Appendix C
NOISE STUDY REPORT

NOISE STUDY REPORT

SOUTH AND EAST BELTWAYS STUDY
LINCOLN, NEBRASKA

PREPARED FOR

FEDERAL HIGHWAY ADMINISTRATION
NEBRASKA DEPARTMENT OF ROADS
LANCASTER COUNTY
CITY OF LINCOLN

OCTOBER 2000
(REVISED 2/01, 11/01, 5/02)

NOISE STUDY REPORT
for
South and East Beltways Study
Lincoln, Nebraska

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	C.4
2.0	PROJECT DESCRIPTION	C.4
3.0	MEASUREMENT OF SOUND	C.5
4.0	TRAFFIC NOISE STANDARDS	C.6
5.0	PROJECT AREA ACTIVITY CATEGORY	C.6
6.0	EXISTING 1999 NOISE LEVELS	C.7
7.0	PREDICTED NOISE LEVELS	C.7
7.1	Prediction Methodology	C.7
7.2	Traffic Parameters	C.7
7.3	Predicted Noise Levels	C.8
7.4	Predicted Noise Contour	C. 32
8.0	NOISE ABATEMENT	C.32
8.1	Noise Mitigation Measures	C.32
8.1.1	Shifting the Roadway Alignment Horizontally	C.32
8.1.2	Constructing Noise Barriers	C.32
8.2	Noise Abatement Analysis for Impacted Receptors along the SM-4	C.34
8.3	Noise Abatement Analysis for Impacted Receptors along the EC-1	C.35
8.4	Noise Abatement Analysis for Impacted Receptors along the EM-1	C 38
8.5	Noise Abatement Analysis for Impacted Receptors along the EF-1	C.39
9.0	CONSTRUCTION NOISE	C.42
10.0	SUMMARY	C.43
11.0	REFERENCES	C.44

Appendices

Appendix C-A	2030 Average Daily Traffic Volume	C.45

Tables

Table C.1	Common Noise Levels	C.5
Table C.2	Noise Abatement Criteria	C.6
Table C.3	Vehicle Mix Percentage	C.8
Table C.4	EC-1 Alternative: Predicted Noise Levels on 27th Street	C.15
Table C.5	EC-1 Alternative: Predicted Noise Levels on Van Dorn Street	C.16
Table C.6	EC-1 Alternative: Predicted Noise Levels on Old Cheney Road	C.16
Table C.7	EM-1 Alternative: Predicted Noise Levels on Old Cheney Road	C.17
Table C.8	EM-1 Alternative: Predicted Noise Levels on 70th Street	C.18
Table C.9	EF-1 Alternative: Predicted Noise Levels on Old Cheney Road	C.19
Table C.10	EF-1 Alternative: Predicted Noise Levels on 70th Street (between Yankee Hill and Saltillo Road)	C.20
Table C.11	EF-1 Alternative: Predicted Noise Levels on 70th Street (between Old Cheney and N-2)	C.21
Table C.12	SM-4/EC-1 Alternative Predicted Beltway Noise Levels	C.22
Table C.13	SM-4/EM-1 Alternative Predicted Beltway Noise Levels	C.23
Table C.14	SM-4/EF-1 Alternative Predicted Beltway Noise Levels	C.24
Table C.15	EC-1 Alternative Predicted Beltway Noise Levels	C.25
Table C.16	EM-1 Alternative Predicted Beltway Noise Levels	C.28
Table C.17	EF-1 Alternative Predicted Beltway Noise Levels	C.30
Table C.18	Noise Abatement Feasibility Review: SM-4 Alternative	C.34
Table C.19	Noise Abatement Feasibility Review: SM-4 Alternative	C.35
Table C.20	Noise Abatement Feasibility Review: SM-4 Alternative	C.38
Table C.21	Noise Abatement Feasibility Review: SM-4 Alternative	C.39

Figures

Figure C.1	Noise Receptors along 27th Street (Table C.4) from Pine Lake Road to Yankee Hill Road	C.9
Figure C.2	Noise Receptors along Van Dorn Street (Table C.5) from 84th Street to 98th Street	C.10
Figure C.3	Noise Receptors along Old Cheney Road (Tables C.6, C.7 and C.9) from 84th Street to 98th Street	C.11
Figure C.4	Noise Receptors along 70th Street (Tables C.8 and C.10) from Yankee Hill Road to Rokeby Road	C.12
Figure C.5	Noise Receptors along 70th Street (Tables C.8 and C10) from Rokeby Road to Saltillo Road	C.13
Figure C.6	Noise Receptors along 70th Street (Tables C.11) from Old Cheney Road to N-2	C.14

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NOISE STUDY REPORT
for
South and East Beltways Study
Lincoln, Nebraska

1.0 INTRODUCTION

This report provides a discussion of the potential traffic related noise impacts associated with the South and East Beltways Project. This noise analysis has been conducted in accordance with 23 CFR Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise" and with "Noise Analysis and Abatement Policy, May 1998" of the Nebraska Department of Roads. Noise levels within the study area are predicted using the Federal Highway Administration, Traffic Noise Model (TNM, Version 1b). Using the model results, predicted noise levels are compared to existing noise levels and the Federal Noise Abatement Criteria (NAC) to determine if there are any project-related noise impacts. Where impacts are predicted to occur, appropriate noise mitigation measures are evaluated, including noise barriers. Mitigation is not considered for the No Build alternative.

2.0 PROJECT DESCRIPTION

The purpose of the South and East Beltways Study has been to conduct a feasibility study and alternatives evaluation for preferred beltway alignments on the south and east fringes of the City of Lincoln to complete a circumferential transportation system. The south beltway alternative would connect US 77 with N-2, while the east beltway alternative would connect N-2 with I-80.

The study area for the south beltway is bounded on the north by Yankee Hill Road, on the south by the half-section line 0.8 km (0.5mi) south of Bennett Road, on the east by the half-section line 0.8 km (0.5 mi) east of 148th Street, and on the west by US 77. The study area for the east beltway is bounded on the west by 98th Street, on the east by the half-section line 0.8 km (0.5 mi) east of 148th Street, on the north by I-80, and on the south by N-2.

The Nebraska Department of Roads Standard Section for a Rural Expressway was used for all beltway alignments. A rural expressway typical section has the following features:

- Approximately 76.2 to 91 m (250 to 300 ft) right-of-way; right-of-way needs vary with topography
- Two 3.7 m (12 ft) driving lanes in each direction
- 2.4 m (8 ft) paved outside shoulders
- 0.9 m (3 ft) paved inside shoulders
- 12 m (40 ft) unpaved depressed median (includes inside shoulders)

Construction of the east beltway alternatives will increase traffic volume on several existing roadways that cross or parallel the beltway alignments (*Interim Report No. 3* (WSA, revised 1999)) and which are not necessarily in the beltway study area. The roadway segments listed below were predicted to have an increase of 50 percent or greater traffic volume dependant upon the beltway alternative selected. Therefore, the following roadway segments have been included in the noise study.

EC-1 Alternative:

- 27th Street between Pine Lake and Yankee Hill
- Van Dorn between 84th and 98th Streets
- Old Cheney between 84th and 98th Streets

EM-1 Alternative:

- Old Cheney between 84th and 98th Streets
- 70th Street between Yankee Hill and Saltillo Road

EF-1 Alternative:

- Old Cheney between 84th and 98th Streets
- 70th Street between Yankee Hill and Saltillo Road
- 70th Street between Old Cheney and N-2

3.0 MEASUREMENT OF SOUND

The Federal Highway Administration (FHWA) has specified that noise be predicted and evaluated in decibels weighted with the A-level frequency response; this unit of measure is referred to as dBA. Measurements in dBA incorporate the human ear's reduced sensitivity to both low frequency and very high frequency noises, thereby correlating well with our subjective impression of loudness. **Table C.1** displays noise levels (in dBA) common to our everyday activities.

Table C.1

COMMON NOISE LEVELS

Common Noise Levels	Distance from Receiver	Noise Level (dBA)
Rock Band	5 m (16 ft)	110
Jet Flyover	300 m (985 ft.)	105
Gas Lawn Mower	1 m (3 ft.)	95
Diesel Truck	15 m (50 ft.)	85
Same Truck	34 m (110 ft.)	80
Gas Lawn Mower	30 m (100 ft.)	70
Normal Speech	1 m (3 ft.)	65
Birds Chirping	--	50
Leaves Rustling	--	40
Very Quiet Soft Whisper	--	30

4.0 TRAFFIC NOISE STANDARDS

The Federal Highway Administration has developed noise abatement criteria based on the A-weighted, equivalent level noise descriptor (Leq(h)). The Leq(h) is the equivalent steady state sound level reported over a period of one hour which contains the same acoustic energy as the time-varying traffic sound level during that same hour. **Table C.2** contains the upper limits of the Leq(h) desirable noise levels that are part of the Noise Abatement Criteria (NAC) established by the FHWA. Any noise levels that approach or exceed these criteria would not be desirable and would be referred to as a noise impact.

Table C.2

NOISE ABATEMENT CRITERIA
HOURLY A-WEIGHTED SOUND LEVEL

Activity Category	Hourly Noise Levels Leq(h) dBA	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, play grounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties or activities not included in Categories A or B above.
D	----	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

In accordance with the Nebraska Department of Roads policy, a noise impact occurs and abatement measures will be considered for receptors if:

- The predicted future year (year 2030) noise levels approach or exceed NAC criteria of 67 Leq(h) dBA for Activity Category B or 72 Leq(h) dBA for Activity Category C. Approach is defined by the NDOR as 1 dBA less than the noise abatement criteria or;
- The predicted future year (year 2030) noise level exceeds the existing noise level by 15 dBA or more.

The noise impacts predicted to occur within the project area are discussed later in this report.

5.0 PROJECT AREA ACTIVITY CATEGORY

The majority of the project lies within rural areas and the land use is classified as Activity Category "B" or "D" as described in **Table C.2** above. Activity "C" land use is located near the US 77 and SM-4 interchange.

6.0 EXISTING 1999 NOISE LEVELS

Existing noise levels for the receptors adjacent to the beltway alternatives were determined by direct field measurements using a Quest 2800 sound level meter. The measurements were taken along unimproved county roadways near existing residences (generally 30 to 45.7 m (100 to 150 ft) from the centerline of the roadway) at a height of 1.5 m (5 ft) above ground level. The duration of the measurement time ranged from fifteen to thirty minutes. Noise levels for locations where the project roadway intersects an existing highway system were determined by modeling the existing traffic volume (1998 traffic data) as discussed below.

Noise levels ranged in the mid to upper 40 Leq(h) level adjacent to unimproved county roads and ranged in the upper 50 Leq(h) to mid 60 Leq(h), level near existing highways. Noise levels exceeding the FHWA impact criteria currently occur at several residences located adjacent to N-2.

7.0 PREDICTED NOISE LEVELS

7.1 Prediction Methodology

The procedures included in the FHWA Traffic Noise Model perform an analysis of traffic noise in terms of traffic parameters (vehicle type and speed), roadway design and receptor characteristics. These parameters are input into the computer model which provides the noise level estimate. All noise levels referred to in this study are exterior noise levels.

Detailed engineering regarding the exact alignment and grade of the beltway alternatives, cut and fill areas, and intersection design is beyond the scope of the current level of the beltways study. As such, the traffic engineer's best estimates of these parameters have been incorporated into the model, therefore, these results must be considered preliminary. Further analysis of the noise impacts and recommended mitigation should be completed using more detailed design information if any of the Build options are selected.

7.2 Traffic Parameters

Beltway Alternatives. The traffic volume used in this study is based upon 2030-Build projections developed by the Lincoln-Lancaster County Planning Department (refer to Appendix C-A). Typically, roadway projects are modeled using 20 year traffic projections, however, the 2030 data was developed to correspond to the Build Out Scenario (BOS2) Land Use Plan adopted by the City of Lincoln. This plan assumes a population of 374,630. Traffic volumes within the diamond interchanges along the beltway were not modeled by the City and therefore were not available for the noise model. However, noise at the interchanges would not be considered significant due to the low volumes and reduced speeds of traffic within the interchanges in comparison with the high volumes and high speeds through the interchange.

The "peak-hour" traffic parameters used reflect 10 percent of the 2030-Build ADT.

Existing Roadways. The 2020-No-Build traffic volumes from *Interim Report No. 3* (WSA, revised 1999) were compared to the 2030-Build projections developed by the Lincoln-Lancaster County Planning Department.

The "peak-hour" traffic parameters used reflect 10 percent of the 2020 No-Build and 2030- Build ADT.

The following Federal Highway Administration (FHWA) criteria for automobiles, medium trucks and heavy trucks were used in determining the vehicle mix (**Table C.3**) for the study roadways.

- Automobiles: all vehicles with two axles and four tires- primarily designed to carry nine or fewer people (passenger cars, vans) or cargo (vans, light trucks)- generally with gross vehicle weight less than 44 kilonewtons (9,900 lb)
- Medium trucks: all cargo vehicles with three or more axles- generally with gross vehicle weight between 44 kilonewtons (10,000 lb) but less than 116 kilonewtons (26,000 lb)
- Heavy trucks: all cargo vehicles with three or more axles- generally with gross vehicle weight more than 116 kilonewtons (26,000 lb)

Table C.3

VEHICLE MIX PERCENTAGE

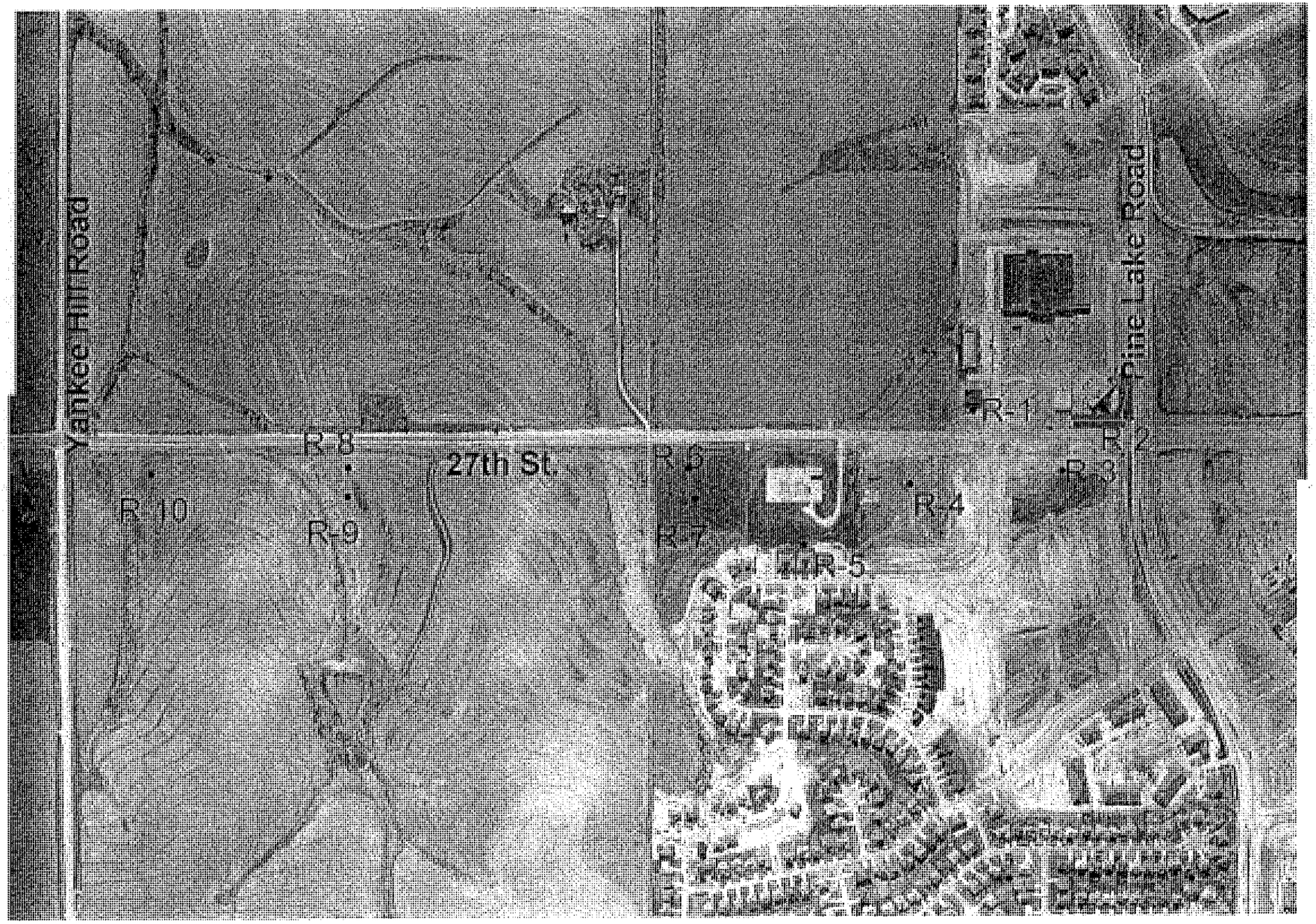
Finalist Alternative	Cars and Pickup Trucks Percentage	Medium Trucks Percentage	Heavy Trucks Percentage
SM-4 [1]	90.60	1.07	8.33
EC-1, EM-1, EF-1 [1]	96.96	1.29	1.75
US 77 [2]	91.7	1.7	6.6
N-2 [2]	87.5	1.25	11.25
US 34 [2]	93	2	5
I-80 [2]	79	2.1	18.9
Existing Roads	95	4.5	0.5

[1] Provided by HWS Consulting Group, Inc.
[2] Provided by Nebraska Department of Roads

7.3 Predicted Noise Levels

Existing Roadway Noise Levels. The east beltway alternatives are projected to cause an increase in traffic volume along certain existing roadways (some of which are not located within the beltway study area). For these locations, the 2030-Build projected traffic Leq(h) noise level at each receptor has been compared to the 2020 No-Build traffic Leq(h) noise level to determine future noise impacts for receptors adjacent to the existing roadways. The analysis indicates that noise levels will generally increase along existing roadways, however, no noise impacts are predicted (refer to **Tables C.4-C.11**). The locations of the receptors are shown in **Figures C-1** to **C-6** which include a base photograph from April 1997.

It should also be noted that some of the 2020 predicted levels for the No-Build scenario were as much as 6 dB lower than the lowest 1999 field measurements of ambient noise. This is most likely due to the fact that the model does not account for other ambient noise in the area.



Legend
Noise Receptor
R-10 Receptor Identifier

N

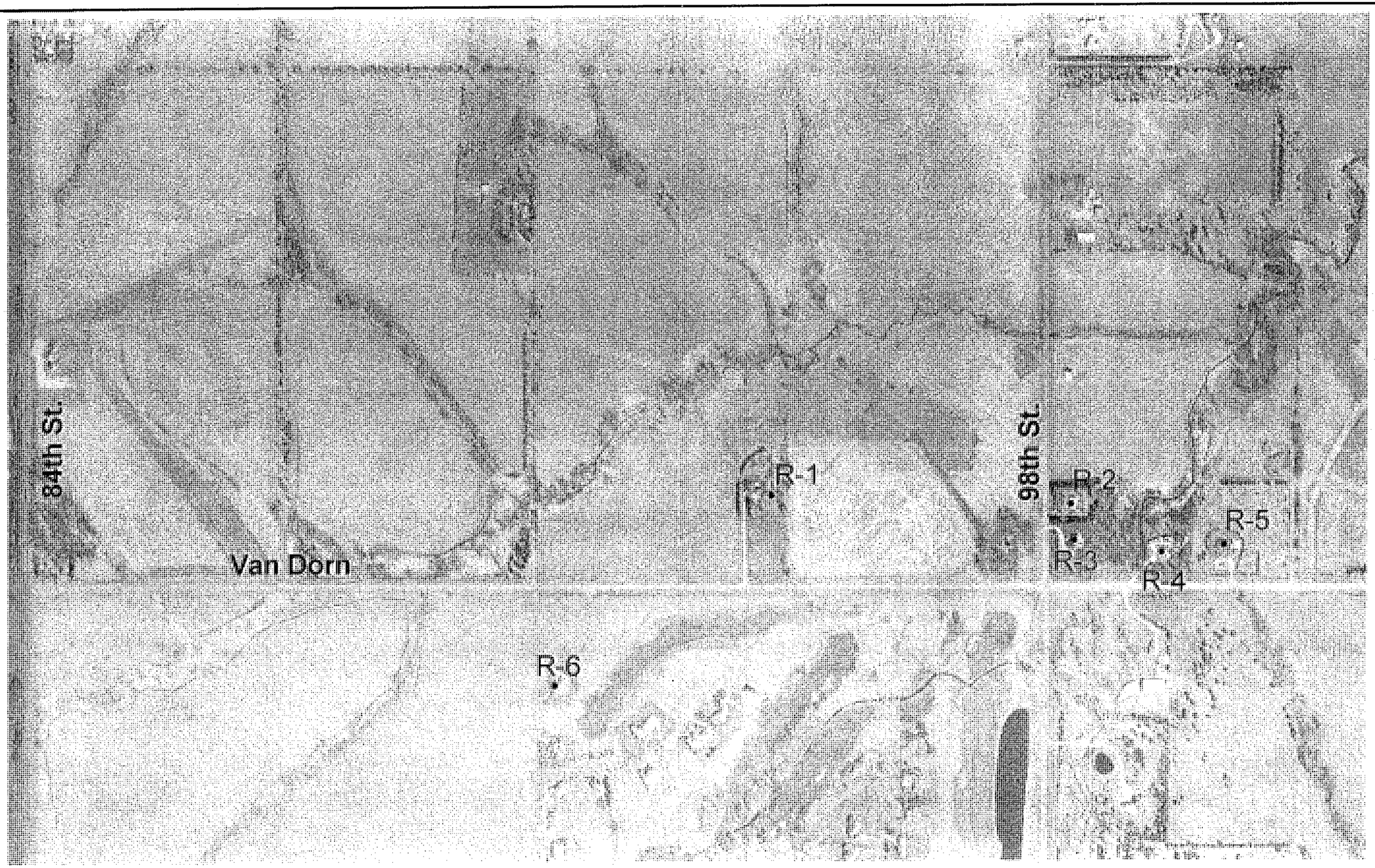
November 1st, 2000

LINCOLN SOUTH AND EAST BELTWAYS
ENVIRONMENTAL IMPACT STATEMENT

500 0 500 Feet
100 0 100 Meters

Noise Receptors along 27th St. (Table C.4) from Pine Lake Road to Yankee Hill Road

Figure C-1



Legend
- Noise Receptors
- R-4 Receptor Identifier

N

November 1st, 2000

LINCOLN SOUTH AND EAST BELTWAYS ENVIRONMENTAL IMPACT STATEMENT

500 0 500 Feet

100 0 100 Meters

Noise Receptors along Van Dorn Street (Table C.5) from 84th Street to 98th Street

Figure C-2

Legend

● Noise Receptors

R-4 Receptor Identifier

N

November 1st, 2000

LINCOLN SOUTH AND EAST BELTWAYS
ENVIRONMENTAL IMPACT STATEMENT

500 0 500 Feet

100 0 100 Meters

Noise Receptors along Old Cheney Road (Tables C.6, C.7, and C.9) from 84th Street to 98th Street

Figure C-3

Legend
Noise Receptor
R-10 Receptor Identifier

N

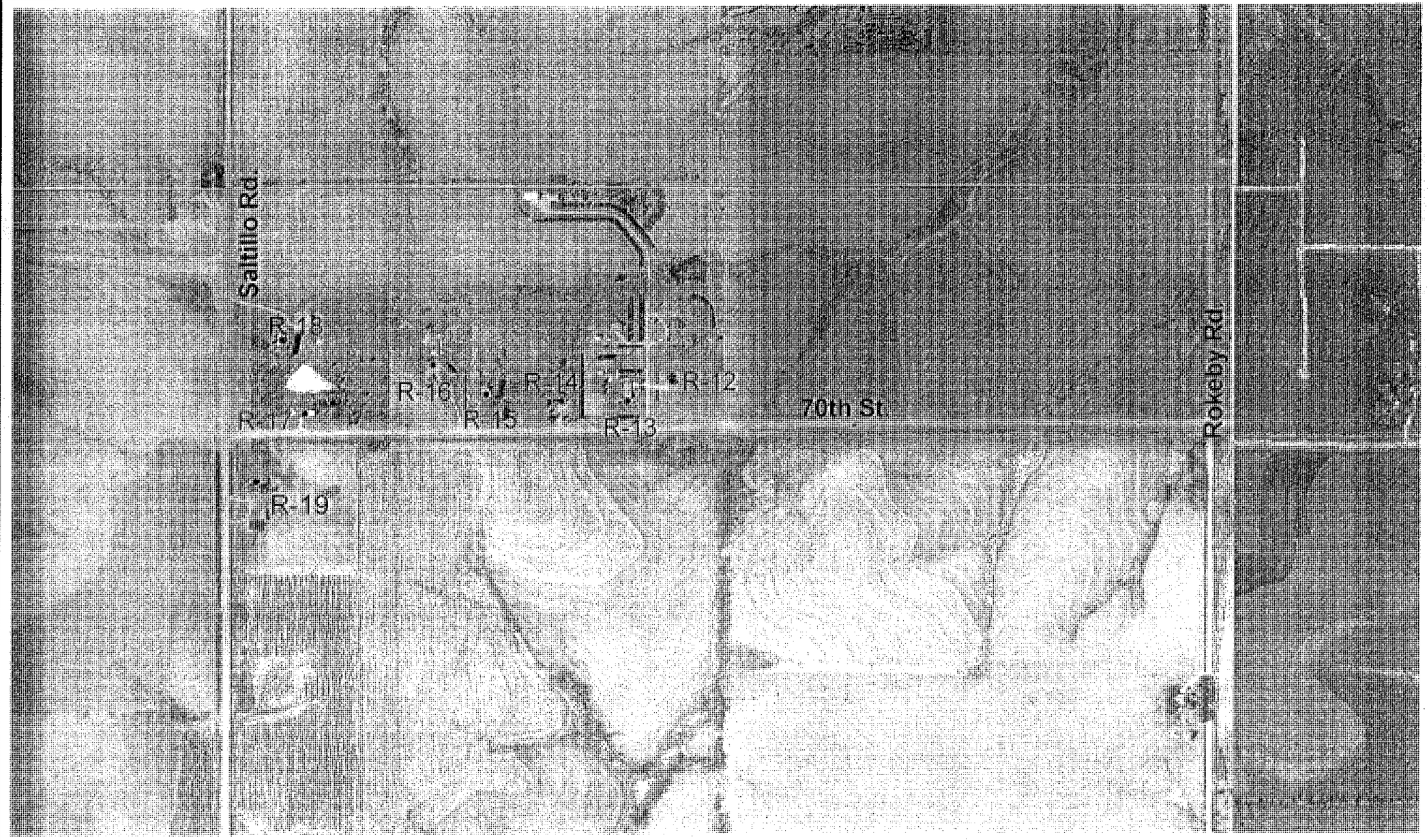
November 1st, 2000

LINCOLN SOUTH AND EAST BELTWAYS
ENVIRONMENTAL IMPACT STATEMENT

500 0 500 Feet
100 0 100 Meters

Noise Receptors along 70th St. (Tables C.8 and C.10) from Yankee Hill Road to Rokeby Road

Figure C-4



Legend
Noise Receptor
R-10 Receptor Identifier

N

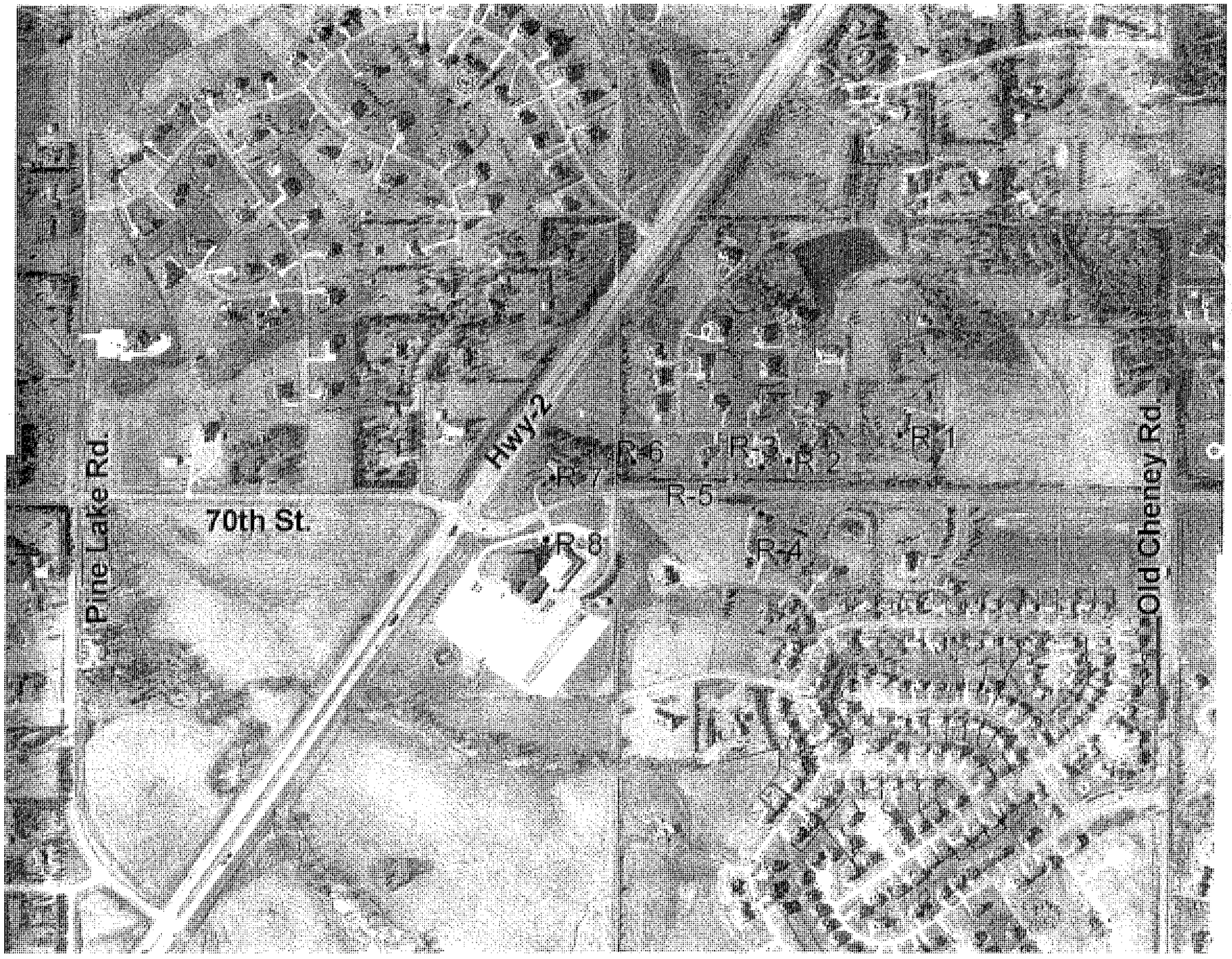
November 1st, 2000

LINCOLN SOUTH AND EAST BELTWAYS
ENVIRONMENTAL IMPACT STATEMENT

500 0 500 Feet
100 0 100 Meters

Noise Receptors along 70th St. (Table C.8 and C.10) from Rokeby Road to Saltillo Road.

Figure C-5



Legend
• Noise Receptor
R-10 Receptor Identifier

N

November 1st, 2000

LINCOLN SOUTH AND EAST BELTWAYS
ENVIRONMENTAL IMPACT STATEMENT

500 0 500 Feet
100 0 100 Meters

Noise Receptors along 70th St. (Table C.11) from Old Cheney Road to N-2

Figure C-6

Beltway Noise Levels. The 2030-Build projected traffic Leq(h) noise level at each receptor has been compared to the 1999-Existing traffic Leq(h) noise level to determine future noise impacts for receptors adjacent to the beltway alignments. The predicted noise levels for these receptors are summarized in **Tables C.12 to C.17**. **Tables C.12** to **C.14** are the south beltway alternative under different traffic volume assumptions corresponding to connections with EC-1, EM-1 and EF-1. **Tables C.15** to **C.17** are the three east beltway alternatives. The location of the receptors are shown on the **Exhibits** in the main body of the EIS.

Table C.4

EC-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on 27TH Street between Pine Lake Road and Yankee Hill Road

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	C	57	61	4	No[1]	No
R2	C	60	62	2	No	No
R3	C	53	56	3	No	No
R4	B	51	55	4	No [2]	No
R5	C	45	49	4	No	No
R6	C	57	61	4	No	No
R7	C	51	55	4	No	No
R8	B	57	61	4	No	No
R9	B	51	55	4	No	No
R10	B	62	61	1	No	No

[1] NAC level is 72 Leq(h)
[2] NAC level is 67 Leq(h)

Table C.5

EC-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on Van Dorn Street between 84th Street and 98th Street

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	44	42	2	No	No
R2	B	45	43	2	No	No
R3	B	54	51	3	No	No
R4	B	52	50	2	No	No
R5	B	54	51	-3	No	No
R6	B	43	42	-2	No	No

Table C.6

EC-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on Old Cheney Road between 84th Street and 98th Street

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	62	65	3	No	No
R2	B	52	55	3	No	No
R3	B	61	64	3	No	No
R4	B	56	58	2	No	No
R5	B	64	63	-1	No	No
R6	B	62	61	-1	No	No

Table C.7

EM-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on Old Cheney Road between 84th Street and 98th Street

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	62	65	3	No	No
R2	B	52	55	3	No	No
R3	B	61	64	3	No	No
R4	B	56	59	3	No	No
R5	B	64	63	-1	No	No
R6	B	62	62	0	No	No

Table C.8

EM-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on 70th Street between Yankee Hill Road and Saltillo Road

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	57	65	8	No	No
R2	B	44	52	8	No	No
R3	B	47	55	8	No	No
R4	B	43	49	6	No	No
R5	B	44	51	7	No	No
R6	B	46	53	7	No	No
R7	B	40	46	6	No	No
R8	B	48	56	8	No	No
R9	B	44	51	7	No	No
R10	B	39	46	7	No	No
R11	B	48	56	8	No	No
R12	B	38	50	12	No	No
R13	B	44	56	12	No	No
R14	B	42	54	12	No	No
R15	B	37	45	8	No	No
R16	B	49	59	10	No	No
R17	B	46	50	4	No	No
R18	B	41	52	9	No	No
R19	B	51	50	-1	No	No

Table C.9

EF-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on Old Cheney Road between 84th Street and 98th Street

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	62	65	3	No	No
R2	B	52	55	3	No	No
R3	B	61	64	3	No	No
R4	B	58	59	1	No	No
R5	B	64	64	0	No	No
R6	B	62	62	0	No	No

Table C.10

EF-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on 70th Street between Yankee Hill Road and Saltillo Road

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	57	65	8	No	No
R2	B	44	52	8	No	No
R3	B	47	55	8	No	No
R4	B	43	50	6	No	No
R5	B	44	51	7	No	No
R6	B	46	53	7	No	No
R7	B	40	46	6	No	No
R8	B	48	56	8	No	No
R9	B	44	51	7	No	No
R10	B	39	46	7	No	No
R11	B	48	56	8	No	No
R12	B	38	50	12	No	No
R13	B	44	56	12	No	No
R14	B	42	54	12	No	No
R15	B	37	45	8	No	No
R16	B	49	60	10	No	No
R17	B	46	50	4	No	No
R18	B	41	52	9	No	No
R19	B	51	50	-1	No	No

Table C.11

EF-1 ALTERNATIVE
PREDICTED NOISE LEVELS
on 70th Street between Old Cheney Road and N-2

Receptor and Activity Category		2020 Existing Noise Level	2030 Build Noise Level		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC	Increase equal to or greater than 15 dBA
R1	B	54	56	2	No	No
R2	B	58	61	3	No	No
R3	B	58	60	2	No	No
R4	B	62	65	3	No	No
R5	B	58	60	2	No	No
R6	B	61	61	0	No	No
R7	B	61	60	0	No	No
R8	B	61	62	1	No	No

Table C.12

SM-4/EC-1 ALTERNATIVE
PREDICTED BELTWAY NOISE LEVELS

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EC-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R1	B	62	65	3	No	No
R2	B	46	54	8	No	No
R3	B	50	55	5	No	No
R4	B	55	59	4	No	No
R5	C	60	63	3	No	No
R6	C	59	62	3	No	No
R7	C	56	60	4	No	No
R8	B	46	54	8	No	No
R9	B	47	60	13	No	No
R10	B	47	50	3	No	No
R11	B	44	61	17	No	Yes
R12	B	47	61	14	No	No
R13	B	47	56	9	No	No
R14	B	47	52	5	No	No
R15	B	47	61	14	No	No
R16	B	47	59	12	No	No
R17	B	47	57	10	No	No
R18	B	47	55	8	No	No
R19	B	44	53	9	No	No
R20 (Barn)	B	44	57	13	No	No
R21	B	44	57	13	No	No
R22	B	44	56	12	No	No
R23	B	44	56	12	No	No
R24	B	44	56	12	No	No
R25	B	64	67	3	Yes	No
R26 (Barn)	B	61	65	4	No	No
R27	B	67	70	3	Yes	No
R28	B	66	68	2	Yes	No
R29	B	66	70	4	Yes	No
R30	B	58	62	4	No	No
R31 (Wheeler Relocation)	B	63	67	4	Yes	No

Table C.13

SM-4/EM-1 ALTERNATIVE
PREDICTED BELTWAY NOISE LEVELS

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EM-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R1	B	62	65	3	No	No
R2	B	46	54	8	No	No
R3	B	50	55	5	No	No
R4	B	55	59	4	No	No
R5	C	60	63	3	No	No
R6	C	59	62	3	No	No
R7	C	56	60	4	No	No
R8	B	46	54	8	No	No
R9	B	47	60	13	No	No
R10	B	47	50	3	No	No
R11	B	44	61	17	No	Yes
R12	B	47	61	14	No	No
R13	B	47	56	9	No	No
R14	B	47	52	5	No	No
R15	B	47	61	14	No	No
R16	B	47	58	11	No	No
R17	B	47	57	10	No	No
R18	B	47	55	8	No	No
R19	B	44	53	9	No	No
R20 (Barn)	B	44	57	13	No	No
R21	B	44	57	13	No	No
R22	B	44	56	12	No	No
R23	B	44	56	12	No	No
R24	B	44	58	14	No	No
R25	B	64	67	3	Yes	No
R26 (Barn)	B	61	65	4	No	No
R27	B	67	70	3	Yes	No
R28	B	66	68	2	Yes	No
R29	B	66	70	4	Yes	No
R30	B	58	62	4	No	No
R31 (Wheeler Relocation)	B	63	67	4	Yes	No

Table C.14

SM-4/EF-1 ALTERNATIVE
PREDICTED BELTWAY NOISE LEVELS

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EF-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R1	B	62	65	3	No	No
R2	B	46	54	8	No	No
R3	B	50	55	5	No	No
R4	B	55	59	4	No	No
R5	C	60	63	3	No	No
R6	C	59	62	3	No	No
R7	C	56	60	4	No	No
R8	B	46	54	8	No	No
R9	B	47	60	13	No	No
R10	B	47	50	3	No	No
R11	B	44	61	17	No	Yes
R12	B	47	61	14	No	No
R13	B	47	56	9	No	No
R14	B	47	52	5	No	No
R15	B	47	61	14	No	No
R16	B	47	59	12	No	No
R17	B	47	57	10	No	No
R18	B	47	55	8	No	No
R19	B	44	53	9	No	No
R20 (Barn)	B	44	55	11	No	No
R21	B	44	57	13	No	No
R22	B	44	56	12	No	No
R23	B	44	56	12	No	No
R24	B	44	57	13	No	No
R25	B	64	67	3	Yes	No
R26 (Barn)	B	61	65	4	No	No
R27	B	67	70	3	Yes	No
R28	B	66	68	2	Yes	No
R29	B	66	70	4	Yes	No
R30	B	58	62	4	No	No
R31 (Wheeler Relocation)	B	63	67	4	Yes	No

Table C.15

EC-1 ALTERNATIVE
PREDICTED BELTWAY NOISE LEVELS

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EC-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R1	B	45	58	13	No	No
R2	B	45	56	11	No	No
R3	B	45	52	7	No	No
R4	B	45	50	5	No	No
R5	B	45	40	5	No	No
R6	B	45	51	6	No	No
R7	B	45	51	6	No	No
R8	B	45	51	6	No	No
R9	B	45	49	4	No	No
R10	B	45	62	17	No	Yes
R11	B	45	55	10	No	No
R12	B	55	64	9	No	No
R13 (Barn)	B	57	60	3	No	No
R14	B	58	60	2	No	No
R15	B	52	57	5	No	No
R16	B	51	58	7	No	No
R17	B	49	66	17	Yes	Yes
R18	B	48	54	6	No	No
R19	B	46	66	20	Yes	Yes
R20	B	46	58	12	No	No
R21 (Water Tower)	B	50	63	13	No	No
R22	B	50	58	8	No	No
R23	B	50	54	4	No	No
R24	B	50	53	3	No	No
R25	B	50	53	3	No	No
R26	B	50	52	2	No	No
R27	B	50	54	4	No	No

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EC-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R28	B	54	59	5	No	No
R29	B	54	62	8	No	No
R30	B	47	60	13	No	No
R31	B	47	60	13	No	No
R32	B	47	61	14	No	No
R33	B	47	56	9	No	No
R34	B	49	54	5	No	No
R35 (Osterberg Relocation)	B	49	61	12	No	No
R36 (Barrett Relocation)	B	49	67	18	Yes	Yes
R37 (Rustad Relocation)	B	49	62	13	No	No
R38	B	48	62	14	No	No
R39	B	48	64	16	No	Yes
R40	B	48	65	17	No	Yes
R41	B	48	62	14	No	No
R42	B	48	63	15	No	Yes
R43	B	50	62	12	No	No
R44	B	63	67	4	Yes	No
R45	B	44	61	17	No	Yes
R46	B	44	62	18	No	Yes
R47	B	44	62	18	No	Yes
R48	B	44	56	12	No	No
R49	B	44	57	13	No	No
R50	B	44	58	14	No	No
R51	B	44	59	15	No	Yes
R52	B	44	58	14	No	No
R53	B	52	59	7	No	No
R54	B	52	56	4	No	No
R55	B	52	67	15	Yes	Yes
R56	B	52	68	16	Yes	Yes
R57	B	52	61	9	No	No

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EC-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R58	B	52	55	3	No	No
R59	B	52	63	11	No	No
R60	B	47	59	12	No	No
R61	B	47	56	9	No	No
R62 (Pump station)	B	47	56	9	No	No
R63 (Out-building)	B	57	57	0	No	No
R64	B	58	59	1	No	No
R65	B	60	64	4	No	No
R66	B	47	56	9	No	No
R67	B	47	54	7	No	No

Table C.16

EM-1 ALTERNATIVE
PREDICTED BELTWAY NOISE LEVELS

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EM-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R1	B	44	56	12	No	No
R2	B	44	53	9	No	No
R3 (Evans Relocation)	B	44	56	12	No	No
R4	B	54	57	3	No	No
R5	B	62	65	3	No	No
R6	B	67	67	0	Yes	No
R7	B	66	66	0	Yes	No
R8	B	66	66	0	Yes	No
R9	B	55	58	3	No	No
R10	B	49	54	5	No	No
R11	B	48	51	3	No	No
R12	B	47	55	8	No	No
R13	B	47	50	3	No	No
R14	B	47	60	13	No	No
R15	B	47	53	6	No	No
R16	B	47	56	9	No	No
R17	B	44	64	20	No	Yes
R18 (Empty Lot)	B	44	58	14	No	No
R19	B	44	58	14	No	No
R20 (Empty Lot)	B	44	55	11	No	No
R21	B	44	55	11	No	No
R22	B	44	57	13	No	No
R23 (Golf Course)	B	44	59	15	No	Yes
R24 (Golf Course)	B	44	58	14	No	No
R25 (Golf Course)	B	44	60	16	No	Yes
R26 (Golf Course)	B	44	53	14	No	No

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EM-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R27	B	43	59	16	No	Yes
R28	B	43	56	13	No	No
R29	B	43	54	11	No	No
R30	B	43	55	12	No	No
R31	B	43	58	15	No	Yes
R32	B	50	50	0	No	No
R33 (Microwave Tower)	B	50	62	12	No	No
R34	B	50	58	8	No	No
R35	B	47	63	16	No	Yes
R36	B	47	62	15	No	Yes
R37 (Pump Station)	B	47	57	10	No	No
R38	B	47	59	12	No	No
R39	B	54	65	11	No	No
R40	B	54	58	4	No	No
R41 (Out-building)	B	54	56	2	No	No

Table C.17

EF-1 ALTERNATIVE
PREDICTED BELTWAY NOISE LEVELS

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EF-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R1	B	58	61	3	No	No
R2	B	69	73	4	Yes	No
R3	B	43	55	12	No	No
R4	B	43	58	15	No	No
R5	B	66	71	5	Yes	No
R6	B	66	69	3	Yes	No
R7	B	67	69	2	Yes	No
R8	B	62	66	4	Yes	No
R9	B	65	69	4	Yes	No
R10	B	65	69	4	Yes	No
R11	B	58	62	4	No	No
R12	B	46	63	17	No	Yes
R13	B	46	61	15	No	Yes
R14	B	46	54	8	No	No
R15	B	46	60	14	No	No
R16	B	53	57	4	No	No
R17	B	53	61	8	No	No
R18	B	53	55	2	No	No
R19	B	53	62	9	No	No
R20	B	53	55	2	No	No
R21	B	45	55	10	No	No
R22	B	46	58	12	No	No
R23	B	46	55	9	No	No
R24	B	43	66	23	Yes	Yes
R25	B	43	58	15	No	Yes
R26	B	60	65	5	No	No
R27	B	60	64	4	No	No
R28 (Otley Relocation)	B	50	62	12	No	No
R29	B	47	57	10	No	No
R30	B	47	64	17	No	Yes

Receptor and Activity Category		1999 Existing Noise Level	2030 Build Noise Level SM-4 and EF-1		Type of Impact 2030-Build	
			Noise Level	Increase	Approach or Exceed NAC (67 Leq(h))	Increase equal to or greater than 15 dBA
R32	B	47	60	13	No	No
R33	B	47	58	11	No	No
R34	B	47	55	8	No	No
R35	B	47	56	9	No	No
R36	B	57	57	0	No	No
R37	B	58	59	1	No	No
R38	B	60	64	4	No	No

7.4 Predicted Noise Contours

Based upon review of the noise levels predicted for the existing receptors and by inserting "dummy"receptors along the beltway alignments, the 66 Leq(h) dBA noise contour which represents the residential noise impact level as discussed in Section 4.0 has been estimated. The location of this contour is useful for land-use planning.

The area adjacent to the beltway alignments which will be within the 66 Leq(h) dBA contour will vary depending upon the traffic (volume and type) and topography. Along the SM-4 alternative the contour ranges from 51.8 to 76.2 m (170 to 250 ft) from the roadway centerline, on the EC-1 and EM-1 alignments the contour ranges from 45.7 to 57.9 m (150 to 190 ft) and along the EF-1 alignment the contour is approximately 45.7 m (150 ft) from the centerline. These distances will increase near the major intersections.

8.0 NOISE ABATEMENT

8.1 Noise Mitigation Measures

In accordance with the NDOR Noise Abatement Policy, noise abatement measures must be considered where predicted traffic noise levels approach or exceed the noise abatement criteria, or when the predicted traffic noise levels substantially exceed the existing noise levels (i.e. 15 dBA). The noise mitigation measures considered during this study are summarized below.

8.1.1 Shifting the Roadway Alignment Horizontally

A shift in the horizontal alignment can be incorporated into a project to reduce traffic noise where receptors are typically on one side of the roadway alignment and the topography is acceptable. Since sound intensity decreases with distance, shifting the roadway away from the receptor will reduce noise levels. Shifting the horizontal alignment of the roadway appears to be a feasible method to mitigate the traffic noise at nine of the impacted receptors, however, a cost analysis could not be completed during this level of study. A more detailed analysis to determine the exact distance of the roadway shift, the starting and ending points and the construction costs will be necessary to determine if this mitigation method is reasonable.

8.1.2 Constructed Noise Barriers

A noise barrier, either a wall made of concrete or wood products or an earthen berm, may be constructed to break the line-of-sight to the receptor. To be effective, a noise barrier must be continuous and have substantial length and height. In accordance with the NDOR Policy, a noise barrier must be *feasible* from an engineering standpoint and *reasonable* from a cost, effectiveness, and access standpoint to be considered.

Barrier Feasibility Criteria. Barriers are considered *feasible* if the insertion loss (reduction in traffic noise at a point 3.0 m (10 ft) from the residence) is at least five decibels. The following items are considered to evaluate the *feasibility*:

- Can a barrier be built to fit the topography?
- Is the exposed height of the barrier no more than 4.9 m (16 ft), except for short lengths?

- Can the barrier be located beyond the clear recovery zone or be incorporated into existing highway barriers?
- Are other significant noise sources present?

Barriers not meeting these criteria are not *feasible* and further evaluation is not conducted.

Noise barriers for thirteen locations appear to be feasible based upon the current alignments, therefore, a reasonableness test was conducted for each of these locations.

Barrier Reasonableness Criteria. Reasonableness is judged on a point system based upon the four criteria listed below. Barriers with a point total of 9 or less are judged to be not reasonable.

1. The noise abatement must be cost effective. Cost effectiveness is defined as cost per protected receptor.

   < $18,000/receptor = 4
   $28,000 to $23,000/receptor = 3
   $23,000 to $28,000/receptor = 2
   $28,000 to $30,000/receptor = 1

   (Unit costs for construction of earthen barriers of $3.92 per cubic meter ($3.00 per cubic yard) of soil and $190.00 per square meter ($18 per square ft) for manufactured walls was used in the cost analysis. If the cost per receptor is above $30,000, the barrier will be considered not reasonable).

2. The change in computed noise levels between the design year and the existing will equal or exceed 3 decibels (a barely perceptible change).

   > 3 decibels = 4
   3 decibels = 3
   2 decibels = 2
   < 2 decibels = 1

3. The impacted receptor or platted area preceded the FHWA approval of the environmental document for initial highway construction.

   > 80 percent = 4
   50-80 percent = 3
   30-50 percent = 2
   <30 percent = 1

4. It is considered unreasonable if the barrier provides noise abatement on a highway with partial or no control of access.

   Full access control = 4
   ½ mile access control = 2
   1/4 mile access control = 1
   < 1/4 mile access control = 0

8.2 Noise Abatement Analysis for Impacted Receptors along the SM-4 Alternative

Table C.18

NOISE ABATEMENT FEASIBILITY REVIEW: SM-4 ALTERNATIVE

Finalist Alternative	Receptor Number	Horizontal/Vertical Roadway Alignment Shift Feasibility?[1]	Barrier Feasibility Determination				
			Compatible with Topo	Height[2]	Other Noise Sources[3]	Location	Is Barrier Feasible?
SM-4	R-11	Yes: shift 37 m (120 ft) north	Yes	No	No	OK	No
SM-4	R-25, 27, 28, 29	No	Yes	Yes	No	OK	Yes

Notes: 1 - Alignment shifted to eliminate noise impact (less than 66 Leq(h) dBA or below significant increase of 15 dBa).
2 - Can the exposed height of a barrier be built 4.9 meters (16 feet) or less?
3 - Other noise sources include other roadways that contribute to noise.

Noise barriers for one location appears to be feasible based upon the current alignment of SM-4, therefore, a reasonableness test was conducted for this location.

Barrier Reasonableness Test for SM-4 Receptors 25, 27, 28, 29. A manufactured wall ranging in height of 3.0 to 3.4 m (10 to 11 ft) extending 769.6 m (2,525 ft) in length along the right-of-way was analyzed. Based a cost/receptor in excess of $30,000, as summarized below, the wall is not reasonable and will not be included for further study.

Reasonableness Test Scores for a Manufactured Wall for SM-4 Receptors 25, 27, 28, 29		
Test Parameter		**Score**
Cost per receptor (assumes 6 receptors benefit)	$76,616	0
2030-Build noise level > than 3 dBA above existing		na
Percent of housing preceding project		na
Access control to highway		na
	Total Score	0

8.3 Noise Abatement Analysis for Impacted Receptors along the EC-1 Alternative

Table C.19

NOISE ABATEMENT FEASIBILITY REVIEW: EC-1 ALTERNATIVE

Finalist Alternative	Receptor Number	Horizontal/Vertical Roadway Alignment Shift Feasibility?	Barrier Feasibility Determination				
			Compatible with Topo	Height[2]	Other Noise Sources[3]	Location	Is Barrier Feasible?
EC-1	R-10	No	Yes	No	No	OK	No
EC-1	R-17	No	Yes	Yes	No	OK	Yes
EC-1	R-19	No	Yes	Yes	No	OK	Yes
EC-1	R-39, 40	No	Yes	No	No	OK	No
EC-1	R-42	Yes: shift 15 m (50 ft) west	Yes	No	No	OK	No
EC-1	R-44	No	Yes	No	Yes	OK	No
EC-1	R-45, 46, 47, 51	No	Yes	No	No	OK	No
EC-1	R-55	No	Yes	Yes	No	OK	Yes
EC-1	R-56	No	Yes	Yes	No	OK	Yes

Notes: 1 - Alignment shifted to eliminate noise impact (less than 66 Leq(h) dBA or below significant increase of 15 dBa).
2 - Can the exposed height of a barrier be built 4.9 meters (16 feet) or less?
3 - Other noise sources include other roadways that contribute to noise

Noise barriers for four locations appear to be feasible based upon the current alignment of EC-1, therefore, a reasonableness test was conducted for each of these locations.

Barrier Reasonableness Test for EC-1 Receptor 17. An earthen berm ranging in height of 3.4 to 4.27 m (11 to 14 ft) extending 189.3 m (621 ft) along the right-of-way was analyzed. Based upon the reasonable test summary below, the berm should be included for further study.

Reasonableness Test Scores for an Earthen Berm for EC-1 Receptor 17		
Test Parameter		**Score**
Cost per receptor	$21,000	3
2030-Build noise level > than 3 dBA above existing	17.1 dBA	4
Percent of housing preceding project	> 80%	4
Access control to highway	Full Control	4
	Total Score	15

Barrier Reasonableness Test for Receptor 19. A manufactured wall ranging in height of 3.4 to 4 m (11 to 13 ft) extending 110.3 m (362 ft) in length along the right-of-way was analyzed. Based a cost/receptor in excess of $30,000, as summarized below, the wall is not reasonable and will not be included for further study.

Reasonableness Test Scores for a Manufactured Wall for EC-1 Receptor 19		
Test Parameter		**Score**
Cost per receptor	$74,000	0
2030-Build noise level > than 3 dBA above existing		na
Percent of housing preceding project		na
Access control to highway		na
	Total Score	0

Barrier Reasonableness Test for EC-1 Receptor 55. An earthen berm at a height of 3.7 m (12 ft) extending 132.3 m (434 ft) along the right-of-way was analyzed. Based upon the reasonable test summary below, the berm should be included for further study.

Reasonableness Test Scores for an Earthen Berm for EC-1 Receptor 55		
Test Parameter		**Score**
Cost per receptor	$13,000	4
2030-Build noise level > than 3 dBA above existing	14.8 dBA	4
Percent of housing preceding project	> 80%	4
Access control to highway	Full Control	4
	Total Score	16

Barrier Reasonableness Test for Receptor R-56. An earthen berm at a height of 3.7 m (12 ft) extending 142.6 m (468 ft) along the right-of-way was analyzed. Based upon the reasonable test summary below, the berm should be included for further study.

Reasonableness Test Scores for an Earthen Berm for EC-1 Receptor 56		
Test Parameter		**Score**
Cost per receptor	$13,550	4
2030-Build noise level > than 3 dBA above existing	17.1 dBA	4
Percent of housing preceding project	> 80%	4
Access control to highway	Full Control	4
	Total Score	16

8.4 Noise Abatement Analysis for Impacted Receptors along the EM-1 Alternative

Table C.20

NOISE ABATEMENT FEASIBILITY REVIEW: EM-1 ALTERNATIVE

Finalist Alternative	Receptor Number	Horizontal/Vertical Roadway Alignment Shift Feasibility?[1]	Barrier Feasibility Determination				
			Compatible with Topo	Height[2]	Other Noise Sources[3]	Location	Is Barrier Feasible?
EM-1	R-6, 7, 8	No	Yes	Yes	No	OK	Yes
EM-1	R-17	Yes: shift 91-107 m (300-350 ft) east	Yes	No	No	OK	No
EM-1	R-23, 25	No	Yes	No	No	OK	No
EM-1	R-27	No	Yes	No	No	OK	No
EM-1	R-31	No	Yes	No	No	OK	No
EM-1	R-35, 36	Yes: shift 120 m (400 ft) east	Yes	No	No	OK	No

Notes: 1 - Alignment shifted to eliminate noise impact (less than 66 Leq(h) dBA or below significant increase of 15 dBa).
2 - Can the exposed height of a barrier be built 4.9 meters (16 feet) or less?
3 - Other noise sources include other roadways that contribute to noise

Noise barriers for one locations appears to be feasible based upon the current EM-1 alignment, therefore, a reasonableness test was conducted for this location:

Barrier Reasonableness Test for EM-1 Receptors 6, 7 and 8. A manufactured wall ranging in height of 3.4 to 5.8 m (11 to 19 ft) extending 437.7 m (1,436 ft) in length along the right-of-way was analyzed. Based a cost/receptor in excess of $30,000, as summarized below, the wall is not reasonable and will not be included for further study.

Reasonableness Test Scores for a Manufactured Wall for EM-1Receptors 6, 7 and 8		
Test Parameter		Score
Cost per receptor	$84,200	0
2030-Build noise level > than 3 dBA above existing		na
Percent of housing preceding project		na
Access control to highway		na
	Total Score	0

8.5 Noise Abatement Analysis for Impacted Receptors along the EF-1 Alternative

Table C.21

Noise Abatement Feasibility Review: EF-1 Alternative

Finalist Alternative	Receptor Number	Horizontal/Vertical Roadway Alignment Shift Feasibility?[1]	Barrier Feasibility Determination				
			Compatible with Topo	Height[2]	Other Noise Sources[3]	Location	Is Barrier Feasible?
EF-1	R-2	No	Yes	Yes	No	OK	Yes
EF-1	R-5,6,7, 8,9,10	No	Yes	Yes	No	OK	Yes
EF-1	R-12	Yes: shift 30 m (100 ft) west	Yes	Yes	No	OK	Yes
EF-1	R-13	Yes: shift 7.6-15 m (25-50 ft) west	Yes	Yes	No	OK	Yes
EF-1	R-24, 25	No	Yes	Yes	No	OK	Yes
EF-1	R-30	Yes: shift 61 m (200 ft) east	Yes	No	No	OK	No
EF-1	R-31	Yes: shift 76.2 m (250 ft) east	Yes	No	No	OK	No

Notes: 1 - Alignment shifted to eliminate noise impact (less than 66 Leq(h) dBA or below significant increase of 15 dBa).
2 - Can the exposed height of a barrier be built 4.9 meters (16 feet) or less?
3 - Other noise sources include other roadways that contribute to noise

Noise barriers for five locations appear to be feasible based upon the current alignment of EF-1, therefore, a reasonableness test was conducted for each of these locations:

Barrier Reasonableness Test for EF-1 Receptor 2. A manufactured wall ranging in height of 3.0 to 4.3 m (10 to 14 ft) extending 187.5 m (615 ft) in length along the right-of-way was analyzed. Based a cost/receptor in excess of $30,000, as summarized below, the wall is not reasonable and will not be included for further study.

