



Index of Sheets	
No.	Description
Sheets	Bridge Plan
A.1	Title Sheet
A.2	Location Map Sheet
V.1	Estimated Quantities - Design #####
V.2 - XX	Design -
SPS Sheets	Bridge Plan Soils Sheet
SPS.1	Bridge Plan Soils Sheet
Road Sheets	Road Plan
A.??-?.??	Road Plans
C.1	Estimated Quantities - Road
C.2	Standard Plans - Road
RC.1 - 5	Estimated Quantities - Erosion Control

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM STORY COUNTY Culvert Replacement

**on US 65 culvert over Drainage Ditch
0.2 mi S of Co Rd E63/310th St in Collins**

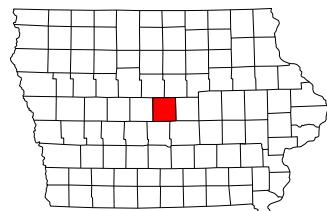
Refer to the Plan Sheets for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications



Preliminary Not For Construction

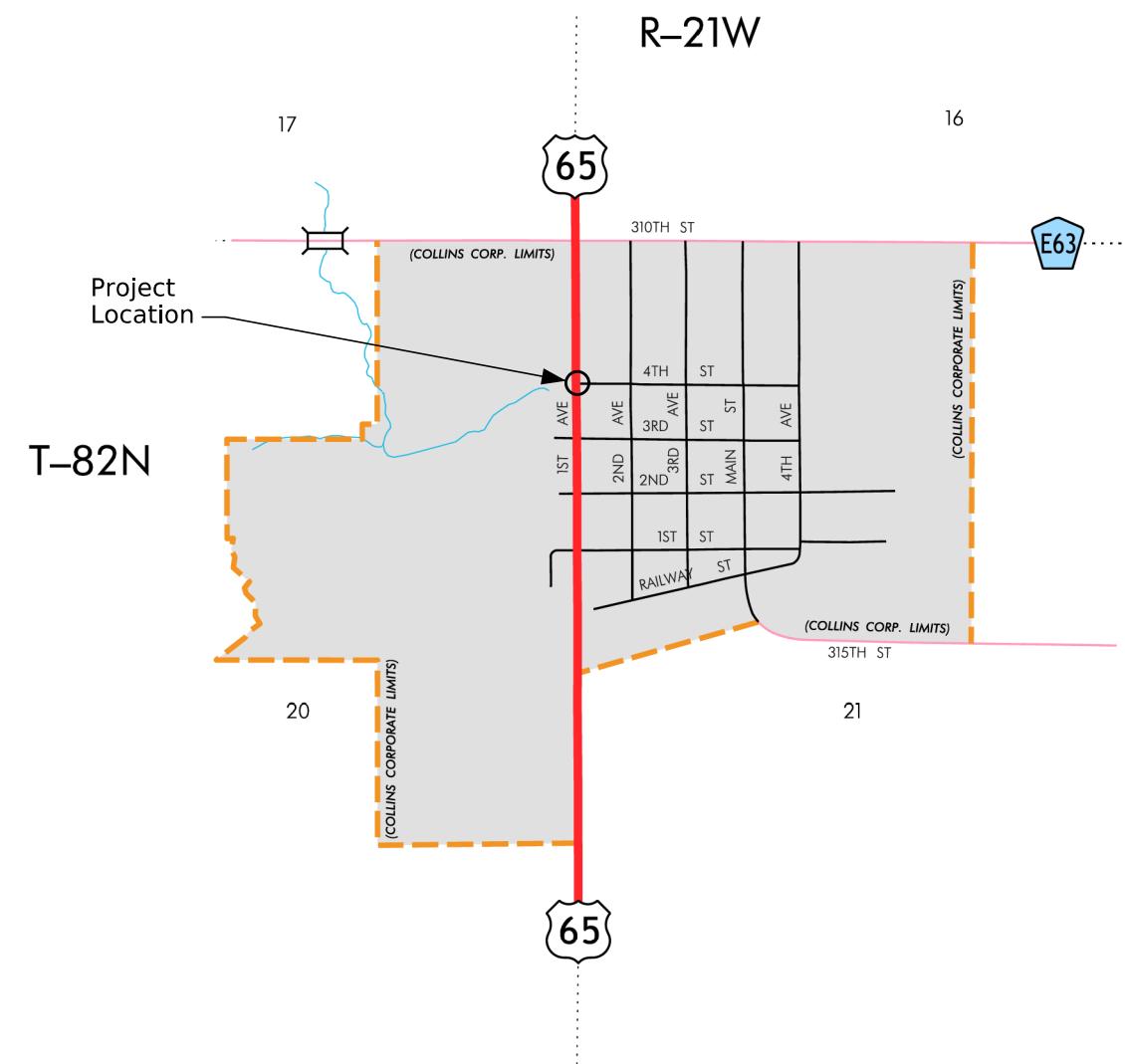
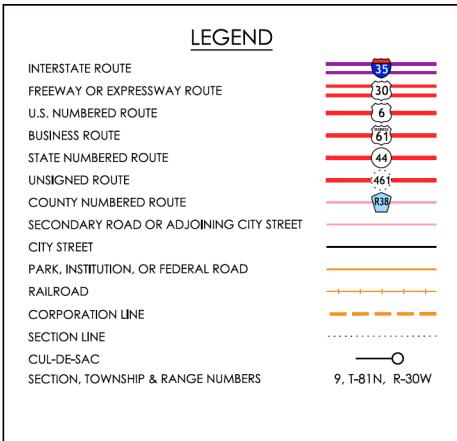
Revisions to this Design Plan and/or Project Specifications should be submitted by _____



