

LUCAS COUNTY

SLIDE REPAIR  
ER-014-2(42)--28-59

LETTING DATE  
05/17/2022



REVISIONS

TOTAL	14
PROJECT IDENTIFICATION NUMBER	
PROJECT NUMBER	21-59-014-010
R.O.W. PROJECT NUMBER	ER-014-2(42)--28-59
	STPN-014-2(43)--2J-59

INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 7	IA 14
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Reference Ties and Bench Marks
G.4	Horizontal Control Tab. & Super for all Alignments
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
J.1	Traffic Control Plan
	* Color Plan Sheets

PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**LUCAS COUNTY**  
**SLIDE REPAIR**  
 2.1 mi S of US 34 to 3.6 mi N of Co Rd J22 - 7 Locations

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



SCHEDULE:

D5 - 10-15-2021  
D6 - 03-01-2022

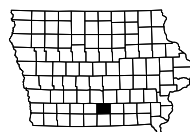
DESIGN DATA RURAL			
2018	AADT	1980	V.P.D.
20 --	AADT	--	V.P.D.
20 --	DHV	--	V.P.H.
	TRUCKS	12.6	%
	Total		
	Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

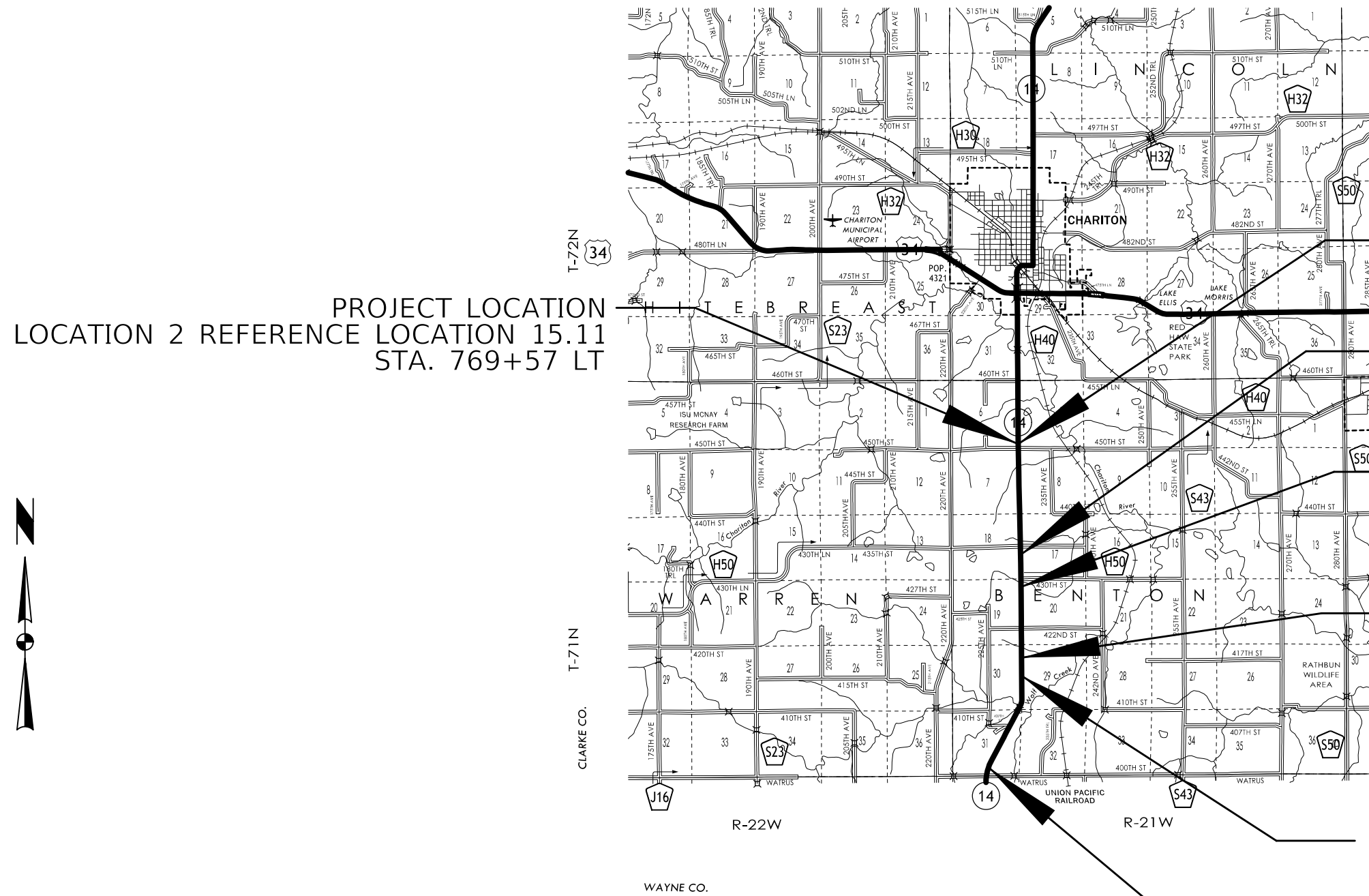
PRELIMINARY PLANS

Subject to change by final design.

**D2 PLAN - Date: 10-07-2021**



See Sheet A.2 for Project Map



PROJECT LOCATION  
LOCATION 2 REFERENCE LOCATION 15.11  
STA. 769+57 LT

PROJECT LOCATION  
LOCATION 1 REFERENCE LOCATION 15.16  
STA. 770+77 RT

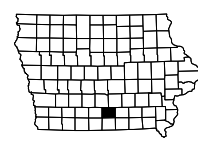
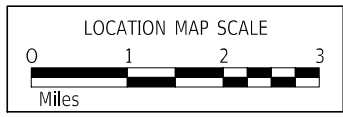
PROJECT LOCATION  
LOCATION 3 REFERENCE LOCATION 13.5  