Reasonableness Test Scores for a Manufactured Wall for EF-1 Receptor 2		
Test Parameter		**Score**
Cost per receptor	$148,840	0
2030-Build noise level > than 3 dBA above existing		na
Percent of housing preceding project		na
Access control to highway		na
	Total Score	0

Barrier Reasonableness Test for EF-1 Receptors 5, 6, 7, 8, 9 and 10. A manufactured wall ranging in height of 2.1 to 2.7 m (7 to 9 ft) extending 860.8 m (2,824 ft) in length along the right-of-way was analyzed. Based a cost/receptor in excess of $30,000, as summarized below, the wall is not reasonable and will not be included for further study.

Reasonableness Test Scores for a Manufactured Wall for EF-1 Receptors 5, 6, 7, 8, 9 and 10		
Test Parameter		**Score**
Cost per receptor	$55,733	0
2030-Build noise level > than 3 dBA above existing		na
Percent of housing preceding project		na
Access control to highway		na
	Total Score	0

Barrier Reasonableness Test for EF-1 Receptor 12. An earthen berm ranging in height of 2.4 to 3.0 (8 to 10 ft) extending 196.9 m (646 ft) along the right-of-way was analyzed. Based upon the reasonable test summary below, the berm should be included for further study.

Reasonableness Test Scores for an Earthen Berm for EF-1 Receptor 12		
Test Parameter		**Score**
Cost per receptor	$12,740	4
2030-Build noise level > than 3 dBA above existing	16.6 dBA	4
Percent of housing preceding project	> 80%	4
Access control to highway	Full Control	4
	Total Score	16

Barrier Reasonableness Test for EF-1 Receptor 13. An earthen berm ranging in height of 3.4 to 4.6 m (11 to 15 ft) extending 147.2 m (483 ft) along the right-of-way was analyzed. Based upon the reasonable test summary below, the berm should be included for further study.

Reasonableness Test Scores for an Earthen Berm for EF-1 Receptor 13		
Test Parameter		**Score**
Cost per receptor	$22,875	3
2030-Build noise level > than 3 dBA above existing	15 dBA	4
Percent of housing preceding project	> 80%	4
Access control to highway	Full Control	4
	Total Score	15

Barrier Reasonableness Test for EF-1 Receptors 24 and 25. An earthen berm ranging in height of 4.0 to 4.9 m (13 to 16 ft) extending 98.5 m (323 ft) along the right-of-way was analyzed. Based upon the reasonable test summary below, the berm should be included for further study.

Reasonableness Test Scores for an Earthen Berm for EF-1 Receptors 24 and 25		
Test Parameter		**Score**
Cost per receptor	$8,100	4
2030-Build noise level > than 3 dBA above existing	23.1 dBA	4
Percent of housing preceding project	> 80%	4
Access control to highway	Full Control	4
	Total Score	16

9.0 CONSTRUCTION NOISE

Construction noise levels are typically a function of the scale of the project, the phase of construction, the condition of the equipment and its operating cycles, and the number of construction equipment units operating simultaneously. There are several measures that can be adopted to reduce construction noise impacts.

- **Constructing the noise barrier early in construction**
  If the recommended noise barrier is publically acceptable, its construction at an early phase could mitigate potential construction-related noise impacts.

- **Community awareness**
  Letting people know when construction noise may occur and the duration helps the public anticipate it and plan their activities accordingly. This information is generally submitted to the local news media.

- **Design considerations**
  This includes designating haul routes that would avoid sensitive areas and constructing permanent and temporary noise barriers.

- **Controlling noise at the source**
  Source control can be accomplished by specifying proper muffler systems and using wheeled equipment instead of tracked equipment whenever possible. Operation of stationary equipment such as air compressors or generator as far away as possible from sensitive receptors will reduce noise impacts and erection of temporary noise barriers are considerations to mitigate noise. Source control provisions can be included in contract documents.

- **Time and activity constraints**
  This includes limiting work hours so activity is not occurring during the hours of sleep or holidays. Exceptions due to weather, schedule, and a time-related phase of the construction work could occur.

10.0 SUMMARY

Traffic noise impacts are predicted to occur under the 2030-Build scenario for the four proposed beltway alignments. The only noise impacts predicted under the No-Build scenario occur at several residences located adjacent to N-2.

Noise mitigation measures determined to be feasible and reasonable include shifting the horizontal roadway alignment and/or installation of noise barriers. For locations where noise abatement is feasible and reasonable, a public information meeting will be held and benefitted property owners will be given an opportunity to vote according to NDOR Noise Policy. Noise abatement will be provided if 75 percent of the benefitted property owners are in favor of the proposed noise abatement device. The preliminary evaluation indicates noise abatement measures should be considered at 13 locations as summarized below. All proposed barriers provide an insertion loss of a least 5 dBA below the predicted level. Roadway alignment shifts will provide a reduction in the predicted traffic noise level increase to less than 15 dBA over existing conditions.

SM-4 Alternative Receptor R-11. Shift horizontal roadway alignment of roadway north approximately 36.6 m (120 ft).

EC-4 Alternative Receptor R-17. Installation of an earthen berm ranging in height from 3.4 to 4.3 m (11 to 14 ft) and a length of 189.3 m (621 ft).

EC-1 Alternative Receptor R-42. Shift horizontal roadway alignment of roadway west approximately 15 m (50 ft).

EC-1 Alternative Receptor R-55. Installation of an earthen berm at a height of 3.7 m (12 ft) and a length of 132.3 m (434 ft).

EC-1 Alternative Receptor R-56. Installation of an earthen berm at a height of 3.7 m (12 ft) and a length of 142.6 m (468 ft).

EM-1 Alternative Receptor R-17. Shift horizontal alignment of roadway 91 to 107 m (300 to 350 ft) east.

EM-1 Alternative R-35, 36. Shift horizontal alignment of roadway 120 m (400 ft) east.

EF-1 Alternative R-12. Installation of an earthen berm at a height ranging from 2.4 to 3.0 m (8 to 10 ft) and a length of 196.9 m (646 ft). Shift horizontal alignment of the roadway 30 m (100 ft) west.

EF-1 Alternative R-13. Installation of an earthen berm ranging in height from 3.4 to 4.6 m (11 to 15 ft) and a length of 147.2 m (483 ft). Shift roadway alignment 7.6 to 9.1 m (25 to 30 ft) west.

EF-1 Alternative R-24, 25. Installation of an earthen berm ranging in height from 4.0 to 4.9 m (13 to 16 ft) and a length of 98.5 m (323 ft).

EF-1 Alternative R-30. Shift roadway alignment 61 m (200 ft) east.

EF-1 Alternative R-31. Shift roadway alignment 76.2 m (250 ft) east.

There are 25 remaining receptors which are impacted, but for which it appears there are no feasible or reasonable noise abatement measures available. These include 4 on SM-4; 9 on EC-1; 5 on EM-1; and 7 on EF-1. Further evaluation of noise abatement measures should be conducted during final roadway design.

11.0 REFERENCES

Highway Traffic Noise Analysis and Abatement, Policy and Guidance, FHWA, June 1995

Noise Analysis and Abatement Policy, Nebraska Department of Roads, May 1998

23 Code of Federal Regulations (CFR) Part 772, 1982.

South and East Beltways Study, Interim Report No. 3. Wilbur Smith Associates. (Revised March) 1999. Lincoln, Nebraska.

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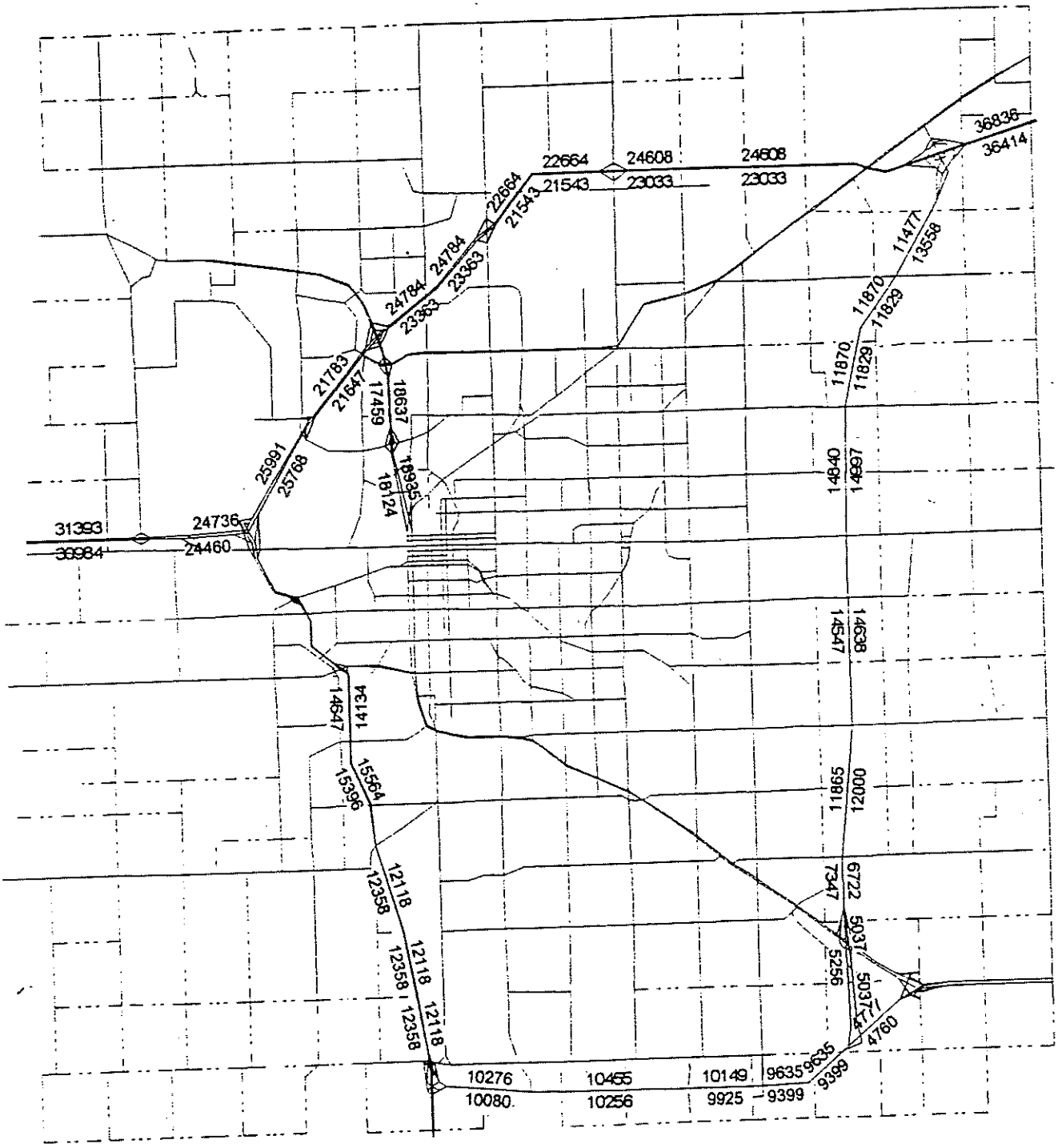
Appendix C-A

2030 Average Daily Traffic Volume

Beltway Alternatives Analysis
Future Network with Beltway South-Mid & East-Close
December 9, 1999



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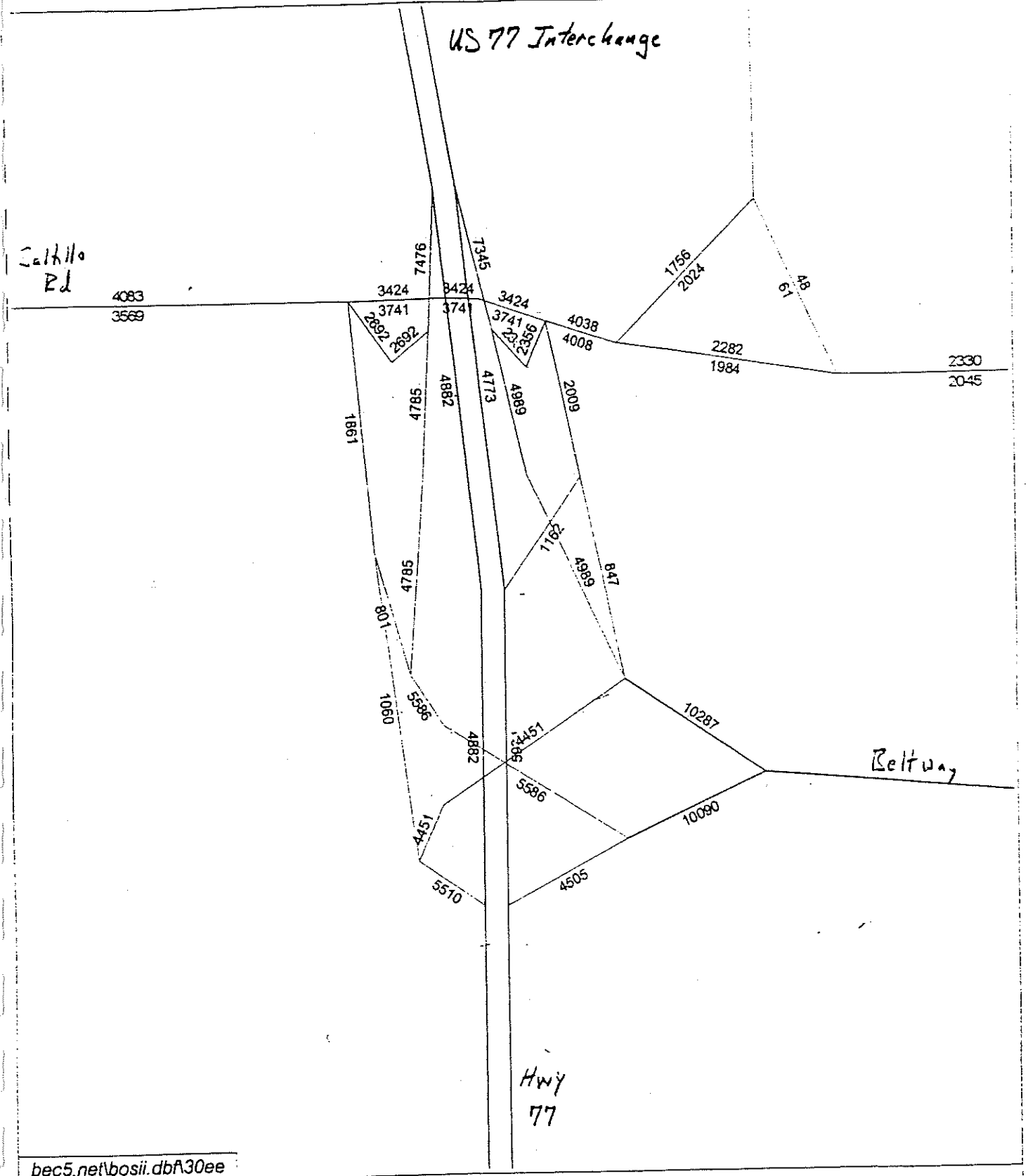
Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

Licensed to Lincoln City-County Planning

Future Network with Beltway South-Mid & East-Close

December 9, 1999



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Average Daily Traffic

External Traffic Projections for Year 2030

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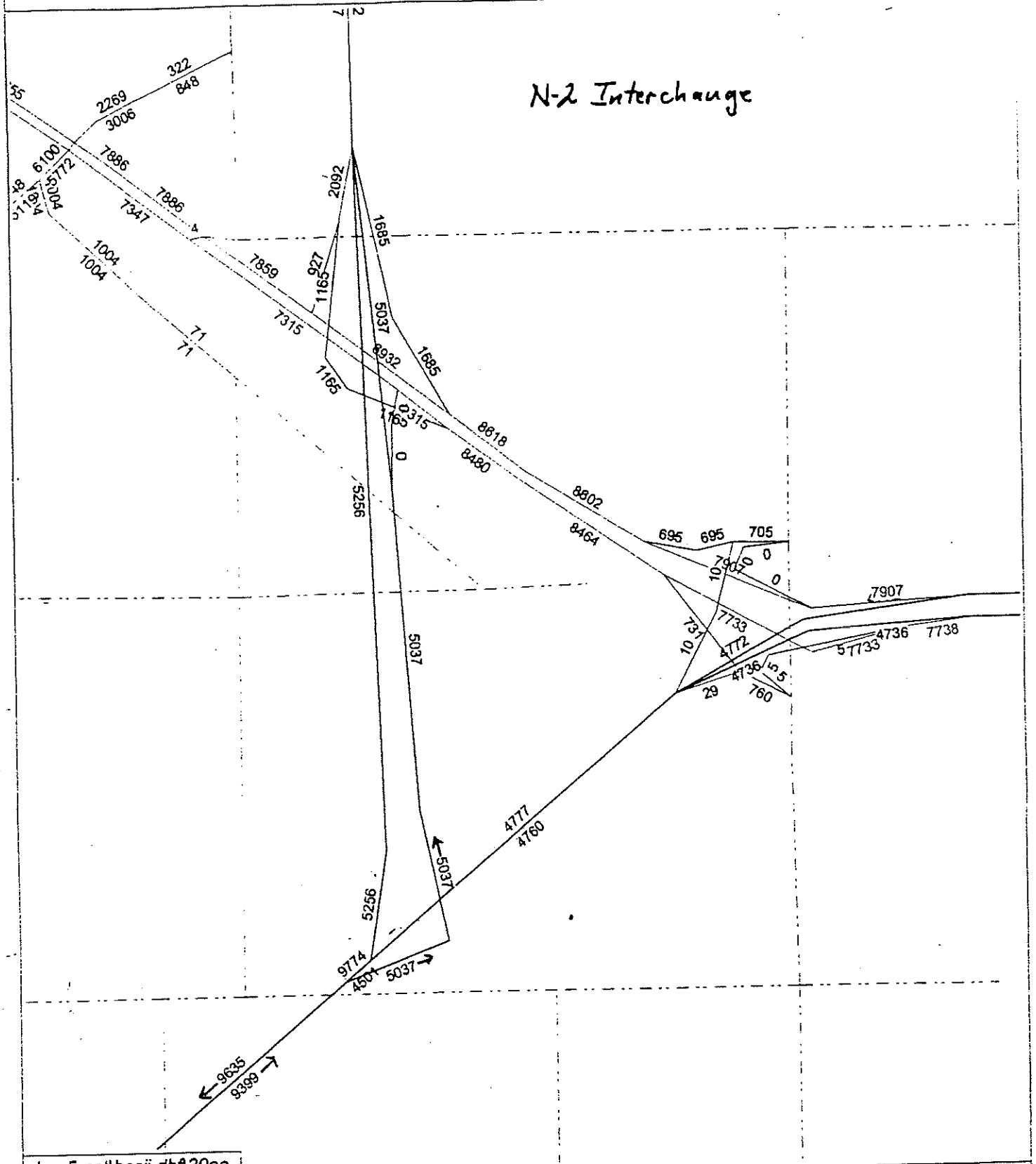
Beltway Alternatives Analysis
Future Network with Beltway South-Mid & East-Close
December 9, 1999



Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

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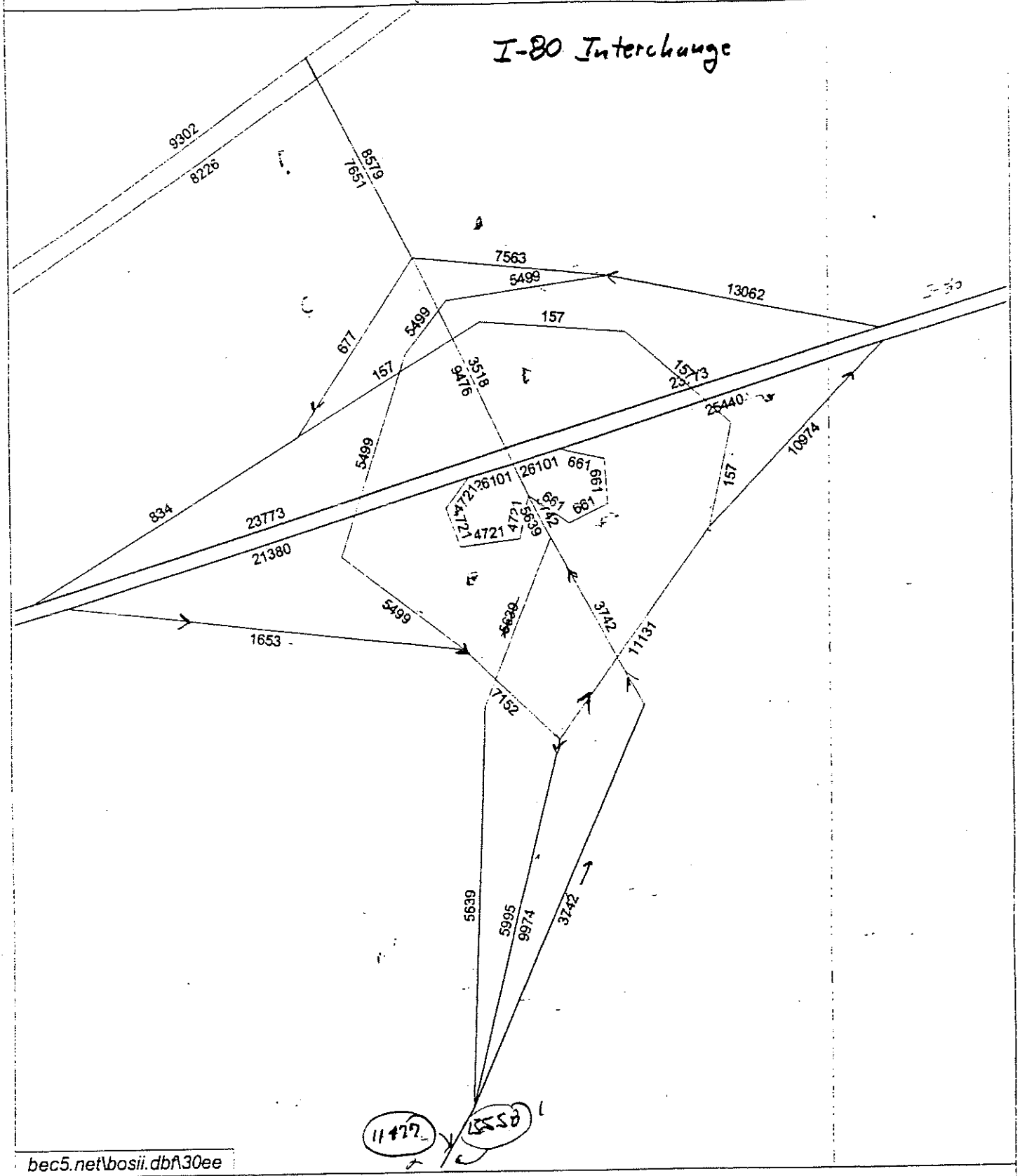
Beltway Alternatives Analysis
Future Network with Beltway South-Mid & East-Close
December 9, 1999



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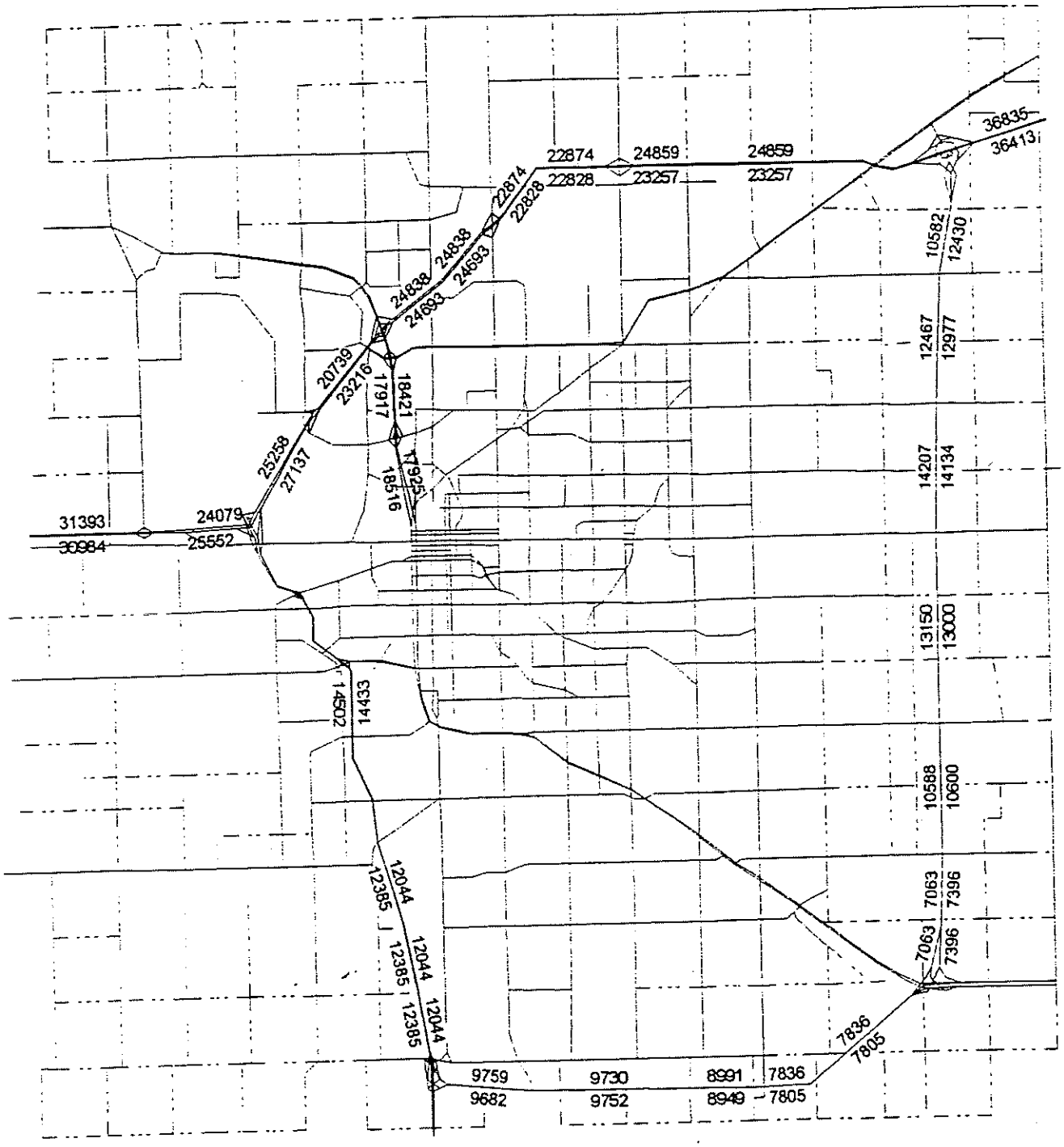
Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

Licensed to Lincoln City-County Planning

Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Mid
December 9, 1999



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Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

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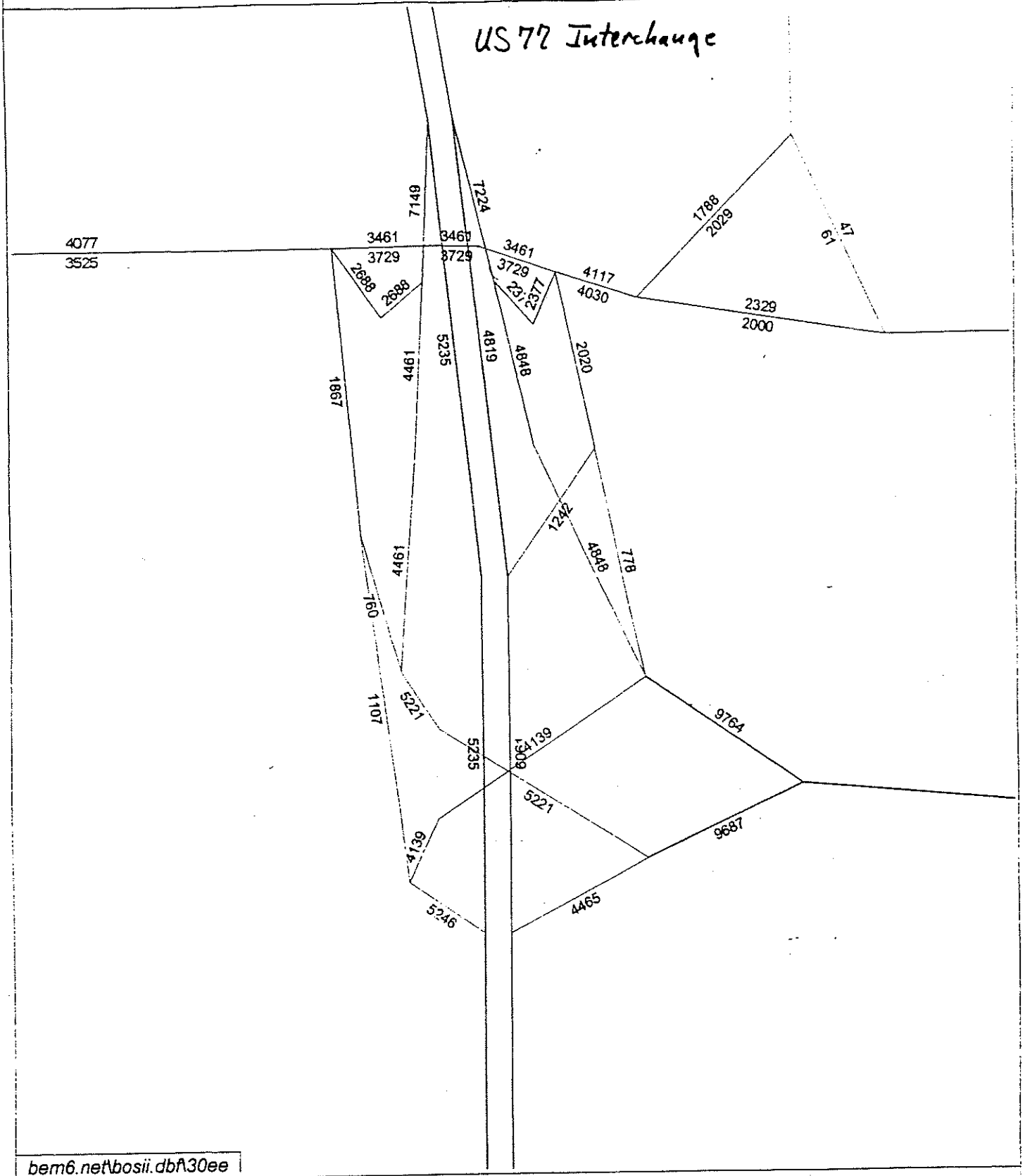
Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Mid
December 9, 1999



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Average Daily Traffic
External Traffic Projections for Year 2030

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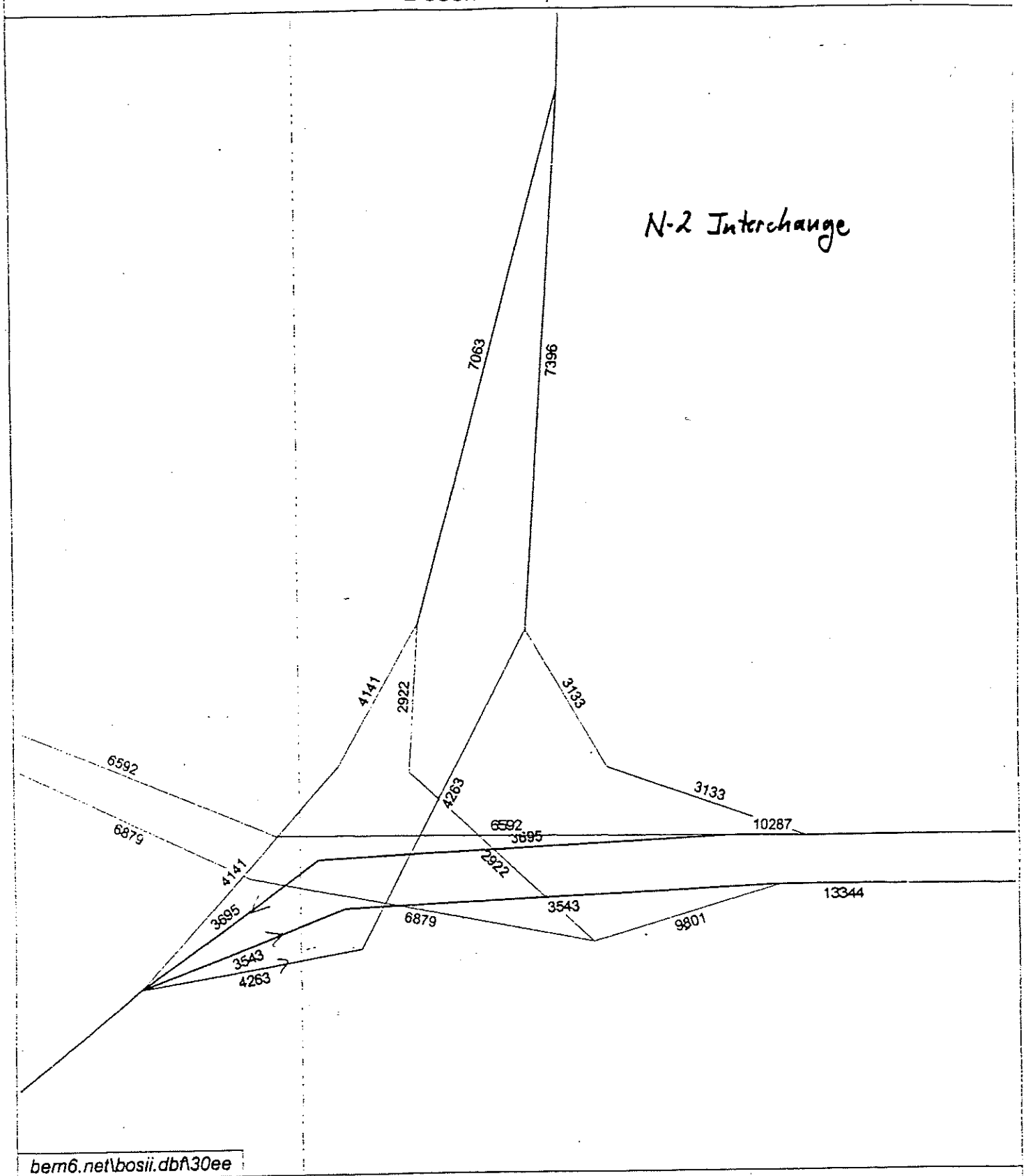
Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Mid
December 9, 1999

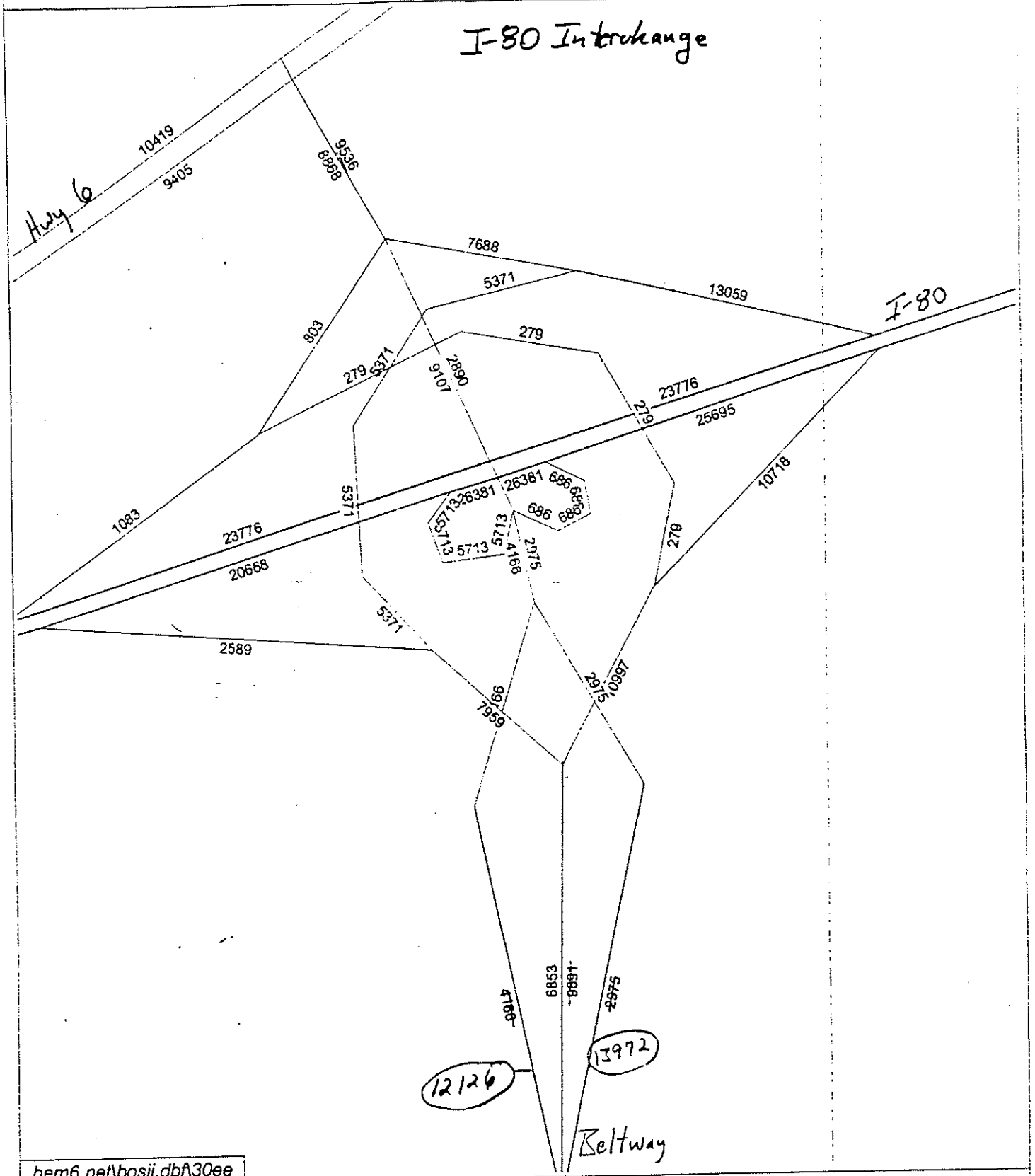


Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

Licensed to Lincoln City-County Planning

Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Mid
December 9, 1999



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Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

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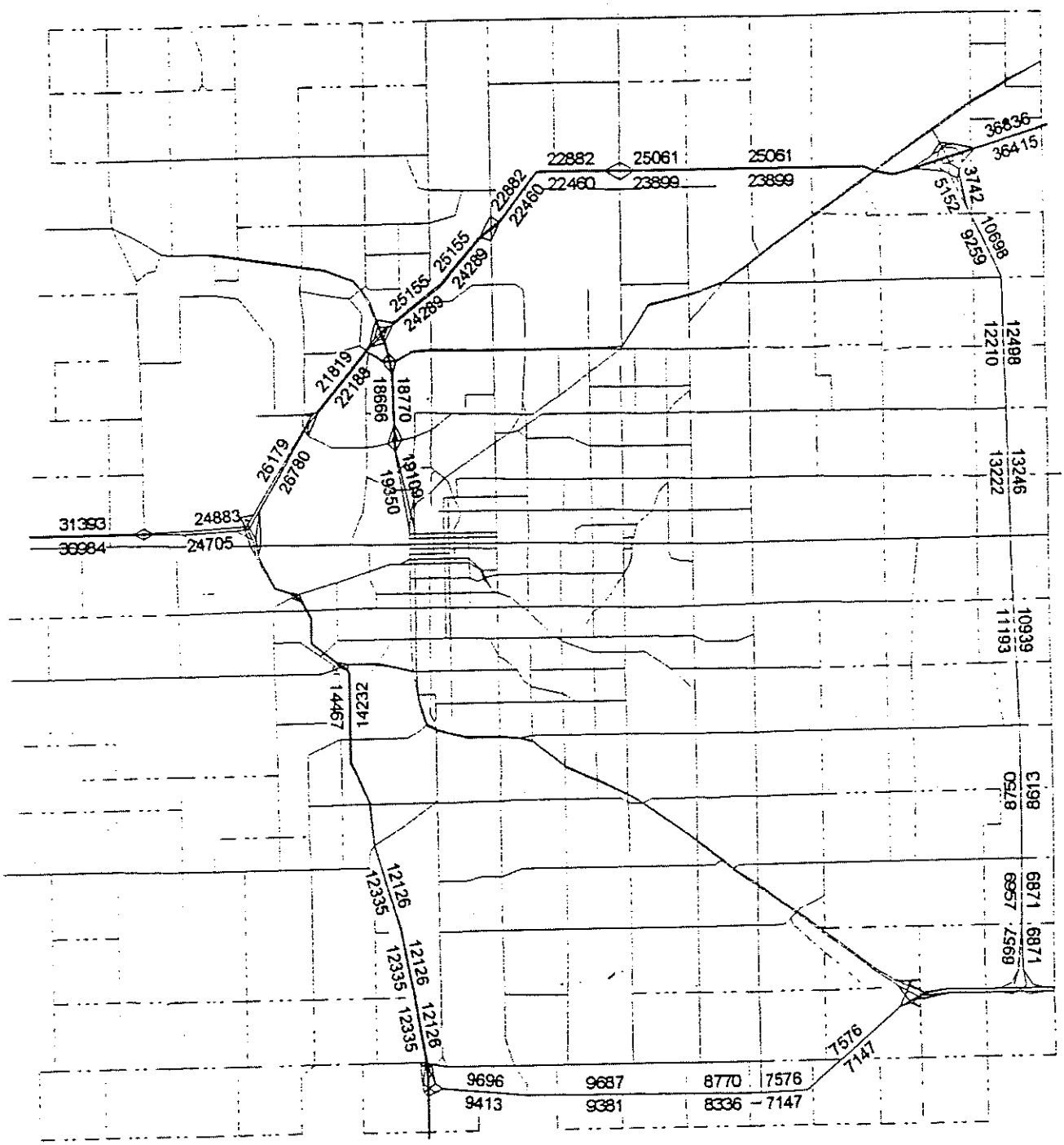
Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Far
December 9, 1999



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Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

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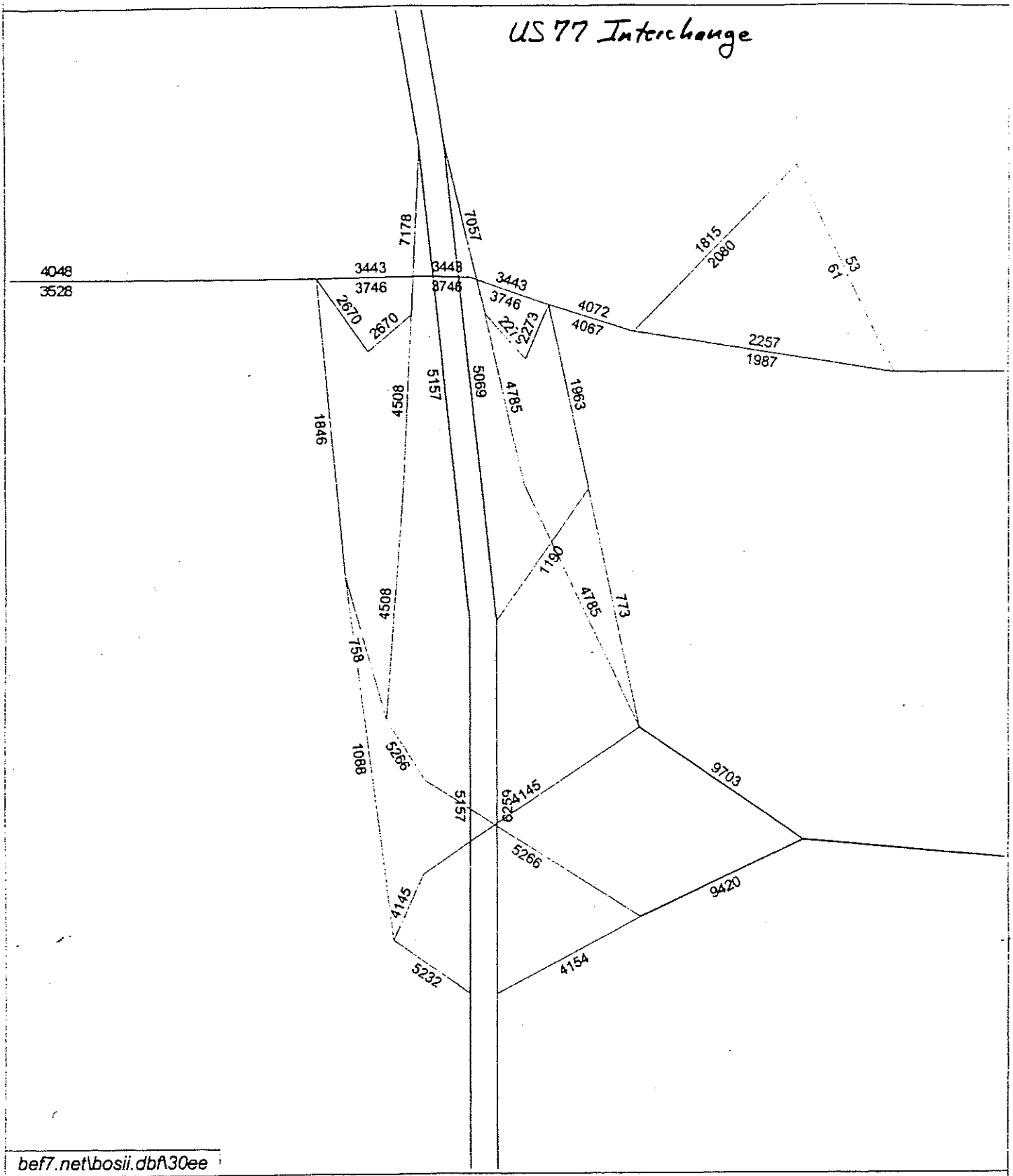
Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Far
December 9, 1999



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Average Daily Traffic
External Traffic Projections for Year 2030

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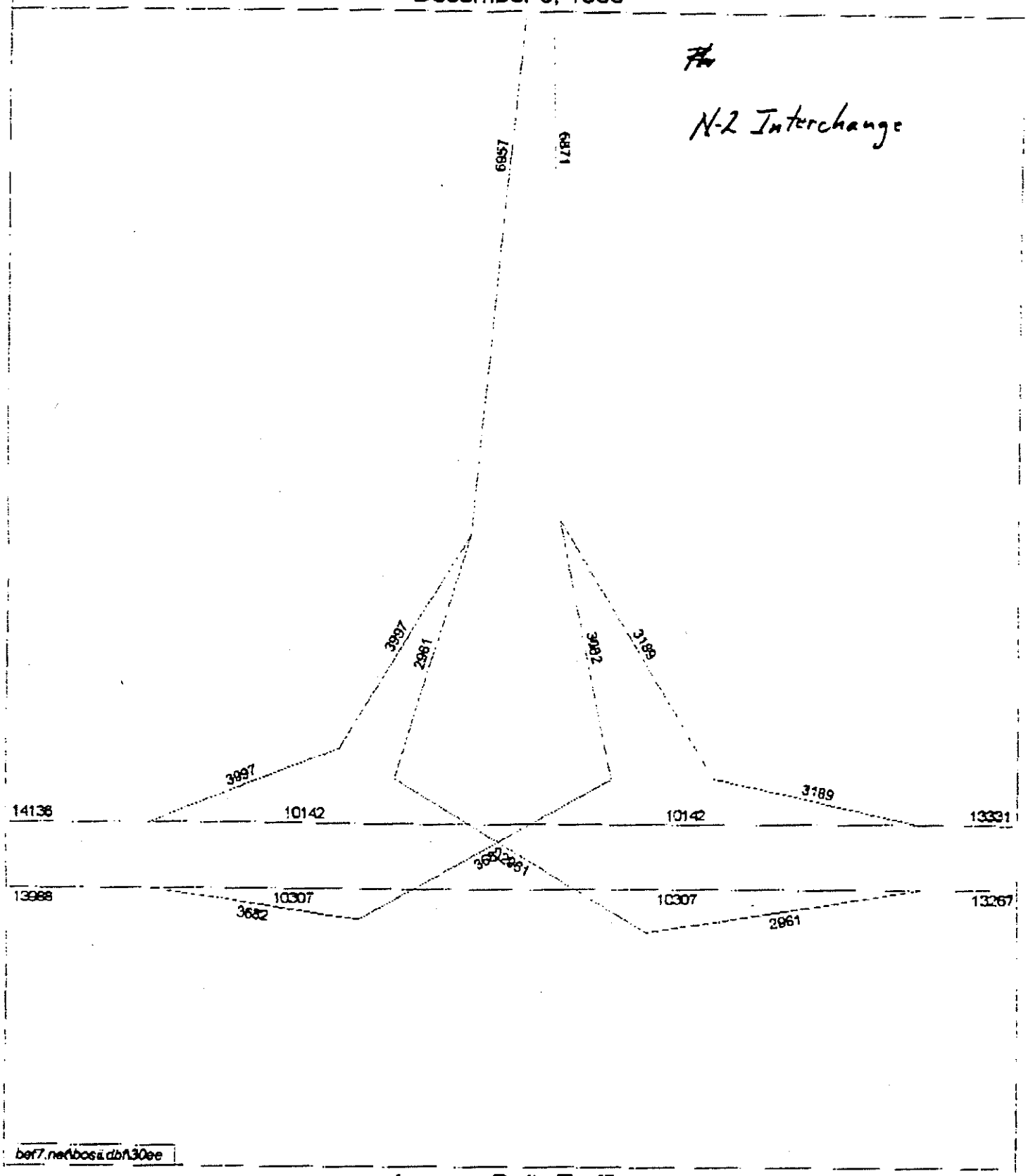

Average Daily Traffic
External Traffic Projections for Year 2030

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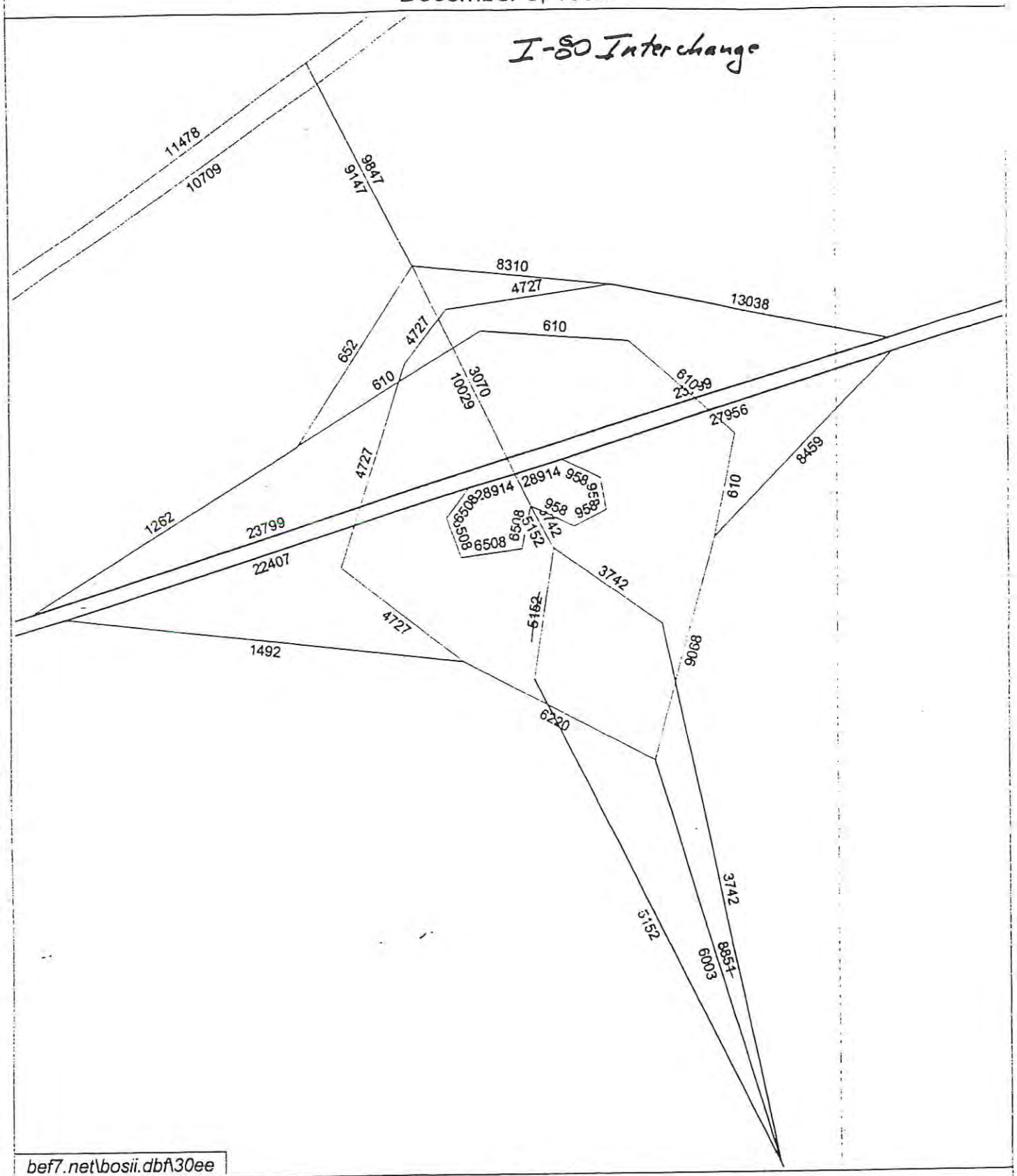
Lincoln Beltway Alternatives
Future Network with Beltway South-Mid & East-Far
December 9, 1999



Average Daily Traffic
External Traffic Projections for Year 2030

Viper Software by The Urban Analysis Group

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Appendix D

WETLAND DELINEATION REPORT

WETLAND DELINEATION REPORT

SOUTH AND EAST BELTWAY
LINCOLN, NEBRASKA

PREPARED FOR

FEDERAL HIGHWAY ADMINISTRATION
NEBRASKA DEPARTMENT OF ROADS
LANCASTER COUNTY
CITY OF LINCOLN

OCTOBER 2000
(REVISED 2/01)

WETLAND DELINEATION REPORT
for
South and East Beltways Study
Lincoln, Nebraska

TABLE OF CONTENTS

		Page
1.0	BACKGROUND	D.3
2.0	REGULATORY FRAMEWORK	D.3
3.0	PROJECT LOCATION	D.4
4.0	REVIEW OF EXISTING RESOURCES	D.4
5.0	FIELD SURVEY	D.6
6.0	FINDINGS OF THE WETLAND DELINEATION	D.6
7.0	IMPACTS OF THE FOUR FINALIST ALTERNATIVES	D.10
8.0	PROPOSED MITIGATION	D.11

Appendices

Appendix D-A	Photolog	D.19
Appendix D-B	Routine Wetland Determination Data Forms	D.25

Tables

Table D.1	Hydric Soils in the Beltway Study Area	D.5
Table D.2	Wetland Types in the Beltway Study Area	D.6
Table D.3	Typical Wetland Types and Common Plant Species in the Beltway Study Area	D.7
Table D.4	Summary of Estimated Wetland Impacts along the Four Finalist Alternatives	D.10
Table D.5	Wetland Locations and Impacts along the Four Finalist Alternatives	D.12

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WETLAND DELINEATION REPORT
for
South and East Beltways Study
Lincoln, Nebraska

1.0 BACKGROUND

The Lincoln South and East Beltways Study is being conducted to evaluate potential transportation improvements for the south and east fringes of the City of Lincoln, Nebraska. The study, initiated in 1995, is being undertaken by the City of Lincoln, Lancaster County, Nebraska Department of Roads and the Federal Highway Administration. Proposed improvements may include the construction of a beltway along the south and/or east fringes of Lincoln.

2.0 REGULATORY FRAMEWORK

Construction of the beltway will require a permit for activities that impact wetlands or other waters of the United States (waters) as regulated by the US Army Corps of Engineers (Corps) Section 404 Permit program. Under Section 404 of the Clean Water Act, any project that requires the placement of dredged or fill material into wetlands or waters must obtain a permit from the Corps prior to initiation of construction. As part of this permit, the project would be reviewed by the Nebraska Department of Environmental Quality for Section 401 Water Quality certification.

The construction of the Beltway will require Individual Section 404 permits due to the length and extensive nature of the project. These permits will cover each segment of the project as it is constructed, including impacts to waters at bridge and culvert locations (even if wetlands are not present).

Due to these requirements, all potential wetlands and waters within the 90 m (300 ft) rights-of-way along the total 83.7 km (52 mi) of the four finalist alternatives, the inside areas of the interchanges, and approximately 0.4 km (0.25 mi) surrounding the interchanges were included in this delineation.

The purpose of the wetland delineation was to determine the nature and extent of any wetlands or waters. The delineation included (A) field surveys of the alternatives (B) photographing existing conditions, (C) marking wetland locations on aerial photography, and (D) documentation of existing conditions. Data collected documents the presence/absence of hydrophytic vegetation, hydric soils, and wetland hydrology for use in establishing Corps jurisdictional requirements. Based on the ground truthing and aerial photo interpretation, wetland boundaries were delineated on Farm Service Agency (FSA) aerial photographs and transferred to City 1997 digital aerial photography.

3.0 PROJECT LOCATION

The four finalist beltway alternatives are located along the south and east edges of the City of Lincoln (see **Figure 2.25** of DEIS). SM-4 begins at US 77, 0.8 km (0.5 mi) south of Saltillo Road and extends 12.9 km (8 mi) west to the approximate intersection of Nebraska Highway 2 (N-2) and 120th Street. EC-1 begins near the approximate intersection of the SM-4 and 105th Street, and extends north generally along the half section line to Havelock Road, where it turns northeast and intersects Interstate 80 (I-80) approximately 0.8 km (0.5 mi) east of the US Highway 6 (US 6) interchange. EM-1 begins near the approximate intersection of N-2 and 127th Street, and extends generally along the half section line north to I-80 approximately 0.8 km (0.5 mi) east of the US 6 interchange. EF-1 begins near the approximate intersection of N-2 and 141st Street and extends north generally along the half section line to Fletcher Road, where it turns to the northwest for 3.2 km (2 mi) and intersects I-80 0.8 km (0.5 mi) east of the US 6 interchange.

4.0 REVIEW OF EXISTING RESOURCES

Several published resources were reviewed as part of the wetland evaluation, including:

1. U.S. Geological Survey (USGS) Topographic 7.5-Minute Maps, Bennett, Roca, Walton and Waverly Quadrangles

2. USDA Natural Resources Conservation Service (NRCS, formerly Soil Conservation Service) Soil Survey for Lancaster County (1980)

3. NRCS Hydric Soils List for Lancaster County, Nebraska (1998)

4. US Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) Maps, Bennett, Roca, Walton and Waverly Quadrangles

5. Farm Services Agency (FSA) land classification maps for Lancaster County (1980 photography)

6. Interagency Resource Categorization of Nebraska's Eastern Saline Wetlands Map, Roca and Waverly Quadrangles (Gilbert and Stutheit, 1994)

7. City of Lincoln 1997 Digital Aerial Photographs of Lancaster County

Topography. The four alternatives cross gently rolling hills and flood plains with elevations ranging from a low of 344.4 m (1130 ft) mean sea level (msl.) near the north end of the east alternatives to a high of 442.0 m (1450 ft) msl near the intersection of SM-4 and EM-1. One of the primary drainage features is Salt Creek which crosses SM-4 east of 25th Street. Another is Stevens Creek which parallels the three east alternatives. It crosses EC-1 south of Adams Street, and EM-1 south of O Street and north of Yankee Hill Road. Other less prominent drainage features include tributaries to Little Nemaha River.

