

Memorandum

DATE February 14, 2020

TO Dillon Dittmer, Eric Gonzalez, Chris Lutz, Jeff Hartman

FROM Robert Carnazzo

THRU Julie Ramirez and Jason Dayton

SUBJECT Floodplain Certification — Holdrege South, 183-1(118), CN 71189

Holdrege South is a Mill and Overlay project located in Harland and Phelps Counties, Nebraska, along Highway Us-183. The project begins approximately 1000 feet south of the junction of US-183 with N-4 in Harlan County (Mile Marker (MM) 20.97) and extends north to just north of Park Road in the City of Holdrege, Phelps County, Nebraska (MM 30.35). The project will also complete work on Highway N-4 for approximately 350 feet on each side of US-183.

This improvements on this project consist of:

- From south of Highway N-4 in Harlan County to the BNSF RR in the City of Holdrege; Remove four (4) inches of asphalt pavement by milling and then placing a five (5) inch asphalt overlay, resulting in a one (1) inch increase in pavement elevation. The surface shoulders will also be completely removed and replaced. The earth shoulders will be regraded. Select culverts will be removed and replaced or extended.
 - The bridge over Turkey Creek (S0183 02243) will undergo deck repair, replacement of the expansion joints, removal and replacement of the guardrail including remodeling of the bridge connection, and placement of a two (2) inch asphalt overlay. The deck elevation will be increased two (2) inches.
- From the BNSF RR to just north of Park Road, all within the City of Holdrege; Remove two and three-quarter (2.75) inches of asphalt by milling, complete concrete pavement repair, and then place a three and one-half (3.5) inch asphalt overlay, all between the existing concrete curbs, resulting in a three-quarter (0.75) inch increase in pavement elevation.
- Highway N-4; Remove four (4) inches of asphalt pavement by milling and then placing a four (4) inch asphalt overlay, resulting in no change in pavement elevation. The surface shoulders will also be milled and overlaid.

Please review the attached mapping showing where this project encroaches into flood zones. Enclosed you will find certifications for these encroachments:

Community of Harlan County

Turkey Creek, S183 02243, Section 08 T04N R18W

The project encroaches the Base Floodplain for Turkey Creek in Section 08 T04N R18W. The tributary's ordinary high water flow is conveyed through the highway by an 82-foot bridge structure (S183 02243) at this location. At this location the project will complete deck repair, replacement of the expansion joints, removal and replacement of the guardrail including remodeling of the bridge connection, and placement of a two (2) inch asphalt overlay. The deck elevation will be increased two (2) inches. An analysis completed for the rehabilitation of the bridge in 1988 indicated that the base flood (100 year flood event) of 3,000 cfs is conveyed by the bridge at a base flood elevation (BFE) of 2245.0 feet (NGVD 29), which is below the bridge deck elevation of

February 14, 2020

2252.7 feet. Since the project will not affect a change in the creek's conveyance through the bridge, the project will not affect the depth of flow in the creek. The project will not cause a change in the base flood elevation of Turkey Creek.

Community of City of Holdrege

Unnamed Drainage, Section 04 T05N R18W

The project encroaches the Base Floodplain for an unnamed drainage in Section 04 T05N R18W. The Base Floodplain that is being encroached upon represents a ponding situation rather than riverine flooding. The ordinary high water flow within the ponding area is conveyed through the highway by two 60-inch pipe culverts at this location. Within the floodplain the project will remove four (4) inches of asphalt pavement by milling and then placing a five (5) inch asphalt overlay, resulting in a one (1) inch increase in pavement elevation. The surface shoulders will also be completely removed and replaced. The earth shoulders will be regraded. There will be no culvert work. Since the Base Floodplain represents a ponding situation, the loss of storage by the highway work is the concern. The project impact through this floodplain is limited to the one (1) inch change in pavement elevation, there is no other embankment grading. This one (1) inch increase happens over a 40 foot width that is approximately 4000 feet long, and reduces the total storage for ponding by approximately 13,300 cubic feet. Over the approximately 11,000,000 sq. ft. of floodplain shown in the mapping, that loss would add approximately 0.001 foot of rise in the base flood elevation. This is a negligible amount, and therefore we are certifying that the project will not cause a change in the base flood elevation of the unnamed drainage.

