

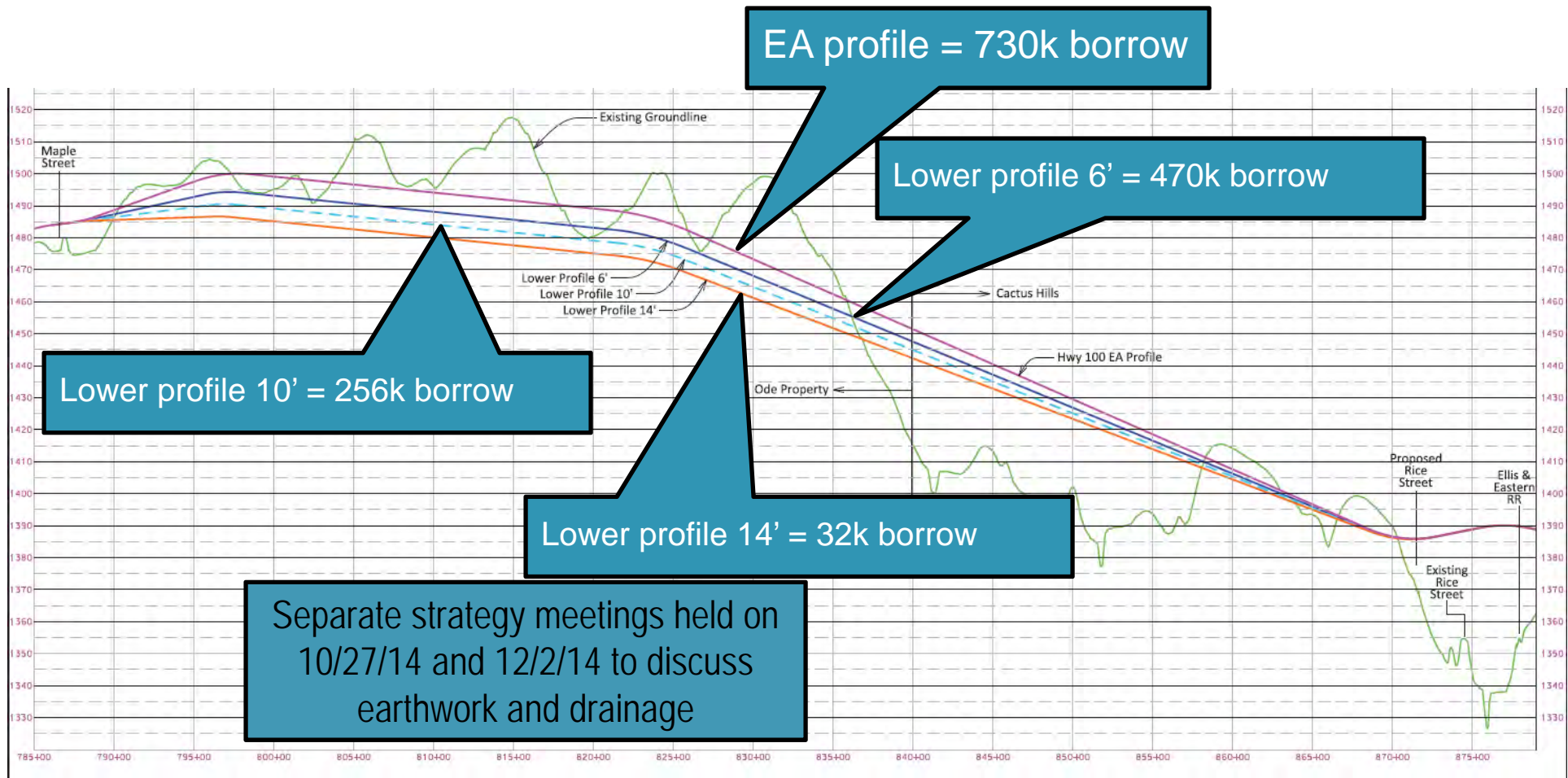
## **Appendix 1 – Graphics for earthwork borrow reduction**

- Slide 8 from FDI meeting showing HWY100 profile options
- Slide 9 from FDI meeting showing overall project earthwork balances
- Slide 10 from FDI meeting showing earthwork balances with typical section options and the associated work limits.

*FDI= Final Design Inspection*

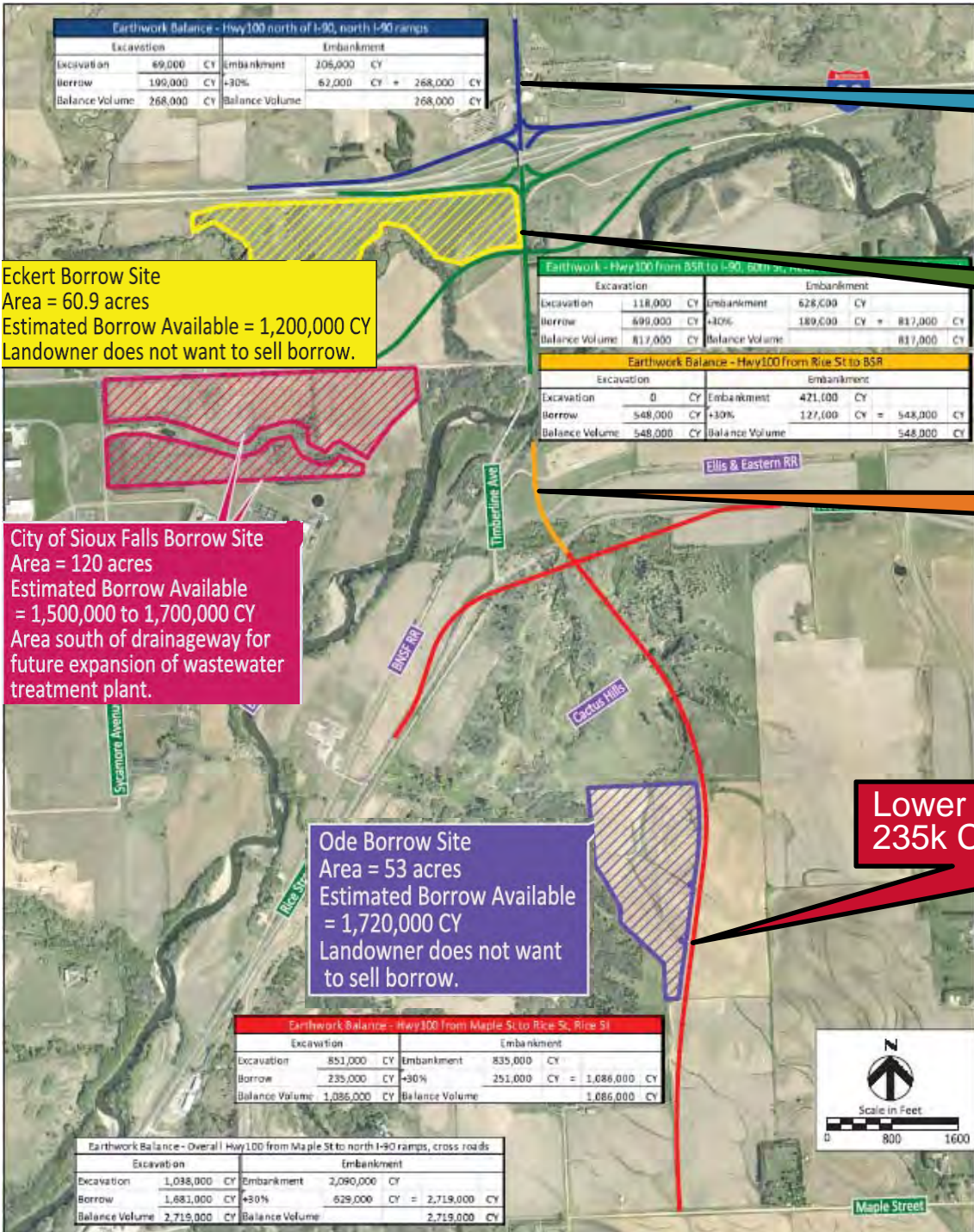
*PDI= Preliminary Design Inspection*

# Profile Options from 9/25/14 FDI meeting (with 3:1 cut slopes)



Hwy100 Profile

## 2. Earthwork



**Eckert Borrow Site**  
 Area = 60.9 acres  
 Estimated Borrow Available = 1,200,000 CY  
 Landowner does not want to sell borrow.

**City of Sioux Falls Borrow Site**  
 Area = 120 acres  
 Estimated Borrow Available = 1,500,000 to 1,700,000 CY  
 Area south of drainageway for future expansion of wastewater treatment plant.

**Ode Borrow Site**  
 Area = 53 acres  
 Estimated Borrow Available = 1,720,000 CY  
 Landowner does not want to sell borrow.

I-90 to north = 199k CY borrow

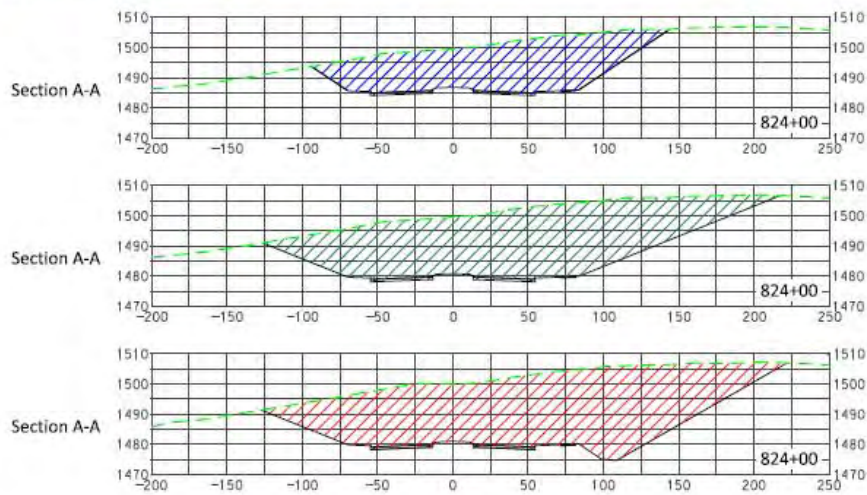
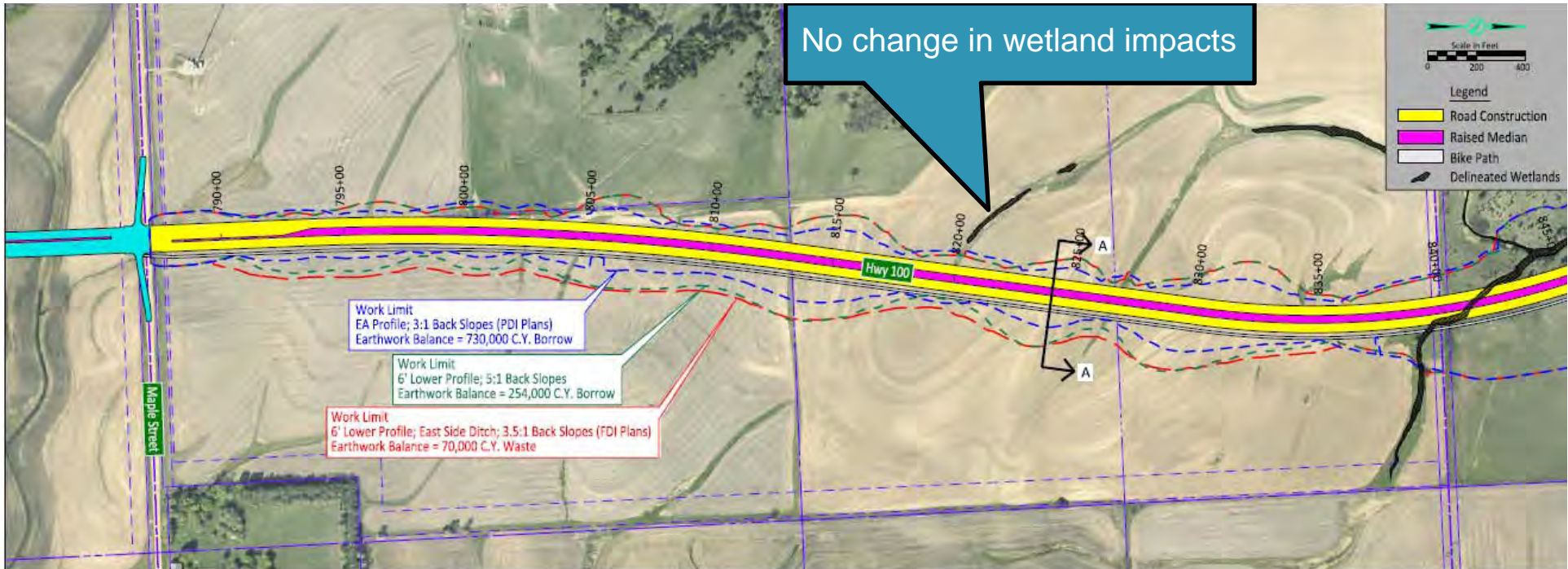
River to I-90 = 699k CY borrow

Rice to River = 548k CY borrow

Total = 1.681M CY borrow

Lower profile 6' & 5:1 cut slopes = 235k CY borrow

# 2. Earthwork



Date of Aerial  
Photography: 2012

Drawn By: B. Miller  
Date: 4/7/15  
Checked By: J. Unruh  
Date: 4/7/15  
Revision:



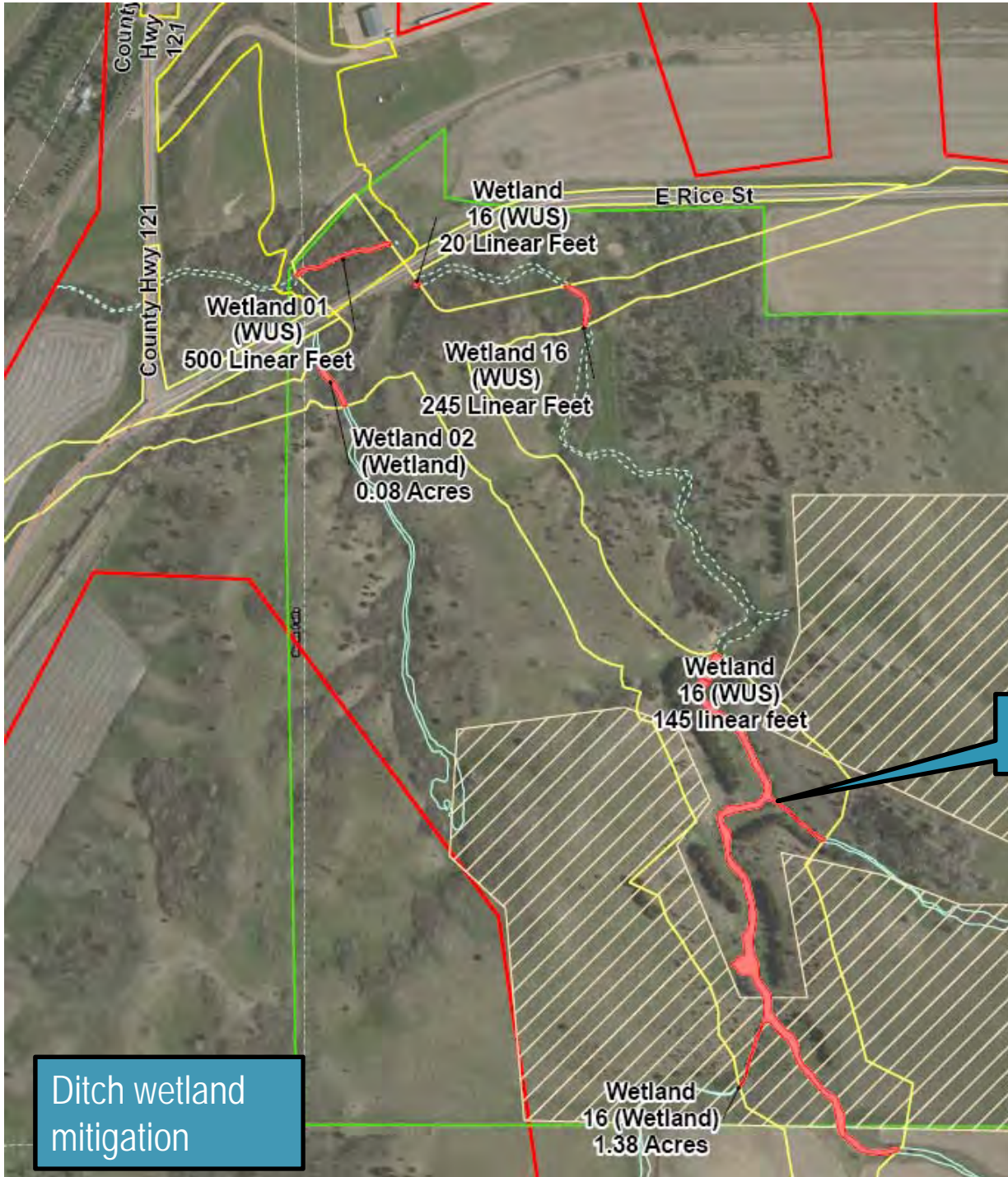
Work Limit Comparison on Ode Property  
Highway 100 from Maple Street to Rice Street      Sioux Falls, SD