Soils. The Lancaster County list of hydric soils and the Lancaster County Soil Survey list several soils that are considered hydric or that contain hydric inclusions. **Table D.1** provides a list of the hydric soils occurring along the four alternatives.

Table D.1

HYDRIC SOILS IN THE BELTWAY STUDY AREA

HYDRIC SOIL NAME	PORTION CONSIDERED HYDRIC	LOCATION
Colo silty clay loam	Soils with a seasonal high water table as inclusions	Lower areas
Colo-Nodaway silt loam	Colo part	NA
Kennebec silt loam	Colo soils as inclusions	Lower areas
Nodaway silt loam	Colo soils as inclusions	Lower areas and old stream channels
Nodaway silt loam, channelled	Colo soils and soils that pond as inclusions	Lower areas and old stream channels
Zook silt loam	Soils with a seasonal high water table as inclusions	Lower areas
Zook silty clay loam	Soil with a seasonal high water table as inclusions	Lower areas

It should be noted that not every portion of these soil units are considered hydric. It should also be noted that soils not classified as hydric or as not containing hydric inclusions, may contain hydric inclusions. The wetlands identified during the field survey were generally located on areas mapped as having hydric soils.

Wetlands. Based on the NWI and the field surveys, there are numerous wetlands, streams and ponds along the four finalist alternatives. Wetlands generally occur along Salt Creek and its tributaries, Stevens Creek and its tributaries, and tributaries to the Little Nemaha River, as well as in isolated depressions (natural and excavated) throughout the study area. Some of these tributaries are devoid of wetland vegetation, and only meet the criteria to be classified as waters. Some of the impounded tributaries are deep enough and do not support rooted vegetation and are therefore classified as ponds, or deepwater habitats. Based on field observations, wetlands along the alternatives were classified into several types based on vegetation type, water regime and location in the landscape (**Table D.2**).

Table D.2

WETLAND TYPES IN THE BELTWAY STUDY AREA

WETLAND TYPE	GENERAL LOCATION
Riverine Wetlands	Within high banks of main channels of Salt Creek, Stevens Creek and larger tributary channels
Forested Drainage Wetlands	Above high banks of larger tributaries and across channels of smaller tributaries
Scrub-shrub Drainage Wetlands	Fringe areas of Forested Wetlands and smaller tributaries
Emergent Drainage Wetlands	Smaller tributaries
Impounded Drainage Wetlands	Behind impoundments on tributaries and fringe areas of ponds
Isolated Wetlands	Depressions, both natural and excavated
Farmed Wetlands	Depressions in farm fields

5.0 FIELD SURVEY

OES staff conducted wetland field surveys during July and August 1999. Data collected was used to document the presence of wetland hydrology, hydric soils, and hydrophytic vegetation according to guidelines established by the U.S. Army Corps of Engineers and described in the 1987 Wetland Delineation Manual. Wetlands were classified according to Cowardin, *et al.* (1979).

Each site was assigned a number according to its position along the four alternatives. EM-5, for example, indicates the a site along the east mid alignment. S-19 would indicate a site along the south alignment. The wetland and stream crossing locations are shown in the **Exhibits** to the DEIS. Photographs of the wetlands were taken to document observed conditions at all wetland locations. Photographs of selected locations are included in the Photolog **(Appendix D-A)** to illustrate the wetland types in the study area. Routine Wetland Determination Data Forms were completed for each of the sites investigated **(Appendix D-B)**.

Of the approximately 116 sites investigated, six sites were assessed solely using aerial photographs and maps (S-1, S-4A, S-5, S-5A, EF-3A and EF-21). These properties were not surveyed on foot for one or more of the following reasons: permission was denied, the landowners could not be contacted, or the site was difficult to access. Where possible, public roads were used to validate map observations. If the final alternative affects any of these sites, they will be reinvestigated during final design.

6.0 FINDINGS OF THE WETLAND DELINEATION

Several types of wetlands occur along the four finalist alternatives. **Table D.3** provides a list of each wetland type and the common plant species associated with them.

Table D.3

TYPICAL WETLAND TYPES AND COMMON PLANT SPECIES IN THE BELTWAY STUDY AREA

WETLAND TYPE	COMMON NAME	SCIENTIFIC NAME
Riverine	Reed canarygrass	*Phalaris arundinacea*
	Stinging nettle	*Urtica dioica*
Forested Drainage	Cottonwood	*Populus deltoides*
	Peach-leaf willow	*Salix amygdaloides*
	Sandbar willow	*Salix exigua*
	Elderberry	*Sambucus canadensis*
	Reed canarygrass	*Phalaris arundinacea*
	Prairie cordgrass	*Spartina pectinata*
Scrub-Shrub Drainage	Cottonwood (saplings)	*Populus deltoides*
	Peach-leaf willow (saplings)	*Salix amygdaloides*
	Elderberry	*Sambucus canadensis*
	Green ash (saplings)	*Fraxinus pennsylvanica*
Emergent Drainage	Narrowleaf cattail	*Typha angustifolia*
	Broadleaf cattail	*Typha latifolia*
	Reed canarygrass	*Phalaris arundinacea*
	Prairie cordgrass	*Spartina pectinata*
	Curly dock	*Rumex crispus*
	Smartweeds	*Polygonum spp.*
	Sedges	*Carex spp.*
	Softstem bulrush	*Scirpus validus*
	Hardstem bulrush	*Scirpus acutus*
	Green bulrush	*Scirpus atrovirens*
	Spikerushes	*Eleocharis spp*
	Indian hemp dogbane	*Apocynum cannabinum*
	Barnyard grass	*Echinochloa crusgalli*
	Torrey's rush	*Juncus torreyi*
	Toad rush	*Juncus bufonius*
	Giant foxtail	*Setaria faberi*
	Wild bergamot	*Monarda fistulosa*
Impounded Drainage	Cottonwood	*Populus deltoides*
	Peach-leaf willow	*Salix amygdaloides*
	Sedges	*Carex spp.*
	Arrowhead	*Sagittaria cuneàta*
	Reed canarygrass	*Phalaris arundinacea*
	Rushes	*Juncus spp.*
	Prairie cordgrass	*Spartina pectinata*
	Narrowleaf cattail	*Typha angustifolia*
	Broadleaf cattail	*Typha latifolia*

WETLAND TYPE	COMMON NAME	SCIENTIFIC NAME
Isolated	Reed canarygrass	*Phalaris arundinacea*
	Prairie cordgrass	*Spartina pectinata*
	Switchgrass	*Panicum virgatum*
	Green bulrush	*Scirpus atrovirens*
	Narrowleaf cattail	*Typha angustifolia*
	Broadleaf cattail	*Typha latifolia*
	Marshpepper smartweed	*Polygonum hydropiper*
	Pennsylvania smartweed	*Polygonum pennsylvanicum*
	Lady's Thumb	*Polygonum lapathifolium*
	Curly dock	*Rumex crispus*
	Foxtail barley	*Hordeum jubatum*
	Kentucky bluegrass	*Poa pratensis*
	Scouring rush	*Equisetum hyemale*
	Arrowhead	*Sagittaria cuneàta*
	Sedges	*Carex spp.*
	Spikerushes	*Eleocharis spp.*
	False pimpernel	*Lindernia dubia*
	Ditch stonecrop	*Penthorum sedoides*
	Bugleweed	*Lycopus americanus*

Riverine Wetlands. Riverine wetlands occur within the main channel and larger tributary channels of Salt Creek and Stevens Creek. They are confined within the high banks of the channels and are typically devoid of vegetation from scouring flows. In general, riverine wetlands are not jurisdictional wetlands under the Corps 404 regulatory program. However, these areas are jurisdictional waters and are regulated as rivers and streams.

Salt Creek is classified as R2UBG (riverine lower perennial unconsolidated bottom intermittently exposed wetlands). Stevens Creek is classified in various locations as R4SBF (riverine intermittent streambed semi-permanently flooded wetlands), R4SBC (riverine intermittent streambed seasonally flooded wetlands), and R4SBA (riverine intermittent streambed temporarily flooded wetlands). Some tributaries observed during the field survey are classified as R4SBA and R4SBJ (riverine intermittent streambed intermittently flooded wetlands).

Forested Drainage Wetlands. Forested drainage wetlands occur along many drainages along the four alternatives. These wetlands occur above the high banks of the larger channels and across the drainage of the smaller channels. These areas are classified as PFOA (palustrine forested temporarily flooded wetlands) and PFOAx (palustrine forested temporarily flooded excavated wetlands). Dominant species within these wetlands include cottonwood, peachleaf willow, sand bar willow, elderberry, reed canarygrass and prairie cordgrass.

Scrub-Shrub Drainage Wetlands. Scrub-shrub drainage wetlands occur along the smaller drainages and along the edge of forested drainage wetlands. Included in this category are those wetlands classified as PSSA (palustrine scrub-shrub temporarily flooded wetlands). These wetlands tend to be dominated by willow, cottonwood and green ash saplings and elderberry.

Some of these wetlands have been created through excavation or have been excavated to improve drainage. These wetlands are jurisdictional under the Corps regulatory program as described in the 1995 "Ditch" Regulatory Guidance Letter. This guidance states that excavated wetlands that carry a pre-existing waterway or that are constructed on a hydric soil and continue to be influenced by groundwater are jurisdictional. Some occurrences of this type of wetland are along the Burlington Northern Santa Fe and Union Pacific railroad tracks near Salt Creek along SM-4, along the Mo-Pac Trail near Walton along EC-1, and in the vicinity of the proposed I-80 interchange.

Emergent Drainage Wetlands. Emergent drainage wetlands occur within the tributaries to Salt Creek, Stevens Creek, and Little Nemaha River. These wetlands are classified as PEMA (palustrine emergent temporarily flooded wetlands), PEMC (palustrine emergent seasonally flooded wetlands) and PEMF (palustrine emergent semi-permanently flooded wetlands). Dominant species include narrowleaf cattail, broadleaf cattail, reed canarygrass, prairie cordgrass, curly dock, smartweed, sedges, rushes, green bulrush and spikerush.

Some of these wetlands have also been created by excavation or modified to improve drainage. Once again, if the wetland carries a previously existing waterway, or was constructed on hydric soils, and is presently ditched or excavated, it remains jurisdictional under the Corps regulatory program.

Impounded Drainage Wetlands. Impounded drainage wetlands occur along many of the tributaries to Salt Creek, Stevens Creek and Little Nemaha River. They were generally created as farm ponds or shallow impoundments. Some of the impoundments have been breached and now only maintain shallow water depths. These are classified as PEMCh (palustrine emergent seasonally flooded impounded wetlands) and PEM2Fh (palustrine emergent non-persistent permanently flooded impounded wetlands). Others continue to retain water at greater depth and are devoid of rooted emergent vegetation. These deepwater habitats are not generally jurisdictional under the Corps 404 regulatory program and are classified as PUBFh (palustrine unconsolidated bottom semi-permanently flooded impounded wetlands). The emergent impounded wetlands are generally dominated by narrowleaf cattail, broadleaf cattail, arrowhead, reed canarygrass, prairie cordgrass, sedges and rushes. Some of the deepwater wetlands have a vegetated shelf several feet wide surrounding them with similar plant species, while others are devoid of any vegetated margin.

Isolated Wetlands Isolated wetlands occur in isolated depressions and excavations along the four alternatives. These wetlands are classified as PEMA and PEMC. Dominant species in these wetlands include prairie cordgrass, switchgrass, curly dock, marsh pepper smartweed, Pennsylvania smartweed, Lady's Thumb, reed canarygrass, narrowleaf cattail, broadleaf cattail, green bulrush, and arrowhead.

Saline Wetlands. The interagency study team (Gilbert and Stutheit, 1994) mapped only a small number of Category IV freshwater wetlands occurring on non-saline soils in the vicinity of the I-80 interchange. No saline wetlands, or freshwater wetlands occurring on saline soils, were mapped along the four alternatives. The closest saline wetlands occur about 1.6 km (1.0 mi) west of the proposed I-80 interchange near the intersection of North 98th Street and Cornhusker Highway.

Farmed Wetlands. The Farm Service Agency (FSA) Land Classification maps indicate one farmed wetland along the East Mid alignment near "A" Street. Farmed wetlands are considered jurisdictional under the Corps 404 regulatory program if they have not been drained. This wetland did not appear to be drained or ditched and was dominated by sedges and spikerush. Therefore, this wetland would be considered jurisdictional.

Another type of farmed wetlands occurs in upland terraces created for erosion control and terrace farming. If these areas are not farmed for 5 years, and they exhibit wetland characteristics they become jurisdictional. One terrace wetland was identified during the field survey along the EM-1alternative was located in a field that had been enrolled in CRP for over five years. This wetland therefore, is jurisdictional.

7.0 IMPACTS OF THE PROPOSED ALTERNATIVES

Most of the wetlands and waterways identified during the field surveys will be impacted by various configurations of the four alternatives. The impacts include actual Beltway crossings, interchanges, bridges, exit and entrance-ramps and access roads. **Table D.4** provides a summary of the estimated wetland impacts for the four finalist alternatives. **Table D.5** provides more detail about each of the identified wetlands and waterways, and indicates whether they are considered jurisdictional under the Corps 404 regulatory program, their classification based on field observations, and the alternatives that will impact them. Each site is referenced in **Table D.5** by Section, Township and Range for greater ease in locating them. Those classifications in the table that have an (NWI) next to them indicate the sites that were assessed from aerial photography and maps. The classification for these sites is from the NWI.

Table D.4

SUMMARY OF ESTIMATED WETLAND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

WETLAND IMPACTS	ALTERNATIVE			
	SM-4	EC-1	EM-1	EF-1
Number of Wetlands	19	33	17	22
Wetland Impacts - hectares (acres)	7.3 (18.0)	16.9 (41.8)	8.8 (21.8)	8.3 (20.4)

8.0 PROPOSED MITIGATION

Mitigation has been proposed to replace the wetlands at a minimum ratio of 1:1 replacement-to-loss. Wetland mitigation sites may be located along the proposed project route at feasible sites, or may be located in the City of Lincoln's Wetland Mitigation Bank, currently under development.

C:\My Documents\Beltway\DEIS\wetland.201.wpd
11Feb01

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
2-8-6	S-1	Yes	Yes	PFOA (NWI)	Forested Drainage	Yes	No	No	No
1-8-6	S-2	Yes	No	R4SBC	Stream	Yes	No	No	No
	S-3	Yes	Yes	PEMCh	Impounded Drainage	Yes	No	No	No
	S-4	Yes	No	R2UBG	Salt Creek	Yes	No	No	No
6-8-7	S-4A	Yes	Yes	PFOAx (NWI)	Railroad Ditches	Yes	No	No	No
	S-5	Yes	Yes	PSSAx (NWI)	Scrub-Shrub Drainage	Yes	No	No	No
	S-5A	Yes	Yes	PEMCx, PFOAx (NWI)	Railroad Ditches	Yes	No	No	No
	S-6	Yes	No	R4SBA	Stream	Yes	No	No	No
5-8-7	S-7	Yes	Yes	PEMA	Emergent Drainage	Yes	No	No	No
4-8-7	S-8	Yes	Yes	PEMA	Emergent Drainage	Yes	No	No	No
	S-9	Yes	Yes	PEMA	Isolated Emergent	Yes	No	No	No
	S-10	Yes	Yes	PFOA	Forested Drainage	Yes	No	No	No
	S-11	Yes	Yes	PEMA	Emergent Drainage	Yes	No	No	No
	S-12	Yes	Yes	PEMC	Emergent Drainage	Yes	No	No	No
3-8-7	S-13	Yes	No	R4SBA	Stream	Yes	No	No	No
2-8-7	S-14	Yes	No/Yes	PUBFh/PEMF	Impounded Drainage w/ Emergent Margin	Yes	No	No	No
	S-15	Yes	Yes	PEMA	Emergent Drainage	Yes	No	No	No

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
	S-16	Yes	No	R4SBJ	Stream	Yes	No	No	No
	S-17	Yes	No	R4SBJ	Stream	Yes	No	No	No
	S-18	Yes	No	R4SBJ	Stream	Yes	No	No	No
	S-19	Yes	Yes	PEMA	Emergent Drainage	Yes	No	No	No
1-8-7	S-20	Yes	Yes	PFOA	Forested Drainage	Yes	No	No	No
36-9-7	S-21	Yes	Yes	PEMA	Emergent Drainage	No	Yes	No	No
	S-22	Yes	Yes	PEMA	Emergent Drainage	Yes	Yes	No	No
	S-23	Yes	Yes	PFOA	Forested Drainage	Yes	No	No	No
31-11-8	EC-1	Yes	No	R4SBC	Stream	No	Yes	No	No
12-10-7	EC-2	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	Yes	No	No
13-10-7	EC-3	Yes	Yes	PEMC	Emergent Drainage	No	Yes	No	No
	EC-4	Yes	No	R4SBF	Stevens Creek	No	Yes	No	No
	EC-5	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	Yes	No	No
24-10-7	EC-6	Yes	Yes	PEMA	Emergent Drainage	No	Yes	No	No
	EC-7	Yes	Yes	PFOA	Forested Drainage	No	Yes	No	No
	EC-7A	Yes	No	R4SBC	Stream	No	Yes	No	No

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
25-10-7	EC-8	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	Yes	No	No
	EC-9	Yes	Yes	PFOA	Forested Drainage	No	Yes	No	No
36-10-7	EC-10	Yes	Yes	PFOA	Forested Drainage	No	Yes	No	No
	EC-11	Yes	No	PUBFh	Impounded Drainage (no emergent margin)	No	Yes	No	No
	EC-12	Yes	No	R4SBC	Stream	No	Yes	No	No
	EC-13	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	Yes	No	No
1-9-7	EC-14	Yes	Yes	PEMA	Emergent Drainage	No	Yes	No	No
12-9-7	EC-15	Yes	Yes	PFOA	Forested Drainage	No	Yes	No	No
	EC-16	Yes	No	R4SBA	Stream	No	Yes	No	No
	EC-16A	Yes	Yes	PEMA	Emergent Drainage	No	Yes	No	No
	EC-17	Yes	Yes	PEMC	Isolated Emergent	No	Yes	No	No
	EC-18	Yes	Yes	PFOA	Forested Drainage	No	Yes	No	No
13-9-7	EC-18A	Yes	Yes	PFOA	Forested Drainage	No	Yes	No	No
	EC-19	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	Yes	No	No
	EC-20	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	Yes	No	No

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
24-9-7	EC-21	Yes	No	R4SBA	Stream	No	Yes	No	No
	EC-22	Yes	Yes	PEMC	Emergent Drainage	No	Yes	No	No
	EC-23	Yes	Yes	PEMA/PEMC	Emergent Drainage	No	Yes	No	No
25-9-7	EC-24	Yes	Yes	PEMC	Emergent Drainage	No	Yes	No	No
	EC-25	Yes	Yes	PFOA (NWI)	Forested Drainage	No	Yes	No	No
	EC-26	Yes	Yes	PEMC	Emergent Drainage	No	Yes	No	No
	EC-27	Yes	Yes	PEMC	Emergent Drainage	Yes	Yes	No	No
36-9-7	EC-28	Yes	Yes	PFOA	Forested Drainage	Yes	Yes	No	No
	EC-29	Yes	Yes	PFOA	Forested Drainage	Yes	Yes	No	No
	EC-30	Yes	Yes	PEMC	Emergent Drainage	Yes	Yes	No	No
	EC-31	Yes	Yes	PSSA/PEMA	Scrub-Shrub and Emergent Drainage	Yes	Yes	No	No
5-10-8	EM-1	Yes	Yes	PEMAx	Emergent Drainage	No	No	Yes	No
	EM-2	Yes	Yes	PFOA	Forested Drainage	No	No	Yes	No
8-10-8	EM-3	Yes	Yes	PFOA	Forested Drainage	No	No	Yes	No
17-10-8	EM-4	Yes	No	R4SBC	Stream	No	No	Yes	No
20-10-8	EM-5	Yes	Yes	PFOA	Forested Drainage	No	No	Yes	No
29-10-8	EM-6	Yes	No	R4SBF	Stevens Creek	No	No	Yes	No

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
	EM-7	Yes	Yes	PEMA	NRCS Designated Farmed Wetland	No	No	Yes	No
	EM-7A	Yes	Yes	PEMA	Isolated Emergent	No	No	Yes	No
32-10-8	EM-8	Yes	Yes	PEMA	Isolated Emergent	No	No	Yes	No
	EM-9	Yes	Yes	PEMA	Isolated Emergent	No	No	Yes	No
5-9-8	EM-10	Yes	No	R4SBC	Stream	No	No	Yes	No
8-9-8	EM-11	Yes	Yes	PEMA	Isolated Emergent (Terraced)	No	No	Yes	No
	EM-12	Yes	No	R4SBA	Stream	No	No	Yes	No
17-9-8	EM-13	Yes	Yes	PEMC/PEMA	Emergent Drainage	No	No	Yes	No
	EM-14	Yes	Yes	PEMC	Emergent Drainage	No	No	Yes	No
	EM-15	Yes	Yes	PEMA	Emergent Drainage	No	No	Yes	No
20-9-8	EM-16	Yes	No	R4SBC	Stream	No	No	Yes	No
	EM-17	Yes	Yes	PEMA	Emergent Drainage	No	No	Yes	No
	EM-18	Yes	No	R4SBC	Stream	No	No	Yes	No
	EM-19	Yes	No	R4SBC	Stream	No	No	Yes	No
29-9-8	EM-20	Yes	Yes	PEMA/PFOA	Forested and Emergent Drainage	No	No	Yes	No
	EM-21	Yes	Yes	PFOA	Forested Drainage	No	No	Yes	No
	EM-22	Yes	Yes	PEMC	Emergent Drainage	No	No	Yes	No

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
29-9-8	EM-23	Yes	Yes	PFOA	Forested Drainage	No	No	Yes	No
	EM-24	Yes	No	R4SBA	Stream	No	No	Yes	No
	EM-25	Yes	Yes	PEM2F	Impounded Emergent	No	No	Yes	No
32-11-8	EF-1	Yes	Yes	PEMA	Emergent Drainage	No	No	No	Yes
33-11-8	EF-2	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	No	No	Yes
4-10-8	EF-3	Yes	Yes	PEMA	Emergent Drainage	No	No	No	Yes
9-10-8	EF-3A	Yes	Yes	PFOA (NWI)	Forested Drainage	No	No	No	Yes
	EF-4	Yes	No	R4SBA	Stream	No	No	No	Yes
16-10-8	EF-5	Yes	Yes	PEMA	Emergent Drainage	No	No	No	Yes
	EF-6	Yes	Yes	PEMA	Emergent Drainage	No	No	No	Yes
21-10-8	EF-7	Yes	Yes	PFOA	Forested Drainage	No	No	No	Yes
28-10-8	EF-8	Yes	No	R4SBC	Stream	No	No	No	Yes
33-10-8	EF-9	Yes	Yes	PFOA/PEMA	Forested and Emergent Drainage	No	No	No	Yes
	EF-10	Yes	No	R4SBC	Stream	No	No	No	Yes
4-9-8	EF-11	Yes	No	R4SBC	Stream	No	No	No	Yes
	EF-12	Yes	Yes	PFOA	Forested Drainage	No	No	No	Yes
	EF-13	Yes	No	R4SBC	Stream	No	No	No	Yes

Table D.5

WETLAND LOCATIONS AND IMPACTS ALONG THE FOUR FINALIST ALTERNATIVES

Location (Section-Township-Range)	Site No.	Waters of the United States	Wetland	Wetland Classification	Comments	Beltway Alternative			
						SM-4	EC-1	EM-1	EF-1
	EF-14	Yes	No	R4SBC	Stream	No	No	No	Yes
	EF-15	Yes	No	R4SBA	Stream	No	No	No	Yes
9-9-8	EF-16	Yes	Yes	PEMA	Emergent Drainage	No	No	No	Yes
	EF-17	Yes	Yes	PEMC	Emergent Drainage	No	No	No	Yes
	EF-18	Yes	Yes	PFOA	Forested Drainage	No	No	No	Yes
	EF-19	Yes	Yes	PFOA	Forested Drainage	No	No	No	Yes
21-9-8	EF-20	Yes	Yes	PEMC	Emergent Drainage	No	No	No	Yes
28-9-8	EF-21	Yes	?	PEMA?	Emergent Drainage?	No	No	No	Yes
	EF-22	Yes	Yes	PFOA	Forested Drainage	No	No	No	Yes
	EF-23	Yes	Yes	PEMC	Emergent Drainage	No	No	No	Yes
	EF-24	Yes	Yes	PFOA	Forested Drainage	No	No	No	Yes
	EF-25	Yes	No	PUBFh	Impounded Drainage (no emergent margin)	No	No	No	Yes
20-11-8	INT-1	Yes	Yes	PSSAx	Scrub-Shrub Drainage	No	Yes	Yes	Yes
29-11-8	INT-2	Yes	Yes	PEMAx	Emergent Drainage				
	INT-3	Yes	Yes	PEMA	Several impounded emergent wetland surrounding INT-4	No	Yes	Yes	Yes
	INT-4	Yes	No	PUBFh	Impounded Drainage	No	Yes	Yes	Yes
	INT-5	Yes	No	R4SBA	Stream	No	No	Yes	No

APPENDIX D-A
Photolog

Photo 1: Example of a Riverine Wetland. Shown is site EC-4, Stevens Creek, with a riparian corridor of walnut and maple trees with smooth brome and nettles.

Photo 2: Example of a Riverine Wetland. Shown is site EF-8, a stream with a riparian corridor consisting mainly of smooth brome and cottonwoods.

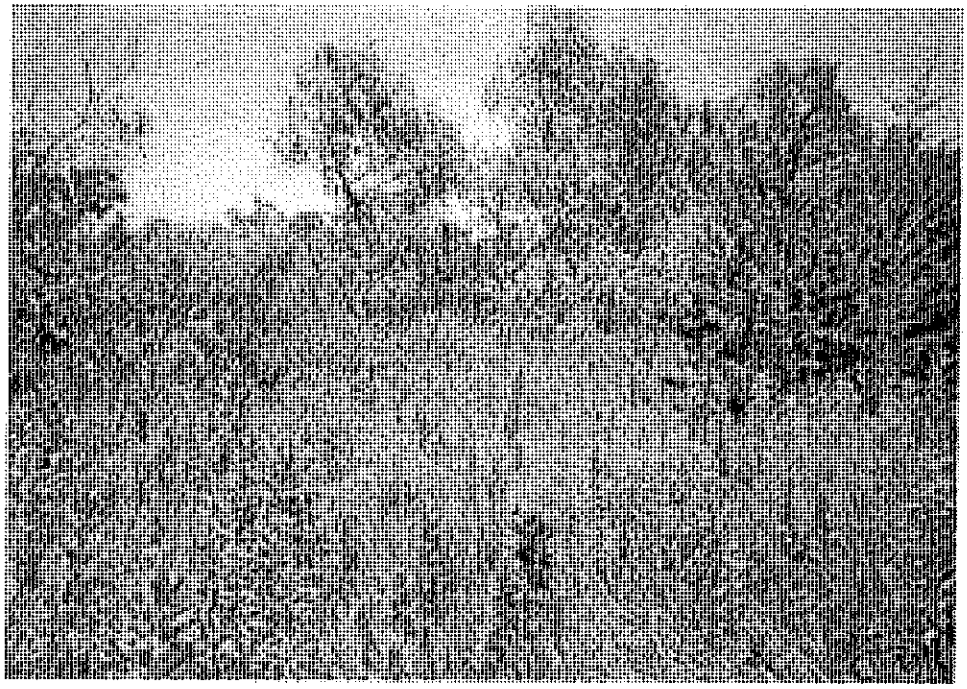

Photo 3: Example of a Forested Drainage Wetland. Shown is site S-23, dominated by peach-leaf willows and reed canarygrass.

Photo 4: Example of a Scrub-Shrub Drainage Wetland. Shown is EC-31 (on left of photo). Dominant vegetation includes elderberry and willow, cottonwood and green ash saplings.

Photo 5: Example of an Emergent Drainage Wetland. Shown is site S-11, a PEMA wetland dominated by cattails and reed canarygrass.

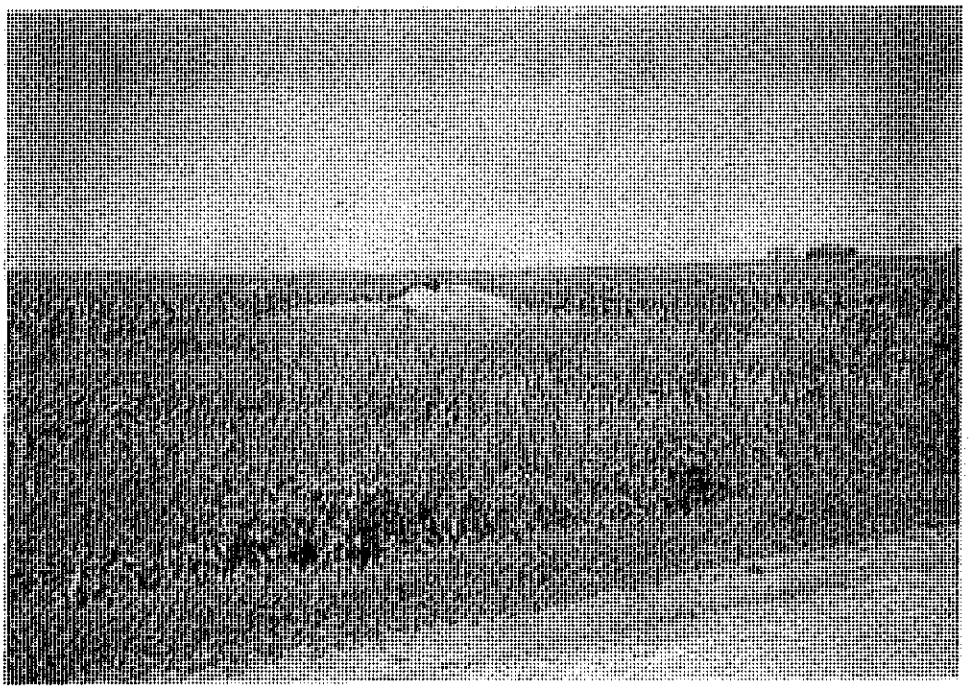

Photo 6: Example of an Emergent Drainage Wetland. Shown is site S-22, a PEMA wetland dominated by reed canarygrass.

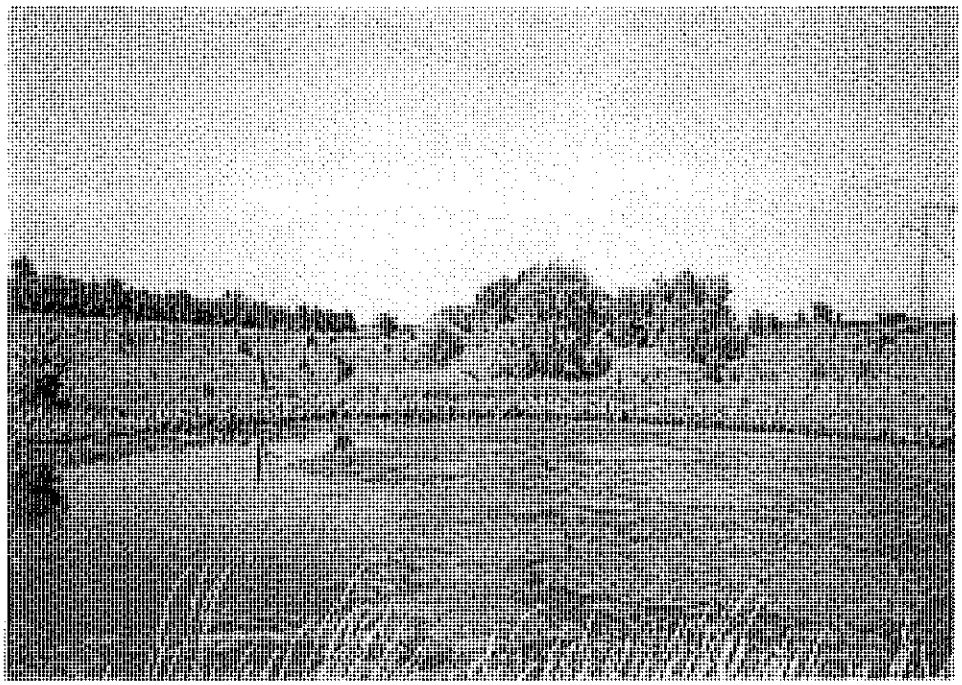

Photo 7: Example of an Impounded Drainage Wetland. Shown is site S-14, a PUBFh wetland with an emergent margin of common arrowhead.

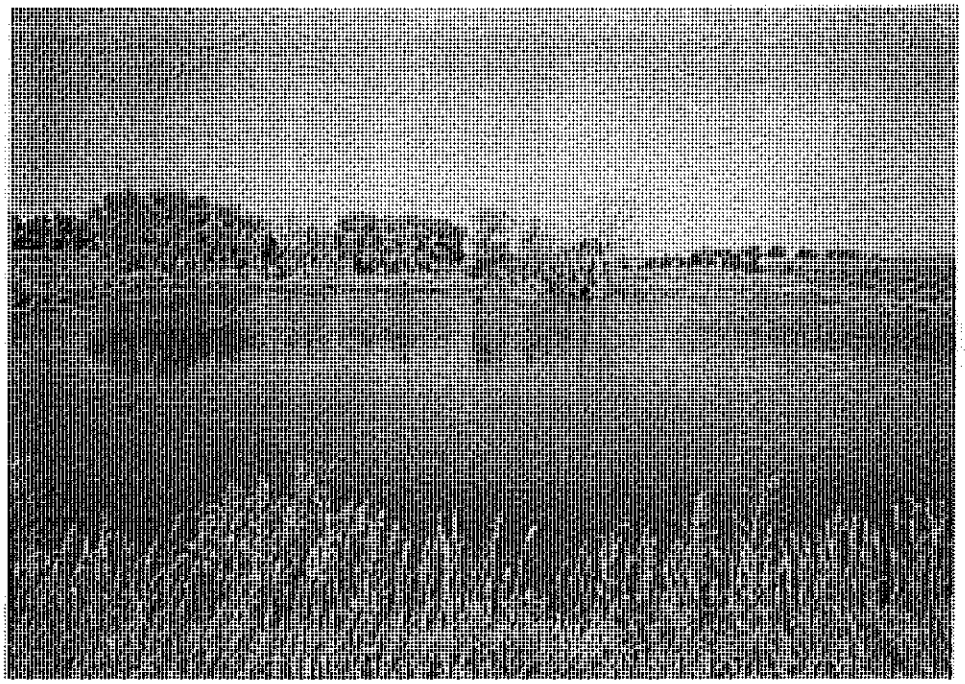

Photo 8: Example of an Impounded Drainage Wetland. Shown is site EF-25, a PUBFh wetland with little-to-no emergent margin.

Photo 9: Example of an Isolated Wetland. Shown is site EM-17, a PEMC isolated wetland dominated by cattails, Torrey's rush, soft rush, foxtail barley, American bugleweed, and green bulrush.

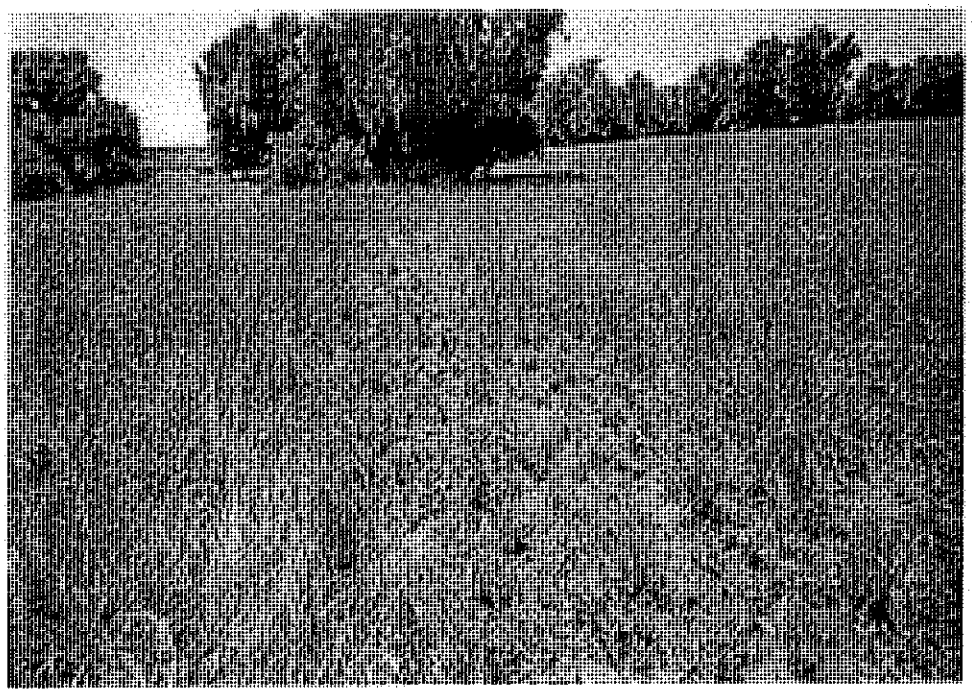

Photo 10: Example of a Farmed Wetland. Shown is site EM-11, a terraced PEMA wetland dominated by smartweed and foxtail barley.

APPENDIX D-B

Routine Wetland Determination Data Forms

SAMPLE DATA FORM IS PROVIDED.
FULL APPENDIX PROVIDED SEPARATELY TO US ARMY CORPS OF ENGINEERS.
DATA AVAILABLE ON REQUEST.

SAMPLE DATA FORM

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: *Lincoln South and East Beltways*	Date: *7-6-99*
Applicant/Owner *Bernheise*	County: *Lancaster*
Investigator: *Craig Mielke, Scott Dicke*	State: *NE*
Do Normal Circumstances exist on this (Yes) No	Community ID: *PEMC*
Is the site significantly disturbed (Atypical) Yes (No)	Transect ID: *Sec 4-8-7*
Is the area a potential Problem Area? Yes (No)	Plot ID: *S-12*
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Phalaris arundinacea*	*H*	*FACW*	9.		
2. *Salix amygdaloides*	*T*	*FACW*	10.		
3. *Scirpus atrovirens*	*H*	*OBL*	11.		
4. *Eleocharis spp*	*H*	*fac-obl*	12.		
5. *Scirpus validus*	*H*	*OBL*	13.		
6. *Spartina pectinata*	*H*	*FACW*	14.		
7. *Typha angustifolia*	*H*	*OBL*	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-) ? *100%*

Remarks: *7 of 7 = 100%*

HYDROLOGY

x Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- *x* Aerial Photographs
- ____ Other
- ____ No Recorded Data Available

Field Observations:

Depth of Surface Water: ---- (In.

Depth of Free Water in Pit: --- (In.

Depth of Saturated Soil: *3"* (In.

Wetland Hydrology Indicators:

Primary Indicators:
- ____ Inundated
- *x* Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more Required):
- *X* Oxidized Root Channels in upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- *x* FAC-Neutral Test
- Other (Explain in Remarks)

Remarks: *FSA aerial photo and 1997 City of Lincoln aerial photo both shows "wet signature"*

FAC Neutral Test (assume that Eleocharis is FAC in this case) 6 of 6 are wetter than FAC (passes test)

SOILS

Map Unit Name

(Series and Phase): *WtD3* Drainage *moderately well*

Field Observations

Taxonomy (Subgroup): Confirm Mapped Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Structure, etc.
0-18"	*A*	*N 2.5/*			

Hydric Soil
- ____ Histosol
- ____ Histic Epipedon
- ____ Sulfidic Odor
- ____ Aquic Moisture Regime
- *X* Reducing Conditions
- *x* Gleyed or Low-Chroma
- ____ Concretions
- ____ High Organic Content in Surface Layer in
- ____ Organic Streaking in Sandy Soils
- ____ Listed on Local Hydric Soils List
- ____ Listed on National Hydric Soils List
- ____ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No	
Wetland Hydrology Present? (Yes) No	Is this sampling point a wetland? (Yes) No
Hydric Soils Present? (Yes) No	

Remarks:

Approved by HQUSACE 3/92

Appendix E
SECTION 106 CONSULTATION

SECTION 106 CONSULTATION
for
South and East Beltways Study
Lincoln, Nebraska

TABLE OF CONTENTS

	Page
Memorandum of Agreement between FHWA, ACHP and SHPO (5/02)	E-2
SHPO Concurrence on Additional Acreage for Stevens Creek Stock Farm (1/30/02)	E-7
SHPO Concurrence on revised *Defining Boundaries of NRHP-Eligible Properties* and *Preliminary Draft Environmental Statement* (2/1/02)	E-9
SHPO Concurrence and Comments on *Defining Boundaries of NRHP-Eligible Properties*, *Assessment of Adverse Effects to NRHP and NRHP-Eligible Sites*, and *Preliminary Draft Environmental Impact Statement and 4(f) Statement* (11/27/00)	E-10
SHPO Concurrence on No Adverse Effect with Conditions for NRHP-Eligible Site LC00: E-118 (Road Sign at 112th and Adams) (10/5/00)	E-12
SHPO Concurrence on Final Archeological Report (6/2/00)	E-13
SHPO Concurrence on List of NRHP and NRHP-Eligible Sites (10/7/99)	E-14
SHPO Concurrence on Hulda Otto House, John Guenzel Farmstead and Henry Wunibald Farmstead (9/8/99)	E-16
SHPO Request for Information on Hulda Otto House (2/17/99)	E-17
SHPO Concurrence on NRHP Eligible Archeological Sites and Request for Further Testing (12/7/98)	E-18
Letter from City of Lincoln to SHPO regarding Section 106 Consultation (9/17/98)	E-20
SHPO Letter regarding Revised Survey Report for Standing Structures (7/31/98)	E-21
SHPO Concurrence and Comments on Revised Survey Report for Standing Structures (6/11/98)	E-22
SHPO Concurrence on Archeological Survey Report for SM-4 (6/3/98)	E-23
SHPO Letter regarding Draft Survey Report for Standing Structures (2.19/98)	E-24
SHPO Letter regarding Draft Interim Report No. 3 (7/22/97)	E-27
SHPO Letter regarding Section 106 Consultation Protocol (6/10/97)	E-29
SHPO Letter regarding Required Information for Section 106 Consultation (4/23/96)	E-31

MEMORANDUM OF AGREEMENT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND THE NEBRASKA STATE HISTORIC PRESERVATION OFFICER REGARDING THE LINCOLN SOUTH AND EAST BELTWAY PROJECT

WHEREAS, the Federal Highway Administration, Nebraska Divisions (FHWA) has determined that the Lincoln South and East Beltway Project (undertaking) may have an adverse effect on historic properties which are listed in or eligible for the National Register of Historic Places, and has consulted with the Nebraska State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. Section 470f); and

WHEREAS, FHWA has chosen the proposed SM-4/EM-1 alignment for the South and East Beltways, which generally is located 0.5 miles south of Saltillo Road and 0.5 miles east of 120th Street in Lancaster County, Nebraska, as its preferred alternative pursuant to analysis under the National Environmental Policy Act; and

WHEREAS, FHWA has consulted with the City of Lincoln, the Nebraska Department of Roads (NDOR), and the National Trust for Historic Preservation (NTHP) regarding the effects of the undertaking on historic properties and has invited them to sign this MOA as concurring parties; and

WHEREAS, in accordance with 36 CFR Section 800.6(a)(1), FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination with specified documentation and the ACHP chose to participate in the consultation pursuant to 36 CFR Section 800.6(a)(1)(iii);

NOW, THEREFORE, FHWA, ACHP and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

FHWA shall ensure that the following measures are carried out:

I. STEVE JOHNSON FARMYARD (LC00:E-52)

A. Prior to the implementation of the undertaking, NDOR, in consultation with the SHPO, shall design a landscape site plan to screen the view of the beltway from the farmyard, and shall ensure that the area is landscaped in accordance with the approved plan. The plan shall consist at a minimum of a screen, large shrub, or hedge planting along the west side of the farmyard, extending north from Yankee

Hill Road to the north end of the corral. This is anticipated to consist of one row (hedge) of lilacs or similar large shrub. Further refinement of plant types and spacing will be addressed in the plan as part of the final design.

B. In order to implement the landscape site plan, NDOR shall obtain an easement or agreement with the property owners of the Steve Johnson Farmyard or adjacent property owners to the west.

C. Prior to the implementation of the undertaking, should an event such as a fire, storm, other natural disaster or similar occurrence, render the Steve Johnson Farmyard no longer eligible for the National Register of Historic Places, the parties to this MOA shall consult to determine if the MOA should be amended or terminated in accordance with Stipulation VIII or IX herein.

II. **HENRY WUNIBALD FARMYARD (LC00:S-143)**

A. Prior to the implementation of the undertaking, NDOR, in consultation with the SHPO, shall design a landscape site plan to screen the view of the beltway from the farmyard, and shall ensure that the area is landscaped in accordance with the approved plan. The plan shall consist at a minimum of a windbreak planting along the north and west sides of the farmyard in the general area of the original windbreak. This may include up to three rows: shrubs, cedar trees, and possibly deciduous trees such as cottonwoods. Further refinement of plant types and spacing will be addressed in the plan as part of the final design.

B. In order to implement the landscape site plan, NDOR shall obtain an easement or agreement with the property owners of the Henry Wunibald Farmyard or adjacent property owners to the west.

C. Prior to the implementation of the undertaking, should an event such as a fire, storm, other natural disaster, or similar occurrence, render the Henry Wunibald Farmyard no longer eligible for the National Register of Historic Places, the parties to this MOA shall consult to determine if the MOA should be amended or terminated in accordance with Stipulation VIII or IX herein.

III. **EASEMENTS.** In order to address the potential cumulative effects on historic properties in the Area of Potential Effect for the Lincoln South and East Beltway Project, the National Trust for Historic Preservation and other consulting parties agree to assist owners of such historic properties who may be interested in donating historic preservation or conservation easements. Such assistance may include conducting workshops on easements, providing information on potential easement-holding organizations in the local area, and serving as a resource for technical assistance in developing easement documents.

IV. **DURATION.** This agreement will be null and void if its terms are not carried out within ten (10) years from the date of its execution. Prior to such time, FHWA may consult with the other

signatories to reconsider the terms of the agreement and amend in accordance with Stipulation VIII below.

V. **POST REVIEW DISCOVERIES.** If historic properties are discovered or unanticipated effects on historic properties are found during project construction, the FHWA shall comply with Section 800.13(b) of ACHP's regulations.

VI. **MONITORING AND REPORTING.** No later than May 1st each year following the execution of this agreement until the terms in stipulations I-III are carried out or the MOA is terminated, FHWA shall provide all parties to this agreement a written summary report detailing work undertaken pursuant to its terms. If no activities have been carried out pursuant to this MOA, the report shall so indicate. If implementation of the undertaking has begun, such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in FHWA's efforts to carry out the terms of this agreement. Failure to provide such summary report may be considered noncompliance with the terms of this MOA pursuant to Stipulation VIII, below.

VII. **DISPUTE RESOLUTION.** Should the FHWA, Council or SHPO object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with the objecting party(ies) to resolve the objection. If FHWA determines, within 30 days, that such objection(s) cannot be resolved, FHWA will:

A. Forward all documentation relevant to the dispute to the ACHP. Upon receipt of adequate documentation, the ACHP shall review and advise FHWA on the resolution of the objection within 30 days. Any comment provided by the ACHP, and all comments from the parties to the MOA, will be taken into account by FHWA in reaching a final decision regarding the dispute.

B. If the ACHP does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, FHWA may render a decision regarding the dispute without needing to wait any further for the ACHP to comment. In reaching its decision, FHWA will take into account all comments regarding the dispute from the parties to the MOA.

C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. FHWA will notify all parties of its decision in writing before implementing that portion of the undertaking subject to dispute under this stipulation. FHWA's decision will be final.

VIII. **AMENDMENTS AND NONCOMPLIANCE.** If FHWA, ACHP, or the SHPO determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall provide a written explanation for such a determination to all signatories and immediately consult with the other signatories to develop an amendment to this MOA. The amendment will be effective on the date a copy is signed by FHWA, ACHP, and the SHPO. If FHWA, ACHP, and the SHPO cannot agree to appropriate terms to amend the MOA, any one of

these parties unilaterally may terminate the agreement in accordance with Stipulation IX, below.

IX. **TERMINATION.** If an MOA is not amended following the consultation set out in Stipulation VIII., it may be terminated unilaterally by FHWA, ACHP or the SHPO. In the case of termination, FHWA either will initiate consultation to execute an MOA with the signatories under 36 CFR §800.6(c)(1) or request the comments of the ACHP under 36 CFR §800.7(a) and proceed accordingly. Within 30 days following termination FHWA will notify the signatories as to which of these two compliance courses it will pursue.

Execution of this Memorandum of Agreement by FHWA, SHPO, and ACHP, and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

SIGNATORIES:

Federal Highway Administration, Nebraska Division

_____ Date 4/26/02

Nebraska State Historic Preservation Officer

_____ Date 4/23/02

Advisory Council on Historic Preservation

_____ Date 5/8/02

CONCURRING PARTIES:

Nebraska Department of Roads

_____ Date April 22, 2002

City of Lincoln

____Date 4-22-2002

National Trust for Historic Preservation

___Date 5-24-2002

t

JAN 3 1 2002 cc - Sand, Blotsky

100 Centennial Mall North, Room 220
Lincoln, NE 68508-3851
Nebraska.FHWA@FHWA.DOT.GOV

Eulk —
Rnb —
Sno

COPY

U.S. Department of Transportation
Federal Highway Administration

January 10, 2002

In Reply Refer To:
HRW-NE

RECEIVED
JAN 14 2002
NSHS/STATE HISTORIC PRESERVATION OFFICE

NEBRASKA DIVISION FHWA

Mr. Robert Puschendorf
State Historic Preservation Office
Nebraska State Historical Society
Box 82554
Lincoln, Nebraska 68501-2554

Dear Mr. Puschendorf:

9509-052-01

Request for Concurrence Additional Acreage for Stevens Creek Stock Farm
South and East Beltways, Lincoln, Nebraska

FHWA would like to request the concurrence of the SHPO regarding the eligibility and assessment of adverse effect on two properties in the study area for the Lincoln South and East Beltways.

In a letter dated 7 November 2001 from AZ Environmental, your office was provided a package of updated information regarding the additional 320 acres that the owners of Stevens Creek Stock Farm (SCSF) believed should be included in the historic boundaries of the site that is on or eligible for the National Register of Historic Places (NRHP). FHWA reviewed this information and determined that two of the properties were in close enough proximity to the preferred east beltway alternative (EM-1) to warrant further evaluation. Based on the information provided by the consultant, FHWA has determined that the following two properties are eligible for the NRHP.

1. W1/2 NE1/4 5-9-8 This is the 80-ac N-S parcel west of and contiguous to the original 240 ac site.

2. NE1/4 SE1/4 5-9-8 & NW1/4 SW1/4 4-9-8 This is the 80-ac E-W parcel south of and contiguous to the original 240 ac site.

While the properties are strictly "associated agricultural acreage" and contain no historic structures, either Charles Retzlaff or his son George acquired them within the period of significance for the SCSF. The Retzlaff family has assisted by providing additional information about the SCSF acreage. Your concurrence on eligibility would enlarge the historic boundary of the SCSF, adding an additional 160-ac to the current 240-ac site that is either on or eligible for the NRHP.

FHWA has also determined that the east middle route would have no adverse effect on the SCSF, including the additional 160-ac, for the following reasons:

The East Middle route requires no right-of-way from properties on or eligible for the NRHP.

1. A large visual intrusion, an LES electric transmission line, is located between the East Middle route and the properties on or eligible for the NRHP.

2. The NRHP-eligible property closest to the east middle route contains a significant visual intrusion: a modern log-cabin structure. This property was subdivided in 1996, and a 6-acre lot containing the log cabin was sold outside the Retzlaff family.

3. The period of significance for the SCSF includes the amassing of lands and the corresponding success of a large-scale cattle operation (and other stock). Charles Retzlaff acquired close to 1,000-ac of prairie grasslands, which were used for cattle range and pasture. The properties in question are in agricultural row crops (as are most of the other properties on the 320-ac list) and include modern agricultural features of grassed waterways and a small dam (see aerial photographs in the DEIS on page G.3 and Exhibit EM1-3).

4. The Assessment of Adverse Affects (see PFEIS, Appendix F) includes the information that the EM-1 route has no visual, atmospheric or audible impacts because the standing structures are well buffered visually and physically by their orientation to the east, trees, and Stevens Creek.

If you have any questions or require additional information, please feel free to call me.

Sincerely yours,

Edward W. Kosola
Realty/Environmental Officer

cc:
Jim Linderholm
Roger Figard
Amy Zlotsky

CONCUR

[illegible] STATE HISTORIC PRESERVATION OFFICER

DATE: 1/30/02

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 1-800-833-6747 www.nebraskahistory.org

February 1, 2001

Mr. Edward Kosola
Federal Highway Administration-Nebraska Division
Federal Building, Room 220
100 Centennial Mall North
Lincoln, NE 68508

RE: Lincoln South and East Beltways- Draft *Defining Boundaries of NRHP-Eligible Properties Located Within the South and East Beltway Study Area* (October 31, 2000)

Dear Mr. Kosola:

We have reviewed the referenced draft report, which has incorporated our comments on the draft dated October 17, 2000. We concur with the findings and editorial changes made for the October 31 2000 report.

We believe that this letter, along with our November 27, 2000 letter, should make our comments on all materials related to the Preliminary Draft Environmental Impact Statement (November 13, 2000) up to date. Please let us know if you disagree.

Thank you once again for the opportunity to comment on these documents. If you have any questions, please call Bill Callahan at 471-4788.

Sincerely,

L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historic Preservation Office

Cc: Roger Figard
Cindy Veys
Ed Zimmer
Amy Zlotsky

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

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November 27, 2000

Mr. Edward Kosola
Federal Highway Administration-Nebraska Division
Federal Building, Room 220
100 Centennial Mall North
Lincoln, NE 68508

RE: Lincoln South and East Beltways- Draft *Defining Boundaries of NRHP-Eligible Properties Located Within the South and East Beltway Study Area* (October 17, 2000)

Draft *Assessment of Adverse Effects to NRHP and NRHP-Eligible Sites, Lincoln South and East Beltways Study, Lincoln, Nebraska* (October, 2000)

Preliminary Draft Environmental Impact Statement and 4(f) Statement-South and East Beltways, Lincoln, NE (November13, 2000)

Dear Mr. Kosola:

We have reviewed the referenced draft reports which follow up on comments received by consulting parties in response to the *Preliminary Assessment of Adverse Effects* dated December, 1999. We have recently provided Olsson Environmental Sciences with editorial comments on the *Defining Boundaries* report. These comments are not substantive in terms of the report's findings however, hopefully, they will clarify some of the more arcane National Register evaluation issues.

We understand the *Defining Boundaries* report to be an addendum to the various cultural resources survey reports that have been provided to us and to which we have concurred upon over the past three years. We believe an accounting of the reports produced to identify historic properties for the Beltways project includes:

- *Lincoln South and East Beltways Historic Survey Report* (Elliott and Dirr, 1998)
- *Evaluation of the Hulda Otto House for Eligibility to the National Register Of Historic Places* (Stupka-Burda, 1999. This report includes, in addition to the Otto House, evaluations of the Guenzel Farmstead and the Wunibald Farmstead)
- *Archeological Inventory and Evaluation of Lincoln's South and East Beltway: Investigation Along the Southern Route SM-4, Lancaster County, Nebraska* (Parks and Stupka-Burda, January, 1998)

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- *Archeological Inventory and Evaluation of Lincoln's South and East Beltway: Investigation and Testing Along the Eastern Routes EF-1, EM-1, EC-1. Lancaster County, Nebraska* (Parks and Stupka-Burda, November 1998)

- *Archeological Inventory and Testing of Lincoln's South and East Beltway Alternatives SM-4, EC-1, EM-1and EF-1 Lancaster County Nebraska*, (Parks and Stupka-Burda, 2000).

After taking into account all the documentation provided and after careful review of the draft *Defining Boundaries* report, we concur with the findings therein. In addition, we have been provided copies of memos from UN-L (Stupka-Burda) to Olsson Environmental Sciences (Zlotsky) dated 9/19/00, 10/13/00 and 10/17/00. These memos clarify and reevaluate previous assessments made by Parks/Stupka-Burda and Elliot/Dirr on archeological properties and standing structures. The clarifications and reevaluations were made in accordance with comments and inquiries from consulting parties, and we concur with both memo's findings.

After taking into account the findings of the additional documentation provided in the *Defining Boundaries* report and the UN-L memos, we concur with the findings of the October, 2000 draft *Assessment of Adverse Effects*.

Our concurrence with these findings is given with the understanding that our edits on the draft *Defining Boundaries* report will be taken into account when the final draft is produced.

Finally, we appreciate the opportunity to review and comment upon the Preliminary Draft Environmental Impact Statement (PDEIS). We understand this document to be a work in progress, and is for internal review only.

In Appendix E we notice that copies of our letters dated June 10 1997 and July 22 1997 to the City of Lincoln have been omitted. In order to reflect an accurate synopsis of Section 106 consultation, we believe those letters should be made part of the public record. Similarly, in Appendix F we note that the October 13, 2000 UN-L memo to Olsson Environment Sciences referenced above has been omitted, and should be included in this appendix.

We concur with the findings of the main body of the PDEIS (current Section 3.23) and, with the exception of comments above as appropriate, we concur with the findings of the appendices as they relate to Section 106 consultation.

Thank you once again for the opportunity to comment on these documents. If you have any questions, please call Bill Callahan at 471-4788.

Sincerely,

L. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historic Preservation Office

Cc: Roger Figard
Cindy Veys
Ed Zimmer
Amy Zlotsky

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

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November 14, 2000

In Reply Refer To:
HRW-NE

NEBRASKA DIVISION FHWA

Mr. Robert Puschendorf
Deputy State Historic Preservation Officer
Nebraska State Historical Society
P. O. Box 82554
Lincoln, NE 68501

Copy

Dear Mr. Puschendorf:

Preliminary Draft Environmental Impact Statement (DEIS) - South and East Beltway, Lincoln - Projeet DPU-3300(1)

Attached is a copy of the Preliminary DEIS for the subject project. We are attaching a copy of the letter we sent to various other state and Federal agencies requesting their concurrence in the alternatives carried forward.

We would like your early review of the Preliminary DEIS so that we can proceed toward completion and circulation of a DEIS. If you have any questions please contact me at 437-5973. We appreciatc the time and effort you and your staff have the invested in this project to date.

Sincerely yours,

Edward W. Kosola
Environmental/Realty Officer

Enclosures

cc: Len Sand, Nebraska Department of Roads
Amy Zlotsky, Olsson Associates

U.S. Department
of Transportation

**Federal Highway
Administration**

SEP 27 2000

OCT 12 2000

Nebraska Division Office
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100 Centennial Mall North
Lincoln, NE 68508-3851
Nebraska.FHWA@FHWA.DOT.GOV

copy to Sand + Zlotsky 10-19-00

September 26, 2000

NEBRASKA DIVISION

In Reply Refer To:
HRW-NE

Mr. Robert Puschendorf
State Historic Preservation Office
Nebraska State Historical Society
P.O. Box 82554
Lincoln, Nebraska 68501-2554

0009-077-01

Dear Mr. Puschendorf:

**Concurrence on No Adverse Effect with conditions
for NRHP-Eligible Site: LC00: E-118 (Road Sign at 112th and Adams)
DPU-3300(1) South and East Beltways Study, Lincoln, Nebraska**

In compliance with Section 106 of the National Historic Preservation Act, the Federal Highway Administration identified 34 sites in the Lincoln South and East Beltways Study area which are either listed in or eligible for listing in the National Register of Historic Places and the SHPO has concurred upon their eligibility. A concrete directional road sign located at 112th and Adams (LC00: E-118) was one property the SHPO and FHWA agreed was eligible.

