-D-14	PUB	1.33	0.03	Yes	13,14
W-D-15	PUB	0.60	N/A	Yes	13,14
W-D-16	PUB	0.02	N/A	No	13,14
W-D-17	PUB	3.90	0.50	Yes	8,9,22, 23
W-D-18	PUB	0.71	0.06	Yes	22,23
W-D-19	PAB	0.19	0.18	Yes	22,23
W-D-20	PUB	2.09	N/A	Yes	9,10
W-D-21	PUB	3.69	N/A	No	7,8
W-D-22	PAB	0.23	0.10	No	8,9
W-D-23	PUB	1.26	N/A	No	18,19
W-D-24	PEM	0.005	0.005	Yes	18,19
W-D-25	PUB	12.20	1.25	Yes	19,20, 21
W-D-26	PUB	1.38	0.05	Yes	20,21
W-D-27	PEM	1.61	N/A	Yes	22,23
Total:		37.65	3.93		

(a) Light green shading indicates potentially jurisdictional features

(b) An official Jurisdictional Determination can only be provided by the USACE. Recommendations made by Burns & McDonnell follow the pre-2015 regulatory guidance (September 16, 2021).

Table 2: US 54/East Kellogg Expansion: Streams

Stream Number ^c	Stream Type	Length of Stream Delineated (feet)	Length of Stream within Updated Survey Area (Feet)	USACE Jurisdictional ^a	Figure A-4 Page Number
S-D-1	Ephemeral	181	162	No	5,6
S-D-2	Ephemeral	201	N/A	No	5,6
S-D-3	Ephemeral	508	167	No	5,6
S-D-4	Intermittent	12,472	5,372	Yes	4,5,6,19,20
S-D-5	Ephemeral	204	204	Yes	4,5
S-D-6	Ephemeral	810	810	Yes	2,3,4,5
S-D-7	Ephemeral	399	399	Yes	4,5
S-D-8	Ephemeral	168	N/A	Yes	4,5
S-D-9	Ephemeral	961	N/A	Yes	5,6
S-D-10	Ephemeral	137	N/A	Yes	5,6
S-D-11	Ephemeral	397	N/A	Yes	5,6
S-D-12	Ephemeral	32	N/A	Yes	5,6
S-D-13	Intermittent	2,038	372	Yes	11,12
S-D-14	Intermittent	1,224	N/A	Yes	25,26
S-D-15	Ephemeral	184	N/A	Yes	27,28
S-D-16	Intermittent	6,129	208	Yes	13,14,27,28
S-D-17	Intermittent	956	225	Yes	13,14
S-D-18	Ephemeral	516	58	Yes	13,14
S-D-19	Intermittent	6,809	675	Yes	14,15,28
S-D-20	Intermittent	3,071	1,039	Yes	22,23
S-D-21	Intermittent	592	531	Yes	9,10,23,24
S-D-22	Intermittent	2,641	898	Yes	23,24
S-D-23	Ephemeral	664	79	Yes	18,19
S-D-24	Ephemeral	57	57	No	17,18
S-D-25	Intermittent	604	N/A	Yes	9,10
S-D-26	Perennial	8,552	947	Yes	7,8,9,22,23
S-D-27	Ephemeral	501	501	No	17,18
Total:		51,008	12,704		

(c) Light green shading indicates potentially jurisdictional features

(d) An official Jurisdictional Determination can only be provided by the USACE. Recommendations made by Burns & McDonnell follow the pre-2015 regulatory guidance (September 16, 2021).

(e) S-D-27, a continuation of S-D-24, was delineated via desktop due to Survey Area extension.

4.0 Summary

Burns & McDonnell conducted a wetland delineation and protected species assessment of the Project to identify wetlands and other waterbodies. A total of 27 wetlands and 27 streams were identified during the delineation efforts. To avoid the need for a Section 404 permit from the USACE, the proposed Project should be designed to avoid all impacts to potentially jurisdictional waters.

As shown in Table 1 and Table 2, 12 wetlands and 22 streams appear to meet the criteria of waters of the U.S. and may potentially be under USACE jurisdiction. However, 15 wetlands and 5 streams did not appear to meet the criteria of waters of the U.S. and may not be under USACE jurisdiction. The review of potential jurisdictional status was based on the pre-2015 regulatory guidance (September 16, 2021). Factors considered to make a jurisdictional status recommendation included the hydrological connections to other probable waters of the U.S. Jurisdictional status recommendations are the opinion of Burns & McDonnell based on best professional judgement and interpretation of the pre-2015 regulatory guidance and subject to change based on agency review. An approved Jurisdictional Determination would need to be issued by the USACE to confirm these recommendations.

If impacts to waters of the U.S. cannot be completely avoided, they should be minimized, and a Section 404 permit from the USACE would be required. Once final Project design is known, an assessment of potential impacts, if applicable, and a permitting strategy can be determined. If you have any questions or require additional information, please contact David Partridge by email at dmpartridge@burnsmcd.com.

Sincerely,

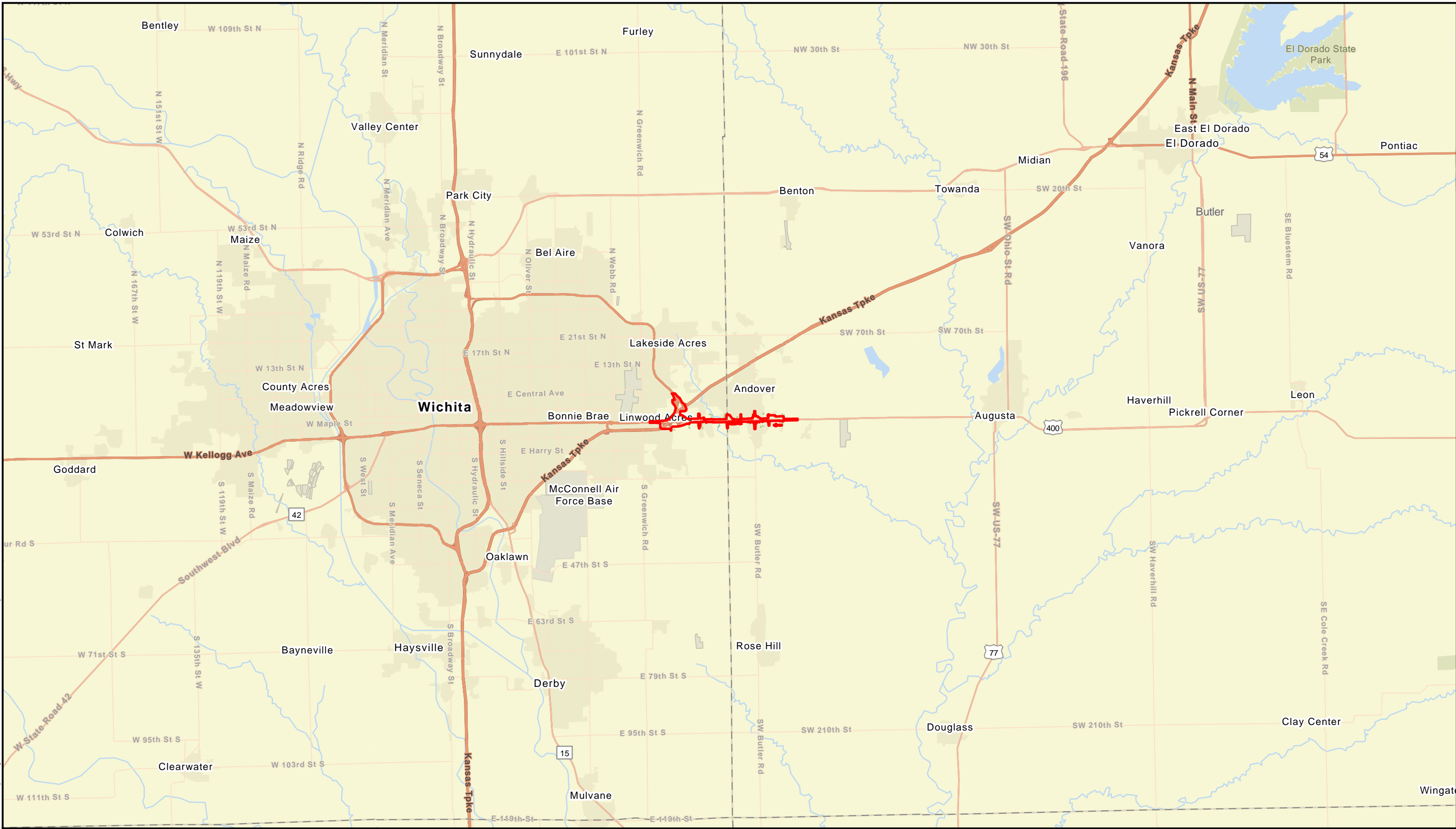



David Partridge
Assistant Environmental Scientist

Attachments:

Appendix A - Figures
Appendix B - Routine Wetland Determination Data Forms, Midwest Region
Appendix C - Ground Photographs
Appendix D - Antecedent Precipitation Tool Results

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 Survey Area

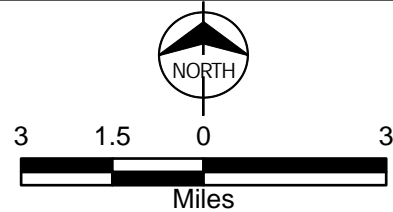
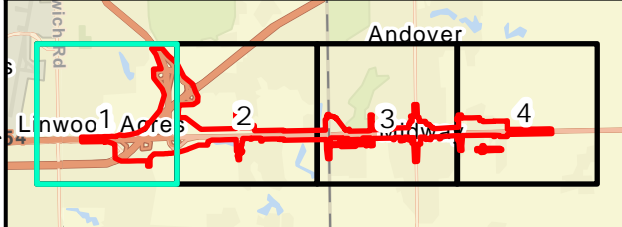
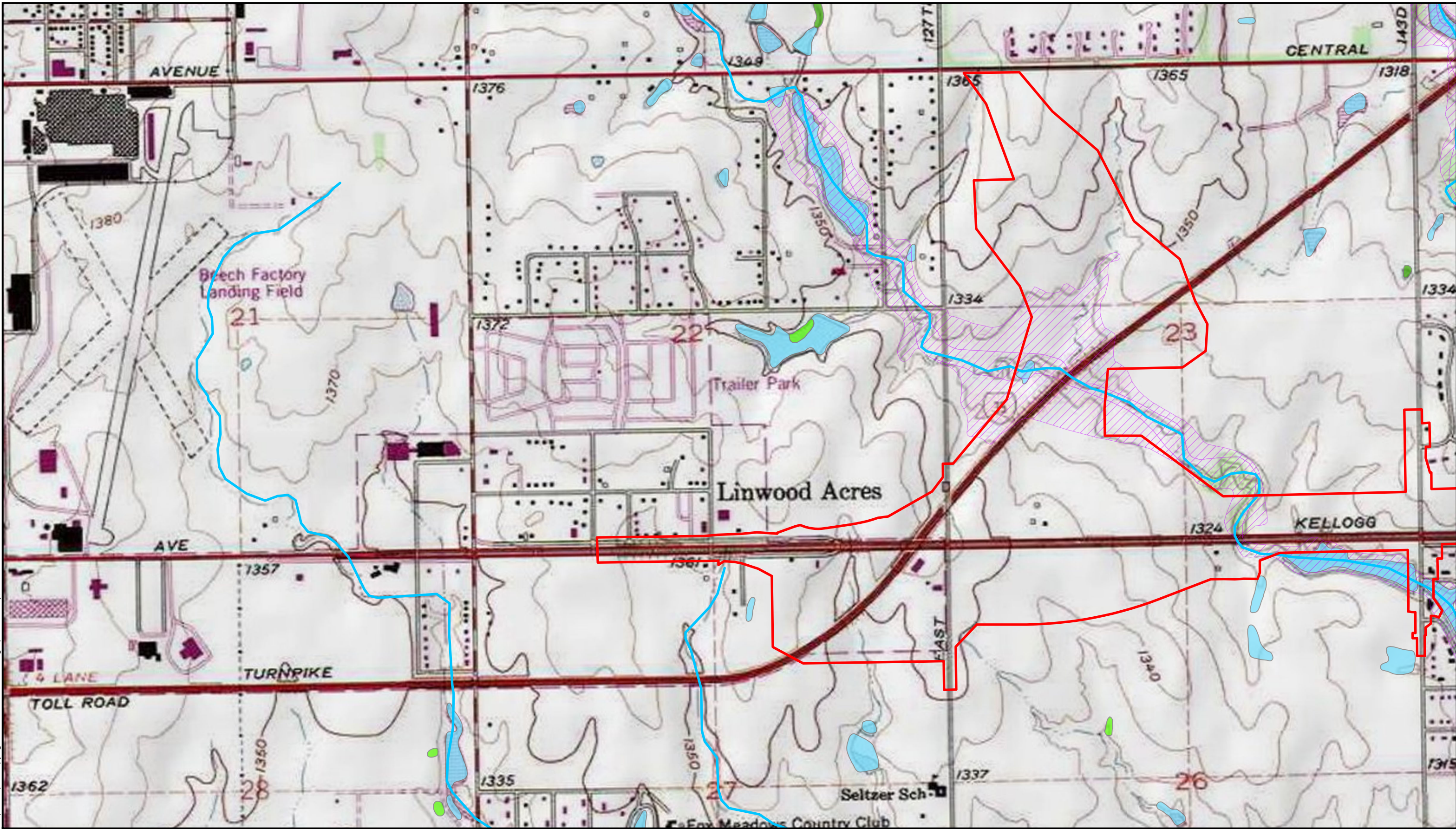


Figure A-1
General Vicinity Map
US/E. Kellogg Corridor Improvements
Kansas Department of
Transportation (KDOT)
Sedgwick and Butler County

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- Survey Area
- NHD Stream
- 100-Year Floodplain
- NWI Wetland
- PEM
- PFO
- PUB

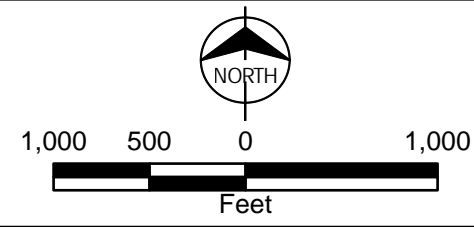
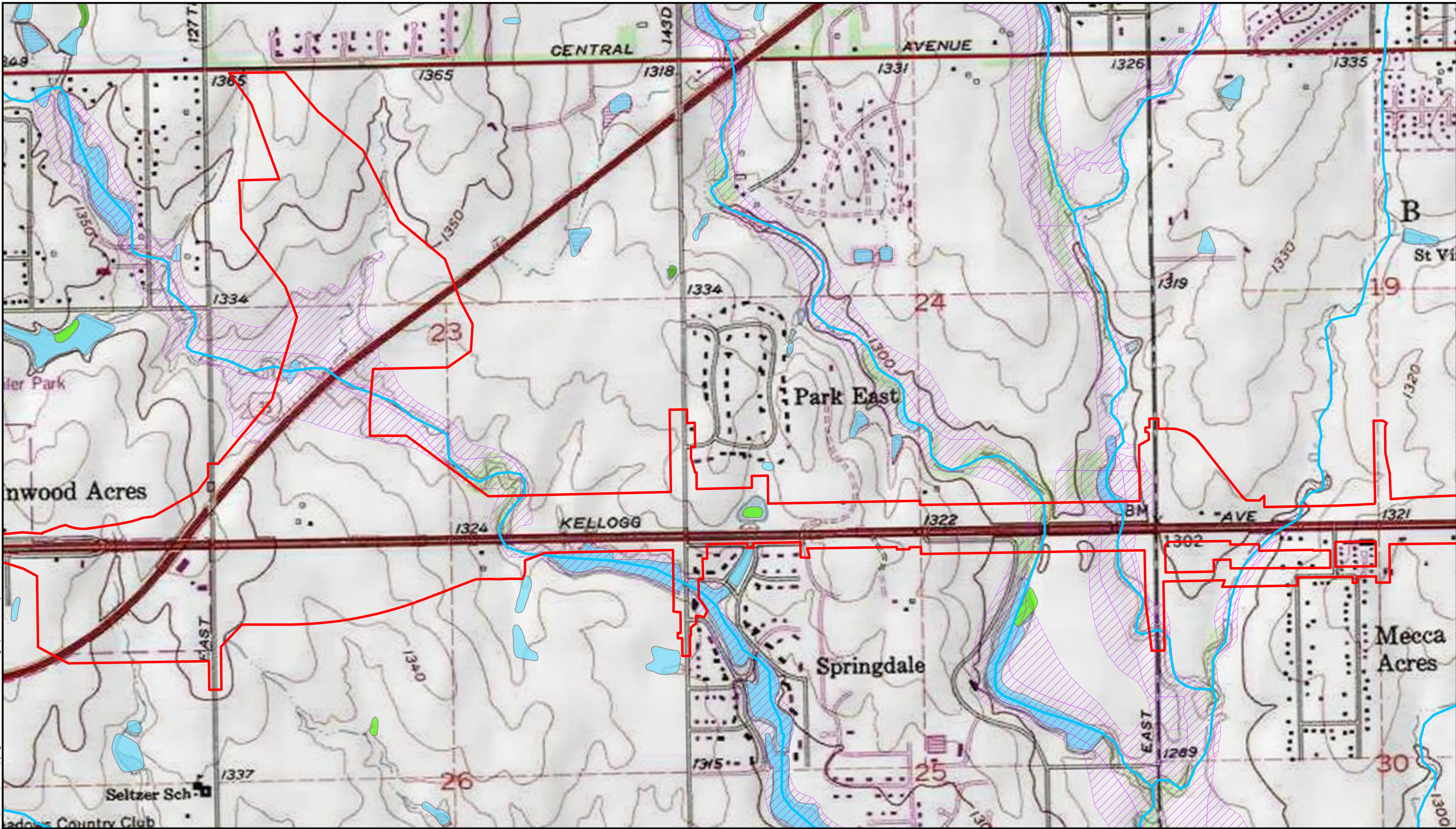
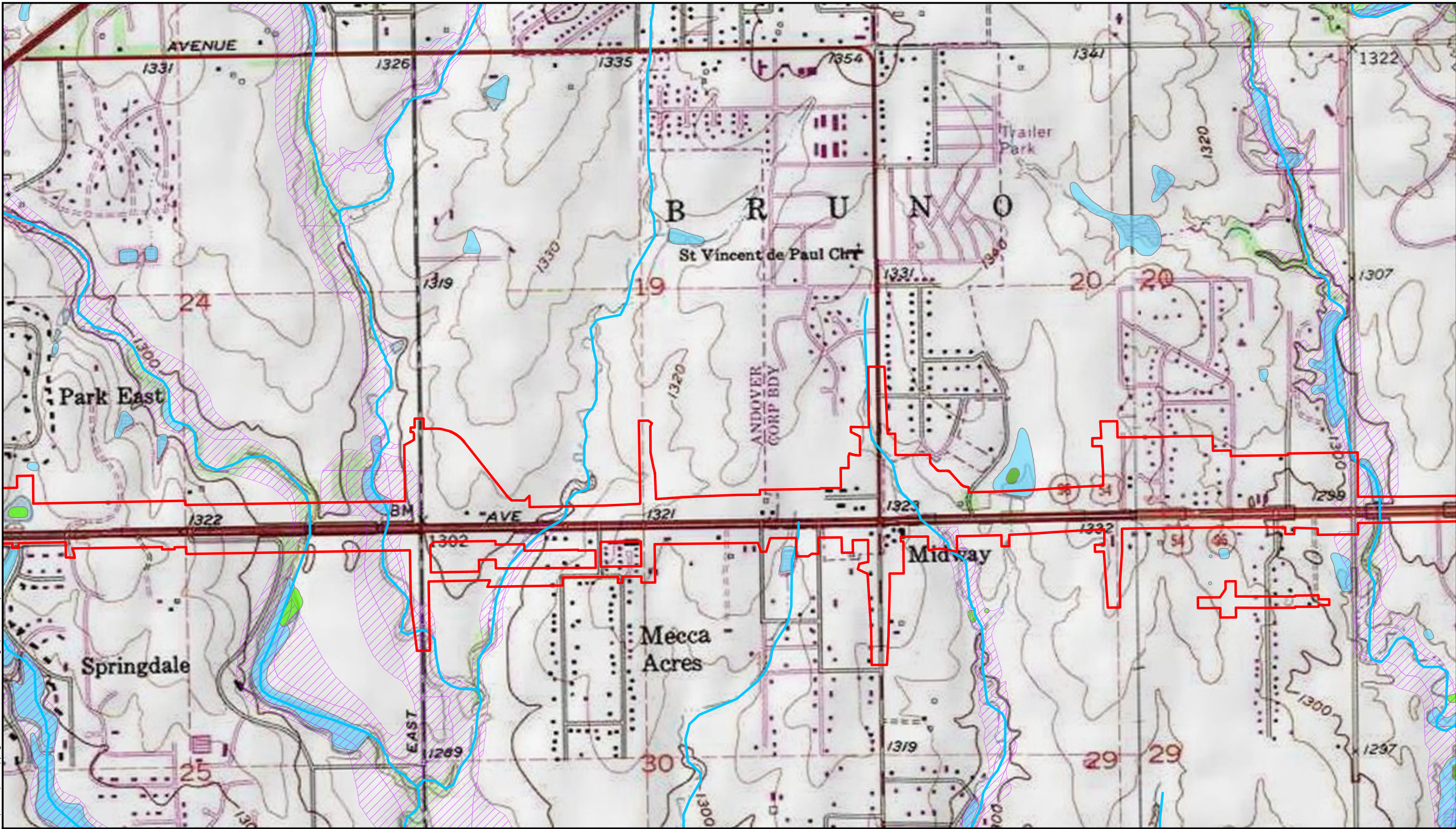