Enclosures: Certificates (2)
 FIRMettes covering project (7)
 Location Map

February 14, 2020

Permit Information:

Community of Harlan County

Turkey Creek, S183 02243, Section 08 T04N R18W

Is the work substantial improvement?	No
Is the work in an identified floodplain?	Yes
Elevation of the base flood (100-year event)?	2245.0 NGVD 29
Elevation/floodproofing requirement (if applicable)?	NA
Is the work in a designated floodway?	No

Community of City of Holdrege

Unnamed Drainage, Section 04 T05N R18W

Is the work substantial improvement?	No
Is the work in an identified floodplain?	Yes
Elevation of the base flood (100-year event)?	No Change
Elevation/floodproofing requirement (if applicable)?	NA
Is the work in a designated floodway?	No

*Certification of Compliance
Floodplain and Floodway Regulations*

FLOODPLAIN/ FLOODWAY LOCATION

Project Name Holdrege South Stream Turkey Creek
Project No. 183-1(118) County Phelps
Control No. 71189 Section(s) 04 T 05 N R 18 W

FEMA LOCATION

County/Community City of Holdrege, Nebraska
Panel No. 31137C 0340C and 31137C 0320C
Effective Date 01/16/2008

TYPE OF STRUCTURE

☐ Bridge ☒ Culvert 2 – 60 inch Pipe Culvert ☒ Roadway

Structure No. _____ ☐ _____

TYPE OF IMPROVEMENT

☐ Modify Existing ☐ Replace Existing ☒ Other

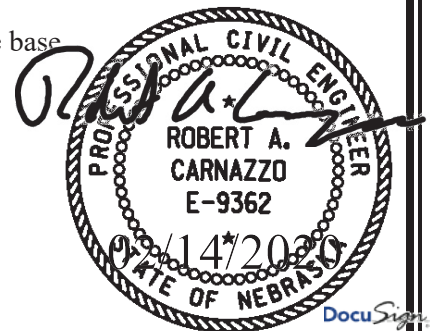
Details Remove 4-inches of highway pavement by milling, place a 5-inch asphalt overlay, remove and replace surfaced shoulders, regrade earth shoulders for a 1-inch increase in elevation.

Highway Profile Change: ☒ Yes ☐ No

THE FOLLOWING IS HEREBY CERTIFIED

- ☐ Floodplain in Un-mapped Community (State Minimum Standards Apply)
Proposed construction will not increase the base
(100 year) flood heights more than one foot at any location.
- ☒ Floodplain (without Designated Floodway) or Flood Fringe
Proposed construction will not increase the base
(100 year) flood heights more than one foot at any location.
- ☐ Designated Floodway
Proposed construction will result in no rise along the base
(100 year) floodway water surface profile.

Completed By: ROBERT A. CARNAZZO, P.E., CFM
NDOT Roadway Design Hydraulics



*Certification of Compliance
Floodplain and Floodway Regulations*

FLOODPLAIN/ FLOODWAY LOCATION

Project Name Holdrege South Stream Turkey Creek
Project No. 183-1(118) County Harlan
Control No. 71189 Section(s) 08 T 04 N R 18 W

FEMA LOCATION

County/Community Harlan County, Nebraska
Panel No. 31083C 0100B
Effective Date 02/18/2009

TYPE OF STRUCTURE

☒ Bridge ☐ Culvert ☐ Roadway
Structure No. S183 02243 ☐

TYPE OF IMPROVEMENT

☒ Modify Existing ☐ Replace Existing ☐ Other

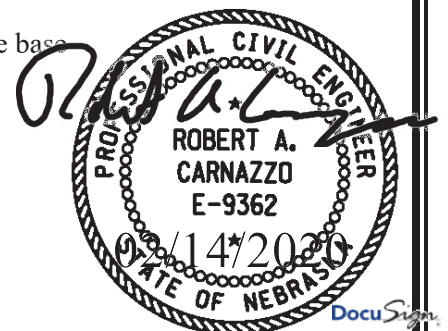
Details Bridge deck repair, replace expansion joints, remove and replace guardrail, place 2-inch asphalt overlay, for 2-inch increase in pavement elevation.