STA. 684+29 LT

PROJECT LOCATION  
LOCATION 4 REFERENCE LOCATION 12.8  
STA. 647+20 RT

PROJECT LOCATION  
LOCATION 5 REFERENCE LOCATION 11.89  
STA. 599+22 RT

PROJECT LOCATION  
LOCATION 6 REFERENCE LOCATION 11.47  
STA. 577+14 RT

PROJECT LOCATION  
LOCATION 7 REFERENCE LOCATION 9.94  
STA. 495+80 LT



### SURVEY SYMBOLS

	BL, Topo Breakline
	BL, Topo Breakline
	BM, Bench Mark
	CON, Concrete or A/C Slab
	CON, Concrete or A/C Slab
	CP, Control Point
	CUL, Culvert
	CUL, Culvert
	D, Centerline Draw or Stream -Down
	D, Centerline Draw or Stream -Down
	ENT, Centerline BL of Entrance
	ENT, Centerline BL of Entrance
	ENU, Edge Unpaved Entrance and Parking
	ENU, Edge Unpaved Entrance and Parking
	EP, Edge of Paved Roads -ML or SR
	EP, Edge of Paved Roads -ML or SR
	EW, Edge of Water
	EW, Edge of Water
	Existing Contours
	FENO, FENO Monument
	FW, Wire Fence
	FW, Wire Fence
	GR, Ground Shot
	OUT, Tile Outlet
	PIP, Pipe Culvert
	PIP, Pipe Culvert
	PLG, Location of General Photo
	PRO, Profile Shot
	SH, Paved Shoulder
	SH, Paved Shoulder
	SI, Sign
	SNP, Unpaved Shoulder
	SNP, Unpaved Shoulder
	SOP, Size of Pipe or Culvert
	TIL, Tile Line
	TIL, Tile Line
	TPD, Telephone Pedestal

### UTILITY LEGEND

	E1	ELID, Clarke Electric Coop - Quality D
	FO	FOID, Iowa Communications Network - Quality D
	PPA	PPA, Clarke Electric Coop
	TL	TLID, Windstream Communications - Quality D
	W	WLID, Rathbun Regional Water - Quality D

### PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING		Design Color No.	
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

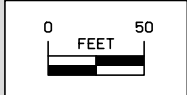
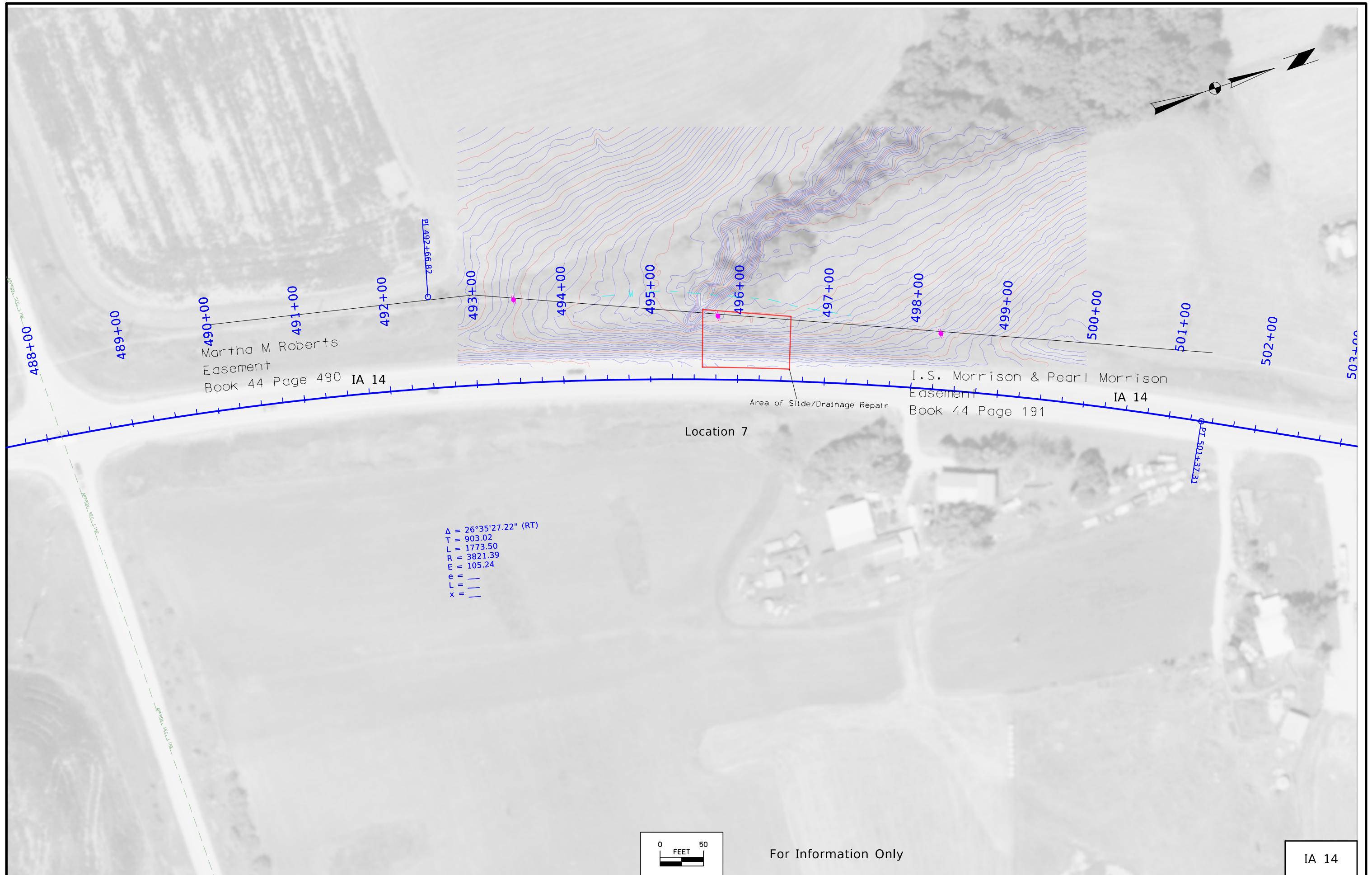
	Reference Point	Survey Line	
	Station		
	Section Corner		
	Ground Line Intercept		
	Saw Cut		
	Guardrail		
	Trench Drain		
	HighTension Cable Guardrail		
	Sheet Pile		
	Pavement Removal		Clearing & Grubbing Area