[04-07-15 Work Limit Comparison.pdf](#)

# 2. Earthwork

***Appendix 2 – Graphics for deep roadside ditches within Cactus Hills area***

- Slide 32 from FDI meeting showing EA wetland impacts in Cactus Hills area
- Cross section sheet 18 showing deep ditches in Cactus Hills area



Hwy 100 will fill in valley

Ditch wetland mitigation

**7. Design Issues  
Hwy 100**

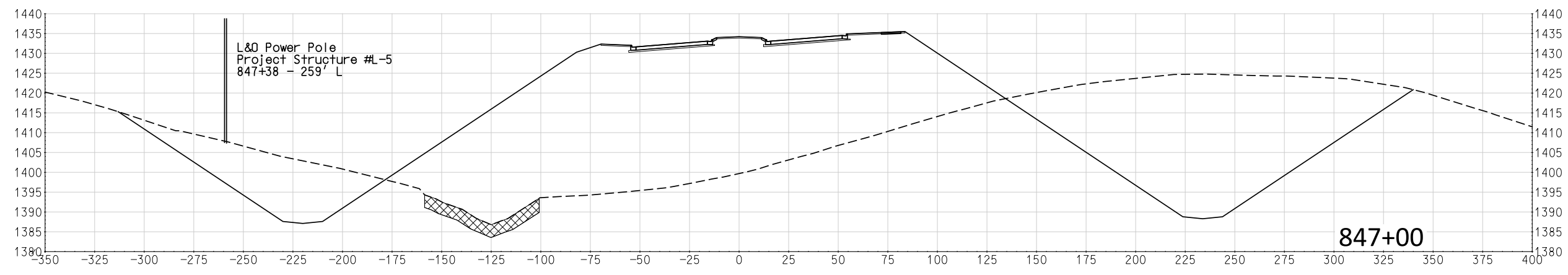
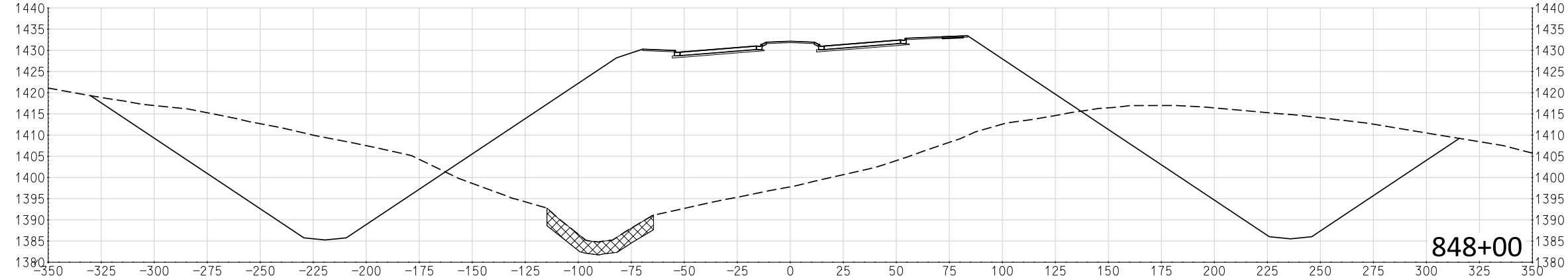
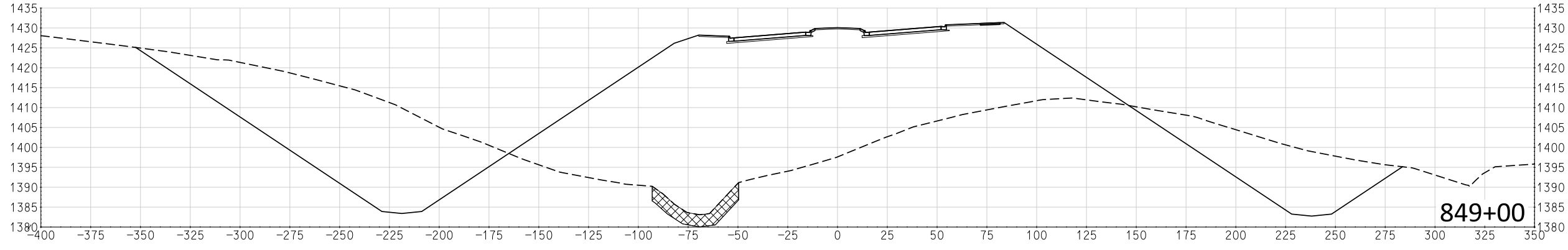
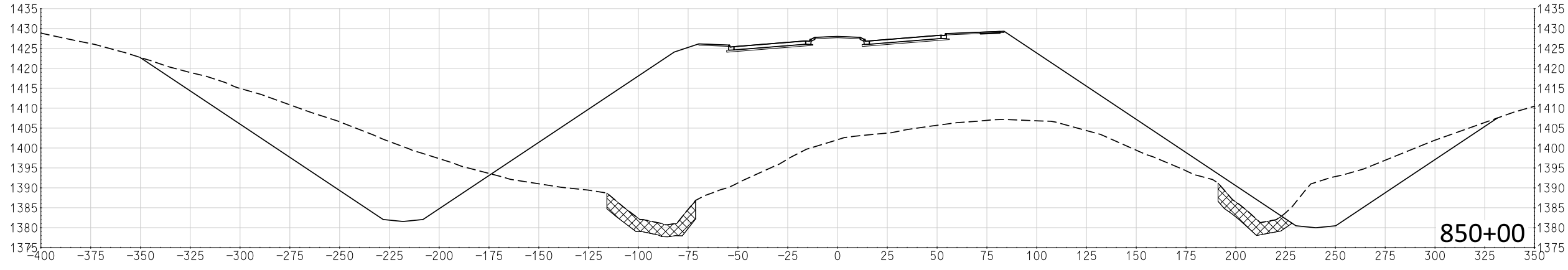
# Hwy 100

CROSS SECTIONS SCALE { Horizontal: 1" = 60'  
Vertical: 1" = 30'

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH 0100(105)419	X18	X58

FILE: X02-X54.dgn  
PLOTING DATE: 03-31-2015

REV DATE:  
INITIAL:



**Appendix 3 – Elimination of retaining walls and longer culverts near HWY100/Rice Street intersection**

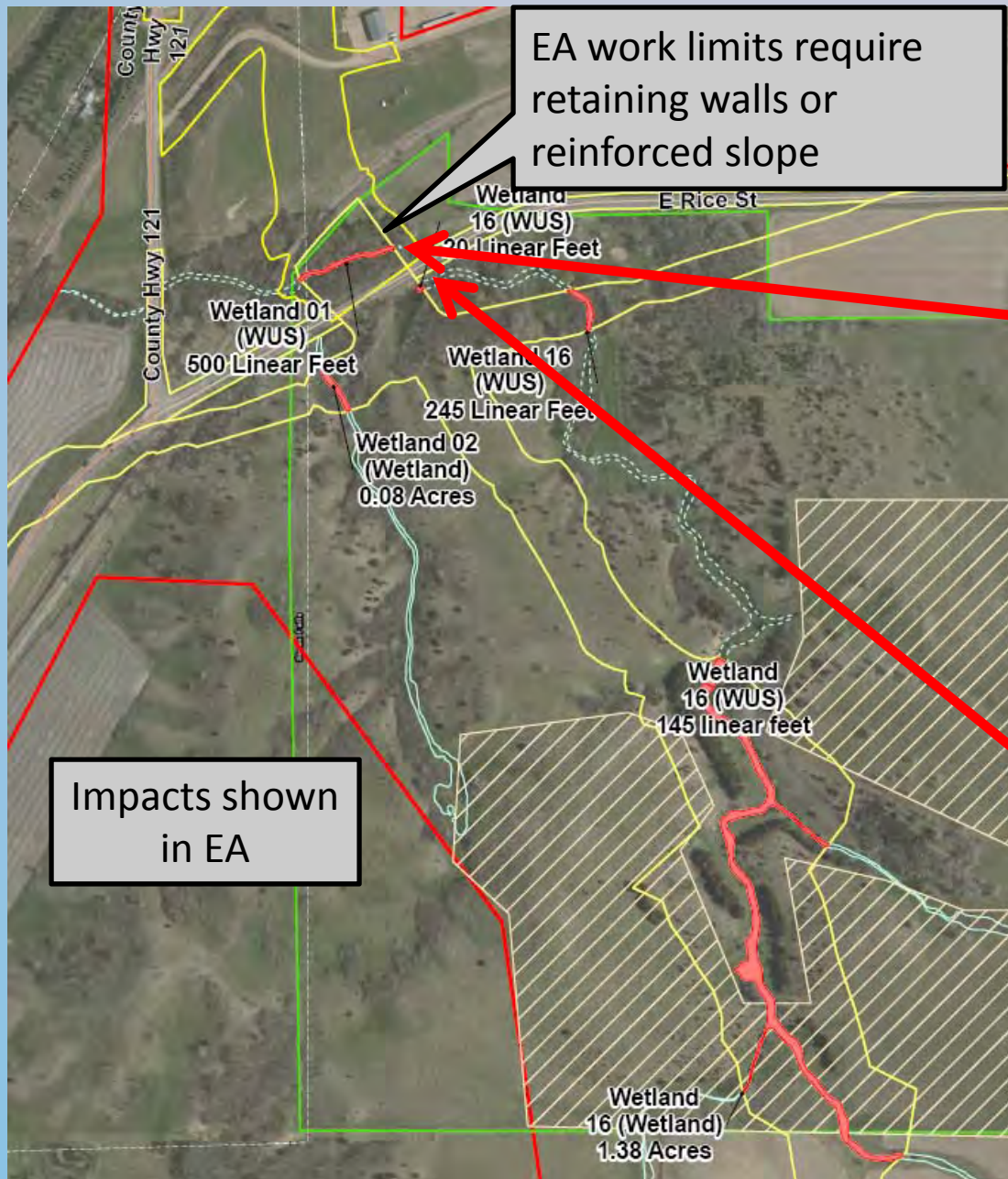
- Slide 13 from PDI meeting showing EA work limits and stream impacts
- Slides 25 to 28 from FDI meeting showing elimination of retaining walls from EA/PDI design
- Figures 1 to 4 from drainage analyses showing culvert sizes and lengths