Design Data Urban	
20?? AADT	V.P.D.
20?? AADT	V.P.D.
20?? DHV	V.P.H.
TRUCKS	%
Total Design ESALs	

Index of Seals

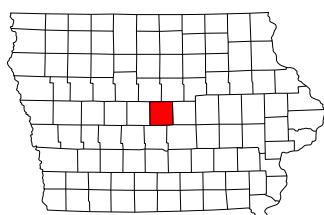
	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p>Signature <u>Mark C. Currie</u> Date <u>2025</u> Printed or Typed Name My license renewal date is December 31,</p> <p>Pages or sheets covered by this seal: _____</p>
---	---



Story County Location Map

Not To Scale

City of Collins



FILE NO. -	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Story COUNTY	PROJECT NUMBER STP-065-5(042)-2C-85	SHEET NUMBER A.2
------------	---------	-----------------------------------	--------------	-------------------------------------	------------------

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets A.1 A.2 A.3 - 19 A.20 - 23
	Title Sheet Location Map Sheet Project Concept Field Exam Notes
B Sheets	Typical Cross Sections and Details B.1 - 2
	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets D.1 D.2
	Plan & Profile Legend & Symbol Information Sheet US 65
G Sheets	Survey Sheets G.1 G.2 G.3
	Survey Information Control Point Vicinity Map Horizontal and Vertical Project Control Coordinate Listing
V Sheets	Bridge and Culvert Situation Plans V.1
	Situation Plan



VEENSTRA & KIMM INC.
6775 Vista Drive
West Des Moines, Iowa 50266
515.225.8000 // 800.241.8000
www.v-k.net

IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 1

DATE: October 22, 2025

ATTENTION: Jeremey Vortherms

PROJECT: Story County
STP-065-5(042)--2C-85
PIN: 25-85-065-010

FROM: Mark Currie

OFFICE: Veenstra & Kimm, Inc.

SUBJECT: Project Concept Statement; (Draft, D0)

This project involves the replacement of a culvert on US 65 culvert over Drainage Ditch, 0.2 mi S of Co Rd E63/310th St in Collins.

It is recommended to remove the existing culvert and replace it with 16' x 4' x 58' RCB culvert at 0 degree skew with a buried flowline and reconstruct the roadway with a 32' paved section to match the existing highway, with traffic maintained via detour route at an estimated cost of \$383,029. Additional right-of-way will be required. Traffic will be maintained via detour using IA 210 west to 653rd Ave/650th Ave, then north to US 30, then east to US 65.

Recipients of this letter should review the attached Draft Project Concept Statement that was developed by Veenstra & Kimm, Inc. It is requested that you submit any comments or concerns by Friday, September 26, 2025. Any comments received during this time period will be incorporated into the final concept.