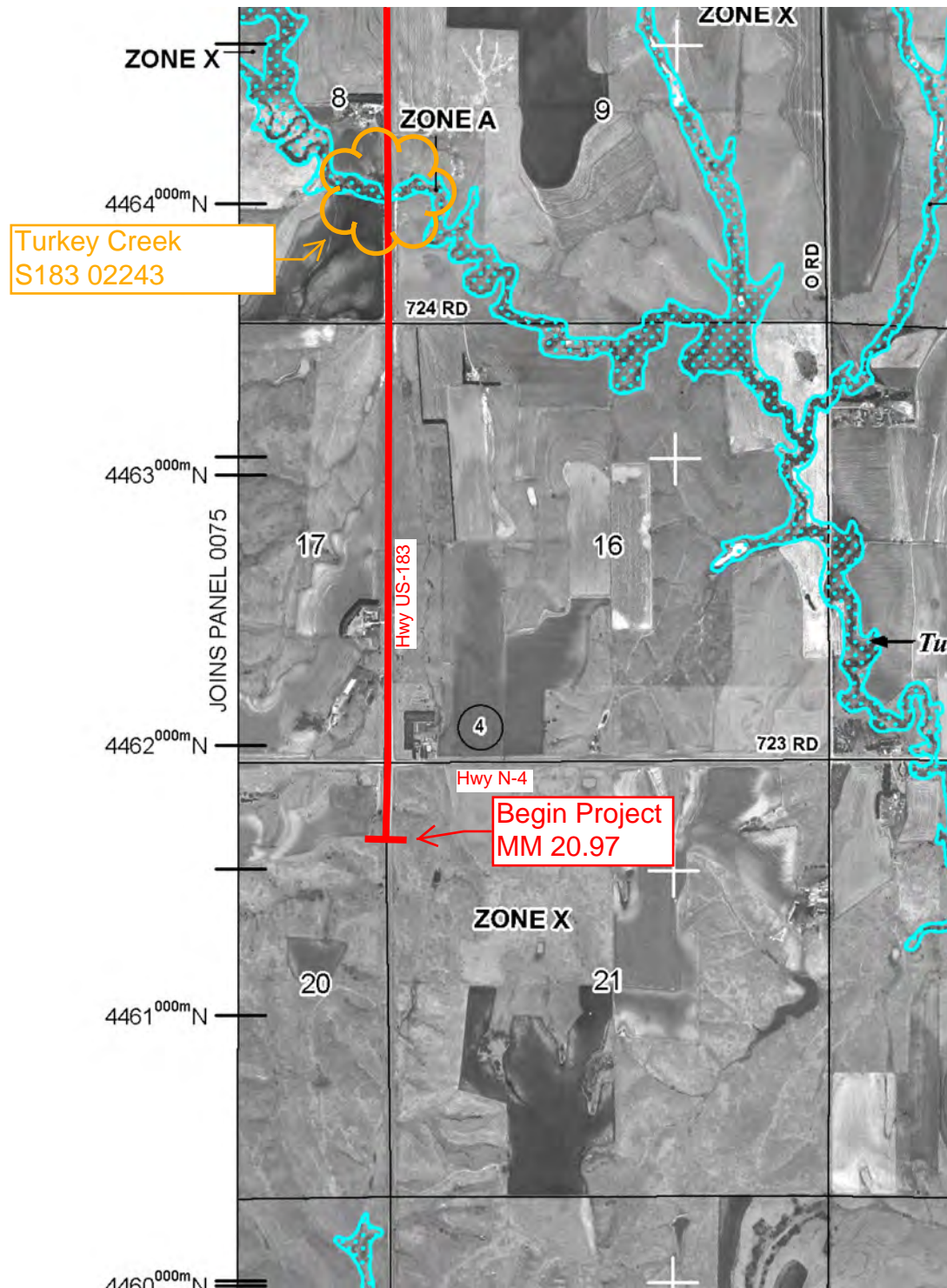
Highway Profile Change: ☒ Yes ☐ No

THE FOLLOWING IS HEREBY CERTIFIED

- ☐ Floodplain in Un-mapped Community (State Minimum Standards Apply)
Proposed construction will not increase the base
(100 year) flood heights more than one foot at any location.
- ☒ Floodplain (without Designated Floodway) or Flood Fringe
Proposed construction will not increase the base
(100 year) flood heights more than one foot at any location.
- ☐ Designated Floodway
Proposed construction will result in no rise along the base
(100 year) floodway water surface profile.