*FDI= Final Design Inspection*

*PDI= Preliminary Design Inspection*



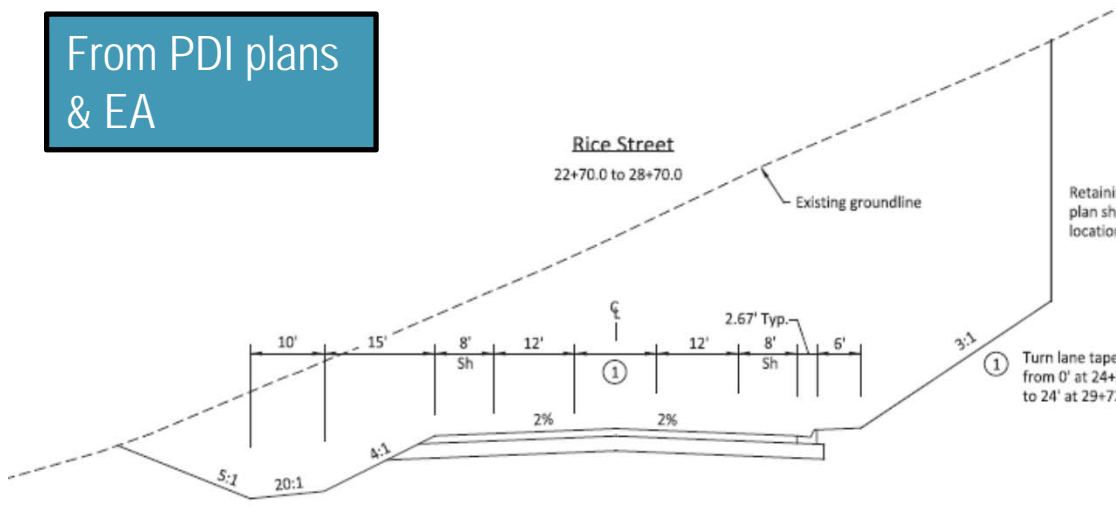
# Stream and Wetland Impacts



Stream flow

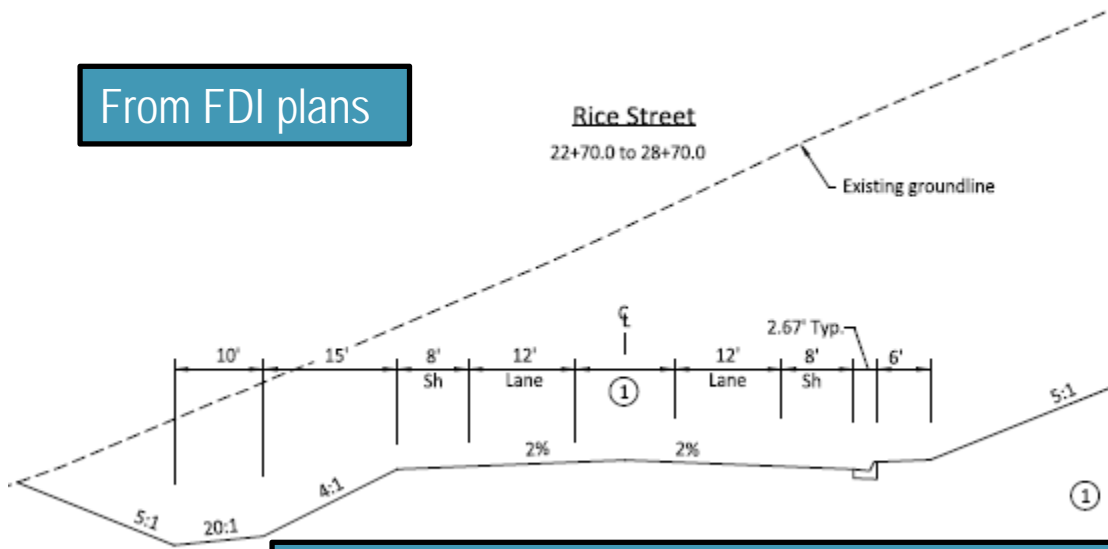


From PDI plans & EA

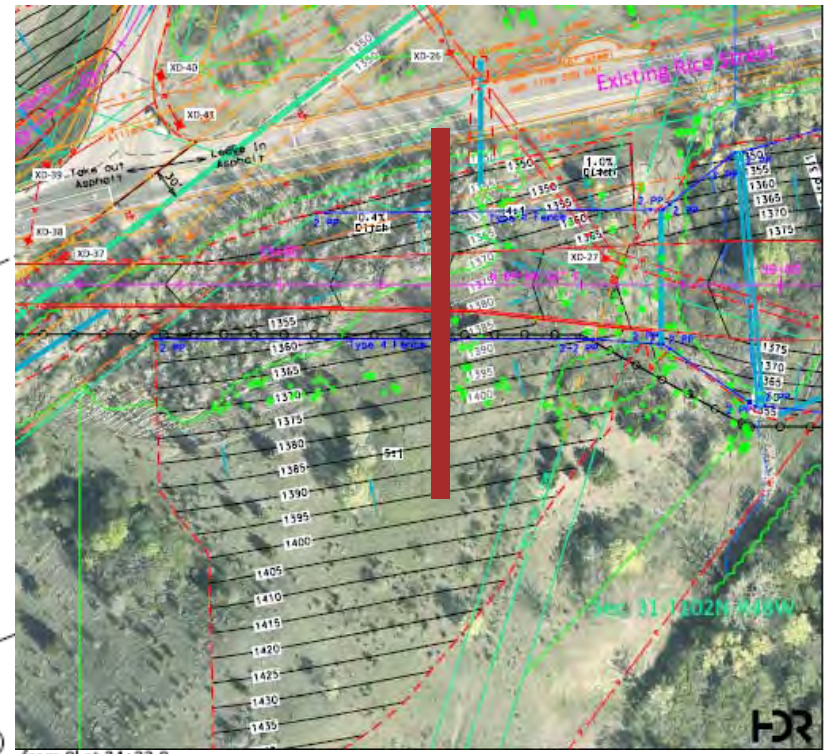


Wall not feasible per SDDOT

From FDI plans

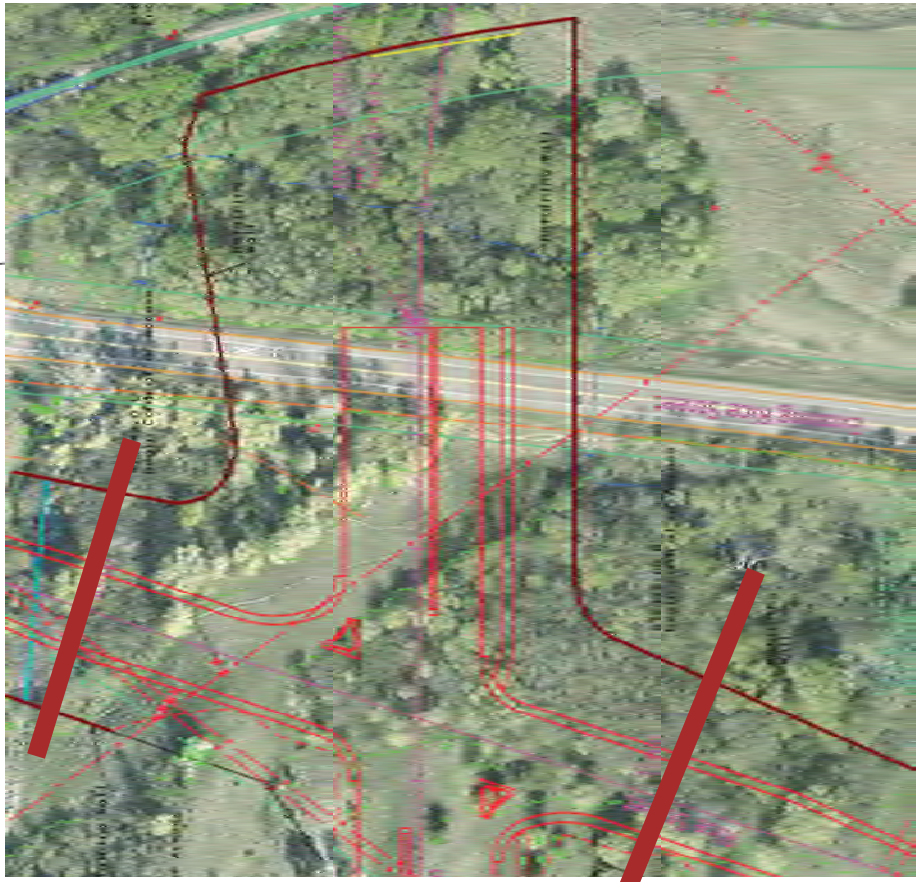
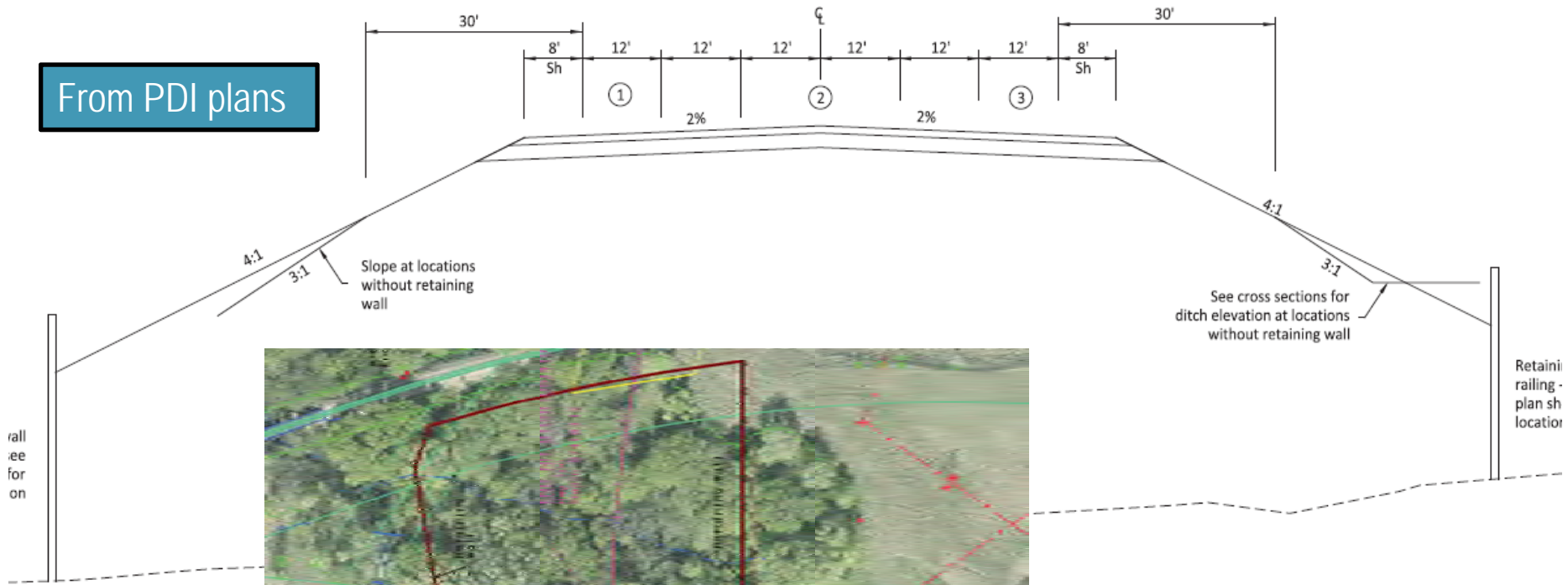


Elimination of retaining walls (PDI direction)



## 6. Design Issues Rice Street

From PDI plans



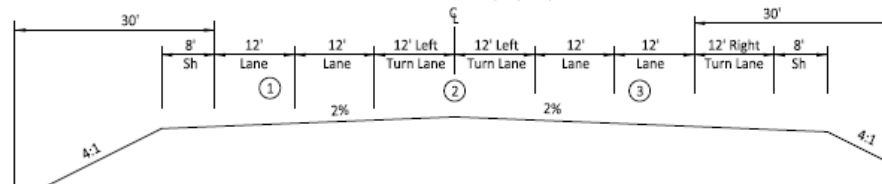
Elimination of retaining walls (PDI direction)

## 6. Design Issues Rice Street

From FDI plans

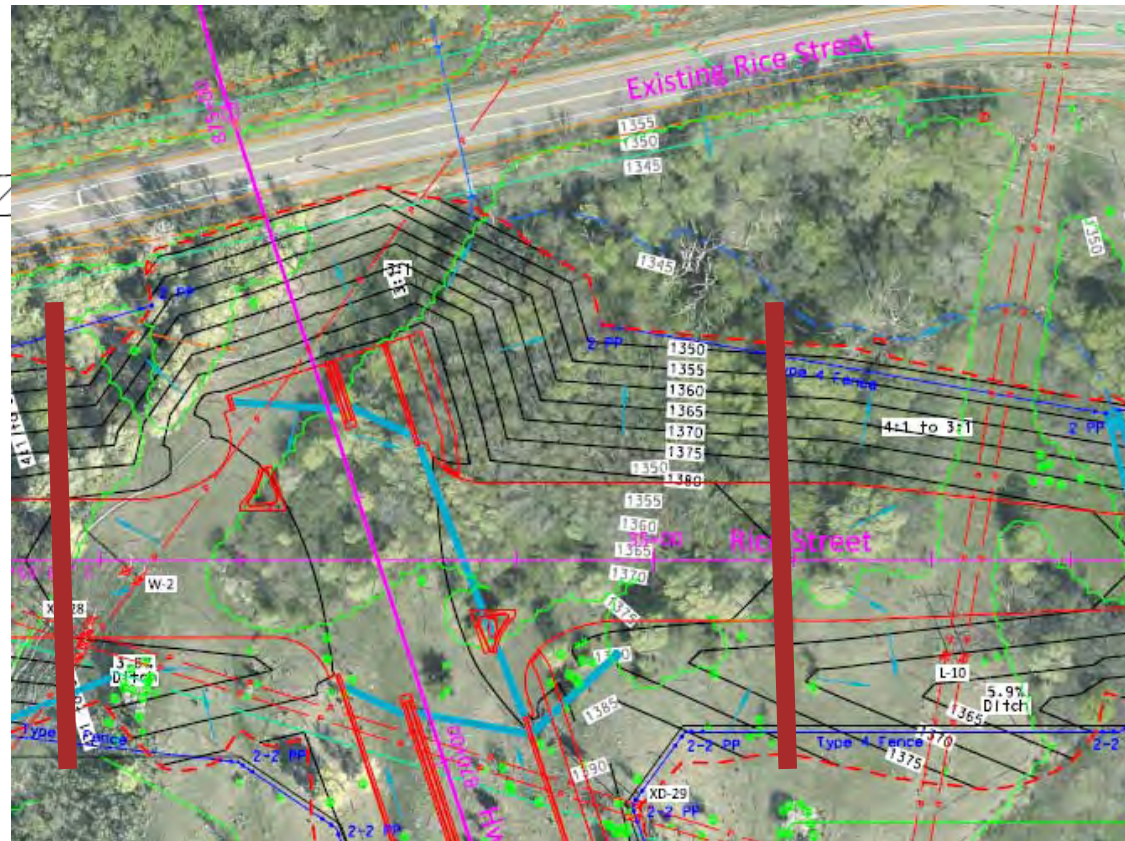
### Rice Street

28+70.0 to 33+00.0 (Hwy 100)



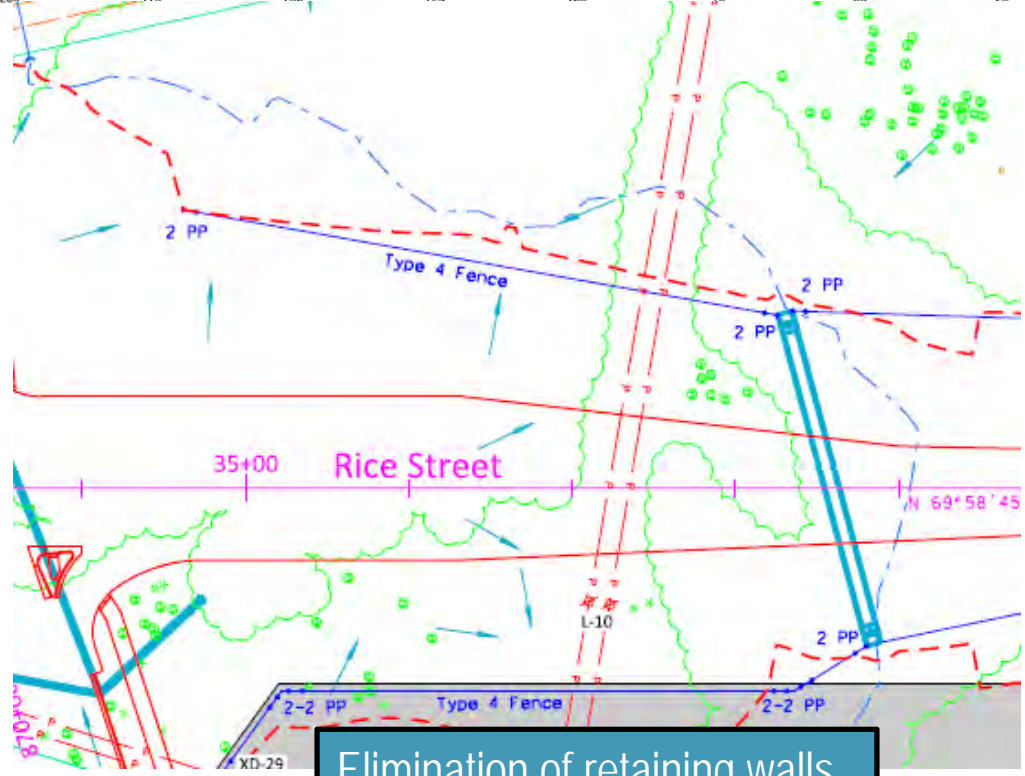
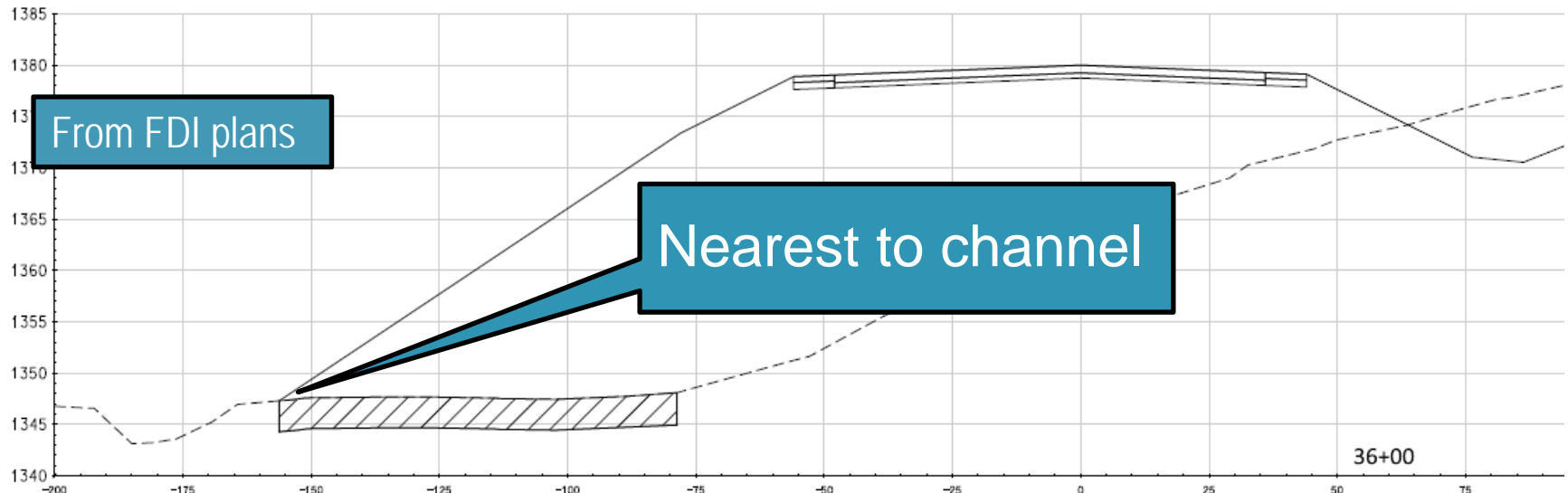
- ① Lane tapers from 0' at 24+23.0 to 12' at 29+72.2
- ② Turn lane tapers from 0' at 24+23.0 to 24' at 29+72.2
- ③ Turn lane tapers from 0' at 28+54.2 to 12' at 29+72.2