### RIGHT-OF-WAY LEGEND

	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)



For Information Only

IA 14

Benton TWP.  
T-71N R-21W  
SEC. 30



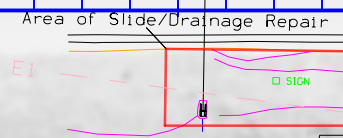
Sta. 577+14.0 (Survey)  
2'x2'x89' RCB  
D.A.=2' A-H (From Plan)  
**(U.A.C.)**

569+00 570+00 571+00 572+00 573+00 574+00 575+00 576+00 577+00 578+00 579+00 580+00 581+00 582+00 583+00 584+00

Location 6

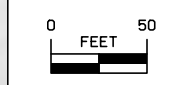
IA 14 APPROX. SEC. LINE

Lester F Ream  
Easement  
Book 44 Page 356



Mattilda Gusmann  
Easement  
Book A-9 Page 427

Sect. No. 29



For Information Only

IA 14



Benton TWP.  
T-71N R-21W  
SEC. 30

Sta. 599+71.7 (Survey)  
5'x4'x58.7' RCB With 5'x7'x6.9' Drop Inlet  
Extended 21' LT & 16' RT  
D.A.=122 A-H (From Plan)  
**(U.A.C.)**

592+00 593+00 594+00 595+00 596+00 597+00 598+00 599+00 600+00 601+00 602+00 603+00 604+00 605+00 606+00 607+00

Location 5

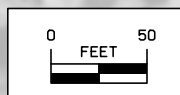
IA 14

IA 14

Area of Slide/Drainage Repair

Lester F Ream  
Easement  
Book 44 Page 356

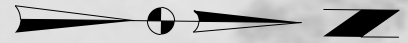
Sect. No. 29



For Information Only

IA 14

FILE NO.	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	LUCAS COUNTY	PROJECT NUMBER ER-014-2(42)--28-59	SHEET NUMBER D,4
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Sta. 646+30.8 (Survey)  
 Skew 55° RT AH  
 3'x3'x175' RCB  
 D.A.=72 A-H (From Plan)  
 (U.A.C.)

Benton TWP.  
 T-71N R-21W  
 SEC. 19

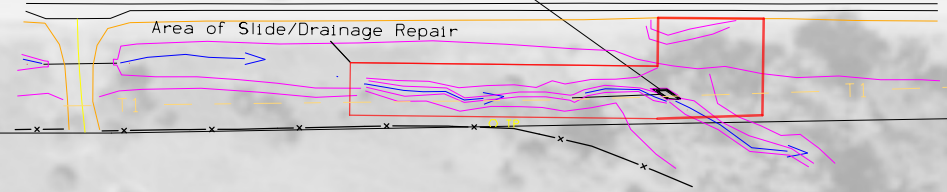
639+00 640+00 641+00 642+00 643+00 644+00 645+00 646+00 647+00 648+00 649+00 650+00 651+00 652+00 653+00 654+00