Figure A-2
Topographic Map
US/E. Kellogg Corridor Improvements
Kansas Department of
Transportation (KDOT)
Sedgwick and Butler County
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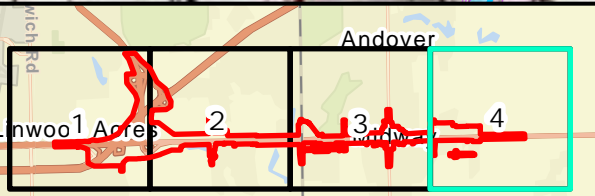
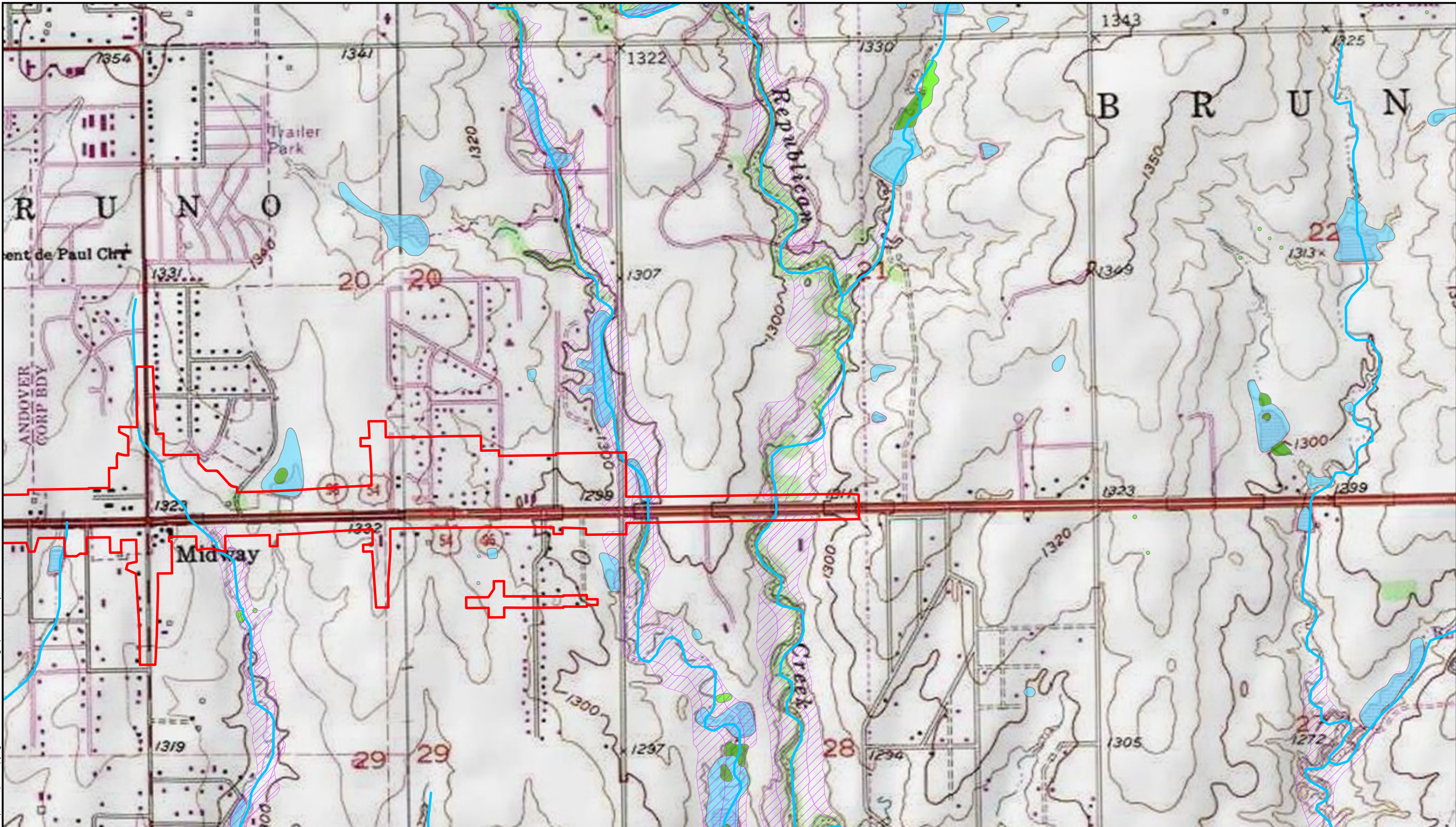
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|---------------------|-----------------|
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| NHD Stream | NWI Wetland PFO |
| 100-Year Floodplain | NWI Wetland PUB |

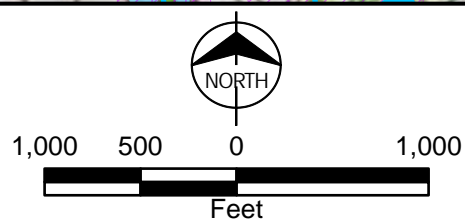
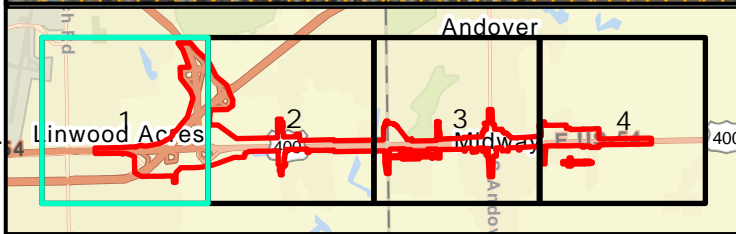






Figure A-2
Topographic Map
US/E. Kellogg Corridor Improvements
Kansas Department of
Transportation (KDOT)
Sedgwick and Butler County
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 Survey Area
  NRCS Soil
  Non-Hydric
  Hydric

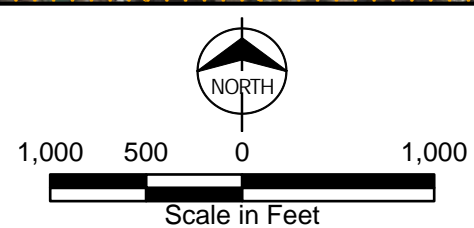
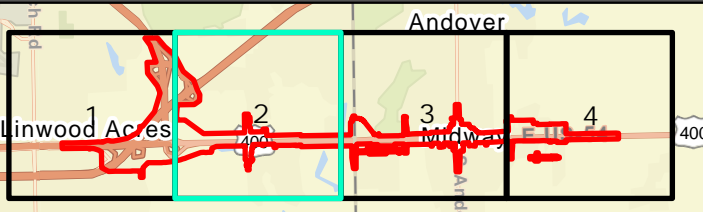
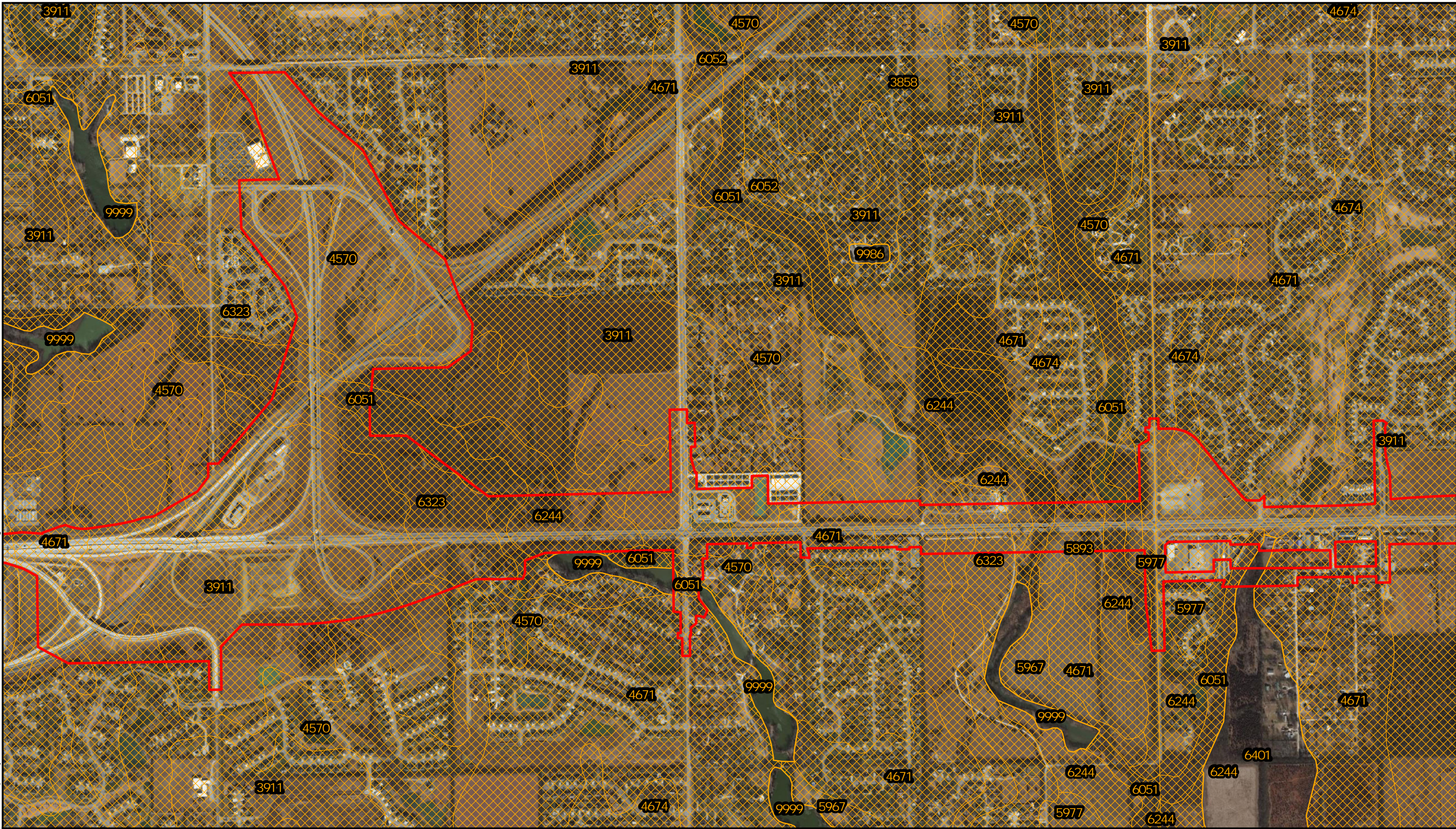


Figure A-3
NRCS SSURGO Map
US/E. Kellogg Corridor Improvements
Kansas Department of
Transportation (KDOT)
Sedgwick and Butler County
Page 1 of 4

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- Survey Area
- NRCS Soil
- Non-Hydric
- Hydric

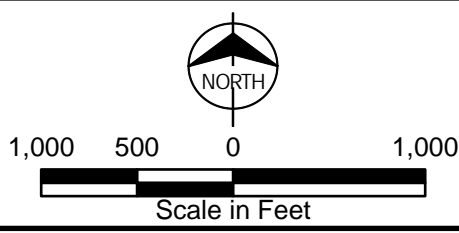
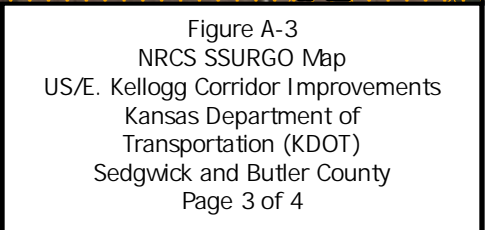
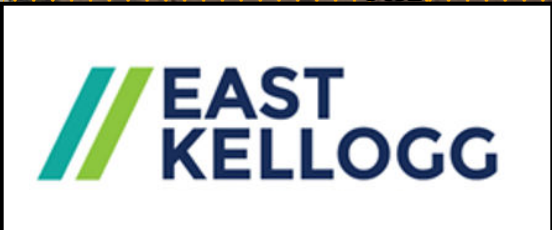
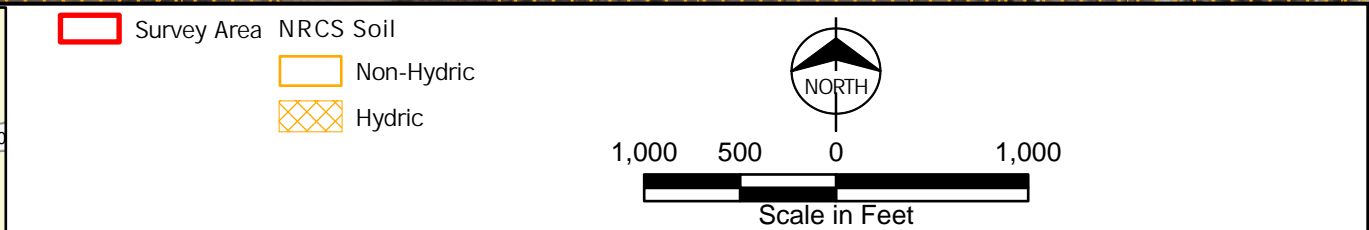
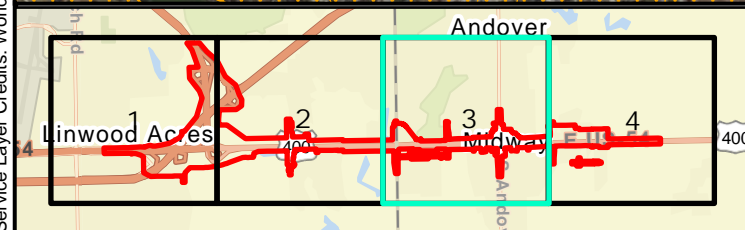
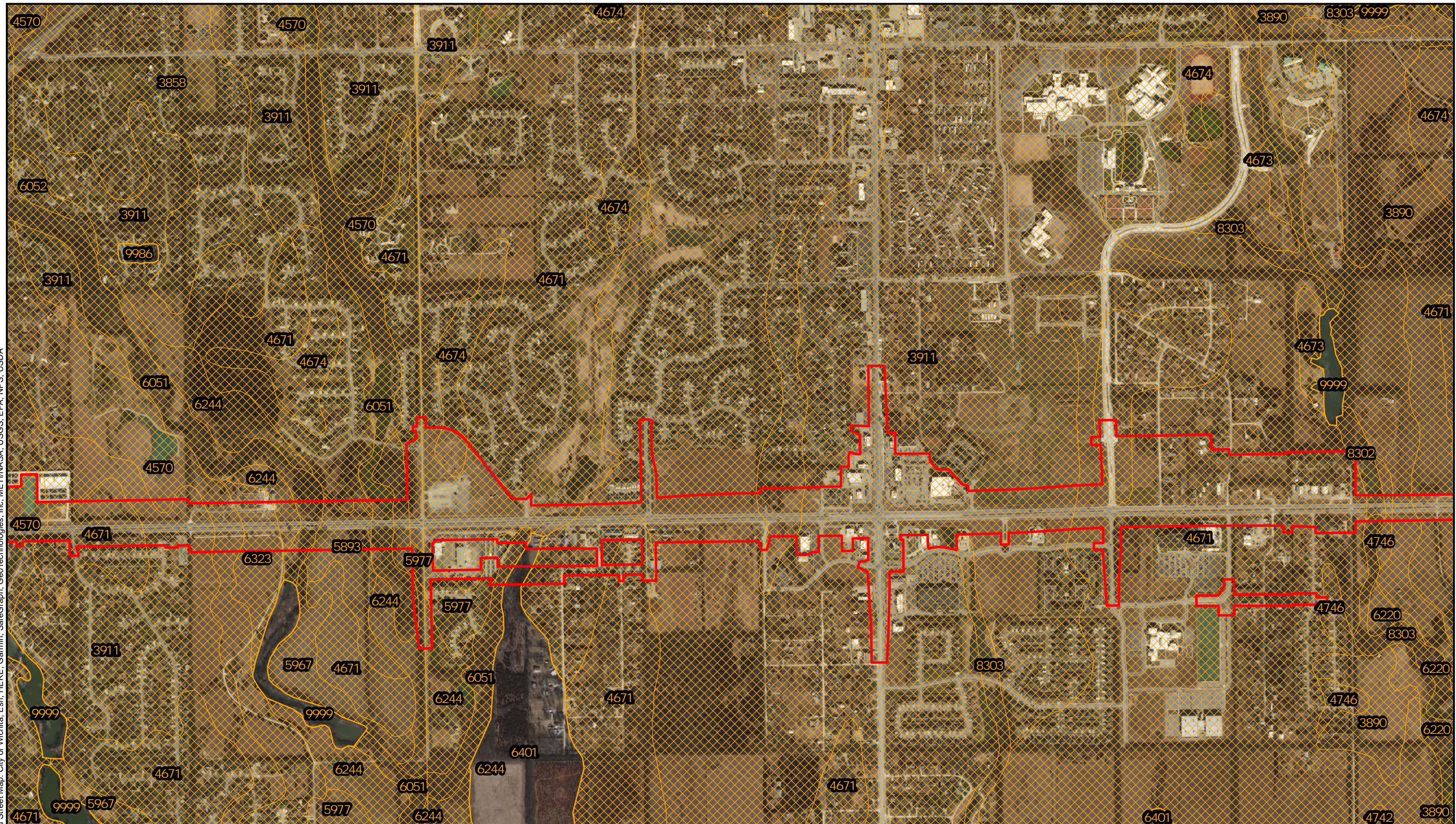


Figure A-3
NRCS SSURGO Map
US/E. Kellogg Corridor Improvements
Kansas Department of
Transportation (KDOT)
Sedgwick and Butler County
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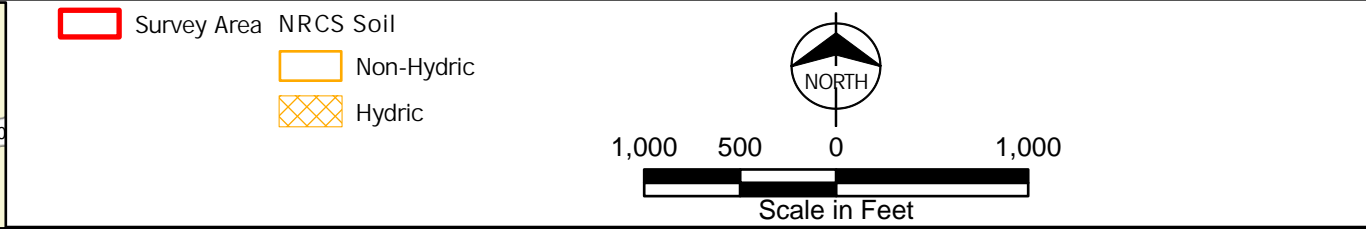
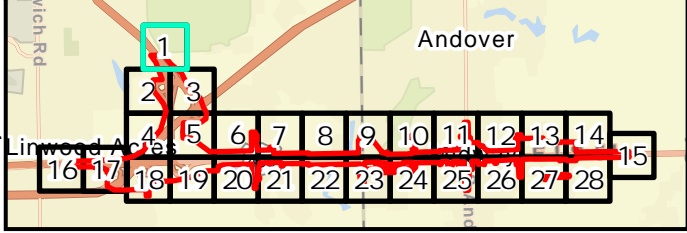