Completed By: ROBERT A. CARNAZZO, P.E., CFM
NDOT Roadway Design Hydraulics





MAP SCALE 1" = 2000'

1000 0 1000 2000 4000
FEET

NFIP

PANEL 0100B

FIRM
FLOOD INSURANCE RATE MAP
**HARLAN COUNTY,
NEBRASKA
AND INCORPORATED AREAS**

PANEL 100 OF 375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HARLAN COUNTY	310442	0100	B
RAGAN, VILLAGE OF	310533	0100	B

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

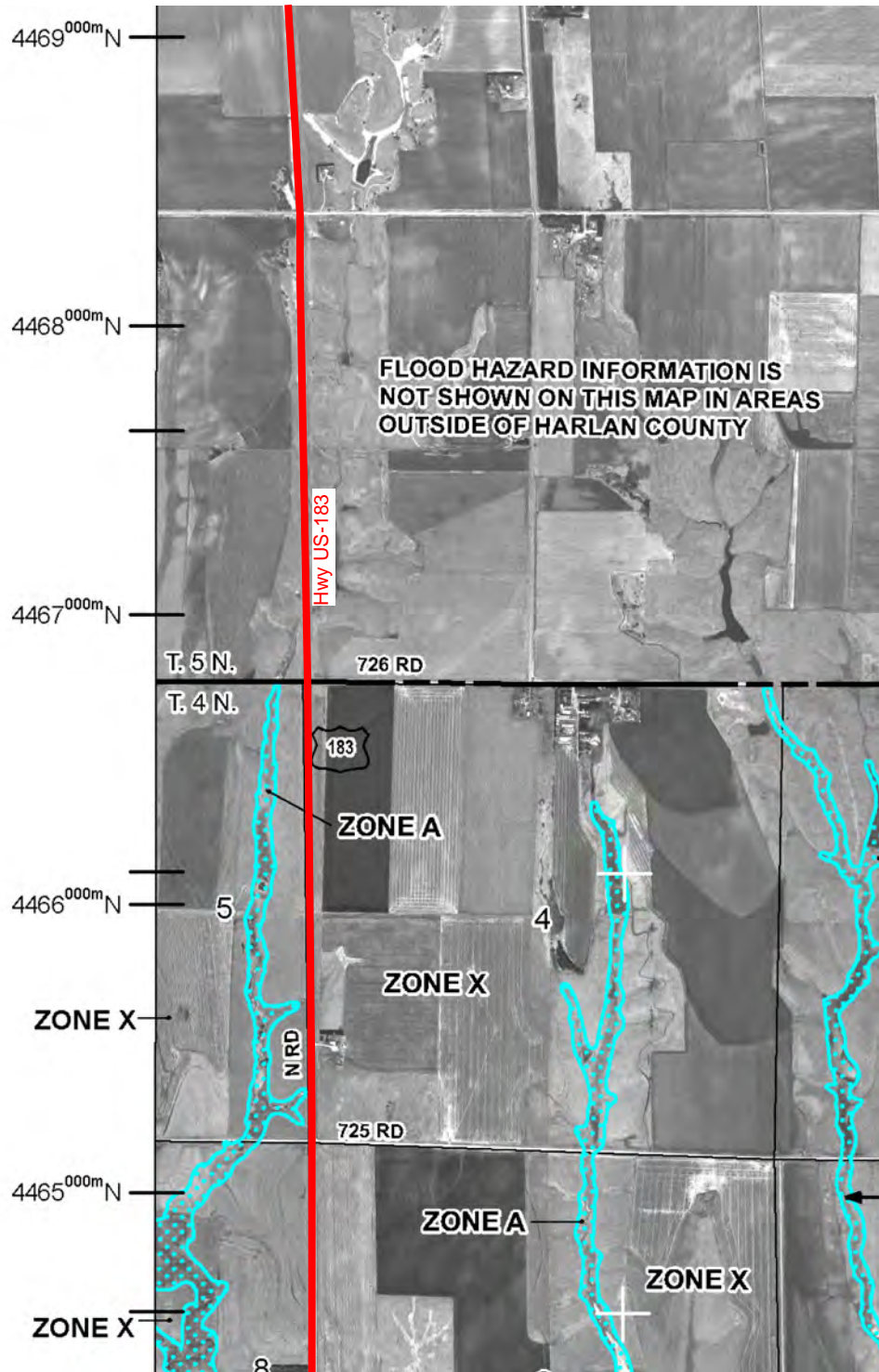


**MAP NUMBER
31083C0100B**

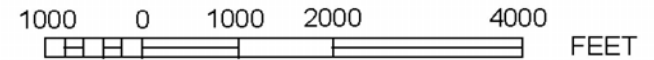
**EFFECTIVE DATE
FEBRUARY 18, 2009**

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.



MAP SCALE 1" = 2000'



NFIP

PANEL 0100B

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
**HARLAN COUNTY,
NEBRASKA**
AND INCORPORATED AREAS

PANEL 100 OF 375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
HARLAN COUNTY	310442	0100	B
RAGAN, VILLAGE OF	310533	0100	B

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
31083C0100B
EFFECTIVE DATE
FEBRUARY 18, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.



MAP SCALE 1" = 2000'

1000 0 1000 2000 4000
FEET

NFIP

PANEL 0475C

FIRM
FLOOD INSURANCE RATE MAP
PHELPS COUNTY
NEBRASKA
AND INCORPORATED AREAS