Unstable excavation  
(3' assumed for quantities)  
29+50+/- to 31+00+/- Lt

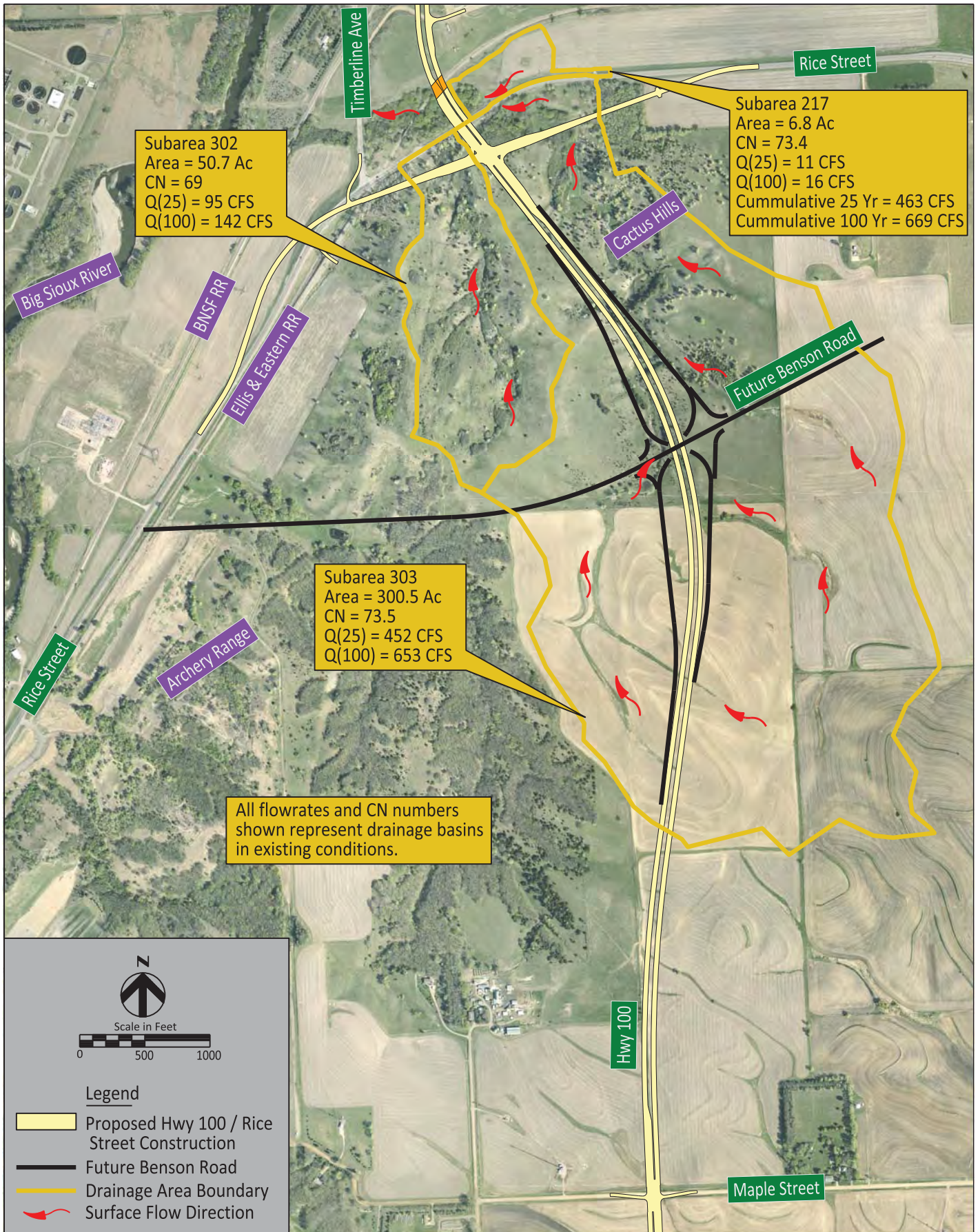


Elimination of retaining walls

## 6. Design Issues Rice Street



**6. Design Issues  
Rice Street**



Date of Aerial  
 Photography: 2012

Drawn By: BRM  
 Date: 10/21/14  
 Checked By: JHU  
 Date: 10/21/14  
 Revision:



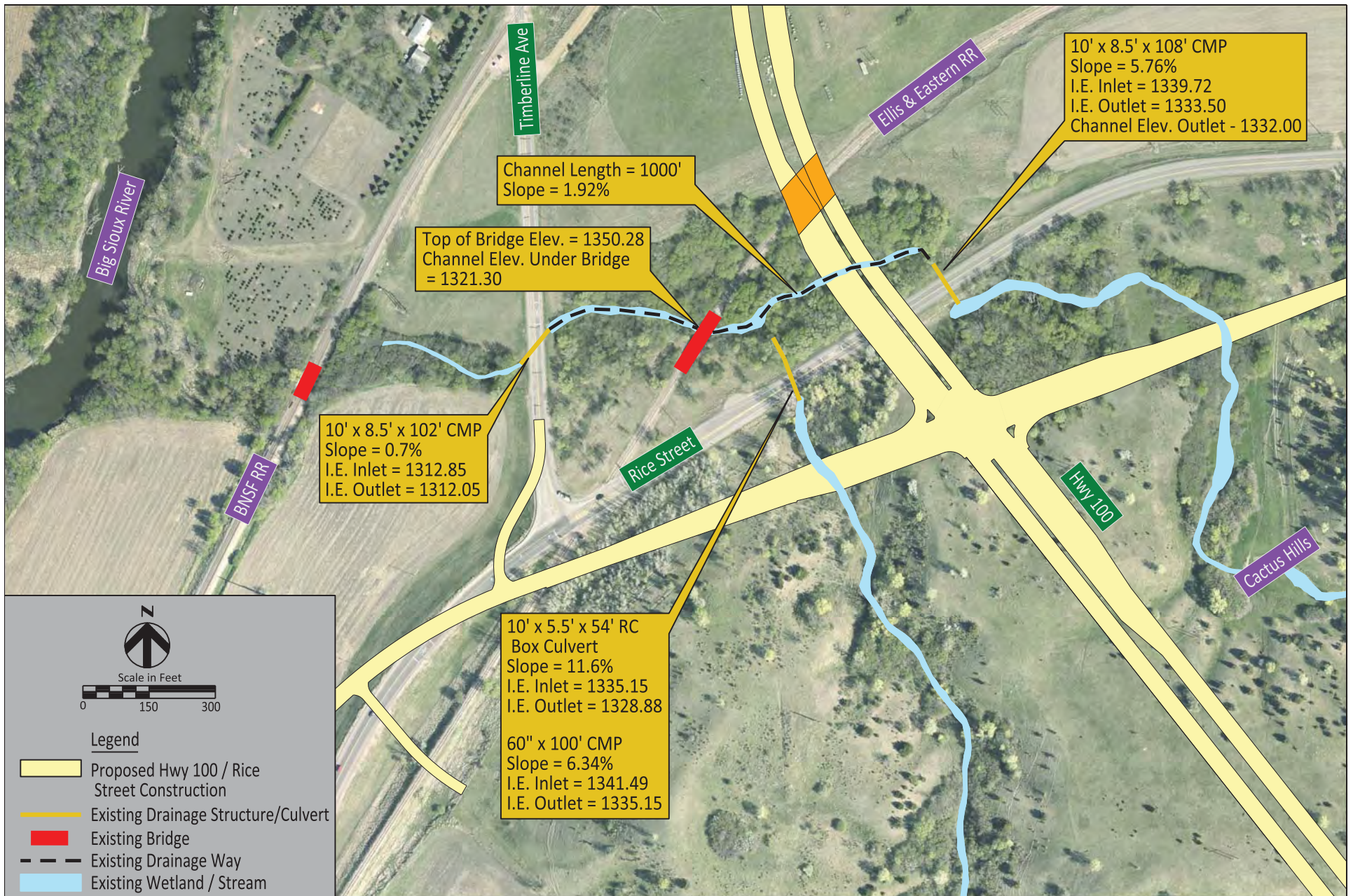
## Drainage Analyses Drainage Areas

Hwy 100 from Maple Street to Ellis & Eastern Railroad

Sioux Falls, SD

Figure

1



Date of Aerial  
Photography: 2012

Drawn By: BRM  
Date: 10/21/14  
Checked By: JHU  
Date: 10/21/14  
Revision:



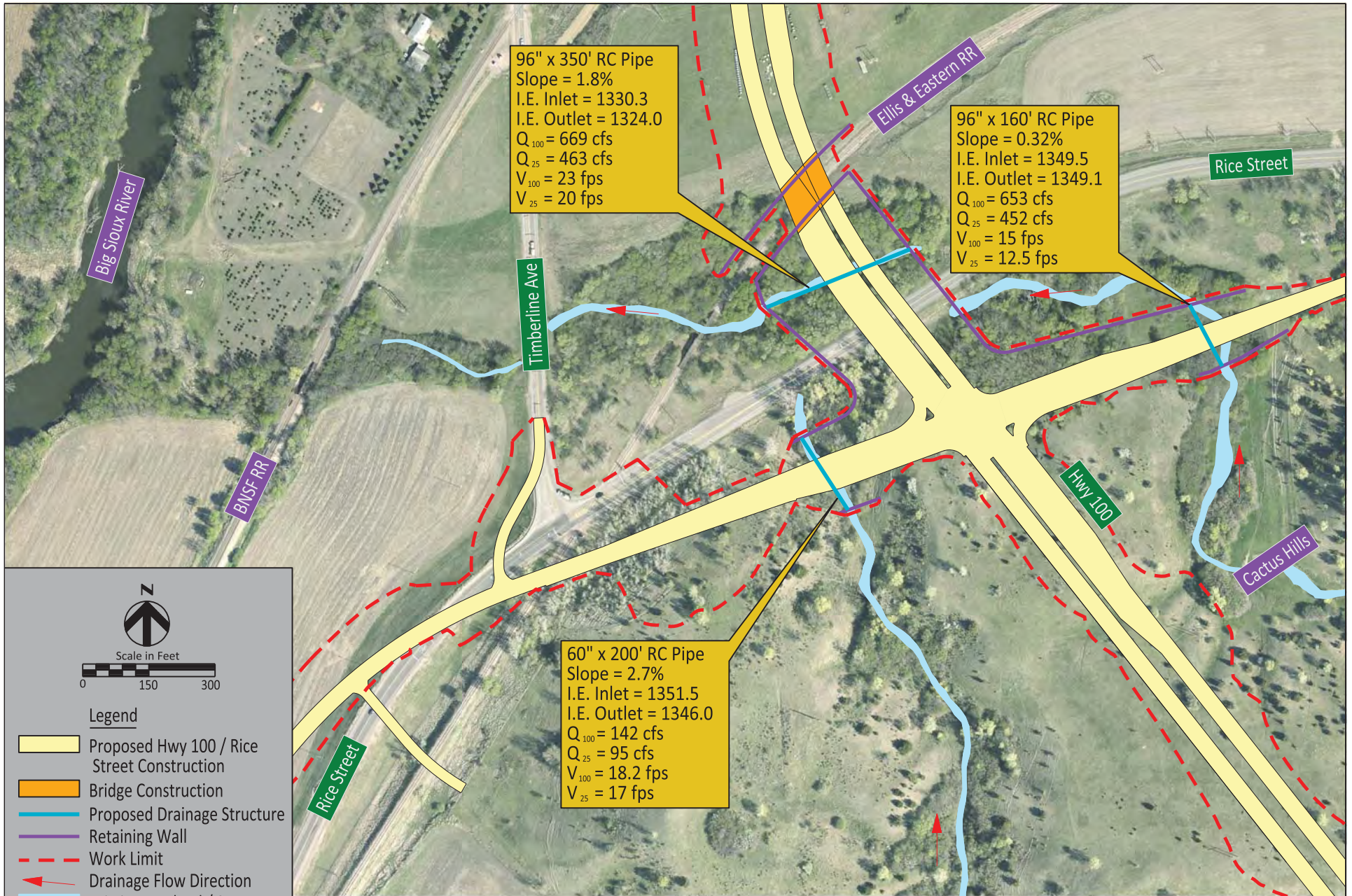
## Drainage Analyses Existing Drainage Features

Hwy 100 from Maple Street to Ellis & Eastern Railroad

Sioux Falls, SD

Figure

2



Date of Aerial  
 Photography: 2012

Drawn By: BRM  
 Date: 10/21/14  
 Checked By: JHU  
 Date: 10/21/14  
 Revision:



**Drainage Analyses**  
**Proposed Drainage Structures with EA Work Limit**

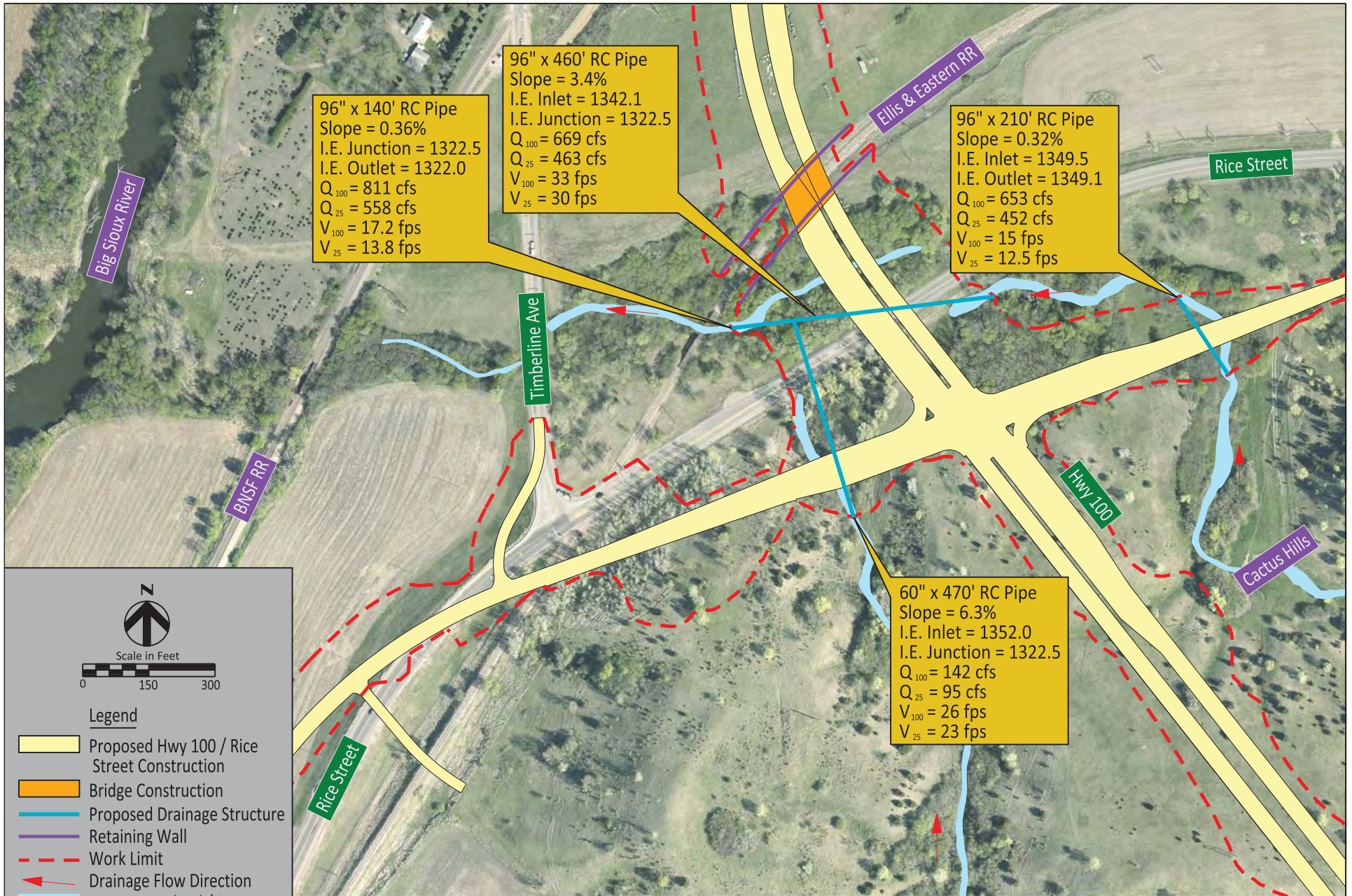
Hwy 100 from Maple Street to Ellis & Eastern Railroad

Sioux Falls, SD

Figure

**3**














96" x 140' RC Pipe  
 Slope = 0.36%  
 I.E. Junction = 1322.5  
 I.E. Outlet = 1322.0  
 $Q_{100} = 811$  cfs  
 $Q_{25} = 558$  cfs  
 $V_{100} = 17.2$  fps  
 $V_{25} = 13.8$  fps