Figure A-3
NRCS SSURGO Map
US/E. Kellogg Corridor Improvements
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 Survey Area

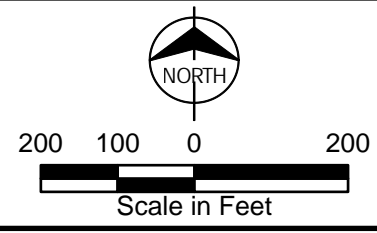
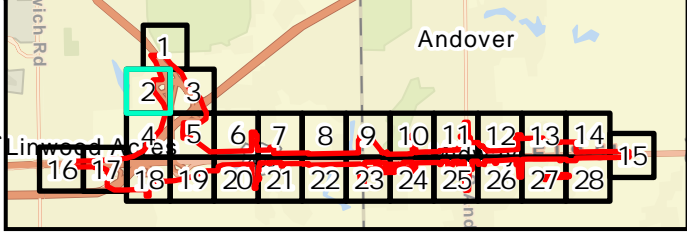


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Sedgwick and Butler County
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- Survey Area
- ▲ Photo Point (PP)
- Streams (S)
- Ephemeral

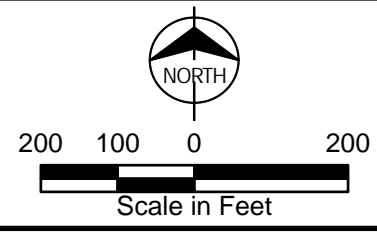
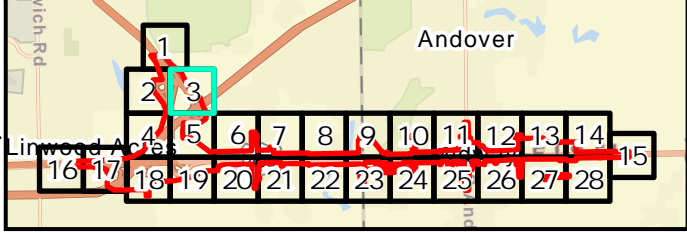
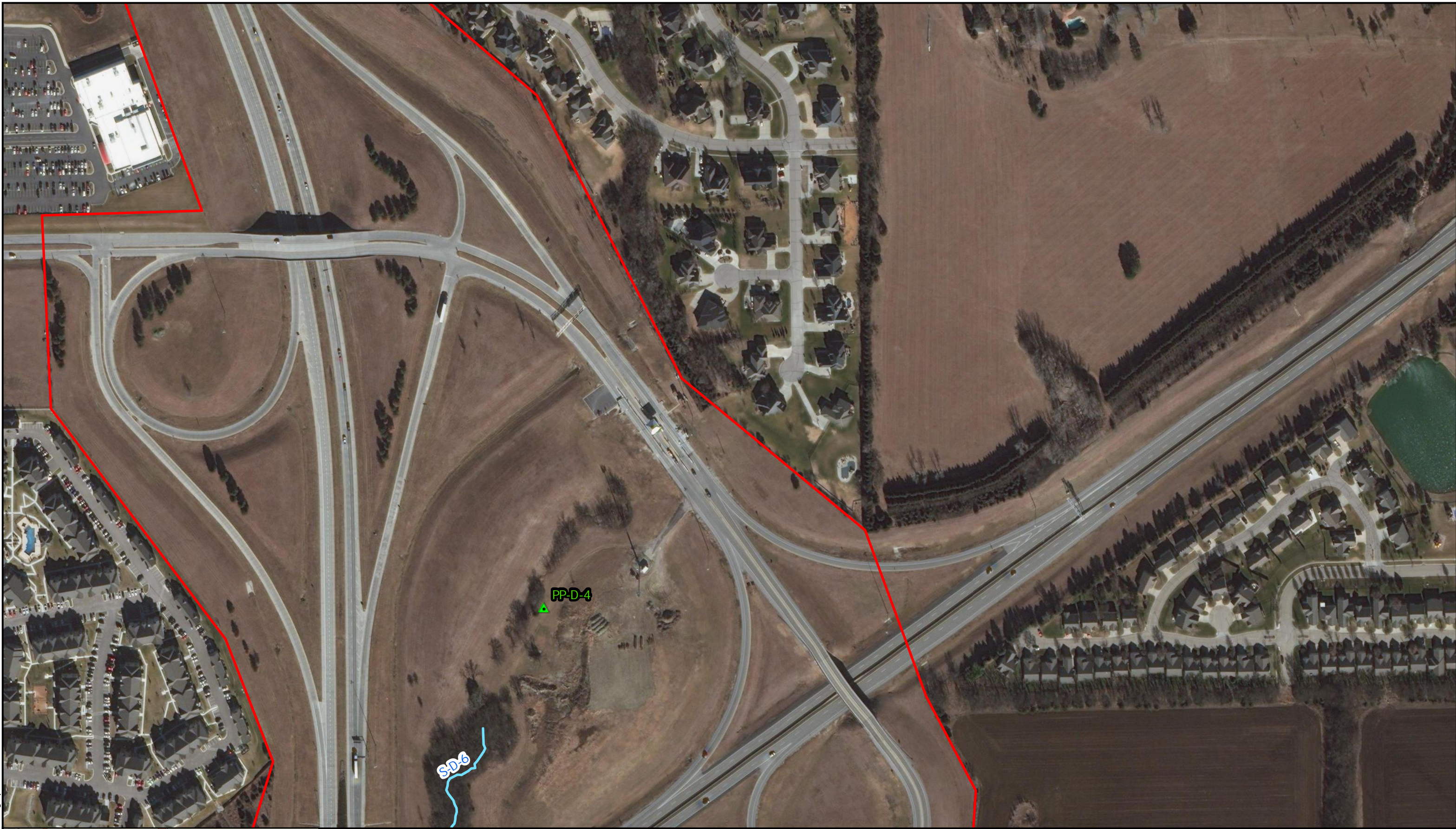


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
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- Survey Area
- Photo Point (PP)
- Streams (S)
- Ephemeral

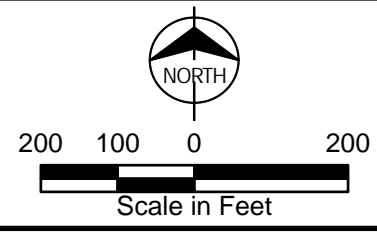
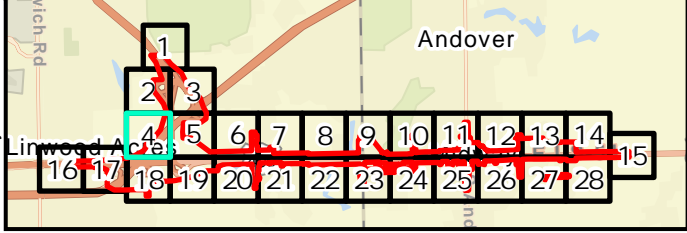
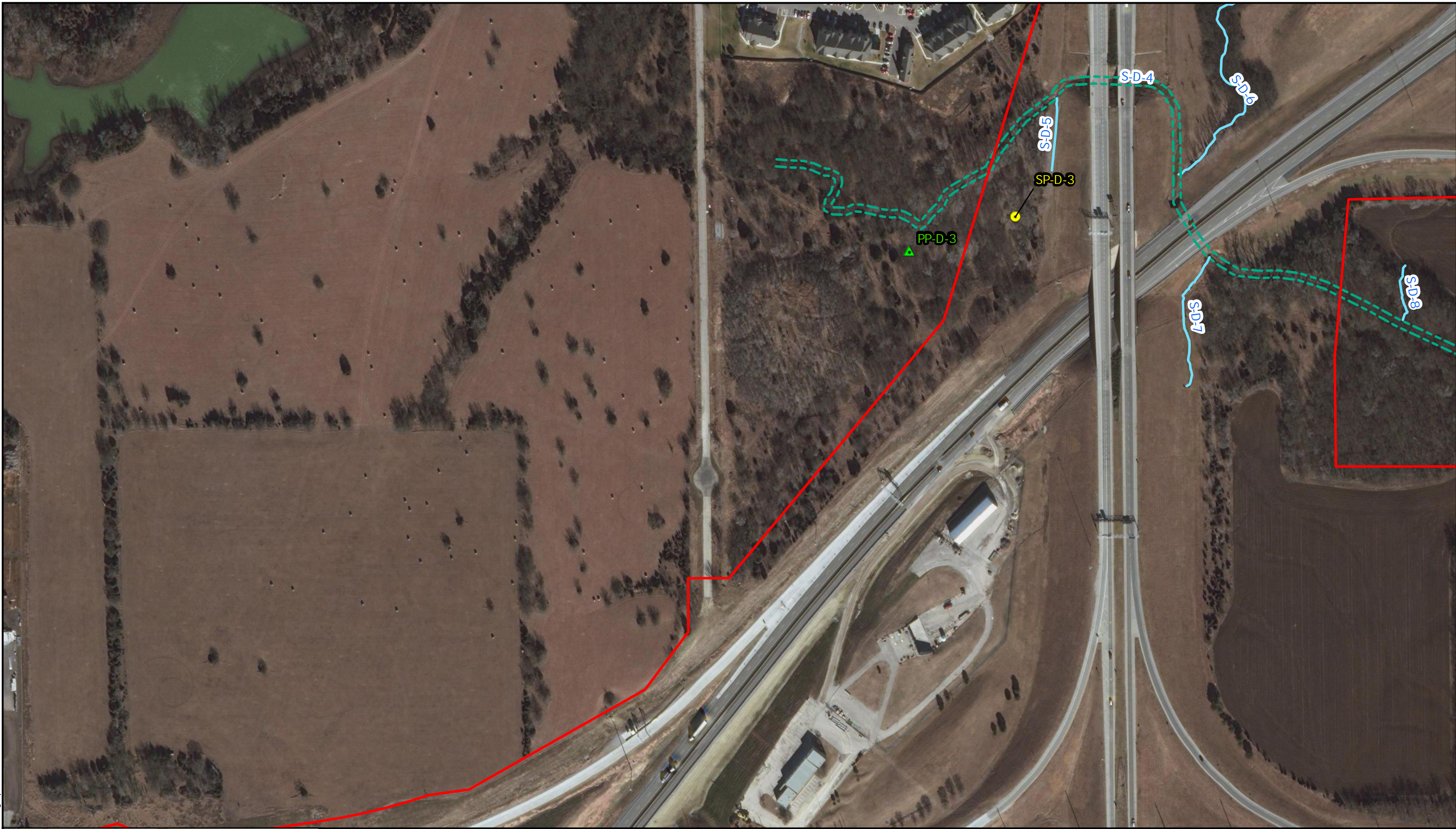


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
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Survey Area

Sample Plot (SP)

Photo Point (PP)

Streams (S)

Ephemeral

Intermittent

NORTH

200

100

0

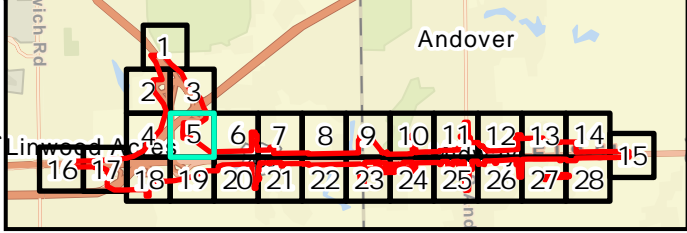
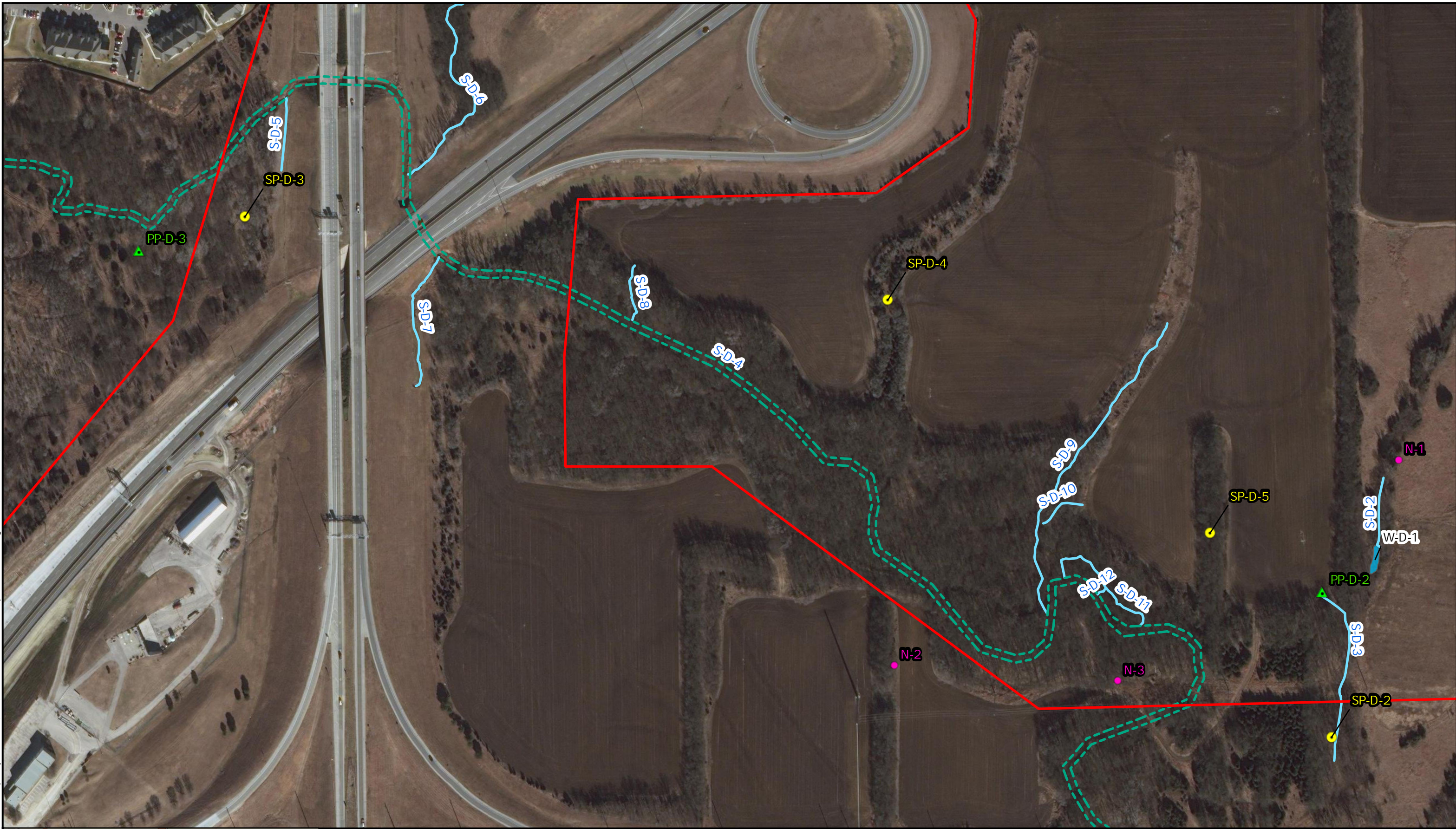
200

Scale in Feet



Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
Page 4 of 28

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|--|---|--|
| <div><div></div> Survey Area</div> <div><div></div> Sample Plot (SP)</div> <div><div></div> Photo Point (PP)</div> <div><div></div> Stick Nest (N)</div> | <div><div></div> Streams (S)</div> <div><div></div> Ephemeral</div> <div><div></div> Intermittent</div> | <div><div></div> Wetlands (W)</div> <div><div></div> PUB</div> |
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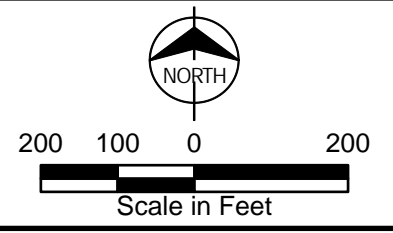
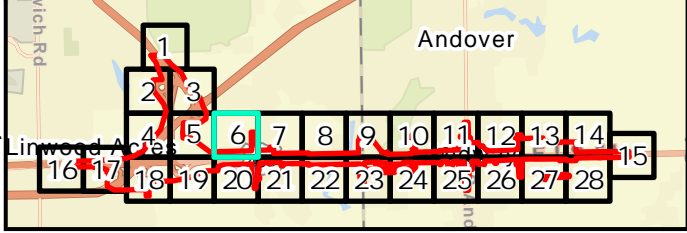
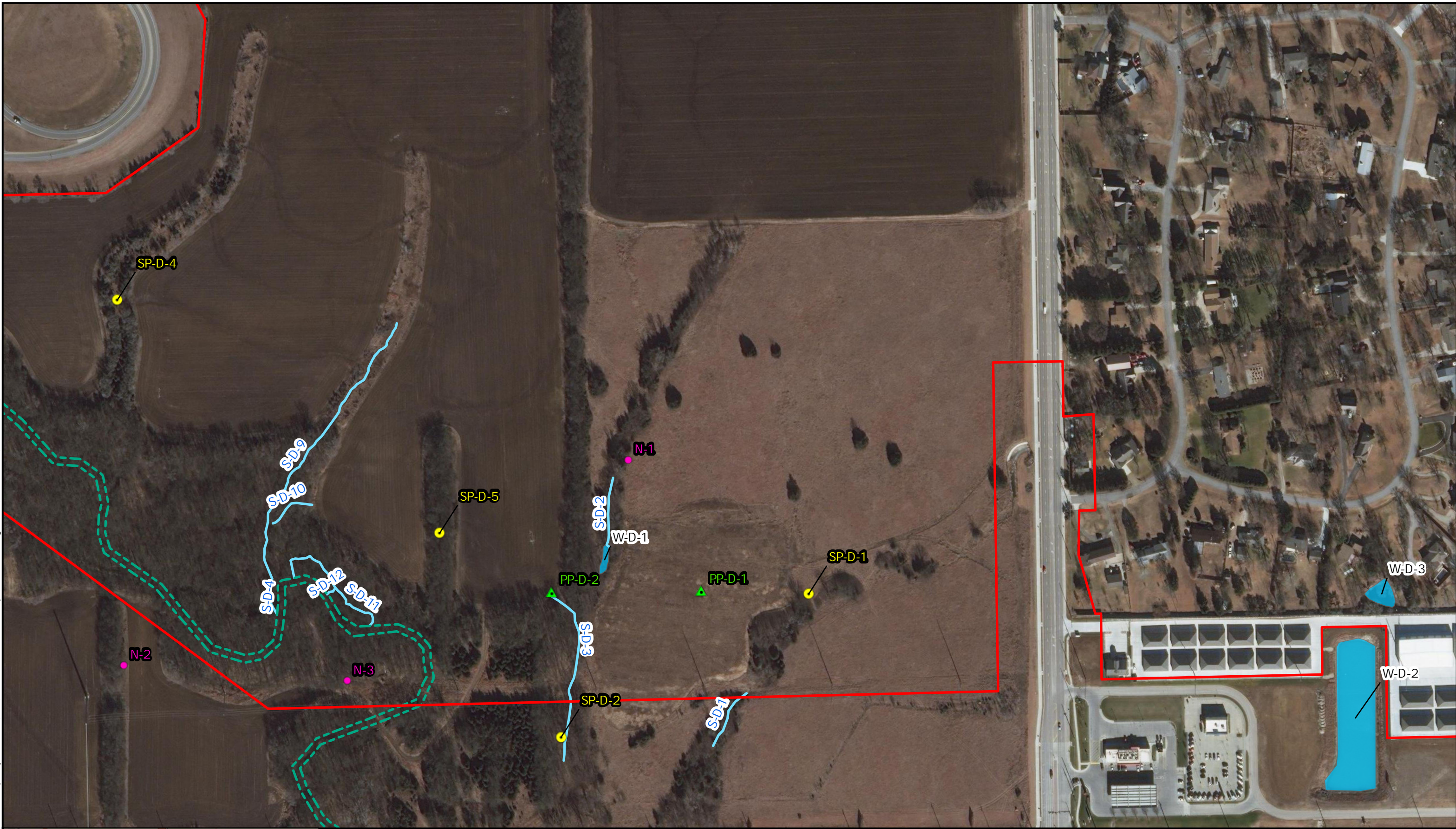