PANEL 475 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHELPS COUNTY	310465	0475	C

Notice to User: The Map Number shown above should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



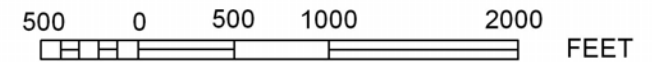
MAP NUMBER
31137C0475C
EFFECTIVE DATE
JANUARY 16, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.



MAP SCALE 1" = 1000'



NFIP

PANEL 0340C

FIRM
FLOOD INSURANCE RATE MAP
PHELPS COUNTY
NEBRASKA
AND INCORPORATED AREAS

PANEL 340 OF 500
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHELPS COUNTY	310465	0340	C
HOLDREGE, CITY OF	310173	0340	C

Notes to Users: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.



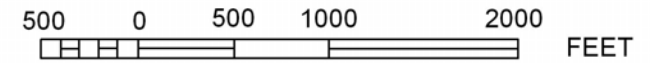
MAP NUMBER
31137C0340C

EFFECTIVE DATE
JANUARY 16, 2008

Federal Emergency Management Agency



MAP SCALE 1" = 1000'



NIP

PANEL 0340C

FIRM
FLOOD INSURANCE RATE MAP
PHELPS COUNTY
NEBRASKA
AND INCORPORATED AREAS

PANEL 340 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
PHELPS COUNTY	310465	0340	C
HOLDREGE, CITY OF	310173	0340	C

Notice to User: The Map Number shown below should be used when placing map orders, the Community Number shown above should be used on insurance applications for the subject community.