Location 4

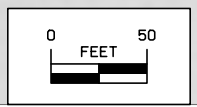
IA 14

IA 14

Ada C Nichols  
 Easement  
 Book 44 Page 357

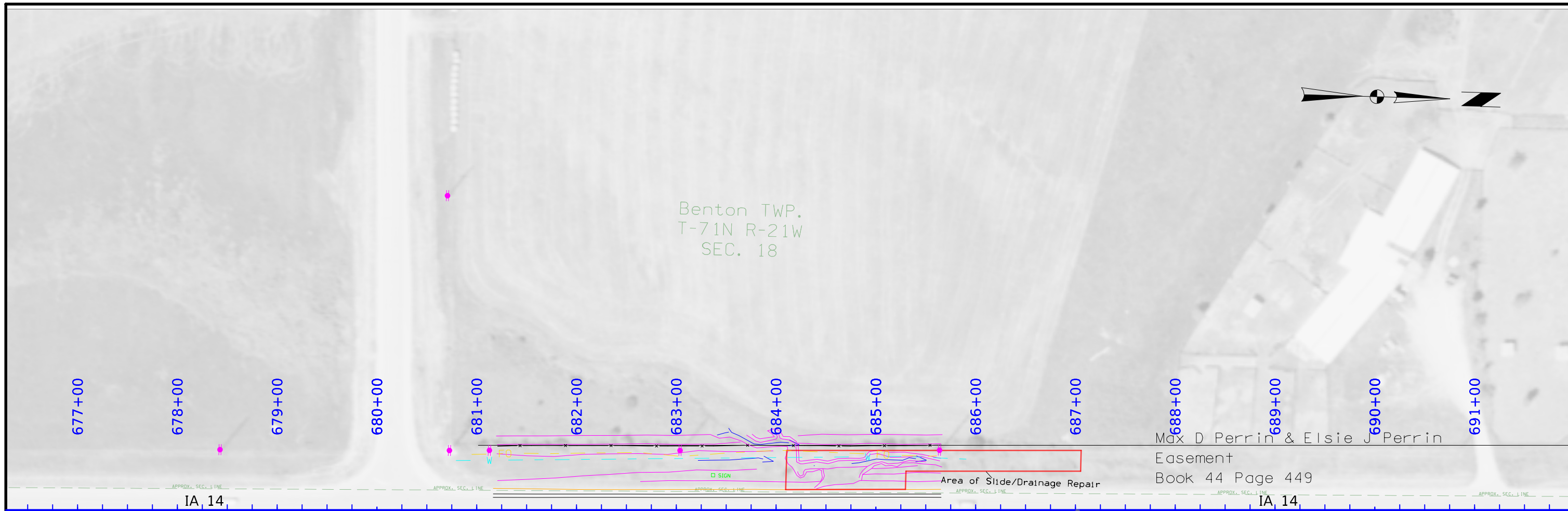


Sect. No. 20



For Information Only

IA 14



FILE NO.	ENGLISH	DESIGN TEAM HOLST/TAMRAKAR/ACKERMAN	LUCAS COUNTY	PROJECT NUMBER ER-014-2(42)--28-59	SHEET NUMBER D.6
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Benton TWP.  
T-71N R-21W  
SEC. 6



Sta. 771+98.8 (Survey)  
Skew 9° RT AH  
3'x2'x45.9' RCB W/3'x4'x31' Ext LT and 3'x4'x42.5' Ext RT  
D.A.=24 A-H (From Plan)  
**(U.A.C.)**

Location 2

765+00 766+00 767+00 768+00 769+00 770+00 771+00 772+00 773+00 774+00 775+00 776+00 777+00 778+00 779+00 780+00

Edmond M Stone & Mary Belle Stone  
Easement  
Book 44 Page 350

A Hayes Gillespie  
Easement  
Book 44 Page 487

IA 14

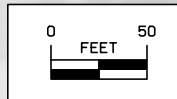
IA 14

Area of Slide/Drainage Repair

A Hayes Gillespie  
Easement  
Book 44 Page 487

Location 1

Sect. No. 5



For Information Only

IA 14

## Survey Information

### SURVEY INDEX

County: Lucas

PIN: 21-59-014-010

Project Number: ER-014-2(42)--28-59

Location: 2.1 mi S of US 34 to 3.6 mi N of Co Rd J22 - 7 Locations

Type of Work: Slide Repair

Project Directory: 5901401021

### Survey Personnel

Nels Sutherland – Survey Party Chief

Myron Fox – Assistant Survey Party Chief

### Date(s) of Survey

Begin Date 04/12/2021

End Date 05/25/2021

### General Information

Measurement units for this survey are US survey feet. This survey is for Slide Repair 2.1 mi S of US 34 to 3.6 mi N of Co Rd J22 on State Hwy14, 7 locations. Project datum and control information is provided by Design Survey Office. This project is a Full Field Survey.