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Survey Area	Streams (S)	Wetlands (W)
Sample Plot (SP)	Ephemeral	PUB
Photo Point (PP)	Intermittent	
Stick Nest (N)		

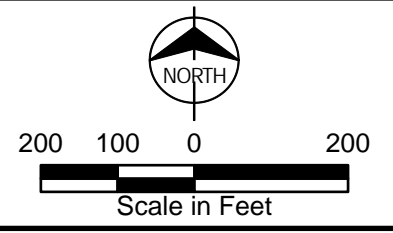
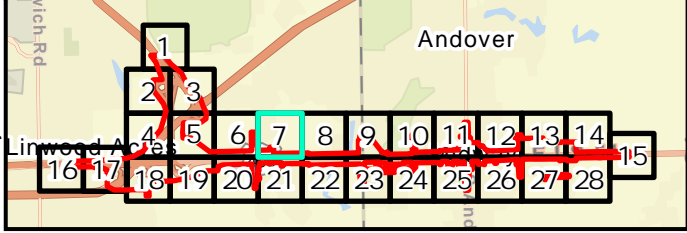


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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|------------------|-------------|--------------|
| Survey Area | Streams (S) | Wetlands (W) |
| Sample Plot (SP) | Perennial | PUB |

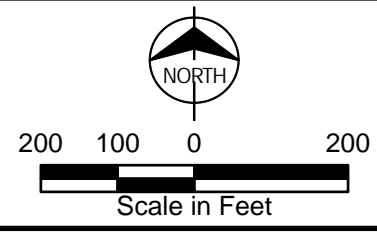
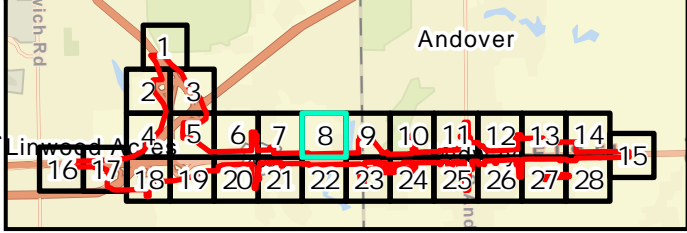
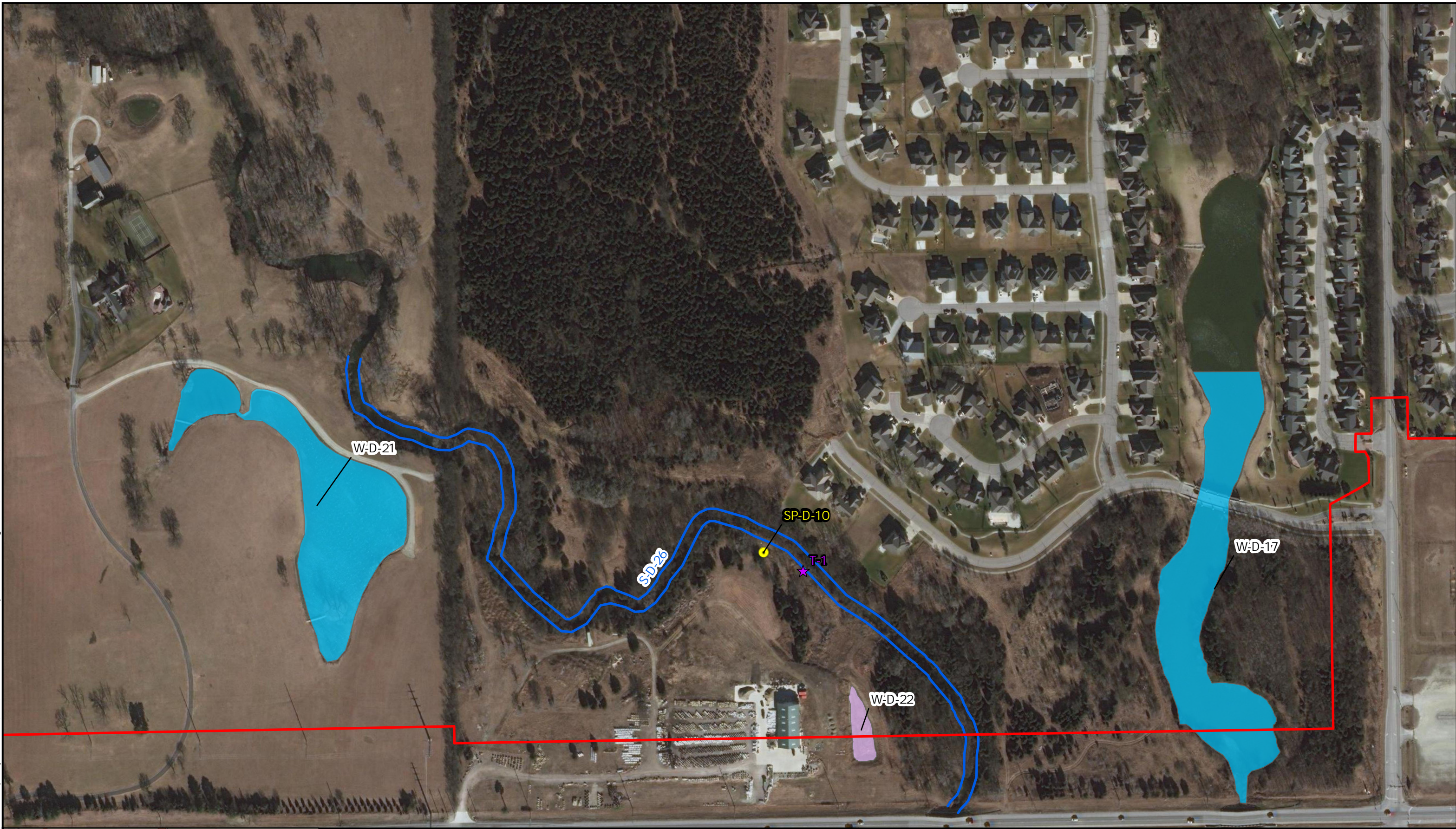


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Survey Area

Sample Plot (SP)

Potential Roost Tree (T)

Streams (S)

Perennial

Wetlands (W)

PAB

PUB

NORTH

200

100

0

200

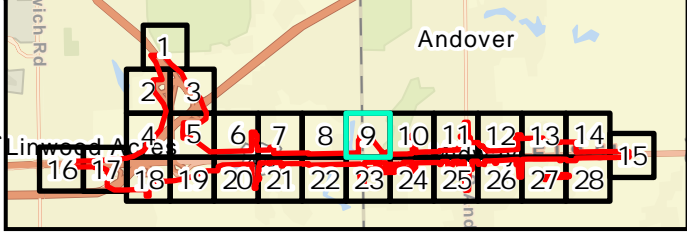
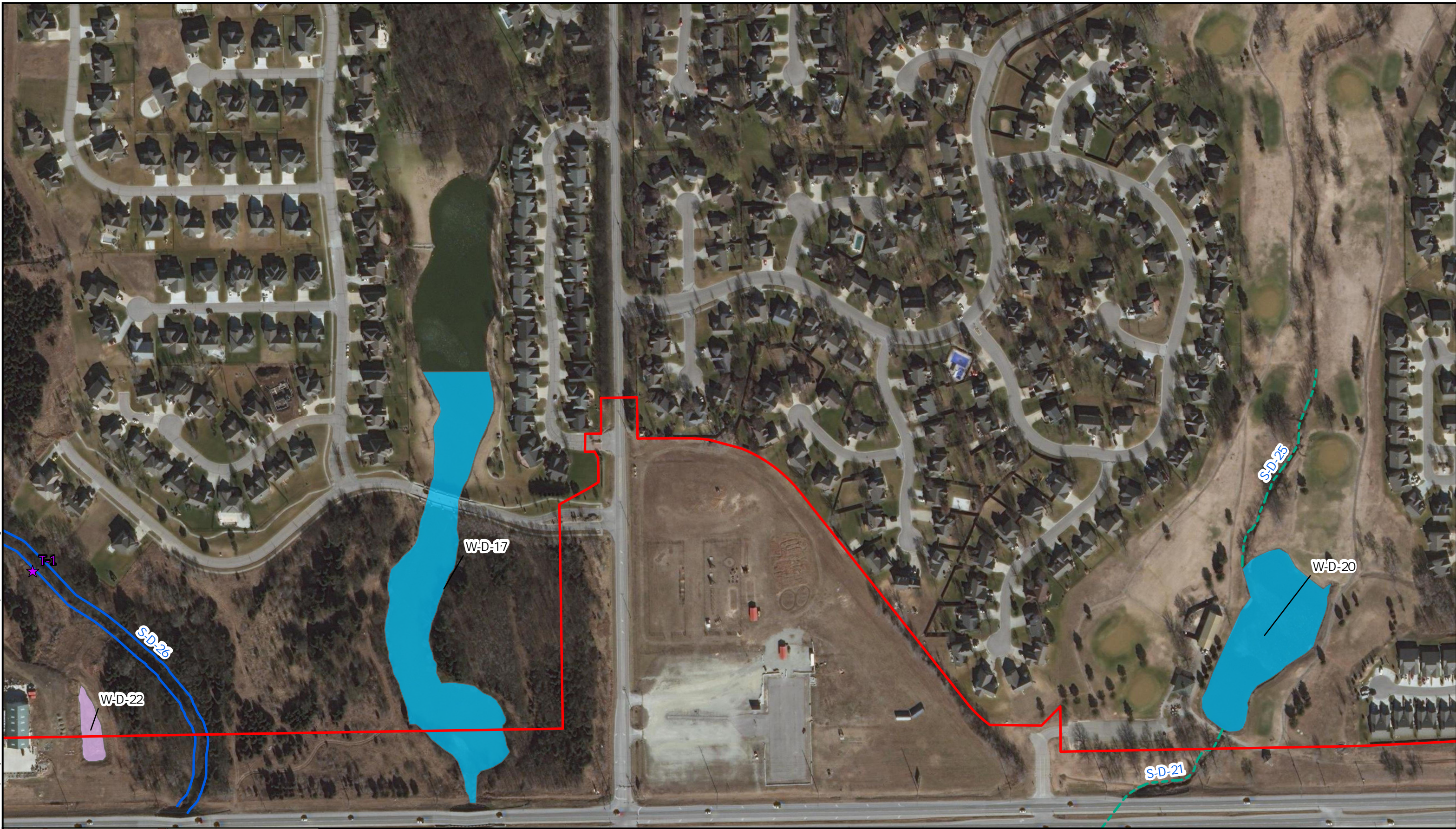
Scale in Feet

Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation (KDOT)
Sedgwick and Butler County
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Source: ESRI, KDOT, and Burns & McDonnell

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Service Layer Credits: World Street Map: City of Wichita, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc. METI/NASA, USGS, EPA, NPS, USDA



Survey Area

★

Potential Roost Tree (T)

Streams (S)

Intermittent

Perennial

Wetlands (W)

PAB

PUB

NORTH

200

100

0

200

Scale in Feet

EAST
KELLOGG

Figure A-4

Wetlands and Other Water Resources

US 54/E. Kellogg Corridor Improvements

Kansas Department of Transportation (KDOT)

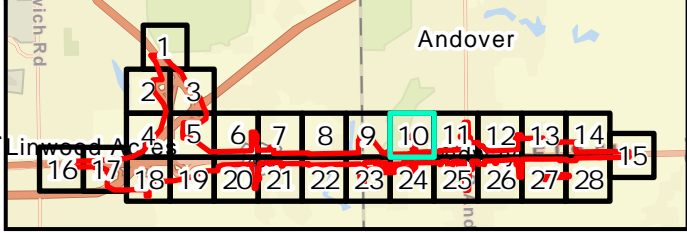
Sedgwick and Butler County

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Source: ESRI, KDOT, and Burns & McDonnell

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Survey Area Streams (S) Wetlands (W)
Intermittent PUB

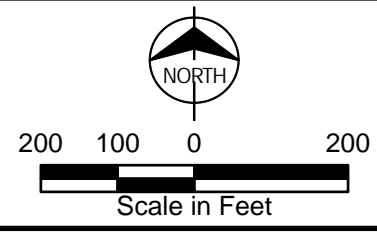
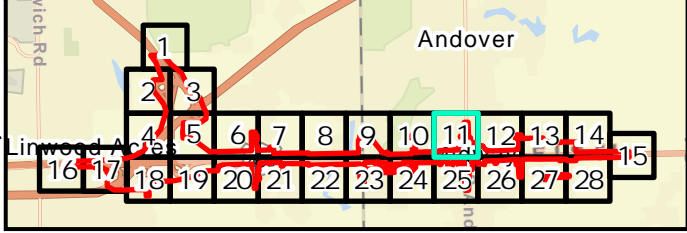


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
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Survey Area Streams (S) Wetlands (W)
Intermittent PUB

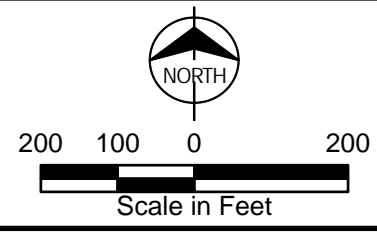
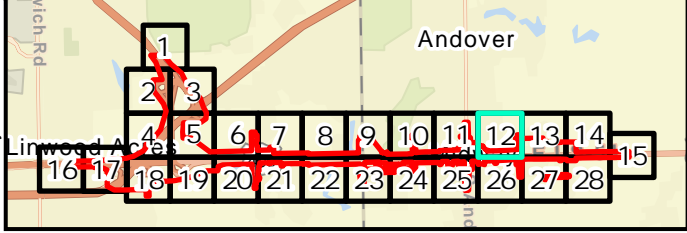


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Sedgwick and Butler County
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Survey Area Streams (S) Wetlands (W)
Intermittent PUB

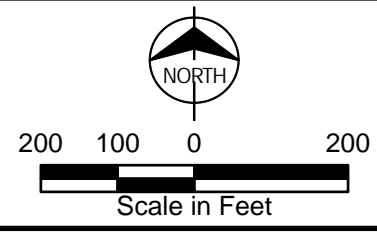
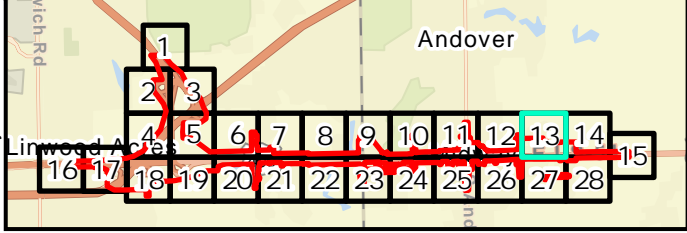


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Sedgwick and Butler County
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Survey Area Streams (S) Wetlands (W)
Ephemeral PUB
Intermittent

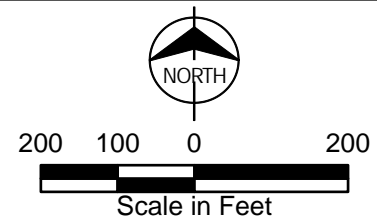
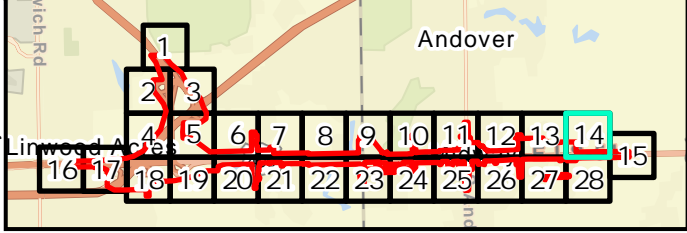


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Survey Area Streams (S) Wetlands (W)
Ephemeral PUB
Intermittent

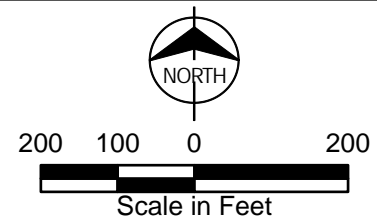
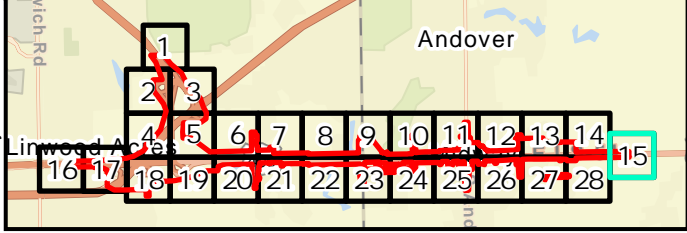
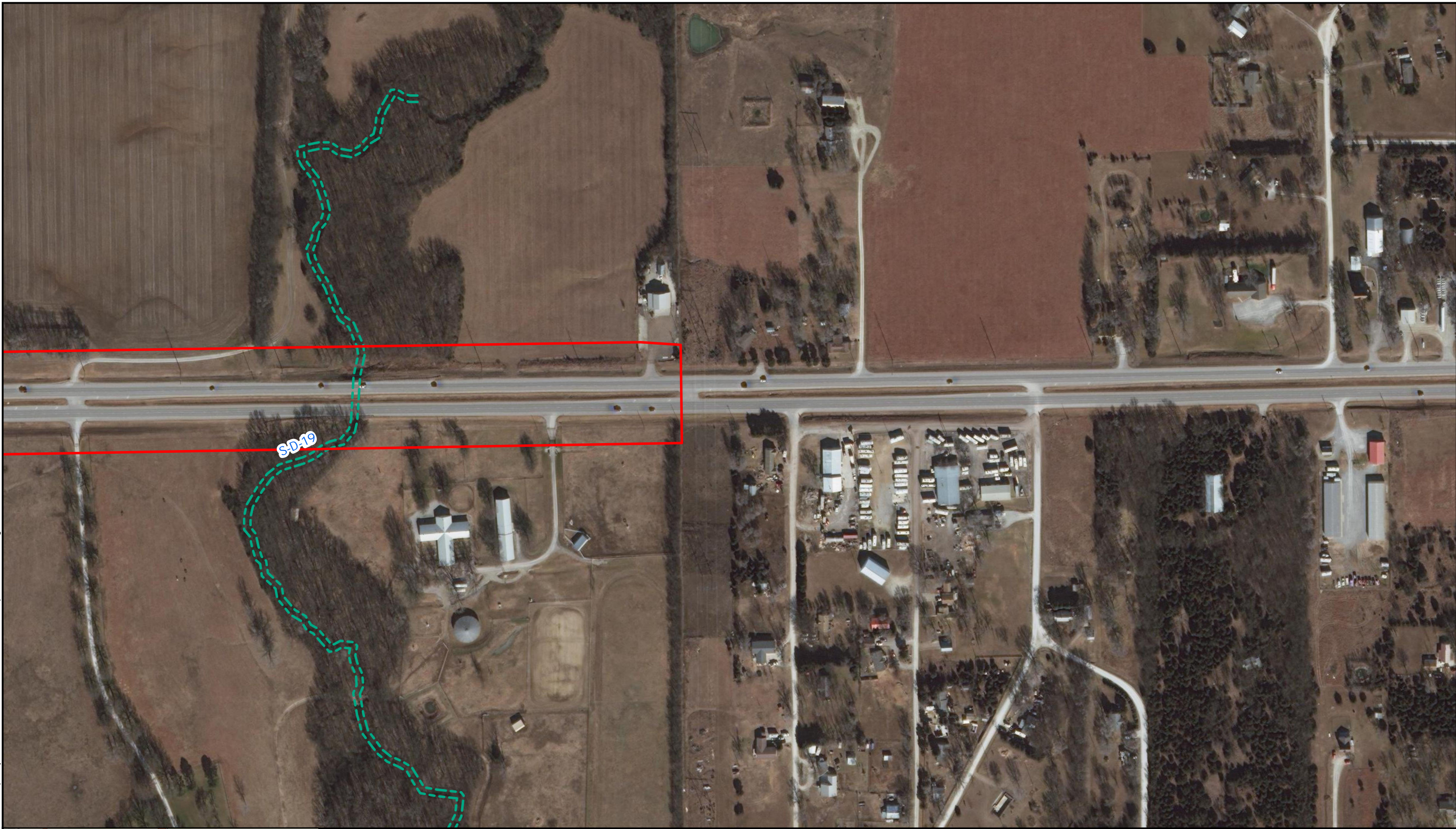



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Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
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Sedgwick and Butler County
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 Survey Area
 Intermittent Streams (S)