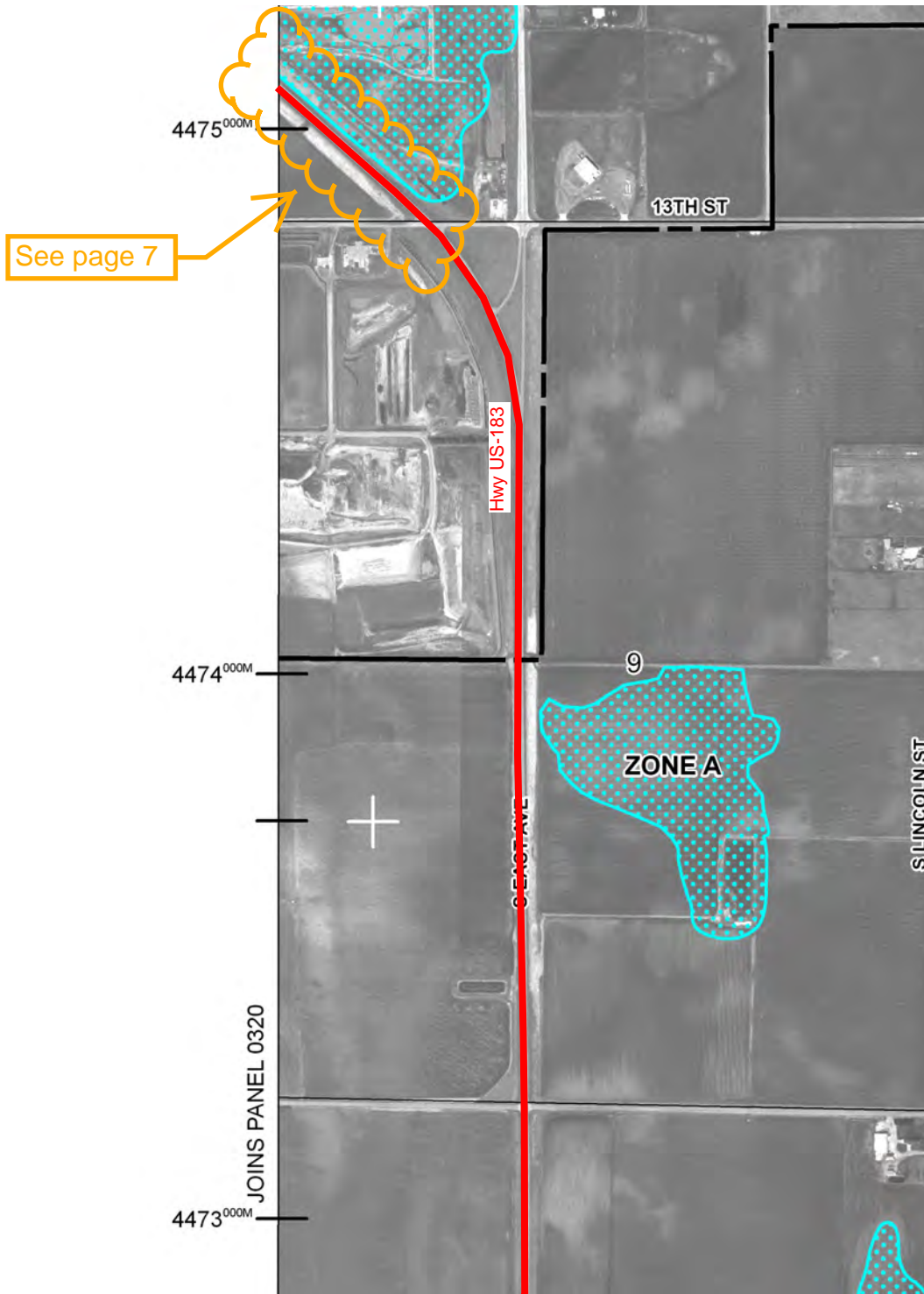


MAP NUMBER
31137C0340C

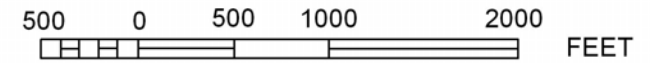
EFFECTIVE DATE
JANUARY 16, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.