During the assessment of adverse effects for the beltway project, it was determined that LC00: E-118 would not be adversely affected by the Beltway project if the following conditions are met:

If either alternative EM-1 or EF-1 is selected as the preferred alternative, LC00:E118 will be protected from damage during construction of the Beltway and repaving and upgrade of Adams Street.

Additionally, in consultation with the SHPO, LC00:E-118 will be repositioned about 20 feet from the upgraded road and as near its current location as is practicable (assuming the County roads have not been upgraded prior to beltway construction). These conditions will be incorporated into the Draft Environmental Impact Statement and Draft 4(f) Statement for the project.

Because the historic boundaries of the road signs have been recommended as a 5-foot radius around the sign, the beltway alternatives will require incorporation of land from a historic property and must therefore be addressed in the Draft 4(f) Statement.

We are requesting your concurrence that implementing the conditions described will result in "no adverse effects" to the historic property LC00:E-118.

Sincerely yours,

Edward W. Kosola
Realty/Environmental Officer

cc:
Amy Zlotsky, OES
Jim Linderholm, HWS
Roger Figard, City of Lincoln
Len Sand, NDOR

CONCUR

DEPUTY STATE HISTORIC PRESERVATION OFFICER

DATE: 10/5/00

NEBRASKA STATE HISTORICAL SOCIETY
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June 2, 2000

Mr. Ed Kosola
Federal Highway Administration-Nebraska Division
Federal Building, Room 220, 100 Centennial Mall North
Lincoln, NE 68508

RE: Review of Final Archeological report, South and East Beltways (Parks, Stupka-Burda-Jan. 2000)

Dear Mr. Kosola:

We have reviewed the referenced document, which included additional testing of sites and geomorphological testing requested by our office. We apologize as, although the SHPO archeologist responded verbally and in memo form in February, we have yet to respond to the report's findings in writing. We trust our late response will cause a minimum of inconvenience.

We concur with the findings of the report, as follows:

We agree that archeological sites 25LC115, 25LC143, 25LC144, 25LC157, 25LC158 and 25LC160 are not eligible for listing on the National Register of Historic Places. We agree that 25LC147 is eligible for listing on the National Register under criterion D. We note that 25LC159 was not further investigated, as it falls outside the project APE. All other sites within the report have previously been reviewed and commented upon by our office.

The report's upland sample indicates that there is low probability of significant sites being found in this topographic situation. Therefore, further survey is not recommended for upland areas of the final project route. However, the report points out that there remain some areas, due to landowner permission problems, that were not surveyed. We recommend that any areas of the final selected route that cross stream courses which have not been surveyed be surveyed for archeological resources. This should include the report's recommended subsurface testing in Trench areas 3 and 6, if the project includes these areas in the final route selection. We also concur with the report's recommendation that all future borrow areas be surveyed as appropriate. Finally, we once again reiterate the need for the development and implementation of a monitoring and contingency plan for on-site monitoring during construction.

If you have any questions, please do not hesitate to call me at 471-4788.

Sincerely,

L. Robert Puschendorf
Deputy State Historic
Preservation Officer

Cc: Amy Zlotsky
Cindy Veys
Roger Figard
Ed Zimmer

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

U.S. Department
of Transportation

**Federal Highway
Administration**

RECEIVED
OCT 08 1999
OLSSON ASSOCIATES

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Lincoln, NE 68508-3851
Nebraska.FHWA@FHWA.DOT.GOV

October 7, 1999

NEBRASKA DIVISION

In Reply Refer To:
HRW-NE

Mr. Bob Puchendorf
State Historic Preservation Office
Nebraska State Historical Society
P.O. Box 82554
Lincoln, NE 68501-2554

Dear Mr. Puchendorf:

Concurrence on Historic Properties
South and East Beltway Study, Lincoln, Nebraska

In compliance with Section 106 of the National Historic Preservation Act, the Federal Highway Administration has identified 34 sites in the Lincoln South and East Beltways Study area which are either on or eligible for listing on the National Register of Historic Places (see attached Table 1). This list of sites is based on the recommendations of the Historic Survey Report, Archeological Evaluation, and supplemental investigations requested by the State Historic Preservation Office (SHPO) for this project. These include 30 historic and four (4) archeological sites. Your office has already concurred with the recommendations of eligibility found in these reports (letters dated 3 June 1998, 11 June 1998, 7 December 1998, and 7 September 1999).

Based on our determination, these 34 sites will be evaluated for adverse effects as part of the Section 106 consultation for the Lincoln South and East Beltways Study.

Sincerely yours,

Edward W. Kosola
Realty Officer

Attachment

cc:
Amy Zlotsky, OES
Jim Linderholm, HWS
Roger Figard, City of Lincoln
Len Sand, NDOR
Cindy Veys, NDOR

Table 1
LIST OF SITES ON OR ELIGIBLE FOR
THE NATIONAL REGISTER OF HISTORIC PLACES
Lincoln South and East Beltways Study

FARMYARDS

LC00: S-15	Del O'Brien Farmyard
LC00: S-143	Henry Wunibald Farmstead
LC00: E-52	Steve Johnson Farmyard
LC00: E-53	Penterman Farmyard, "Penterman Farm"
LC00: E-56	Michael Smith Farmyard
LC00: E-61	Elaine and Owen Herter Farmyard
LC00: E-62	Joel and Kathy Sartore Farm, "Herter's-Hagaman Farm"
LC00: E-69	Arthur Monahan Farmyard, "Haeger Dairy"
LC00: E-72	Lyle and Maverne Mayer Farmyard
LC00: E-87	Theresa Retzlaff Farmyard, "Forest Brook Farm"
LC00: E-88	Stevens Creek Stock Farm, Mardale Farm
LC00: E-134	Laura Reed Farmyard, "Reed Homestead"

BARNS

LC00: S-6	David McEwen Gable Roof Barn
LC00: S-31	Steve Speidel Gothic Arch Roof Laminated Truss Barn
LC00: S-47	Margene Zachek Gable Roof Connected Barn
LC00: S-127	Ehler's Round Barn
LC00: E-57	Elton Haase Gable Roof Mortise and Peg Barn, "Haase Farm"
LC00: E-67	Shirley Retzlaff Gable Roofed Banked Barn and Silos, "Retzlaff Farm"
LC00: E-102	Donna Keane Gambrel Roof Barn, "Kettlehut Farm"
LC00: E-132	Lynn Lenhoff Gambrel Roof Concrete Block Barn

RESIDENCES

LC00: S-23	Forest Nicely Residence, "Jensen Homeplace"
LC00: E-81	Chuck Hobka Residence, "Jacoby Homestead"
LC00: E-99	Norma and Bob Lemke Residence, "Karl Lemke Farm"
LC00: E-141	William Fagen Residence, "Fagen's Acres"

SCHOOL

LC00: S-41	"Cheney School"

GRAIN ELEVATORS

LC00: S-40	Circle 4 Feed and Grain Elevator, Cheney
LC00: E-106	Farmers Coop Grain Elevator, Walton

ROAD SIGNS

LC00: S-42	Road Sign at 1st and 91st, Cheney
LC00: S-135	Road Sign at Saltillo and 56th
LC00: E-118	Road Sign at 112th and Adams

ARCHEOLOGICAL SITES

25LC1	Schrader Site–Small Late Prehistoric Village, Smokey Hill Phase
25LC125	Lithic Scatter
25LC129	Lithic and Ceramic Scatter
25LC147	Euroamerican Trail, ca. 1860-1880

RECEIVED
SEP 0 8 1999
OLSSON ASSOCIATES

NEBRASKA STATE HISTORICAL SOCIETY
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September 7, 1999

Edward Kosola-Realty Officer
Federal Highways Administration
100 Centennial Mall North, Rm. 220
Lincoln NE 68508-3851

RE: South and East Lincoln beltways, additional evaluation for NRHP eligibility:
Hulda Otto House; John Guenzel Farmstead; Wunibald Farmstead

Dear Mr. Kosola:

We have reviewed additional documentation provided by the City for the referenced properties, and have visually inspected all three. We concur with the findings of the City's report. In our opinion, the Hulda Otto house is not significantly associated with any person, event or pattern of events that may make it eligible for listing on the National Register. Additionally, in our opinion, the Otto house does not embody the distinctive characteristics of a construction type, period or method of construction nor does it retain sufficient physical historic integrity to allow consideration of Register eligibility for design or construction.

The Guenzel Farmstead, in our opinion, is not a good candidate for listing on the Register for reasons identical to the Otto house. Several of the outbuildings on the Guenzel Farmstead appear to have good physical historic integrity (although the main house does not), but do not embody sufficiently distinctive design or construction characteristics to allow for their consideration individually.

In our opinion, the Wunibald Farmstead is eligible for listing on the National Register. The main house and outbuildings embody the distinctive characteristics of an early 20th century farmstead with good historic integrity. The farmstead also reflects the evolution of farming practices from the construction of the earliest building (the house, c. 1901) to the latest, a mid-century quonset-style machine shed. In our opinion, all of the extant structures on the farmstead contribute to the historic character of the complex. Additionally, the setting of the Wunibald Farmstead is a significant feature of the historic property. The farmstead's isolation, its location in mid-section and its commanding viewshed of the surrounding countryside not only contributed to its inadvertent exclusion from the original Beltway study, but also demonstrates a conscious effort of the Wunibald family to locate the farmstead to allow for such visual and physical characteristics.

If you concur with our findings, the Wunibald Farmstead should be included in consultation about project effects to historic properties. Additionally, we believe all consulting parties should be made aware of the addition of the Wunibald Farmstead to the list of eligible properties located within the boundaries of the Beltway study area.

If you have any questions, please do not hesitate to call me at 471-4769 or Bill Callahan at 471-4788.

Sincerely,

L. Robert Puschendorf
Deputy State Historic
Preservation Officer

Cc: Amy Zlotsky
Ed Zimmer
Cindy Veys
Roger Figard

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February 17, 1999

Mr. Ed Kosola
Federal Highway Administration-Nebraska Division
Federal Building, Room 220, 100 Centennial Mall North
Lincoln, NE 68508

RE: Lincoln Beltway-National Trust for Historic Preservation request for determination of eligibility-Hulda Otto House

Dear Mr. Kosola:

We have received a copy of a letter to you from the National Trust regarding the referenced property. In order to assist the FHWA in determining the eligibility of the Hulda Otto House, we suggest the City of Lincoln provide the following information:

1) Current, clear photographs of the property, including perspectives from all four facades, representative detail shots and photos of any associated outbuildings. If possible, representative interior photos should be included. The photographs should be labeled and keyed to a site plan, and a floor plan if interior photos are taken. The photos may be in either color or black and white.
2) A map locating the property on an East Beltway map that will place the Otto house in geographic context with the EF-1 corridor and previously identified historic properties.
3) A history of the house including its construction date, builder if known and whether George Retzlaff did, indeed give the property to Hulda Otto. This history should take into account the Stevens Creek Stock Farm National Register nomination, and place the Otto house in context with properties included in that nomination.
4) The City should ask the Trust where it received its information about the Otto House and pursue that avenue of inquiry. The City should find out as much as possible about Hulda Otto herself, as well as the circumstances by which the house was built for her. This investigation should take into account the Trust's statement concerning: "...the role of women in the establishment of the Stevens Creek Stock Farm and the development of the first permanent agricultural community in the Lancaster County area."

FHWA, of course, will make the determination of eligibility for the Otto house. However, since our office is required to be consulted in determinations of this nature, we respectfully submit the above requirements in order that we may make informed comments to FHWA. If you have any questions, please do not hesitate to call me at 471-4788.

Yours Truly,

Bill Callahan
Public Programs and Resource
Planning Program Associate

Cc: NTHP-Rob Nieweg
Roger Figard
Amy Zlotsky

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To	From Bob Puschendorf	
Co./Dept.	Co. Nebr. SHPO	
Phone #	Phone #	
Fax # 474-5160	Fax #	

Advance copy

December 7, 1998

Mr. Roger Figard, City Engineer
Lincoln Public Works and Utilities Dept.
555 South 10th Street
Lincoln, NE 68508

RE: East Beltway Archeological Survey draft report review

Dear Mr. Figard:

We have completed our review of the referenced document. We generally concur with the findings of the report. We agree that sites 25LC125 and 25LC129 are eligible for listing on the National Register of Historic Places. In our opinion, however, site 25LC147 is also eligible for listing on the Register. Excepting the four sites discussed below, we concur that none of the other archeological sites identified in this investigation are eligible for the National Register.

In our opinion, sites 25LC115, 25LC143 and 25LC144 require further testing in order to determine whether they are eligible for listing on the National Register. The testing required for these sites would require a great deal of ground disturbance, consisting of blading strips of topsoil below the plow zone. As this type of testing is very intrusive and is also quite costly, we agree that testing of this nature may be delayed until a single corridor is chosen for further study. Our reasoning in this instance is the same as that in regards to geomorphological testing. The cost and intrusive nature of this type of testing do not justify their implementation until a single corridor is chosen. If these three sites lie within a corridor chosen for further study, then this more extensive testing will be necessary.

Similarly, we are sympathetic with the difficulties that have arisen with the identification and location of archeological features possibly associated with the Shirley Road Ranch (AKA Shirley Station). We believe that further work should be completed in an attempt to pin down where or if there are archeological features associated with this property. If a corridor is chosen for further study that may affect features associated with this resource, more intensive efforts will be necessary to identify their existence and location.

EM EF

If you agree to the addition of 25LC147 as a National Register eligible site, and if you agree to complete testing and investigation on 25LC115, 143, 144 and the Shirley Station as discussed, we will concur with the findings of the report. As we have discussed, the final report should be made public, with the precise locations of the inventoried sites withheld per archeological protection laws. EC

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For the purposes of Section 106 review, and with the exception of standard pre-construction archeological monitoring and investigation, the City has completed its cultural resources inventory of the proposed Lincoln Beltway area of potential effect. We have previously concurred with the findings of the standing historic structures report completed by On Site Photography and Preservation, and with the South Beltway archeological investigation completed by UNL Department of Anthropology. The City and the Federal Highways Administration have now completed the first crucial step in insuring that the Section 106 review process may proceed smoothly and effectively. The next step of the process, assessing the effects of the project on known cultural resources, will begin once a final corridor is chosen for study.

If you have any questions, please do not hesitate to call me at 417-4769 or Bill Callahan at 471-4788.

Sincerely,

L. Robert Puschendorf
Associate Director\Deputy State
Historic Preservation Officer

Cc: Ed Kosola
Ed Zimmer
Amy Zlotsky
Jim Linderholm

LINCOLN

DEPARTMENT OF PUBLIC WORKS
DEPARTMENT OF PUBLIC UTILITIES

NEBRASKA'S CAPITAL CITY

MIKE JOHANNS, MAYOR

September 17, 1998

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SEP 21 1998
OLSSON ASSOCIATES

Mr. L. Robert Puschendorf
Associate Director/Deputy State Historic Preservation Officer
Nebraska State Historical Society
1500 'R' Street
Lincoln, NE 68501-2554

RE: South and East Beltway Study

Dear Mr. Puschendorf:

Thank you for your July 31, 1998, letter regarding the final draft of the East and South Beltway Historic Building Survey report. We appreciate your concerns and will certainly respect your wishes regarding characterizations of formal comments about the report prior to its release. We agree that a period of public review is needed before any action is taken as a result of the report.

Your letter also mentioned the next step in the 106 process which is to complete a programmatic agreement. At our August 13, 1998, meeting with the FHWA and representatives from your office, it was agreed that instead of using a programmatic agreement, we will continue consultation with your office on a case by case basis. The fact that the beltway corridors and potential impacts have been fairly well defined would indicate that each site can be examined individually. Please let me know if this is not consistent with your understanding of the most appropriate approach.

Thank you again for your continued support.

Sincerely,

Roger A. Figard
Project Manager

C: Beltway Management Committee
Ed Kosala
Ed Zimmer
Beltway Consultants

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July 31, 1998

Mr. Roger Figard, City Engineer
Lincoln Public Works and Utilities Dept.
555 South 10th Street
Lincoln, NE 68508

RE: Final Draft, East and South Beltway cultural resources survey

Dear Mr. Figard:

As you know, we recently reviewed a second draft of the cultural resources inventory completed by On Site Preservation and Photography. This draft was significantly different from the first draft: it was limited to a discussion of the Section 106 process, historic building survey methodology, and the results of applying National Register evaluation criteria to properties discovered by the On Site survey. The second draft report eliminated all but the most cursory discussion of the effects potential beltway construction would have on historic properties. This major change in the focus of the report was, as you know, done at our request. For a number of reasons it was and is still premature for formal discussions of beltway effects on historic properties.

Foremost, the cultural resources inventory completed by On Site is only part of the total inventory required by Section 106. Archeological investigation of the beltway corridor is ongoing, and any discussion of effects the project may have on historic properties or possible mitigation of effects would be premature prior to the completion of the full scope of cultural resource investigation. Second, although we have given preliminary comment on the On Site report, we have not seen a final draft, and have not given the City of Lincoln our formal comments on the On Site report. Any characterization of our formal comments prior to their release should be avoided. Third, as we have discussed many times, the fully completed final draft of the On Site report should be made available for public review and comment prior to any formal discussion or action taken as a result of the findings of the report. We look forward to receiving public comment on the report, and to reviewing it ourselves.

As we have indicated in meetings and previous correspondence, the next step in the 106 process should be to complete a programmatic agreement that will allow the City to continue its planning process while taking into account effects the beltway project may have on historic properties. We urge the City to begin work with our office on a programmatic agreement that will prevent any further delays in the beltway planning process. If you have any questions, please do not hesitate to call me at 417-4769 or Bill Callahan at 471-4788.

Sincerely,

L. Robert Puschendorf
Associate Director\Deputy State
Historic Preservation Officer

Cc: Ed Kasola
Ed Zimmer
Amy Zlotsky
Jim Linderholm

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June 11, 1998

Ms. Amy Zlotsky
Olsson Environmental Sciences
1111 Lincoln Mall
Lincoln, NE 68508

RE: Review of 2nd draft historic buildings survey final report-East and South Beltways

Dear Ms. Zlotsky:

Thank you for giving us the opportunity to review the referenced 2nd draft. Overall, we concur with the findings of the draft report. I have enclosed marked-up copies of the draft. My comments are in pencil, and the pages have been marked with yellow stick-ons. Generally, the draft is in good shape. The inclusion of extensive methodology sections, discussion of National Register and survey evaluation criteria and an overview of the Section 106 process should make the report self-explanatory.

The only outstanding determination of eligibility is for LC00:E-141. Please note our comments on this property on all three appropriate appendices. In short, without further explanation of the "irreversible" deterioration, in our opinion, given the information we have, the site is a good candidate for listing on the Register. Additionally, the survey form for E-99 seems to indicate that the property is eligible for the National Register, however Appendix B indicates that it is not. Given the information we have been provided, we feel the building is a good candidate for the Register under criterion C. Once these issues are rectified, and our comments and your comments are incorporated along with the City of Lincoln's comments, we feel the report will be ready for wider review.

If you have any questions, please do not hesitate to call me at 471-4788.

Yours Truly,

Bill Callahan
Public Programs and Resource
Planning Program Associate

Cc: Ed Zimmer

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June 3, 1998

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JUN 08 1998
OLSSON ASSOCIATES

Ms. Amy Zlotsky
Olsson Environmental Sciences
1111 Lincoln Mall
Lincoln, NE 68508

RE: Review of "Archeological Inventory and Evaluation of Lincoln's South and East Beltway: Investigation along the South route SM-4, Lancaster County, NE-by Stan Parks and Stacy Stupka-Burda"

Dear Ms. Zlotsky:

Thank you for providing us the referenced report. We concur with the findings of the report: sites 25LC93, 25LC94, 25LC95, 25LC96 and 25LC97 are not eligible for listing in the National Register of Historic Places. Site SOAP97-2 will require further testing to determine whether it is a good candidate for the Register. Additionally, we concur with the report's recommendation for geomorphological studies of the stream valleys for the potential of buried cultural resources.

Our concurrence and comment on this report apply only to the subjects of the report. All outstanding archeological and geomorphological investigations are still subject to our review. If you have any questions, please do not hesitate to call me at 471-4769 or Terry Steinacher at 308-665-2918.

Yours Truly,

L. Robert Puschendorf
Deputy State Historic
Preservation Officer

Cc:Terry Steinacher

CITY ENGINEERS OFFICE
FEB 25 ..
Lincoln, Neb.

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February 19, 1998

Mr. Roger Figard. City Engineer
Lincoln Public Works and Utilities Dept.
555 South 10th Street
Lincoln, NE 68508

RE: Review of draft historic buildings survey final report-East and South Beltways

Dear Mr. Figard:

Thank you for giving us the opportunity to review the referenced draft. Our comments on federally assisted projects are required by Section 106 of the National Historic Preservation Act, and implementing regulations of 36 CFR Part 800. Section 106 is a consultation process by which federal agencies are required to seek ways to avoid or reduce adverse effects their undertakings may have on historic properties; and to afford the Advisory Council on Historic Preservation an opportunity to comment on the undertaking. The first requirement of the Section 106 process is to identify historic properties in the area of project effect. Part 800 requires this step to be completed in consultation with our office. This draft report was developed in response to our request for the identification of historic properties within the Beltway project area.

Generally speaking, we believe this report adequately documents historic properties in the project area. In fact, in many ways, the report exceeds our expectations, and we appreciate the efforts of the City of Lincoln and its consultants in developing the document. There are, however, some significant issues to be addressed prior to our concurrence with the findings of the report. These issues are as follows:

Report definition

The report should include a fairly detailed description of its purpose. This "introduction" should tell who wrote the report, who paid for it, why it was written, and what the anticipated federal assistance will be. It is crucial that a fairly detailed definition and explanation of the Section 106 process be included. The introduction should emphasize that 106 applies to properties eligible for listing on the National Register of Historic Places, as well as those that are listed; and should explain how the Register criteria are used in the 106 process. A definition of Register evaluation criteria and aspects of physical integrity is necessary. These definitions may be quoted directly from National Register Bulletin 15. Additionally, it may be prudent to discuss criteria considerations as defined in Bulletin 15. For example, according to the report, no churches are considered eligible, however a grave site\cemetery may be eligible for the Register.

Reconnaissance survey methodology

There needs to be a clearer definition of the reconnaissance survey methodology. This is very important to both the consulting party's and the public's understanding of the 106 process. The methodology definition should include a clear delineation of the survey area (which already exists in the report), how it was physically investigated, a discussion of the Secretary's Standards for survey and evaluation, and the type and scope of preliminary research completed. The methodology should clearly explain (in lay terms) why so many properties were *not* surveyed, why so many were and why, of those properties surveyed, relatively few are considered eligible for the Register.

This section should define the procedures used to compare farmsteads, residences and barns when determining which were considered eligible, and which were not. There needs to be a more detailed contextual explanation of why one farmstead, barn or residence is a "better" example than another. This section should also explain how neglect and deterioration of a property as well as inappropriate additions or intrusions are evaluated, and what

effect these factors have on whether or not a property is considered eligible for the Register. This comparative discussion should be rather detailed, but may use generic examples. It is not necessary to explain, building by building, how these evaluations are made. If the explanation of the methodology is sufficiently clear, a reader may be referred back to this section when comparative issues arise.

When discussing survey methodology, include the extensive public input and participation that was part of the process. Besides being a key tool of the survey methodology, Part 800 requires that a federal agency and the State Historic Preservation Office seek and consider the views of the public when taking steps to identify historic properties, evaluate effects on historic properties, and when developing alternatives to adverse effects (800.1[2]{iv}). The City's effort to provide the public an opportunity to assist in the identification of historic properties helped satisfy both the letter and intent of Section 106. Additionally, this effort to include the public in the process from the beginning helps create a working foundation and an atmosphere of trust through which later public participation may be more easily achieved. Always the most difficult aspect of Section 106 to accomplish satisfactorily, we commend the City on its commitment to date to include the public in the Section 106 process.

Intensive survey methodology

In addition to defining the methodology of the reconnaissance survey of the report, it is necessary to further define the methodology of the intensive survey of the Steven's Creek Bottoms area. Besides reiterating much of the above, it is necessary to define the reasons for intensively surveying the area, and to explain the methods used to identify and evaluate possible historic properties there. We are somewhat concerned since there is no mention whatever of cultural landscapes in the report, and we specifically asked for an evaluation of the area as a cultural landscape or rural historic district. Additionally, the evaluation of the properties within the intensive survey area appears to miss the point of evaluating the area as a cultural landscape or rural historic district.

Although individual buildings and farmsteads within the intensive survey area may contribute to the significance of a cultural landscape or rural historic district, they do not necessarily define it. Further, in the context of a landscape or rural district, individual buildings need not be individually eligible for the Register. Though potentially contributing elements, buildings would not be the only components in a cultural landscape or rural district...they may not even be the most important. Cultivation patterns, windbreaks, road and trail patterns, tree plantings, farmstead orientation and visible waterway alterations should all be considered when evaluating the area as a cultural landscape or rural historic district.

In order to evaluate the intensive survey area in this context, it is imperative to: a) establish the historic context of early settlement in the area (which is already well done); b) using the historic context, establish a period of significance and physical boundary; c) establish whether these historic settlement patterns are *significant* in National Register terms; d) identify potential cultural elements that remain from the period of significance; e) if these elements remain, evaluate them using Register evaluation criteria, and then; f) evaluate the physical integrity of those elements using the Register aspects of integrity, keeping in mind that the elements need not be individually eligible. In order to accomplish d-f above, it is necessary, at minimum, to review GLO maps, plat maps, USGS maps and aerial photography. Of course, written archival and documentary material should also be reviewed, but it appears many of those resources have been studied. If the evaluation for the intensive survey area has taken place as described above, that needs to be documented. If not, then it must be done in order to satisfactorily complete the document.

Assessment of effects and the next step

Finally, it is premature to assess the Beltway project effects on individual historic properties, possible mitigation strategies and especially route selection. Completion of the Beltway planning process: environmental review, details of funding opportunities, route selection, engineering studies and eventual construction are sufficiently distant in time to make this level of evaluation, at this point in the 106 process, unnecessary and inadvisably inflexible. We may assume, of course, that a project of this magnitude may have adverse effects on historic properties. The next step in the 106 *process* should be to develop a programmatic memorandum of agreement (PMOA) that will allow project planning to continue while taking into account all historic properties.

A PMOA will define procedures that will allow the consulting parties as well as the public to take into account historic properties as the planning process continues. It is during the consultation process defined by the PMOA that we will identify and discuss alternatives to adverse effects on individual historic properties. We remind the City

that historic properties include those with archeological significance. Although archeological investigation of the project area has begun, it has not been completed, and archeological properties must be taken into account when developing the PMOA.

Although it is premature to discuss project effects on an individual property basis, is timely to define project effects in the broader context of Section 106 compliance. The report should explain and define what is meant by no effect, no adverse effect and adverse effect, using the definitions at 800.9. Generic examples are probably useful as an instructional tool but, as before, specific examples using surveyed properties are not necessary at this time. We do, however, appreciate the effort put forward in an attempt to identify individual property effects. We believe using this section of the report as a starting point in the context of a PMOA would be a prudent use of resources, and save time during future consultation.

We have forwarded an informal memo that highlights some of the issues discussed above, some issues of detail we noticed in the report, and a marked-up copy of the report to your consultants. Portions of the memo may seem redundant, as it was developed during real-time review of the report. If you wish a copy of these materials, please let us know.

We would like to emphasize once again that the National Historic Preservation Act, and specifically Section 106 of that act, was passed to provide the public an opportunity to have a voice in how federally assisted projects affect historic properties in their communities. Public participation, seeking the views of the public and at times requesting public involvement in the consultation process is required throughout Part 800. This process is designed to give the public voice in a sometimes unsympathetic bureaucratic process, and it is imperative the public be given that voice *at least* when called for in regulation. In expectation of continued public cooperation and input, we hope that this document will be made available to the public at large, and specifically to those groups and individuals that have expressed a desire to participate in the 106 consultation process.

Part 800 requires that the Section 106 process be initiated early in the planning stages of the undertaking, when the widest feasible range of alternatives is open for consideration. Last year at this time, we were very concerned that the Beltway planning process was far outstripping Section 106 review, and was possibly foreclosing on FHWA's opportunity to comply with 106. Given the current status of project planning as we understand it, and provided archeological investigations are completed as planned, and provided the remainder of the 106 process is adhered to, we believe consultation may now proceed concurrently with project planning without risking non-compliance. We commend the City for its efforts at "catching up" the 106 process with the remainder of project planning, and look forward to continuing the consultation process.

Sincerely,

L. Robert Puschendorf
Deputy State Historic
Preservation Officer

cc: Ed Kosola-FHWA
Art Yonkey-DOR
Ed Zimmer
Amy Zlotsky-Olsson Environmental
Jim Linderholm-HWS
Melissa Dirr-On Site
Claudia Nissely-ACHP

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July 22, 1997

Mr. Roger Figard, City Engineer
Lincoln Public Works and Utilities Dept.
555 South 10th Street
Lincoln, NE 68508

RE: East and South Beltway Study, Section 106 review-Draft Interim Report #3

Dear Mr. Figard:

We last wrote your office June 10, 1997 (copy enclosed) concerning Federal Section 106 regulatory requirements. That letter was to inquire as to the status of the City's responsibilities as outlined in our April 1996 letter to you (copy enclosed). To date, we have received no response from the City. The City's consultant, apparently responding to our June letter, did forward copies of Beltway study documents. This was the first opportunity our office has had to review these documents, some over one year old. On July 21 of this year we received the above referenced document from the consultant as part of a mass mailing.

We are extremely disappointed in draft Interim Report #3. This document affirms that the City has not taken into account its Section 106 obligations. To begin, Chapter 5, pp. 4-5 indicates that the consultant has used the City's GIS system to identify cultural resources in the project area. We know, from dealing with the City on other issues, that cultural resources are not included in the GIS system. To then therefore claim in table 5-1 that virtually no cultural resources exist in the project area is specious to the point of being dishonest.

The three paragraphs devoted to Section 106 review on pages 5\12-13 are insufficient to address the complexity of this project and its potential to effect cultural resources. These paragraphs also appear to misrepresent our position regarding this issue. The March 1996 meeting referenced at page 5-12 addressed significantly broader issues than the single issue referenced in the draft report #3 (see our April 1996 letter). The draft report also references known cultural resources. The entire point of both our previous letters was to address unknown cultural resources. As we indicated in our April 1996 letter, neither our office nor anyone else has a clear idea of the number or nature of cultural resources in the potential area of project effect.

Additionally, as we stated in both our April 1996 and June 1997 letters, limiting a cultural resources investigation to a 1\4 mile wide corridor for a project of this nature is woefully insufficient. If the City had deigned to inquire, this reasoning is quite clear. In relation to cultural resources, the City's selection of a project corridor is arbitrary. An arbitrarily defined 1\4 mile wide corridor does not, cannot, and will not ever sufficiently address long term, indirect and aggregate effects a project of this size and complexity will have on cultural resources. We based the boundaries for cultural resource investigation on

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the City's own study area (our April, 1996 letter). We know of no other logical, defensible criteria for a project with such enormous potential for long term, indirect and aggregate adverse effects to cultural resources (4\96).

Finally, the draft report seems to imply that Section 106 consultation has begun in regard to this project, and that the City has "coordinated" with our office. We have never, throughout the life of this project, received communication from the City of Lincoln. In the past year and one-half we have met with the consultant's sub-contractor twice, and have very recently had an informal meeting with FHWA and NDOR. As referenced, we have twice asked the City, in writing, to begin addressing Section 106 issues and have received no response. We do not view events to date as "coordination with the SHPO." We have attempted, in good faith, to assist the City with its Section 106 obligations in a timely, methodical, defensible and professional manner. We attempted to do so in order to prevent a situation that would cause lengthy, costly and potentially contentious project delays. By being unresponsive, the City has come to the brink of self-inflicting just such a situation; of foreclosing on the Advisory Council and Historic Preservation's opportunity to comment on this project; and to preclude the ability of the project's sponsors to comply with federal law.

There is still opportunity for the City to comply with the intent and letter of Section 106 and Part 800. We advise the City to scrap the inaccurate and potentially damaging cultural resource evaluation in the draft Interim Report #3, and to immediately begin good faith, defensible and coordinated consultation with this office, FHWA and NDOR. Additionally, we request that this letter, as well as our letters of April 23, 1996 and June 10, 1997 be included in the final Interim Report #3 to ensure an accurate public record of our desire to address this issue.

We reiterate that consultation with the State Historic Preservation Office has not been initiated, and that failure to do so may lead to foreclosure of the ability of a federal agency to assist the project. Our obligation remains to aid FHWA and the City with their Section 106 responsibilities. We urge the City to accept this assistance while all parties are still in a position to move forward.

Yours Truly,

L. Robert Puschendorf
Deputy State Historic
Preservation Officer

cc: FHWA-Ed Kosola
NDOR-Bill Hurst
HWS-Jim Linderholm
Olsson Environmental-Amy Zlotsky
Hon. Mike Johanns-w\encl.
Claudia Nissley-Advisory Council
on Historic Preservation-w\encl.

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June 10, 1997

Mr. Roger Figard, City Engineer
Lincoln Public Works and Utilities Dept.
555 South 10th Street
Lincoln, NE 68508

RE: East and South Beltway Study, Section 106 review

Dear Mr. Figard:

In April of last year we provided your office our comments (copy enclosed) on Interim Report Number One for the referenced project. We provided additional comments regarding the larger issues and difficulties inherent in a project the magnitude of the East and South Beltway. These comments were copied to the Federal Highway Administration, EA Engineering and staff from the Lincoln\Lancaster Planning department. Our comments are required on federally assisted, licensed or funded undertakings pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and the Section 106 implementing regulations, 36 CFR Part 800.

The bulk of our April 1996 letter outlined the documentation our office would require in order to adequately comment on the Beltway project as required by 800.4(a)(ii). Interim Report Number One, provided to our office in March of 1996, illustrated a large project study area which included a number of broadly defined potential corridors for the Beltway project. At that time, our office indicated that the FHWA or its designee, presumably the City of Lincoln, should undertake cultural, historical and archeological investigations of the entire project area. The scope of these investigations were detailed in our April letter. To date, we have received no response of any kind to our letter from the City, EA Engineering or the FHWA. We have, however, received a number of calls and letters from citizens concerned about the potential of the Beltway to adversely effect significant cultural properties.

We have been made aware, through local media, of progress made by the City and its consultant regarding the Beltway corridor selection process. According to published reports, the City and the consultant have eliminated all but three (one southern and two eastern) alternatives for the Beltway corridor, including elimination of the no-build alternative. To our knowledge, the selection process has not addressed the potential for effects on cultural resources. No consultation has taken place with our office since our April 1996 correspondence, as required by Section 106 regulations. If these reports are accurate, and significant cultural resources exist within the proposed corridors, it may be extremely difficult for our office to assist the FHWA in completing their responsibilities pursuant to Section 106. Unfortunately, that circumstance may foreclose the Advisory Council on Historic Preservation's opportunity to comment on the project, and preclude FHWA's compliance with federal law.

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As indicated in our April 1996 letter, our office desires to assist the FHWA and the City in completing their responsibilities pursuant to Section 106. It is difficult for our office to provide that assistance if we are not consulted as part of the process, and if our recommendations have not been addressed. If the City or FHWA has completed the cultural resource inventories requested by our office last year, we would appreciate being provided the conclusions and recommendations of those inventories. If all but one project alternative has been eliminated, and the recommended cultural inventories have not been completed, please inform us how the City and FHWA intend to complete their Section 106 responsibilities without consultation with this office and the Advisory Council on Historic Preservation.

Yours Truly,

L. Robert Puschendorf
Deputy State Historic
Preservation Officer

cc: Amy Zlotsky-EA Engineering
Phil Barnes-FHWA
Claudia Nissley-Advisory Council
on Historic Preservation

LRP\WJC

NEBRASKA STATE HISTORICAL SOCIETY
1500 R STREET, P.O.BOX 82554, LINCOLN, NE 68501-2554
(402) 471-3270 Fax: (402) 471-3100 Museum Fax: (402) 471-3314

April 23, 1996

Mr. Roger Figard, City Engineer
Lincoln Public Works and Utilities Dept.
555 South 10th Street
Lincoln, NE 68508

RECEIVED
APR 25 1996
Engineering, Science, and Technology
Lincoln, NE

RE: East and South Beltway Study: cultural resource review,
Interim Report No. 1

Dear Mr. Figard:

We have reviewed the referenced document. We understand this interim report to be a preliminary effort at providing data and analyses about the feasibility of and alternatives to the beltway project; and to document work completed as the study advances. We also understand this preliminary process is intended, in part, to determine what levels of investigation would be required to satisfy local, state and federal approvals for this project, if the project is determined to be feasible and necessary. Although we understand that the City of Lincoln is the primary contact, we assume that the Federal Highway Administration is providing funding, and will be the lead federal agency for this project.

The intent of this letter is to assist the City of Lincoln in determining what preliminary steps are necessary to begin the Section 106 review process. Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations, 36 CFR Part 800 (copy enclosed) requires, among other things, that Federal agencies:

1) Identify historic properties within the area of an undertaking's area of potential effects (APE);

2) Determine what effects an undertaking may have on historic properties within the APE, and;

3) Seek ways to avoid or reduce adverse effects an undertaking may have on historic properties.

Section 106 and Part 800 also require that Federal agencies consult with the State Historic Preservation Office throughout the 106 process, and provide the federal Advisory Council on Historic Preservation an opportunity to comment on the undertaking. In Nebraska, the Preservation Division of the State Historical Society is the SHPO.

Part 800 defines a federal undertaking as a federally assisted or licensed project (800.1). Historic properties are those listed on or eligible for listing on the National Register of Historic Places (800.2{e}). APE is the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties (800.2{c}). Adverse effects to historic properties are defined at 800.9.

In order for the Section 106 process to begin for the beltway project, historic properties within the APE must be identified. This requirement should be fulfilled as early in the planning process as is feasible. Early identification of significant historic, architectural and archeological properties can help avoid lengthy, costly delays in later project planning and approval. To date, EA Engineering has identified previously surveyed archeological properties and properties already listed on the National Register of Historic Places. In order to completely satisfy the identification needs of the Section 106 process, the following additional investigations should be completed:

1) A complete architectural\historic building survey of the entire study area, planned and completed in consultation with this office.

Rural Lancaster County has never been completely surveyed for historic properties with architectural or historic significance. In order to understand what historic properties may be affected by the project, we require a complete accounting of potentially significant properties. Additionally, indirect and long term effects of the beltway undertaking must be taken into account. Therefore, the entire project area should be surveyed and not limited to a narrow area identified as potential right-of-way.

2) An intensive historic survey of the Stevens Creek bottoms area. This survey should take into account the potential for a rural historic district and\or a cultural landscape district. This survey should also be planned and completed in consultation with this office.

The Stevens Creek bottoms area was the first part of Lancaster county to be settled by Euro-Americans. Except for the Stevens Creek Stock Farm, which is listed on the National Register, we have little information about the existence and\or integrity of structures that may be associated with early settlers. With the Stevens Creek Farm as our only example, there appears to be the potential for a rural historic district in the area.

Historic cultural landscapes are those that have been shaped by cultural forces. Again, we have little information as to the existence or integrity of potentially significant cultural landscape features created during the settlement era.

3) An archeological investigation of the entire study area, planned and completed in consultation with this office.

A literature and records search concerning archeological properties has been completed (Barton,

1996). We recommend that an intensive survey of all potential stream crossings from valley margin to valley margin should be completed, and that a ten-percent sample of all upland areas should be intensively surveyed.

It is necessary to perform the surveys described in 1&2 above for the entire beltway study area. In the long term, waiting until a preferred route is chosen before completing these surveys could result in lengthy, costly delays. At minimum, to seek alternatives to potential adverse effects; or to determine if there are feasible and prudent alternatives to adverse effects (Section 4(f) also applies to historic properties), the entire beltway study area should be considered the APE.

Additionally, as indirect and long term effects of a project of this magnitude must be taken into account, a large study area must be examined. Issues such as visual effects, long-term changes in land use and associated transportation upgrades must be considered. This can only be accomplished by identifying an area of potential effects at least as large as the entire study area.

Thank you for allowing us to review interim report No. 1. We would be pleased to meet with you or your representatives to discuss the methodology, scope and need of the survey requirements discussed above. If you have any questions, about the architectural\historical components of this letter, or would like to set up a meeting, please do not hesitate to call me at 471-4788. For questions about the archeological components, please call Terry Steinacher, 308\665-2918.

Yours Truly,

Bill Callahan
Historic Buildings Survey
Program Associate\National
Register Coordinator

cc: Amy Zlotsky
Phil Barnes
Ed Zimmer
Mike Rindone
Terry Steinacher

potential easement-holding organizations in the local area, and serving as a resource for technical assistance in developing easement documents.

Archeological Site 25LC129. Based on discussions during the site visit on 17 October 2001, further engineering refinements were evaluated (see **Section 9.3**). From the reanalysis, it appears possible to completely avoid impacts to the archeological site by incorporating a retaining wall on the west side of the beltway right-of-way. No additional mitigation is proposed.

Additional Cultural Resource Management Activities. Other activities will include:

- Completion of an archeological survey of bottomlands where access has been previously denied.
- Use of NDOR standard provisions regarding previously unsuspected archeological remains that provide for cessation of work and notification of the SHPO
- Use of NDOR standard provisions regarding monitoring of archeological sites.
- A historic marker located at Saltillo Road and the abandoned South 14th Street right-of way will need to be relocated. The marker commemorates the Nebraska City to Fort Kearny Road, "The Great Central Route to the Gold Fields" which crossed near this location. There are no remnants of the trail known within or near the SM-4 right-of-way.

10.0 STATUS OF SECTION 106

In November 2000, the SHPO reviewed the Preliminary Draft Environmental Impact Statement (PDEIS), and concurred with the findings of the PDEIS and the findings of the appendices (specifically the Assessment of Adverse Effects and the Determination of Boundaries report) as they related to Section 106 consultation (see **Appendix E**, letters dated 1 February 2001 and 27 November 2000).

Following the close of the comment period on the DEIS, comments on historic issues were compiled. These issues were investigated further and the current status is documented in this Appendix and in **Chapter 9** of the FEIS. Based on the additional investigations, the list of sites which were determined to be adversely affected was updated to reflect the fact that archeological site 25LC129 could be avoided on EM-1 (**Table F.2**). The list of adverse affects (**Table F.3**) was also updated for publication of the FEIS based on the additional evaluations.

Consultation with the SHPO has been ongoing to resolve the final issues. The SHPO concurred with FHWA determinations on the additional Stevens Creek Stock Farm parcels by signature dated 30 January 2002 (**Appendix E**). The SHPO concurred with the mitigation plan by signature to the MOA (**Appendix E**).

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07May02

ASSESSMENT OF ADVERSE EFFECTS TO NRHP AND NRHP-ELIGIBLE SITES

SOUTH AND EAST BELTWAYS STUDY
LINCOLN, NEBRASKA

PREPARED FOR

FEDERAL HIGHWAY ADMINISTRATION
NEBRASKA DEPARTMENT OF ROADS
LANCASTER COUNTY
CITY OF LINCOLN

OCTOBER 2000
(REVISED 2/01, 11/01, 5/02)

ASSESSMENT OF ADVERSE EFFECTS TO NRHP AND NRHP-ELIGIBLE SITES for South and East Beltways Study Lincoln, Nebraska

TABLE OF CONTENTS

		Page
1.0	BACKGROUND	F.4
2.0	METHODOLOGY	F.4
3.0	RESULTS OF LEVEL 1 SCREENING	F.5
4.0	RESULTS OF LEVEL 2 SCREENING	F.5
5.0	RESULTS OF LEVEL 3 SCREENING	F.8
6.0	PUBLIC COORDINATION	F.16
7.0	ADDITIONAL INVESTIGATIONS	F.16
7.1	Determination of Boundaries	F.16
7.2	Evaluation of Stevens Creek Stock Farm 320 Hectares (800 Acres)	F.16
7.3	Evaluation of Sartore (Herter) Farmyard 40 Hectares (100 Acres)	F.16
7.4	Noise Evaluation	F.17
7.5	Evaluation of Urban Sprawl	F.17
7.6	Reevaluation\Evaluation of Other Sites	F.17
7.7	Reevaluation of a Historic District	F.19
7.8	Resolution of Other Issues	F.20
7.9	Reevaluation of Effects for Publication of the DEIS	F.20
8.0	DEIS COMMENTS AND RESOLUTION OF HISTORIC ISSUES	F.21
8.1	Field Trip on Historic Issues	F.22
8.2	Secondary and Cumulative Impacts	F.22
8.3	Boundaries of Historic Properties	F.22
8.4	Evaluation of Additional Acres for the Stevens Creek Stock Farm	F.22
8.5	Additional Historic Property	F.23
8.6	Assessment of Adverse Affects	F.23
8.7	Advisory Council on Historic Preservation	F.24
9.0	MITIGATION PLAN FOR HISTORIC PROPERTIES ALONG SM-4/EM-1	F.25
10.0	STATUS OF SECTION 106 CONSULTATION	F.27

Appendices

Appendix F-A	Documentation of Additional Investigations	F.23

Tables

Table F.1	Sites on or Eligible for the NRHP by Nearest Beltway Alternative	F.6
Table F.2	Summary of NRHP Sites Adversely Affected by the Beltway Alternatives	F.9
Table F.3	List of Adverse Effects to Sites on or Eligible for the NRHP	F.10

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07May02

ASSESSMENT OF ADVERSE EFFECTS TO NRHP AND NRHP-ELIGIBLE SITES for South and East Beltways Study Lincoln, Nebraska

1.0 BACKGROUND

This report has been prepared in compliance with Section 106 of the National Historic Preservation Act which requires Federal agencies to take into account the effects of their undertakings on historic properties. Based on the recommendations of the Historic Survey Report, Archeological Evaluation, and supplemental investigations requested by the SHPO for this project, there were 34 sites in the Lincoln South and East Beltways Study area which were either on or eligible for listing on the National Register of Historic Places (NRHP). These included 30 historic and 4 archeological sites.

The SHPO concurred with the recommendations of eligibility for historic and archeological sites; all other sites were determined not eligible.

Since that time, two additional cast concrete road signs were identified within the study area in June 2000 (Appendix G) and have been included in this assessment.

2.0 METHODOLOGY

A preliminary assessment of adverse effects to NRHP sites was conducted by a team of technical persons who have been involved in the Beltway project over the course of several years. For the historic sites, the team included:

Bill Callahan	Nebraska State Historical Society, SHPO
Ed Kosola	Federal Highway Administration, NEPA Coordinator
Cindy Veys	Nebraska Department of Roads, Environmental Supervisor
Len Sand	Nebraska Department of Roads, Environmental Analyst Supervisor
Ed Zimmer	City-County Planning Department, Historic Planner
Roger Figard	City Engineer
Virendra Singh	City Public Works Department, Long-Range Planning Supervisor
Kelly Sieckmeyer	City Public Works Department, Engineer
Jim Linderholm	HWS, Principal-in-Charge
Mike Gorman	HWS, Project Manager, Transportation Engineer
Lisa Richardson	HWS, Transportation Engineer
Amy Zlotsky	OES, Environmental Scientist

For the archeological sites, the team included:

Terry Steinacher	Nebraska State Historical Society, SHPO
Stan Parks	University of Nebraska, Research Archeologist
Stacy Stupka-Burda	University of Nebraska, Research Archeologist
Mike Gorman	HWS, Project Manager, Transportation Engineer
Lisa Richardson	HWS, Transportation Engineer
Amy Zlotsky	OES, Environmental Scientist

Methodology for the assessment followed 36 CFR Part 800.5, as described in the revised guidance dated 18 May 1999. The preliminary assessment of effects included three levels of screening.

3.0 RESULTS OF LEVEL 1 SCREENING

The original 34 sites and the two new sites (road signs) were reviewed to determine which beltway corridors could potentially affect them (**Table F.1**). However, only the four remaining beltway corridors were considered in the evaluation; these are SM-4, EC-1, EM-1 and EF-1. Based on this review, 3 historic sites and 1 archeological site were determined not to be affected by any of these four corridors. Eliminated from further consideration were sites LC00: S-6, LC00: S-31, LC00: S-47 and 25LC1.

4.0 RESULTS OF LEVEL 2 SCREENING

The remaining 32 sites (29 historic and 3 archeological) were compared with the most recently refined corridor concepts. Materials available to the reviewers included site survey data forms, descriptions, maps, and photographs of the sites. For each corridor, materials available included recent aerial photography, existing and future contour maps, revised centerline concepts and cut and fill information.

Using the list of examples of adverse effects found in 36 CFR Part 800.5 (a) (2), a matrix of potential adverse effects was determined for each site along each corridor. Of the seven example types of effects, five were considered possible with the beltway project. In addition, other types of effects were considered, but none were identified as appropriate to this project. The types of effects evaluated were:

1. Physical destruction of or damage to all of part of the property [800.5 (a) (2) (i)].

   An example would be where the EC-1 route crosses wagon ruts from an EuroAmerican trail (site 25LC147).

2. Removal of a property from its historic location [800.5 (a) (2) (iii)].

   An example would be the possible need to reposition the Road Sign at 112th and Adams (site LC00: E-118) by an estimated 6.1 m (20 ft) when Adams Street is paved and upgraded to current standards.

Table F.1

SITES ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES BY NEAREST BELTWAY CORRIDOR LOCATION [1]
(X indicates potential effects)

SITE NUMBER	SITE NAME	CORRIDOR						
		SC-1	SC-4	SF-1	SM-4	EC-1	EM-1	EF-1
FARMYARDS								
LC00: S-15	Del O'Brien Farmyard				X			
LC00: S-143	Henry Wunibald Farmyard				X			
LC00: E-52	Steve Johnson Farmyard						X	X
LC00: E-53	Penterman Farmyard, "Penterman Farm"							X
LC00: E-56	Michael Smith Farmyard							X
LC00: E-61	Elaine and Owen Herter Farmyard							X
LC00: E-62	Joel and Kathy Sartore Farmyard, "Herter's-Hagaman Farm"							X
LC00: E-69	Arthur Monahan Farmyard, "Haeger Dairy"							X
LC00: E-72	Lyle and Maverne Mayer Farmyard						X	X
LC00: E-87	Theresa Retzlaff Farmyard, "Forest Brook Farm"							X
LC00: E-88	Stevens Creek Stock Farm, Mardale Farm						X	X
LC00: E-134	Laura Reed Farmyard, "Reed Homestead"					X	X	
BARNS								
LC00: S-6	David McEwen Gable Roof Barn		X					
LC00: S-31	Steve Speidel Gothic Arch Roof Laminated Truss Barn	X						
LC00: S-47	Margene Zachek Gable Roof Connected Barn	X						
LC00: S-127	Ehler's Round Barn				X			
LC00: E-57	Elton Haase Gable Roof Mortise and Peg Barn, "Haase Farm"							X

Table F.1
(continued)

SITE NUMBER	SITE NAME	CORRIDOR						
		SC-1	SC-4	SF-1	SM-4	EC-1	EM-1	EF-1
LC00: E-67	Shirley Retzlaff Barns and Silo "Retzlaff Farm"							X
LC00: E-102	Donna Keane Gambrel Roof Barn, "Kettlehut Farm"						X	
LC00: E-132	Lynn Lenhoff Gambrel Roof Concrete Block Barn					X		
RESIDENCES								
LC00: S-23	Forest Nicely Residence, "Jensen Homeplace"				X			
LC00: E-81	Chuck Hobza Residence, "Jacoby Homestead"						X	X
LC00: E-99	Norma and Bob Lemke Residence, "Karl Lemke Farm"						X	X
LC00: E-141	William Fagen Residence, "Fagen's Acres"					X		
SCHOOL								
LC00: S-41	"Cheney School"				X	X		
GRAIN ELEVATORS								
LC00: S-40	Circle 4 Feed and Grain Elevator, Cheney				X	X		
LC00: E-106	Farmers Coop Grain Elevator, Walton					X	X	
ROAD SIGNS								
LC00: S-42	Road Sign at 1st and 91st, Cheney				X	X		
LC00: S-135	Road Sign on at Saltillo and 56th				X			
LC00: S-145	Road Sign at Saltillo and approx 112th			X				
LC00: E-118	Road Sign at 112th and Adams						X	X
LC00: E-146	Road Sign at Yankee Hill and approx 116th						X	
ARCHEOLOGICAL SITES								
25LC1	Schrader Site–Small Late Prehistoric Village, Smokey Hill Phase			X				
25LC125	Lithic Scatter						X	
25LC129	Lithic and Ceramic Scatter						X	
25LC147	Euroamerican Trail, ca. 1860-1880					X		

[1] List includes two additional road signs identified in June 2000.

3. Change of character of property's use or physical features within the property's setting that contribute to historic significance [800.5 (a) (2) (iv)].

   An example would be where the SM-4 route crosses near the Henry Wunibald farmyard (site LC00: S-143) requiring (1) construction of a new lane to access the farmstead, and (2) changing the previous isolation of the property by placing it within 300 m (1,000 ft) of the beltway.

4. Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features [800.5 (a) (2) (v)].

   An example would be where EF-1 crosses within 180 m (600 ft) of the Penterman farmyard creating visual impacts.

5. Neglect of a property which causes its deterioration (exception for Indian tribes) [800.5 (a) (2) (vi)].

   After Level 3 Screening, no examples of this type of effect were found.

Among other things, the teams evaluated the physical characteristics of and type of historic site; the distance between the property and the beltway; the topography in between the property and the beltway; any existing screening; whether the beltway was in a cut or fill section; whether the property was already affected by other transportation facilities; and any changes in access.

Based on the matrix, sites were either determined to be (a) not adversely affected by the beltway project, (b) adversely affected, or (c) possibly adversely affected, but needed field verification.

5.0 RESULTS OF LEVEL 3 SCREENING

In Fall 1999, a field investigation was conducted by the team members to survey the sites in question. The field trip included viewing sites from the corridor centerlines and viewing the centerlines from the sites. Based on the field review, the team finalized the preliminary assessment of adverse effects. Seven sites were determined to be impacted by the four routes. These were:

- one historic site on SM-4
- one archeological site on EC-1
- one historic and one archeological site on EM-1 (however, in December 2002 refinements to the EM-1 alignment allowed this archeological site to be avoided).
- three historic sites on EF-1

A summary of the seven adversely affected sites is provided in **Table F.2**. More detailed information from the assessment of adverse effects is provided in **Table F.3**.

Table F.2

SUMMARY OF NRHP SITES ADVERSELY AFFECTED BY THE BELTWAY ALTERNATIVES

SM-4	EC-1	EM-1	EF-1
LC00: S-143 Henry Wunibald Farmyard	25LC147 Euroamerican Trail	LC00: E-52 Steve Johnson Farmyard	LC00: E-53 Penterman Farmyard
		25LC129[1] Lithic and Ceramic Scatter	LC00: E-87 Teresa Retzlaff Farmyard
			LC00: E-88 Stevens Creek Stock Farm

[1] In December 2002 refinements to the EM-1 alignment allowed this archeological site to be avoided.

Table F.3
LIST OF ADVERSE EFFECTS
TO SITES ON OR ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES
Lincoln South and East Beltways Study

SITE INFORMATION		ADVERSE EFFECTS (36 CFR Part 800.5, 18 May 1999)					
SITE NUMBER SITE NAME DATE OF CONSTRUCTION	SIGNIFICANCE COMPONENTS	(i) Physical destruction of or damage to all or part of the property	(iii) Removal of a property from its historic location	(iv) Change of character of property's use or physical features within the property's setting that contribute to historic significance	(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features	(vi) Neglect of a property which causes its deterioration	Notes
FARMYARDS							
LC00: S-15 Del O'Brien Farmyard 1910s-1920	Significant, under Criterion A, as a complex of buildings associated with agricultural development. 2-story house with Craftsman features hollow tile chicken house, gambrel roof barn, polygonal granary, windmill.	NO	NO	NO	NO, already visual intrusion of busy paved road & powerline. Topography also screens proposed alignment since road is on other side of ridge.	NO	SM-4 is 0.8 km (0.5 mi) away, separated from farmyard by Saltillo Road, and screened to a large degree by topography. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: S-143 Henry Wunibald Farmyard 1900-1960s	Significant, under Criterion A, as a complex of buildings associated with agricultural development, and under Criterion C, for the house, barn and shed (former kitchen). 1 ½-story farmhouse with 1917 addition, mortise and tenon gable roof barn, hollow clay tile coop, shed (former kitchen), metal quonset-style shed.	NO	NO	YES, change in access & change in previous isolation.	YES, visual, but no noise impact.	NO	SM-4 is 91 m (300 ft) from associated agricultural acreage and 300 m (1,000 ft) away from closest structure. Despite good faith effort, site was missed in initial survey. Site is on ridge surrounded by vegetation. For mitigation, consider berms, could put interchange at Saltillo Rd, but moving beltway to north won't do much to mitigate.
LC00: E-52 Steve Johnson Farmyard 1890s-1900	Significant, under Criterion A, as a complex of buildings associated with agricultural development, and under Criterion C, as typical example of Folk Victorian architecture in house and outbuildings. Folk Victorian house, garage (summer kitchen) large gable roof barn, two-pen granary, chicken coop and outhouse.	NO	NO	NO	YES, adverse visual effect--looking down onto EM-1, but no noise impact.	NO	EM-1 is 300 m (1,000 ft) from associated agricultural acreage & 701 m (2,300 ft) from farmyard and will have adverse visual affect on farmyard. EF-1 is 1 280 m (4,200 ft) away, in cut, on other side of creek. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-53 Pentorman Farmyard, "Penterman Farm" 1920s	Significant, under Criterion A, as a complex of buildings associated with agricultural development. Small bungalow house with matching garage, gambrel roof barn with intact horseyard, two small sheds.	NO	NO	NO	YES, visual intrusion, but no noise impact.	NO	EF-1 is 180 m (600 ft) away from closest building in fill section. For mitigation, could move road to east and take residence on south side of road, consider depressing road.
LC00: E-56 Michael Smith Farmyard 1912-14	Significant, under Criterion C, as Craftsman style house typifies period of construction.Outbuildings contribute to size and formality of site. 2.5-story Craftsman house, garage, large gable end barn, chicken coop, machine shed.	NO	NO	NO	NO	NO	EF-1 is 579 m (1,900 ft) away and site faces 148th St. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-61 Elaine and Owen Herter Farmyard Pre 1900	Significant, under Criterion A, as a complex of buildings associated with agricultural development, and under Criterion C as an excellent example of a turn-of-the-century farmstead in study area. Large Folk Victorian farmhouse, gable roof barn, concrete block garage, granary, coop, windmill.	NO	NO	NO	NO	NO	EF-1 is 1 200 m (4,000 ft) away separated by 148th St and site is well hidden by trees. Alternative will not diminish characteristics that make this property eligible for NRHP.