96" x 460' RC Pipe  
 Slope = 3.4%  
 I.E. Inlet = 1342.1  
 I.E. Junction = 1322.5  
 $Q_{100} = 669$  cfs  
 $Q_{25} = 463$  cfs  
 $V_{100} = 33$  fps  
 $V_{25} = 30$  fps

96" x 210' RC Pipe  
 Slope = 0.32%  
 I.E. Inlet = 1349.5  
 I.E. Outlet = 1349.1  
 $Q_{100} = 653$  cfs  
 $Q_{25} = 452$  cfs  
 $V_{100} = 15$  fps  
 $V_{25} = 12.5$  fps

60" x 470' RC Pipe  
 Slope = 6.3%  
 I.E. Inlet = 1352.0  
 I.E. Junction = 1322.5  
 $Q_{100} = 142$  cfs  
 $Q_{25} = 95$  cfs  
 $V_{100} = 26$  fps  
 $V_{25} = 23$  fps

  
 Scale in Feet  
  
**Legend**  
 Proposed Hwy 100 / Rice Street Construction  
 Bridge Construction  
 Proposed Drainage Structure  
 Retaining Wall  
 Work Limit  
 Drainage Flow Direction  
 Existing Wetland / Stream

Date of Aerial  
 Photography: 2012

Drawn By: BRM  
 Date: 10/21/14  
 Checked By: JHU  
 Date: 10/21/14  
 Revision:



Drainage Analyses  
 Proposed Drainage Structures with Fill Slopes

Hwy 100 from Maple Street to Ellis & Eastern Railroad

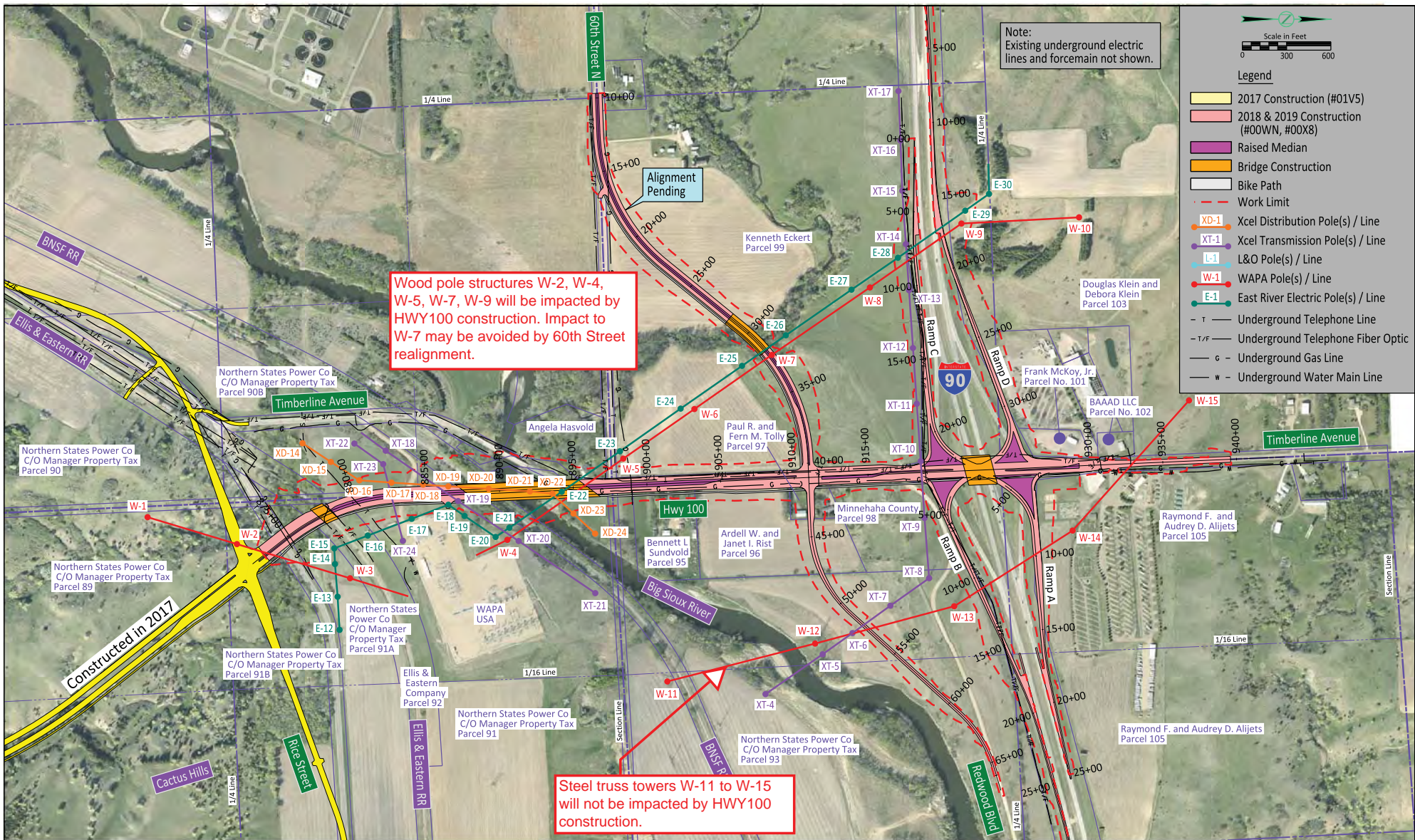
Sioux Falls, SD

Figure

4

## ***Appendix 4 – Western power pole relocations***

- Figure 3 of Power Pole Impacts Summary



Note:  
Existing underground electric lines and forcemain not shown.



Legend

- 2017 Construction (#01V5)
- 2018 & 2019 Construction (#00WN, #00X8)
- Raised Median
- Bridge Construction
- Bike Path
- Work Limit
- XD-1 Xcel Distribution Pole(s) / Line
- XT-1 Xcel Transmission Pole(s) / Line
- L-1 L&O Pole(s) / Line
- W-1 WAPA Pole(s) / Line
- E-1 East River Electric Pole(s) / Line
- T - Underground Telephone Line
- T/F - Underground Telephone Fiber Optic
- G - Underground Gas Line
- W - Underground Water Main Line

Wood pole structures W-2, W-4, W-5, W-7, W-9 will be impacted by HWY100 construction. Impact to W-7 may be avoided by 60th Street realignment.

Steel truss towers W-11 to W-15 will not be impacted by HWY100 construction.

Date of Aerial Photography: 2012

Drawn By: B.Miller  
Date: 4/21/15  
Checked By: J.U. Unruh  
Date: 4/21/15  
Revision:

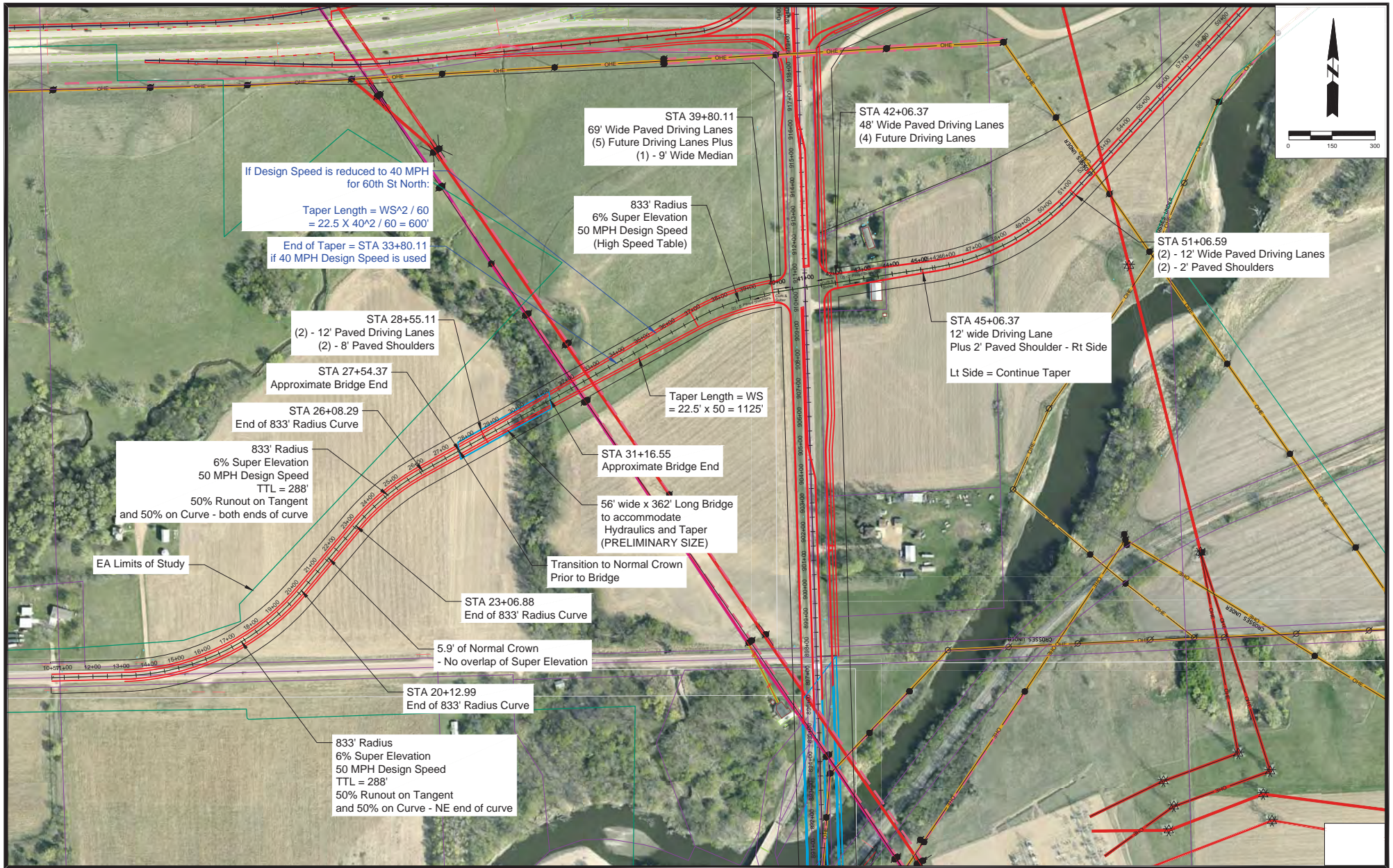


Power Pole Impacts Summary  
(Project #00WN & 00X8)  
Highway 100 from Rice Street to I-90

Sioux Falls, SD

## ***Appendix 5 – 60<sup>th</sup> Street and Redwood Boulevard Realignment***

- Graphic showing current 60<sup>th</sup> Street and Redwood Boulevard alignment



If Design Speed is reduced to 40 MPH for 60th St North:  
 $Taper\ Length = WS^2 / 60 = 22.5 \times 40^2 / 60 = 600'$   
 End of Taper = STA 33+80.11 if 40 MPH Design Speed is used

STA 39+80.11  
 69' Wide Paved Driving Lanes  
 (5) Future Driving Lanes Plus  
 (1) - 9' Wide Median

STA 42+06.37  
 48' Wide Paved Driving Lanes  
 (4) Future Driving Lanes

STA 51+06.59  
 (2) - 12' Wide Paved Driving Lanes  
 (2) - 2' Paved Shoulders

STA 28+55.11  
 (2) - 12' Paved Driving Lanes  
 (2) - 8' Paved Shoulders

STA 27+54.37  
 Approximate Bridge End

STA 26+08.29  
 End of 833' Radius Curve

833' Radius  
 6% Super Elevation  
 50 MPH Design Speed  
 TTL = 288'  
 50% Runout on Tangent  
 and 50% on Curve - both ends of curve

Taper Length =  $WS = 22.5' \times 50 = 1125'$

STA 31+16.55  
 Approximate Bridge End

56' wide x 362' Long Bridge  
 to accommodate  
 Hydraulics and Taper  
 (PRELIMINARY SIZE)

STA 45+06.37  
 12' wide Driving Lane  
 Plus 2' Paved Shoulder - Rt Side  
 Lt Side = Continue Taper

EA Limits of Study

Transition to Normal Crown  
 Prior to Bridge

STA 23+06.88  
 End of 833' Radius Curve

5.9' of Normal Crown  
 - No overlap of Super Elevation

STA 20+12.99  
 End of 833' Radius Curve

833' Radius  
 6% Super Elevation  
 50 MPH Design Speed  
 TTL = 288'  
 50% Runout on Tangent  
 and 50% on Curve - NE end of curve





I-90

EA Alignment

Revised Alignment

Hwy 100

60th St N

10+00

10+00

15+00

15+00

20+00

20+00

25+00

25+00

30+00

30+00

35+00

35+00

40+00

40+00

45+00

50+00

55+00

60+00

## ***Appendix 6 – Agency Coordination***

- SHPO Coordination
- USFWS Coordination
- Western's Review of Reevaluation



**Department of Transportation**  
**Office of Project Development**  
**Environmental Office**  
700 E Broadway Avenue  
Pierre, South Dakota 57501-2586  
605/773-3268 Fax: 605/773-6608

June 13, 2016

Amy Rubingh, Review & Compliance Archaeologist  
State Historic Preservation Office  
Cultural Heritage Center  
900 Governors Drive  
Pierre, SD 57501-2217

**RE: SD100 – SHPO Project #131022001F**

Dear Ms. Rubingh:

**Project Information**

**Project No:** IM 0909(75)402, PCN 00WN (I-90 Interchange)  
NH 0100(104), PCN 00X8 (I-90 to Rice)  
NH 0100(105), PCN 01V5 (Maple to Rice)  
NH 0100(103), PCN 00KB (Madison to Maple)

**County:** Minnehaha County

**Project Location:** From I-90/Timberline Avenue Interchange to south of Madison Street

**Description:** East Side Corridor

The purpose of this letter is to coordinate additional Study Areas for the Reevaluation of the Environmental Assessment (EA) and FONSI being completed for the Northern Segment of Hwy 100 (I-90 to Madison Street) (the Project) and to update the conditions for the effect determination for the eligible structure at 5100 N. Timberline Avenue. Coordination has occurred with your office throughout the Project. This letter is to request SHPO concurrence of an effect determination for the Project that incorporates the results of the previous survey conducted within the additional Study Areas and the updated conditions for 5100 N. Timberline Avenue.

**Additional Study Area**

The additional Study Areas include two areas: one 15-acre area in Section 6, T101N, R48W, and a second 11-acre area in Section 31, T102N, R48W (see attached Figure 1). A background record search was conducted for the Project by the State Archaeological Research Center on 5/22/2013. The additional Study Areas fall within the survey area of a previous Level III cultural resources survey conducted in 1995 by Lueck and Winham. For additional information on this previous survey, see the attached report: *An Intensive Cultural Resources Survey of Projected Development Lands in the Sioux Falls Area - 1994 Lower Big Archaeological Sioux Region, Minnehaha County, South Dakota*. The previous survey did not identify any NRHP eligible cultural resources within the additional Study Areas. One



archaeological site (Site 39MH0162) was identified within one additional Study Area and is not eligible. Site 39MH0162 is described as a prehistoric artifact scatter. No other cultural resources were identified within the additional Study Areas.

### **5100 N. Timberline Avenue**

The previous coordination with your office included the following conditions for 5100 N. Timberline Avenue:

- 1) No building or structure will be demolished, relocated, or modified due to this Project.
- 2) This residence will continue to have direct access to N. Timberline Avenue.
- 3) SDDOT will work with the property owner to plant trees and/or other landscaping to provide a buffer of the house to the road.

Due to the Project changes described below, we propose to remove conditions 2 and 3 and update the conditions to the following:

- 1) No building or structure will be demolished, relocated, or modified due to this Project.

The residence at 5100 N. Timberline Avenue will be acquired by the SDDOT for the Project; therefore, access to N. Timberline Avenue and a landscape buffer will no longer be needed. This was updated after a comment received from Bennett Sundvold on November 6, 2014 (see attached). As noted in a previous report prepared for the Project, the house is significant for its architectural and historical associations, and even with the proposed road widening, it would retain its integrity of location, design, materials, workmanship, feeling, setting, and association<sup>1</sup>.