### Project Control

Primary geodetic style three-dimensional project control monuments are found or placed at approximate ½ to 1 mile intervals throughout this project. Datum was accessed via GNSS static survey observations using Iowa Real Time Network reference stations in the area. Other legacy datum monuments in the area were surveyed comparing legacy coordinates to validate the results of the local project network adjustment. Comparisons validate results. For additional details of the control survey see the control survey report in the CONTROL file folder of the PrelimSurvey project directory.

**PROJECT DATUM: NAD83(2011) EPOCH 2010.00**

**VERTICAL DATUM: NAVD88**

**COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 12**

### Alignments Information

The horizontal alignment for this survey is a retrace of As-built Plans No. F-252-(2). Survey stationing was equated to the plan at PC Sta. 587+00 and was ran back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PT Sta.451+08.75 Plan

= Survey PT Sta. 451+11.30

PC Sta. 483+62.6 Plan

= Survey PC Sta. 483+63.8

PT Sta. 501+35.9 Plan

= Survey PT Sta. 501+37.31

TS Sta. 549+21.01 Plan

= Survey TS Sta. 549+17.81

SC Sta. 551+21.01 Plan

= Survey SC Sta. 551+17.81

CS Sta. 556+32.71 Plan

= Survey CS Sta. 556+29.52

ST Sta. 558+32.71 BK, 558+30.61 AH Plan

= Survey ST Sta. 558+29.52

PC Sta. 587+00 Plan

= Survey PC Sta. 587+00

PT Sta. 593+00 Plan

= Survey PT Sta. 593+00

PI Sta. 621+65 Plan

= Survey PI Sta. 621+65.10

PC Sta. 666+97.9 Plan

= Survey PC Sta. 666+96.57

PT Sta. 672+97.9 Plan

= Survey PT Sta. 672+96.56

PC Sta. 725+58.6 Plan

= Survey PC Sta. 725+55.88

PT Sta. 731+58.6 Plan

= Survey PT Sta. 731+55.88

PC Sta. 760+75 Plan

= Survey PC Sta. 760+72.14

PT Sta. 766+75 Plan

= Survey PT Sta. 766+72.14

POT Sta. 790+69.7

= Survey Sta. 790+65.63

### Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

### CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 12

Coordinate listing from next sheet will be used with 1aRTN for monument recovery. No other reference ties are given.

# HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 12  
Project Control Marks are Bench Marks

Point Name	North	East	Height	Code Description
23	6192267.972	22615617.144	1043.308	CP Wayne Co GPS CCP Mon inside can with lid_ from the intersection of Watrous and 220th ave proceed S 1132ft along 220th ave_point is 26ft E of centerline of 220th ave
5026	6209323.051	22630974.643	995.586	CP Wayne Co GPS CCP 5/8th rebar 0.20ft above surface_ from the intersection of S43 and H50 proceed W along H50 4461ft_point is 34ft S of centerline of H50
590140112	6200440.489	22622371.917	1003.727	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 422nd st and hwy14 proceed S 4968ft along hwy14_point is 64ft W of centerline of hwy14
590140118	6203243.578	22622478.395	1024.71	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 422nd st and hwy14 proceed S 2162ft along hwy14_point is 77ft W of centerline of hwy14
590140123	6206281.403	22622322.498	1049.846	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 422nd st and hwy14 proceed N 875ft along hwy14_point is 55ft W of centerline of hwy14
590140129	6208999.898	22622398.286	997.217	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 430th st and hwy14 proceed S 361ft along hwy14_point is 53ft E of the centerline of hwy14
590140133	6211498.965	22622248.910	1046.31	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 435th st and hwy14 proceed S 510ft along hwy14_point is 59ft W of the centerline of hwy14
590140149	6219957.572	22622021.670	1023.833	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 450th st and hwy14 proceed N 49ft along hwy14_point is 78ft W of the centerline of hwy14
FENO_1-Prev	6218113.218	22622161.307	997.836	FENO Set Feno Monument_1780 S of 450TH St_300ft N of entrance at 44604 IA Hwy 14_136ft NW of Station 70 Sign_27ft E of IA Hwy 14
FENO_2-Prev	6218952.073	22622092.024	991.593	FENO Set Feno monument_946ft S of 450th Ave_26ft W of IA Hwy 14_114ft SE of Power Pole_71 NE of Center Gate for Field Entrance
590140154	6222412.882	22622125.812	1009.491	FENO monument with IDOT brass disc set 4in below surface_ from the intersection of 450th st and hwy14 proceed N 2503ft along hwy14_point is 53ft E of the centerline of hwy14
NGS-59_38	6234978.18	22621857.701	1037.488	BM NGS Mon AT CHARITON_ON THE CHICAGO_BURLINGTON AND QUINCY RAILROAD_4 POLES NORTH OF OVERPASS 333.81_70 FEET EAST OF THE TRACK_134 FEET SOUTH OF THE INTERSECTION OF MAIN AND ARMORY STREETS_53 FEET SOUTH AND 36 FEET EAST OF THE SOUTHEAST CORNER OF THE HOUSE AT 301 SOUTH MAIN STREET_AND OPPOSITE A POLE_A STATE SURVEY STANDARD DISK_SET IN THE TOP OF A CONCRETE POST