Table F.3
(Continued)

SITE INFORMATION		ADVERSE EFFECTS (36 CFR Part 800.5, 18 May 1999)					
SITE NUMBER SITE NAME DATE OF CONSTRUCTION	SIGNIFICANCE COMPONENTS	(i) Physical destruction of or damage to all or part of the property	(iii) Removal of a property from its historic location	(iv) Change of character of property's use or physical features within the property's setting that contribute to historic significance	(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features	(vi) Neglect of a property which causes its deterioration	Notes
LC00: E-62 Joel and Kathy Sartore Farm, "Herter's-Hagaman Farm" 1895	Significant, under Criterion A, as a complex of buildings associated with agricultural development, and under Criterion C, as it typifies Folk Victorian building style. Victorian house, large gambrel roof barn, hollow tile smokehouse, gambrel roof granary, pig house, sheds, root cellar with arched roof.	NO	NO	NO	NO	NO	EF-1 is 792 m (2,600 ft) away in cut section, and site is well hidden by trees. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-69 Arthur Monahan Farmyard, "Haeger Dairy" 1910s-20s	Significant, under Criterion A, as a complex of commercial dairy buildings, and under Criterion C for architectural styles and evolution of site. Turn-of-century house, bungalow house, large dairy barn with concrete block silo, Tudor influenced hollow tile milk house, two small hog sheds.	NO	NO	NO	NO	NO	EF-1 is 335 m (1,100 ft) away from interchange, but site is already on busy US 34. Addition of beltway will not introduce elements out of character with property's current configuration.
LC00: E-72 Lyle and Maverne Mayer Farmyard 1900s-1910	Significant, under Criterion C, as representative type of small scale vernacular farmstead with innovative buildings. Folk Victorian house, gable roof barn, granary, chicken coop.	NO, already on busy US 34 with likely impacts from planned widening prior to beltway.	NO	NO, already on busy US 34.	NO, already on busy US 34. EM-1 in cut west of powerline, down hill, on other side of ridge. EF-1 is very far away.	NO	EM-1 is 488 m (1,600 ft) away and EF-1 is 945 m (3,100 ft) away. Site is already affected by visual and audible intrusions caused by US 34. Addition of beltway will not introduce elements out of character with property's current configuration.
LC00: E-87 Theresa Retzlaff Farmyard, "Forest Brook Farm" 1890s-1920	Significant, under Criterion C, as excellent example of vernacular building types. Stone Tudor style cottage, gable roof barn, granary, hog house, small polygonal shed.	NO	NO	NO	YES, visual due to close proximity, elevated road/bridge & removal of trees, but no noise impact.	NO	EF-1 is 150 m (500 ft) from farmyard. For mitigation, could consider moving road farther east (would affect additional archeological sites) or to west (would affect Stock Farm).
LC00: E-88 Stevens Creek Stock Farm, Mardale Farm 1867-1970s	On NRHP. Significant to the early settlement of the county and the development of agriculture in Nebraska. Several structures, individually and collectively, represent a distinctive entity significant in Nebraska architecture. Compact grouping of 18 buildings in excellent condition representing extended courtyard arrangement. 3 houses, 4 barns, numerous sheds and pole buildings. Includes 65 ha (160 ac) plus additional 32 ha (80 ac) of farmground to the east determined eligible. More recently, 32 ha (80 ac) of farmground to the west and 32 ha (80 ac) of farmground to the south determined eligible.	NO	NO	For EM-1: NO	For EM-1: NO, buildings and west boundary of NRHP farmground well buffered visually & physically by orientation to east, trees, creek, etc.	NO	EM-1 is 488 m (1,600 ft) from edge of property therefore no physical intrusion, farmground not harmed by visual impact.
				For EF-1: YES, introduction of large transportation facility is out of character with setting. Beltway would be adjacent to farmground eligible for NRHP.	For EF-1: YES, Can see 1891 house & top of cupolas & silos from centerline near Van Dorn. No noise impacts.		EF-1is at edge of farmground, 610 m (2,000 ft) from the 1891 & closest barn, 792 m (2,600 ft) from ranch house. Potential for development is considered greater since site is located west of (w/in) beltway.

Table F.3
(Continued)

SITE INFORMATION		ADVERSE EFFECTS (36 CFR Part 800.5, 18 May 1999)					
SITE NUMBER SITE NAME DATE OF CONSTRUCTION	SIGNIFICANCE COMPONENTS	(i) Physical destruction of or damage to all or part of the property	(iii) Removal of a property from its historic location	(iv) Change of character of property's use or physical features within the property's setting that contribute to historic significance	(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features	(vi) Neglect of a property which causes its deterioration	Notes
LC00: E-134 Laura Reed Farmyard, "Reed Homestead" 1900s-10	Significant, under Criterion A, as a complex of buildings associated with agricultural development in the area. Small 1-story house, twin gambrel roof barns, hollow tile silo, granary, hog house, small shed (summer kitchen).	NO	NO	NO, although few trees around house, road would be in valley below & no line of sight on north or west, and no interchanges at this location.	NO, audible or visual.	NO	EC-1 is 671 m (2,200 ft) away, separated by 112th St. EM-1 is 1 370 m (4,500 ft) away and separated by ridge and creek. Alternative will not diminish characteristics that make this property eligible for NRHP.
BARNS							
LC00: S-6 David McEwen Gable Roof Barn 1910s	Significant, under Criterion C, as excellent example utilizing architectural details in barn construction. Large gable roof barn with cupolas and formal cornice returns.	NO	NO	NO	NO	NO	Along SC-4 corridor which was eliminated from consideration.
LC00: S-31 Steve Speidel Gothic Arch Roof Laminated Truss Barn 1932/1936	Significant, under Criterion C, as illustrating a method of construction for laminated truss system for large Gothic arched roof. Large Gothic arched roof barn.	NO	NO	NO	NO	NO	Along SC-1 corridor which was eliminated from consideration.
LC00: S-47 Margene Zachek Gable Roof Connected Barn 1910s-20s	Significant, under Criterion C, as excellent example of innovative agricultural construction. Large connected barn complex with gable roof barn connected to machine shed by low birthing shed.	NO	NO	NO	NO	NO	On SC-1 corridor which was eliminated from consideration.
LC00: S-127 Ehler's Round Barn 1922-1924	On NRHP. Significant, under Criterion C, in the area of architecture as a well-preserved example of a true round barn. Hollow tile and frame barn with stepped conical roof.	NO	NO	NO	NO	NO	SM-4 is 1 160 m (3,800 ft) away. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-57 Elton Haase Gable Roof Mortise and Peg Barn, "Haase Farm" 1915	Significant, under Criterion C, as excellent example of innovative construction for joinery system. Mortise and peg gable roof barn with limestone foundation.	NO	NO	NO	NO	NO	EF-1 is over 0.8 km (0.5 mi) away and would be separated from barn by already busy 148th Street. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-67 Shirley Retzlaf Barns and Silo, "Retzlaf Farm" 1890s-1900	Significant, under Criterion C, as excellent example of banked barn construction with raised stone foundation. Large gable roof banked barn, smaller gambrel roof barn, and hollow tile silo.	NO	NO	NO	NO	NO	EF-1 is 549 m (1,800 ft) away. Alternative will not diminish characteristics that make this property eligible for NRHP.

Table F.3
(Continued)

SITE INFORMATION		ADVERSE EFFECTS (36 CFR Part 800.5, 18 May 1999)					
SITE NUMBER SITE NAME DATE OF CONSTRUCTION	SIGNIFICANCE COMPONENTS	(i) Physical destruction of or damage to all or part of the property	(iii) Removal of a property from its historic location	(iv) Change of character of property's use or physical features within the property's setting that contribute to historic significance	(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features	(vi) Neglect of a property which causes its deterioration	Notes
LC00: E-102 Donna Keane Gambrel Roof Barn, "Kettlehut Farm" 1916	Significant, under Criterion C, as excellent example of this type of dairy barn construction. Larger gambrel roof barn with attached gambrel roof milking shed.	NO	NO	NO	NO	NO	EM-1 is 610 m (2,000 ft) away in cut section, with visual barrier of conifers, & existing intrusions of acreage homes. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-132 Lynn Lenhoff Gambrel Roof Concrete Block Barn 1930s	Significant, under Criterion C, typifying new type of construction with modern materials, and under Criterion A, as an example of evolving farm technology. Large gambrel roof concrete block barn.	NO	NO	NO	NO, could only see very top of roof from centerline.	NO	EC-1 is 610 m (2,000 ft) away, and about 5 m (15 ft) difference in grade. Alternative will not diminish characteristics that make this property eligible for NRHP.
RESIDENCES							
LC00: S-23 Forest Nicely Residence, "Jensen Homeplace" 1936	Significant, under Criterion C, representing a type of small neo Tudor style house in study area. Small neo Tudor house with gable roof.	NO	NO	NO	NO	NO	Site is about 1.2 km (0.75 mi) from SM-4 along diagonal no longer under consideration, and already adjacent to busy Saltillo Road. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-81 Chuck Hobza Residence, "Jacoby Homestead" 1910s	Significant, under Criterion C, typifying new type of construction and building materials locally manufactured. Large 4-square box house constructed of concrete block with ornamental molding.	NO	NO	NO	NO	NO	EM-1 is 732 m (2,400 ft) away with significant grade difference, no interchange at Havelock & site surrounded by trees. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-99 Norma and Bob Lemke Residence, "Karl Lemke Farm" 1930s	Significant, under Criterion C, as good example of Colonial Revival style. Colonial Revival brick house with simple rectangular plan	NO	NO	NO	NO, beltway would be on west side of powerline, no line of sight due to trees and ridges.	NO	EM-1 is 610 m (2,000 ft) away in cut section with no interchange at Old Cheney. Alternative will not diminish characteristics that make this property eligible for NRHP.
LC00: E-141 William Fagen Residence, "Fagen's Acres" 1890s	Significant, under Criterion C, as interesting example of Italianate design. Simple box plan house with Folk Italianate features.	NO	NO	NO, separated from road by at least 2 shelterbelts, house completely surrounded by mature trees.	NO	NO	EC-1 is 1 490 m (4,900 ft) away, ridge between site and road, access is from 98th St not Fletcher. Alternative will not diminish characteristics that make this property eligible for NRHP.
SCHOOL							
LC00: S-41 "Cheney School" 1910s-20s	Significant, under Criterion A, for rural educational development, and under Criterion C, as representative type of Arts and Crafts building. 2-story clapboard sided school with pyramidal roof.	NO	NO	NO	NO	NO	Neither EC-1 nor EM-1 will adversely affect historic properties located within the Village of Cheney.

Table F.3
(Continued)

SITE INFORMATION		ADVERSE EFFECTS (36 CFR Part 800.5, 18 May 1999)					
SITE NUMBER SITE NAME DATE OF CONSTRUCTION	SIGNIFICANCE COMPONENTS	(i) Physical destruction of or damage to all or part of the property	(iii) Removal of a property from its historic location	(iv) Change of character of property's use or physical features within the property's setting that contribute to historic significance	(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features	(vi) Neglect of a property which causes its deterioration	Notes
GRAIN ELEVATORS							
LC00: S-40 Circle 4 Feed and Grain Elevator, Cheney 1910s-20s	Significant, under Criterion C, under umbrella of multiple property nomination to cover local elevators in history of the county's agricultural development. Grain elevator with steeply pitched tin covered gable roof.	NO	NO	NO	NO	NO	Neither EC-1 nor EM-1 will adversely affect historic properties located within the Village of Cheney.
LC00: E-106 Farmers Coop Grain Elevator, Walton 1910s	Significant, under Criterion C, under umbrella of multiple property nomination for local elevators in history of the county's agricultural development. Grain elevator with tin covered gable roofs.	NO	NO	NO	NO	NO	EC-1 is 1.2 km (0.75 mi) away. Site is historically associated with transportation corridor, and alternative will not diminish characteristics that make this property eligible for NRHP.
ROAD SIGNS							
LC00: S-42 Road Sign at 1st & 91st, Cheney 1920s	Significant, under Criterion C, under umbrella of multiple property nomination for early Lancaster County concrete road signs as contribution to broad transportation patterns. Cast concrete directional sign.	NO	NO	NO	NO	NO	Sign is over 0.8 km (0.5 mi) from SM-4/EC-1, w/in street grid of Cheney & already buffered from beltway by existing buildings & trees. Transportation facility not in-compatible w/ sign's historic function.
LC00: S-135 Road Sign at Saltillo & 56th 1920s	Significant, under Criterion C, under umbrella of multiple property nomination for early Lancaster County concrete road signs as contribution to broad transportation patterns. Cast concrete directional sign.	NO	NO	NO	NO	NO	Road sign is about 0.8 km (0.5 mi) from SM-4, is already on busy Saltillo Road. Transportation facility is not incompatible with sign's historic function.
LC00: S-145 Road Sign at Saltillo & approx 112th 1920s	Significant, under Criterion C, under umbrella of multiple property nomination for early Lancaster County concrete road signs as contribution to broad transportation patterns. Cast concrete directional sign.	NO	NO	NO	NO	NO	Road sign might have been impacted by SF-1, but is about 0.8 km (0.5 mi) east of SM-4. Sign is already on busy Saltillo Road which is already paved. No beltway inter-change is proposed on Saltillo Rd. Transportation facility is not incom-patible with sign's historic function.
LC00: E-118 Road Sign at 112th & Adams 1920s	Significant, under Criterion C, under umbrella of multiple property nomination for early Lancaster County concrete road signs as contribution to broad transportation patterns. Cast concrete directional sign.	NO, provided construction near sign is monitored.	NO, however may need to reposition about 20 ft from road.	NO	NO	NO	EM-1 & EF-1 would have inter-changes at Adams with Adams St improved. But, sign is 18 m (60 ft) from CL of Adams which is planned for paving & upgrade to current standards w/ or w/o beltway. Trans-portation facility not incompatible with sign's historic function.
LC00: E-146 Road Sign at Yankee Hill & approx 166th 1920s	Significant, under Criterion C, under umbrella of multiple property nomination for early Lancaster County concrete road signs as contribution to broad transportation patterns. Cast concrete directional sign.	NO	NO	NO	NO	NO	Road sign is about 0.8 km (0.5 mi) west of EM-1. No beltway inter-change is proposed on Yankee Hill Rd. Sign was moved previously. Transportation facility is not incom-patible with sign's historic function.

Table F.3
(Continued)

SITE INFORMATION		ADVERSE EFFECTS (36 CFR Part 800.5, 18 May 1999)					
SITE NUMBER SITE NAME DATE OF CONSTRUCTION	SIGNIFICANCE COMPONENTS	(i) Physical destruction of or damage to all or part of the property	(iii) Removal of a property from its historic location	(iv) Change of character of property's use or physical features within the property's setting that contribute to historic significance	(v) Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant features	(vi) Neglect of a property which causes its deterioration	Notes
ARCHEOLOGICAL SITES							
25LC1 Schrader Site	On NRHP. Significant, under Criterion D, for its ability to yield information important in prehistory. Small Late Prehistoric Village, Smokey Hill Phase	NO	NO	NO	NO	NO	Along SF-1 corridor which was eliminated from consideration.
25LC125	Significant, under Criterion D, for its ability to yield information important in prehistory. Lithic Scatter	NO	NO	NO	NO	NO	Cut section for EM-1 is 61 to 84 m (200-275 ft) from edge of delineated site.
25LC129	Significant, under Criterion D, for its ability to yield information important in prehistory. Lithic and Ceramic Scatter	NO	NO	NO	NO	NO	NO, EM-1 alignment refined in Dec 2001 to avoid this site.
25LC147	Significant, under Criterion A for relevance to early transportation and settlement, and Criterion D for its ability to yield information important in history. Site is part of discontinuous archeological district also including (1) wagon ruts east of Stevens Creek considered to be Road 324 from 1866 map, and (2) Shirley Road Ranch. Wagon ruts from Euroamerican trail, ca. 1860-1880.	YES, EC-1 would cross assumed trail location no matter how a shift is made & shift could impact cemetery or Indian burial if move too far up hill. However, no wagon ruts are visible in area of EC-1 ROW.	NO	YES, EC-1 crosses discontinuous archeological district.	NO	NO	As required by SHPO, further archeological investigation is necessary if this alternative is selected. Trail is presumed to exist in area of EC-1, although no trail ruts are visible.

6.0 PUBLIC COORDINATION

The Preliminary Assessment of Adverse Effects to NRHP and NRHP-Eligible Sites was made available for review and comment by the consulting parties and general public. A total of 32 letters were received, including 20 which mentioned being members of CARS–Citizens for for Accountable Route Selection.

Comments were reviewed, summarized and discussed by the teams listed above. Additional investigations were conducted, and information from the comments and investigations was incorporated into (1) this Assessment of Adverse Effects to NRHP and NRHP-Eligible Sites to be submitted to the SHPO, and (2) the Draft Environmental Impact Statement, where appropriate.

7.0 ADDITIONAL INVESTIGATIONS

As recommended in the consulting party/public comments, several additional investigations were conducted.

7.1 Determination of Boundaries

Boundaries were determined for all historic properties eligible for the NRHP. Boundaries were delineated in a report prepared by the University of Nebraska-Lincoln (UNL) and reviewed by the SHPO (Appendix G). In particular, the determination included an evaluation of agricultural acreage (crop and pasture land) as a potential contributing component of eligible farmsteads.

7.2 Evaluation of Stevens Creek Stock Farm 320 Hectares (800 Acres)

The boundary for the Stevens Creek Stock Farm was assumed to be the 65 ha (160 ac) listed on the NRHP plus the additional 32 ha (80 ac) of cropland immediately east of the NRHP site (for a total of 97 ha (240 ac)). It does not include the remaining 227 ha (560 ac) which Charles Retzlaff reportedly had acquired by 1888, and which the SHPO considered eligible for listing in a letter dated 18 September 1995. Additional investigation of these parcels (32 ha (80 ac) in Section 3, Stockton Township and 194 ha (480 ac) in Section 34, Stevens Creek Township) revealed that they are at least 1.6 km (1.0 mi) away and not contiguous with the original homesteader's property and buildings (located in Sections 4 and 5, Stockton Township). Consultation with the SHPO indicated that it was not appropriate to have a discontinuous site.

7.3 Evaluation of Sartore (Herter) Farmyard 40 Hectares (100 Acres)

Since initiation of the historic boundaries evaluation, the Sartore property was listed on the NRHP. The NRHP site is defined as a 8.1 ha (20 ac) parcel and corresponds to the independently delineated boundary in the UNL report (Appendix G). However, the NRHP nomination form contains language which allows for increasing the size of the NRHP site, pending completion of the evaluation of an additional 40 ha (100 ac). Based on review of the UNL report, the SHPO indicated that the remaining 40 ha (100 ac) of the Sartore property would not be considered eligible for listing due to (a) agricultural terracing which has altered the natural contours of landscape, and (b) a portion of the land is overgrown with numerous exotic trees such as Chinese elm and no longer contributes to the knowledge or understanding of the Herter Farmstead.

7.4 Noise Evaluation

A noise evaluation (Appendix C) was conducted for all sensitive receptors in the beltway study area, including three residences on or eligible for the NRHP (Henry Wunibald, Penterman and Teresa Retzlaff) . None of the other historic residences are located within the 300 m (1000 ft) range of accuracy for the noise model, and therefore were not modeled. Noise impacts generally occur within 76 m (250 ft) of the edge of pavement.

None of the three historic residences were predicted to have noise impacts based on guidelines and criteria established by FHWA (June 1995) which define noise impacts as predicted future noise levels of 66 dbA or greater, or an increase in noise of over 15 decibels.

7.5 Evaluation of Urban Sprawl

As recommended in the consulting party/public comments, an assessment was made regarding the potential for the beltway project to cause urban sprawl. A discussion of this topic is included in Sections 3.2 and 3.31 of the DEIS. Based on this discussion, it was determined that it is the Lincoln-Lancaster County planning process and policies that will dictate whether urbanization will occur in the beltway corridors. The presence of a beltway does not necessarily equate to urban sprawl when growth follows a locally approved plan. Toward that end, the City has already begun work on the Stevens Creek Basin Planning Initiative with the goal of preparing a long range conceptual plan for inclusion in the Comprehensive Plan update process. It is expected that any urbanization of the basin and other fringe areas will occur according to approved Subarea Plans.

7.6 Reevaluation/Evaluation of Other Sites

Several of the consulting party/public comments listed additional sites for consideration on the NRHP. All of the sites within the beltways study area were reinvestigated by UNL.

Of the properties mentioned with standing structures, four had already been evaluated, determined not eligible by experienced professionals in the field, and had received concurrence by the SHPO as not eligible. These were the Maahs Barns (LC00: E-68), Williss Farm (LC00: E-80); Want Schoolhouse (LC00: E-101), and Hulda Otto House (LC00: E-144). It should be noted that the investigators for the original historic survey (On Site, 1998) did visit the entire Willis Farm; however, only the barn was described in the report because the historic integrity of the other structures was compromised. Despite previous evaluation, UNL reinvestigated these properties, and determined that the original findings were still appropriate (**Appendix F-A**, memo from UNL dated 17 October 2000). To be eligible for the NRHP, properties must possess both significance and integrity.

> Maahs Barns. In addition to the conclusions in the On Site report (no architectural significance, loss of historic association, setting and fabric, neglect), UNL noted that the setting had been highly impacted by the intrusion of five large steel grain bins and a modern house.

Williss Farm. In addition to the conclusions in the On-Site report, UNL noted that the house lacks historic integrity considering the many modern alterations including the west addition; replacement windows; replacement siding; addition of shutters; replacement entrance over the east door is not in keeping with the architectural style or feel of the house; and it appears that the original chimney has been removed.

Want Schoolhouse. In addition to conclusions in the On Site evaluation (plug holes from blown in insulation, house likely moved to this location), UNL noted that the building sits on a new poured concrete foundation; one door has been replaced with an insulated steel door; and full-light French patio doors have been added on the south facade. None of these features are in keeping with the architectural style of the school. Intrusions of a modern house within 12 m (40 ft) and a trailer park within 15 m (50 ft) affect the integrity of the setting as well.

Otto House. Reconsideration of the Otto house had been previously requested and addressed due to suggestions by owners of the Stevens Creek Stock Farm that there was potential significance relative to an individual. Neither significance nor integrity could be established, and the SHPO concurred with the recommendation of not eligible. Despite previous documentation, the property was revisited by UNL investigators who concluded that the original evaluation was solid.

Many other older properties were visited during the historic survey, but were not considered to have retained a sufficient degree of historic integrity to warrant inclusion in the original historic survey report. The Otley farmstead and Speidel barn, were two such properties. Nevertheless, the properties were revisited by UNL investigators who again concluded that they did not meet the minimum standards to be included in a survey.

Otley Farmstead. The integrity of the Otley farmstead and surrounding farmyard is no longer intact. Specifically, the original porch supports have been replaced with wrought iron supports; the house has been clad in wide lap siding; two additions have been constructed including a new entrance to the structure; the windows have been replaced with no original molding remaining; and the chimney has been removed. The assertion of the uniqueness of indoor plumbing is not considered germane to NRHP eligiblity. Of the other buildings in the farmyard, the only intact historic structures were the two granaries; however, these were not considered to be outstanding examples in the study area.

Speidell Barn. The integrity of the Speidell barn is no longer intact. In particular, the board and batten siding and decorative scalloping has been replaced with corrugated metal on two sides; and the agricultural setting has been altered to a park-like setting with many exotic trees planted around the building.

Three properties were mentioned as having archeological sites. These were the Otley, Wagoner and Skoda properties.

Otley Sites. The Otley archeological site was investigated by UNL; found to be located outside of the study area (approximately 300 m (1,000 ft) from the edge of the project right-of-way); and was recommended not eligible for the NRHP. A site form has been completed for the site and submitted to the SHPO for their records (Site Number 25LC162).

While in the field, Mr. Rod Otley mentioned another Euroamerican archeological site on Edwin Otley's property. The site, located in an upland setting, encompasses approximately 0.1 ha (0.25 ac), and consists of red brick, redware (crockery) and flatglass within an agricultural field). In addition, there appeared to have been a couple of dumping episodes along an intermittent drainage, including tin cans, a barrel stay, more red brick, automotive body pieces from a circa 1920 car body, and unidentifiable metal pieces. UNL recommended that the site was not eligible for the NRHP. A site form has been completed for the site and submitted to the SHPO for their records (Site Number 25LC163).

Wagner Site. The Wagner property was reported to contain a buried "old Indian well" in an island of trees. According to the UNL investigators who spoke with the owner, the reported location is not within the project right-of-way and, since the site was buried prior to acquisition, there are many islands of trees in the area, and there is no way to determine its exact location (**Appendix F-**A, memo from UNL dated 17 October 2000).

Skoda Site. It has been reported by Mr. Rod Otley that another person living in the SW1/4 Section 21, T10N, R8E Stevens Creek Township told him that "something" had been found during excavation for the Skoda house in the late 1990's, and that "Indians came out and held a ceremony" after which construction was completed. UNL investigators were unable to verify any of this information through the SHPO, local Native American community, or other local authorities. Permission for access to the Skoda property was denied to the study team on more than one occasion. See **Appendix F-A**, memo from UNL dated 19 September 2000.

7.7 Reevaluation of a Historic District

One of the properties requested for evaluation, the German/Trinity Lutheran Church (located near 162nd Street and Old Cheney Road), is not in the defined study area and therefore was not surveyed. The church is 2.4 km (1.5 mi) east of the farthest east beltway alignment, and is considered outside the scope of the beltways project.

A request was made for reevaluation of a historic district centered on the German/Trinity Lutheran Church. Such an evaluation was not conducted because:

(a) The reconnaissance survey for the beltways study already identified all resources for a distance of 1.6 km (1.0 mi) beyond the farthest east alignment. The church is yet another 0.8 km (0.5 mi) farther east.

(b) The intensive survey for the beltways study already documented the local trends that resulted in the lack of resources to support a rural historic district centered around the Stevens Creek bottoms (which was the area of earliest settlement in Lancaster County due to the available natural resources). These trends include century long changes in agricultural operations; a poor agricultural economy resulting in abandonment of farmsteads; increasing consolidation of farm units; and urban pressure from the growing Lincoln community. These trends have resulted in urban and agricultural intrusions in the overall physical context, including suburban acreages, rural and municipal water distribution systems, radio and communication towers; transmission lines and electrical substations; a private airstrip, golf courses, recreational trails, and commercial and industrial

enterprises. Certainly, the contributions of early settlers were important; however, similar patterns occurred in counties throughout Nebraska. In contrast to eastern Nebraska, there are millions of acres in the western part of the state where modern impacts are much less intrusive than they are in the beltway study area.

(c) Whether or not resources exist to support a rural historic district for the German Evangelical Lutheran community extending beyond the beltway study area, those resources have already been documented to be extremely sparse in the area impacted by the beltway alternatives.

(d) A religious property cannot be eligible for the NRHP simply because it was the place of religious services for a community or was the oldest structure used by a religious group in a local area. In fact, the historic significance of a religious property must be based on "architectural or artistic values, or for important historic or cultural forces that the property represents (NR Bulletin 15). In addition, the original 1883 church burned and was replaced in 1917 with the current structure and although over 50 years old, the integrity of the 1917 structure has been significantly compromised due to modern overlay siding and additions placed on the front and rear of the structure.

7.8 Resolution of Other Issues

Some of the consulting party/public comments listed additional features missing from the beltway constraints map such as prairies, wetlands, transmission lines, etc. This map has been updated in the DEIS (see **Figures 2.1** and **2.25**).

Other consulting party/public comments are addressed in **Chapter 3** of the DEIS. These comments related to noise (**Section 3.13**), lighting (**Section 3.14**), wildlife (**Sections 3.17** and **3.22**), visual aethetics (Section **3.25**), indirect effects (Section **3.31**) and cumulative effects (Section **3.32**).

7.9 Reevaluation of Effects for Publication of the DEIS

Based on the consulting party/public comments and additional investigations, the list of eligible sites remained unchanged from that determined by FHWA in a letter dated **7** October 1999, and for which concurrence was obtained by the SHPO in letters dated 3 June 1998, 11 June 1998, 7 December 1998, 7 September 1999 and 2 June 2000. The only exception was the addition of the two more recently identified road signs which are considered eligible for the NRHP.

Based on the additional investigations, sites on or eligible for the NRHP were reevaluated and **Table F.3** was updated for publication of the DEIS. However, the list of sites which were determined to be adversely affected remained unchanged from the December 1999 preliminary assessment.

8.0 DEIS COMMENTS AND RESOLUTION OF HISTORIC ISSUES

Comments on the DEIS, including written comments and oral testimony, were compiled and summarized. Comments regarding historic issues primarily concerned the following issues:

(a) Secondary and Cumulative Impacts. The most frequent comment on historic properties was regarding secondary and cumulative impacts, and specifically, the likelihood of the beltway to cause development and urban sprawl to the point of having an adverse effect on historic structures, and specifically on the Stevens Creek Stock Farm. Comments of the National Trust for Historic Preservation, Environmental Law and Policy Center, and landowners in the beltway study area have focused concerns about secondary and cumulative impacts to historic properties on the EF-1 route. While the Preservation Association of Lincoln (PAL) raised the issue for all east routes in their letter dated 15 June 2001, they changed their opinion in testimony at the City/County Public Hearing on 15 August 2001 where the president of PAL urged that the preferred alternative be the EM-1 route.

(b) Boundaries of the Historic Properties. Several letters from historic preservation organizations and landowners stated that the boundaries of the historic properties were delineated too narrowly. With the exception of PAL, all comments focused on the EF-1 route only. In general, the commentors felt that most of the properties should be defined as the original parcel of land containing the historic structure, or in the case of the Stevens Creek Stock Farm, all agricultural land holdings of the property owners during the period of significance. Documentation was provided for changing the boundaries of the Theresa Retzlaff (Forest Brook) Farmyard and Sartore (Herter-Hagaman) Farmyard. Various acreage amounts or descriptive requests were made for the Stevens Creek Stock Farm, Retzlaff Farms, Penterman Farmyard, Haeger Dairy, and Michael Smith Farmyard.

(c) Additional Historic Property. Two letters stated that the Wenzl Farmyard/Barn had not been considered as a historic site.

(d) Assessment of Adverse Affects. Several property owners and PAL stated that the Assessment of Adverse Affects did not adequately assess all impacts to the properties, including noise, visual, lighting, traffic impacts, fuel smells, trash and crime. With the exception of PAL, all comments focused on the EF-1 route only.

(e) Advisory Council on Historic Preservation (ACHP). The ACHP requested that FHWA seek a formal determination from the Keeper of the National Register for the boundaries of seven historic properties on the EF-1 route consisting of the Herter-Hagaman Farm, Forest Brook Farm, Penterman Farm, Michael Smith Farmyard, Haeger Dairy, Alan and Shirley Retzlaff Farm, and Stevens Creek Stock Farm.

8.1 Field Trip on Historic Issues.

A field trip was conducted on 17 October 2001 to (1) revisit the historic properties, (2) visit an additional 320 ac requested for inclusion in the Stevens Creek Stock Farm, (3) revisit the Wenzl Farm on EC-1, and (4) discuss potential mitigation strategies for historic sites with adverse affects along the SM-4 and EM-1. Participants included:

Bill Callahan	Nebraska State Historical Society, SHPO
Stacy Stupka-Burda	Nebraska State Historical Society, SHPO
Ed Kosola	Federal Highway Administration, NEPA Coordinator
Rod O'Sullivan	Federal Highway Administration,
Len Sand	Nebraska Department of Roads, Environmental Analyst Supervisor
Ed Zimmer	City-County Planning Department, Historic Planner
Scott Cockrill	City Engineering, Senior Engineering Specialist
Jim Linderholm	HWS, Principal-in-Charge
Brian Ray	HWS, Transportation Engineer
Amy Zlotsky	AZ Environmental, Environmental Scientist
Stan Parks	University of Nebraska, Research Archeologist

8.2 Secondary and Cumulative Impacts.

A discussion of secondary and cumulative impacts to historic properties has been added to the FEIS (see **Section 9.6**).

8.3 Boundaries of the Historic Properties.

The Herter-Hagaman Farm, Forest Brook Farm, Penterman Farm, Michael Smith Farmyard, Haeger Dairy, and Alan and Shirley Retzlaff Farm are all located on EF-1. Since this alternative is not being developed, FHWA has determined that no additional analysis of the property boundaries is necessary at this time. In addition, an important reason why the EM-1 route was selected was because it minimized impacts to these historic resources.

8.4 Evaluation of the Additional Acres for the Stevens Creek Stock Farm

A consulting party had previously requested that an additional 560 ac be added to the 240 ac already on or eligible for the NRHP--for a total of 800 ac–which were owned by Charles Retzlaff by 1888 (defined by NSHS letter dated 18 September 1995). With the additional information that none of the 560 ac were contiguous with the 240 ac, the SHPO stated that the 560 ac were not considered eligible. Following receipt of this second request for consideration of the 560 ac, the SHPO again stated that the 560 ac were not considered eligible because they were not contiguous to the original 240 ac.

This consulting party further requested that an additional 320 ac, not previously requested for consideration, be considered eligible for the NRHP because these were part of the Stevens Creek Stock Farm during the period of significance. Therefore, research was conducted in the Registrar of Deeds records to determine ownership history of these parcels. The information was provided to the consulting party for their review, and then was provided to the SHPO. All of the parcels were acquired by Charles Retzlaff or his son George by 1909 which predates construction of some of the historic structures. Most, but not all of the parcels are contiguous with the 240 ac which are on or eligible for the NRHP, or they are contiguous with each other.

Of the parcels in the additional 320 ac, two are in close proximity to the preferred alternative, EM-1. Assessment of adverse affects to these two properties relative to the preferred alternative were discussed during a field trip conducted on 17 October 2001.

The first parcel is west of the Stevens Creek Stock Farm (West Half of the Northeast Quarter of Section 5, Township 9 Range 8). FHWA has determined that at least a portion of the west parcel would be eligible for the NRHP because (1) it was acquired by Charles Retzlaff during the period of significance (between 1858 and early 1920s, based on personal communication between Amy Zlotsky and David Murphy, Nebraska SHPO) and (2) at least the southern portion of the property retains enough integrity to contribute to the rural landscape of the Stevens Creek Stock Farm (the parcel has serious integrity problems in the northwest and west portions of the property, including a modern log cabin residence and high voltage transmission line).

The second parcel is located south of the Stevens Creek Stock Farm (Northeast Quarter of the Southeast Quarter of Section 5, Township 9 Range 8 and Northwest Quarter of the Southwest Quarter of Section 4, Township 9 Range 8). FHWA has determined that the second parcel is eligible for the NRHP because (1) it was acquired by George Retzlaff during the period of significance and (2) at least the east portion of the parcel retains enough integrity to contribute to the rural landscape of the Stevens Creek Stock Farm (there is a non-historic dam and pond on the west side of the parcel).

The SHPO concurred with the FHWA determinations by signature dated 30 January 2002 (Appendix E).

8.5 Additional Historic Property.

The Wenzl Farm was revisited during the field trip, and the SHPO restated that neither the barn nor the farmstead had the significance or integrity to be eligible for the NRHP. Specifically, the barn was not individually architecturally significant, and it had been subject to many alterations, including the addition of an I-beam lean-to, replacement windows, and a newer corrugated metal roof. In addition, the setting was no longer intact with a modular home on the property.

8.6 Assessment of Adverse Affects.

All of the comment letters which comment on the assessment of adverse affects are in regards to properties on EF-1, and none of these properties are affected by the preferred alternative–SM-4/EM-1. A reassessment of adverse affects was conducted only for the preferred alternative. In consultation with the SHPO, FHWA determined that there were no additional adverse affects to properties on the preferred alternative. The noise evaluation was also checked, and no noise impacts were identified at the historic sites.

Further, FHWA has determined that the EM-1 alternative will have no adverse affects on the first additional Stevens Creek Stock Farm parcel because (1) EM-1 is located approximately 300 ft west of the parcel and takes no land from the parcel for either the beltway or overpass, (2) there is a high-voltage transmission line located between the parcel and EM-1, (3) the property has been subdivided with a modern log cabin and tree-lined driveway constructed on a 6-ac lot in the northwest portion of the property, and (4) the historic structures of the Stevens Creek Stock Farm are already screened from the EM-1 route by the tree line of Stevens Creek.

FHWA has also determined that the EM-1 alternative will have no adverse affects on the second additional Stevens Creek Stock Farm parcel because (1) EM-1 is located more than 0.25 mi west of the parcel and takes no land from the parcel, (2) there is a high-voltage transmission line located between the parcel and EM-1, and (3) the historic structures of the Stevens Creek Stock Farm are already screened from the EM-1 route by the tree line of Stevens Creek.

The SHPO has concurred with the FHWA determinations of no effect by signature dated 30 January 2002 (**Appendix E**).

8.7 Advisory Council on Historic Preservation.

Since receipt of the ACHP letter, the SM-4/EM-1 route has been identified as the preferred alternative. Since all of the properties listed in the ACHP letter are on the EF-1 route and none are affected by the EM-1 route, FHWA made the decision that it was not necessary to seek a determination from the Keeper of the National Register.

An additional 320 ac were evaluated for the Stevens Creek Stock Farm to determine if the EM-1 alternative would affect any of the property. Based on this evaluation, two additional parcels (west and south of the original 240 acre site) were considered eligible for the NRHP; however, FHWA determined that EM-1 would have no adverse affect on the additional parcels, or on the original 240 ac of the historic site. The SHPO concurred with these determinations.

At a meeting conducted in February 2002 with the ACHP and the National Trust for Historic Preservation (NRHP), these agencies stated that it was reasonably foreseeable that the EM-1 beltway could potentially cause adverse secondary and cumulative affects on some historic properties, and specifically the Stevens Creek Stock Farm. They felt that a beltway would induce "development", potentially changing the timing and character of development near historic properties. It was suggested that appropriate mitigation should be offered to the owners of the historic properties. Their main recommendation for mitigation was to establish conservation easements on the historic properties.

In regards to the proposed mitigation, it was pointed out that the owners of the Stevens Creek Stock Farm, as well as the Preservation Association of Lincoln, had previously expressed written opposition to the use of conservation easements. Copies of their letters were provided to ACHP and NRHP. Upon additional discussion with FHWA, the owners of the Stevens Creek Stock Farm again stated their opposition to pursuing conservation easements with FHWA.

In regards to the beltway inducing development, it is not reasonably forseeable to assume that the EM-1 beltway route will have potential adverse secondary and cumulative effects on the Stevens Creek Stock Farm or other historic sites. This statement is based on analysis of local conditions and the facts of the specific EM-1 route, such as (1) the City of Lincoln has a unique and long history of managed, contiguous growth, (2) the community contemplates development in the Stevens Creek basin--with or without a beltway, (3) the community's proposed plans are to develop in the Stevens Creek area, prior to the construction of the beltway, thus the beltway will not change the timing of the planned growth, (4) while interchanges may change the character of development nationwide, interchanges in the EM-1 route have been planned to avoid roads (specifically Van Dorn Street which is adjacent to the Stock Farm) which could impact historic properties, thus the beltway will not change the character of the development near historic properties, and (5) development is proposed to be restricted in the floodplain areas (greenspace) which cover much of the Stevens Creek Stock Farm and vicinity.

9.0 MITIGATION PLAN FOR HISTORIC PROPERTIES ALONG SM-4/EM-1

A mitigation plan has been developed to cover the two historic properties which are adversely affected by the preferred SM-4/EM-1 alternative. These are the Henry Wunibald Farmyard on SM-4 and the Steve Johnson Farmyard on EM-1. Modification of the EM-1 alignment made it possible to avoid archeological site 25LC129. The mitigation plan is based on observations and discussions from the field trip, recommendations by the SHPO, input from a professional landscape architect, and meetings with the property owners.

A Draft Memoranda of Agreement was developed to implement the mitigation plan. The document, along with a draft version of Chapter 9 of this FEIS, was provided to the property owners and consulting parties, including the ACHP and NTHP. A public meeting on historic mitigation was conducted for the property owners and consulting parties on 12 February 2002.

Approximately 24 people attended the meeting, including representatives of the ACHP, NTHP, SHPO and Preservation Association of Lincoln. Seven written comments were received over the 10-day comment period. Comments related to historic issues covered the following topics:

(f) Two landowners on EM-1 objected to the revised boundary of the Stevens Creek Stock Farm as it included their properties. The boundary changes were made without their permission. One owner expressed concern that they would now be subject to federal permits or stipulations on receiving federal subsidies.

(g) The owner of the non-historic log cabin residence (located on the additional NRHP-eligible parcel west of the Stevens Creek Stock Farm) expressed concern about noise impacts from EM-1.

(h) The owner of the Henry Wunibald Farmyard expressed concern that their non-historic farmyard would be more adversely affected by noise impacts from SM-4 that the NRHP eligible property.

(i) The FEIS should address the impacts on the Stevens Creek Stock Farm from additional traffic on 138th which is traveling from the EF-1 interchange on Pioneers Boulevard to Van Dorn Street.

(j) Certain consulting parties felt that properties along all the routes should be studied for possible boundary changes.

(k) The NTHP believes that the beltway will have the potential for cumulative and indirect effects on historic properties, and suitable mitigation strategies should be developed.

(l) Certain consulting parties felt that the FEIS should contain a statement that the EF-1 alternative is eliminated from any future consideration. They did not feel that selection of EM-1 was strong enough assurance that the EF-1 route would never be reconsidered.

Based on comments, the MOA was finalized (Appendix E). The mitigation plan, as described in the MOA, is as follows.

Henry Wunibald Farmyard. The primary emphasis of the mitigation proposal is to screen the view of the beltway from the house and yard. Presently, the north and west sides of the property are lined with many mature deciduous trees (cottonwood, mulberry, walnut) which extend up to the house. While the existing trees screen the view from the house and yard during the growing season, the beltway would be visible during winter. The period of significance for this site is 1901-1950 which includes the period when shelterbelts and windbreaks were a part of the farm culture. Some existing trees on the property appear to be remains of old windbreaks to the north and west of the residence.

Prior to implementation of the undertaking, NDOR, in consultation with the SHPO, shall design a landscape site plan to screen the view of the beltway from the farmyard, and shall ensure that the area is landscaped in accordance with the approved plan. The plan shall consist at a minimum of a windbreak planting along the north and west sides of the farmyard in the general area of the original windbreak. This may include up to three rows: a shrub, cedar trees, and possibly a deciduous tree, such as cottonwood. Further refinement of plant types and spacings will be addressed as part of final design.

In order to implement the landscape plan, NDOR shall obtain an easement or agreement with the property owners of the Henry Wunibald Farmyard or adjacent property owners to the west.

Steve Johnson Farmyard. The primary emphasis of the mitigation proposal is to screen the view of the beltway from the house and yard. South of Yankee Hill Road, the beltway would be hidden by a hill across the road and to the east of the site. North of Yankee Hill Road, the beltway would be visible to a point about 0.25 mi north of the road; further north it is hidden by another hill. There is a small creek with trees within 100 to 300 ft of the beltway--between the beltway and the house. On the property itself, there is a line of mature cedar trees along the driveway, and a number of scattered shrubs and deciduous tree west of the tree line. These trees hide the view of the beltway from the house itself, but not from the yard west of the drive.

The period of significance for this property is 1890-1936. While windbreaks, for the most part, are outside of this historic period, it is reasonably in context with the site to add a lilac or similar large shrub hedge.

Prior to implementation of the undertaking, NDOR, in consultation with the SHPO, shall design a landscape site plan to screen the view of the beltway from the farmyard, and shall ensure that the area is landscaped in accordance with the approved plan. The plan shall consist at minimum of a screen, large shrub, or hedge planting along the west side of the farmyard, extending north from Yankee Hill Road to the north end of the corral. This is anticipated to consist of one row (hedge) of lilacs or similar large shrub. Further refinement of plant types and spacings will be addressed as part of final design.

In order to implement the landscape plan, NDOR shall obtain an easement or agreement with the property owners of the Steve Johnson Farmyard or adjacent property owners to the west.

Easements. In order to address the potential cumulative effects on historic properties in the Area of Potential Effect for the Lincoln South and East Beltways Project, the National Trust for Historic Preservation and other consulting parties agree to assist owners of such historic properties who may be interested in donating historic preservation or conservation easements. Such assistance may include conducting workshops on easements, providing information on

potential easement-holding organizations in the local area, and serving as a resource for technical assistance in developing easement documents.

Archeological Site 25LC129. Based on discussions during the site visit on 17 October 2001, further engineering refinements were evaluated (see **Section 9.3**). From the reanalysis, it appears possible to completely avoid impacts to the archeological site by incorporating a retaining wall on the west side of the beltway right-of-way. No additional mitigation is proposed.

Additional Cultural Resource Management Activities. Other activities will include:

- Completion of an archeological survey of bottomlands where access has been previously denied.
- Use of NDOR standard provisions regarding previously unsuspected archeological remains that provide for cessation of work and notification of the SHPO
- Use of NDOR standard provisions regarding monitoring of archeological sites.
- A historic marker located at Saltillo Road and the abandoned South 14th Street right-of way will need to be relocated. The marker commemorates the Nebraska City to Fort Kearny Road, "The Great Central Route to the Gold Fields" which crossed near this location. There are no remnants of the trail known within or near the SM-4 right-of-way, and the marker is not considered an historic site.

10.0 STATUS OF SECTION 106

In November 2000, the SHPO reviewed the Preliminary Draft Environmental Impact Statement (PDEIS), and concurred with the findings of the PDEIS and the findings of the appendices (specifically the Assessment of Adverse Effects and the Determination of Boundaries report) as they related to Section 106 consultation (see **Appendix E**, letters dated 1 February 2001 and 27 November 2000).

Following the close of the comment period on the DEIS, comments on historic issues were compiled. These issues were investigated further and the current status is documented in this Appendix and in **Chapter 9** of the FEIS. Based on the additional investigations, the list of sites which were determined to be adversely affected was updated to reflect the fact that archeological site 25LC129 could be avoided on EM-1 (**Table F.2**). The list of adverse affects (**Table F.3**) was also updated for publication of the FEIS based on the additional evaluations.

Consultation with the SHPO has been ongoing to resolve the final issues. The SHPO concurred with FHWA determinations on the additional Stevens Creek Stock Farm parcels by signature dated 30 January 2002 (**Appendix E**). The SHPO concurred with the mitigation plan by signature to the MOA (**Appendix E**).

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Appendix F-A
Documentation of Additional Investigations

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Memo

To: Amy Zlotsky

From: Stacy Stupka-Burda SSB

CC: Stan Parks, Bill Callahan, Rob Bozell

Date: 9/19/00

Re: South and East Beltway: Possible Archeological Site on Ron Skoda's property

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Amy,

As we discussed in early August 2000, during discussions with Rod Otley, Mr. Otley mentioned that another person living in the SW ¼ of Section 21, T10N, R8E relayed to him that "something" had been found during excavations related to construction activities on this property. Mr. Otley stated that he was told "Indians came out and held a ceremony" after which construction was completed.

While we had no first hand knowledge of the situation we operated under the assumption that there was a possibility that human remains were discovered. Therefore, we felt it was important to try and determine what, if anything had been discovered. As you are undoubtedly aware LB340 and NAGPRA mandate that the discovery of human remains be handled in a very specific manner.

We discussed this situation with Rob Bozell of the Nebraska State Historical Society to determine whether or not his office had ever been notified about the discovery of human remains in the area in question. Mr. Bozell assured us that his office has not been notified of any discovery of human remains in that area.

We also checked with the local Native American community, who indicated that they had no knowledge of anything discovered in the area in question. Furthermore, our contacts indicated members of the local Native American community would handle any situation involving the discovery of human remains in accordance with State and Federal law.

On numerous occasions during fieldwork conducted relative to the South and East Beltway Study, the UNL Department of Anthropology attempted to gain permission to conduct archeological investigations in the area in question. We were repeatedly, and quite firmly denied access.

In summary, it is not clear what, if anything was found on the property described above. It is clear, however, that no local authorities were notified. If human remains were discovered and not reported, it would be violation of both State and Federal Law.

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Memo

To: Amy Zlotsky

From: Stacy Stupka-Burda SSB

CC: Stan Parks

Date: 10/13/00

Re: Addendum: Archeological Inventory and Testing of Lincoln's South and East Beltway: Alternatives SM-1, EC-1, EM-1, and EF-1 Lancaster County, Nebraska Volumes I and II.

This memo is prepared as an Addendum to the report entitled, Archeological Inventory and Testing of Lincoln's South and East Beltway: Alternatives SM-1, EC-1, EM-1 and EF-1 Lancaster County, Nebraska Volumes I and II, prepared by Stan Parks and Stacy Stupka-Burda of the UNL Department of Anthropology (January 2000).

As a result of public comments received regarding the Preliminary Assessment of Adverse Effects, researchers from the UNL Department of Anthropology investigated three locations which were reported by property owners to be archeological sites not previously recorded during the archeological inventory of the South and East Beltway alternatives conducted in 1996 and 1998 (Parks and Stupka-Burda 2000). Through these additional investigations, two previously unrecorded archeological sites were documented. A fourth locale, reported as a potential archeological site is addressed in a separate memo dated 09/19/2000.

25LC162 (EBAP2000-01)

This site is located in the [redacted] Township. Descriptively, this site is located approximately [redacted]. Site 25LC162 is a lithic scatter located in an upland setting and is estimated to encompass [redacted]. Lithic material types noted included Nehawka chert, white chalcedony, red quartzite and brown chert. A total of 12 flakes were noted on the ground surface, and all of these appeared to be secondary decortication or tertiary flakes. No formal or expedient tools were noted. The property owner indicated that artifacts had been collected from this site, but these artifacts could not be located for examination by UNL researchers. The property owner indicated that they had not collected any projectile points. The site area is under agricultural cultivation, and ground surface visibility in mid-August 2000 was 75-80%. The site is located approximately 300 meters east of the eastern most survey boundary for the [redacted] alternative inventoried by UNL in 1998 and occurs outside the project right-of-way.

University of Nebraska–Lincoln University of Nebraska Medical Center University of Nebraska at Omaha University of Nebraska at Kearney

Given the paucity of artifacts observed on the ground surface, the absence of diagnostic or patterned tools, and the upland setting associated with this site, 25LC162 is recommended not eligible to the National Register of Historic Places (NRHP). No additional investigation is recommended.

25LC163 (EBAP2000-02)

The site, 25LC163 is located in the [redacted] Township. Descriptively, this site is approximately [redacted]. 25LC163 is a non-Native American site, commonly referred to as a Euroamerican or historic site. The site area is estimated to cover [redacted] and extends from an area currently under agricultural cultivation to an area dominated by scrubby tree growth. Ground surface visibility ranged from 95% in the agricultural field to 15% within the trees. Artifacts noted on the ground surface included red brick, flatglass and stoneware. Within the trees, UNL researchers observed more red brick, tin cans, a barrel stay, automotive body pieces from a ca. 1920 car body, and unidentifiable ferrous metal pieces. The artifacts located in the trees appear to be of secondary deposition, and are either the result of clearing the agricultural field, household refuse disposal, or most probably, some combination thereof. This site is located in an upland setting within the original survey corridor of the [redacted] alternative. This area was not inventoried by UNL researchers in 1998 because NeSHPO approved survey design of the archeological inventory of the South and East Beltway alternatives dictated that only 10% of the upland areas were to be surveyed (Parks and Stupka-Burda 2000). This sampling was obtained in upland settings scattered throughout each survey corridor. Inventory of the parcel where site 25LC163 is located was arbitrarily not selected to complete the 10% sample of alternative [redacted].

The type of information afforded by site 25LC163 is available in archival sources. Beyond locational information already recorded, the archeological research potential of this site is severely limited. Therefore, this site is recommended not eligible to the NRHP. No additional investigation is recommended.

Additional archeological inventory

UNL also inventoried an area located in the [redacted] Township. This location was described as a potential archeological site by the property owner. This area is an upland setting approximately [redacted]. The most recent agricultural crop at this locale was wheat. Ground surface visibility was approximately 35%. No artifacts were noted on the ground surface, and no archeological site was recorded.

enclosures:
NSHS site form – 25LC162
NSHS site form – 25LC163
Topographic map illustrating areas surveyed as discussed above } omit in EIS for confidentiality

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Memo

To: Amy Zlotsky

From: Stacy Stupka-Burda

CC: Stan Parks

Date: 10/17/00

Re: South and East Beltway: Reevaluation of historic properties in response to public comment

---

This memo was prepared in response to public comments received regarding the Preliminary Assessment of Adverse Effects. Researchers from the UNL Department of Anthropology investigated seven locations reported by property owners to be historic properties potentially eligible to the National Register of Historic Places (NRHP) or archeological sites. In some cases, public comment suggested that these locations were not previously evaluated during investigations conducted by On Site Photography and Preservation (1998) or were not recorded by the archeological inventory of the South and East Beltway alternatives conducted in 1996 and 1998 (Parks and Stupka-Burda 2000). In addition, concerned property owners requested that two locations be reevaluated regarding their potential NRHP eligibility.

UNL Researchers revisited each locale in question and found that the original evaluations and recommendations provided by On Site (1998) were valid. In the case of two properties not included in the On Site report (1998), the Otley Farmstead and the Speidell Barn, UNL determined that these properties did not retain sufficient integrity and did not meet minimum evaluation considerations outlined in the Nebraska Historic Buildings Survey (NeHBS) Manual (July 9, 1997), and were not included in the original inventory conducted by On Site (1998).

The NRHP eligibility of the Hulda Otto House was examined and detailed in Evaluation of the Hulda Otto House for Eligibility to the National Register of Historic Places (Stupka-Burda 1999).

One locale, reported as a potential archeological site, is addressed in a separate memo dated 09/19/2000. Two archeological sites recorded as a result of additional investigation are detailed in a memo dated 10/13/00.

Maahs Barns

Recommendation: Not Eligible.

Numerous modern intrusions are present on this property. There are 5 steel grain bins present, three of which are very large and dwarf the barns. A modern house has been placed on site. There is no integrity of setting, feeling or association remaining at this site.

Otley Farmstead

Recommendation: Not eligible.

The integrity of this structure and the surrounding farmyard is no longer intact. The house lacks integrity, and does not meet minimum evaluation considerations outlined in the Nebraska Historic Buildings Survey (NeHBS) Manual (July 9, 1997). The original porch supports on the house have been replaced with wrought iron supports, and the house has been clad in wide lap siding. At least two additions, one to the north and one to the east, and a new entrance have been added. All of the windows that UNL could see from the public right-of-way have been replaced, and no original molding exists around the windows. The chimney has been removed. The presence of indoor plumbing is not germane to the question of NRHP eligibility. The setting of the yard is intact, but the house retains little integrity.

In the farmyard itself, there is an older corrugated metal building (ca. 1950-60) plus two new metal quonsets. There are two small granaries (which look to be the only intact historic buildings on site, but still are not the best representations of such structures in the study area).

This house and the surrounding farmyard have been substantially altered and cannot be considered eligible to the NRHP. Especially when compared to other eligible properties in the study area.

The Bud and Joan Speidell Barn

Recommendation: Not eligible.

The barn is clad in board and batten siding with decorative scalloping, and the haymow door faces north. While the barn looks intact on the north and west sides from public right-of-way, the integrity of this gable roof barn is not intact. On the east side, the board and batten siding has been replaced with corrugated metal. The lower portion of the board and batten siding has been replaced with corrugated metal on the north side.

In addition, the agricultural setting originally associated with this barn has been significantly altered. The setting is now park like, with bluegrass and many exotic trees planted all around the barn. This barn is not the best representative of such a barn in the study area. Other structures on site are modern.

This property does not meet minimum evaluation considerations outlined in the Nebraska Historic Buildings Survey (NeHBS) Manual (July 9, 1997).

The Want Schoolhouse (LC00:E-101)

Recommendation: Not eligible.

In addition to On Site's comments (Elliott and Dirr 1998), the building sits upon a new poured concrete foundation, one door has been replaced with an insulated steel door, and full-light French patio doors have been added on the south facade. These additions and insertions are not in keeping with the architectural style of the school. A modern house is positioned approximately 12 m (40 ft) west of the schoolhouse, and a trailer park is located approximately 15 m (50 ft) east. The integrity of this structure is no longer intact, and modern intrusions have impacted the integrity of setting and feeling.

Williss Farm (LC00:E-80):

Recommendation: Not eligible.

UNL supports On Site's recommendation, this property is not eligible to the NRHP On Site (1998) did assess the entire farm, but found that the integrity of the house was compromised and thus did not evaluate it for NRHP eligibility.

The house lacks integrity, and does not meet minimum evaluation considerations outlined in the Nebraska Historic Buildings Survey (NeHBS) Manual (July 9, 1997). Specifically, an addition has been placed on the west, and many windows have been replaced. The house has been resided, and shutters have been added. The entrance over the east door has been replaced and is not in keeping with the architectural style or feel of the house. There is no brick chimney visible, so one can assume that it has been removed. While this house is well maintained, too many modern alterations have occurred to recommend it eligible to the NRHP.

German/Trinity Lutheran Church

As has been pointed out, this church is well outside the study area. The church itself has been re-sided, and has an addition on the front and one on the rear. These additional and alterations impact the integrity of the structure. Generally, religious properties are considered ineligible for listing on the NRHP. Exceptions to this include those properties that derive significance from architectural or artistic distinction. This church does not appear to be architecturally or artistically distinctive. According to information provided by the Trust, "the historic church was founded by pioneers of Lancaster County in April 1880 as the German Evangelical Lutheran Church of Stockton Precinct...The original church, completed in 1883, later burned. However, the current church building was dedicated in 1917" (letter dated 11/2/99). The fact that there was an earlier church plays no bearing on eligibility. A structure can only be eligible for significance obtained after its construction date (NR Bulletin #15, p. 28). So inferring that this building is significant because of some connection with early pioneers of Lancaster County and an 1883 building that no longer exists is irrelevant. National Register Bulletin #15 points out that "A religious property cannot be eligible simply because [it] was the place of religious services for

a community, or was the oldest structure used by a religious group in a local area." (p.27).

The Trust (letter dated11/2/99), suggested that a potential historic district be studied using the German/Trinity Lutheran Church as a center point. When considering this potential historic district, by the time you reach 148th Street and the study area, the same impacts and loss of integrity that precluded the creation of a Stevens Creek Historic District are present relative to a historic district centered on the German/Trinity Lutheran Church.

Wagner site (Old Indian Well)

It isn't clear from Mr. Wagner's description of the old Indian well where it is as there are many "islands of trees" there now. We spoke to June Garrett when gaining permission to do nearby archeological surveys (Summer 1998). Mrs. Garrett informed us that they had always been told that there was an old Indian well on their property near the center of the ¼ section (SE ¼ Section 9 T9N, R8E). Relying on this information, we determined that this would be located outside our survey corridor and outside the project right-of-way. Mr. Wagner describes the site as buried in 1978. Conventional survey methods, visually inspecting areas by walking along evenly spaced transects, would not allow us to identify such a buried site.

It is our opinion, that if the site described by property owners is cultural, or man-made, then it may be an early non-Native American (Euroamerican) well. Another possibility is that this was the location of a natural spring that has carried away the subterranean loess creating an empty void, which then may have collapsed. Such features occur in the dissected loess plains of Eastern Nebraska.

We did not attempt to find this site, for a variety of reasons. Primarily, the location, as described to us is outside UNL's survey corridor and it was reportedly buried a number of years ago. In addition to its location, it is unlikely that such a site, as described, exists in this region. Native Americans on the Plains are not known to have dug wells, but instead relied on available surface water.

Appendix G

DEFINING BOUNDARIES

of NRHP and NRHP-Eligible Properties

During the reconnaissance survey conducted by On Site, the South and East Beltways Study Area was surveyed section by section in an effort to include each man-made structure or object in the survey (Elliott and Dirr 1998). The comparative nature of this study dictated that On Site initially consider hundreds of man-made structures and objects. Through a process based on the Secretary of the Interior's Standards for Identification and Evaluations and on evaluation considerations outlined in the *Nebraska Historic Buildings Survey (NeHBS) Manual* (July 9, 1997), professional judgment and experience; Elliott and Dirr (1998) identified 141 sites that met minimum historic property survey criteria.