Based on the effects to the eligible sites previously coordinated, and no adverse impacts to eligible sites, a determination of *No Adverse Effect* is recommended for this Project. This recommendation is due to the Project's effects not meeting the criteria for an adverse effect (36 CRF 800.5) or the Project has conditions imposed to avoid adverse effects. The SDDOT requests SHPO concurrence of a Section 106 determination of *No Adverse Effect* for this Project.

Sincerely,



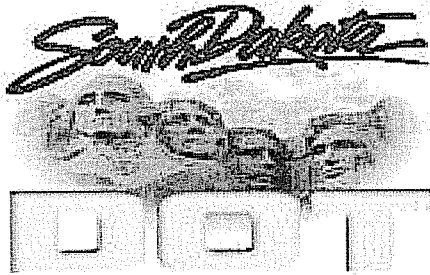
Tom Lehmkuhl  
Environmental Supervisor  
605.773.3721

### Attachments

- (1) Figure 1. Additional Study Areas
- (2) *An Intensive Cultural Resources Survey of Projected Development Lands in the Sioux Falls Area - 1994 Lower Big Archaeological Sioux Region, Minnehaha County, South Dakota* [on cd]
- (3) Bennett Sundvold comment card received on November 6, 2014.

---

<sup>1</sup>HDR, 2013. An Addendum Report to: A Level III Cultural Resources Evaluation of the Proposed South Dakota Department of Transportation Eastside Highway Corridor (SD100) Realignment Project Alterations, Sioux Falls, Minnehaha and Lincoln Counties, South Dakota: Addendum No. 3 (Project No. EM-P 0100(101)405, PCN 00T7).



## PUBLIC COMMENTS

Project Northern Segment of Hwy 100  
County Minnehaha County  
Location South of Madison Street to I-90

- ① at this address: I will be left with 60' of space from my front porch. So: take 115' on west side + 85 on East side, for ROW. Vice opposite.
- ② Open the Highway so I will have Right + Left Egress to Road.
- ③ also, I will be left here as the only Residence as an island in a sea of Highways + Intersections. This will cause a tremendous loss of value to my property. therefore I ~~wish~~ will sell you the property at an agreed to Amount & you can take the loss of value.  
Please advise on who to contact to let my concerns be known.

Name: Bennett Z. Sundvold Date: 11-6-14  
Address: 5100 N. Timberline Ave  
Sioux Falls SD 57104

Written testimony will be included in the meeting record. Please submit comments by Nov. 6, 2014

Send to: Steve Hoff, HDR, Inc.  
E-Mail Address: [Steve.hoff@hdrinc.com](mailto:Steve.hoff@hdrinc.com)  
6300 South Old Village Place, Suite 100  
Sioux Falls, SD 57108



July 13, 2016

Mr. Tom Lehmkuhl  
Department Of Transportation  
Office of Project Development-Environmental  
700 E Broadway Avenue  
Pierre SD 57501-2586

**SECTION 106 PROJECT CONSULTATION – EVALUATION/EFFECT**

Project: 071009009F – SD 100 in Sioux Falls – East Side Corridor

Location: Multiple Counties  
(FHWA/DOT)

Dear Mr. Lehmkuhl:

Thank you for the opportunity to comment on the above referenced project pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended). The South Dakota Office of the State Historic Preservation Officer (SHPO) concurs with your agency's determination regarding the effect of the proposed undertaking on the non-renewable cultural resources of South Dakota.

On June 16, 2016, the SHPO received your correspondence regarding the changes to structure number MH03000001 the eligible property at 5100 N. Timberline Ave, Brandon. Based upon your correspondence and the additional information, the SHPO maintains concurrence with the original determination of No Adverse Effect. Activities occurring in areas not identified in your request will require the submission of additional documentation pursuant to 36 CFR part 800.4.

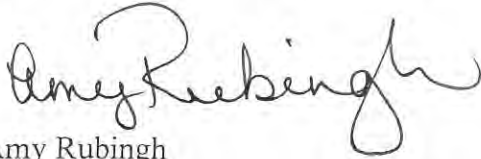
If historic properties are discovered or unanticipated effects on historic properties are found after the agency official has completed the Section 106 process, the agency official shall avoid, minimize or mitigate the adverse effects to such properties and notify the SHPO/ THPO and Indian tribes that might attach religious and cultural significance to the affected property within 48 hours of the discovery, pursuant to 36 CFR part 800.13.

Concurrence of the SHPO does not relieve the federal agency official from consulting with other appropriate parties, as described in 36 CFR part 800.2(c).

Should you require additional information, please contact Amy Rubingh at (605) 773-8370. Your concern for the non-renewable cultural heritage of our state is appreciated.

Sincerely,

Jay D. Vogt  
State Historic Preservation Officer

A handwritten signature in cursive script that reads "Amy Rubingh". The signature is written in black ink and is positioned above the printed name and title.

Amy Rubingh  
Review and Compliance Archaeologist

Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA)

Range-wide Programmatic Consultation for  
Indiana Bat and Northern Long-eared Bat

**Project Submittal Form**

*Updated May 2016*

In order to use the range-wide programmatic consultation to fulfill Endangered Species Act consultation requirements, transportation agencies must use this submittal form (or a comparable Service approved form) to provide project-level information for all actions that may affect the Indiana bat and/or northern long-eared bat (NLEB). The completed form should be submitted to the appropriate U.S. Fish and Wildlife Service (Service) Field Office prior to project commencement. For more information, see the Standard Operating Procedure for Site Specific Project(s) Submission in the User's Guide.

By submitting this form, the transportation agency ensures that the proposed project(s) adhere to the criteria and conditions of the range-wide programmatic consultation, as outlined in the biological assessment (BA) and biological opinion (BO). Upon submittal of this form, the appropriate Service Field Office may review the project-specific information provided and request additional information. For projects that may affect, but are not likely to adversely affect (NLAA) the Indiana bat and/or NLEB, if the applying transportation agency is **not** contacted by the Service with any questions or concerns within 14 calendar days of form submittal, it may proceed under the range-wide programmatic consultation and assume concurrence of the NLAA determination made by the Service in the BO. For projects that may affect, and are likely to adversely affect (LAA) the Indiana bat and/or the NLEB, the appropriate Service Field Office will respond (see recommended response letter template) within 30 calendar days of receiving a complete project-level submission, which includes, but may not be limited to this completed form.

Further instructions on completing the submittal form can be found by hovering your cursor over each text box.

---

1. Date: 8/9/2016

2. Lead agency: FHWA

*This refers to the Federal governmental lead action agency initiating consultation; select FHWA, FRA or FTA as appropriate*

3. Requesting agency: SDDOT

*This refers to the transportation agency completing the form (it may or may not be the same as the Lead Agency).*

- Name: Tom Lehmkuhl
  - Title: Environmental Supervisor
-

- Phone: 605-773-3721
- Email: Tom.Lehmkuhl@state.sd.us

4. Consultation code<sup>1</sup>: 06E14000-2016-SLI-0078

5. Project name(s): Hwy 100 (Northern Segment)

6. Project description:

*Please attach additional documentation or explanatory text if necessary*

The South Dakota Department of Transportation (SDDOT), in cooperation with the Federal Highway Administration (FHWA), proposes to construct a limited access highway connecting Interstate 29 (I-29) with I-90 east of the City of Sioux Falls, referred to as Hwy 100 . The Northern Segment of Hwy 100 is located from I-90 to south of Madison Street. Additional borrow areas are being analyzed and proposed design changes are being incorporated.

Design changes include:

- Speed limit of I-90 updated to 80 mph, increasing the Study Area to be analyzed;
- Access to one residence added to Study Area;
- Incorporate working limits of proposed wetland mitigation area;
- Eliminate retaining walls at Rice Street



7. Project location (county, state):

*If not delineated in IPaC, attach shape files*

8. For other species from IPaC official species list:

No effect – project(s) are inside the range, but no suitable habitat (see additional information attached).

- ✓ May affect – see additional information provided for those species (see attached or forthcoming).

**Please confirm and identify how the proposed project(s) adhere to the criteria of the BO by completing the following (see User Guide Section 2.0):**

---

<sup>1</sup> Available through IPaC System Official Species List: <https://ecos.fws.gov/ipac/>

## NO EFFECT

9. For Indiana bat/NLEB, if applicable, select your no effect determination:

No effect – project(s) are outside the species' range. *submittal form complete*

No effect – project(s) are inside the species range but no suitable forested bat habitat; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*

No effect – project(s) do not involve any construction activities (e.g., bridge assessments, property inspections, planning and technical studies, property sales, property easements, and equipment purchases). *submittal form complete*

No effect – project(s) are completely within existing road/rail surface and do not involve percussive or other activities that increase noise above existing traffic/background levels (e.g., road line painting). *submittal form complete*

No effect – project(s) includes maintenance, alteration, or demolition of bridge(s)/structure(s) and indicate(s) no signs of bats from results of a bridge/structure assessment. *submittal form complete*

*Otherwise, please continue below.*

## MAY AFFECT, NOT LIKELY TO ADVERSELY EFFECT – W/O AMMS

10. For Indiana bat/NLEB, if applicable, select your may affect, NLAA determination (without implementation of AMMs):

NLAA – project(s) are inside the range and suitable bat habitat is present, but **negative** bat presence/absence (P/A) surveys; must also be greater than 0.5 miles from any hibernaculum. *submittal form complete*

NLAA – project(s) within suitable bat habitat that involve maintenance of existing facilities (e.g., rest areas, stormwater detention basins) but do not remove or alter the habitat (e.g., mowing, brush removal). *submittal form complete*

NLAA – project(s) within 300 feet of existing road/rail surfaces in areas that contain suitable habitat but do not remove or alter the habitat (e.g., mowing, brush removal). *submittal form complete*

NLAA – project(s) limited to slash pile burning. *submittal form complete*

NLAA –project(s) are limited to wetland or stream protection activities associated with compensatory wetland mitigation that do not clear suitable habitat. *submittal form complete*

---

*Otherwise, please continue below.*

MAY EFFECT, NOT LIKELY TO ADVERSELY AFFECT – WITH AMMs

11. For Indiana bat/NLEB, if applicable, document your may affect, NLAA determination by completing the following section (**with implementation of AMMs**; use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum: ✓

Verify that the project is within 100 feet of existing road/rail surfaces:

Verify that no documented Indiana bat and/or NLEB roosts and/or surrounding summer habitat within 0.25 mile of documented roosts will be impacted:

Verify that all tree removal will occur outside the active season (i.e., will occur in winter)<sup>2</sup>: Tree clearing would occur October 1 to Apr 1

Acres of trees proposed for removal: 15

b. Bridge/Structure Work Projects

Proposed work: Removal of Timberline Bridge

Timing of work: No restrictions - bridge not habitat

Evidence of bat activity on/in bridge/structure? Y/N N

Verify that work will be conducted outside the active season, or if during the active season, verify that no roosting bats will be harmed or disturbed in any way: ✓

Verify that work will not alter roosting potential in any way: ✓

Verify that all applicable lighting minimization measures will be implemented:

c. Other (please explain)

Project is not within 300 feet of existing roadway. Bridge is not considered northern long-eared bat habitat, therefore removal of bridge is not anticipated to impact the species.

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<sup>2</sup> Coordinate with the local Service Field Office for appropriate dates.



MAY AFFECT, LIKELY TO ADVERSELY AFFECT

12. For Indiana bat/NLEB, if applicable, document your may affect, LAA determination by completing the following section (use #13 to document AMMs).

Affected Resource/Habitat Type:

a. Trees

Verify that all tree removal occurs greater than 0.5 mile from any hibernaculum:

Project Location:

0-100 feet from edge of existing road/rail surface

100-300 feet from edge of existing road/rail surface

Verify that no documented Indiana bat roosts or surrounding summer habitat within 0.25 mile of documented roosts will be impacted between May 1 and July 31:

Verify that no documented NLEB roosts or surrounding summer habitat within 150 feet of documented roosts will be impacted between June 1 and July 31:

Timing of tree removal:

Acres of trees proposed for removal:

b. Bridge/Structure Work Projects

Proposed work:

Timing of work:

Verify no signs of a colony:

Verify that work will not alter roosting potential in any way:

13. For Indiana bat/NLEB, **if applicable to the action type**, the following AMMs will be implemented<sup>3</sup> unless P/A surveys and/or bridge assessments document that the species are not likely to be present:

General AMM 1 (required for all projects):

---

<sup>3</sup> See AMMs Fact Sheet (Appendix C) for more information on AMMs

Tree Removal AMM 1:   
Tree Removal AMM 2 (required for NLAA):   
Tree Removal AMM 3 (required for all projects):   
Tree Removal AMM 4 (required for NLAA):   
Tree Removal AMM 5 (required for LAA):   
Tree Removal AMM 6 (required for LAA):

Tree Removal AMM 7 (required for LAA):

Bridge AMM 1:   
Bridge AMM 2 (required for all projects during active season):   
Bridge AMM 3 (required for NLAA during active season):   
Bridge AMM 4 (required for NLAA during active season):   
Bridge AMM 5 (required for all projects):

Structure AMM 1 (required for all Indiana bat projects, required for NLAA NLEB projects):   
Structure AMM 2 (required for all Indiana bat projects, required for NLAA NLEB projects):   
Structure AMM 3 (required for all Indiana bat projects, required for NLAA NLEB projects):   
Structure AMM 4 (required for all Indiana bat projects, required for NLAA NLEB projects):

Lighting AMM 1 (required for all projects during the active season):   
Lighting AMM 2 (required for all projects):

Hibernacula AMM 1 (required for all projects):

14. For Indiana bat, if applicable, compensatory mitigation measures will also be required to offset adverse effects on the species (see Section 2.10 of the BA). Please verify the mechanism in which compensatory mitigation will be implemented and that sufficient information is provided to the Service.

Range-wide In Lieu Fee Program, The Conservation Fund

State, Regional, Recovery Unit-Specific In Lieu Fee Program  
Name:

Conservation Bank,  
Name:  
Location:

Local Conservation Site(s)  
Name:  
Location:  
Description:

---

## **Brisbois, Jessica**

---

**From:** Lehmkuhl, Tom <Tom.Lehmkuhl@state.sd.us>  
**Sent:** Monday, August 15, 2016 10:34 AM  
**To:** Rust, Jill  
**Cc:** Brisbois, Jessica  
**Subject:** FW: Hwy 100 (Veteran's Parkway) - USFWS NLEB Coordination

FYI that Terry has received the inspection reports.

### **Tom Lehmkuhl**

Environmental Supervisor  
SDDOT – Environmental Office  
Ph: (605) 773-3721  
Cell: (605) 295-1150

**From:** Quesinberry, Terry [[mailto:terry\\_quesinberry@fws.gov](mailto:terry_quesinberry@fws.gov)]  
**Sent:** Friday, August 12, 2016 3:16 PM  
**To:** Lehmkuhl, Tom  
**Subject:** Re: Hwy 100 (Veteran's Parkway) - USFWS NLEB Coordination

Thanks.

Terry Quesinberry

Fish and Wildlife Biologist  
US Fish and Wildlife Service  
South Dakota Ecological Services Office  
Pierre, SD  
Phone: (605) 224-8693, x234  
FAX: (605) 224-9974

On Fri, Aug 12, 2016 at 3:08 PM, Lehmkuhl, Tom <[Tom.Lehmkuhl@state.sd.us](mailto:Tom.Lehmkuhl@state.sd.us)> wrote:

Hi Terry,

Please reference the attached. Thank you.

### **Tom Lehmkuhl**

Environmental Supervisor  
SDDOT – Environmental Office

Ph: (605) 773-3721

Cell: (605) 295-1150

**From:** Quesinberry, Terry [mailto:[terry\\_quesinberry@fws.gov](mailto:terry_quesinberry@fws.gov)]  
**Sent:** Friday, August 12, 2016 10:59 AM  
**To:** Lehmkuhl, Tom  
**Cc:** Rust, Jill ([Jill.Rust@hdrinc.com](mailto:Jill.Rust@hdrinc.com)); Brisbois, Jessica  
**Subject:** Re: Hwy 100 (Veteran's Parkway) - USFWS NLEB Coordination

Hi Tom,

Everything looks good but could you provide me a copy of the NLEB bridge survey/inspection report for my records.