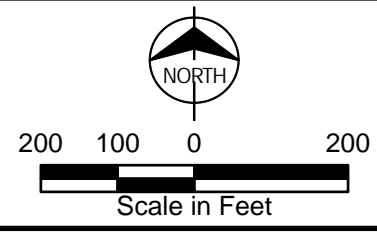
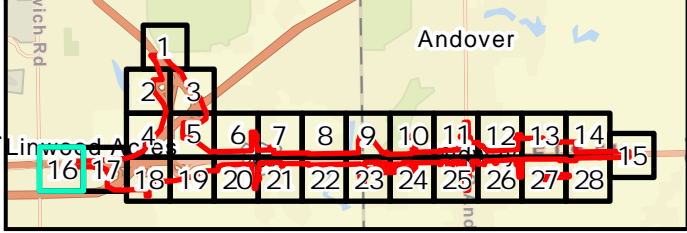


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
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Survey Area

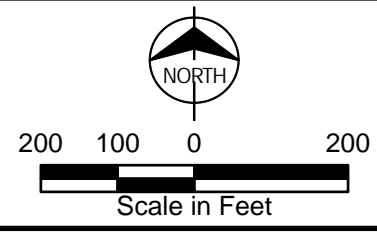
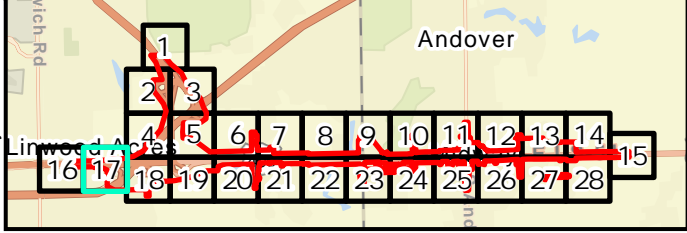
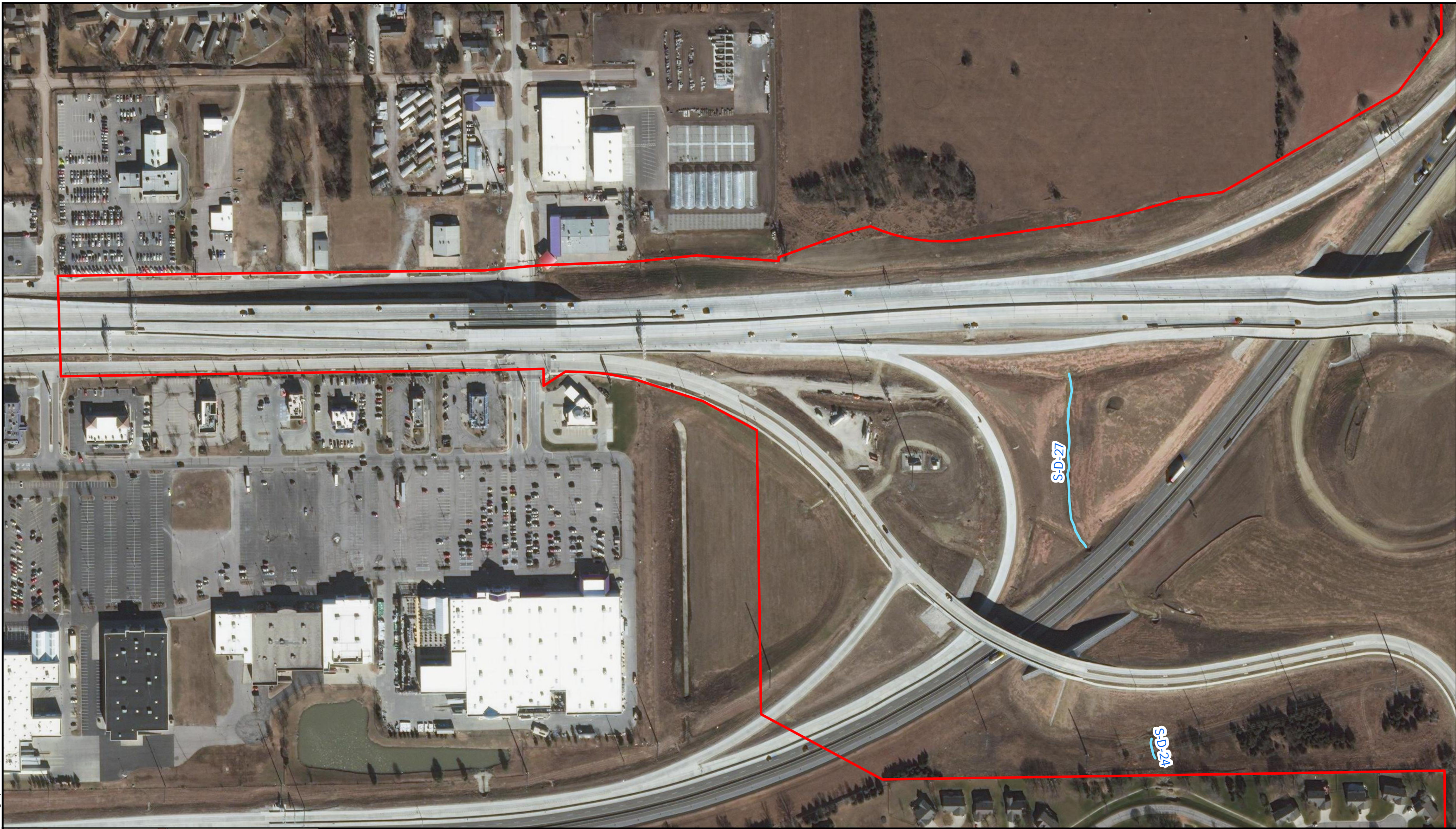


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Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
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Sedgwick and Butler County
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Survey Area Streams (S)
Ephemeral

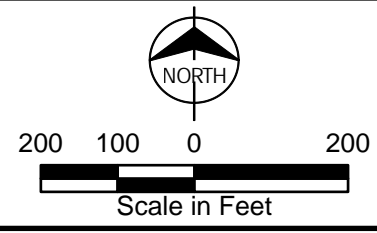
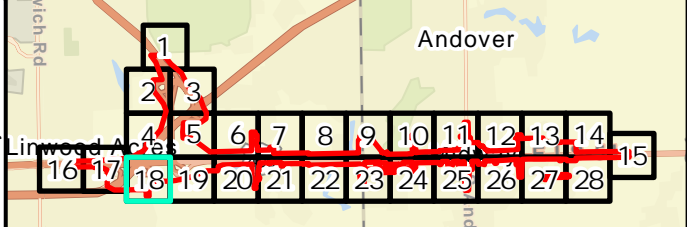
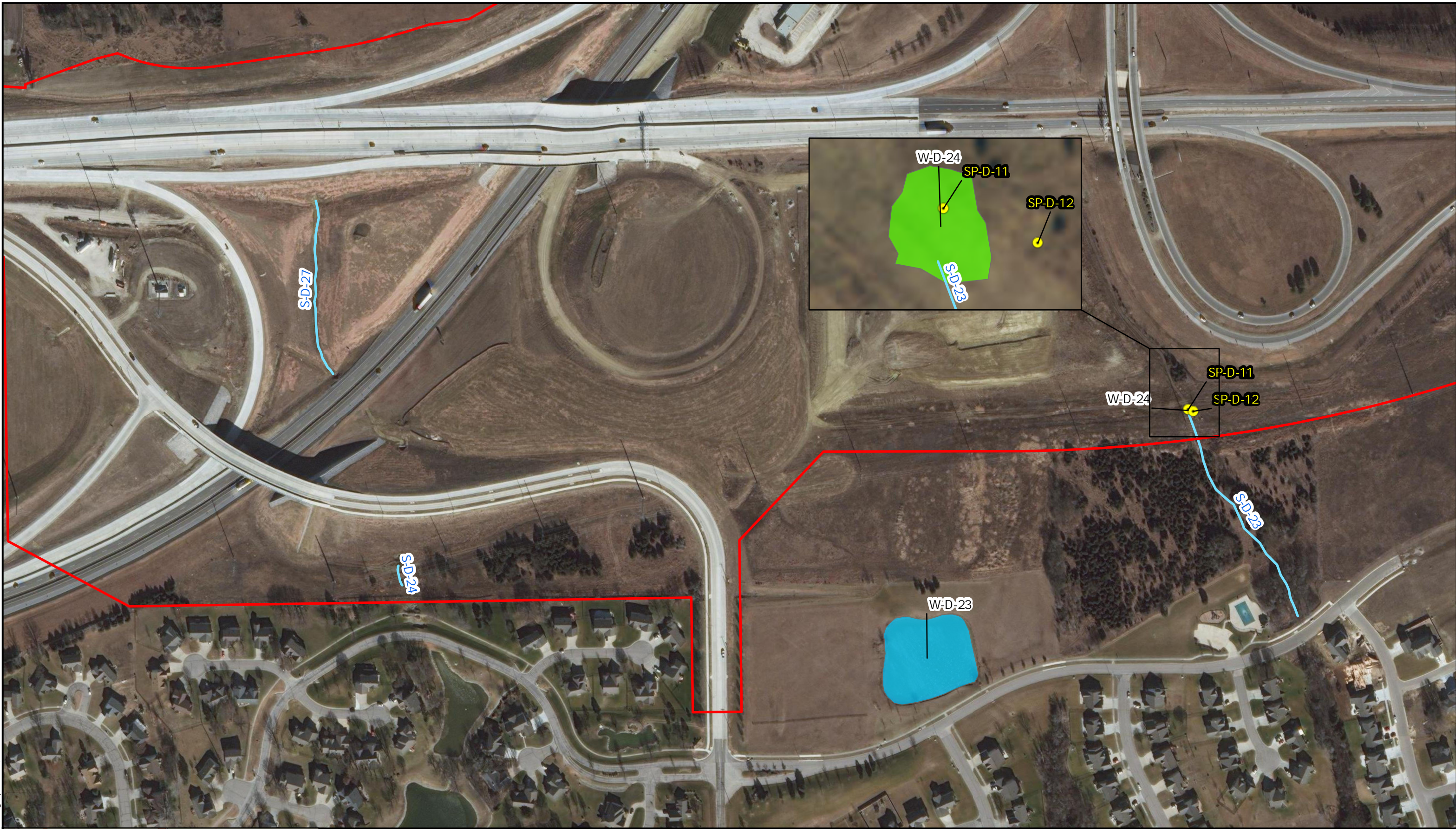


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Sedgwick and Butler County
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|------------------|-------------|--------------|
| Survey Area | Streams (S) | Wetlands (W) |
| Sample Plot (SP) | Ephemeral | PEM |
| | | PUB |

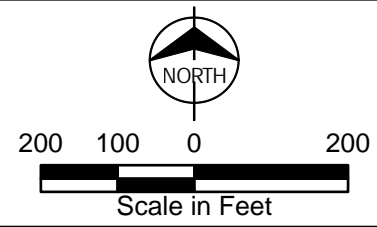
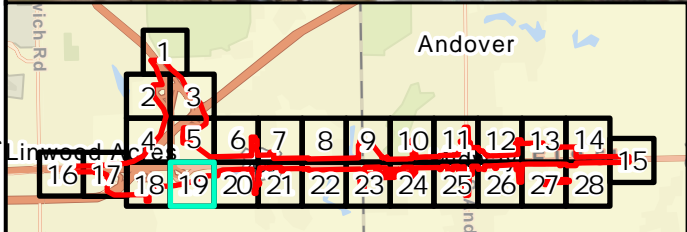
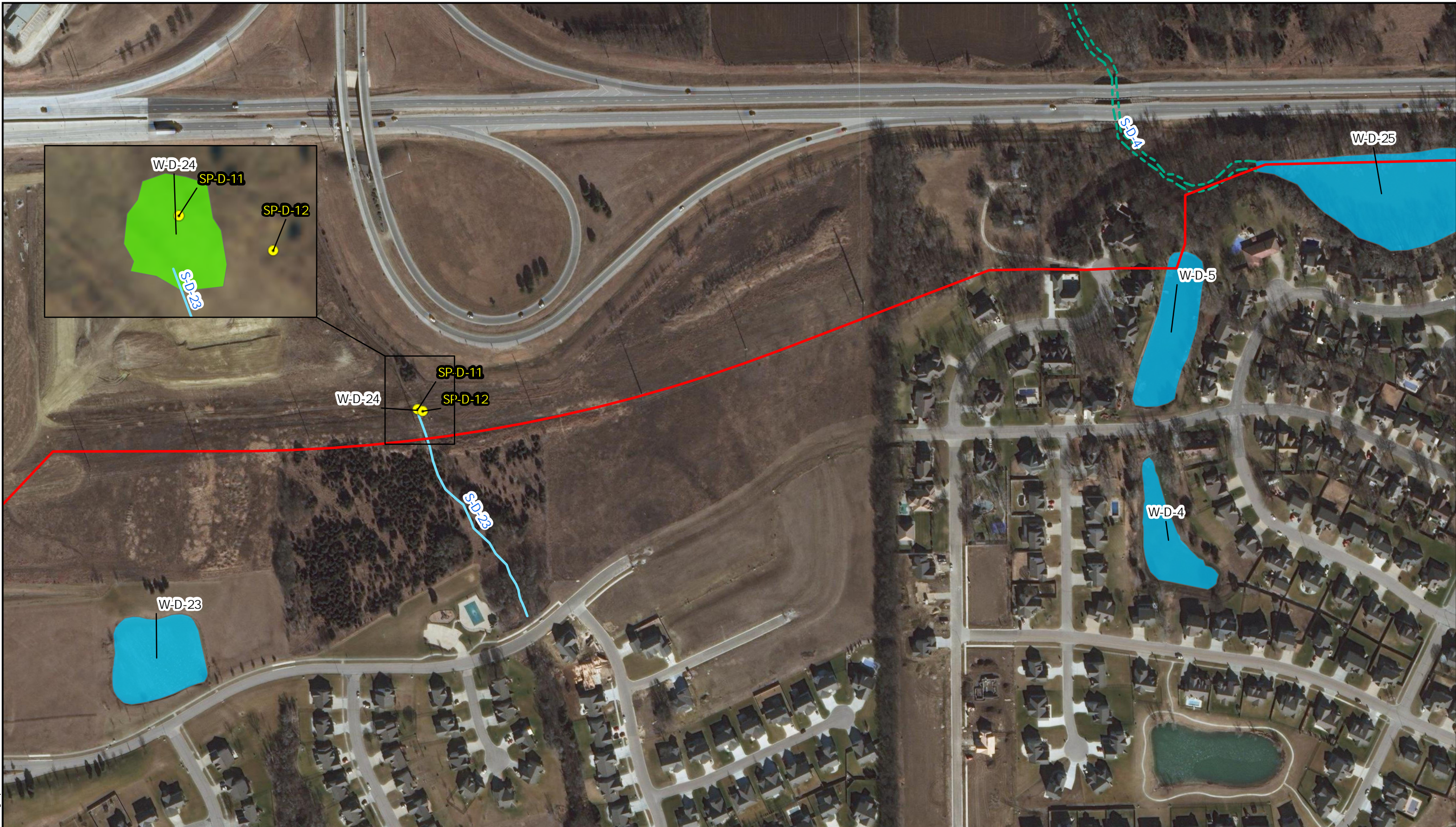


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
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| Survey Area | Streams (S) | Wetlands (W) |
| Sample Plot (SP) | Ephemeral | PEM |
| | Intermittent | PUB |

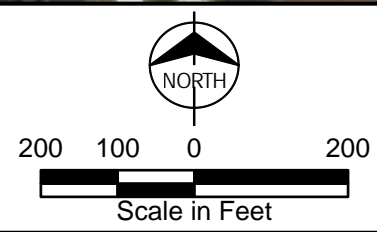


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Sedgwick and Butler County
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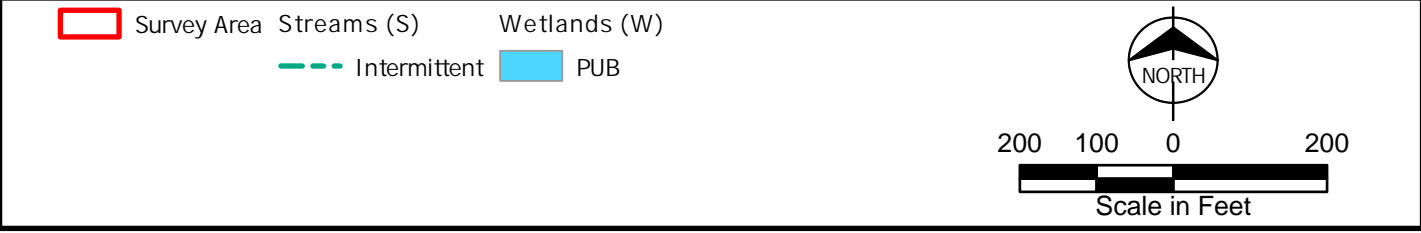
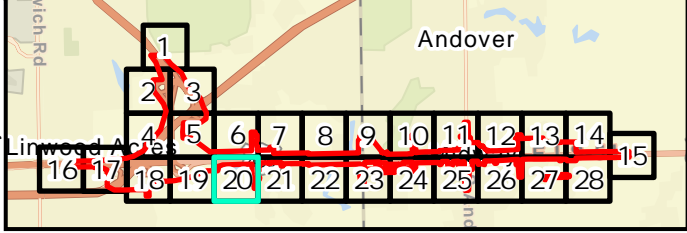
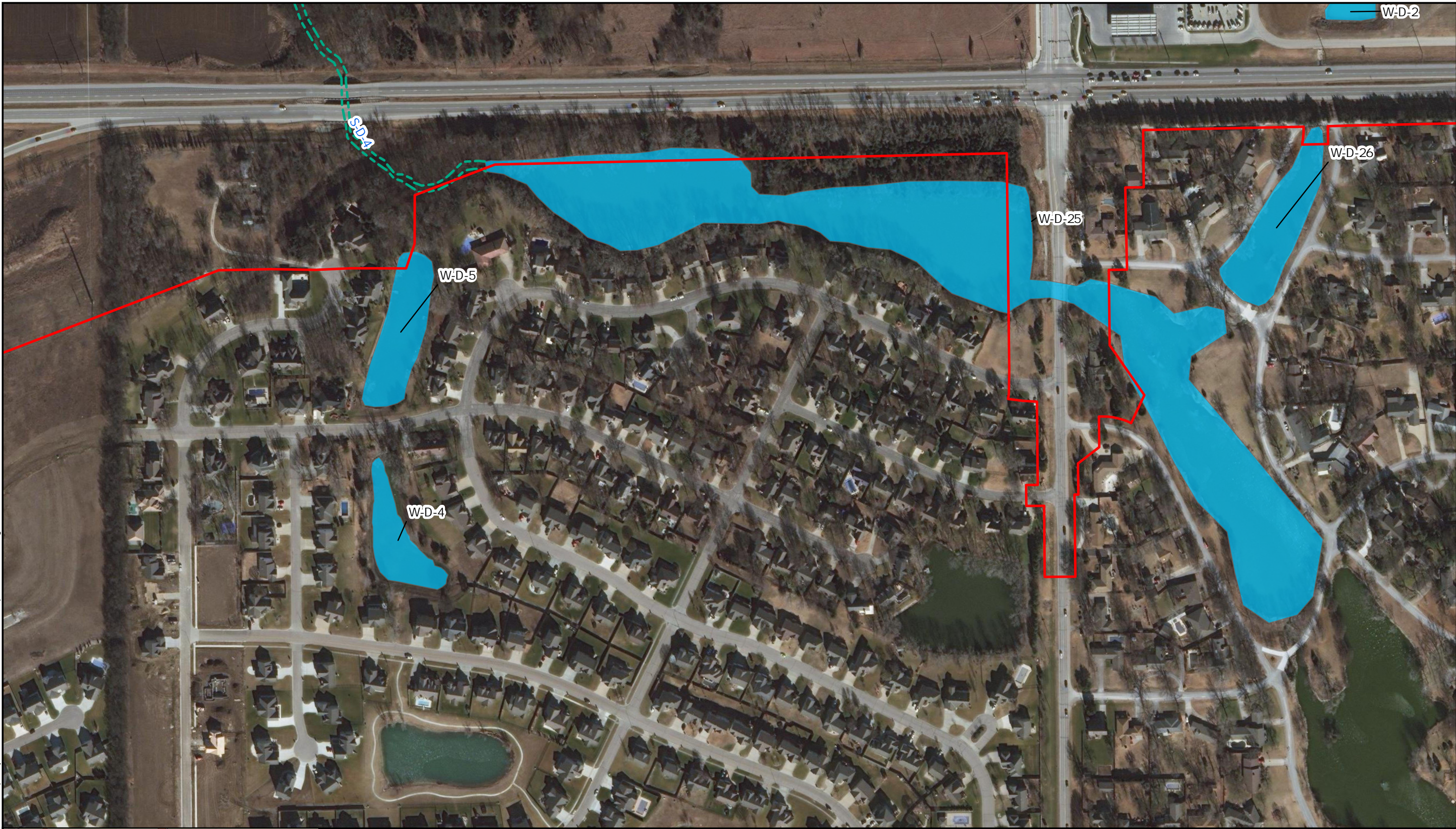
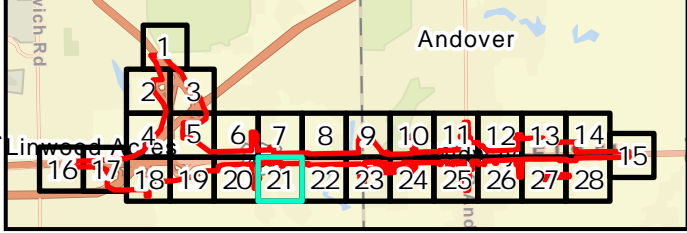