Of the 141 historic properties so identified, two properties, the Stevens Creek Stock Farm (**Figure G.1**) and Ehlers Round Barn (**Figure G.2**) were already listed in the NRHP (Elliott and Dirr 1998). Further, in consultation with the NeSHPO, the City of Lincoln Preservation Planner, and in accordance with appropriate National Register bulletins, physical integrity evaluation and comparative analysis, Elliott and Dirr (1998) recommended an additional 25 sites eligible to the NRHP (see Figure 3.3 in main body of DEIS). The NeSHPO concurred with these recommendations. Since the completion of the investigations completed by On Site, one of the historic properties considered eligible for listing, the Herter Farmstead (also known as the Herter-Hagamen Farm) has been listed on the NRHP (form on file, NSHS). Also, two additional 32 ha (80 ac) parcels (to the west and south) have been determined eligible as part of the Stevens Creek Stock Farm.

Within the intensive-level survey of the Stevens Creek Bottoms area, Elliott and Dirr (1998) developed a context within which to examine the area as a cultural landscape/rural historic district and to evaluate its eligibility for the NRHP. Although a broad pattern of nineteenth century immigrant settlement was identified within this context, Elliott and Dirr (1998) considered only one additional site within the bottoms area, the Karl Lemke Farm, eligible for the NRHP (in addition the NRHP listed Stevens Creek Stock Farm). Primarily due to physical integrity issues and later/new construction within the boundaries of the study area, Elliott and Dirr (1998) were unable to identify any cultural landscapes or historic districts. Elliott and Dirr (1998) postulated that the low incidence of NRHP-eligible properties located within the Stevens Creek Bottoms was due to the ever changing and evolving demands of agriculture. These forces continually erode the historic integrity of landscapes and structures associated with early settlement in Lancaster County. Again, the NeSHPO concurred with these recommendations.

In 1999, UNL evaluated three historic properties: one inadvertently omitted by On Site (Site LC00: S-143, Wunibald Farmyard); one previously considered outside the study area (Site LC00 S-142, Guenzel Farmyard); and one previously considered to lack sufficient integrity to be considered for listing on the NRHP (Site LC00: E-144, Hulda Otto House). These investigations were conducted under the guidelines established by the On Site researchers (1998). As a result of this additional work, one historic property (Wunibald Farmyard) was recommended eligible to the NRHP. The NeSHPO concurred with this recommendation (letter dated June 1999).

Defining Historic Boundaries

Although not routine for Section 106 purposes, well-defined historic property boundaries can assist in determining the effects of Federal undertakings. Additionally, as stated previously, the boundaries of the historic properties discussed in this report were defined at the request of FHWA subsequent to public comment, as was the evaluation of associated agricultural acreage to NRHP or NRHP eligible properties.

DEFINING BOUNDARIES OF NRHP and NRHP-ELIGIBLE PROPERTIES Located Within the South and East Beltway Study Area

November 2000
(Revised 2/01, 11/01, 5/02)

In December 1999, the Federal Highway Administration (FHWA) requested comments from consulting parties on the preliminary Assessment of Adverse Effects to NRHP and NRHP-eligible sites for the Lincoln South and East Beltways study. The preliminary assessment of adverse effects was prepared and a request for comments was made as part of FHWA's process to comply with 36 CFR Part 800, the regulations that govern Section 106 of the National Historic Preservation Act of 1966.

This report has been completed in partial response to consulting party comments, and addresses two of the more challenging issues raised by public comment. The first issue is to identify specific boundaries for properties within the South and East Beltways Area of Potential Effect (APE) that are considered eligible for listing in the National Register of Historic Places (NRHP). The second issue addresses whether large agricultural acreages should be considered contributing elements to smaller properties eligible for or listed in the NRHP.

Under agreement with Olsson Environmental Sciences (OES), the University of Nebraska-Lincoln, Department of Anthropology (UNL) conducted evaluations to define the historic boundaries of 30 NRHP-eligible properties located within the South and East Beltways Study. The inclusion of associated agricultural acreage was also assessed as appropriate. These evaluations were conducted at the request of FHWA subsequent to public comment. During the evaluation, UNL identified two additional NRHP-eligible directional signs within the study area (LC00:S-145 and LC00: E-146).

The boundaries of three NRHP eligible archeological sites, 25LC125, 25LC129, 25LC147, were defined by Parks and Stupka-Burda (2000). The boundaries of a fourth archeological site, 25LC1, were determined by the Nebraska State Historical Society (on file, NSHS).

The boundaries of two additional NRHP properties, the Stevens Creek Stock Farm–Mardale Farms (LC00: E-88; NeHBS #LC00-22) and Ehlers Round Barn (LC: S-127; NeHBS #LC00-035) were defined on their respective National Register of Historic Places Registration Forms (on file, NSHS) and, for the Stock Farm, in additional correspondence from the Nebraska State Historic Preservation Office (NeSHPO).

Previous Investigations

In 1997, On Site Photography and Preservation (On Site) conducted a reconnaissance-level historical survey within the 210 km^2 (80 mi^2) South and East Beltways Study Area and an intensive-level survey of the Stevens Creek Bottoms (Elliott and Dirr 1998). Elliott and Dirr (1998) surveyed potential historic resources, evaluated each of these historic resources using NRHP Criteria, and made recommendations for NRHP eligibility based upon those evaluations.

DEFINING BOUNDARIES OF NRHP ELIGIBLE PROPERTIES LOCATED WITHIN THE SOUTH AND EAST BELTWAYS STUDY AREA

November 2000

A Cultural Resources Management Repc..

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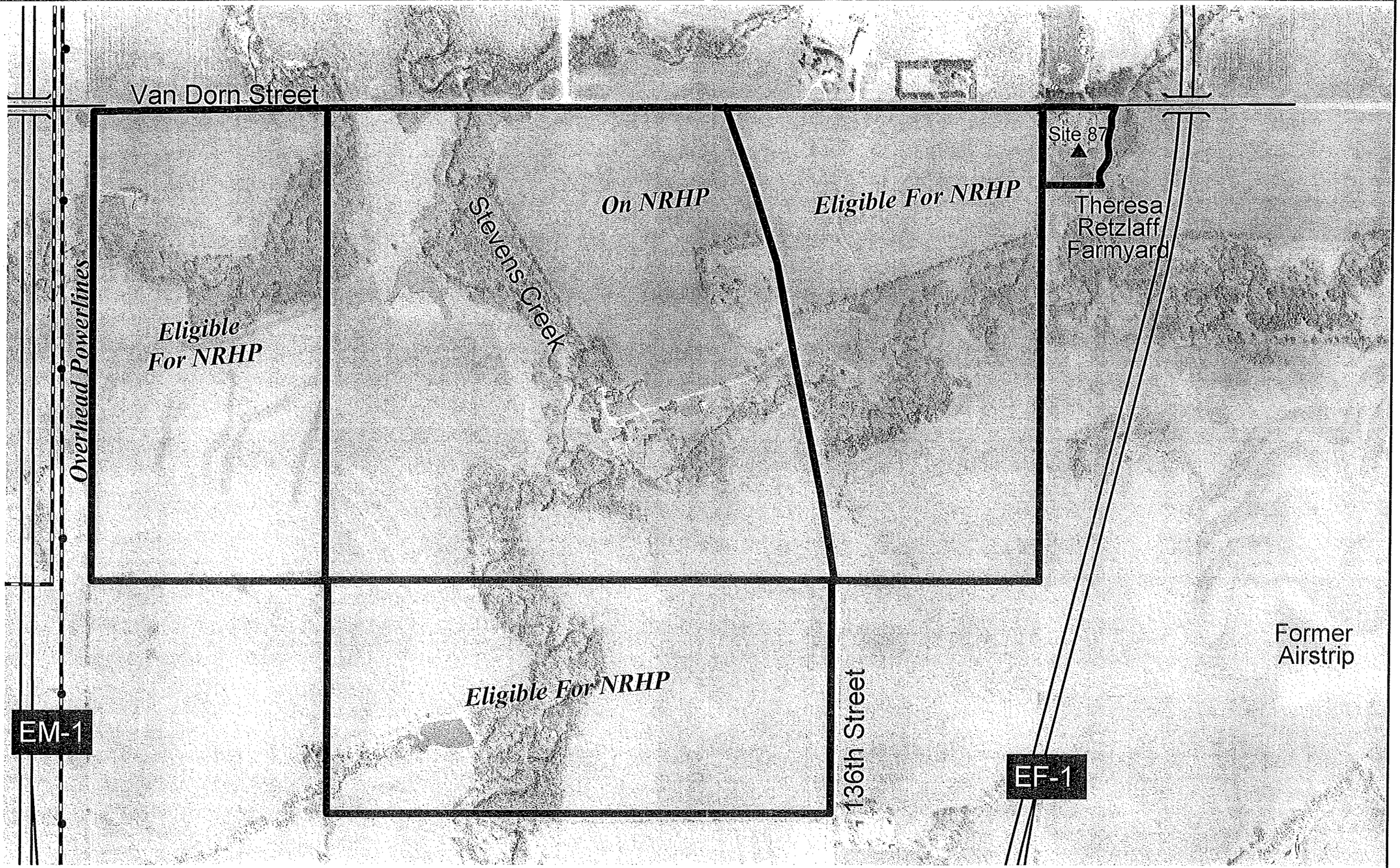

LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

500 0 500 Feet

200 0 200 Meters

Boundary of NRHP Site and NRHP - Eligible Property
Site LC00: E-88
Stevens Creek Stock Farm

May 2nd, 2002

G-1

LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

300 0 300 Feet

100 0 100 Meters

Boundary of NRHP Site:
Site LC00:S-127
Ehler's Round Barn

June 9, 2000

G-2

Boundaries are selected based on the historic property's significance, integrity and physical setting (NR Bulletins #21 and #30). According to NR Bulletin #21, these boundaries "should define the limits of the eligible resource...and usually include the immediate surroundings and encompass the appropriate setting" (p. 2). Resources or areas that do not contribute directly to a property's significance are excluded (NR Bulletin #21). When defining historic boundaries, researchers should consider:

1. **Integrity:** The majority of the property must retain integrity of location, design, setting, feeling and association to be eligible. The essential qualities that contribute to an eligible property's significance must be preserved. Activities that often compromise integrity include new construction or alterations to the resource or its setting. Natural processes that alter or destroy portions of the resource or its setting, such as fire, flooding, erosion, or disintegration of the historic fabric, may compromise integrity.

2. **Setting and Landscape Features:** Consider the setting and historically important landscape features. Natural features of the landscape may be included when they are located within the district or were used for purposes related to the historical significance of the property.

3. **Use:** Consider the historic use of the property when selecting the boundary. The eligible resource may include open spaces, natural land forms, designed landscapes, or natural resources that were integral to the property's historic use. Modern use may be different, and some modern uses alter the setting or affect built resources.

4. **Research Potential:** For properties eligible under Criterion D, define boundaries that include all resources with integrity that have the potential to yield important information about the past.

(NR Bulletin #21)

Boundaries can be aligned with the distribution of resources (both above ground and subsurface); can follow legal boundaries; can correspond with boundaries as illustrated on historic maps; and can be based on natural features or cultural features. Cartographic features and arbitrary limits may be used when necessary (NR Bulletin #21). Any combination of these may be utilized as necessary.

South and East Beltway Historic Boundaries

Based on the information described above, information obtained from the NeSHPO, and that from additional research, several observations regarding the definition of the boundaries of historic properties located within the South and East Beltway Study area can be stated. These observations were used as guidelines when considering boundary definitions for this report.

Associated Agricultural Acreage

The amount of acreage that can even be considered for inclusion within the boundary of a historic property is dependent upon the NRHP significance of the property. For example, properties significant to the NRHP under Criterion A may have associated agricultural acreage included within their historic boundaries. This property must retain "the essential physical features that made up

its character or appearance during the period of its association with the important event, historical pattern, or person(s)" (NR Bulletin #15). This associated agricultural acreage must retain its integrity relative to the NRHP eligible property's period of significance (Bill Callahan, NeSHPO, personal communication). The integrity of associated acreage is irrespective of current ownership.

However, those properties determined eligible to the NRHP under Criterion C generally do not include associated agricultural production acreage. Properties considered eligible under Criterion C are eligible due to their physical design, such as architecture (NR Bulletin #15). Associated agricultural acreage does not contribute to Criterion C evaluation. However, boundaries defined for properties determined eligible under Criterion C should still consider the historic setting of the property and should include those features that contribute to the overall integrity, setting and feeling of the property.

According to Guidelines for Evaluating and Documenting Rural Historic Landscapes (NR Bulletin #30) changes that may reduce the historic integrity of a rural landscape include:

- widening and resurfacing of roadways
- changes in land use and management that alter vegetation, change the size and shape of fields, erase boundary demarcations, and flatten the contours of land
- introduction of nonhistoric land uses (quarries; tree farms; sanitary landfill; recreational areas; limited access highways and interchanges; power plants; wastewater treatment plants, and other public utilities; subdivision for residential, commercial, or industrial development)
- deterioration, abandonment, and relocation of historic buildings and structures
- substantial alteration of buildings and structures (remodeling, siding, additions)
- construction of new buildings and structures

Within the South and East Beltways APE, the evolution of agricultural and conservation practices, the removal of agricultural acreage from cultivation, and the expansion of public infrastructure have led to a variety of activities that have negatively impacted the integrity of historic properties and affects the integrity of associated agricultural acreage. These practices include subdivision, construction of modern buildings and structures, agricultural and conservation terracing, channel modification, dam construction, windbreaks, and road widening and paving.

Some of these features and modifications can be dated to general periods of time, which assists in determining whether or not the feature was present during the historic property's period of significance.

Conservation Terracing

Conservation or agricultural terracing can be described within a framework spanning the last 65 years and three types of terrace construction. These three terrace types offer a relative dating technique of agricultural terraces in Lancaster County.

The Dust Bowl of the late 1930's left an important legacy of soil conservation across the United States, but particularly on the Plains (Christy 1940; Worster 1979). The Soil Conservation Service (SCS) was established in 1935 (Helms 1990). Two ways in which the SCS advocated conservation of the soil was by contour cultivation of agricultural fields, and contour furrows on rangeland (Helms 1990). Some of this early conservation contouring employed laborers of the Civilian Conservation

Corps (CCC), stationed in Lancaster County near Denton. The conservation terraces created by the CCC were dug by hand and are easily recognizable.

According to sources at the Lower Platte South Natural Resources District (LPSNRD) based in the Lancaster County Natural Resources Conservation Service (NRCS) field office, some of the features of these early terraces include an uneven appearance; the terraces are closely spaced and the tops of the terraces are very low. In addition, these terraces were not constructed across ridge tops and the ends of CCC terraces constructed across waterways are unlikely to align (NRCS). A few such terraces still exist within Lancaster County, preserved in pasture or grasslands.

The second period of conservation terrace construction began after World War II when a record number of acres were converted to plowed fields. These terraces were built by machine and characterized by even terrace tops. The terraces are evenly spaced and fields are characterized by grassed waterways. Agricultural fields continued to be terraced in this manner into the mid-1970's (NRCS). These terraces are also obviously much more massive than the hand-dug CCC terraces.

By the mid to late 70's a third method of terrace construction was beginning to emerge. These conservation terraces maintain the characteristics of the machine built terraces of the 1950's, 1960's and early 1970's. The major difference is the addition of tile pipe outlets to control water drainage. With the addition of tile pipe outlets, grassed waterways became unnecessary, allowing farmers to farm more of their fields. By the early 1980's, tile pipe outlets became very popular, and today, The NRCS estimates that 99% of the fields that are (Lancaster County NRCS) terraced contain tile pipe outlets.

Channel Modification and the Construction of Small Dams

The Flood Control Acts of 1936 and 1944 initiated the most comprehensive examination of agriculture's relationship to flooding to that time (Helms 1988). The information gained during this examination laid the foundation for future water resources in the United States Department of Agriculture (USDA) and for the Flood Prevention Act of 1954 (Helms 1988).

Beginning in 1936, and continuing to the present day, flood control projects have used combinations of channel modification, small dams, and other engineering works to reduce flooding along small streams (Helms 1988).

Channel modification or stream straightening aided in draining the field, reduced the tendency for stream migration, and gave farmers more useable agricultural acreage. In addition, straightening the borders of small creeks and intermittent drainages simplified cultivation by allowing straight crop rows.

The construction of small dams not only retained storm water in the event of a flood episode but also provided water retention for livestock, wildlife habitat enhancement, recreation, and irrigation.

Trees

Soon after the arrival of non-Native Americans on the Plains, planting trees became important. Settlers planted orchards, woodlots, shelterbelts and hedges (Isaacson 1999). State and Federal laws passed in the late 1860's and early 1870's gave tax exemptions to those who planted trees. Laws such as the Timber Culture Act of 1873 provided that any person who planted 40 acres of

timber, planted not more than 12 feet apart, would be entitled to the ¼ section of which the timber was a part (Dick 1975). However, in the eastern part of Nebraska, there was little government land available by the time this act was passed and there are no known extant timber claim plantings within the Beltways study area.

Passed in 1924, the Clarke-McNary Act, encouraged tree planting and made it possible for landowners to purchase trees for windbreaks at low cost (Dick 1975). This legislation motivated people in many states to plant trees. However, it was only after the Dustbowl years of the 1920's, the Great Depression of the 1930's that windbreaks became widespread in the Great Plains (Isaacson 1999).

The shelterbelt program of 1935-1942, known after 1937 as the Prairie States Forestry Project, was confined to the zone between the tall grass prairie and the short grass prairie, roughly following the ninety-ninth meridian (Dick 1975). In Nebraska, the eastern boundary of the shelterbelt zone stretched from Boyd County, through Wheeler, Valley, Custer, Phelps, and Harlan Counties. The shelterbelts were forested strips planted along ¼ section lines in the interior of the section rather than along established roads, and were generally 40 m (132 ft) wide (Dick 1975). According to Dick (1975) "the ideal shelterbelt was rooflike in cross section." The center was comprised of tall deciduous trees with successively shorter trees, conifers, tall shrubs, and finally low shrubs on either side (Dick 1975).

Windbreaks are smaller than shelterbelts, and are normally placed to protect the farmyard from the effects of wind. As they occur in the study area, they are generally comprised primarily of evergreen trees evenly spaced along the north and western edges of farmyards. These plantings are not part of a large scale, systematic program of tree planting, though they may have been facilitated by legislation such as the Clarke-McNary Act. Many are the result of local or regional efforts of the Soil Conservation and Survey after 1942.

In summary, tree growth within the Beltway study area does not appear to be part of an historic context or framework which would include systematic, government-sponsored programs. Windbreaks within the study area appear to be the result of ad hoc planting. The visual evidence appears to indicate that these windbreaks date, for the most part, outside the period of historic significance represented in the area: 1890-1936. These windbreaks may now also contain volunteer tree growth Indeed, some of these windbreaks appear to be the result of encouraged volunteer growth, as they exhibit none of the characteristics of a planned shelterbelt. Therefore, windbreaks in the study area are not themselves considered to be historic elements which contribute to the significance of historic farmyards.

Within the study area, sufficiently dense windbreaks are considered to define the physical and visual boundaries of historic properties (i.e. Sartore and Herter Farmyards). Additionally, they are one of several elements considered in the evaluation of whether agricultural acreages contribute to the National Register eligibility of the property (see above). In some instances, the windbreaks are not considered to be sufficiently dense to constitute a visual or physical boundary to associated agricultural acreages (i.e. Del O'Brien and Steve Johnson Farmyards). For the majority of the historic farmyards evaluated as part of this report, however, windbreaks constitute either a physical and visual boundary of an historic property.

Table G.1
NRHP-ELIGIBLE PROPERTIES
INVESTIGATED RELATIVE TO BOUNDARY DEFINITION
(information adapted from Elliott and Dirr 1998)

NeSHPO No.	Resource Type	Construction Date	Historic Name	Current Owner	NRHP Criteria
LC00: S-6	Barn	ca. 1910	--	David McEwen	C
LC00: S-15	Farmyard	1910's-20's	--	Del O'Brien	A
LC00: S-23	Residence	1936	Jensen Homeplace	Forrest Nicely	C
LC00: S-31	Barn	1932-36	--	Steve Speidell	C
LC00: S-40	Grain Elevator	1910's-20's	--	Circle 4 Feed and Grain	A
LC00: S-41	School	1910's-20's	Cheney School	City of Cheney	A and C
LC00: S-42	Directional Sign	1920's	--	Lancaster County	A
LC00: S-47	Barn	1910's-20's	--	Margene Zachek	C
LC00: E-52	Farmyard	1890's-1900's	--	Steve Johnson	A and C
LC00: E-53	Farmyard	1920's	Penterman Farm	George & Deborah Lockyer	A
LC00: E-56	Farmyard	1912-1914	--	Michael Smith	C
LC00: E-57	Barn	1915	Haase Farm	Elton Haase	C
LC00: E-61	Farmyard	pre 1900	--	Elaine and Owen Herter	A
LC00: E-62	Farmyard	1895	Herter's Hagaman	Joel and Kathy Sartore	A and C
LC00: E-67	Barns and Silo	1890's-1900's	Retzlaff Farm	Alan and Shirley Retzlaff	C
LC00: E-69	Farmyard	1910's-20's	Haeger Dairy	Arthur Monahan	A and C
LC00: E-72	Farmyard	1900's-1910	--	Bob Campbell	C
LC00: E-81	Residence	1910's	Jacoby Homestead	Chuck Hobaz	C
LC00: E-87	Residence	1890's-1920's	Forest Brook Farm	Teresa Retzlaff	C
LC00: E-99	Residence	1930's	Karl Lemke Farm	Norma and Bob Lemke	C
LC00: E-102	Barn	1916	Kettlehut Farm	Donna Keane	C
LC00: E-106	Grain Elevator	1910's	Farmer's Co-op	Farmers Co-op	A
LC00: E-118	Directional Sign	1920's	--	Lancaster County	A
LC00: E-132	Barn	1930's	--	Lynn Lenhoff	A and C
LC00: E-134	Farmyard	1900's-10	Reed Homestead	Laura Reed Estate	A
LC00: E-135	Directional Sign	1920's	--	Lancaster County	A
LC00: E-141	Residence	1890's	Fagan's Acres	William Fagan	C
LC00: S-143	Farmyard	1901-1905	Wunibald Farmstead	Greg Savage	A and C
LC00: S-145*	Directional Sign	1920's	--	Lancaster County	A
LC00: E-146*	Directional Sign	1920's	--	Lancaster County	A

The lack of trees in the area that now includes Nebraska was a daunting prospect to the earliest non-Native American explorers and settlers. In fact, it was a widely held belief that the area west of the Missouri River was a desert, and was uninhabitable by anyone but nomads. While explorers like Major Stephan K. Long noted tracts of fertile land, Long stated that the scarcity of wood and water was almost uniformly prevalent, and would deter settlement (Dick 1975). Early non-Native American pioneers wisely settled along streams where water and timber was available, though this timber supply was quickly exhausted.

In Nebraska, there has been a long history of both State and Federal programs which supported and encouraged tree planting, ranging from the tax exemptions and land grants during the 1860's –1870's, the Clarke-McNary Act of 1924, and the Shelterbelt Program from 1935 to 1942. While the period of significance of all historic properties considered in this report, 1890–1936, is potentially represented, these tree planting activities would have varying degrees of identifiable characteristics today.

Investigators were able to discern intentionally planted trees on many of the historic properties. Windbreaks consisting of evergreen trees were noted most frequently, but fruit trees and ornamental trees were also observed in several farmyards. No areas that could be interpreted as early woodlots or tree claims were noted associated with these historic properties. The lack of tree claims is consistent with the observation made by Dick (1975) that by the passage of the Timber Culture Act in 1873, there was very little vacant land in the eastern portion of the State. No large scale shelterbelts, such as those planted with the assistance of the forest service were noted.

A distinction was made between windbreaks and treelines while preparing this report. A windbreak consists of evenly spaced multiple rows of trees intentionally planted to provide shelter from the elements and to assist in soil conservation. In contrast, a treeline is defined in this report as a group of volunteer trees allowed to grow along fencelines and other nonproductive areas. Treelines often consist of quick growing, scrubby tree species.

The distinction between windbreaks and treelines is important because treelines, as described above, would not have been present during the period of significance for the historic properties evaluated during the course of this investigation. Therefore, the presence of a treeline is intrusive and impacts the integrity of setting and feeling.

Results

Physical alterations to the landscape, such as subdivisions, agricultural terracing, stream straightening and dam construction, scrubby tree growth and treelines, when taken individually, may seem minor. However, when taken as a whole, the cumulative effect on the landscape is significant. Modern activities have impacted or destroyed the integrity of setting and feeling in agricultural lands contiguous to nearly all of the NRHP properties and NRHP eligible properties located in the study area.

Of the 11 farmyards determined eligible to the NRHP, four were considered to possess contiguous agricultural acreage that could be associated with the period of significance of the NRHP eligible property, the Del O'Brien Farmyard (LC00:E-15), the Steve Johnson Farmyard (LC00:E-52), the Arthur Monahan Farmyard (LC00:E-69) and the Henry Wunibald Farmyard (LC00:S-143). The remaining historic farmyard properties were assigned boundaries that generally coincide with the extent of the farmyard, bounded by obvious visual boundaries whose definitions were guided by NR Bulletin #21. **Table G.1** is the list of properties for which boundaries were defined.

The lack of trees in the area that now includes Nebraska was a daunting prospect to the earliest non-Native American explorers and settlers. In fact, it was a widely held belief that the area west of the Missouri River was a desert, and was uninhabitable by anyone but nomads. While explorers like Major Stephan K. Long noted tracts of fertile land, Long stated that the scarcity of wood and water was almost uniformly prevalent, and would deter settlement (Dick 1975). Early non-Native American pioneers wisely settled along streams where water and timber was available, though this timber supply was quickly exhausted.

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The NRHP eligible barns, residences, grain elevators and directional signs were assigned boundaries that conformed to the guidelines outlined by NPS (NR Bulletin #21) and that are visually reasonable. Careful attention was given to the seven aspects of integrity (location, design, setting, materials, workmanship, feeling and association) relative to each property and the definition of their historic boundary.

Descriptions and justifications of the historic boundary definitions are provided on the following pages. The architectural descriptions included with each discussion rely heavily on the Elliott and Dirr (1998) report. References and a glossary of terms are included following the discussion of individual properties.

NRHP Eligible Farmyards

Site LC00: S-15 - Del O' Brien Farmyard
7900 Saltillo Rd
Lincoln, NE

The Del O'Brien Farmyard includes a house, a gambrel roof barn, chicken house, polygonal grainery and a windmill. The house is located on the west side of the farmyard and is separated from the outbuildings by a driveway. The farmyard is eligible for the NRHP under Criterion A for its ability to convey significance in the area of agricultural development as a historically functioning farm.

This property is associated with four parcels of land acquired by James O'Brien between 1872 and 1884. These parcels are still owned by heirs of James O'Brien. On Site (1998) defined the period of significance for this farmyard as 1910's-20.

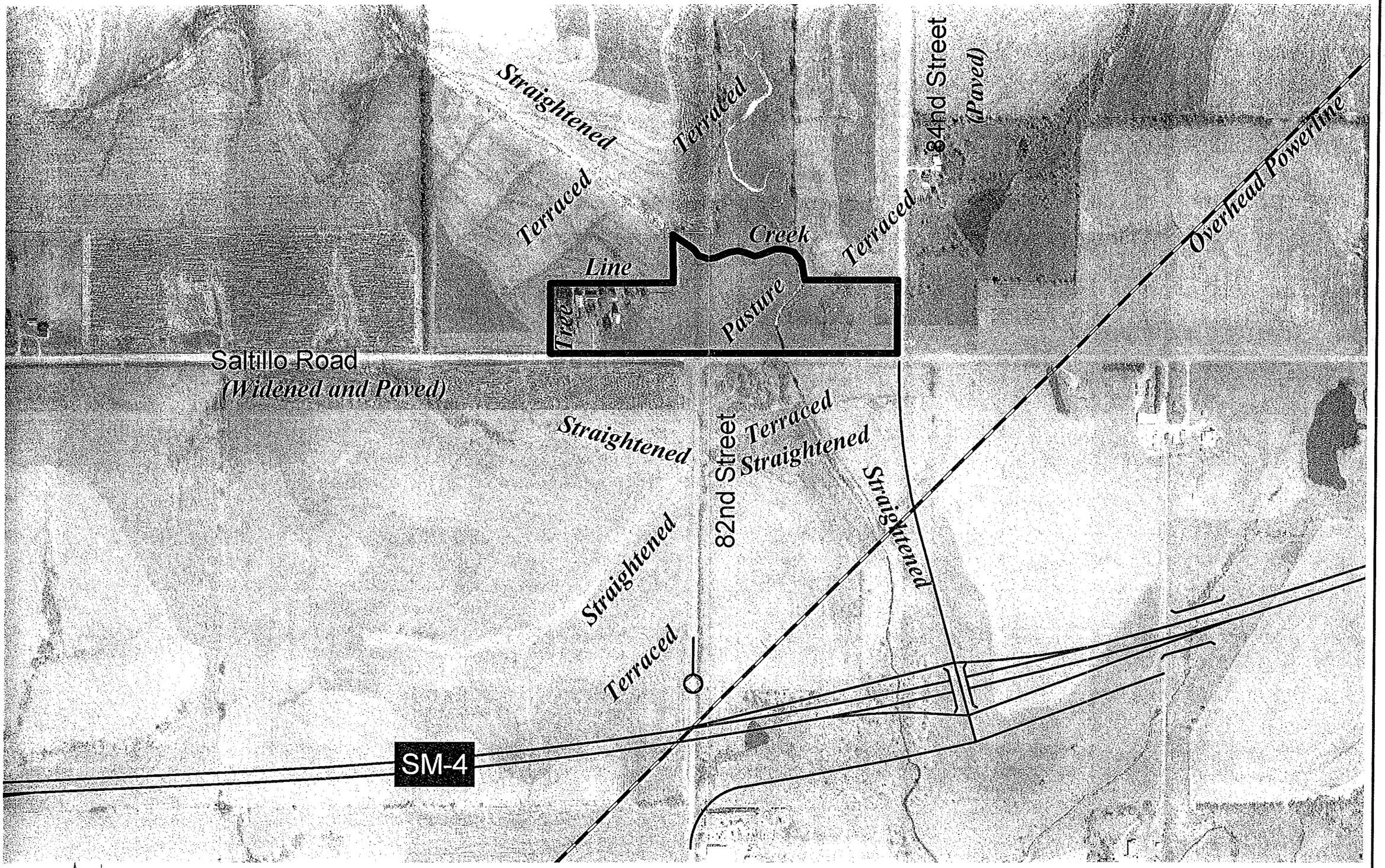
Verbal Boundary Description. The location of the farm yard is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): SE ¼, SW ¼, SE ¼ of Section 34, T9N, R7E Grant Township, Lancaster County, Nebraska. The boundary of this historic property includes the farmyard proper and several hectares located in the E ½ of the SE ¼ of Section 34, that are contiguous to the farmyard. Specifically, the boundary can be described as the windbreak on the west side of the farmhouse; the windbreak on the north side of the farmhouse; north on the quarter-line from the north windbreak to an intermittent drainage; east on the drainage to the west end of a east-west fenceline; east on the east-west fenceline to the west edge of the 84th Street right-of-way; south on the 84th Street right-of-way to the north edge of the Saltillo Road right-of-way; west on the north edge of Saltillo Road to the windbreak (**Figure G.3**).

Boundary Justification. The farmyard is part of a parcel of 32 hectares (80 acres) (W ½ of the SE ¼ of Section 34, T9N, R7E Grant Township, Lancaster County, Nebraska) purchased in 1872. Beyond the farmyard, much of this parcel has been agriculturally terraced, changing the natural contours of the land. In addition, an intermittent drainage crossing this parcel has been channelized. These land alterations significantly alter the historic integrity of the landscape, thereby precluding inclusion of the majority of this parcel within an historic boundary associated with the historic farmyard.

James O'Brien purchased a second parcel of 32 hectares (80 acres) (E ½ of the SE ¼ of Section 34, T9N, R7E Grant Township, Lancaster County, Nebraska) in 1882. This parcel includes portions of two intermittent drainages with an associated green belt. This grassy area has always been pasture according to Mr. O'Brien (personal communication May 2000). It is a portion of one of the drainages that delineates the northern boundary of this historic property. Although a green belt is still intact surrounding the remainder of the drainage to the north within this green belt, land on either side has been agriculturally terraced. This terracing is an intrusion when viewed from the historic farmyard and significantly alters the historic integrity of the landscape. Therefore, only an area contiguous to the farmyard, east to 84th Street retains sufficient integrity to be included within the historic boundaries of the farmyard. This area is included within the historic boundary described above.

The third parcel (NE ¼, Section 3, T8N, R7E) was acquired in 1884 and consists of 65 hectares (160 acres) immediately south of Saltillo Road. Much of this parcel has been agriculturally terraced, thereby reducing the integrity of this parcel to the farmyard. In addition, the presence of a high-voltage power transmission line crossing the southeastern corner of this property and the widening of Saltillo Road has further diminished the integrity of this property relative to the original farmstead.

James O'Brien owned a fourth parcel of land located south of Saltillo Road and east of 82nd street by 1903. This property is separated from the original homestead by two roads, each of which has been widened, thus diminishing the integrity of this parcel.



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

500 0 500 Feet

200 0 200 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-15
Del O'Brien Farmyard

June 9, 2000

G-3

Site LC00:E-52 – Steve Johnson Farmyard
13200 Yankee Hill Rd
Cheney, Nebraska

This historic farmyard was determined eligible to the NRHP under Criterion A for its contribution to the agricultural development of the area as an early dairy barn, and under Criterion C as a typical example of Folk Victorian architecture in the residence and in the outbuildings. The period of significance defined for this farmyard is the 1890's to 1900's (On Site, 1998). This property is associated with a ¼ section of property acquired by A.W. Baade sometime after June 1882, but prior to 1902.

Verbal Boundary Description. The location of the buildings associated with this property is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): SW ¼, SW ¼, SE ¼, SE ¼ of Section 20, T9N, R8E Stockton Township, Lancaster County, Nebraska. **Figure G-4** best illustrates the boundaries of this property.

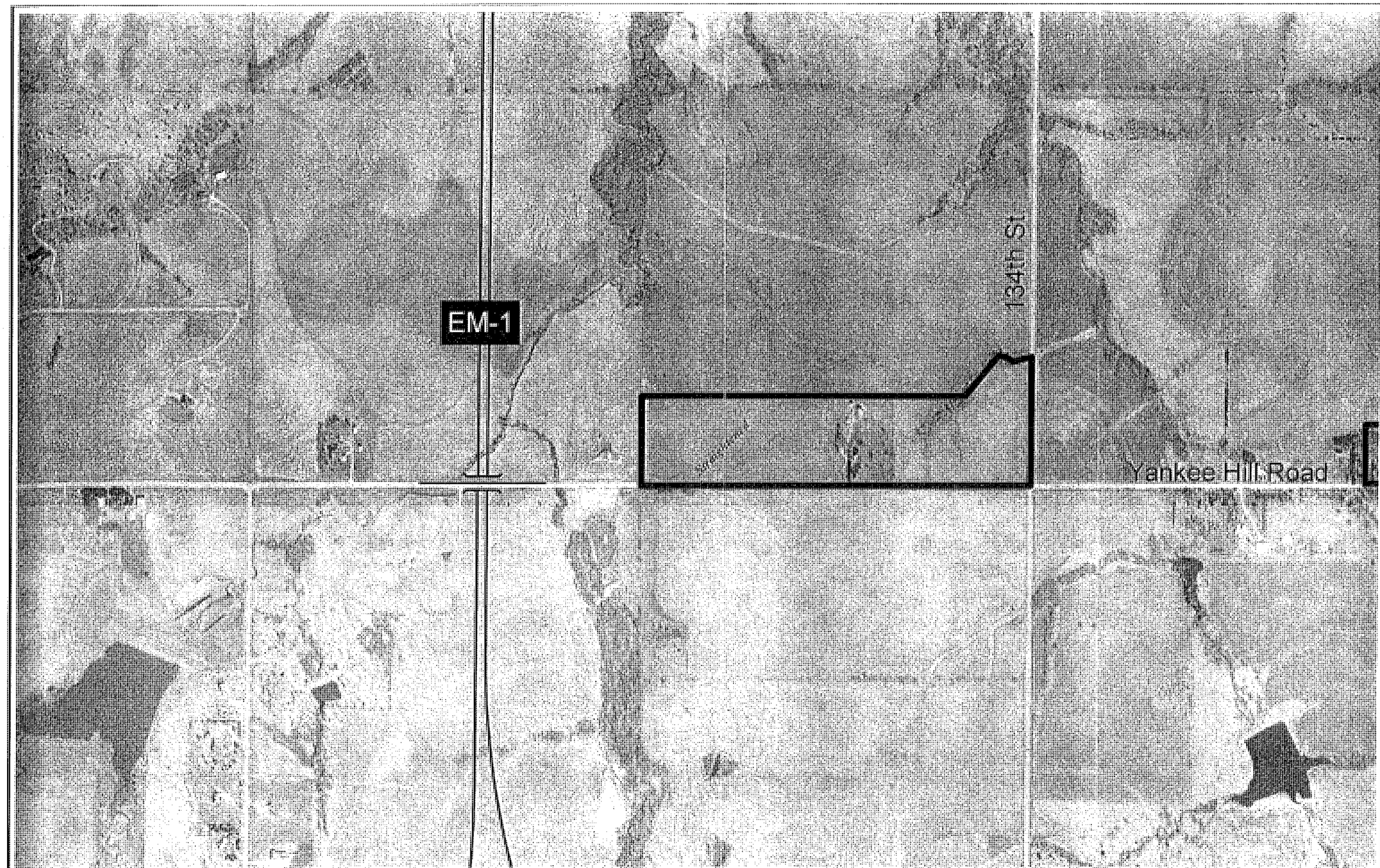
Boundary Justification. The boundary described above encompasses all NRHP eligible resources located within the farmyard and includes adjoining agricultural acreage both east and west of the farmyard. The Baade family purchased this property after June 1882, but prior to 1902. These dates fall within the period of significance for this farmyard. The remainder of the parcel originally purchased by Baade has been significantly impacted by modern activity, including agricultural terracing, dam construction and the straightening of a large intermittent drainage. These modern impacts diminish the integrity of that portion of the parcel not included in the boundary description.

Site LC00:E-53 - Penterman Farmyard (Penterman Farm)
13800 Yankee Hill Rd
Cheney, Nebraska

Historic structures in this farmyard consist of a one-story bungalow with matching one stall garage, a gambrel roof barn and two small sheds. This farmyard was considered eligible to the NRHP under Criterion A for its association with the development of small 20-century farms, and retains a high degree of integrity. This property's period of significance is the 1920's (On Site 1998).

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): SE ¼, SE ¼, SW ¼, of Section 21, T9N, R8E Stockton Township, Lancaster County, Nebraska. The boundaries of this property can be specifically described as the windbreak on the north; the fenceline on the east; the north edge of the Yankee Hill Road right-of-way on the south; and the treeline along the driveway located west of the one-story bungalow (**Figure G.5**). A sewage lagoon located south of the barn near Yankee Hill Road is a non-contributing element.

Boundary Justification. These boundaries include all NRHP eligible resources and a livestock corral located west and south of the barn. Associated farm ground owned by the Spatz family during the period of significance of the farmyard has been subdivided to the west. A modern house has been constructed on one of the subdivisions, in addition to numerous other modern intrusions, including a second sewage lagoon, a man made pond, and trenching to provide water. The remainder of the surrounding agricultural acreage associated with this farmyard has been agriculturally terraced, therefore, the natural contours of the land have been altered, diminishing the historic integrity of this property. This terracing excludes this acreage from consideration as an associated historic property.



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

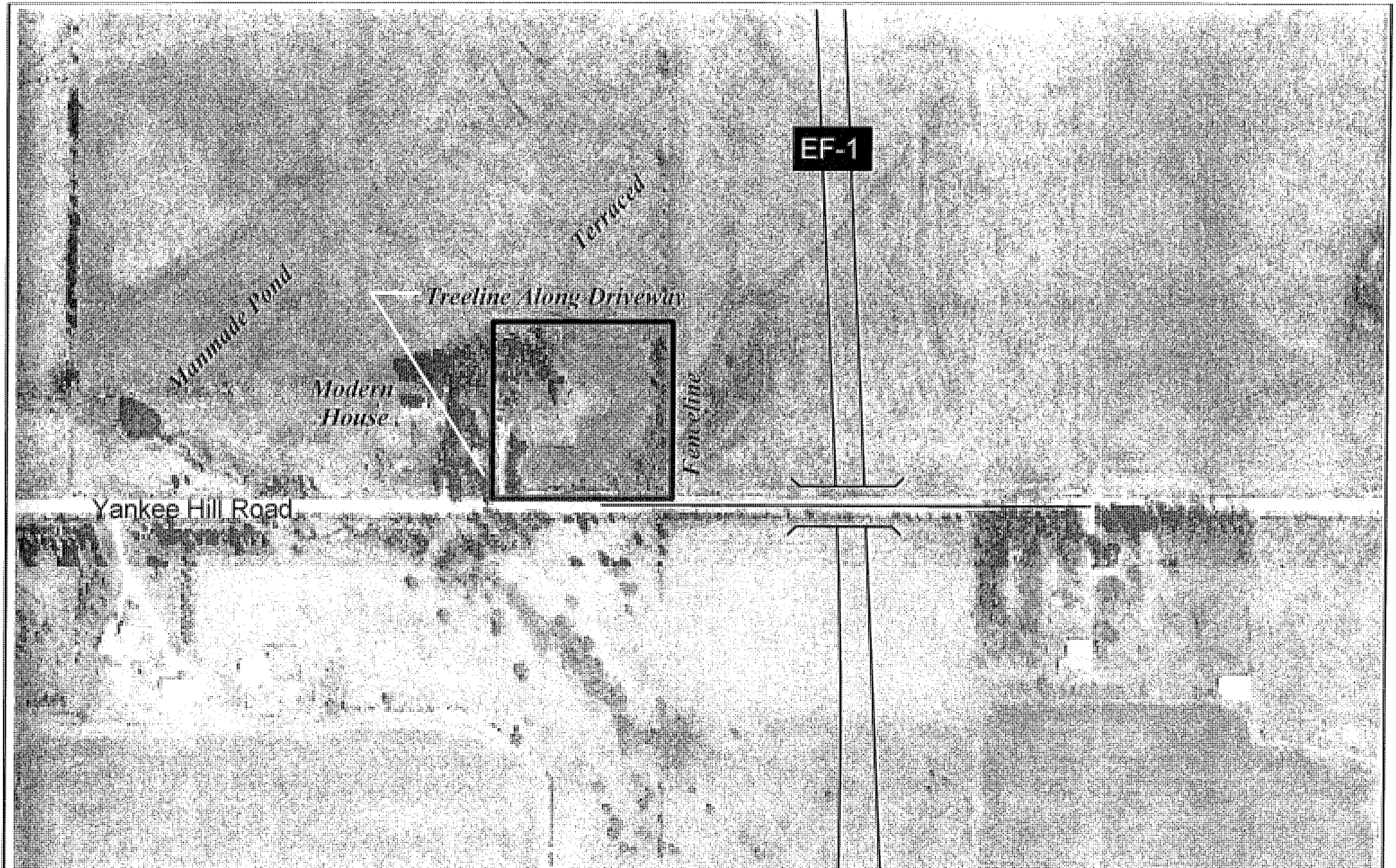
600 0 600 Feet

200 0 200 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-52
Steve Johnson Farmyard

June 9, 2000

G-4



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

200 0 200 Feet

50 0 50 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-53
Penterman Farmyard

Nov. 19th, 2001

G-5

Site LC00:E-56 – Michael Smith Residence
8205 S 148th
Bennet, Nebraska

The house in this farmyard was determined eligible for the NRHP under Criterion C because it typifies the Craftsman style of construction. When initially evaluated in 1997, On Site described 5 structures, including the Craftsman style house, a barn and three outbuildings as resources that contributed to the NRHP eligibility this property. On Site noted however, that the "remaining contributing NRHP eligible resources on this site are unused outbuildings that while neglected, still retain a high degree of historic integrity" (Elliott and Dirr 1998). The period of significance for this property is 1912-14.

During the course of the investigation to define the boundary of this historic property, UNL observed that the contributing resources described by On Site (1998) have further deteriorated. In particular, a large portion of the gable end barn has collapsed. In consultation with the NeSHPO, UNL re-evaluated this property and recommends that only the Craftsman style house remains eligible, under Criterion C, to the NRHP. The barn is no longer eligible to the NRHP as the integrity of design, workmanship, materials, feeling and association has been severely impacted by the collapse of most of the structure. The three remaining minor outbuildings are in fair to poor condition, and while they contribute to the overall feeling, association and setting the of the property, they are not themselves individually eligible to the NRHP.

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): NE ¼, SE ¼, SE ¼, of Section 21, T9N, R8E Stockton Township, Lancaster County, Nebraska. Specifically, the historic boundaries of this property can be described as the treeline on the north; the west edge of the 148th Street right-of-way on the east; the southern edge of the trees lining the driveway on the south; the western edge of a north-south driveway continuing as an imagining line to the northern boundary (**Figure G.6**). All other buildings located on this property, including a modern, corrugated steel shed located west of the barn are non-contributing.

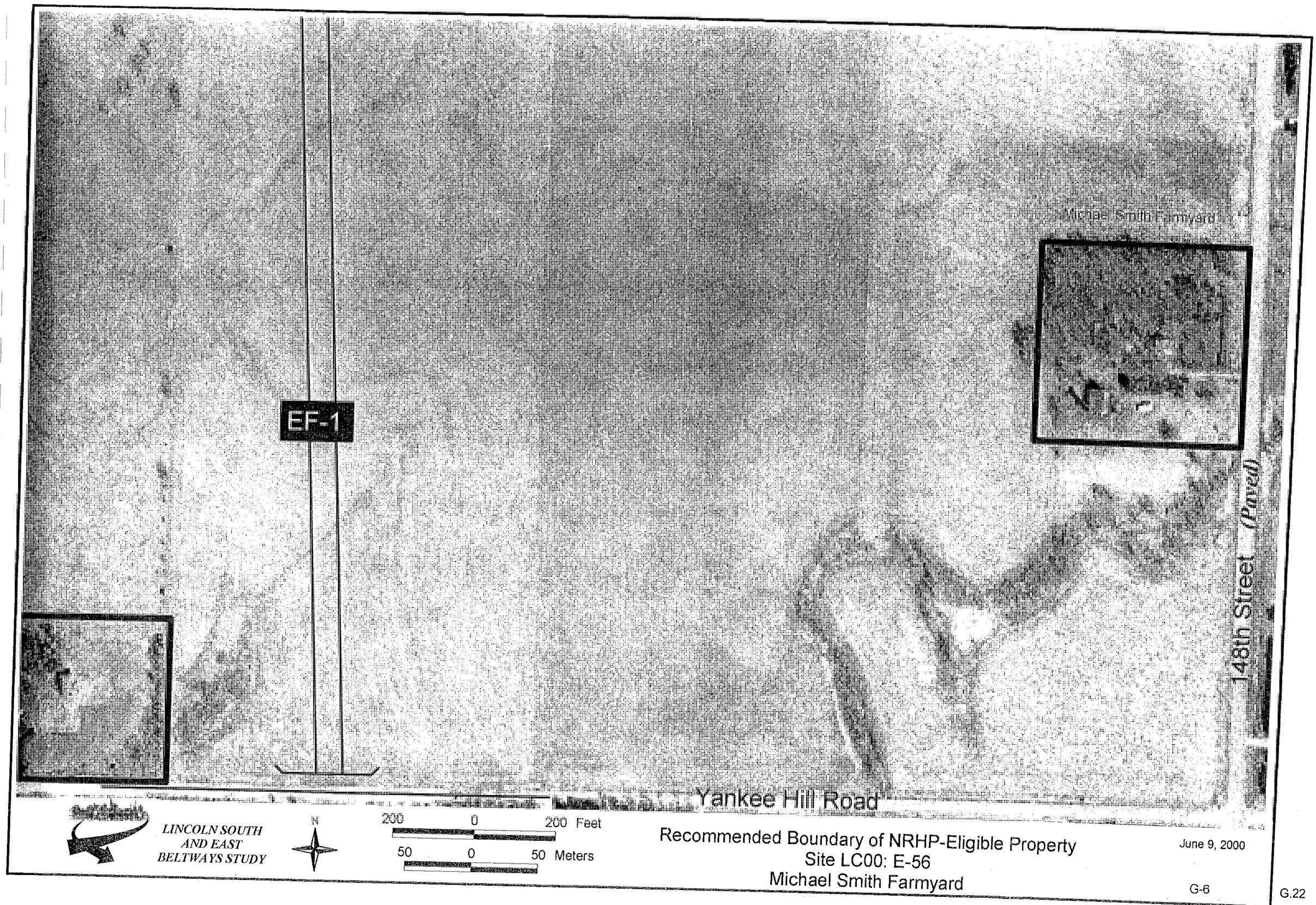
Boundary Justification. The boundaries described above include an area surrounding the eligible resource, including a formal yard and a tree lined driveway. The 65 hectares (160 acres) (SE ¼ 21-9-8) of land initially associated with this farmyard are not considered eligible for inclusion within the historic boundaries of this property. The general character and feeling of the period of significance for this property (1912-14) is no longer reflected in the outbuildings and or in the 65 hectares (160 acres) initially associated with this farmhouse. The historic integrity of this property is diminished by the deterioration of the large barn and the overgrowth vegetation on this property.

Site LC00:E-61 – Elaine and Owen Herter Farmyard
5300 S 148th St
Cheney, Nebraska

This isolated farmyard, set back from nearby 148th Street by almost 0.4 km (¼ mi), is eligible to the NRHP under Criterion A, for its contribution to agricultural development in the area. The farmyard is described as one of the best intact turn-of-the-century farmsteads within the study area, and includes 6 NRHP resources.

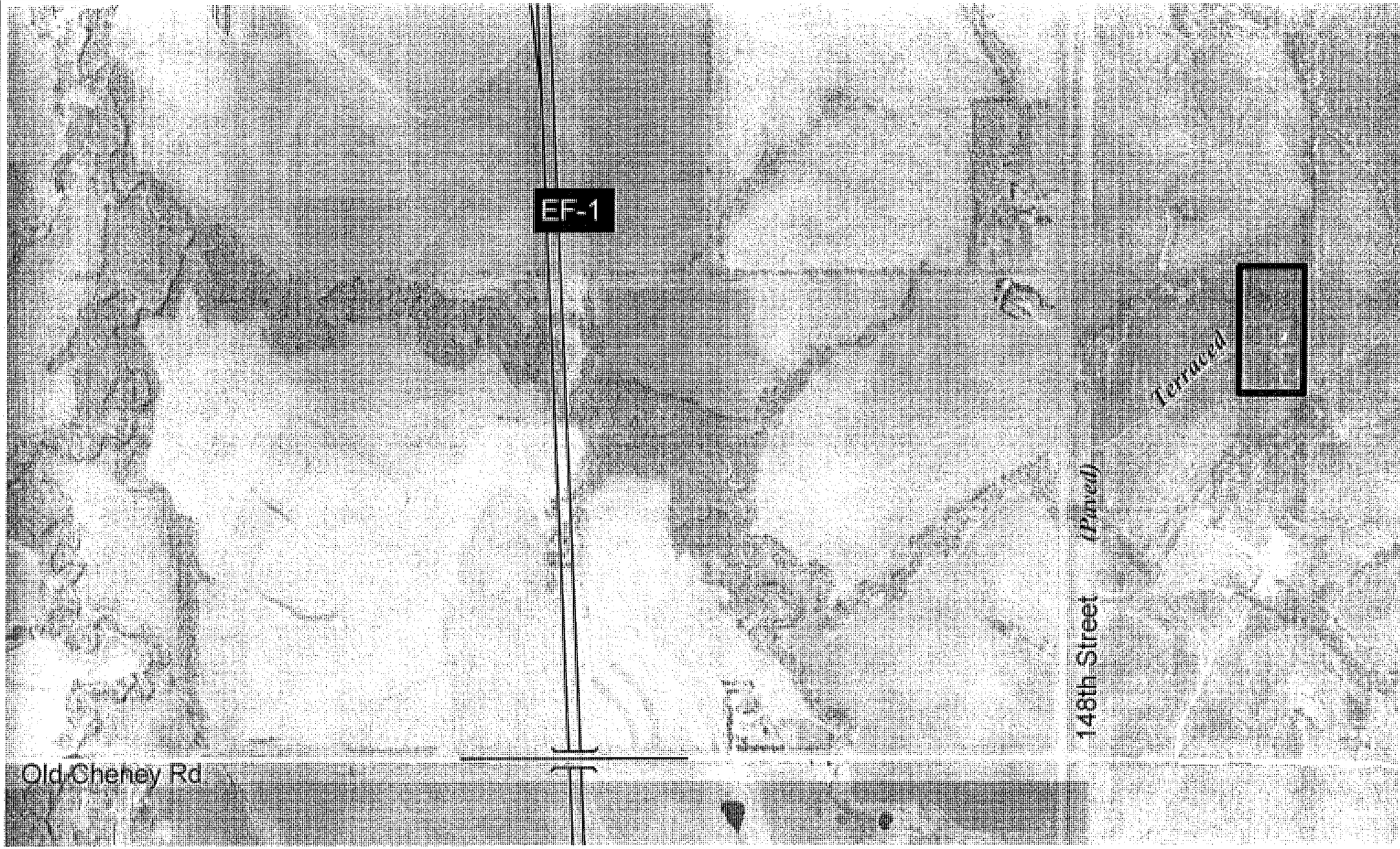
Verbal Boundary Description. According to the USGS quadrangle map, Walton, Nebraska (1964), the location of this property is: NE ¼, NW ¼, SW ¼, of Section 10, T9N, R8E Stockton Township, Lancaster County, Nebraska. The specific boundaries of this property are described as the treelines surrounding the farmyard on all sides (**Figure G.7**).

Boundary Justification. This farmyard is situated away from 148th Street, and the trees surrounding the farmyard offer both an obvious visual and physical boundary. The Herter Family purchased the farm ground associated with this farmyard in 1878. While there is a long historical association between the farmyard and the surrounding farm ground, the farm ground has been terraced. Terracing changes the natural contour of the land, thereby significantly altering the historic integrity of the landscape, making these terraced acres ineligible for inclusion within the historical boundaries of the farmyard.



Recommended Boundary of NRHP-Eligible Property
Site LC00: E-56
Michael Smith Farmyard

June 9, 2000



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

500 0 500 Feet

200 0 200 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-61
Elaine and Owen Herter Farmyard

June 9, 2000

Site LC00:E-62 – Joel and Kathy Sartore Farmyard ("Herter-Hagaman Farm")
4949 S 148th St
Cheney, Nebraska

The site of a former dairy operation, this late 1890's site is listed on the NRHP and was determined eligible under Criterion A for it's contribution to agricultural development in the area, and under Criterion C as the buildings typify the Folk Victorian architectural style. The period of significance for the farm is 1885-1930, which encompasses the farm origins through construction of all its outbuildings, and the completion of the house.

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): SE ¼, SE ¼, NE ¼, of Section 9, T9N, R8E Stockton Township, Lancaster County, Nebraska. The specific boundaries of this property can be described as the west edge of the treeline on the west (coinciding with the western property boundary); the north treeline on the north (coinciding with the northern property boundary); the west edge of the 148th Street right-of-way on the east; and the fenceline on the south (coinciding with the southern property boundary) **(Figure G.8)**.

Boundary Justification. The boundary described above includes the entire farmyard. Much of the surrounding land with an historical association to the farmyard has been agriculturally terraced, which alters the natural contours of the landscape. A portion of land north of the farmyard boundary to Pioneers Blvd on the east side of a small drainage is not currently under cultivation. However, this parcel of land is overgrown with numerous trees such as Chinese Elm. This overgrowth would not have been present during the period of significance for this property and is a visual intrusion not in keeping with the historical integrity of the remainder of this property.

Since initiation of the historic boundaries evaluation, this property was listed on the NRHP. The NRHP site is defined as a 8.1 ha (20 acre) parcel and corresponds to the independently delineated boundary in this report.

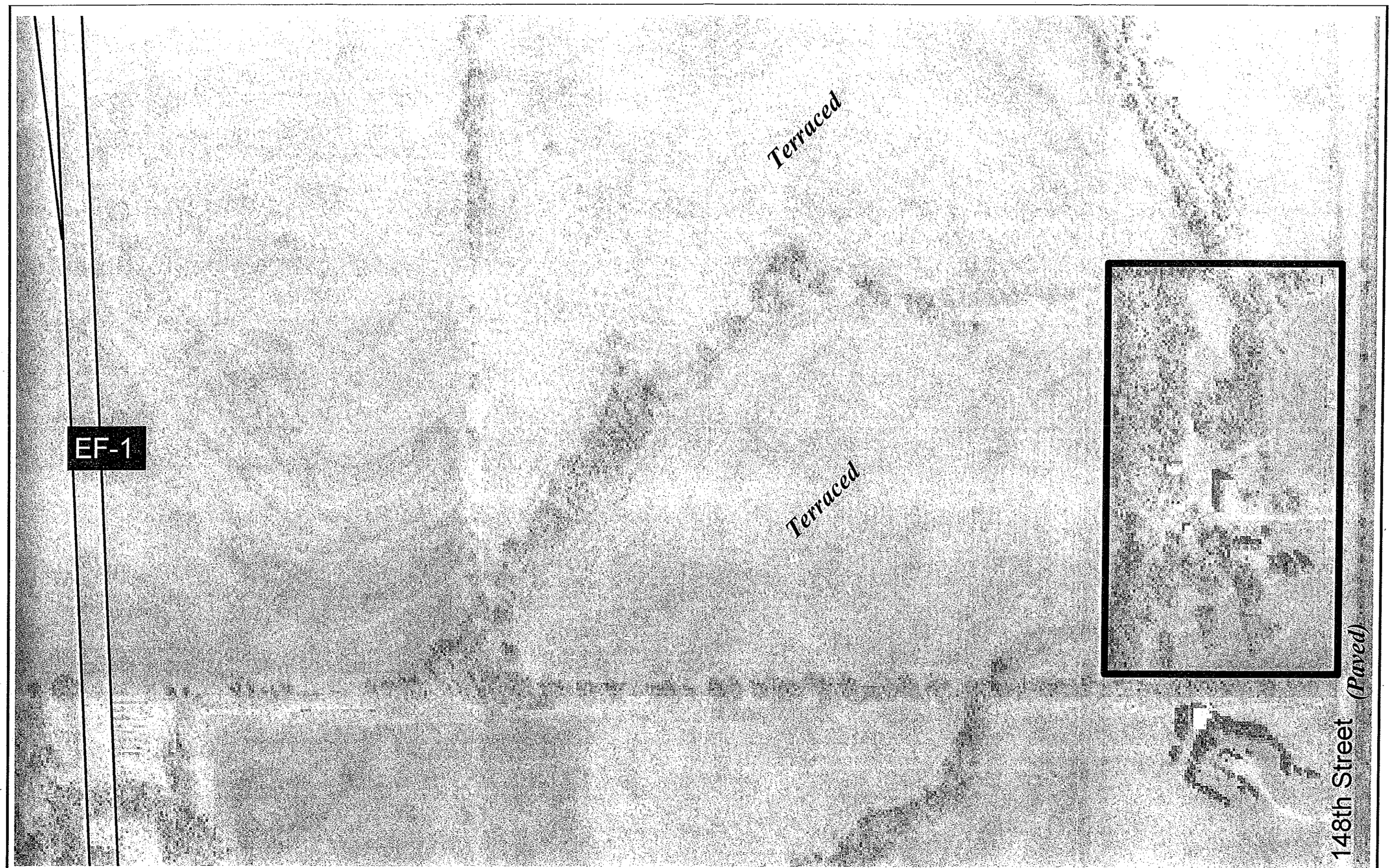
Site LC00:E-69 – Arthur Monahan Farmyard ("Haeger Dairy")
14300 O St
Lincoln, Nebraska

This large historic site known as the Haeger Dairy, supplied milk to nearby Lincoln residents during the early part of the 20th century. This site was determined eligible under Criterion A as a commercial dairy and its contribution to the development of agriculture in the area, and under Criterion C for the integrity of the architectural styles, which document the evolution of the site. All buildings located on site, a total of nine, contribute to this eligibility. The period of significance for this property is ca. 1900 – 1920.