Thanks,

Terry Quesinberry

Fish and Wildlife Biologist

US Fish and Wildlife Service

South Dakota Ecological Services Office

Pierre, SD

Phone: (605) 224-8693, x234

FAX: (605) 224-9974

On Thu, Aug 11, 2016 at 11:05 AM, Lehmkuhl, Tom <[Tom.Lehmkuhl@state.sd.us](mailto:Tom.Lehmkuhl@state.sd.us)> wrote:

Terry –

Due to the changes in counties with white nose syndrome (WNS), SDDOT is re-coordinating on the northern long-eared bat for the Highway 100 Project. Our last coordination was a letter from us dated February 17, 2016 in which your office concurred with the determination of May Affect, No Likely to Adversely Affect. No Avoidance and Minimization Measure (AMMs) were included with that determination. With the expansion of WNS counties, we are now submitting the FHWA Programmatic Consultation form with a May Affect, Not Likely to Adversely Affect with AMMs. No other changes to the project study area or to project activities have occurred since our previous coordination.

Based on these considerations, SDDOT requests USFWS concurrence in a determination of May Affect, Not Likely to Adversely Affect the northern long-eared bat. Please advise if further project-level consultation is required. We realize the USFWS has 14 days to review this material, but if a response could be provided in the next few days, we would greatly appreciate it.

Thanks.

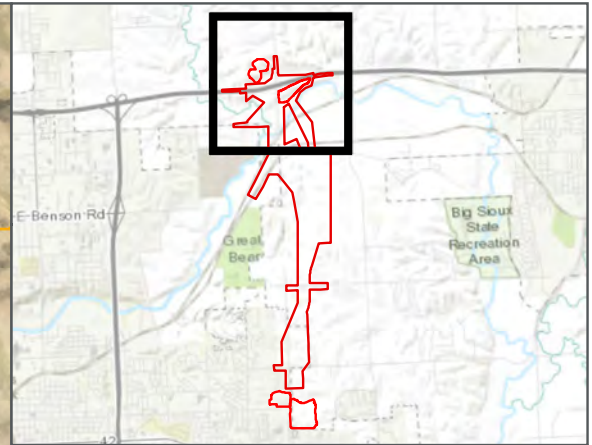
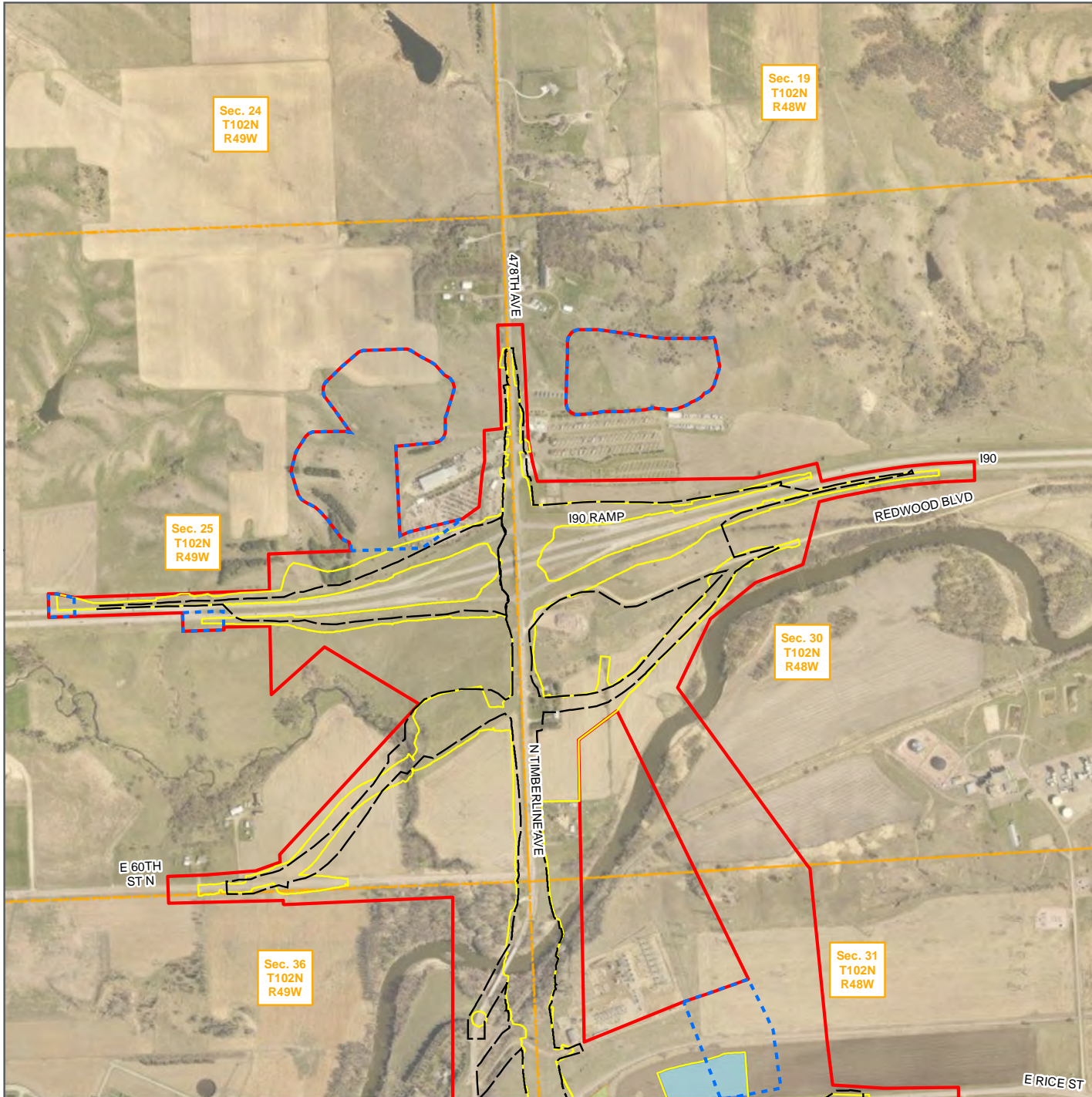
**Tom Lehmkuhl**

Environmental Supervisor

SDDOT – Environmental Office

Ph: (605) 773-3721

Cell: (605) 295-1150



**LEGEND**

- 2016 Preferred Alternative Study Area
- Study Areas added since 2014 EA and FONSI
- 2016 Preferred Alternative Working Limits
- 2014 EA Working Limits
- Conservation Easement for the Lined Snake
- Proposed Detention Pond
- Area referred to as Cactus Hills
- PLSS

**STUDY AREA**  
NORTHERN SEGMENT  
SD 100

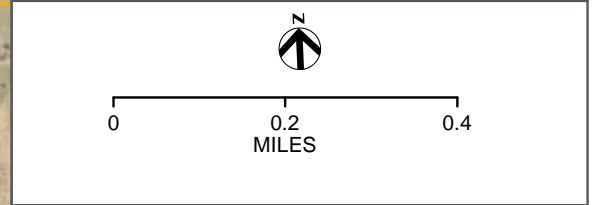
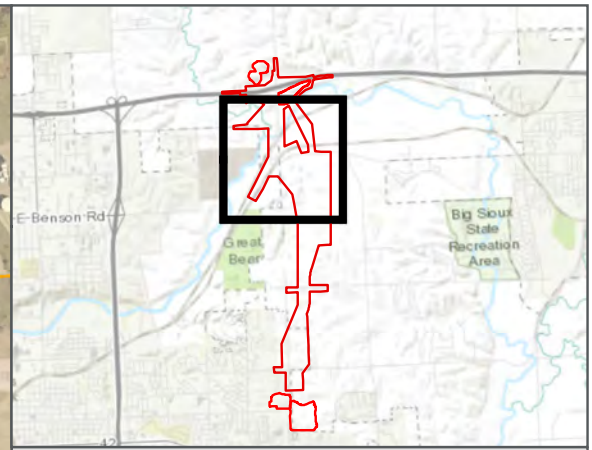
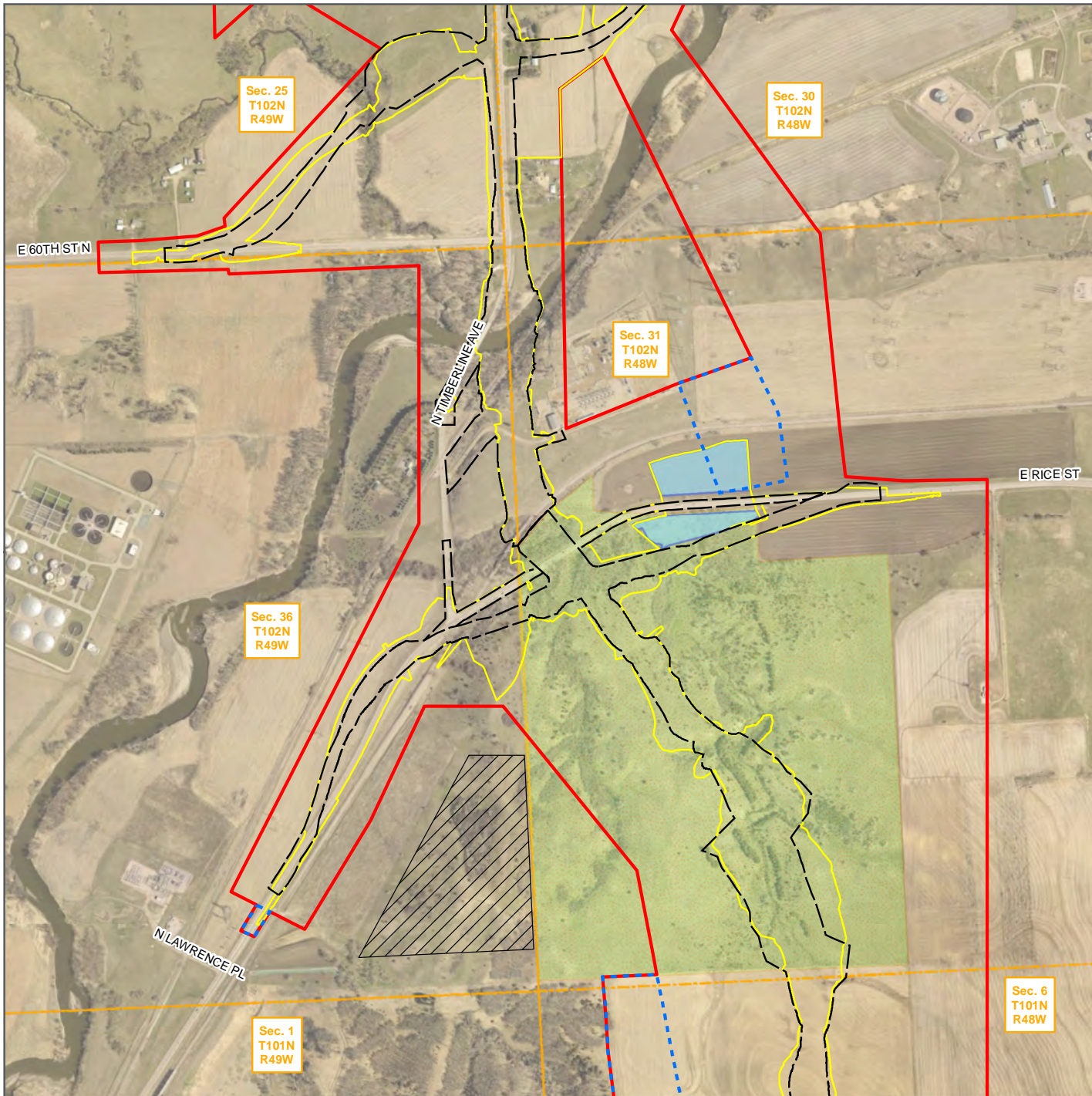


FIGURE 1-1



**LEGEND**

- 2016 Preferred Alternative Study Area
- Study Areas added since 2014 EA and FONSI
- 2016 Preferred Alternative Working Limits
- 2014 EA Working Limits
- Conservation Easement for the Lined Snake
- Proposed Detention Pond
- Area referred to as Cactus Hills
- PLSS