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Survey Area Wetlands (W)
PUB

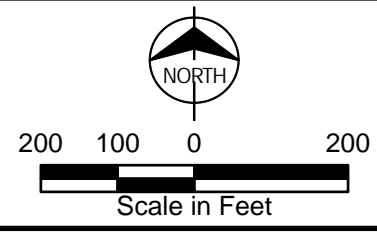
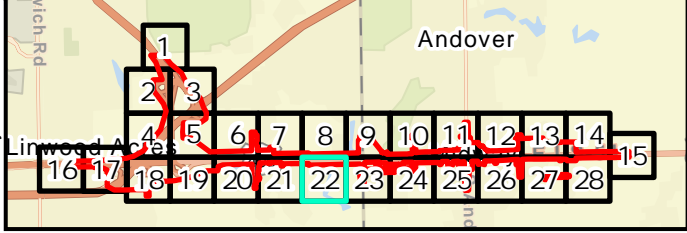


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
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<div><div></div> Survey Area</div> <div><div></div> Sample Plot (SP)</div>	<div>Streams (S)</div> <div><div></div> Intermittent</div> <div><div></div> Perennial</div>	<div>Wetlands (W)</div> <div><div></div> PAB</div> <div><div></div> PEM</div> <div><div></div> PUB</div>
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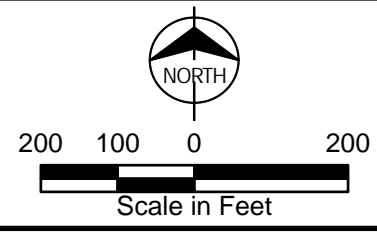
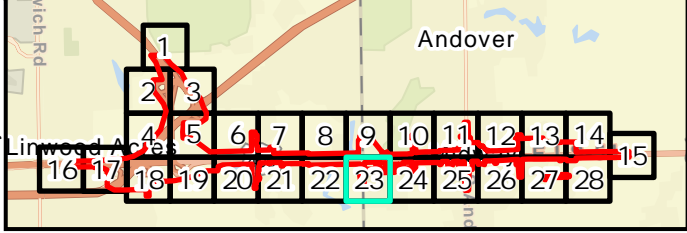
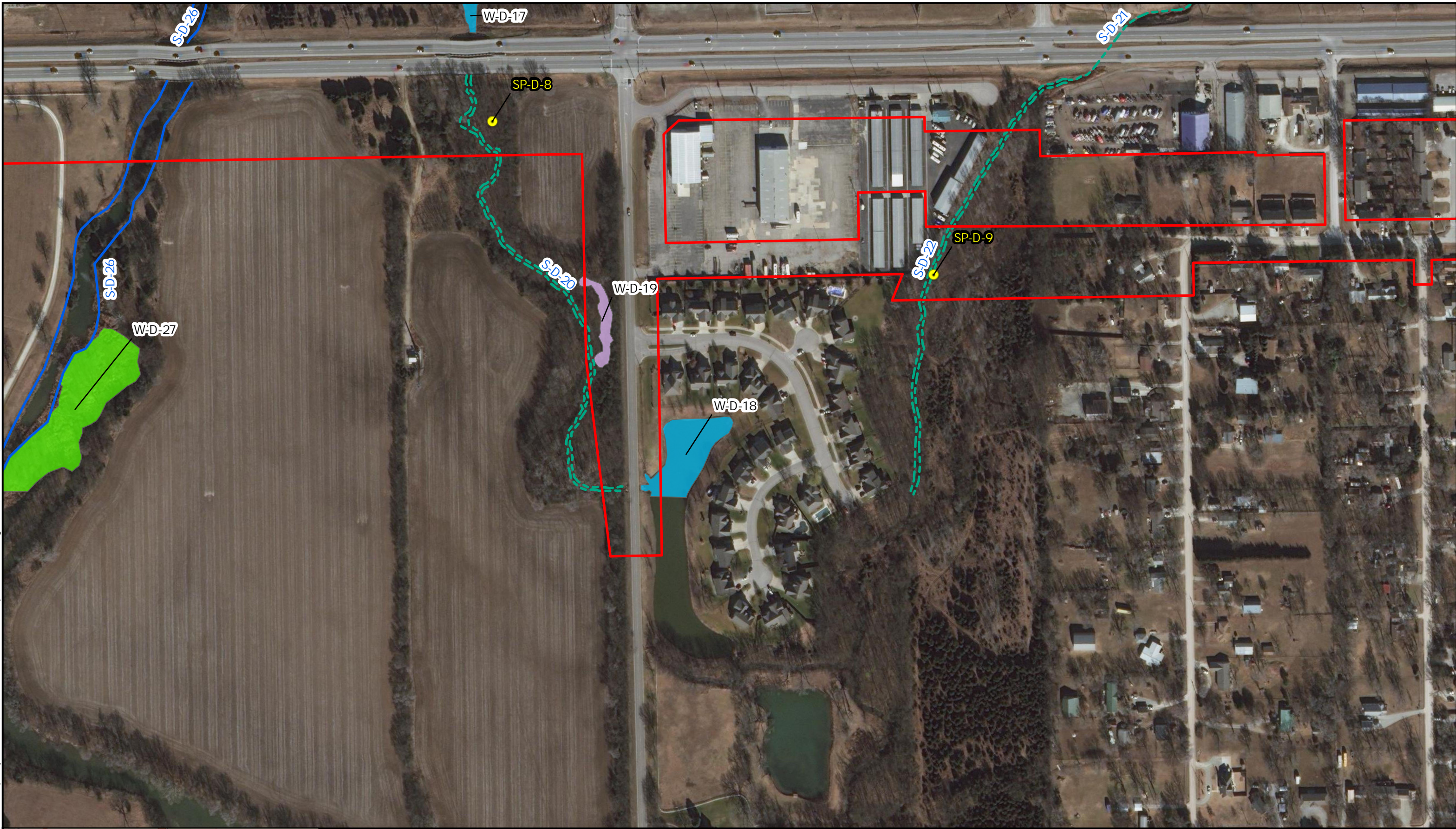


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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<div><div></div> Survey Area</div> <div><div></div> Sample Plot (SP)</div>	<div>Streams (S)</div> <div><div></div> Intermittent</div> <div><div></div> Perennial</div>	<div>Wetlands (W)</div> <div><div></div> PAB</div> <div><div></div> PEM</div> <div><div></div> PUB</div>
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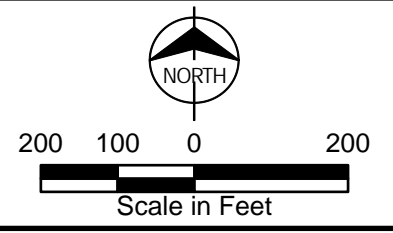
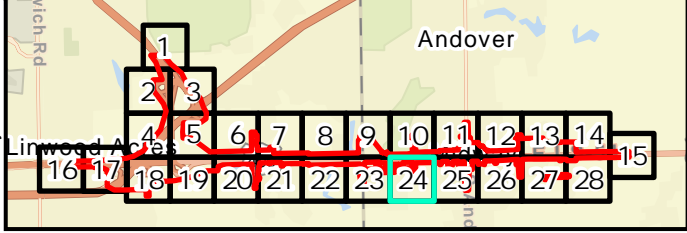
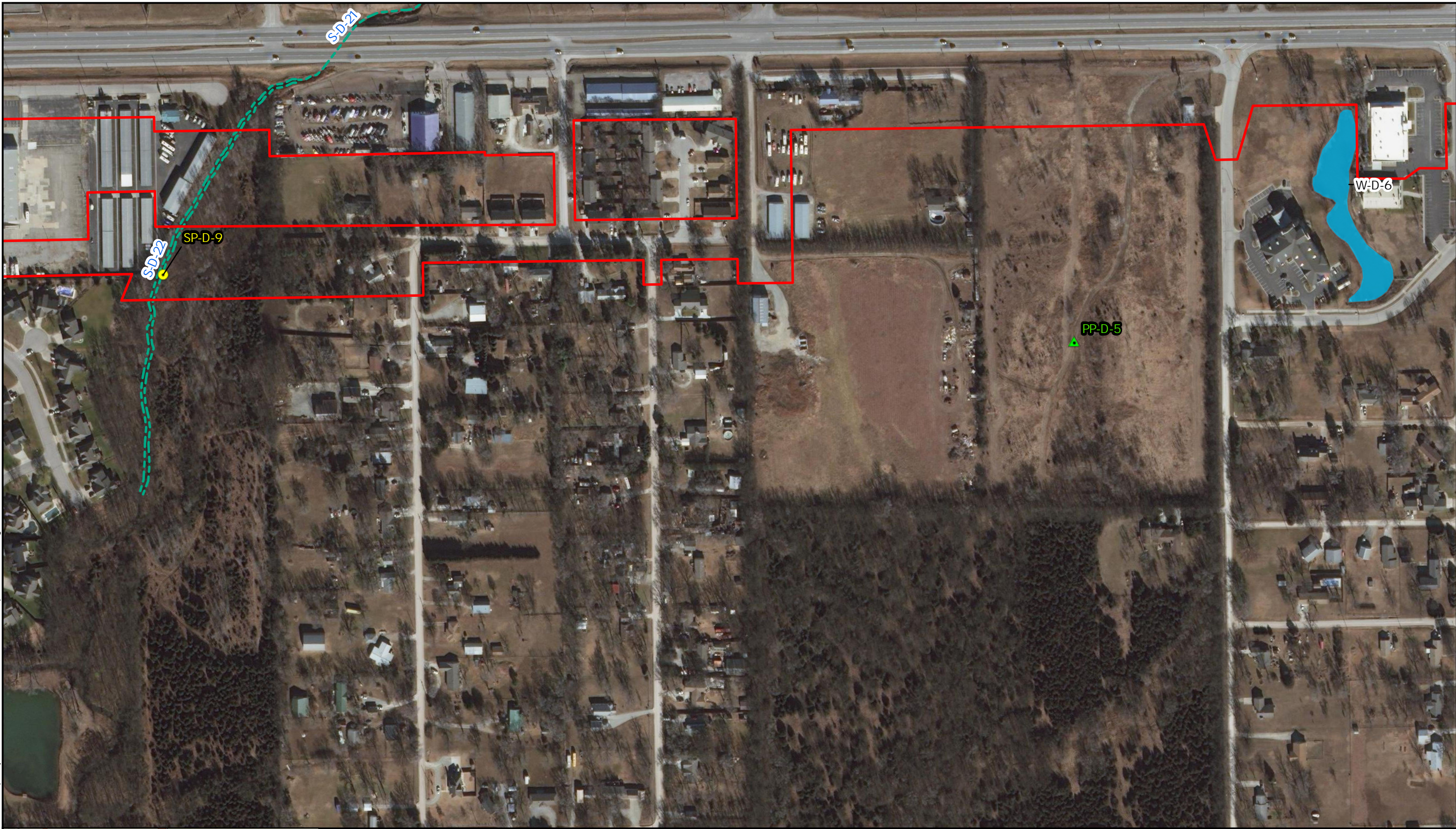


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
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Sedgwick and Butler County
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- | | | |
|------------------|-----------------------------|---------------------|
| Survey Area | Streams (S)
Intermittent | Wetlands (W)
PUB |
| Sample Plot (SP) | | |
| Photo Point (PP) | | |

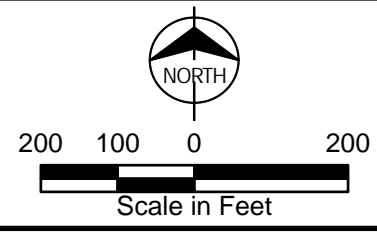
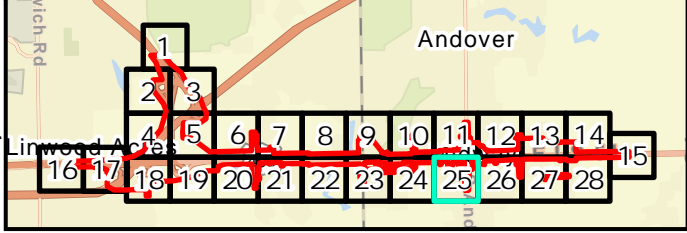


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
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Service Layer Credits: World Street Map: City of Wichita, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, EPA, NPS, USDA



- | | | |
|------------------|-----------------------------|------------------------|
| Survey Area | Streams (S)
Intermittent | Wetlands (W)
PEMPSS |
| Sample Plot (SP) | | PUB |
| Photo Point (PP) | | |

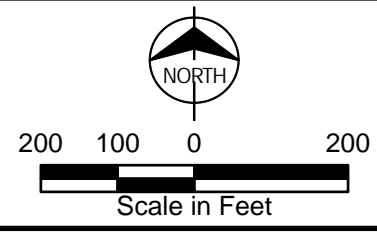


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
Page 25 of 28

Path: C:\Users\mpartridge\OneDrive - Burns & McDonnell\Desktop\Kellogg\Figures_Working.aprx dmpartridge 7/28/2022
Service Layer Credits: World Street Map: City of Wichita, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc. METI/NASA, USGS, EPA, NPS, USDA

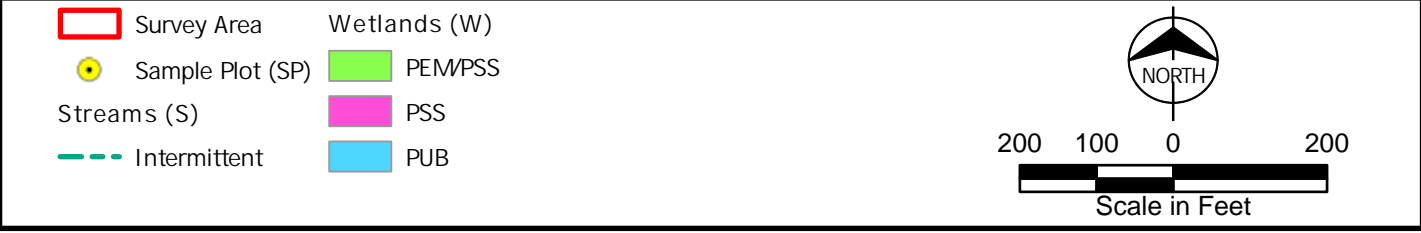
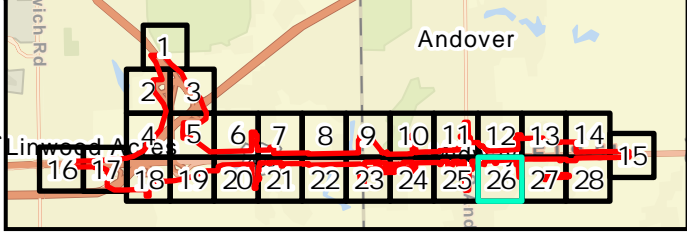
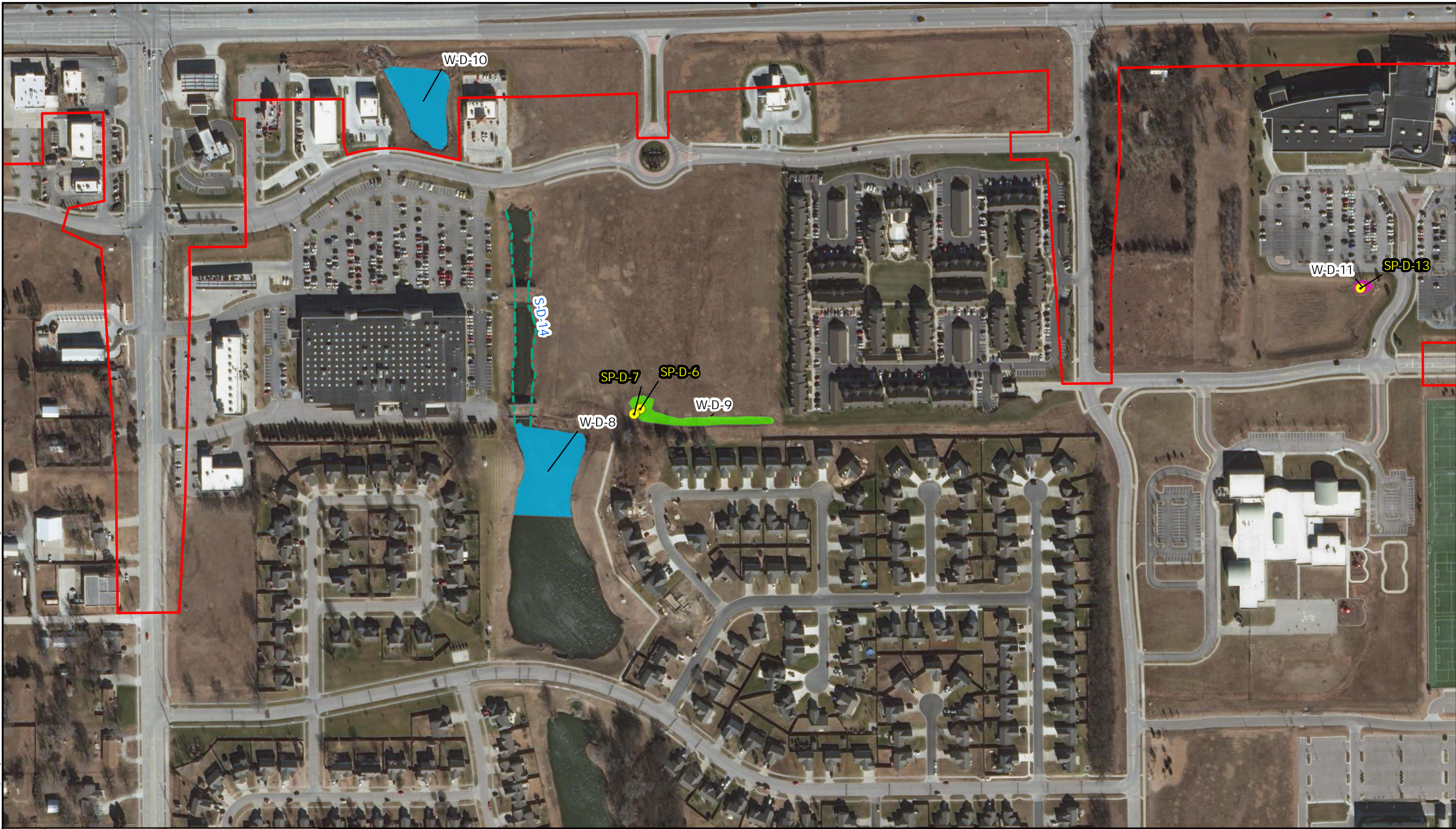


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
Page 26 of 28

Path: C:\Users\dmppartridge\OneDrive - Burns & McDonnell\Desktop\Kellogg\Figures_Working.aprx dmpartridge 7/28/2022
Service Layer Credits: World Imagery: Maxar, Microsoft