The 65 hectares (160 acres) originally associated with this historic property was purchased by Anthony Reed in 1893. In 1929, the Reed family sold this property to Jimmie Haeger. I.F. Kurszer purchased the property in 1945. Arthur Monahan purchased the west 80 acres and the associated NRHP eligible buildings in 1956 and converted the dairy to a cattle operation.

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): SE ¼, SW ¼, SE ¼, of Section 21, T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. Specifically, these boundaries can be described as the north-south fenceline that runs along the ¼ section line on the east, an east-west fenceline located approximately 305 m (1000 ft) north of the 'O' Street right-of-way on the north, a north-south fenceline located immediately west of the shelterbelt on the west, and the 'O' Street right-of-way on the south (**Figure G.9**).

Boundary Justification. The boundaries described above include the entire the farmyard, livestock pens associated with the barn and a portion of pasture located to north of the farmstead. The remainder of the 65 hectares (160 acres) originally purchased by Reed is excluded from these boundaries due to the construction of a modern residential subdivision on the site, man-made ponds and small flood control dams. In addition, a commercial subdivision located in the SW ¼ Section 21 is visible from the Monahan property. These modern impacts intrude upon the integrity of setting, feeling and association when considering the remainder of the 65 hectares (160 acres) originally associated with this historic property. The general character and feeling of the period of significance for this property (1900 - 20) is no longer reflected in the 65 hectares (160 acres) initially associated with this historic property.



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

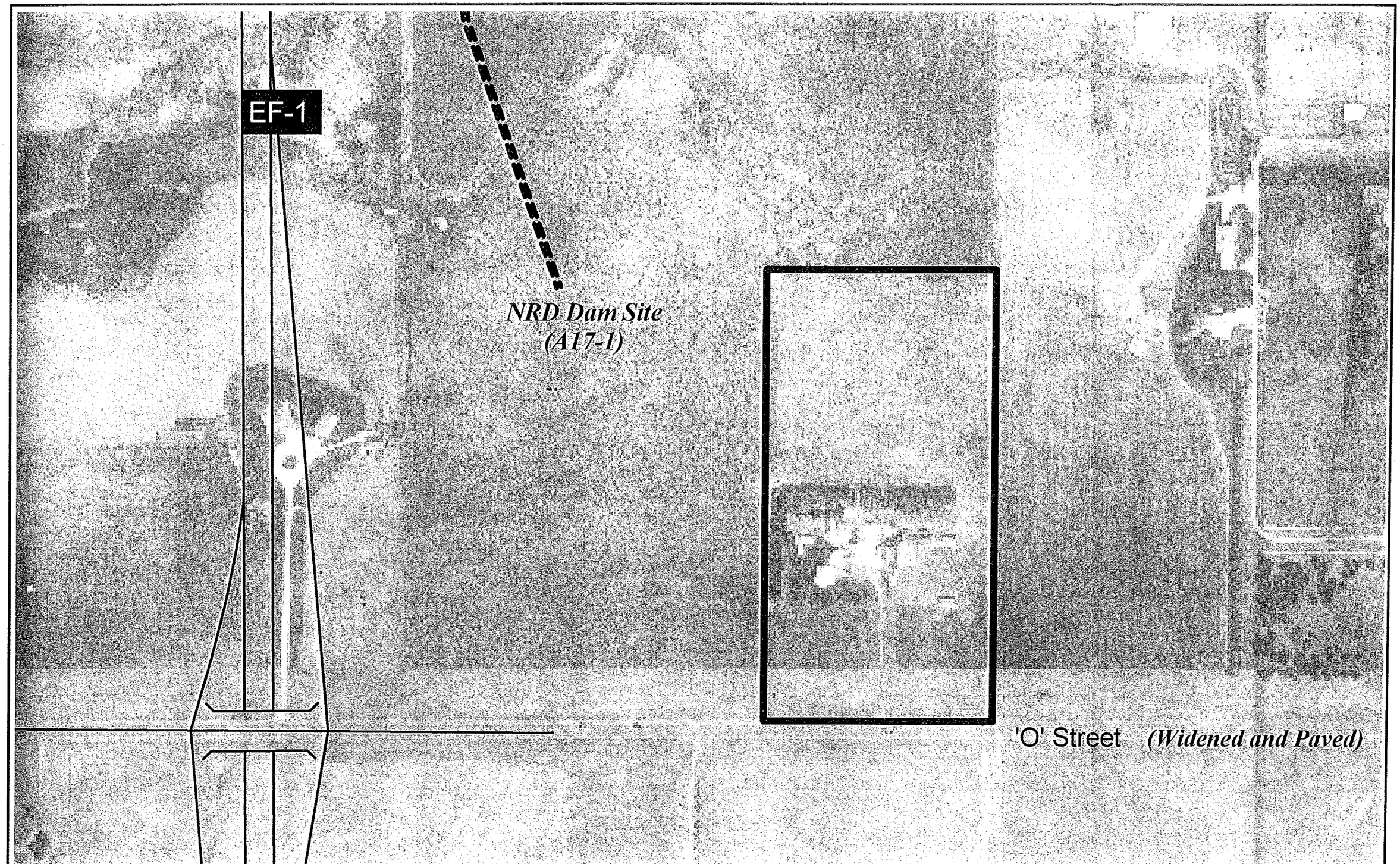
200 0 200 Feet

50 0 50 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-62
Joel and Kathy Sartore Farmyard

June 9, 2000

G-8



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

200 0 200 Feet

50 0 50 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-69
Arthur Monahan Farmyard

June 9, 2000

G-9

Site LC00:E-72 – Lyle and Maverne Mayer Farmyard

The Mayer Farmyard was determined eligible to the NRHP under Criterion C as a representative type of small-scale vernacular farmstead. The buildings located on site are described as innovative and retain a high degree of integrity. The period of construction for this property is ca. 1900 – 10.

Verbal Boundary Description. According to the USGS quadrangle map, Walton, Nebraska (1964), the house and some of the outbuildings of this farmyard are situated in different ¼ ¼ ¼'s. The house, the garage and a shed are in the SE ¼, SE ¼, SW ¼ SE ¼ of Section 20, T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. The barn and a chicken coop are in the SW ¼, SW ¼, SE ¼ SE ¼, of Section 20, T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. The specific boundaries can be described as the windbreak on the north; the fenceline on the east; the north edge of the 'O' Street right-of-way on the south; and the windbreak on the west (**Figure G.10**).

Boundary Justification. The boundary described above includes the entire farmyard. The windbreaks and fenceline provide an obvious visual boundary for this property.

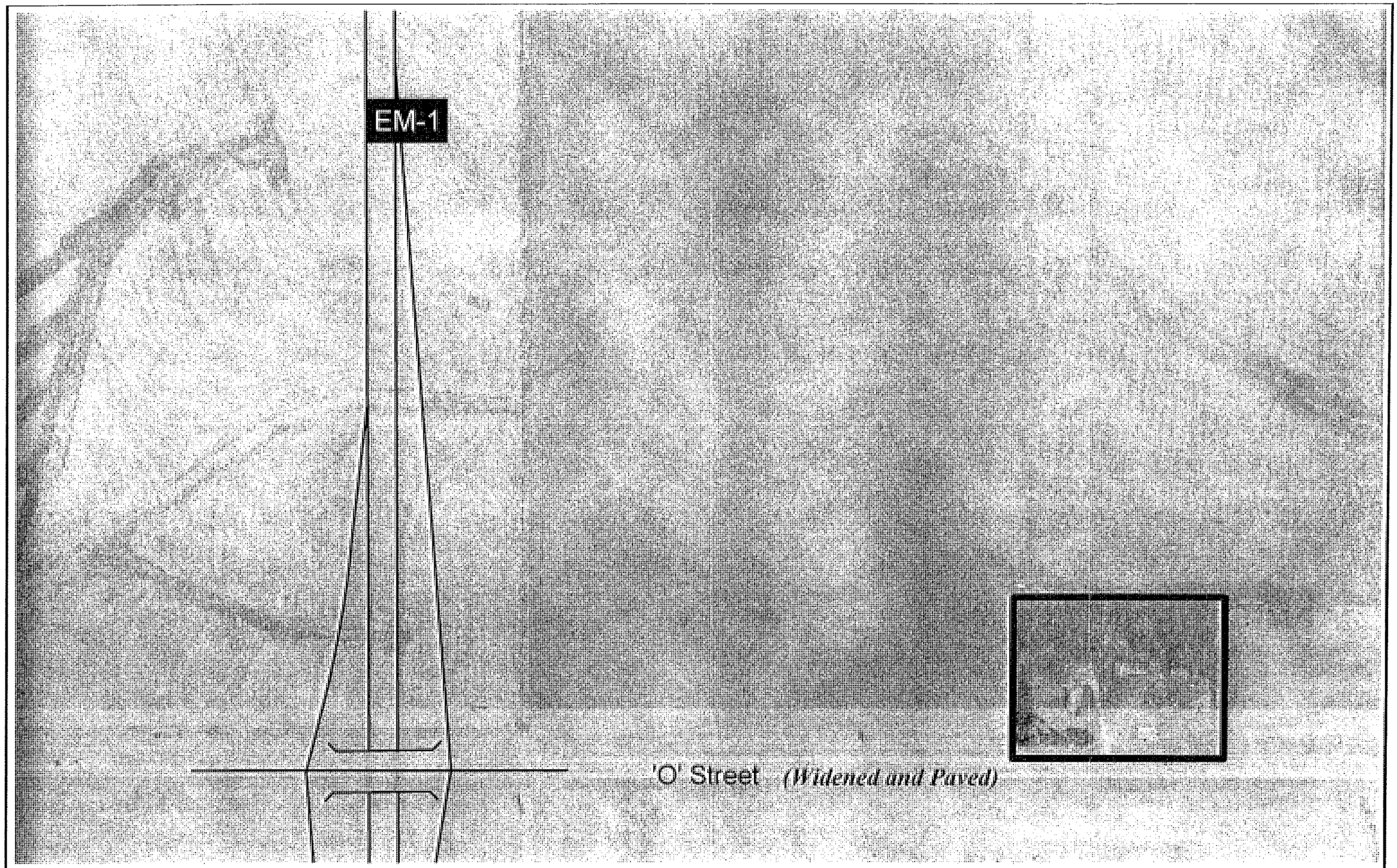
Site LC00:E-87 – Theresa Retzlaff Farmyard ("Forest Brook Farm")
13905 Van Dorn St
Walton, Nebraska

This historic farmyard is an excellent example of vernacular building types and is considered eligible to the NRHP under Criterion C for its ability to convey significance through the use of local materials and individual adaptation of architectural styles. The period of significance is ca. 1890–1920.

The farmyard is located within a 32 hectare (80 acre) parcel of land purchased by Wilhem Francke from the US Government in 1887. Fred Retzlaff purchased this parcel from Francke in 1914. Fred Retzlaff also acquired an additional 32 hectares (80 acres) located immediately north of Van Dorn Street in 1914. This property was then transferred to Fred Retzlaff's son Elmer, husband to Theresa Retzlaff, the current owner of the property.

Verbal Boundary Description. The location of the farmyard is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): NW ¼, NW ¼, NW ¼, NE ¼ of Section 4, T9N, R8E Stockton Township, Lancaster County, Nebraska. The boundary of this farmyard can be described as the fenceline on the west; the south edge of the Van Dorn Street right-of-way on the north; the west bank of the unnamed creek on the east; and the treeline on the south (**Figure G.11**). This boundary encompasses all structures determined eligible to the NRHP, including the Tudor-style cottage, the gable roof barn with stone foundation, the hog house, a granary with stone foundation, and a small polygonal shed. All other structures located within this boundary description are non-contributing.

Boundary Justification. The boundaries described above provide obvious and highly visible cultural and natural boundaries. The effect of modern activities on the historical integrity of this property has been significant. These effects include terracing, a man-made dam, the widening of Van Dorn Street and an overgrowth of trees. These features would not have been present during the period of significance for this property and are a visual intrusion not in keeping with the historical integrity of this property.



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

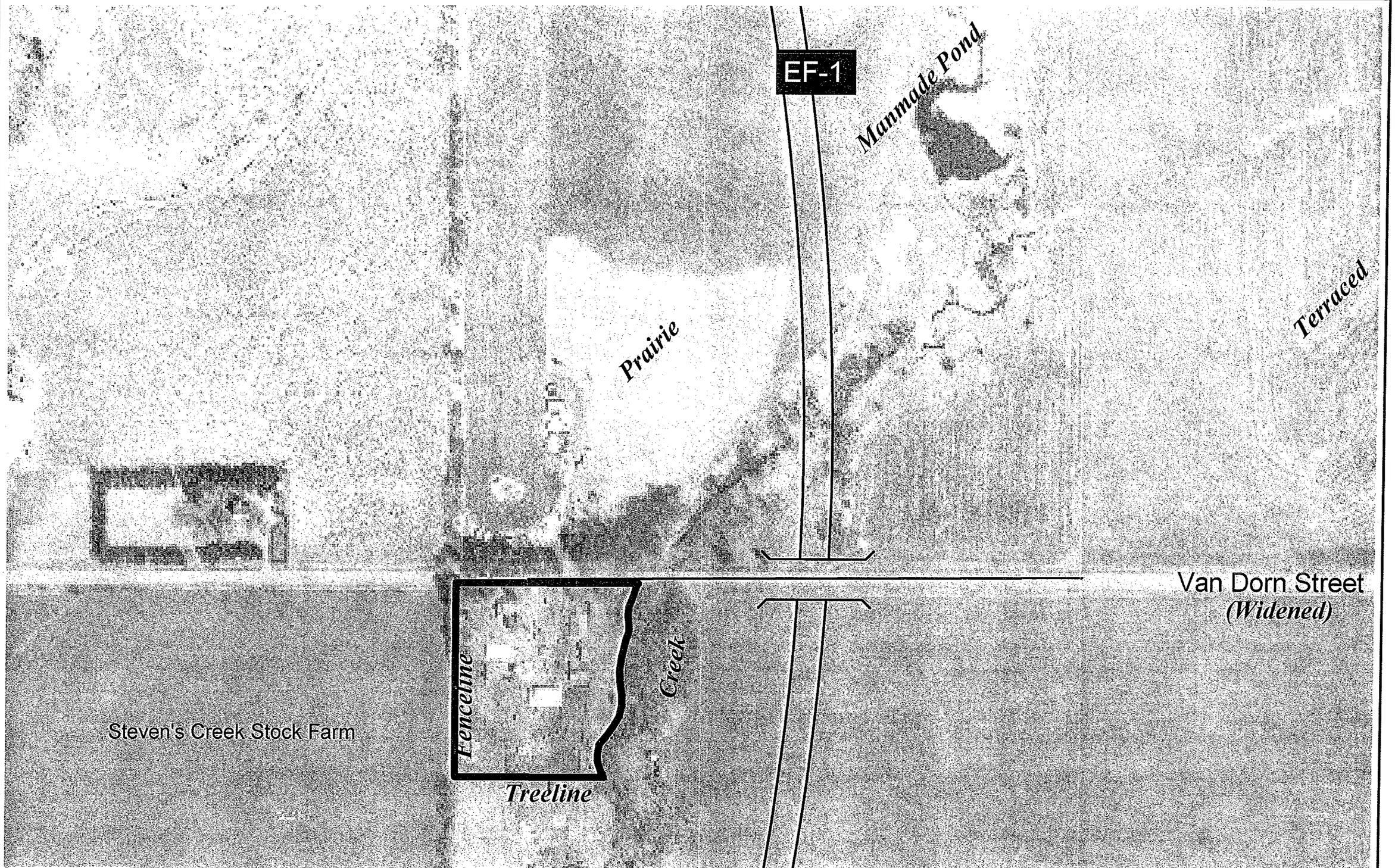
200 0 200 Feet

50 0 50 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-72
Lyle and Maverne Mayer Farmyard

June 9, 2000

G-10



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

200 0 200 Feet

50 0 50 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-87
Theresa Retzlaff Farmyard

June 9, 2000

G-11

Site LC00:E-134 – Laura Reed Farmyard ("Reed Homestead")
112th & Havelock
Lincoln, Nebraska

This historic farmyard was determined eligible for the NRHP under Criterion A for its contribution to agricultural development in the area. The house and the outbuildings retain a high degree of integrity and their period of significance is their construction date, ca. 1900 -10.

Verbal Boundary Description. According to the USGS quadrangle map, Walton, Nebraska (1964), the location of this property is: SW ¼, SW ¼, SW ¼ of Section 6 (correction section), T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. The specific boundaries of this site can be described as an imaginary east-west line 30 m (100 ft) north of the north driveway; an imaginary north-south line 30 m (100 ft) east of the eastern-most outbuilding; the north edge of the Havelock Avenue right-of-way on the south; and the east edge of the 112th Street right-of-way on the west (**Figure G.12**).

Boundary Justification. The boundaries as described above encompass the entire farmyard. The land associated with this farmyard has been impacted by modern activity, including agricultural terracing, and the removal of the Chicago Rock Island and Pacific Railway line, which significantly diminishes the historic integrity of the associated acreage.

Site LC00:E-143 – Henry Wunibald Farmyard
8907 Saltillo Rd
Lincoln, Nebraska

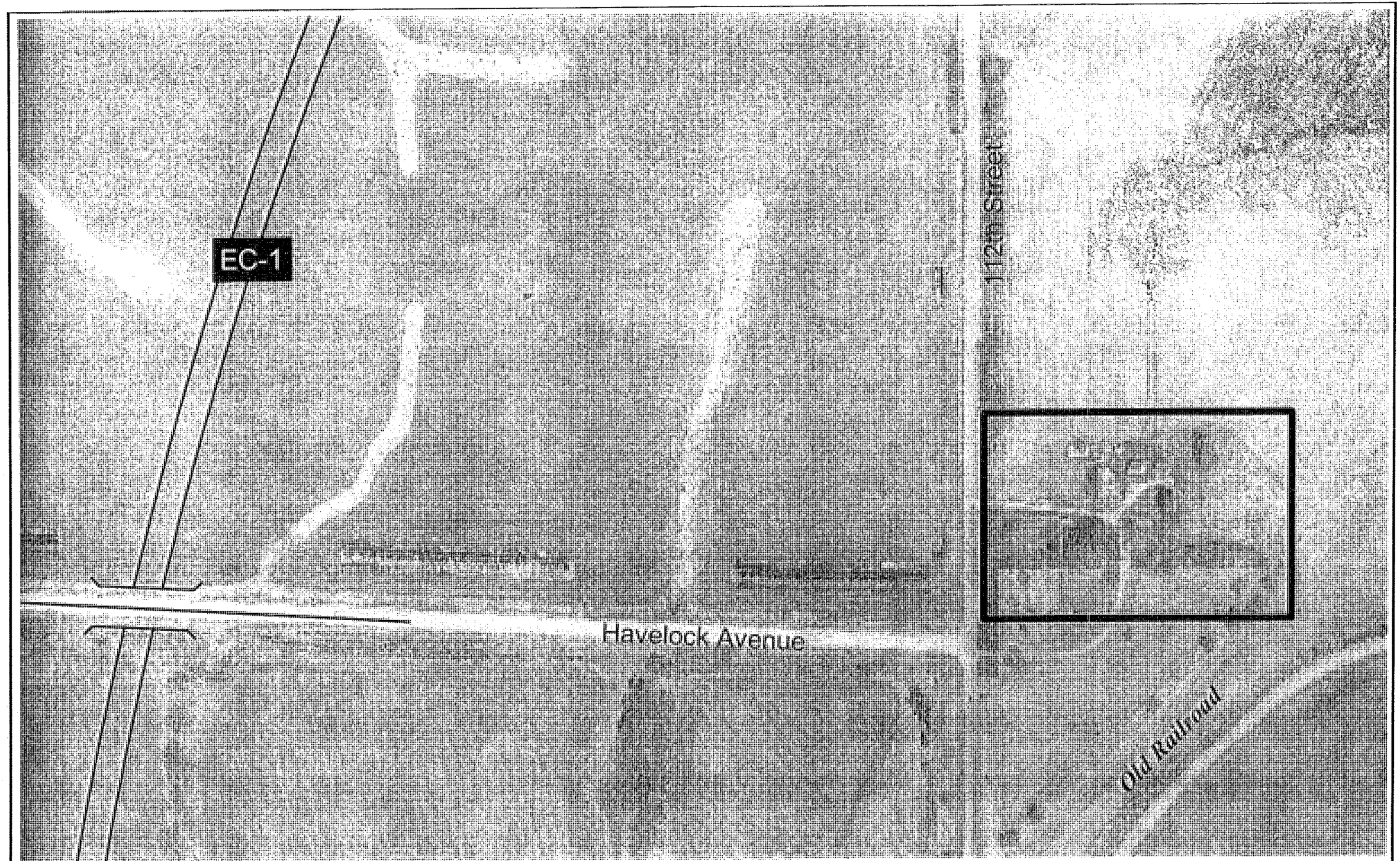
This historic farmyard located near the center of a section, was determined eligible to the NRHP under Criterion A for its contribution to agricultural development in the area, and under Criterion C as an excellent example of an early 20th century vernacular wood-frame farmhouse with some Italianate details and good historic integrity. The period of significance for this property is ca. 1901–50. In addition to the house, a mortise-and-tenon barn, and a former kitchen turned shed are eligible resources. A metal Quonset-style shed constructed in 1962 contributes to the overall significance of this property.

This farmyard is associated with a parcel of 219 hectares (540 acres) originally purchased by the Wunibald brothers, Auke, Henry, and Weirt in 1896. Around 1901, the Wunibalds divided the land among themselves. Construction began on the current house in 1901 and was completed sometime around 1905. The large barn on site was completed by 1906. The property was transferred to Helmer and Estella Wunibald in 1958. The farmyard (lots 5 & 8, NE ¼, NE ¼, NE ¼, SW ¼ of Section 2, T8N, R7E Saltillo Township, Lancaster County, Nebraska) was sold to Greg Savage in 1992.

Verbal Boundary Description. According to the USGS quadrangle map, Bennet, Nebraska 1964, the topographic location of this property is: NE ¼, NE ¼, NE ¼, SW ¼ of Section 2, T8N, R7E Saltillo Township, Lancaster County, Nebraska. The enclosed map best illustrates the boundaries of this property (**Figure G.13**).

Boundary Justification. This boundary includes the Wunibald Farmyard, and portions of property originally held by Henry Wunibald. Numerous physical changes to the landscape surrounding the Wunibald Farmyard have occurred, including conservation terracing, construction of small dams, channel straightening and the placement of large powerline structures. These alterations to the landscape have impacted the integrity of setting and feeling with regard to the agricultural acreage surrounding this historic property.

The boundary described above includes portions of the original Wunibald owned acreage that speaks to the historic character of the farmyard and retains the integrity of setting and feeling.



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

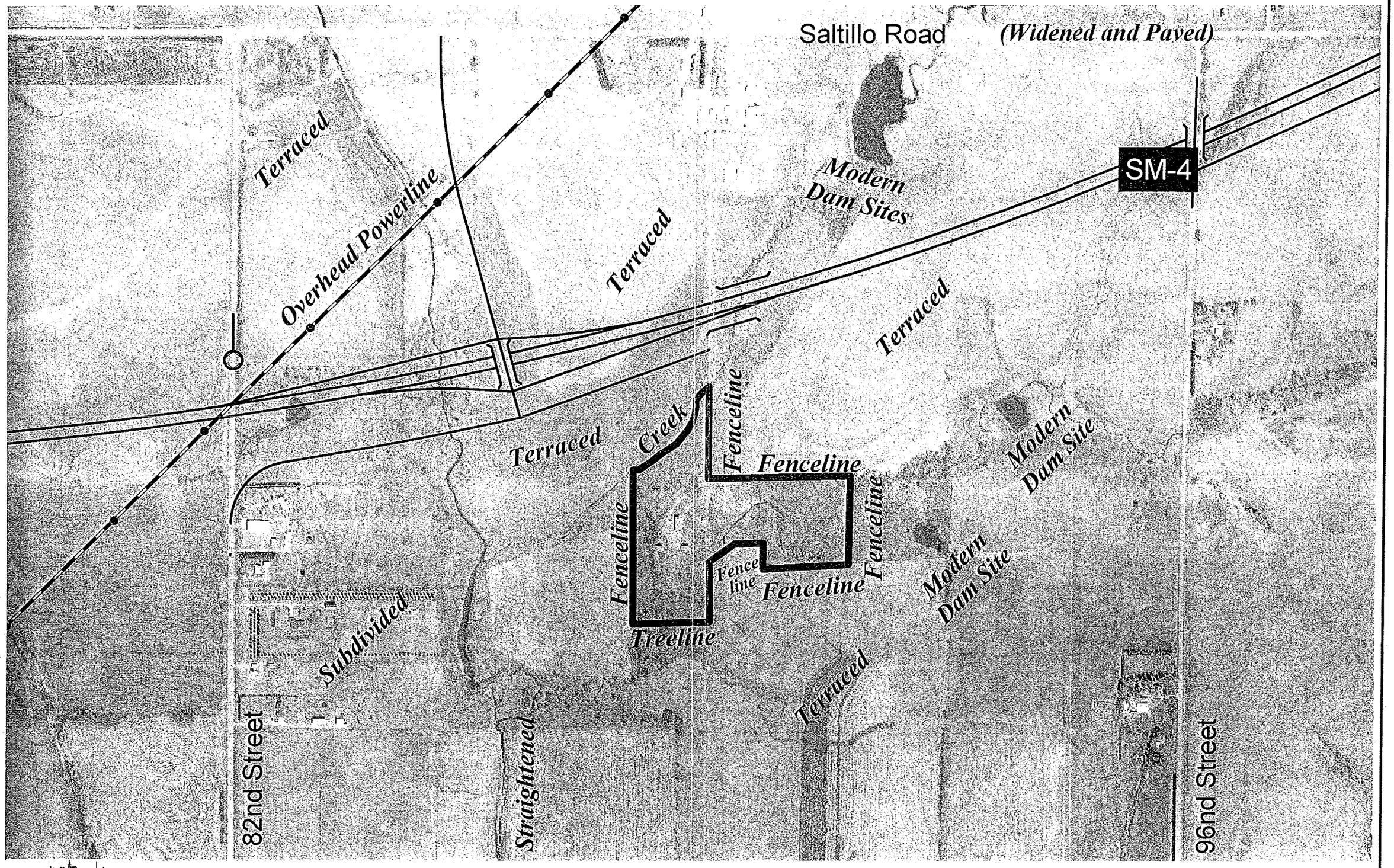
200 0 200 Feet

50 0 50 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: E-134
Laura Reed Farmyard

June 9, 2000

G-12



LINCOLN SOUTH AND EAST BELTWAYS STUDY

N

500 0 500 Feet

100 0 100 Meters

Recommended Boundary of NRHP-Eligible Property
Site LC00: S-143
Henry Wunibald Farmyard

May 2nd, 2002

G-13

NRHP Eligible Barns

Site LC00:S-6 – David McEwen Gable Roof Barn

3801 Rokeby Road
Roca, NE

A large gable roofed barn with formal cornice returns on the main north facing façade. This barn is the only historic building on the property and as such is individually eligible under Criterion C as an example of utilizing architectural details in barn construction. The period of significance is the construction date of the barn, ca. 1910. According to the current property owner, this barn was moved to its current location a number of years ago.

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Roca, Nebraska (1964): NE¼, NE ¼ of Section 31, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific property boundary is described as an imaginary line extending 3 m (10 ft) from the envelope of the building.

Boundary Justification. The boundary of the nominated property includes only an area immediately surrounding the historic building, as the integrity and setting of property surrounding this barn are not intact.

Site LC00:S-31 – Steve Speidel Gothic Arch Roof Barn

7800 S 40th
Lincoln, NE

This large Gothic arch roof barn was constructed in 1932 and is individually eligible to the NRHP under Criterion C as illustrative of the laminated truss system for the large Gothic arched roof. The period of significance for this structure is the date of construction, 1932. The remaining structures located on site are not eligible for the NRHP.

Verbal Boundary Description. The location of this barn is as follows according to the USGS quadrangle map, Roca, Nebraska (1964): NW ¼, NW ¼, SW ¼ of Section 20, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific property boundary is described as an imaginary line extending 3 m (10 ft) from the envelope of the building.

Boundary Justification. The boundary of the nominated property includes only an area immediately surrounding the historic building, as the integrity and setting of property surrounding this barn are not intact.

Site LC00:S-47 – Margene Zachek Gable Roof Connected Barn
70th & Yankee Hill Rd
Lincoln, Nebraska

This large connected barn complex is eligible to the NRHP under Criterion C as an excellent example of innovative agricultural construction. A gable roof barn connected to a machine shed represents vernacular efforts and techniques employed to improve the farm. The construction date, ca. 1910-20's, is the period of significance for this historic property. Although other structures are present on site, this connected barn is the only structure eligible to the NRHP.

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): SE ¼, NW ¼, NW ¼, SW ¼ of Section 22, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific boundary of this property can be described as the northern edge of the driveway on the north; the treeline on the east; an imaginary line 6 m (20 ft) south of the barns; intersecting with the west edge of the driveway on the west; and back to the point of beginning. The concrete block silo is a non-contributing structure.

Boundary Justification. Due to modern alterations, these connected barns are the only structures on this site eligible to the NRHP. The boundary described above includes an associated corral and driveways used to access the historic buildings that contribute to the feeling and association of the architecturally significant property.

Site LC00:E-57 – Elton Haase Gable Roof Mortise and Peg Barn ("Haase Farm")
8000 S 148th St
Cheney, Nebraska

This barn was recommended eligible under Criterion C as an excellent example of mortise and peg construction located within the South and East Beltway study area. The construction date of 1915 is the period of significance for this structure.

Verbal Boundary Description. According to the USGS quadrangle map, Bennet, Nebraska (1966) The location of this property is as follows: SW ¼, NW ¼, SW ¼, of Section 22, T9N, R8E Stockton Township, Lancaster County, Nebraska. The boundary of this historic property can be described as an imaginary line beginning at a point 3 m (10 ft) north of the barn; intersecting with an imaginary line 3 m (10 ft) east of the barn; intersecting with an imaginary line 11 m (35 ft) south of the barn; intersecting with an imaginary line 20 (65 ft) west of the barn back to the point of beginning.

Boundary Justification. The boundary described above includes the historic barn, and an associated livestock corral on the west and south sides of the barn that contribute to the feeling, setting and association of the architecturally significant property.

Site LC00:E-67 – Shirley Retzlaff Barns & Silo ("Retzlaff Farm")
1905 S 148th St
Walton, Nebraska

Historic structures on the Retzlaff Farm include a large gable roof barn, a smaller gambrel roof barn, and a hollow tile silo. The gable roof barn was built upon a cut stone foundation, contains distinctive ornamental shingles and is slightly banked on one side. The barns and silo were recommended eligible to the NRHP under Criterion C, for methods and type of construction. The period of significance for this historic property is the date of construction, ca. 1890's – 1900's.

Verbal Boundary Description. According to the USGS quadrangle map, Walton, Nebraska (1964), the location of this property is: NW ¼, SE ¼, SE ¼, NE ¼ of Section 33, T10N, R8E Stockton Township, Lancaster County, Nebraska. Separate boundaries have been assigned to each the barns. The boundary of the gable roof barn can be described as an imaginary line beginning at a point 6 m (20 ft) west of the barn; intersecting with an imaginary line 3 m (10 ft) north of the barn; intersecting with the eastern edge of the driveway on the east side of the barn; intersecting with an imaginary line 6 m (20 ft) south of the gable roof barn; back to the point of beginning.
The boundary of the gambrel roof barn is an imaginary line 3 m (10 ft) from the envelope of the building on the north, west, and south sides; the imaginary line is extended to 8 m (25 ft) on the east side of the barn to include the hollow tile silo.

Boundary Justification. The boundary of the gable roof barn described above includes a livestock corral associated with barn and a driveway on the east side of barn. This eastern boundary insures inclusion of the east facing entrance, which contributes to the feeling and association of the architecturally significant property. The boundary of the gambrel roof barn encompasses only the building and a nearby silo due to many modern intrusions on this farm and surrounding acreage. These intrusions include a modern ranch style house, a flood control dam and a sewage lagoon, which diminish the historic integrity of this property.

Site LC00:E-102 – Donna Keane Gambrel Roof Barn ("Kettlehut Farm Homestead")
12160 Van Dorn St
Walton, Nebraska

This large gambrel roof barn is banked on the west façade, and is nicely detailed. This barn retains a high degree of integrity and was determined eligible under Criterion C for its architectural significance.

Verbal Boundary Description. The location of the barn is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): SW ¼, SW ¼, SW ¼, SW ¼ of Section 32, T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. The historic boundary can be described as an imaginary east-west line 6 m (20 ft) north of the barn; an imaginary north-south line 6 m (20 ft) east of the barn; the north edge of the Van Dorn Street right-of-way on the south; and the east edge of the driveway on the west side of the barn.

Boundary Justification. The boundary described above uses obvious visual edges, as well as imaginary lines to include an area surrounding the barn. This area includes mature trees that contribute to the integrity and feeling of the barn.

Site LC00:E-132 – Lynn Lenhoff Gambrel Roof Barn
2000 N 98th St
Walton, Nebraska

This large gambrel roof concrete block barn was determined eligible to the NRHP under Criterion C as typifying a new type of construction through use of modern materials, and under Criterion A as an example of evolving technology in the adaptation of such materials.

Verbal Boundary Description. The location of the barn is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): SE ¼, SW ¼, NW ¼, SW ¼ of Section 13, T10N, R7E Lancaster Township, Lancaster County, Nebraska. The specific boundary of this historic property can be described as an imaginary east-west line located 3 m (10 ft) north of the barn; the wooden fence of a livestock corral 12 m (40 ft) east of the barn; an imaginary east-west line 3 m (10 ft) south of the barn; an imaginary north-south line 3 m (10 ft) west of the barn.

Boundary Justification. The boundary described above includes a livestock corral associated with the barn that contributes to the historic setting of the barn. The remainder of the property has been impacted by modern intrusions which diminish the historic integrity of this property.

NRHP Eligible Residences

Site LC00:S-23 Forest Nisley Residence (Jensen Homeplace)
11601 S 120th St
Bennet, NE

This small-scale neo-Tudor house was built in 1936 and exemplifies its type within the study area and is therefore eligible to the NRHP under Criterion C. The residence is bounded on the south by a graveled drive, which also serves to separate the residence from the "working" farmyard. The remainder of the farmyard is not considered NRHP eligible due to numerous alterations and new intrusions.

Verbal Boundary Description. The location of this historic residence is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): NE ¼, NE ¼, NE ¼ of Section 6, T8N, R8E Nemaha Township, Lancaster County, Nebraska. The boundary of this property begins at an imaginary point located five ft south of the southern-most stone column at the driveway entrance continuing north-northwest on an imaginary line to the southern edge of a circular drive; from the top of the circular driveway to a point that intersects a windbreak to the west; continuing to the windbreak located at the northern edge of the property; and finally to the windbreak along the eastern edge of the property to the point of beginning. All structures included in this boundary, except the historic residence, are considered non-contributing elements.

Boundary Justification. The graveled circular driveway provides a highly visible cultural boundary for the property, as do the mature trees located on the north, west and east sides of the residence. The integrity of the large yard surrounding the home is intact and contributes to the historic location, feeling, and association of the architecturally significant property. Modern intrusions and alterations, including recent construction of a garage near the residence preclude inclusion of the remainder of the farmyard.

Site LC00:E-81 – Chuck Hobza ("Jacoby Homestead")
13200 Havelock Ave
Lincoln, NE 68527

This large foursquare house, constructed of concrete block, was recommended eligible for the NRHP under Criterion C. This historic residence typifies a type of construction new to the area at the time of its construction with the use of concrete block with materials locally manufactured.

Verbal Boundary Description. The location of this property is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): SE ¼, SE ¼, SE ¼, SE ¼ of Section 5, T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. Specifically, the boundary of this historic residence is described as an imaginary east-west line 8 m (25 ft) north of the structure; the windbreak on the east; the north edge of the Havelock Avenue right-of-way on the south; and an imaginary line 15 m (50 ft) west of the structure.

Boundary Justification. The windbreak and the north edge of Havelock Ave provide obvious visual boundaries. The boundaries on the north and west were selected to include those portions of the yard that contribute to the overall feeling and association of the property. In addition, these boundaries include a half circle drive located south of the structure. This drive contributes to the location, feeling and association of this architecturally significant property.

Site LC00:E-99 – Norma and Bob Lemke Residence ("Karl Lemke Farm")
13000 Old Cheney Rd
Walton, Nebraska

This brick house, constructed during the 1930's, was recommended eligible to the NRHP under Criterion C as an example of Colonial Revival architectural style.

Verbal Boundary Description. According to the USGS quadrangle map, Walton, Nebraska (1964), the location of this property is: NE ¼, SW ¼, NE ¼, SW ¼ of Section 9, T9N, R8E Stockton Township, Lancaster County, Nebraska. The boundary of this property can be described as the south edge of a driveway north of the residence; the west edge of a driveway on the east side of the residence; an imaginary east-west line located 15 m (50 ft) south of the residence; and a treeline west of the residence.

Boundary Justification. The driveways and the treeline provide an obvious visual boundary. The boundary described above includes a large front yard, decorative rock walls, and numerous mature trees which contribute to the location, feeling and association of this architecturally significant property.

Site LC00:E-141 – William Fagan Residence ("Fagan's Acres")
0.32 km (0.2 mile) north of 98th and Fletcher Ave
Lincoln, NE

This house, featuring a folk Italianate architectural style was determined eligible to the NRHP under Criterion C for its architectural significance and was constructed in the 1890's.

Verbal Boundary Description. The location of this residence is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): NW ¼, NW ¼, SW ¼, SW ¼ of Section 36, T11N, R7E Waverly Township, Lancaster County, Nebraska. Specifically the boundary of this historic property can be described as the existing fenced yard.

Boundary Justification. The fence surrounding the house offers an obvious visual and cultural boundary for this property. The boundary described above includes a large front yard, which contributes to the location, feeling and association of this architecturally significant property.

NRHP Eligible Grain Elevators

Site LC00:S-40 – Circle 4 Feed and Grain Elevator
4th & Shower St
Cheney, Nebraska

This early 20th century grain elevator is considered eligible to the NRHP under Criterion A for its contribution to broad agricultural development. Grain elevators located throughout Lancaster County represent important facilities in an earlier era of smaller-scale, locally based agricultural commerce.

Verbal Boundary Description. The location of this grain elevator is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): SE ¼, NW ¼, NE ¼ of Section 26, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific boundary of this historic property is described as the southern edge of the railroad right-of-way on the south; to an imaginary line 12 m (40 ft) west of the building; north to the right-of-way of Breagan Road, east to an imaginary line 12 m (40 ft) from building; south to point of beginning at railroad right-of-way.

Boundary Justification. The boundary of the nominated property includes only an area immediately surrounding the historic building, as the integrity of setting and association of the property surrounding this grain elevator are no longer intact.

Site LC00:E-106 – Farmer's Coop Elevator – Walton
Walton Nebraska

This grain elevator and coop located adjacent to the abandoned Missouri and Pacific Railway Line was determined eligible to the NRHP under Criterion A for its contribution to broad agricultural development. Grain elevators located throughout Lancaster County represent important facilities in an earlier era of smaller-scale, locally based agricultural commerce.

Verbal Boundary Description. The location of this elevator is as follows according to the USGS quadrangle map, Walton, Nebraska (1964): SE ¼, NW ¼, NE ¼, NW ¼, of Section 31 (correction section), T10N, R8E Stevens Creek Township, Lancaster County, Nebraska. Specifically, the boundary of this historic property can be described as the north edge of the original railroad siding, an imaginary line approximately 7.5 m (25 ft) east of the elevator on the east, the northern edge of the driveway to the south, an imaginary line approximately 12 m (40 ft) west of the elevator.

Boundary Justification. Present setting does not contribute to the significance of this historic property. The railway line originally serving this grain elevator has been abandoned and the rails have been removed. The abandoned railway line now serves as a popular hiker / biker trail.

NRHP Eligible School

Site LC00:S-41 – Cheney School
2nd & Smith St
Cheney, Nebraska

This historic school, constructed ca. 1910 – 1920 was determined eligible to the NRHP under Criterion A for rural educational development and under Criterion C as representative of the Arts and Crafts architectural style as evidenced around the main entrance to the building.

Verbal Boundary Description. The topographic location of this property is as follows according to the USGS quadrangle map, Bennet, Nebraska (1966): NW ¼, NE ¼, NW ¼, NE ¼ of Section 26, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific boundary of this historic school is described as an imaginary line enveloping the footprint of the building.

Boundary Justification. This boundary description includes only an area immediately surrounding the building due to a wide range of modern alterations and additions that have impacted the integrity of setting and of feeling. These modern alterations include the addition of a handicapped entrance and sidewalk on the west side of the building, placement of 2 non-historic buildings, and a modern, paved playground.

NRHP Eligible Directional Signs

Site LC00:S-42 – Directional Sign
1st St, at 91st
Cheney, Nebraska

This cast concrete directional sign was determined eligible for the NRHP under Criterion A for its contribution to the broad transportation patterns evident in Lancaster County. With directional arrows, this sign informs travelers "Lincoln 11 miles / Bennet 7 miles". This sign has been moved, or at the very least, rotated 180 degrees (presumably for the benefit of motorists traveling along 91st Street) which makes the directional arrows incorrect. These concrete signs, placed throughout Lancaster County, offer us a snapshot of early vehicular travel in the county, and convey a sense of feeling regarding a time when travel was being revolutionized by the automobile.

Verbal Boundary Description. According to the USGS quadrangle map, Bennet, Nebraska 1966, the location of this site is as follows: NW ¼, NW ¼, NW ¼, NW ¼ of Section 26, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific boundary of this property is an imaginary circle with a 1.5 m (5 ft) radius around the base of the sign.

Boundary Justification. Other than that immediately surrounding the directional sign, it is not necessary to include any additional property in the boundary designation.

Site LC00:E-118 – Directional Sign
112th & Adams

This cast concrete directional sign was determined eligible for the NRHP under Criterion A for its contribution to the broad transportation patterns evident in Lancaster County. With a directional arrow, this sign informs travelers "Prairie Home 4 miles". These concrete signs, placed throughout Lancaster County, offer us a snapshot of early vehicular travel in the county, and convey a sense of feeling regarding a time when travel was being revolutionized by the automobile.

Verbal Boundary Description. According to the USGS quadrangle map, Walton, Nebraska 1964, the location of this site is as follows: SW ¼, SW ¼, SW ¼, SW ¼ of Section 7 (correction section), T10N, R8E Grant Township, Lancaster County, Nebraska. The specific boundary of this property is an imaginary circle with a 1.5 m (5 ft) radius around the base of the sign.

Boundary Justification. Other than that immediately surrounding the directional sign, it is not necessary to include any additional property in the boundary designation.

Site LC00:E-135 – Directional Sign
56th & Saltillo
Lincoln, Nebraska

This cast concrete directional sign was determined eligible for the NRHP under Criterion A for its contribution to the broad transportation patterns evident in Lancaster County. With a directional arrow, this sign informs travelers "Lincoln 11 miles". These concrete signs, placed throughout Lancaster County, offer us a snapshot of early vehicular travel in the county, and convey a sense of feeling regarding a time when travel was being revolutionized by the automobile.

Verbal Boundary Description. According to the USGS quadrangle map, Roca, Nebraska 1964, the location of this site is as follows: SW ¼, SW ¼, SW ¼, SW ¼ of Section 33, T9N, R7E Grant Township, Lancaster County, Nebraska. The specific boundary of this property is an imaginary circle with a 1.5 m (5 ft) radius around the base of the sign.

Boundary Justification. Other than that immediately surrounding the directional sign, it is not necessary to include any additional property in the boundary designation.

Site LC00:E-145 – Directional Sign
Saltillo Road, 0.80 km (0.5 mile) west of 120th St
Lincoln, Nebraska

This cast concrete directional sign was determined eligible for the NRHP under Criterion A for its contribution to the broad transportation patterns evident in Lancaster County. With a directional arrow, this 2 –sided sign informs travelers "Lincoln 14 miles". These concrete signs, placed throughout Lancaster County, offer us a snapshot of early vehicular travel in the county, and convey a sense of feeling regarding a time when travel was being revolutionized by the automobile.

Verbal Boundary Description. According to the USGS quadrangle map, Bennet, Nebraska 1964, the location of this site is as follows: SE ¼, SE ¼, SW ¼, SW ¼ of Section 31 (correction section), T9N, R8E Stockton Township, Lancaster County, Nebraska. The specific boundary of this property is an imaginary circle with a 1.5 m (5 ft) radius around the base of the sign.

Boundary Justification. Other than that immediately surrounding the directional sign, it is not necessary to include any additional property in the boundary designation.

Site LC00:E-146 – Directional Sign
2.25 km (1.4 miles) east of Cheney on Yankee Hill Road
Lincoln, Nebraska

This cast concrete directional sign is recommended eligible for the NRHP under Criterion A for its contribution to the broad transportation patterns evident in Lancaster County. With a directional arrow, this 2 –sided sign informs travelers "Cheney 1 mile". This sign is not in its original location, but rather was moved to this location in 1999. These concrete signs, placed throughout Lancaster County, offer us a snapshot of early vehicular travel in the county, and convey a sense of feeling regarding a time when travel was being revolutionized by the automobile.

Verbal Boundary Description. According to the USGS quadrangle map, Bennet, Nebraska 1964, the location of this site is as follows: NW ¼, NW ¼, NE ¼, NW ¼ of Section 30 (correction section), T9N, R8E Stockton Township, Lancaster County, Nebraska. The specific boundary of this property is an imaginary circle with a 1.5 m (5 ft) radius around the base of the sign.

Boundary Justification. Other than that immediately surrounding the directional sign, it is not necessary to include any additional property in the boundary designation.

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Glossary of Terms

Association. Link of a historic property with a historic event, activity, or person. Also, the quality of integrity through which a historic property is linked to a particular past time and place.

Eligible. Properties that meet the National Register of Historic Places (NRHP) Criteria for nomination and listing on the NRHP.

Evaluation. Process by which the significance and integrity of a historic property are judged and eligibility for NRHP listing is determined.

Feeling. Quality of integrity through which a historic property evokes the aesthetic or historic sense of past time and place.

Historic Context. The concept used to group related historic properties based upon a theme, a chronological period, and/or a geographic area.

Integrity. Authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period.

National Register of Historic Places (NRHP). The official federal list of districts, buildings, sites, structures, and objects significant in American history, architecture, archeology, engineering, and culture that are important in the prehistory or history of their community, state or nation. The program is administered through the National Park Service by way of State Historic Preservation Offices.

National Register of Historic Places Criteria. Established criteria for evaluating the eligibility of properties for inclusion in the NRHP.

Noncontributing. A building, site, structure, or object that does not add to the historic architectural qualities or historic associations for which a property is significant. The resource was not present during the period of significance; does not relate to the documented significance of the property; or due to alterations, disturbances, additions, or other changes, it no longer possesses historic integrity nor is capable of yielding important information about the period.

Object. An artistic, simple and/or small-scale construction not identified as a building or structure; i.e. historic signs, markers, and monuments.

Period of Significance. Span of time in which a property attained the significance for which it meets the NRHP criteria.

Property. A building, site, structure, and/or object situated within a delineated boundary.

Setting. Quality of integrity applying to the physical environment of a historic property.

Shelterbelt. A long narrow windbreak of trees planted to protect adjoining fields. The shelterbelts planted by the Forest Service consist generally of ten rows of trees preferably not less than one-half mile in length. The tree rows are usually ten feet apart which requires a strip land approximately seven rods wide.

Significance. Importance of a historic property as defined by the NRHP criteria in one or more areas of significance.

Site. The location of a prehistoric or historic event.

Vernacular. A functional, simplistic building or structure without stylistic details. Vernacular form buildings were usually designed by the builder, not by an architect.

Windbreak. A body of trees planted to provide protection from the prevailing wind. Usually these trees are evenly spaced, but are less massive than the shelterbelts planted with the assistance of the Forest Service.

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FINAL SECTION 4(F) STATEMENT

SOUTH AND EAST BELTWAYS STUDY
LINCOLN, NEBRASKA

PREPARED FOR

FEDERAL HIGHWAY ADMINISTRATION
NEBRASKA DEPARTMENT OF ROADS
LANCASTER COUNTY
CITY OF LINCOLN

OCTOBER 2000
(REVISED 2/01, 11/01, 5/02)

FINAL SECTION 4(f) STATEMENT
for
South and East Beltways Study
Lincoln, Nebraska

TABLE OF CONTENTS

		Page
1.0	PROJECT BACKGROUND	H.4
1.1	Final Environmental Impact Statement	H.4
1.2	Applicability of Section 6(f)	H.4
1.3	Beltway Alternatives	H.5
1.4	Section 4(f) Resources Likely to be Impacted by Beltway Alternatives	H.6
2.0	DESCRIPTION AND USE EVALUATION OF THE POTENTIAL SECTION 4(F) RESOURCES	H.7
2.1	MoPac East Trail	H.7
2.2	Henry Wunibald Farmyard (LC00: S-143)	H.9
2.3	Steve Johnson Farmyard (LC00: E-52)	H.9
2.4	Stevens Creek Stock Farm (LC00: E-88)	H.10
2.5	Road Sign at 112th and Adams (LC00: E-118)	H.11
2.6	Lithic and Ceramic Scatter (25LC129)	H.11
3.0	IMPACTS OF THE PROPOSED PROJECT ON SECTION 4(F) RESOURCES AND MEASURES TO MINIMIZE HARM	H.12
3.1	MoPac East Trail	H.12
3.2	Road Sign at 112th and Adams (LC00: E-118)	H.13
4.0	IMPACTS OF AVOIDANCE ALTERNATIVES	H.13
4.1	MoPac East Trail	H.13
4.2	Road Sign at 112th and Adams (LC00: E-118)	H.13
4.4	Comparison of the Alternatives	H.14
5.0	SUMMARY	H.14

Appendices

Appendix H-A Coordination Letters H.19

Tables

Table H.1 Section 4(f) Resources Likely to be Impacted by Beltway Alternatives H.8
Table H.2 Section 4(f) Resources Impacted by the Preferred SM-4/EM-1 Beltway Alternative H.12
Table H.3 Comparison of Impacts to Section 4(f) Resources by Beltway Alternative H.14

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FINAL SECTION 4(f) STATEMENT
for
South and East Beltways Study
Lincoln, Nebraska

1.0 PROJECT BACKGROUND

The City of Lincoln, Lancaster County and the Nebraska Department of Roads, in cooperation with the Federal Highway Administration (FHWA), are proposing to construct a beltway around the south and east sides of the City of Lincoln, Nebraska. The south and east beltways would complete a circumferential transportation system by linking with U.S. Highway 77 (US 77) on the west and Interstate 80 (I-80) on the north. The approximately 13 km (8 mi) long south beltway would connect US 77 with Nebraska Highway 2 (N-2), while the 21 km (13 mi) long east beltway would connect N-2 with I-80.

The beltway system is viewed as an essential component of the regional transportation network that would move through traffic around the congested urban area, as well as reduce delay and improve traffic flow on the existing urban street system. The south and east beltways could be constructed together, completing the loop around the City, or separately as stand alone projects with independent utility.

1.1 Final Environmental Impact Statement

This Final Section 4(f) Statement is being circulated as part of the Final Environmental Impact Statement (FEIS) for the South and East Beltways Study as required by the National Environmental Policy Act (NEPA). The Draft Section 4(f) Statement was previously circulated as part of the Draft Environmental Impact Statement (DEIS). Comments received on the DEIS and Draft 4(f) Statement have been addressed and incorporated into the FEIS and this Final 4(f) Statement. A summary of these comments is provided in Chapter 9.

Other chapters of the FEIS provide more detailed information on the beltways study, including purpose and need (Chapter 1), and evaluation of a universe of beltway alternatives as well as non-beltway and no build alternatives. The process used to screen all of the alternatives is fully described in Chapter 2, including selection of the four finalist beltway alignments approved by FHWA as the alternatives to be carried forward. Evaluation of the four finalist alternatives (SM-4, EC-1, EM-1 and EF-1) and the no build alternative is detailed in Chapter 3. The no build alternative is considered in the FEIS analyses as a baseline alternative and in the Section 4(f) Statement as an avoidance alternative. Selection of the preferred alternative, the EM-4/EM-1 alignment, is described in Chapter 4.

1.2 Applicability of Section 4(f)

Section 4(f) of the US Department of Transportation (DOT) Act of 1966 provides that the Secretary of the DOT shall not approve any program or project that requires land from a public park, recreation area, or wildlife or waterfowl refuge of national, state or local significance, or land of a historic (including archeological) site of national, state or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program or project includes all possible planning to minimize harm resulting from the use.

The word "use" in this case means property that is acquired for construction of a permanent transportation facility or, if not acquired, that proximity impacts are so severe that the activities, features or attributes that make that site significant are substantially impaired. Substantial impairment would only occur when the utility of the resource in terms of prior significance is substantially diminished or destroyed. More specifically, not all impacts invoke protection under 4(f), but rather those that affect the present value of the property to the public and the public uses of that property. Any inconvenience to property owners, from whatever source, is not relevant to Section 4(f). In general, temporary occupancy of land for construction easements are not a use under Section 4(f) so long as it is of temporary duration, involves only minor work, has no permanent adverse physical impacts, and includes full restoration of the land to preconstruction conditions. The Section 4(f) criteria of substantial impairment is considered a higher standard than the Section 106 criteria of adverse affect.

For archeological sites, Section 4(f) applies only to sites on or eligible for the National Register of Historic Places (NRHP) that warrant preservation in place. Section 4(f) does not apply if the FHWA and SHPO determine that the archeological resources are important chiefly because of what can be learned by data recovery and have minimal value for preservation in place.

Additionally, when proposed mitigation measures are used in a constructive use determination, only the net impact need be considered in the analysis.

1.3 Beltway Alternatives

The FEIS evaluation of project alternatives is based on the results of six years of data collection, analysis, and public and agency scrutiny. The study considered a wide range of alternatives. These alternatives were evaluated and those considered most practical and with the least environmental impact were carried forward to more detailed levels of analysis. The planning process included four levels of analysis, each representing a more comprehensive and rigorous evaluation. The overall process was envisioned as a funnel, with the alternatives continually being reduced in number until the best candidates remained to be carried forward in the DEIS analysis. These were identified as the four finalist alternatives, and included one south beltway alternative (SM-4) and three east beltway alternatives (EC-1, EM-1 and EF-1). Based on detailed evaluations of benefits and impacts, and consideration of public comments on the DEIS, the SM-4/EM-1 alignments were identified as the preferred alternative.

The avoidance of impacts to, or use of, resources protected under Section 4(f) was a consideration in the beltway alternative evaluation process. The four finalist alternatives represented previous efforts to minimize Section 4(f) uses. In particular, all south beltway alternatives were previously eliminated which impacted Wilderness Park and its trails. On both the south and the east beltways, site-specific shifts in alignments were made to avoid impacts to historic properties.

<u>Feasiblity</u>. All of the build alternatives served the project purpose, provided a solution to the traffic needs, and were considered feasible. Although the SM-4 alternative was the only remaining recommended south alternative, EC-1, EM-1 and EF-1 represented different alternatives for an east beltway, each with different benefits and trade-offs.

The no build alternative did not serve the project purpose and need, and was not considered feasible.

Prudence. Of the finalist alternatives, only SM-4 and EM-1 were determined to be prudent. SM-4 was considered prudent because it offered transportation functions and minimized impacts on natural resources. While the route does impact some homes and businesses, these impacts have been minimized to the extent possible.

Of the east alternatives, EC-1 was not considered prudent because of the unacceptable impact on existing urban and rural neighborhoods, including noise and visual impacts. The EF-1 alternative was not considered feasible because of the impact to historic sites along the route, including the NRHP-listed Stevens Creek Stock Farm.

EM-1 was considered prudent because it aided in completing a circumferential roadway and providing a new truck route without the less efficient "backtracking" at the north end of EC-1 and EF-1. In comparison to EC-1, EM-1 minimized impacts to rural and urban neighborhoods, and had the least number of relocations of any of the east alternatives. While EM-1 and EF-1 were similar in environmental impact, EM-1 minimized impacts to historic properties. At the same time, EM-1 had less impact to prairies than EF-1, relatively low impact to wetlands compared to EC-1, and required 150 ac less right-of-way than the other alternatives. While the EM-1 crossing of Stevens Creek was the longest of the three east alternatives, it could be built to minimize impacts to the floodplain. In consideration of these resources, the EM-1 route protected and preserved the environment to the greatest extent, and was considered the most compatible with the goals, objectives and values of *Lincoln/Lancaster County Comprehensive Plan*.

The EM-1 route also had the greatest potential as a multi-use corridor for trails, open space, utilities and other transportation alternatives, had greater travel savings than EF-1, and was less expensive to build than EC-1. While EM-1 was more expensive than EF-1, EM-1 may provide future cost savings as a multi-use corridor, and it uses less land than the other two routes.

Other than the proposed future roadway network improvements, the no build alternative did not address the problem of increasing traffic on the south and east fringes of the City of Lincoln, nor did it specifically address reduction of traffic on major urban arterial streets, or high truck use and through traffic on certain rural roadways on the fringe of the metropolitan area. Therefore, the no build alternative was not considered prudent.

1.4 Section 4(f) Resources Likely to be Impacted by Beltway Alternatives

Public Parks, Recreation Areas, or Wildlife or Waterfowl Refuges. The only public parks, recreation areas, or wildlife or waterfowl refuges within the rights-of-way of the beltway alternatives are two publicly-owned recreational trails. The MoPac East Trail would be crossed by all three east alternatives, and the David Murdock Trail would be crossed by EC-1. There are no other such recreational resources within approximately 0.8 km (0.5 mi) of any of the beltway alternatives.

It should be noted that the City of Lincoln is considering two new park areas within the beltway study area which could result in the beltway crossing future public recreation land; however, the parks are only in the conceptual stages of planning and no formal plans have been developed. The first location is the Salt Valley Greenway Corridor which would extend from Wilderness Park south to Hickman, and which would be crossed by SM-4. The second is a new park location in the vicinity of Stevens Creek and the MoPac East Trail which would be crossed by EM-1. If the future park lands are concurrently planned with the proposed roadway project, they would not be considered 4(f) properties in the future. Right-of-way for the beltway will be acquired prior to or separate from any acquisition for future parks.