**STUDY AREA**  
NORTHERN SEGMENT  
SD 100

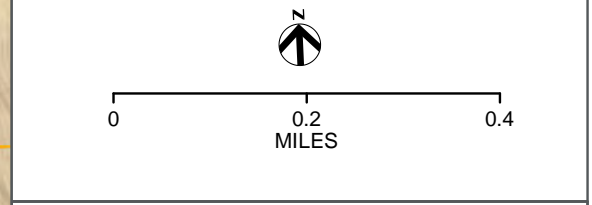
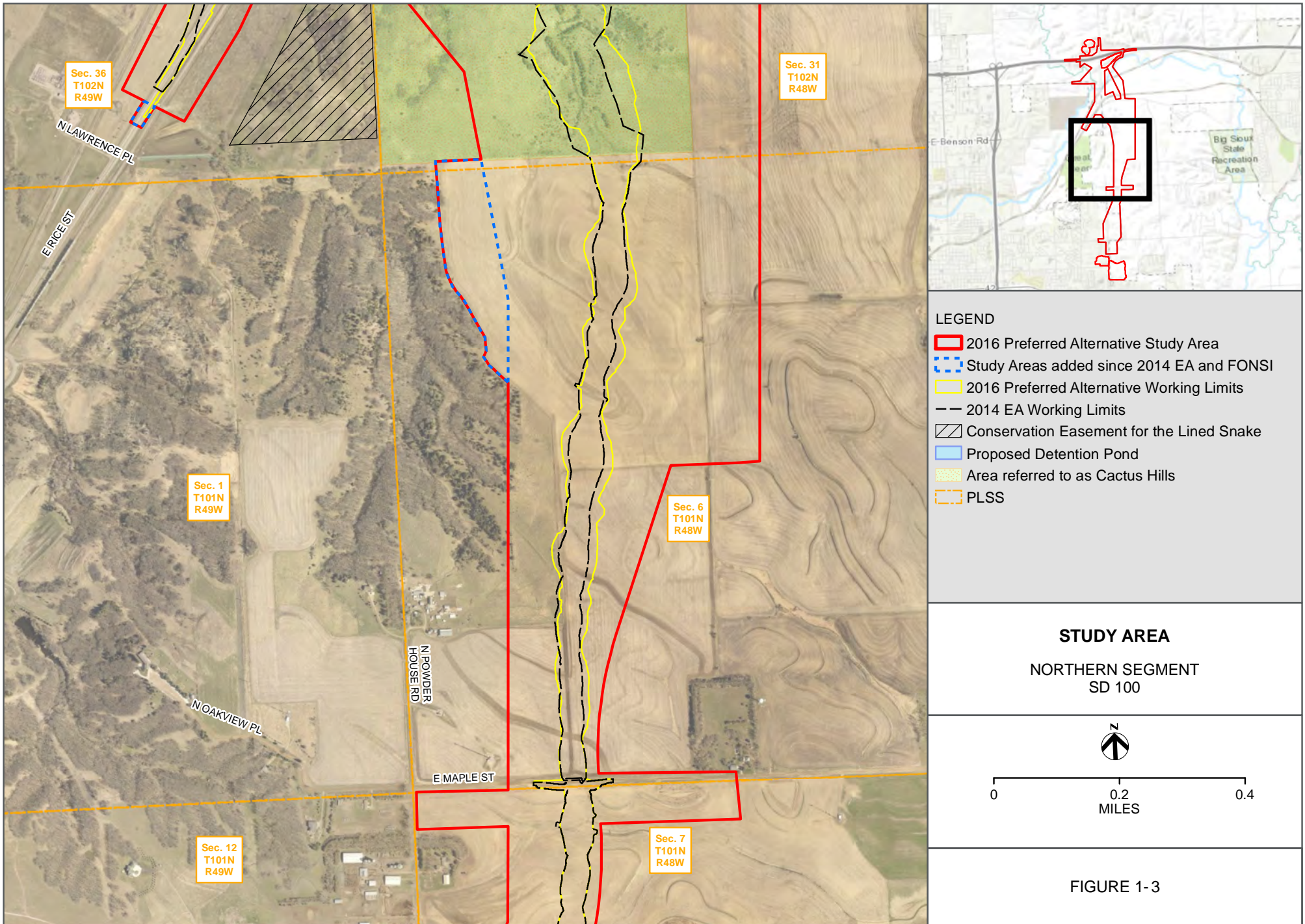
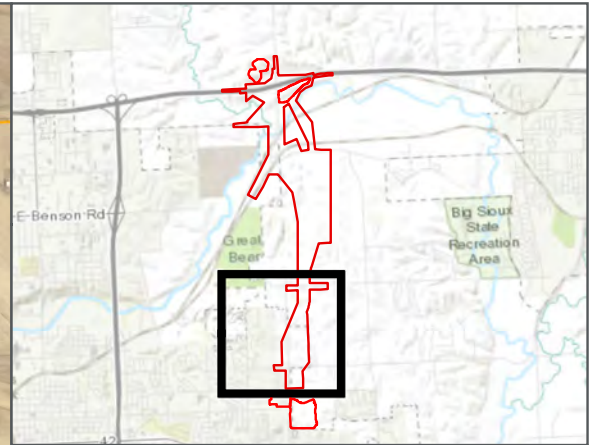
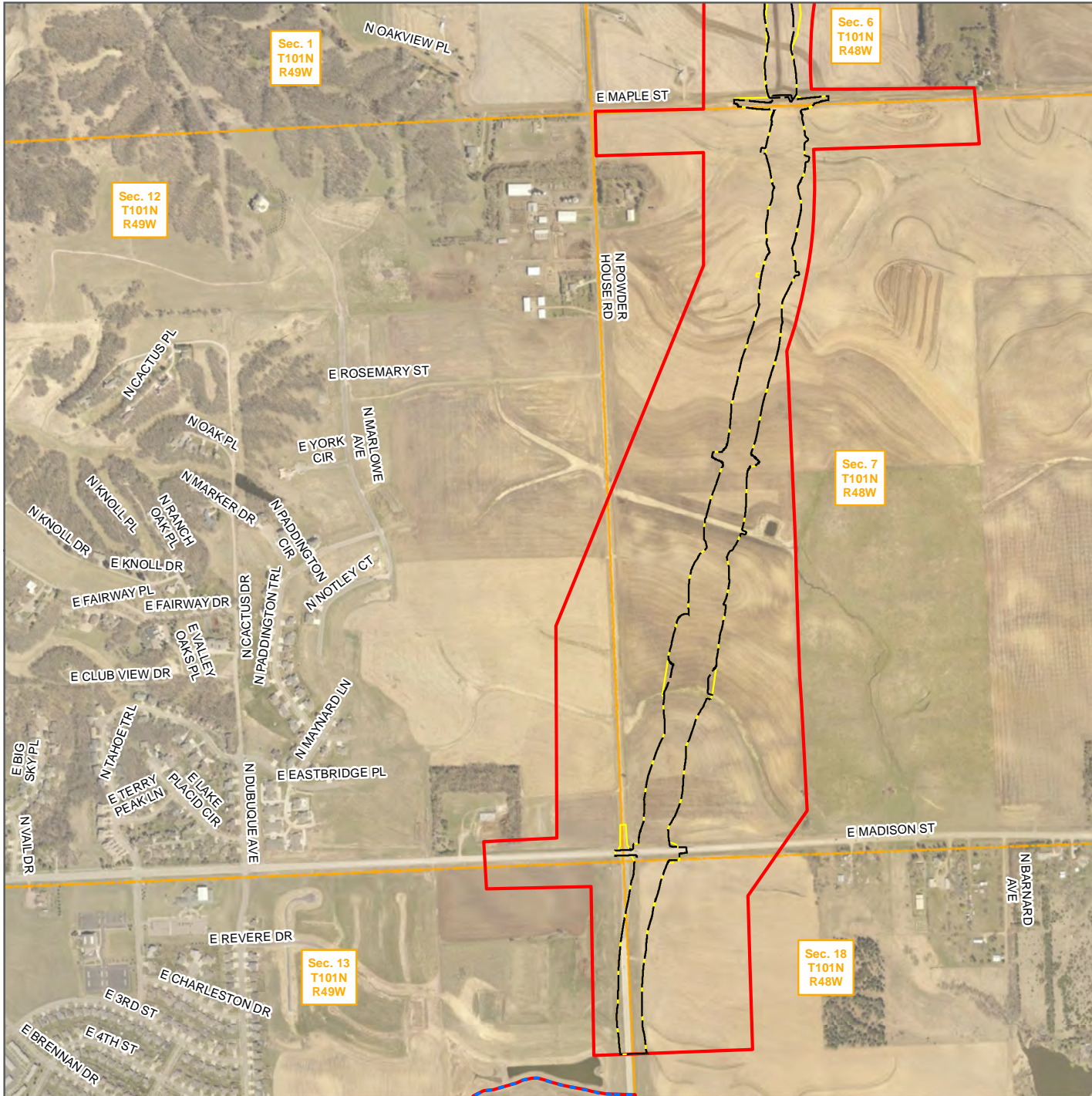


FIGURE 1-2







**LEGEND**

- 2016 Preferred Alternative Study Area
- Study Areas added since 2014 EA and FONSI
- 2016 Preferred Alternative Working Limits
- 2014 EA Working Limits
- Conservation Easement for the Lined Snake
- Proposed Detention Pond
- Area referred to as Cactus Hills
- PLSS

**STUDY AREA**  
NORTHERN SEGMENT  
SD 100

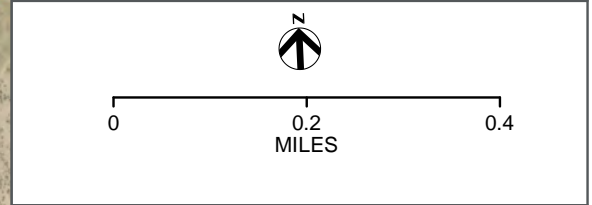
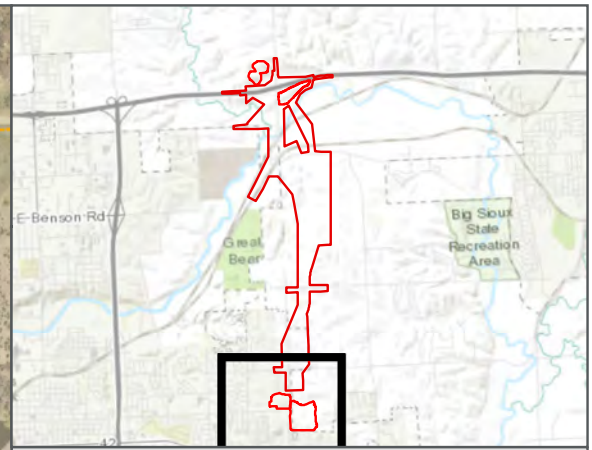
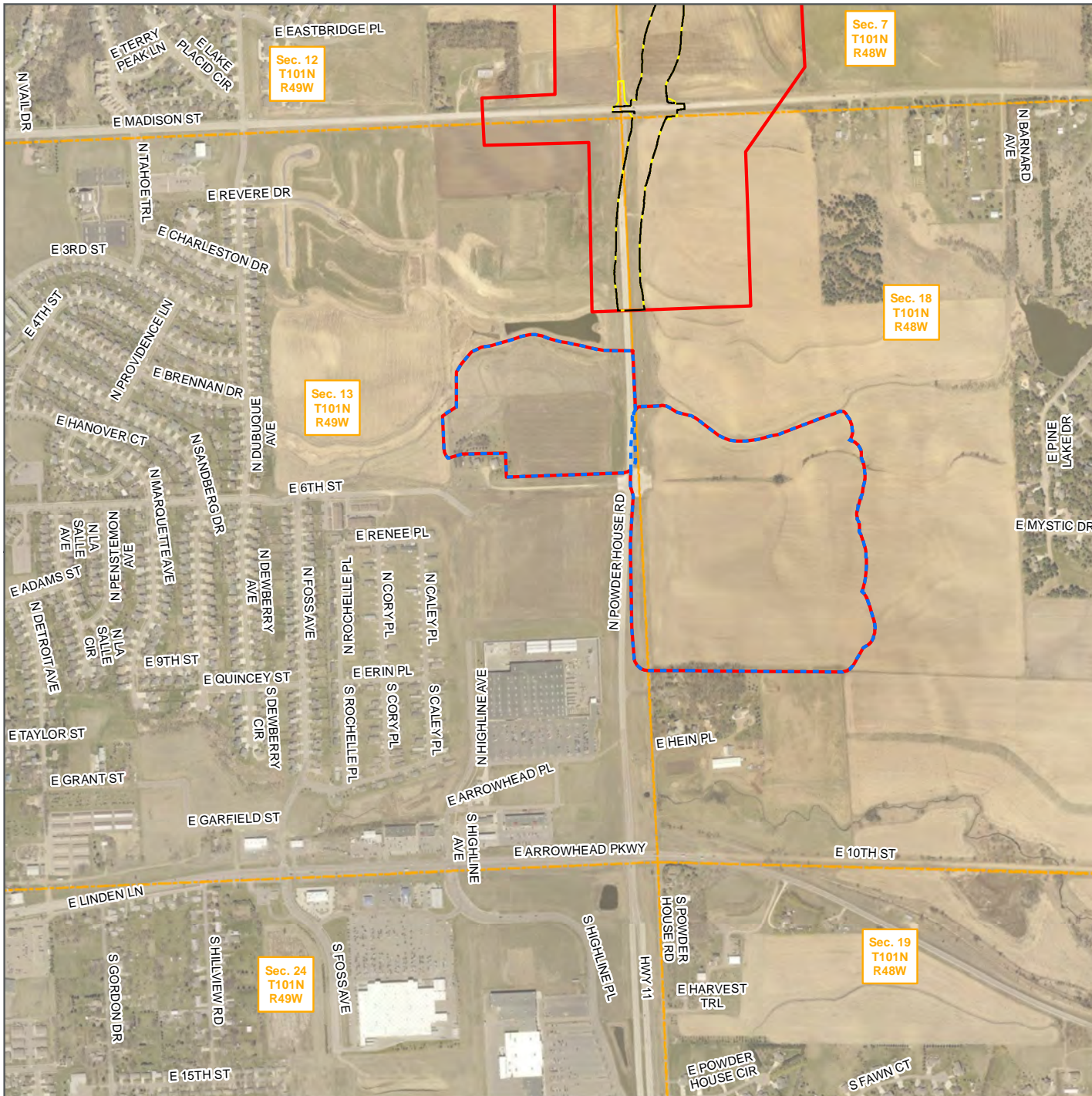


FIGURE 1-4



**LEGEND**

- 2016 Preferred Alternative Study Area
- Study Areas added since 2014 EA and FONSI
- 2016 Preferred Alternative Working Limits
- 2014 EA Working Limits
- Conservation Easement for the Lined Snake
- Proposed Detention Pond
- Area referred to as Cactus Hills
- PLSS

**STUDY AREA**  
NORTHERN SEGMENT  
SD 100

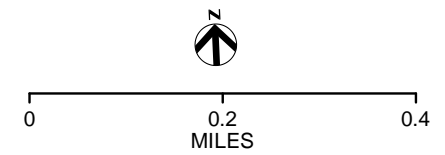


FIGURE 1-5

## Site Photographs

Hwy 100 (Northern Segment)

May 28, 2015

Field Evaluation of Bridges for Northern Long-Eared Bat (NLEB) Habitat



**Photo 1.** Railroad bridge facing northeast; no NLEB roosting habitat - spaces not sealed from weather



**Photo 2.** Railroad bridge facing southwest; no NLEB roosting habitat – spaces not sealed from weather

Site Photographs

Hwy 100 (Northern Segment)

May 28, 2015

Field Evaluation of Bridges for Northern Long-Eared Bat (NLEB) Habitat



**Photo 3.** Timberline Ave. bridge over Big Sioux River facing northeast; no NLEB habitat, no vertical cracks



**Photo 4.** Timberline Ave. bridge over Big Sioux River facing east; no NLEB habitat, no vertical cracks

Site Photographs

Hwy 100 (Northern Segment)

May 28, 2015

Field Evaluation of Bridges for Northern Long-Eared Bat (NLEB) Habitat



**Photo 5.** I-90 Overpass for Timberline Ave. facing northeast; no NLEB habitat, no vertical cracks/crevices



**Photo 6.** I-90 Overpass for Timberline Ave. facing southeast; no NLEB habitat, no vertical cracks/crevices

## Brisbois, Jessica

---

**From:** Rust, Jill  
**Sent:** Friday, August 12, 2016 9:13 AM  
**To:** Brisbois, Jessica  
**Subject:** FW: Highway 100 - USFWS comment on Tree Mitigation

FYI

**Jill Rust**  
D 605.782.8124

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

**From:** Quesinberry, Terry [[mailto:terry\\_quesinberry@fws.gov](mailto:terry_quesinberry@fws.gov)]  
**Sent:** Wednesday, August 10, 2016 1:07 PM  
**To:** Rust, Jill  
**Subject:** Re: Highway 100 - USFWS comment on Tree Mitigation

Hi Jill,

Correct, the recommendation is just for the riparian area and it does still apply. We do not have any guidelines for how the acres are calculated so we are OK with you making that determination.

Let me know if you have any other questions.

Terry Quesinberry

Fish and Wildlife Biologist  
US Fish and Wildlife Service  
South Dakota Ecological Services Office  
Pierre, SD  
Phone: (605) 224-8693, x234  
FAX: (605) 224-9974

On Wed, Aug 10, 2016 at 11:07 AM, Rust, Jill <[Jill.Rust@hdrinc.com](mailto:Jill.Rust@hdrinc.com)> wrote:

Hi Terry – attached is the 2002 letter with recommendations for the project. In the red box is the comment I was referring to regarding tree mitigation. Is this recommendation still valid and if so, is this for just the riparian area around the Big Sioux River? Based on how the letter is written we are assuming this has to do with the Big Sioux River, but wanted to be sure. When we calculate acres, does the USFWS just want us to look at denser forest area, or areas with individual trees?

Tom from SDDOT will be sending out the FHWA Programmatic Consultation project form for re-coordination on the bat.

Appreciate you taking a look at this!

**From:** [Marsh, Matthew](#)  
**To:** [Brisbois, Jessica](#)  
**Cc:** [Barber, Marion \(FHWA\)](#); [Tom Lehmkuhl \(Tom.Lehmkuhl@state.sd.us\)](#)  
**Subject:** Re: Northern Segment of Hwy 100 - Draft Reevaluation Review  
**Date:** Monday, August 22, 2016 10:29:15 AM

---

I have reviewed the documents and have no comments. Thanks for the opportunity to look at it.

Matt

**Matt Marsh | Environmental Manager**

Western Area Power Administration | Upper Great Plains Region

(O) [406.255.2810](tel:406.255.2810) | (M) [406.697.9824](tel:406.697.9824) | [mmarsh@wapa.gov](mailto:mmarsh@wapa.gov)

[Join us on Twitter](#)



On Aug 22, 2016, at 7:24 AM, Brisbois, Jessica <[Jessica.Brisbois@hdrinc.com](mailto:Jessica.Brisbois@hdrinc.com)> wrote:

**HDR Employees:**

Use the "Download Attachments" button after opening this message in Outlook to download attached files.

**Non-HDR Recipients:**

If you are not an HDR employee and this is your first time using Slingshot click [here](#) and follow the prompts to set your password.

Returning users click here to [Download](#) (files: Hwy100\_Appendices.pdf;)

**Notice: The link in this email will only work for up to 30 days (as set by the sender). If you need access to these files for longer, please download and save a copy locally. Recipients of forwarded emails WILL NOT have access to the files using this link.**

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Good morning Matt,

Marion asked that I pass along the appendices for your review, see attached. Let me know if you have any issues downloading them. If you have any comments after reviewing, please send them to me and I can address.

We appreciate your help in getting this turned around on a tight schedule. If you could, please let me know if you have any comments by noon today. Thanks!

Jessica Brisbois  
*Environmental Scientist*

HDR  
6300 S. Old Village Place, Suite 100  
Sioux Falls, SD 57108  
D 605.782.8118  
[Jessica.Brisbois@hdrinc.com](mailto:Jessica.Brisbois@hdrinc.com)

[hdrinc.com/follow-us](http://hdrinc.com/follow-us)

<Slingshot.txt>