MAP SCALE 1" = 1000'



NIP

PANEL 0340C

FIRM
FLOOD INSURANCE RATE MAP
PHELPS COUNTY
NEBRASKA
AND INCORPORATED AREAS

PANEL 340 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PHELPS COUNTY	310465	0340	C
HOLDREGE, CITY OF	310173	0340	C

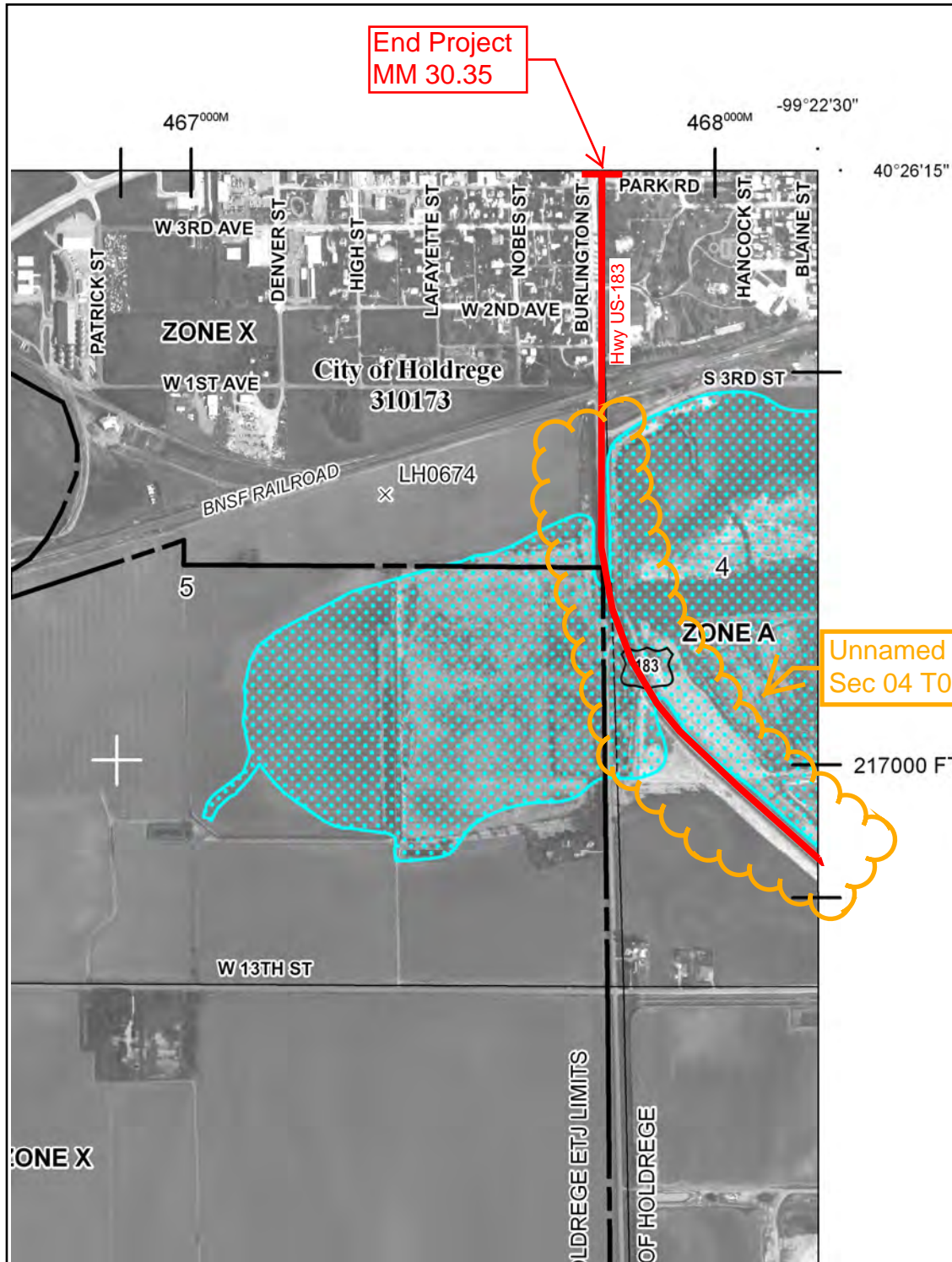
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



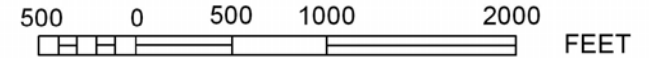
MAP NUMBER
31137C0340C
EFFECTIVE DATE
JANUARY 16, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.