Historic Sites. As part of Section 106 consultation for the beltway study, exhaustive surveys were completed for identifying and evaluating historic standing structures and archeological resources within the beltway study area (see FEIS, **Section 3.23**). Based on the findings, 32 historic standing structures and four archeological sites were determined to be on or eligible for the National Register of Historic Places (NRHP). These 36 sites were then assessed for adverse effects from the beltway alternatives (**Appendix F**). Five historic standing structures and two archeological sites were considered to be adversely affected by beltway routes. In letters dated 27 November 2000 and 1 February 2001 (**Appendix E**), the SHPO concurred with the findings of the Assessment of Adverse Effects, as well as the Determination of Boundaries report (**Appendix G**).

In addition, there is one historical directional sign (LC00:E-118) which may require protection during construction and nearby repositioning, if it is not moved prior to the beltway project for County road widening. Although the SHPO has indicated that the beltway project will have no adverse effect on the sign (with the condition of protection during construction and repositioning nearby), the site is evaluated herein as a 4(f) resource because the historic boundary for the sign has been defined as a 1.5 m (5 ft) diameter circle of land around the sign (Appendix I). Use of the land beneath the sign requires consideration of this property as a 4(f) resource.

The potential Section 4(f) resources for all of the finalist beltway alternatives are listed in **Table H.1**. Locations of the trails are shown in **Figure 2.25** of the FEIS. Location of the historic sites are shown in **Figure 3.3** of the FEIS. Six of these resources occur along the preferred alternative–SM-4/EM-1.

2.0 DESCRIPTION AND USE EVALUATION OF SECTION 4(f) RESOURCES

This section contains a brief description of the six Section 4(f) resources which are located along the preferred alternative SM-4/EM-1, as well as an evaluation of the potential use of those resources for determining Section 4(f) applicability. More detailed descriptions of the historic sites can be found in the references cited in **Section 3.23.1**. For historic resources that could be evaluated for constructive use, a section is included describing the activities, features or attributes which make that resource of value to the public.

2.1 MoPac East Trail

Description. The MoPac Trail, which follows the old Missouri Pacific Railroad line, originates within urban portions of the City of Lincoln, extends east through suburban developments, and continues east into agricultural areas. The trail is owned by the City of Lincoln to 150 m (500 ft) east of 84th Street. From this point east, the MoPac East Trail is owned by the Lower Platte South Natural Resources District (LPSNRD) and extends to Elmwood; future plans include extending the route to Omaha. In the east beltway area, the trail is located in the vicinity of A Street (see **Figure 2.25**).

The MoPac East Trail was developed along abandoned railroad rights-of-way, and is not in the rail conservancy program. The trail has a 30 m (100 ft) right-of-way. Roadway intersections have been variously treated with both at-grade and grade separated crossings. Visually, the trail occurs in open settings. The MoPac East Trail has two trailheads in the study area at 98th Street and in Walton. The trail has a rock treadway, with a screened limestone surface, on the old rail bed for pedestrian and bicycle traffic. A second trail, for equestrian use, is located on one side of the rail bed or the other. This trail has been cleared of brush, and has an earth surface.

Table H.1

SECTION 4(f) RESOURCES LIKELY TO BE IMPACTED BY BELTWAY ALTERNATIVES

RESOURCE	LOCATION	OWNER	NOTES
MoPac East Trail	EC-1 EM-1 EF-1	Lower Platte South Natural Resources District	Publicly-owned Recreational Trail. ROW required.
David Murdock Trail	EC-1	City of Lincoln	Publicly-owned Recreational Trail. ROW required.
Henry Wunibald Farmyard LC00: S-143	SM-4	Private	NRHP Eligible Site. Determined to be adversely affected under 106. No ROW required.
Steve Johnson Farmyard LC00: E-52	EM-1	Private	NRHP Eligible Site. Determined to be adversely affected under 106. No ROW required.
Penterman Farmyard LC00: E-53	EF-1	Private	NRHP Eligible Site. Determined to be adversely affected under 106. No ROW required.
Teresa Retzlaff Farmyard LC00: E-87	EF-1	Private	NRHP Eligible Site Determined to be adversely affected under 106. No ROW required.
Stevens Creek Stock Farm LC00: E-88	EM-1	Private	NRHP Listed Site and Additional NRHP Eligible Land Determined to be not adversely affected under 106. No ROW required.
	EF-1	Private	NRHP Listed Site and Additional NRHP Eligible Land Determined to be adversely affected under 106. No ROW required.
Road Sign at 112th & Adams LC00: E-118	EM-1 EF-1	Lancaster County	NRHP Eligible Site Determined to be conditionally not adversely affected under 106. ROW required, but relocation of sign acceptable to SHPO under 106.
Lithic and Ceramic Scatter (archeological site) 25LC129	EM-1	Private	NRHP Eligible Site. Determined to be adversely affected under 106. Originally thought that ROW would be required. Does not warrant preservation in place.
Euroamerican Trail (wagon ruts) 25LC147	EC-1	Private	NRHP Eligible Archeological District. Determined to be adversely affected under 106. ROW required, through discontinuous district. Wagon ruts warrant preservation in place.

Use of the trail is limited to daylight hours. Through the east beltway study area, both hiker/biker and equestrian usage is considered very heavy according to LPSNRD.

Use Evaluation. All of the east beltway alternatives cross the MoPac East Trail requiring use of the trail right-of-way. Use of the land requires evaluation of the property as a 4(f) resource.

2.2 Henry Wunibald Farmyard (LC00: S-143)

Description. The NRHP-eligible Henry Wunibald Farmyard consists of a 1 ½ story farmhouse, mortise and tenon gable roof barn, hollow clay tile coop, shed (former kitchen) and metal quonset-style shed. The period of significance is 1900-1960s. This property is considered significant under Criterion A as a complex of buildings associated with agricultural development, and under Criterion C for the house, barn and shed (former kitchen).

Current and Primary Activities, Features or Attributes. The historic standing structures occur on an approximately 7.3 ha (18 ac) private residential acreage, with the associated pasture belonging to three different adjacent landowners. Because this site is privately owned, the primary value to the public is the preservation of the physical features of the site–those being the historic standing structures and associated agricultural acreage within the site boundary.

Use Evaluation. The SM-4 alternative will be 300 m (1,000 ft) from the farmhouse and 91 m (300 ft) from the associated agricultural acreage which defines the property boundary. Based on the Assessment of Adverse Effects (**Appendix F**), the SM-4 alternative will have an adverse visual effect on the farmyard, but no noise impact based on guidelines and criteria established by FHWA (June 1995). A Memorandum of Agreement (MOA) for the project has been developed and includes mitigation measures to screen the beltway from the farmyard (see **Section 9.5.9** and **Appendix E**).

Although the SM-4 route adversely affects the property, it would not make the property ineligible for the NRHP. The associated agricultural acreage is not harmed by visual impact and there is no noise impact under Section 4(f). The visual intrusion to the farmyard does not diminish the characteristics that make this property eligible for the NRHP. At approximately 300 m (1,000 ft) distance, the beltway will look similar to a section line road on the horizon. Therefore, the property is not considered substantially impaired which is the threshold for constructive use under Section 4(f).

2.3 Steve Johnson Farmyard (LC00: E-52)

Description. The NRHP-eligible Steve Johnson Farmyard consists of a Folk Victorian house, garage (summer kitchen), large gable roof barn, two-pen granary, chicken coop and outhouse. The period of significance is 1890s-1900. This property is considered significant under Criterion A as a complex of buildings associated with agricultural development, and under Criterion C as a typical example of Folk Victorian architecture in the house and outbuildings.

Current and Primary Activities, Features or Attributes. The historic standing structures are located on an approximately 2 ha (5 ac) private residential acreage, with the remaining associated cropland belonging to an adjacent landowner. The farmyard faces and is very close to Yankee Hill Road–a major county road providing access for rural areas. Because this site is privately owned, the primary value to the public is the preservation of the physical features of the site–those being the historic standing structures and associated agricultural acreage within the site boundary.

Use Evaluation. None of the east beltway alternatives require incorporation of land from this site. The EM-1 alternative will be 701 m (2,300 ft) from the farmhouse and 300 m (1,000 ft) from the associated agricultural acreage which defines the property boundary. Based on the Assessment of Adverse Effects, the EM-1 alternative will have an adverse visual effect on the farmyard, but no noise impact based on guidelines and criteria established by FHWA (June 1995). The MOA for the project includes mitigation measures to screen the beltway from the farmyard (see **Section 9.5.9** and **Appendix E**).

The EF-1 alternative is 1 280 m (4,200 ft) away, located in a cut on the other side of a creek, and is not considered to have an adverse effect under Section 106. Since there is no adverse effect, it is not considered to substantially impair the property under Section 4(f).

Although the EM-1 route adversely affects the property, it would not make the property ineligible for the NRHP. At approximately 0.6 km (0.4 mi) distance, the beltway will look similar to a section line road on the horizon and will not dominate the view from the buildings. The associated agricultural acreage is not harmed by visual impact; and there is no noise impact. Therefore, the property is not considered substantially impaired which is the threshold for constructive use under Section 4(f).

2.4 Stevens Creek Stock Farm (LC00: E-88)

Description. The NRHP-listed Stevens Creek Stock Farm consists of a compact grouping of 18 buildings in excellent condition representing an extended courtyard arrangement. The period of significance for the site is 1850 to 1924 (according to the National Park Service data base). This property is considered significant under Criterion A representing early settlement of the county and the development of agriculture in Nebraska. Several structures are significant under Criterion C representing a distinctive entity in Nebraska architecture.

In addition to the original 160-acre parcel listed on the NRHP, and additional 80-acre parcel of farmground was determined eligible by the SHPO. As part of the recent evaluation of an additional 320 acres, two additional parcels located west and south of the Stevens Creek Stock Farm have been determined eligible (**Section 9.5.5** and **Appendix F**).

Current and Primary Activities, Features or Attributes. The site is the farmyard and all of the contiguous agricultural acreage of a working family farm. Some of the historic standing structures are in active use, including some of the residences. An attribute of note is the relative isolation of the farmyard in the center of the property. Because this site is privately owned, the primary value to the public is the preservation of the physical features of the site–those being the historic standing structures and associated agricultural acreage within the site boundary. The owners have stated that they host school children, university students and others who are interested in history, farming and preservation.

Use Evaluation. None of the beltway alternatives require incorporation of land from this site. The EM-1 alternative will be 945 m (3,100 ft) from the 1867 farmhouse, and 92 m (300 ft) to 488 m (1,600 ft) from the associated agricultural acreage which defines the property's west boundaries. Based on the Assessment of Adverse Effects, the EM-1 alternative will have no adverse effect on the property since the property is well buffered visually and physically by Stevens Creek, trees, and the orientation of the buildings to the east. Additionally, the associated agricultural acreage is not harmed by visual impact. The SHPO has concurred with this determination (**Appendix E**). Since the EM-1 route has no adverse effect under Section 106, it is not considered to substantially impair the property under Section 4(f).

The EF-1 alternative is 610 m (2,000 ft) from the 1891 farmhouse and closest barn, 792 m (2,600 ft) from the 1950s ranch house, and 61 m (200 ft) from the associated agricultural acreage which defines the property's east boundary. Based on the Assessment of Adverse Effects, the EF-1 alternative will adversely affect the property by changing the character of the setting by introducing a large transportation facility, and by being visible from certain buildings (1891 house, top of barn cupolas and silo). There is no noise impact based on guidelines and criteria established by FHWA (June 1995).

Although the EF-1 route adversely affects the property under Section 106 criteria, it is not considered to substantially impair the site under Section 4(f). The beltway will have no effect on the historic significance of site, although it will impact the integrity of the setting. However, the beltway will not dominate the view from the buildings; the associated agricultural acreage is not harmed by visual impact; and the there is no noise impact under Section 4(f). The buildings are relatively isolated in the middle of the 97 ha (240 ac) site and surrounded on all but the north side by trees and creeks (the beltway would not be visible to the north). With 0.6 km (0.4 mi) distance or more from the buildings, the beltway will look similar to a section line road on the horizon and will not dominate the view from the buildings. Therefore, the property is not considered substantially impaired which is the threshold for constructive use under Section 4(f).

2.5 Road Sign at 112th and Adams (LC00: E-118)

Description. The NRHP-eligible Road Sign is a cast concrete directional sign from the 1920s. This sign is considered significant under Criterion C under an umbrella of multiple property nominations for early Lancaster County concrete road signs as a contribution to broad transportation patterns.

Current and Primary Activities, Features or Attributes. The site is a small directional sign located at the intersection of two gravel County roads, and located within the County road right-of-way. The primary value to the public is the preservation of the sign itself.

Use Evaluation. The road could be impacted by either the EM-1 or EF-1 alternatives. The road sign may require protection during construction and nearby repositioning, if it is not moved prior to the beltway project for County road widening. Although the SHPO has indicated that the beltway project will have no adverse effect on the sign (with the condition of protection during construction and repositioning nearby), the site is evaluated herein as a 4(f) resource because the historic boundary for the sign has been defined as a 1.5 m (5 ft) diameter circle of land around the sign (**Appendix G**). Use of the land beneath the sign requires consideration of this property as a 4(f) resource.

2.6 Lithic and Ceramic Scatter (25LC129)

Description. Site 25LC129 is an artifact scatter of lithic material and pottery covering more than 20,000 m^2 (215,000 sq ft) along a terrace slope above the Stevens Creek floodplain. Numerous projectile points were located at the site, as well as grit -tempered, cord-marked pottery and fire-cracked rock. The projectile points suggest that the site dates to the Central Plains Tradition (1000 - 600 years ago). Subsurface testing confirmed the presence of buried cultural material, and also suggests the presence of buried features.

Use Evaluation. The footprint of the EM-1 alternative, as shown in the DEIS, extended across a portion of the area mapped as Site 25LC129. Consultation with the SHPO indicated that appropriate mitigation of this site would include excavation and recordation for data recovery

purposes. As such, the site does not warrant preservation in place and would not meet the criteria to be evaluated as a 4(f) resource. Since this time, refinements made to the EM-1 alternative (including use of a retaining wall) have resulted in avoidance of the archeological site (see **Section 9.5.9**).

3.0 IMPACTS OF THE PREFERRED ALTERNATIVE ON SECTION 4(f) RESOURCES AND MEASURES TO MINIMIZE HARM

Based on the above use evaluation and the criteria of Section 4(f), two of the resources would be adversely impacted by the preferred SM-4/EM-1 beltway alternative. These are listed in **Table H.2**.

Table H.2

SECTION 4(f) RESOURCES
IMPACTED BY THE PREFERRED SM-4/EM-1 BELTWAY ALTERNATIVE

RESOURCE	LOCATION	USE	MITIGATION
MoPac East Trail	EM-1	ROW required.	Construction of grade separated crossing, according to requirements of the Lower Platte Natural Resources District.
Road Sign at 112th & Adams LC00: E-118	EM-1	ROW required and relocation of sign.	Protection during construction and relocation of sign, according to requirements of the State Historic Preservation Office.

3.1 MoPac East Trail

Impacts. The right-of-way requirement for each of the EM-1 crossings of the MoPac East Trail is 0.3 ha (0.8 ac). The impacted location is shown in FEIS Exhibit EM1-3. Such a crossing would require construction of a grade separation as part of the beltway project to provide for trail continuity.

Construction of the beltway will introduce a new roadway element into this segment of the trail, and may adversely impact the visual and audible experience of the trail users for a short distance. However, these impacts on the trail are considered negligible considering the trail is part of an urban trail system that already crosses many roadways (approximately 1 per 1.6 km (1 mi)), and considering the length of the trail (over 14 km (9 mi)).

Coordination. The consulting team has coordinated with the owner of the trail to discuss project impacts and measures to minimize harm. A letter from LPSNRD is included in **Appendix H-A** of this Section 4(f) Statement documenting their concerns and recommendations for appropriate mitigation measures.

Measures to Minimize Harm. For the MoPac East Trail, design of the beltway/trail intersections will include (1) a grade separation to safely accommodate the trail, (2) separate access through confined areas for the hiker/biker and equestrian trails (or a physical divider), and (3) an underpass for the equestrian trail crossing since horses are hesitant to use overpasses. Design of the trails will follow AASHTO and ADA trail guidelines, and will be coordinated with LPSNRD. Specific details on the crossings will not be determined until final design.

Net Impacts. Since replacement trail crossings will be provided, there will be no adverse impact on existing pedestrian, bicycle and equestrian accommodations.

3.2 Road Sign at 112th and Adams (LC00: E-118)

Impacts. The road sign may require protection during construction and nearby repositioning, if it is not moved prior to the beltway project for County road widening. Repositioning the sign is a minor impact, required for operation and safety of an existing roadway.

Coordination. The SHPO has concurred that the beltway project will have no adverse effect on the sign, with the condition of protection during construction and repositioning nearby (see letter dated 26 September 2000, **Appendix H-A** of this Section 4(f) Statement).

Measures to Minimize Harm. Conditions for protection and repositioning of the sign have been defined by the SHPO. The road sign will be protected from damage during construction of the beltway, and upgrade and paving of Adams Street. The sign will be repositioned about 6.1 m (20 ft) from the upgraded road and as near its current location as is practicable (assuming the County roads have not been upgraded prior to beltway construction).

Net Impacts. With the condition of protection during construction and repositioning nearby, there will be no adverse impact on the road sign.

4.0 IMPACTS OF AVOIDANCE ALTERNATIVES

4.1 MoPac East Trail

Because of the length of the MoPac East Trail and its orientation perpendicular to the east beltway study area, any east beltway alternative (remaining or previously eliminated) will require crossing the trail. The only avoidance alternative is the no build alternative.

No Build Alternative. Although the no build alternative will have no impacts on the MoPac East Trail that can be identified at this time, there will be impacts to the trail as County roads are hard surfaced to accommodate a growing suburban population (as part of the proposed future roadway network improvements). An example would be the recent paving of 148th Street across the MoPac East Trail. Additional information on impacts of the no build alternative is detailed in Chapter 3 of the FEIS.

4.2 Road Sign at 112th and Adams (LC00: E-118)

The EC-1 alternative avoids impacts to the road sign, as does the no build alternative. Impacts of these alternatives are detailed in Chapter 3 of the FEIS, and a summary comparison of the impacts of the east alternatives is provided in Chapter 4.

EC-1. The EC-1 alternative meets the project purpose and need, and avoids impacts to the road sign, but still impacts two other Section 4(f) resources--the MoPac East Trail and David Murdock Trail.

No Build Alternative. The no build alternative will have no impact on the road sign. However, the no build alternative will not meet the project purpose and need.

4.3 Comparison of the Alternatives

A summary comparison of the alternatives is provided in **Table H.3**, based on the above Section 4(f) considerations.

Table H.3

COMPARISON OF IMPACTS TO SECTION 4(f) RESOURCES BY BELTWAY ALTERNATIVE

ALTERNATIVE	FEASIBLE AND PRUDENT	USES SECTION 4(f) LAND
SM-4	Feasible: Yes Prudent: Yes	None
EC-1	Feasible: Yes Prudent: No	MoPac East Trail David Murdock Trail
EM-1	Feasible: Yes Prudent: Yes	MoPac East Trail Road Sign
EF-1	Feasible: Yes Prudent: No	MoPac East Trail Road Sign
No Build	No[1]	MoPac East Trail (likely) David Murdock Trail (likely) Road Sign (likely)

[1]Does not meet project purpose and need.

Based on a comparison of impacts to Section 4(f) resources, all of the east alternatives have relatively low net impacts after mitigation. While all of the east alternatives are considered feasible, only the SM-4 and EM-1 alternatives are considered prudent.

5.0 SUMMARY

Based on the Section 4(f) evaluation, it is determined that there are no feasible or prudent alternatives to the use of the land from the MoPac East Trail or Road Sign at 112th and Adams. The proposed action, to construct the SM-4/EM-1 beltway alternative, includes all possible planning to minimize harm to the recreational uses of the trail and the historic attributes of the road sign.

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Appendix H-A
Coordination Letters

U.S. Department of Transportation
Federal Highway Administration

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Nebraska Division Office
Federal Building, Room 220
100 Centennial Mall North
Lincoln, NE 68508-3851
Nebraska.FHWA@FHWA.DOT.GOV

September 26, 2000

NEBRASKA DIVISION

In Reply Refer To:
HRW-NE

copy

Mr. Robert Puschendorf
State Historic Preservation Office
Nebraska State Historical Society
P.O. Box 82554
Lincoln, Nebraska 68501-2554

0009-077-01

Dear Mr. Puschendorf:

Concurrence on No Adverse Effect with conditions
for NRHP-Eligible Site: LC00: E-118 (Road Sign at 112th and Adams)
DPU-3300(1) South and East Beltways Study, Lincoln, Nebraska

In compliance with Section 106 of the National Historic Preservation Act, the Federal Highway Administration identified 34 sites in the Lincoln South and East Beltways Study area which are either listed in or eligible for listing in the National Register of Historic Places and the SHPO has concurred upon their eligibility. A concrete directional road sign located at 112th and Adams (LC00: E-118) was one property the SHPO and FHWA agreed was eligible.

During the assessment of adverse effects for the beltway project, it was determined that LC00: E-118 would not be adversely affected by the Beltway project if the following conditions are met:

If either alternative EM-1 or EF-1 is selected as the preferred alternative, LC00:E118 will be protected from damage during construction of the Beltway and repaving and upgrade of Adams Street.

Additionally, in consultation with the SHPO, LC00:E-118 will be repositioned about 20 feet from the upgraded road and as near its current location as is practicable (assuming the County roads have not been upgraded prior to beltway construction). These conditions will be incorporated into the Draft Environmental Impact Statement and Draft 4(f) Statement for the project.

Because the historic boundaries of the road signs have been recommended as a 5-foot radius around the sign, the beltway alternatives will require incorporation of land from a historic property and must therefore be addressed in the Draft 4(f) Statement.

We are requesting your concurrence that implementing the conditions described will result in "no adverse effects" to the historic property LC00:E-118.

Sincerely yours,

Edward W. Kosola
Realty/Environmental Officer

cc:
Amy Zlotsky, OES
Jim Linderholm, HWS
Roger Figard, City of Lincoln
Len Sand, NDOR

CONCUR

DEPUTY STATE HISTORIC PRESERVATION OFFICER

DATE: 10/5/00

Lincoln Nebraska's Capital City

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AUG 07 20(
HWS

August 3, 2000

Michael N. Gorman, Project Manager
East Beltway Study
HWS Consulting Group, Inc.
P. O. Box 80358
Lincoln, NE 68501-0358

Dear Mr. Gorman:

Thank-you for the opportunity to meet with your staff regarding the proposed East Beltway alignments in Lancaster County and their impacts on the Murdock Trail. As identified in our meeting, the only alternative that would impact the Murdock Trail would be the EC-1 alternative.

The recommendation for mitigating the impact of this trail by designing the beltway/trail intersection with an overpass would be satisfactory. This would provide continuity for the trail as well as separation between the pedestrian/bicycle trail and vehicles. We also understand that the design of the beltway/trail intersection would follow AASHTO and ADA trail guidelines and that any costs associated with the mitigation of these requirements would be a part of the project cost and not a separate expense to the City.

Sincerely,

Lynn Johnson
Director

Post-it™ brand fax transmittal memo 7671	# of pages ▸
To Amy Hotsky	From Mike G
Co.	Co.
Dept.	Phone # FYI
Fax #	Fax #

Parks and Recreation Department / James P. Morgan, Director
2740 A Street / Lincoln, Nebraska 68502 / Phone: 402-441-7847 / Fax: 402-441-8706 / Website: www.ci.lincoln.ne.us
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LOWER PLATTE SOUTH
NATURAL RESOURCES DISTRICT

3125 Portia St., Box 83581, Lincoln NE 68501-3581
(402) 476-2729 • FAX (402) 476-6454

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HWS

July 3, 2000

RECEIVED
JUL 20 2000
OLSSON ASSOCIATES

Michael N. Gorman, Project Manager
East Beltway Study
HWS Consulting Group, Inc.
P.O. Box 80358
Lincoln, NE 68501-0358

Dear Mr. Gorman:

I have reviewed your letter dated June 27, 2000, following our meeting on the proposed East Beltway alignments in Lancaster County and its impacts on the Mo Pac East and the planned Stevens Creek Connector Trail.

The approach contained in your letter would appear to satisfactorily mitigate potential adverse impacts to the trail corridors. The stipulations include maintaining the trail corridors' continuity, maintaining separation between the pedestrian/bicycle trail treadway and the equestrian trail treadway, minimizing the distance of any relocations, the types of crossings for the trail, and the design standards.

The only additional requirements would be reestablishment of vegetation and landscaping as may be needed and appropriate for the respective crossings. Furthermore, we assume that the costs related to these mitigation requirements would not be a cost of the District as the trail owner.

Sincerely,

Glenn D. Johnson
General Manager

GDJ/gdj

pc: Dan Steinkruger, Chair
Dick Powell, RF&W Subcmte Chair

RECORD OF DECISION

South and East Beltways
Lincoln, Nebraska
Project No. DPU-3300(1)

A. DECISION

The City of Lincoln, Lancaster County and the Nebraska Department of Roads (NDOR), in cooperation with the Federal Highway Administration (FHWA), have studied a wide-range of alternatives, evaluated them and selected a preferred alternative for constructing a beltway around the south and east sides of the City of Lincoln. The purpose of the project is to complete the circumferential (encircling) transportation network around Lincoln which currently exists only on the north and west sides. The project would move through traffic around Lincoln's congested urban area, and improve traffic flow on the existing urban street system.

The proposed action is construction of a 4-lane roadway designed to freeway standards, similar to Interstate 80 (I-80). A freeway design would have complete access control (no at-grade crossings) and would typically require a 250 to 300-foot (ft) wide right-of-way. Beltway interchanges would be spaced approximately 2 miles (mi) apart along the existing grid network. Roadways which cross the beltway may or may not be improved as part of the federal project. However for cost estimating purposes of this study, it was assumed that ultimately all unpaved county roads at beltway interchanges would be upgraded to 4-lane paved roadways. County roads which cross the beltway overpasses were assumed to be upgraded to 2-lane paved roadways.

The south beltway would provide an alternative connection between US Highway 77 (US 77) in the southwest and Nebraska Highway 2 (N-2) at the southeast edge of Lincoln. The selected alignment, SM-4, intersects with US 77 approximately 0.5 mi south of Saltillo Road, and extends east to N-2 at approximately 120th Street. Access points are proposed at 27th, 68th and 84th Streets.

The east beltway would connect N-2 at the southeast edge of Lincoln with I-80 in the northeast. The selected alignment, EM-1, extends north from N-2 in the vicinity of 120th, and generally follows 127th Street to connect with I-80 at the Waverly interchange. Access points are proposed at Pine Lake Road, Pioneers Boulevard, US 34 (O Street), Adams Street, Fletcher Avenue and US 6 (Cornhusker Highway).

The beltways could be constructed together, completing the loop around the City, or separately as stand alone projects with independent utility (*i.e.*, they would be usable and a reasonable expense even if only one is built without the other).

B. ALTERNATIVES CONSIDERED

The Final Environmental Impact Statement (FEIS) document contains an evaluation of project alternatives based on the results of six years of data collection, analysis, and public and agency review. Although the document includes the step by step evaluation process, the final evaluation represents an analysis of all that is known at this time. The study considered a wide range of alternatives, including non-beltway and no build alternatives. These alternatives were evaluated and those considered most practical and with the least environmental impact were

carried forward to more detailed levels of analysis. The planning process included four levels of analysis, each representing a more comprehensive evaluation. The overall process was envisioned as a funnel, with the alternatives continually being reduced in number until the best candidates remained to be carried forward in the analysis. These were identified as the four finalist alternatives, and included one south beltway alternative (SM-4) and three east beltway alternatives: close, mid and far (EC-1, EM-1 and EF-1). The no build alternative was carried forward throughout the entire evaluation process.

Assessment of Transportation Benefits. Comparison of the four finalist beltway alternatives indicates that all of the alternatives served the project purpose and need, and all of the alternatives are considered feasible and cost-effective solutions. The location of the east beltway in terms of the close, mid or far alignment does not seem to have a significant effect on the amount of traffic it is expected to carry or the benefits obtained. The east beltway provides relief to traffic coming into or through Lincoln from the northeast (Omaha) and the southeast (Nebraska City). This traffic will use the east beltway regardless of which alternative is selected. The major differences between the east alternatives involve the interchanges at I-80, N-2 and the south beltway. The EC-1 and EF-1 requires diagonal routing to connect to an interchange at I-80, and requires two separate interchanges for N-2 and the south beltway. EM-1 requires a single, but more complicated interchange at N-2 and the south beltway. These differences are best reflected in the construction cost estimates and right-of-way impacts; however, they have little effect on system performance.

Assessment of Environmental Impacts. This FEIS contains an assessment of environmental, social and economic impacts, and includes proposed mitigation to avoid, minimize or compensate for project impacts to the extent possible. Comparison of the project impacts indicates that all of the finalist alternatives have relatively low impact considering the length of the segments. This is due to the primarily rural setting and the great effort made to minimize impacts throughout the beltway planning process. However, all of the east routes have impacts to Section 4(f) resources.

Overall differences between the east alternatives are relatively minor. EC-1 and EF-1 have greater right-of-way requirements than EM-1; and therefore, have greater land use impacts. EC-1 has slightly more impact to suburban type land uses such as residential and commercial acreage and impacts to trails due to its closer proximity to Lincoln. In contrast, EF-1, which is 2.5 mi more distant from the city than EC-1, has slightly more impact to rural uses such as farmland, prairie, historic structures, and actual number of residences. EM-1 and EC-1 have slightly more impact to natural resources such as streams, floodplains and floodways, and wetlands due to their closer proximity to Stevens Creek, where as EF-1 has slightly less impact to natural resources due to its general location along the ridgeline.

Selection of the Preferred Alternative. Following receipt and consideration of comments on the DEIS, the SM-4/EM-1 alternative was selected as the preferred alternative.

SM-4 was selected because:

1. Transportation Functions. A south beltway would aid in completing a circumferential roadway in the Lincoln area. The route is within 0.5 mi of the future service limit and would reduce the amount of through traffic that otherwise would be on N-2. The route has potential as a multi-use corridor for future trails, open space, utilities and other transportation alternatives.

2. Environmental Impact. SM-4 minimizes impact on natural resources in that it has relatively little impact on wetlands, no impact on native prairie, does not cross the existing boundaries of Wilderness Park, and could be built in a manner to minimize the floodplain impact on Salt Creek. While the route does impact some homes and businesses, these impacts have been minimized to the extent possible.

EM-1 was considered the best east alternative compared to EC-1 and EF-1 because:

1. Transportation Functions. The EM-1 route would aid in completing a circumferential roadway and provide a new truck route without the less efficient "backtracking" found in the EC-1 and EF-1 options.

2. Environmental Impacts. EM-1 minimizes environmental impacts to those resources that are considered most valuable by the local community. In comparison to EC-1, the EM-1 route minimizes impacts to rural and urban neighborhoods, including noise and visual impacts to residences. It also has the least number of residential and business relocations of any of the east alternatives due to right-of-way requirements. While EM-1 and EF-1 are similar in environmental impact; EM-1 minimizes impacts to historic properties. At the same time, EM-1 has less impact to prairies (versus EF-1), relatively low impact to wetlands (versus EC-1), and requires 150 ac less in right-of-way than the other alternatives. While the EM-1 crossing of Stevens Creek is the longest of the three east alternatives, it could be built to minimize impacts to the floodplain. In consideration of these resources, the EM-1 route protects and preserves the environment to the greatest extent, and is considered the most compatible with the goals, objectives and values of *Lincoln/Lancaster County Comprehensive Plan.*

3. Multi-Use Corridor Potential. The EM-1 route has the greatest potential as a multi-use corridor for trails, open space, utilities and other transportation alternatives. It could be integrated well with a possible trail in Stevens Creek and then tie into possible trails along the South Beltway route to Wilderness Park trails. The potential as an open space corridor is high given that it is within 0.5 mi of Stevens Creek for over a 6-mi stretch. EM-1 also parallels an existing LES transmission line with a 150-ft easement which would allow some overlap of a joint utility and road corridor for over 8 mi.

4. Travel Time. EM-1 has greater travel savings than EF-1.

5. Cost. While EM-1 is more expensive than EF-1 or EC-1, EM-1 may provide future cost savings as a multi-use corridor, and it uses less land than the other two routes.

The selection of the preferred alternative was unanimously approved on 15 June 2001 by the Beltway Management Committee representing the four project sponsors–the City of Lincoln, Lancaster County, NDOR and FHWA.

Local Preference Decision. The SM-4 and EM-1 alternatives were approved by the Lincoln City Council and the Lancaster County Board of Supervisors, in separate actions, on 22 August 2001 for amendment to the *Lincoln/Lancaster Comprehensive Plan*. With the Mayor of Lincoln's signature on 30 August 2001, the alternatives were officially adopted into the plan.

C. SECTION 4(f)

The FEIS document includes the Final Section 4(f) Statement (Appendix H). Based on the Section 4(f) evaluation, the proposed action would impact two Section 4(f) resources along the EM-1 alignment. These are the MoPac East Trail and a historic road sign at 112th and Adams Streets (LC00: E-118).

MoPac East Trail. The EM-1 crossing has a footprint of 0.8 ac across the MoPac East Trail. The crossing requires construction of a grade separation to provide for trail continuity. Construction of the beltway will introduce a new roadway element into this segment of the trail, and may adversely impact the visual and audible experience of the trail users for a short distance. However, these impacts are considered negligible considering the trail is part of an urban trail system that already crosses many roadways (approximately one per mile), and considering the length of the trail (over 9 mi).

Coordination. The consulting team has coordinated with the Lower Platte South Natural Resources District (LPSNRD), the owner of the trail, to discuss project impacts and measures to minimize harm. Their concerns and recommendations were used to develop appropriate mitigation measures.

Measures to Minimize Harm. For the MoPac East Trail, design of the beltway/trail intersections will include (1) a grade separation to safely accommodate the trail, (2) separate access through confined areas for the hiker/biker and equestrian trails (or a physical divider), and (3) an underpass for the equestrian trail crossing since horses are hesitant to use overpasses. Design of the trails will follow AASHTO and ADA trail guidelines, and will be coordinated with LPSNRD.

Net Impacts. Since replacement trail crossings will be provided, there will be no adverse impact on existing pedestrian, bicycle and equestrian accommodations.

Road Sign at 112th and Adams (LC00: E-118). The road sign may require protection during construction and nearby repositioning, if it is not moved prior to the beltway project for County road widening. Repositioning the sign is a minor impact, required for operation and safety of an existing roadway.

Coordination. In a letter dated 26 September 2000, the Nebraska State Historic Preservation Office (SHPO) concurred that the beltway project will have no adverse effect on the sign, with the condition of protection during construction and repositioning nearby.

Measures to Minimize Harm. Conditions for protection and repositioning of the sign have been defined by the SHPO. The road sign will be protected from damage during construction of the beltway, and upgrade and paving of Adams Street. The sign will be repositioned about 20 ft from the upgraded road and as near its current location as is practicable (assuming the County roads have not been upgraded prior to beltway construction).

Net Impacts. With the condition of protection during construction and repositioning nearby, there will be no adverse impact on the road sign.

Impacts of Avoidance Alternatives. Impacts to the MoPac East Trail cannot be avoided because of the length of the trail and its orientation perpendicular to the east beltway study area. Any east beltway alternative requires crossing the trail. The only avoidance alternative is the no build alternative which was not considered feasible as it does not serve the project purpose and need. Although the no build alternative will have no impacts on the MoPac East Trail that can be identified at this time, there will be impacts to the trail as County roads are hard surfaced to accommodate a growing suburban population (as part of the proposed future roadway network improvements). An example would be the recent paving of 148th Street across the MoPac East Trail.

Impacts to the road sign can be avoided with the EC-1 alternative and the no build alternative. The EC-1 alternative meets the project purpose and need, and avoids impacts to the road sign, but still impacts two other Section 4(f) resources--the MoPac East Trail and David Murdock Trail. In addition, EC-1 is not considered prudent because of the unacceptable impact on existing urban and rural neighborhoods. The no build alternative will have no impact on the road sign; however, it is not considered feasible as it does not meet the project purpose and need.

D. COMMENTS ON THE FINAL EIS

Eleven comment letters were received on the Final EIS.

Three of the letters were from reviewing agencies. The Nebraska Department of Environmental Quality stated that they had no comments regarding any of their programs or jurisdiction. The Environmental Protection Agency stated that they have no objections to the project and suggested wetland monitoring of impacted wetlands. The US Army Corps of Engineers made suggestions regarding certain details of wetland mitigation.

Eight letters were received from consulting parties for the Section 106 process (consultation on historic resources), six of these letters were from private landowners with interests on the EF-1 route (which was not selected as the preferred alternative). Letters were also received from two groups that had been supportive of EF-1 landowners--the Preservation Association of Lincoln and the National Trust for Historic Preservation. In general, the consulting party letters covered a similar group of points. Comments are summarized in Table 1.

Table 1

SUMMARY OF COMMENTS ON THE FEIS

NO.	SUMMARY OF COMMENT	RESPONSE
1	NDEQ had no comments regarding any impact within their programs or jurisdiction.	No response necessary.
2	EPA stated that the FEIS adequately supplements information needs and addresses previous concerns. They had no objections to the project.	No response necessary.
3	EPA recommends that impacted wetlands be monitored during construction, and after completion, to assess effectiveness of mitigation measures.	Wetland mitigation sites will be monitored until the US Army Corps of Engineers (USACE) determines that the sites have become established as wetlands, consistent with requirements of the Section 404 permit.
4	USACE suggests that the preferred alternative be identified in the introduction with cross-reference to Chapter 4 where it is described in detail.	Based on comments on the DEIS, the information in Chapter 4 was repeated in the Introduction of the FEIS. There is no more detail in Chaper 4.
5	USACE suggests inclusion of (1) schedule of availability of credits/pre-credits at the Lincoln wetland bank site, (2) anticipated number of credits/pre-credits to be debited for this project, and (3) contingency plan in the event that an acceptable bank is not available or utilized.	Construction of the bank began in 2000. It is reasonable to expect that credits will be available. The project will require an estimated 18.0 acres (and an equivalent amount of credits) for SM-4, and 21.9 for EM-1. Regarding a contingency plan, the FEIS already states that mitigation may be located along the route at feasible sites.
6	USACE suggests deleting the statement that "a minimum of a 1:1 mitigation ratio" because pre-credits from a bank would require 1.5:1, as would mitigation along the roadway.	The statement in the FEIS does not preclude a higher ratio, but it does allow for a ratio lower than 1.5:1 if credits are available, which is likely (see Item. 5).
7	Five consulting party letters stated that they agree with the selection of the EM-1 route.	No response necessary.
8	Six consulting party letters stated that the EF-1 route should never have been considered, should have been eliminated, or was the least desirable route.	No response necessary.
9	Two consulting party letters stated that EF-1 (and EC-1) were not evaluated to the same level as EM-1. If they had been, EF-1 would have been even less desirable.	The DEIS included an evaluation of all three east routes to the same level of detail. Based on the DEIS and comments, the EM-1 route was selected as the preferred alternative, primarily because it minimized impacts to historic properties.
10	Three consulting party letters stated that the reexamination of the boundaries of the Stevens Creek Stock Farm should have been extended to include areas beyond the preferred route. They state that this would be no different than reexamination of the Wenzl property on the EC-1 route.	Based on the DEIS and comments, the EM-1 route was selected as the preferred alternative, primarily because it minimized impacts to historic properties. When additional evaluation was requested to revise the boundaries of historic properties along the EF-1 route, it was determined not necessary since the EF-1 route was not being developed and the sites had already been identified as historic. Regarding the Wenzl site on EC-1, this site was reexamined because questions were raised that the site had been omitted from consideration.

NO.	SUMMARY OF COMMENT	RESPONSE
11	One consulting party letter stated that the document doesn't resolve the concern for preservation of prairies, especially the Reed prairie.	Although prairies are not regulated, impacts to these areas will be avoided or minimized to the extent possible. Based on the preliminary alignment, there are 3.2 ac of prairie impacted along EM-1, and none along SM-4. The Reed prairie is located on EF-1, which is not being developed.
12	Two consulting party letters stated that many of the comments made by Citizens for Accountable Route Selection (CARS) members or their attorney (the organization representing landowners along EF-1) and others were not considered or adequately addressed in the FEIS.	The FEIS addressed and considered all comments received on the DEIS, as well as comments from the consulting parties to the Section 106 process. The FEIS was revised to the satisfaction of all reviewing and regulatory agencies, including the State Historic Preservation Office (SHPO), the agency authorized to oversee historic resource compliance.
13	Six consulting party letters stated that they were not given more opportunities in the 106 process; were never contacted directly as a group or individually as the consulting party status requires; had to present their concerns at meetings designed for the general public, and should have had the opportunity to help prepare, review, comment and concur in the MOA rather than just being notified of opportunities for comment.	Consulting parties were (1) provided individual invitations to public meetings and hearings for the NEPA process, (2) provided draft/advance copies of the Preliminary Assessment of Adverse Effects, Chapter 9 of the FEIS (which addressed their comments) and the MOA for historic properties, and (3) invited to a special meeting held for the consulting parties and owners of historic properties impacted by the preferred alternative. The FHWA, SHPO and cultural resource consultants were available at all the meetings to receive comments and answer questions. A number of the consulting parties were contacted directly to help in providing additional information on specific historic properties.
14	One consulting party letter from two consulting parties stated that they were never involved in specific discussions of their concerns.	These particular consulting parties were specifically contacted regarding the location of prairies. Consultation included a meeting with project consultants, as well as phone conversations.
15	Four consulting party letters stated that they did not feel that the public hearing on 23 and 24 April 2001 was really a public hearing since there were no public officials present, they didn't get to hear all the comments, and they only got to speak to a court reporter and moderator.	The public hearing format used for the beltway study is in common use by FHWA throughout the country. The format has been used successfully on other projects in Lincoln. All comments, written and oral, were provided to public officials. In addition, several public officials did attend the hearings. The FHWA, NDOR, City, SHPO and cultural resource consultants were available at all the meetings to receive comments and answer questions. Comments were made available, and continue to be available at several locations for public review.
16	One consulting party letter stated that the FEIS should have noted that citizens concerns about the study process was an area of controversy.	This information is included in Chapter 6, Section 6.8 which includes summaries of the public meetings. It is also noted on page 9.3, Item 26.
17	Four consulting party letters stated either that there is no discussion in the FEIS of the role of the consulting parties, or there is no reference to the consulting parties in Chapter 6 or Chapter 9, or that not all of the consulting parties are listed in the document.	Chapter 6 describes agency and public involvement as required by the NEPA process. Consulting parties were parties to the Section 106 process which only addresses historic resources. Consultation activities with the consulting parties are mentioned numerous times in Chapter 9, as well as Appendix F, the Assessment of Adverse Effects. Although all of the consulting parties were sent copies of the DEIS & FEIS, a list of their names was not included in the documents.

NO.	SUMMARY OF COMMENT	RESPONSE
18	PAL states that the opinions expressed by the President of the PAL during the Public Hearing on 15 August 2002 were his personal opinions and not the opinion of the organization.	Comment noted.
19	PAL stated that the list of references includes a number of reports by the University of Nebraska-Lincoln, and that there is confusion concerning which references were contracted with UNL and which were contracted with private individuals associated with UNL. This confusion places a shadow over scholarly research.	All of the work was conducted by the UNL Department of Anthropology Archeological Laboratory, and was contracted through the UNL Office of Sponsored Programs. Every reference to this work has always been identified as being conducted by the UNL Department of Anthropology.
20	PAL stated that the boundaries determination report did not adequately reference technical material available from the National Park Service.	All of the reports related to historic resources were reviewed by the Nebraska SHPO, the agency authorized to oversee historic resource compliance. The reports were revised to reflect the comments and concerns of the SHPO, and the SHPO has concurred with the findings of all of the reports.
21	PAL stated that the boundaries determination report did not completely examine early conservation practices utilized before current terracing techniques were adopted.	See Item 20 above.
22	PAL stated that the glossary in the boundaries determination report did not define treeline, terrace or contour cultivation, concepts which are mentioned in the text.	While missing from the glossary, these terms are defined in the text.
23	PAL stated that the boundaries determination did not evenly apply the same evaluation criteria for all studied properties on the three east routes.	See Item 20 above.
24	PAL stated that the boundaries determination report does not correctly list the period of significance for the Theresa Retzlaff Farmyard–which should be extended from 1890-1920, to 1950.	Comment noted. The property is located on EF-1, an alternative that was not selected.
25	PAL and NTHP stated that their requests for determination of additional NRHP eligible properties on the EF-1 route should have been forwarded to the Keeper.	See Item 10 above.
26	NTHP states that the FEIS document falls short of directly acknowledging that the beltway will have an indirect effect on historic properties through potential impacts of growth and sprawl development.	The FEIS includes an extensive evaluation of indirect effects (Chapter 9). Following the Lincoln/Lancaster County Comprehensive Plan, the rural landscape of the entire beltway study area could be converted to an urban form over the planning period. FHWA has no legal tools to direct the local planning process.
27	NTHP requests that the FEIS be revised to remove the statement that the owners of the Stevens Creek Stock Farm had "previously expressed written opposition to the use of conservation easements". NTHP says this is incorrect, and that the owners are opposed only to public ownership of a conservation easement.	The FEIS discussion was intended to relate to public ownership of easements.

E. MEASURES TO MINIMIZE HARM

Impacts from the proposed action have been evaluated and minimized to the extent possible. Mitigation has been proposed for the remaining impacts and will consist of those measures in the Environmental Commitments Listing (Table 2).

All practical measures to minimize harm have been incorporated into the project.

Table 2

ENVIRONMENTAL COMMITMENTS LISTING

AREA OF CONCERN	PAGE/ PARAGRAPH IN FEIS	COMMITMENT/MITIGATION
Access	9.8, 9.9, 9.17, 9.18, 9.21, 9.22	Options for provision of access will be discussed with landowners during final design.
Acquisitions and Relocations	3.17/6 through 3.20/3	Right-of-way acquisition will be handled in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended. Relocation assistance for all eligible residential and business relocatees will be provided without discrimination, through the Nebraska Relocation Assistance Act as required by federal and state laws (Neb. Rev. Stat. Section 76-1214 *et seq.*).
Air Quality	3.31/3-4	If objectionable dust levels occur during construction, dust will be controlled by timely applications of water and temporary seeding to the areas of construction.
Air Space Considerations	3.10/1 9.28	Air space considerations will be reviewed during final design with FAA. Construction methods will be reviewed with FAA 30 days prior to construction.
Construction Impacts	3.76/7 through 3.77/3	Provision of Access. For minor intersections, motorists will be rerouted to nearby parallel streets. Delay will be minimized and adequate signage provided. For major intersections, construction phasing plans will be prepared to address traffic handling operations. Private landowners will be provided access to their property at all times. Dust Supression. If objectionable dust levels occur, dust will be controlled by timely applications of water and temporary seeding to the construction areas. Erosion and Sedimentation Control. Mitigation measures for construction-related erosion and sedimentation control will include dikes, dams, sediment basins, fiber mats, temporary and permanent seeding, straw mulch, plastic liners, slope drains, and other devices which would intercept and trap transported sediments during construction. Noise Controls. Construction noise levels are typically a function of the scale of the project, the phase of construction, the condition of the equipment and its operating cycles, and the number of construction equipment units operating simultaneously. Measures that may be employed to reduce objectionable construction noise include designating haul routes away from sensitive receptors, controlling noise at the source, and limiting construction activities to certain hours of the day.

AREA OF CONCERN	PAGE/ PARAGRAPH IN FEIS	COMMITMENT/MITIGATION
Cultural Resources	3.67/4-5, 9.42/1-9.44/3, F.25/1-F.27/3	Proposed mitigation follows the guidelines of the Nebraska SHPO and is included in the Assessment of Adverse Effects (Appendix F of the FEIS). Memorandums of Agreement were developed to implement mitigation for the two historic properties which are adversely affected by the preferred SM-4/EM-1 alternative (Henry Wunibald and Steve Johnson Farmyards), and include provisions for screening the two properties. Modification of the EM-1 alignment made it possible to avoid archeological site 25LC129. Other cultural resource management activities will include: 1. Completion of an archeological survey of bottomlands where access has been previously denied. 2. Use of NDOR standard provisions regarding previously unsuspected archeological remains that provide for cessation of work and notification of the SHPO. 3. Use of NDOR standard provisions regarding monitoring of archeological sites during construction. 4. A historic marker located at Saltillo Road and South 14th Street will be relocated.
Environmental Risk Sites	3.72/1 through 3.73/2	Contaminated media may be encountered in or near areas of identified releases and could include contaminated soil and/or sediment and ground water. Mitigation measures include avoidance, removal of the contaminated media or on-site treatment. Selection of an appropriate mitigation strategy will depend on the type and concentration of the contaminant and the type and quantity of media contaminated. <u>Avoidance.</u> If possible, contamination should be avoided by realignment of the beltway feature. This approach is difficult because the contamination occurs in the subsurface and the surface extent is typically uncertain. Furthermore, right-of-way acquisition may preclude realignment. <u>Removal.</u> Contaminated soil and sediment may be removed and managed off-site in accordance with requirements of the State of Nebraska for special waste or hazardous waste. If contaminated soil meets the classification of a special waste then the most common management option involves disposal at a licensed Subtitle D landfill in accordance with NDEQ Title 132. If contaminated soil is classified as a hazardous waste, disposal must be at a licensed hazardous waste disposal site in accordance with NDEQ Title 128. <u>On-Site Treatment.</u> Contaminated water generated from any de-watering activities may require treating prior to discharge. Cost of treatment would vary depending on the type and concentration of contaminant, receiving waterway, volume of discharge and treatment system required. Permits issued by NDEQ may be required for this option for water discharges in accordance with NDEQ Title 119 and contaminant emissions to ambient air in accordance with NDEQ Title 129.
Farmland	3.14/4	Right-of-way will be limited to that necessary for transportation uses and any required mitigation.

AREA OF CONCERN	PAGE/ PARAGRAPH IN FEIS	COMMITMENT/MITIGATION
Floodplains	3.51/1 through 3.52	Floodplain Development. Through Lancaster County's participation in the National Flood Insurance Program, it is a local requirement that floodplain development permits be obtained from the City/County. This requires that any developments within designated floodways must include certification from a registered professional engineer that the proposed development will result in no increase along the floodway water surface profiles. The City/County are both sponsors of the project and are aware of floodplain management requirements. The proposed project will comply with or exceed the current minimum requirements of the City/County floodplain management ordinance. There are no additional mitigation measures above what is already required by the City/County program. Channel Realignment. According to the US Army Corps of Engineers requirements, if channel straightening is proposed for any of the crossings, it will be necessary to demonstrate that there are no other practicable alternatives. SM-4 Alternative. It is anticipated that all major crossings in this alternative will allow channels to remain in their existing configurations. EM-1 Alternative. The Stevens Creek tributary crossing south of Pine Lake Road cuts across two existing channel meanders. There are several options for the crossing. The channel can be aligned to provide a relatively straight section of channel at the bridge location, and the meanders upstream and downstream can be reconfigured to enable the total channel length to remain the same as before the realignment. Other options would be to straighten the channel (with the effect of shortening the channel approximately 73 m (240 ft), or extending the bridge approximately 38 m (125 ft) to span the meanders. The Stevens Creek tributary crossing between Van Dorn Street and Pioneers Boulevard may require minor channel realignment at two existing channel meanders due to encroachment of the channel by the roadway embankment. Stevens Creek Farm Ponds. The EM-1 alternative will require continued coordination with LPSNRD, as well as modifications to the roadway design to reduce conflicts with the proposed farm ponds. EM-1 will require (1) the A2-1 spillway to be relocated on the east side of the dam, and (2) adequate protection of the roadway embankment at the same site. Stevens Creek Conservation Easements and Trail. For EM-1, proposed development in the Stevens Creek mainstem floodplain between the Murdock Trail and the MoPac East Trail would be required to comply with the terms of the conservation easements to be acquired by LPSNRD relative to the Stevens Creek watershed plan; however, these terms will not prohibit construction of a beltway facility.
Landscaping	3.39/4	Landscape treatments will be considered to screen freeway lighting if sufficient right-of-way is included outside the lateral obstacle clearances.
	9.24	Landscaping options will be discussed with landowners during final design.

AREA OF CONCERN	PAGE/ PARAGRAPH IN FEIS	COMMITMENT/MITIGATION
Lighting	3.39/4	Lighting features will be determined during final design. Location and choice of specific lighting structures will likely be determined by surrounding land uses. It is expected that the beltway will only be lighted at the intersections and within the City limits, if it extends to the beltway at the time of construction. There are a wide variety of lighting options available to minimize light intrusion on adjacent properties. To the extent possible, the location and choice of specific lighting structures will be designed to minimize light intrusion on adjacent properties. In addition, landscape treatments will be considered to screen freeway lighting if sufficient right-of-way is included outside the lateral obstacle clearances.
Noise	3.36/1 through 3.38/3	Based on a preliminary evaluation of the current alignments for SM-4 and EM-1, noise abatement measures (consisting of alignment shifts and/or barriers) were determined feasibility and reasonable, and should be considered, at four receptors. These locations are R-11 on SM-4; and R-17, R-35 and R-36 on EM-1; all are alignment shifts. Further evaluation of noise abatement measures should be conducted during final roadway design. Reasonableness of barriers will be reassessed prior to construction based on costs at that time; if earthwork costs or right-of-way acquisition are too high, the noise barrier could be considered unreasonable at that time. For locations where noise abatement is feasible and reasonable, a public information meeting will be held and benefitted property owners will be given an opportunity to vote according to NDOR Noise Policy. Noise abatement will be provided if 75 percent of the benefitted property owners are in favor of the proposed noise abatement device. In addition to traffic noise, the project area would experience temporary noise increase during construction. Construction noise levels are typically a function of the scale of the project, the phase of construction, the condition of the equipment and its operating cycles, and the number of construction equipment units operating simultaneously. Measures that may be employed to reduce objectionable construction noise include designating haul routes away from sensitive receptors, controlling noise at the source, and limiting construction activities to certain hours of the day.
Pedestrian and Bicycle Accommodations	3.29/4 through 3.30/2	Existing Trails. For the MoPac East Trail, design of the beltway/trail intersections will include (1) grade separations to safely accommodate the trail, (2) separate access through confined areas for the hiker/biker and equestrian trails (or a physical divider), and (3) underpasses for all equestrian trail crossings since horses are hesitant to use overpasses. The hiker/biker trail may be designed as an overpass or underpass. Proposed Trails. SM-4 crosses the abandoned UP line just north of the half-section line within the Jamaica North segment for which the City has filed for rail banking. If a trail has already been built in this location, the beltway project will provide an appropriate crossing over the trail right-of-way. If the Homestead Trail is built prior to the beltway and prior to the Jamaica North Trail (or other connector), the beltway project will provide a bicycle/pedestrian trail (and appropriate trail crossing) to connect the south end of Wilderness Park with the north end of the Homestead trail. The beltway project will also be designed to accommodate the proposed Stevens Creek Connector. Design. Design of the trails will follow AASHTO and ADA trail guidelines, and will be coordinated with the trail owner, LPSNRD. Specific details on the crossings will not be determined until final design.

AREA OF CONCERN	PAGE/ PARAGRAPH IN FEIS	COMMITMENT/MITIGATION
Permits	3.77	The following permits and approvals will be obtained for the project: 1. Section 404 Permit from the US Army Corps of Engineers 2. Section 401 Water Quality Certification from the Nebraska Department of Environmental Quality 3. National Pollution Elimination Discharge Permit from the Nebraska Department of Environmental Quality 4. Floodplain Development Permit from Lancaster County
Railroads	3.23/3	All beltway/railroad crossings will include grade separations over any active railroad lines.
Threatened and Endangered Species	3.57/8	Since construction is not expected for several years, surveys for the threatened prairie fringed orchid will be updated, as appropriate. Although prairies are not regulated, impacts to these areas will be avoided or minimized to the extent possible.
Transportation Safety	3.12/8	The project will include fencing of the freeway right-of-way and lighting at interchanges.
Utilities	3.23/4	Utility relocations will be determined during final design. Any approvals for relocations will be obtained from the affected utility at that time.
Visual Aesthetics	3.74/1-2	As part of final design, consideration will be given to visual impacts on residential properties. Measures to screen the road from the residence will be evaluated including landscaping, berming and fencing which can be accomplished within the road right-of-way or on additional road right-of-way acquired for this purpose. There is also an opportunity to apply a 'Green' concept to the beltway corridor–similar to Lincoln's 'Boulevard' concept. Accommodating landscaping and open space would have a clear benefit to adjacent properties, but is likely to require the acquisition of additional right-of-way or easements and will need to be weighed against the additional loss of private property.
Water Body Modification and Wildlife	3.47/1 9.3	Mitigation measures will be implemented for construction-related erosion and sedimentation control and include, as appropriate, dikes, dams, sediment basins, fiber mats, temporary and permanent seeding, straw mulch, plastic liners, slope drains, and other devices which would intercept and trap transported sediments during construction. In addition, the project will require a National Pollution Discharge Elimination System (NPDES) permit from NDEQ which is needed for all sites greater than 2 ha (5 ac) in size. The permit will require incorporation of erosion and sedimentation control measures during construction. Any need for wildlife crossings will be evaluated with appropriate resource agencies during final design. To the extent practicable clearing and grubbing activities will be scheduled to avoid nesting birds. In accordance with the Migratory Bird Treaty Act and NDOR Standard Specifications for Highway Construction, if tree removal will occur from April 1 to July 15 (the primary nesting season of migratory birds), an initial survey for nesting birds within the project area shall be conducted. Any presence of eggs or young will be reported immediately to the Fish and Wildlife Service. Based on consultation as a result of this contact, appropriate mitigation will be implemented.

AREA OF CONCERN	PAGE/ PARAGRAPH IN FEIS	COMMITMENT/MITIGATION
Water Quality	3.42/8 through 3.43/1	Groundwater. Roadway designers will consider storm water drainage patterns in the vicinity of the Wellhead Protection Areas; however, there are no land use restrictions in the areas except within 90 m (300 ft) of a well. Surface Water. Mitigation measures will be implemented for construction-related erosion and sedimentation control and include, as appropriate, dikes, dams, sediment basins, fiber mats, temporary and permanent seeding, straw mulch, plastic liners, slope drains, and other devices which would intercept and trap transported sediments during construction. All heavy equipment will be refueled and serviced away from water courses to prevent accidental contamination of surface waters with petroleum products. Only clean fill material will be used in construction in the waters and wetlands. Special consideration will be given to erosion and sedimentation control measures in the vicinity of the tributary to Wagon Train Lake.
Wetlands	3.44/1, 9.29	Mitigation has been proposed to replace all impacted wetlands, whether jurisdictional or not, at a minimum ratio of 1:1 replacement-to-loss. Wetland mitigation sites may be located along the proposed project route at feasible sites, or may be located in the City of Lincoln's Wetland Mitigation Bank, currently under development. Wetland impacts are estimated at 18.0 ac for SM-4 and 21.9 ac for EM-1).

A. CONCLUSION

Based on the analysis and evaluation contained in the Final Environmental Impact Statement for the South and East Beltways, and after careful consideration of all the social, economic, and environmental factors and input from the public involvement process, it is my decision to adopt the recommended SM-4/EM-1 Alternative as the Proposed Action for this project.

9/19/02
Date

Approving Official
Federal Highway Administration