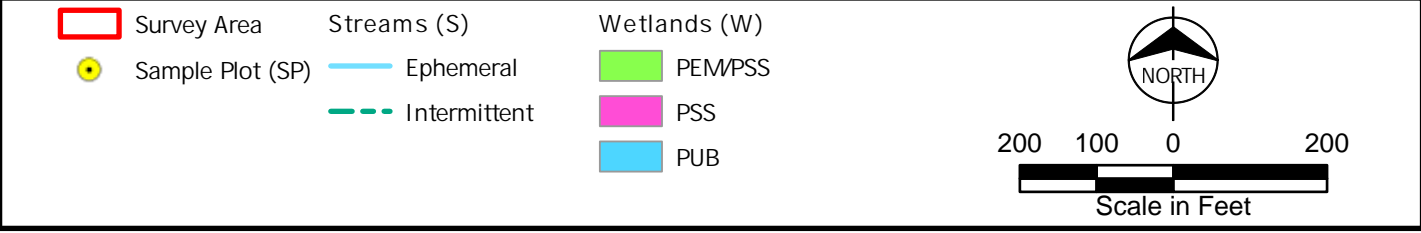
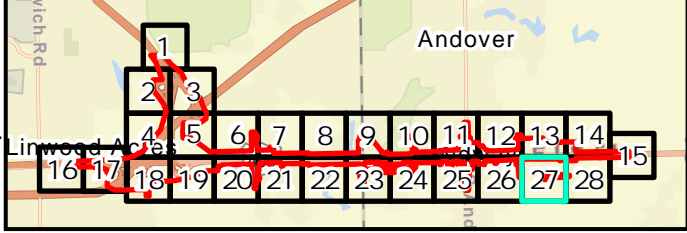
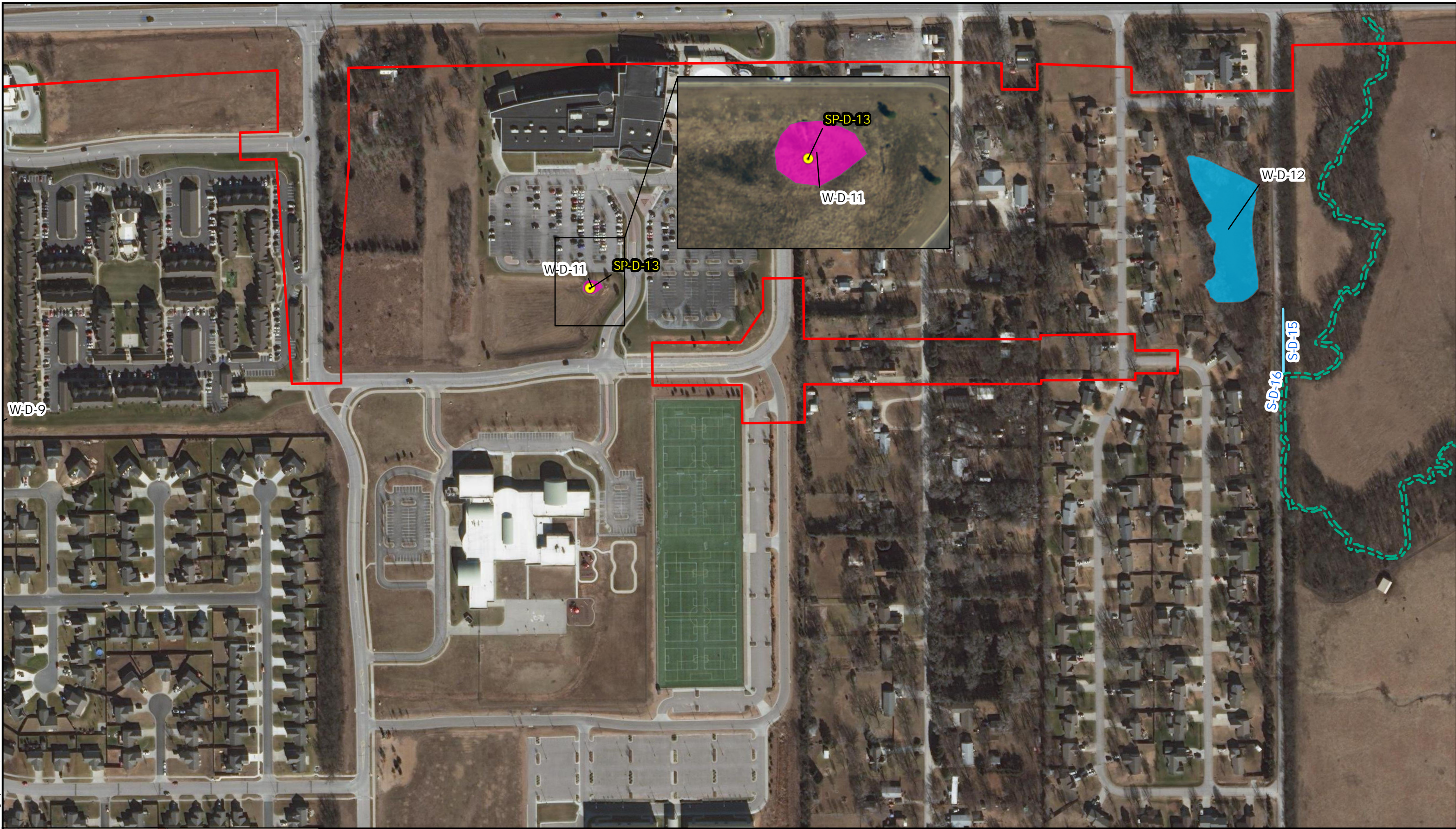
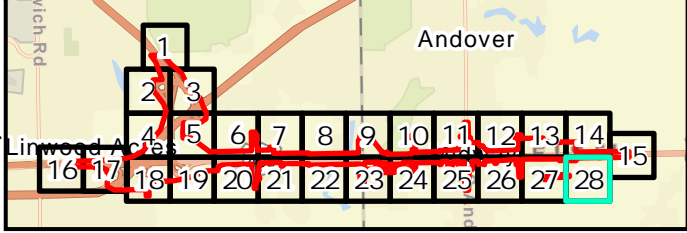
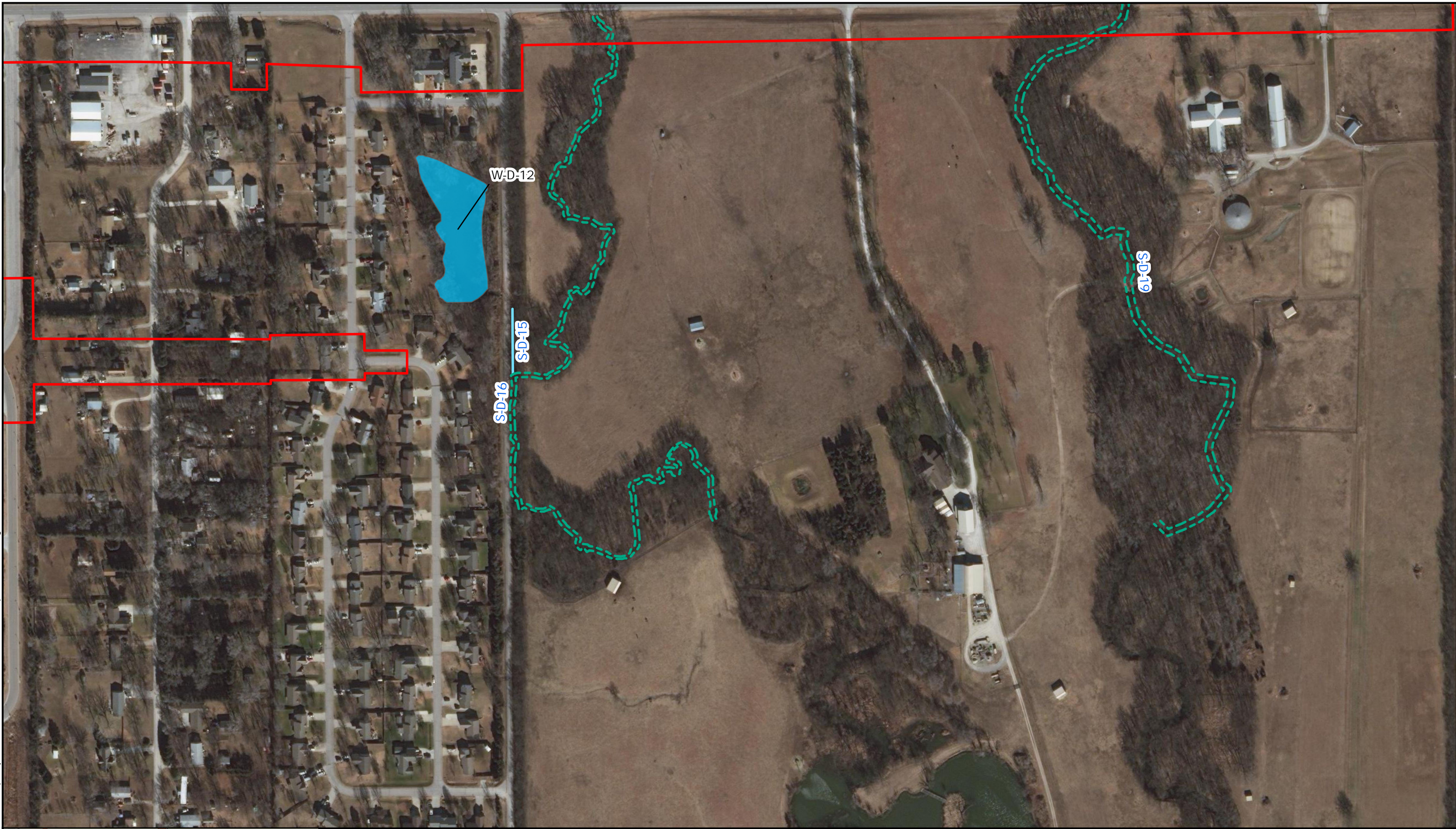


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
Page 27 of 28

Path: C:\Users\mparrtridge\OneDrive - Burns & McDonnell\Desktop\Kellogg\Figures_Working.aprx dmparrtridge 7/28/2022
Service Layer Credits: World Street Map: City of Wichita, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc. METI/NASA, USGS, EPA, NPS, USDA



- | | | |
|--|--|--------------|
| <div style="border: 2px solid red; width: 20px; height: 10px; display: inline-block;"></div> Survey Area | Streams (S) | Wetlands (W) |
| <div style="border-bottom: 2px solid lightblue; width: 20px; display: inline-block;"></div> Ephemeral | <div style="background-color: lightblue; width: 20px; height: 10px; display: inline-block;"></div> PUB | |
| <div style="border-bottom: 2px dashed green; width: 20px; display: inline-block;"></div> Intermittent | | |

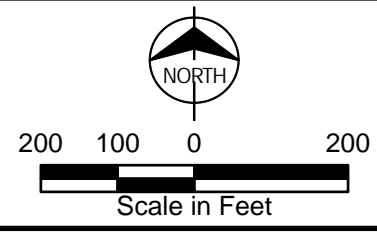


Figure A-4
Wetlands and Other Water Resources
US 54/E. Kellogg Corridor Improvements
Kansas Department of Transportation
(KDOT)
Sedgwick and Butler County
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**Appendix B -Routine Wetland Determination Data Forms,
Midwest Region**

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-05-31
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-1
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S24 T27S R2E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): H 74 Lat: 37.6803055 Long: -97.1702487 Datum: NAD 83
 Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>60</u></td> <td>x 5 = <u>300</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>620</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.43</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>60</u>	x 5 = <u>300</u>	Column Totals: <u>140</u> (A)	<u>620</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>80</u>	x 4 = <u>320</u>																	
UPL species <u>60</u>	x 5 = <u>300</u>																	
Column Totals: <u>140</u> (A)	<u>620</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. <u>Pyrus calleryana</u> <u>60</u> <input checked="" type="checkbox"/> <u>UPL</u> 2. <u>Symphoricarpos orbiculatus</u> <u>20</u> <input checked="" type="checkbox"/> <u>FACU</u> 3. _____ 4. _____ 5. _____ _____ = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Cynodon dactylon</u> <u>60</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover																		
% Bare Ground in Herb Stratum <u>40</u> _____ = Total Cover																		

Remarks:

No tests are met.
See Photo C-1.

SOIL

Sampling Point: SP-D-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0 - 20	10YR 4/2	90	10YR 6/4	10	C	PL / M	Silty Clay Loam
-							
-							
-							
-							
-							
-							
-							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Indicator F3 is met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____
Water Table Present? Yes ☐ No ☐ Depth (inches): _____
Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicator C3 and D2 are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-05-31
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-2
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S23 T27S R2E
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): H 74 Lat: 37.6804471 Long: -97.1763185 Datum: NAD 83
 Soil Map Unit Name: 6244 - Elandco silt loam, rarely flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1. <u>Celtis occidentalis</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Maclura pomifera</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>145</u></td> <td>x 4 = <u>580</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>580</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.00</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>145</u>	x 4 = <u>580</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>580</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>145</u>	x 4 = <u>580</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>145</u> (A)	<u>580</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. <u>Symphoricarpos orbiculatus</u> <u>35</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ <u>60%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Elymus canadensis</u> <u>50</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>35%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>45</u>																		

Hydrophytic Vegetation Indicators:
 ___ 1 - Rapid Test for Hydrophytic Vegetation
 ___ 2 - Dominance Test is >50%
 ___ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ☒

Remarks:

No tests are met.

See Photo C-2.

SOIL

Sampling Point: SP-D-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 4/3	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-05-31
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-3
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S23 T27S R2E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): H 74 Lat: 37.6844661 Long: -97.1866413 Datum: NAD 83
 Soil Map Unit Name: 6051 - Elandco silt loam, frequently flooded NWI classification: PABFh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1. <u>Maclura pomifera</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. <u>Symphoricarpos orbiculatus</u> <u>25</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ <u>50%</u> = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>145</u></td> <td>x 4 = <u>580</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>145</u> (A)</td> <td><u>580</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.00</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>145</u>	x 4 = <u>580</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>145</u> (A)	<u>580</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>145</u>	x 4 = <u>580</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>145</u> (A)	<u>580</u> (B)																	
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Elymus canadensis</u> <u>70</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>25%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
% Bare Ground in Herb Stratum <u>35</u> _____ = Total Cover																		

Remarks:

No tests are met.
See Photo C-3.

SOIL

Sampling Point: SP-D-3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 16	10YR 4/3	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compact Soil
Depth (inches): 16

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No indicators are met. Multiple locations were attempted, however, excavation below 16 inches was prevented by compact soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____
Water Table Present? Yes ☐ No ☐ Depth (inches): _____
Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicator D2 is met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-05-31
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-4
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S23 T27S R2E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): H 74 Lat: 37.6838430 Long: -97.1802887 Datum: NAD 83
 Soil Map Unit Name: 4570 - Clime silty clay, 3 to 7 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. <u>Juniperus virginiana</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
2. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>95</u> x 4 = <u>380</u> UPL species <u>15</u> x 5 = <u>75</u> Column Totals: <u>110</u> (A) <u>455</u> (B) Prevalence Index = B/A = <u>4.14</u>
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. <u>Symphoricarpos orbiculatus</u> <u>20</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ <u>15%</u> = Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Bromus pubescens</u> <u>60</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. <u>Solidago canadensis</u> <u>15</u> <input checked="" type="checkbox"/> <u>FACU</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>20%</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>30</u>				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Remarks:

No tests are met.
See Photo C-4.

SOIL

Sampling Point: SP-D-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 4/3	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicator D2 is met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-05-31
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-5
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S23 T27S R2E
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): H 74 Lat: 37.6819411 Long: -97.1775503 Datum: NAD 83
 Soil Map Unit Name: 6244 - Elandco silt loam, rarely flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1. <u>Maclura pomifera</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)</u> 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>140</u></td> <td>x 4 = <u>560</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>560</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.00</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>140</u>	x 4 = <u>560</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>140</u> (A)	<u>560</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>140</u>	x 4 = <u>560</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>140</u> (A)	<u>560</u> (B)																	
<u>Herb Stratum (Plot size: <u>5 ft r</u>)</u> 1. <u>Elymus canadensis</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
<u>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</u> 1. _____ 2. _____ _____ = Total Cover																		
% Bare Ground in Herb Stratum <u>20</u> _____ = Total Cover																		
Remarks: No tests are met. See Photo C-5.																		

SOIL

Sampling Point: SP-D-5**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 16	10YR 4/2	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if present):**Type: Compact SoilDepth (inches): 16Hydric Soil Present? Yes ☐ No ☒

Remarks:

No indicators are met. Multiple locations were attempted, however, excavation below 16 inches was prevented by compact soil.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Dry-Season Water Table (C2)
☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)
☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:Surface Water Present? Yes ☐ No ☐ Depth (inches): _____Water Table Present? Yes ☐ No ☐ Depth (inches): _____Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Butler County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-6
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S29 T27S R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): H 74 Lat: 37.6765705 Long: -97.1304619 Datum: NAD 83
 Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ☒
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks: Wetland sample plot located in PEM W-D-9.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>35</u> x 2 = <u>70</u> FAC species <u>85</u> x 3 = <u>255</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>120</u> (A) <u>325</u> (B) Prevalence Index = B/A = <u>2.71</u>
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. <u>Populus deltoides</u> 15 <input checked="" type="checkbox"/> FAC 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Carex brevior</u> 70 <input checked="" type="checkbox"/> FAC 2. <u>Carex vulpinoidea</u> 20 <input checked="" type="checkbox"/> FACW 3. <u>Eleocharis compressa</u> 15 _____ FACW 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> _____ = Total Cover				
Remarks:				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Dominance Test is met. See Photo C-6.				

SOIL

Sampling Point: SP-D-6**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
0 - 6	10YR 4/2	95	10YR 6/8	5	C	PL / M	
-							
-							
-							
-							
-							
-							
-							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16)
- (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16)
 (LRR H outside of MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):Type: Supersaturated SoilDepth (inches): 6Hydric Soil Present? Yes ☒ No ☐

Remarks:

Indicator F3 is met. Multiple locations were attempted, however, excavation below 6 inches was prevented by supersaturated soil.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Dry-Season Water Table (C2)
☒ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)
☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 0
 Water Table Present? Yes ☒ No ☐ Depth (inches): 6
 Saturation Present? Yes ☒ No ☐ Depth (inches): 2
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators A1, A2, A3, B9, C3, and D2 are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Butler County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-7
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S29 T27S R3E
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): H 74 Lat: 37.676436 Long: -97.130610 Datum: NAD 83
 Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland sample plot located adjacent to PEM W-D-9.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>90</u> x 4 = <u>360</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>90</u> (A) <u>360</u> (B) Prevalence Index = B/A = <u>4.00</u>
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Sorghum halepense</u> <u>90</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover				
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10</u> _____ = Total Cover				
Remarks: No tests are met. See Photo C-7.				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

SOIL

Sampling Point: SP-D-7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 4/3	100					Silt Loam	
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compact Soil
Depth (inches): 12

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____
Water Table Present? Yes ☐ No ☐ Depth (inches): _____
Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-8
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S25 T27S R2E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): H 74 Lat: 37.678959 Long: -97.154345 Datum: NAD 83
 Soil Map Unit Name: 6051 - Elandco silt loam, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40</u> (A/B)														
1. <u>Fraxinus pennsylvanica</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. <u>Ulmus americana</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
<u>60%</u> = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>70</u></td> <td>x 4 = <u>280</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>460</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.54</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>70</u>	x 4 = <u>280</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>460</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>60</u>	x 3 = <u>180</u>																	
FACU species <u>70</u>	x 4 = <u>280</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>130</u> (A)	<u>460</u> (B)																	
<u>Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>)</u>																		
1. <u>Symphoricarpos orbiculatus</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. <u>Toxicodendron radicans</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>60%</u> = Total Cover																		
<u>Herb Stratum (Plot size: <u>5 ft r</u>)</u>																		
1. <u>Elymus canadensis</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>10%</u> = Total Cover																		
<u>Woody Vine Stratum (Plot size: <u>30 ft r</u>)</u>																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
_____ = Total Cover																		
% Bare Ground in Herb Stratum <u>85</u>																		

Remarks:

No tests are met.
See Photo C-8.