MAP SCALE 1" = 1000'



NFIP

PANEL 0320C

FIRM
FLOOD INSURANCE RATE MAP
PHELPS COUNTY
NEBRASKA
AND INCORPORATED AREAS

PANEL 320 OF 500

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>	<u>PANEL</u>	<u>SUFFIX</u>
PHELPS COUNTY	310465	0320	1C
HOLDREGE, CITY OF	310173	0320	1C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
31137C0320C
EFFECTIVE DATE
JANUARY 16, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIRMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.

HOLDREGE SOUTH 183-1(118)

C.N. 71189 BOOK 6351

HARLAN & PHELPS COUNTIES

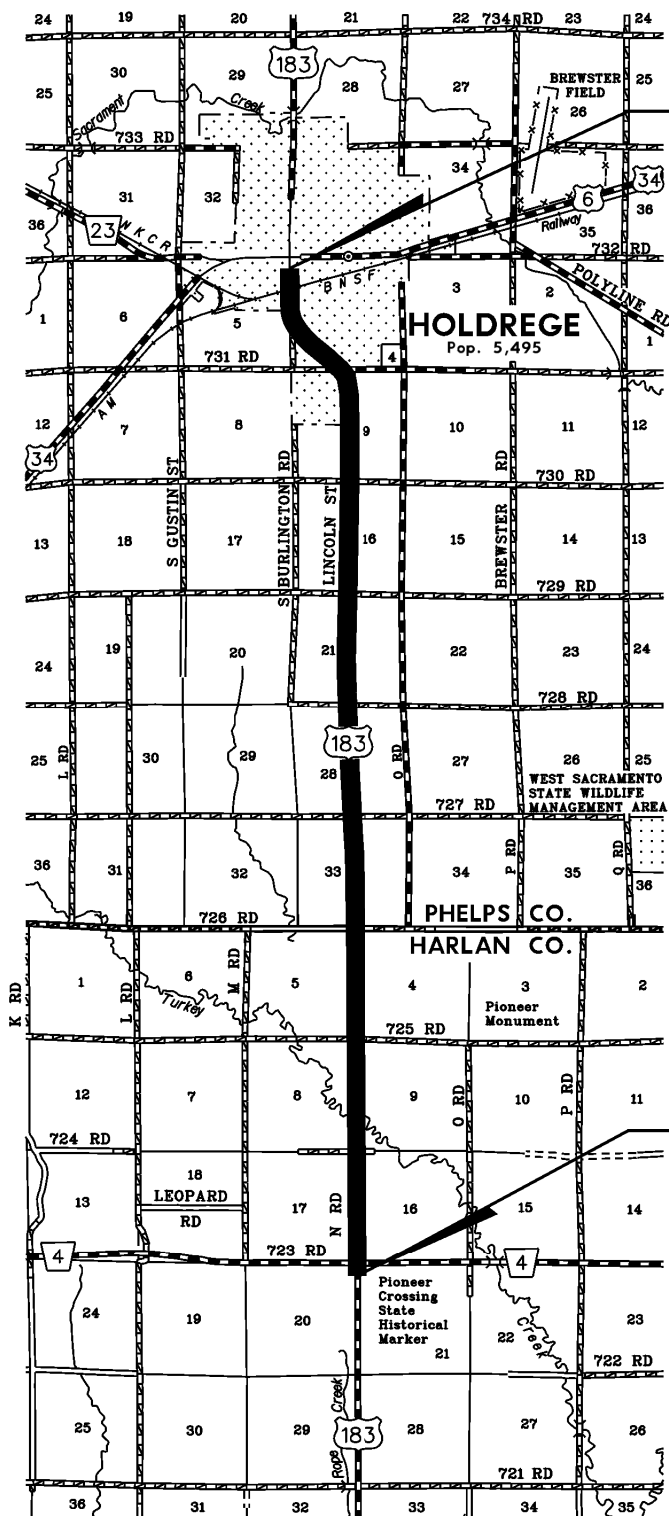
R 19 W

R 18 W

T 6 N

T 5 N

T 4 N



R.P. 30+35 HWY. US-183
STA. 1127+87
END PROJECT

R.P. 20+97 HWY. US-183
STA. 634+00
BEGIN PROJECT