**NOTE:**

The first two digits in the control point name refer to the county number.  
 The next 3 digits refer to the highway number.  
 The next 3 digits refer to the highway milepost.  
 The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.

**ALIGNMENT COORDINATES**

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML014	451+11.30 R1	6189761.10	22619504.31															
2	ML014						483+63.81 R1	6193012.95	22619569.65	492+66.82 R1	6193915.79	22619587.80	501+37.31 R1	6194715.01	22620008.14				
4	ML014				549+17.81 R1	6198946.00	22622233.43			550+51.18 R1	6199064.04	22622295.52				551+17.81 R1	6199125.09	22622322.37	
5	ML014									553+76.42 R1	6199361.81	22622426.49	556+29.52 R1	6199620.00	22622441.27				
6	ML014				556+29.52 R1	6199620.00	22622441.27			556+96.22 R1	6199686.59	22622445.08				558+29.52 R1	6199819.94	22622443.40	
8	ML014									587+00.00 R1	6202690.19	22622407.12	590+00.00 R1	6202990.17	22622403.32	593+00.00 R1	6203290.17	22622401.00	
10	ML014	621+65.10 R1	6206155.18	22622378.80															
11	ML014							666+96.57 R1	6210686.33	22622325.48	669+96.57 R1	6210986.31	22622321.95	672+96.56 R1	6211286.20	22622313.53			
13	ML014							725+55.88 R1	6216543.45	22622166.07	728+55.88 R1	6216843.34	22622157.66	731+55.88 R1	6217143.28	22622152.06			
15	ML014							760+72.14 R1	6220059.03	22622097.59	763+72.14 R1	6220358.98	22622091.99	766+72.14 R1	6220658.97	22622089.14			

**SPIRAL OR CIRCULAR CURVE DATA**

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks				
			Spiral Data						Curve Data										
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E			
C1	ML014																		
C2	ML014	28°27'58.64"	03°59'58.94"	200.00	463.64	46.57	199.90	4.65	133.37	66.70	26°35'27.22"	903.02	1773.50	3821.39	105.24				
C3	ML014										20°28'00.76"	258.61	511.71	1432.50	23.16				
C4	ML014										00°16'48.55"	300.00	600.00	122711.00	0.37				
C5	ML014										00°55'56.85"	300.01	600.00	36867.50	1.22				
C6	ML014										00°32'11.30"	300.00	600.00	64080.00	0.70				
											00°31'31.39"	300.00	600.00	65433.00	0.69				

108-23A  
08-01-08

**TRAFFIC CONTROL PLAN**

Traffic on IA 14 shall be maintained at all times.

108-25  
10-21-14

**511 TRAVEL RESTRICTIONS**

Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			No Restrictions Expected									