SOIL

Sampling Point: SP-D-8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 14	10YR 4/3	100					Sandy Loam	
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compact Soil

Depth (inches): 14

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____

Water Table Present? Yes ☐ No ☐ Depth (inches): _____

Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicator D2 is met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Butler County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-9
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S30 T27S R3E
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): H 74 Lat: 37.677730 Long: -97.150090 Datum: NAD 83
 Soil Map Unit Name: 6051 - Elandco silt loam, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. <u>Populus deltoides</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
2. <u>Ulmus americana</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>450</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.46</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>130</u> (A)	<u>450</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>80</u>	x 3 = <u>240</u>																	
FACU species <u>40</u>	x 4 = <u>160</u>																	
UPL species <u>10</u>	x 5 = <u>50</u>																	
Column Totals: <u>130</u> (A)	<u>450</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. <u>Acer negundo</u> <u>20</u> <input checked="" type="checkbox"/> <u>FAC</u> 2. <u>Symphoricarpos orbiculatus</u> <u>20</u> <input checked="" type="checkbox"/> <u>FACU</u> 3. <u>Juniperus virginiana</u> <u>10</u> <input checked="" type="checkbox"/> <u>UPL</u> 4. _____ 5. _____ <u>60%</u> = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Elymus canadensis</u> <u>20</u> <input checked="" type="checkbox"/> <u>FACU</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>50%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>70</u>																		
Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>																		
Remarks: No tests were met. See Photo C-9.																		

SOIL

Sampling Point: SP-D-9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 3/3	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compact Soil
Depth (inches): 12

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____
Water Table Present? Yes ☐ No ☐ Depth (inches): _____
Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-10
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S24 T27S R2E
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): H 74 Lat: 37.681627 Long: -97.159134 Datum: NAD 83
 Soil Map Unit Name: 6051 - Elandco silt loam, frequently flooded NWI classification: R4SBC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland confirmation sample plot.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. <u>Juniperus virginiana</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) _____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>110</u> x 5 = <u>550</u> Column Totals: <u>130</u> (A) <u>630</u> (B) Prevalence Index = B/A = <u>4.85</u>
1. <u>Maclura pomifera</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>5 ft r</u>) _____ = Total Cover				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Bromus inermis</u>	<u>100</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: <u>30 ft r</u>) _____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>5</u> _____ = Total Cover				
Remarks: No tests are met. See Photo C-10.				

SOIL

Sampling Point: SP-D-10**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 16	10YR 4/2	100					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16)
- (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16)
 (LRR H outside of MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Compact Soil
 Depth (inches): 16

Hydric Soil Present? Yes ☐ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Dry-Season Water Table (C2)
☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)
☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____
 Water Table Present? Yes ☐ No ☐ Depth (inches): _____
 Saturation Present? Yes ☐ No ☐ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-11
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S26 T27S R2E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): H 74 Lat: 37.677087 Long: -97.184960 Datum: NAD 83
 Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	
Remarks: Sample plot located in PEM W-D-24.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>85</u> (A) <u>180</u> (B) Prevalence Index = B/A = <u>2.12</u>
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain)
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
_____ = Total Cover				
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SOIL

Sampling Point: SP-D-11**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 6/1	90					Silty Clay Loam	
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16)
- (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16)
 (LRR H outside of MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):Type: Supersaturated SoilDepth (inches): 8Hydric Soil Present? Yes ☒ No ☐

Remarks:

Indicator F3 is met. Multiple locations were attempted, however, excavation below 8 inches was prevented by compact soil.

HYDROLOGY

Wetland Hydrology Indicators:Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
☒ High Water Table (A2)
☒ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Dry-Season Water Table (C2)
☐ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surface (B8)
☒ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☒ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)
☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
 Water Table Present? Yes ☒ No ☐ Depth (inches): 8
 Saturation Present? Yes ☒ No ☐ Depth (inches): 2
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators A2, A3, B10, D2, and D5 are present.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Sedgwick County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-12
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S26 T27S R2E
 Landform (hillslope, terrace, etc.): Plateau Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): H 74 Lat: 37.677073 Long: -97.184912 Datum: NAD 83
 Soil Map Unit Name: 3911 - Rosehill silty clay, 1 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Upland sample plot located adjacent to PEM W-D-24.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>390</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.90</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>390</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>10</u>	x 3 = <u>30</u>																	
FACU species <u>90</u>	x 4 = <u>360</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>100</u> (A)	<u>390</u> (B)																	
_____ = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft r</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																		
Herb Stratum (Plot size: <u>5 ft r</u>) 1. <u>Sorghum halepense</u> 60 <input checked="" type="checkbox"/> FACU 2. <u>Solidago canadensis</u> 30 <input checked="" type="checkbox"/> FACU 3. <u>Apocynum cannabinum</u> 10 FAC 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft r</u>) 1. _____ 2. _____ _____ = Total Cover % Bare Ground in Herb Stratum <u>10</u>																		
Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																		
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>																		
Remarks: No tests are met. See Photo C-12.																		

SOIL

Sampling Point: SP-D-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 18	10YR 4/4	60	10YR 7/4	40	C	M	Sandy Clay Loam	
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

No indicators are met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
Water Table Present? Yes _____ No _____ Depth (inches): _____
Saturation Present? Yes _____ No _____ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No indicators are met.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: US 54/E. Kellogg Corridor Improvements City/County: Wichita/Butler County Sampling Date: 2022-06-01
 Applicant/Owner: Kansas Department of Transportation State: Kansas Sampling Point: SP-D-13
 Investigator(s): D. Partridge, B. Timm Section, Township, Range: S29 T27S R3E
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR): H 74 Lat: 37.677309 Long: -97.123562 Datum: NAD 83
 Soil Map Unit Name: 4671 - Irwin silty clay loam, 1 to 3 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ☒ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No _____	
Remarks: Sample plot located in PSS W-D-11. Soils were not collected at sample plot due to recent tornado damage preventing access to the area.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>10</u> x 1 = <u>10</u> FACW species <u>70</u> x 2 = <u>140</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>0</u> x 4 = <u>0</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>150</u> (B) Prevalence Index = B/A = <u>1.88</u>
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft r</u>)				
1. <u>Salix nigra</u>	<u>70</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
<u>Herb Stratum</u> (Plot size: <u>5 ft r</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Typha latifolia</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft r</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>70</u>				

Remarks:
Rapid test was met.
See Photo C-13.

SOIL

Sampling Point: SP-D-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
-								
-								
-								
-								
-								
-								
-								
-								
-								

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- (LRR H outside of MLRA 72 & 73)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Property Access

Depth (inches): 0

Hydric Soil Present? Yes ☒ No ☐

Remarks:

No soils were collected due to recent tornado preventing access to area. Due to the dominance of hydrophytic vegetation and the presence of signs of hydrology, hydric soil is assumed to be present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- (where tilled)**
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ☐ No ☐ Depth (inches): _____

Water Table Present? Yes ☐ No ☐ Depth (inches): _____

Saturation Present? Yes ☐ No ☐ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Indicators D2 and D5 are met.



Photograph C-1: View of upland Sample Plot (SP)-D-1, facing north.



Photograph C-2: View of upland SP-D-2, facing south.



Photograph C-3: View of upland SP-D-3, facing southeast.



Photograph C-4: View of upland SP-D-4, facing northeast.



Photograph C-5: View of upland SP-D-5, facing east.



Photograph C-6: View of SP-D-7 located in PEM Wetland (W)-D-9, facing south.



Photograph C-7: View of upland SP-D-7, facing northeast.



Photograph C-8: View of upland SP-D-8, facing south.



Photograph C-9: View of upland SP-D-9, facing west.



Photograph C-10: View of upland SP-D-10, facing northwest.



Photograph C-11: View of SP-D-11 in PEM W-D-24, facing north.



Photograph C-12: View of upland SP-D-12, facing east.



Photograph C-13: View of SP-D-13 in PSS W-D-11, facing north.



Photograph C-14: View of PUB W-D-1, facing south.



Photograph C-15: View of PUB W-D-2, facing north.



Photograph C-16: View of PUB W-D-4, facing north.



Photograph C-17: View of PUB W-D-5, facing north.



Photograph C-18: View of PUB W-D-6, facing north.



Photograph C-19: View of PUB W-D-7, facing northeast.



Photograph C-20: View of PUB W-D-8, facing east.



Photograph C-21: View of PUB W-D-10, facing east.



Photograph C-22: View of PUB W-D-12, facing west.



Photograph C-23: View of PUB W-D-13, facing southeast.



Photograph C-24: View of PUB W-D-14, facing southeast.



Photograph C-25: View of PUB W-D-15, facing west.



Photograph C-26: View of PUB W-D-16, facing north.



Photograph C-27: View of PUB W-D-17, facing north.



Photograph C-28: View of PUB W-D-18, facing east.



Photograph C-29: View of PAB W-D-19, facing south.



Photograph C-30: View of PUB W-D-20, facing northeast.



Photograph C-31: View of PUB W-D-21, facing west.



Photograph C-32: View of PAB W-D-22, facing north.



Photograph C-33: View of PUB W-D-23, facing west.



Photograph C-34: View of PUB W-D-25, facing north.



Photograph C-35: View of PUB W-D-26, facing northeast.



Photograph C-36: View of flooded PEM W-D-27, facing east.



Photograph C-37: View of ephemeral Stream (S)-D-1, facing east.



Photograph C-38: View of ephemeral S-D-2, facing north.



Photograph C-39: View of ephemeral S-D-3, facing south.



Photograph C-40: View of intermittent stream Spring Branch, S-D-4, facing east.



Photograph C-41: View of ephemeral S-D-5, facing north.



Photograph C-42: View of ephemeral S-D-6, facing north.



Photograph C-43: View of ephemeral S-D-7, facing northeast.



Photograph C-44: View of ephemeral S-D-8, facing south.



Photograph C-45: View of ephemeral S-D-9, facing south.



Photograph C-46: View of ephemeral S-D-10, facing west.



Photograph C-47: View of ephemeral S-D-11, facing west.



Photograph C-48: View of ephemeral S-D-12, facing northeast.



Photograph C-49: View of intermittent S-D-13, facing north.



Photograph C-50: View of intermittent S-D-14, facing north.



Photograph C-51: View of ephemeral S-D-15, facing north.



Photograph C-52: View of intermittent S-D-16, facing south.



Photograph C-53: View of intermittent S-D-17, facing north.



Photograph C-54: View of ephemeral S-D-18, facing north.



Photograph C-55: View of intermittent S-D-19, facing northeast.



Photograph C-56: View of intermittent stream Republican Creek, S-D-20, facing north.



Photograph C-57: View of intermittent S-D-21, facing south.



Photograph C-58: View of intermittent S-D-22, facing southwest.



Photograph C-59: View of ephemeral S-D-23, facing northwest.



Photograph C-60: View of ephemeral S-D-24, facing north.



Photograph C-61: View of intermittent S-D-25, facing south.



Photograph C-62: View of perennial stream Fourmile Creek, S-D-26, facing northwest.



Photograph C-63: View cool season meadow from Photo Point (PP)-D-1, facing north.



Photograph C-64: View of active agricultural field from PP-D-2, facing east.



Photograph C-65: View of upland forest from PP-D-3, facing west.



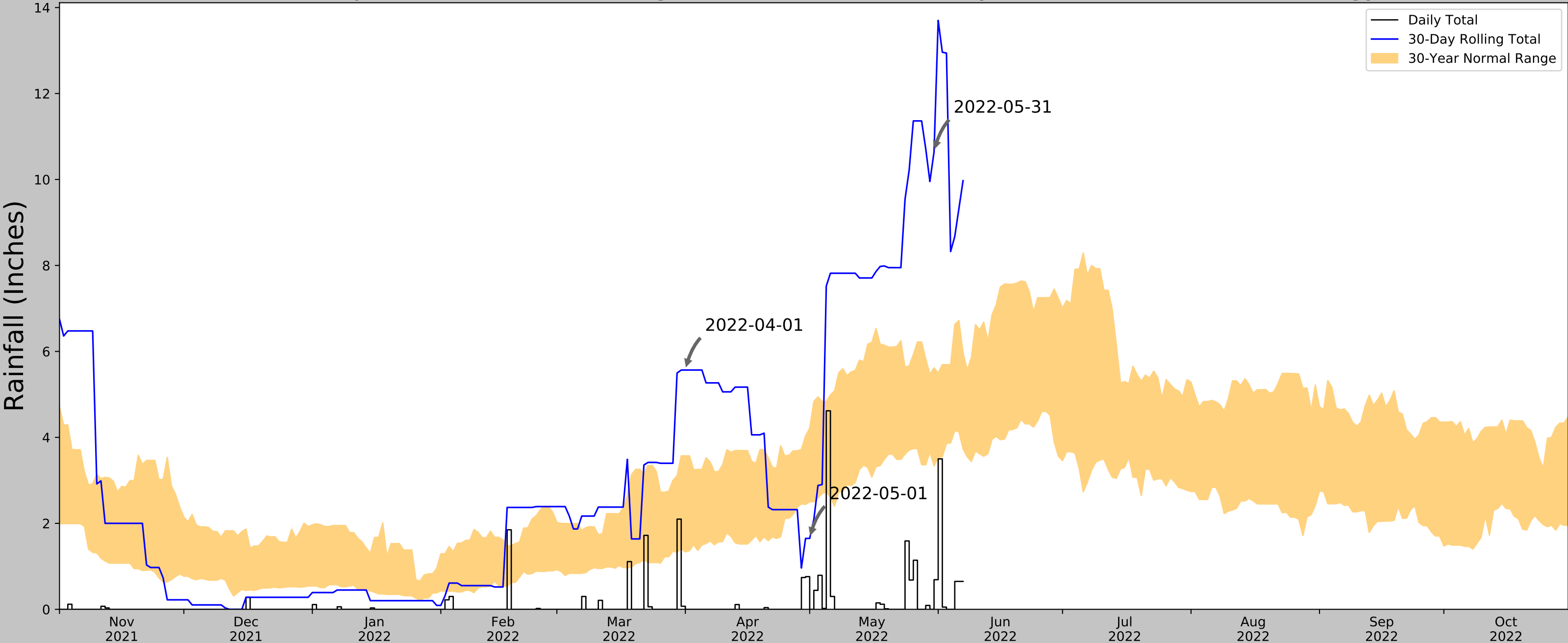
Photograph C-66: View of wind break from PP-D-4, facing northwest.



Photograph C-67: View of 2-track from PP-D-5, facing north.

Appendix D -Antecedent Precipitation Tool Results

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	37.680398, -97.176049
Observation Date	2022-05-31
Elevation (ft)	1314.47
Drought Index (PDSI)	Mild drought
WebWIMP H ₂ O Balance	Wet Season

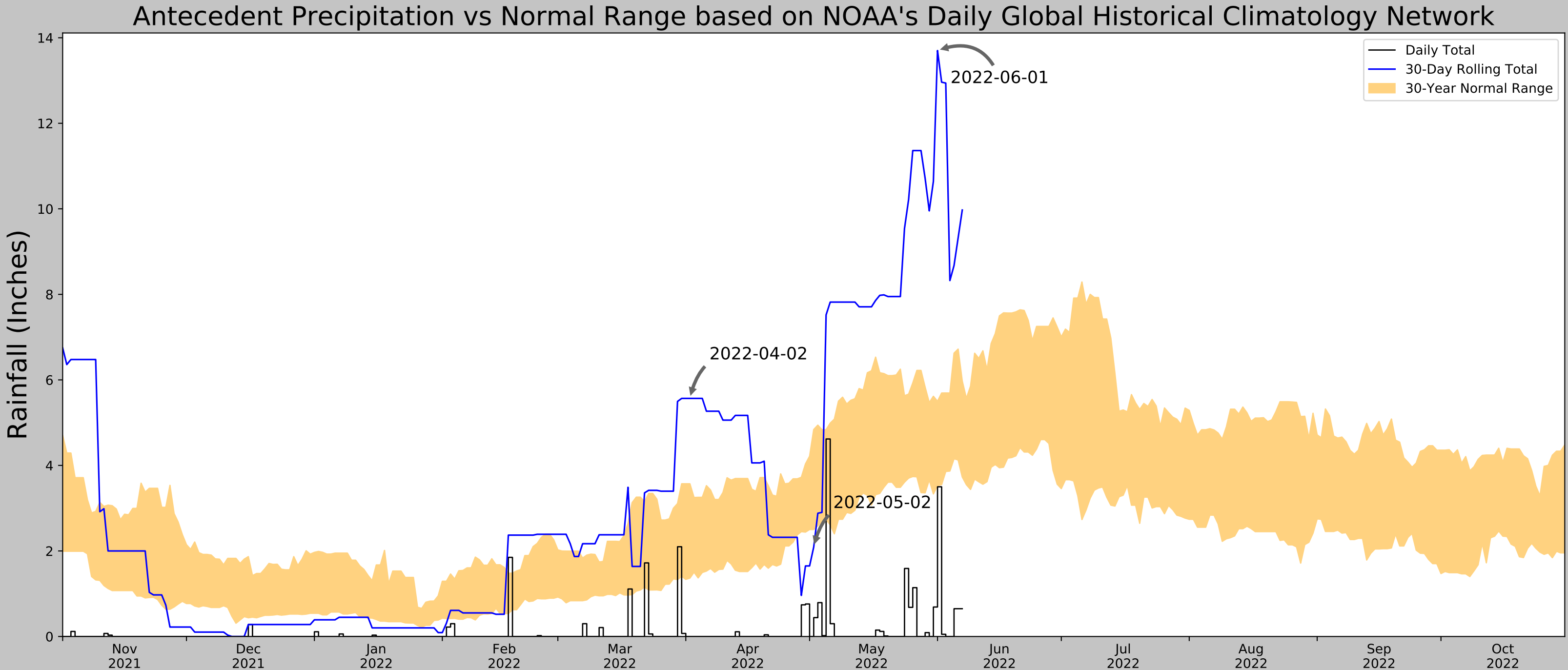
30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-05-31	3.333858	5.616929	10.641733	Wet	3	3	9
2022-05-01	2.501181	4.215748	1.649606	Dry	1	2	2

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
HAYSVILLE .2 NNW	37.5684, -97.3527	1275.919	12.383	38.551	6.05	115	0
ROSE HILL 2.9 ESE	37.55, -97.0833	1275.919	10.341	38.551	5.052	777	0
EL DORADO 7.9 NNW	37.9333, -96.8864	1403.871	23.566	89.401	12.712	148	2
EL DORADO 0.6 SSE	37.813, -96.8543	1332.021	19.823	17.551	9.268	1447	0
DOUGLASS 3.8 W	37.5194, -97.081	1275.919	12.281	38.551	6.0	83	0
LEON 7.5 SW	37.6125, -96.8807	1263.123	16.825	51.347	8.435	480	0
POTWIN 0.2 WNW	37.9406, -97.0225	1349.081	19.836	34.611	9.613	1	0
ROSE HILL 2.7 ESE	37.5533, -97.0855	1292.979	10.083	21.491	4.754	1288	83
AUGUSTA 1.0 S	37.6782, -96.9723	1226.05	11.143	88.42	6.0	1251	5
TOWANDA 4.9 NNE	37.8647, -96.9688	1388.123	17.037	73.653	8.921	9	0
NEWTON 0.8 WNW	38.0475, -97.3559	1446.85	27.195	132.38	15.838	1	0
PARK CITY 0.2 ESE	37.7948, -97.3193	1391.076	11.124	76.606	5.858	124	0
HAYSVILLE 3.5 SW	37.5361, -97.4002	1289.042	15.809	25.428	7.516	4	0
WICHITA 2.5 E	37.6893, -97.2966	1365.158	6.62	50.688	3.315	2	0
MAIZE 5.7 S	37.6916, -97.4797	1365.158	16.621	50.688	8.322	1	0
BELLE PLAINE 4 W	37.3931, -97.3497	1231.955	22.013	82.515	11.722	3227	0



Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers



Coordinates	37.680398, -97.176049
Observation Date	2022-06-01
Elevation (ft)	1314.47
Drought Index (PDSI)	Mild drought (2022-05)
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-06-01	3.527953	5.499606	13.700788	Wet	3	3	9
2022-05-02	2.501181	4.83937	2.090551	Dry	1	2	2

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
HAYSVILLE .2 NNW	37.5684, -97.3527	1275.919	12.383	38.551	6.05	115	0
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ROSE HILL 2.7 ESE	37.5533, -97.0855	1292.979	10.083	21.491	4.754	1288	82
AUGUSTA 1.0 S	37.6782, -96.9723	1226.05	11.143	88.42	6.0	1251	5
TOWANDA 4.9 NNE	37.8647, -96.9688	1388.123	17.037	73.653	8.921	9	0
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BELLE PLAINE 4 W	37.3931, -97.3497	1231.955	22.013	82.515	11.722	3227	0



Figure and tables made by the
Antecedent Precipitation Tool
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