Cc:			
	A. Smyth	K. Nicholson	Y. Jia
	C. Brakke	J. Nelson	M. Nop
	J. Ellis	S. Majors	D. Stokes
	B. Hofer	W. Sorenson	E. Wright
	K. Brink	C. Poole	J. Laaser-webb
	S. Anderson	N. Cuva	J. Holst
	J. Bartholomew	M. Dell	R. Harris
	N. Pohlen	D. Breitbach	B. Smith
	M. Van Dyke	D. Heeren	G. Cagle
	B. Hucker	B. Worrel	L. Narigon
	A. Buss	A. Swisher	J. Vortherms
	J. Hoskins	D. Skogerboe	F. Leong
	B. Adey	S. Passick	S. Nixon
	T. Quam	A. Wright	D. Tamrakar
	J. Becker	J. Garton	D. Newell
	B. Walter		

DRAFT PROJECT CONCEPT STATEMENT

US 65 – Culvert over Drainage Ditch, 0.2 mi S of Co Rd E63/310th St in Collins

Jasper County

STP-065-5(042)--2C-85

PIN: 25-85-065-010

Maint. No. N/A

FHWA No. N/A

Mark C. Currie, P.E., S.E.

515-225-8000

October 22, 2025

I. STUDY AREA

A. Project Description

This project involves the replacement of a culvert and grading the outlet at US 65 over Drainage Ditch, 0.2 mi S of Co Rd E63/310th St in Collins.

One alternative was considered:

1. Remove existing culvert and build a 16' x 4' RCB with a buried flowline with parallel wing headwall at outlet and custom wingwall headwall at inlet. Extend retaining wall at inlet. Ditch inlet and outlet to drain.

Alternative 1 is the preferred alternative due to cost effectiveness of replacing the culvert. The existing culvert is undersized based on new estimates of peak discharge and serves as a bottleneck during high rainfall events.

Traffic will be maintained with a detour via IA 210 west to 653rd Ave/650th Ave, then north to US 30, then east to US 65.

The preliminary project cost is \$383,029.

B. Need for Project

The existing structure is a 10' x 4' x 42' RCB culvert built in 1939 that replaced a 17' x 19.9' concrete arch bridge built in 1939. It was slated to be replaced in 2013, Project Number BRFN-065-5(30)-39-85, with a 12' x 3' RCB immediately north of the existing culvert. The 2013 plans included lowering the US 65 profile north of the culvert and reconstructing US 65 north through Collins. However, US 65

reconstruction was stopped south of the culvert and the culvert was never replaced.

The existing RCB culvert is in good condition; however, the culvert is undersized based on current estimates of peak discharge. The site was flooded in the summer of 2024 when US 65 was overtapped, primarily due to heavy rainfall estimated to be between 100 and 500 yr recurrence.



Looking South along US 65



Looking East at Existing Culvert

C. Present Facility

US 65 is a two-lane urban roadway. The existing roadway was originally constructed in 1938 and composed of 20' wide PCC pavement with curb and gutter sections in the City south of the existing culvert. It was overlaid multiple times and widened to 24'. The roadway has 8' wide effective shoulders composed of 4' paved and 4' grass shoulders. Within the project limits, the regulatory (posted) speed limit is 35 mph.

The 2013 existing plans included replacing the roadway with a 31' roadway with curb and gutter sections and lowering the profile of US 65 north of the culvert. Actual construction ended approximately 55 ft south of the culvert.

The existing structure is a 10' x 4' x 42' RCB culvert built in 1939. At the outlet of the culvert is an 18" beehive that connects to a drainage tile north of the culvert that drains to the field to the west of the site.

D. Traffic Estimates

The 2027 construction year and 2047 design year average daily traffic estimates are 2,300 ADT with 23% trucks and 2,500 ADT with 22% trucks, respectively.

E. Sufficiency Ratings

US 65 is classified as an access route and is a maintenance service level "C" road. The culvert does not have a federal bridge sufficiency rating.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from 2020 through 2025, there were a total of 3 crashes; 2 of them were property damage and one involved possible injury. Property damaged totaling \$19,000 was reported.

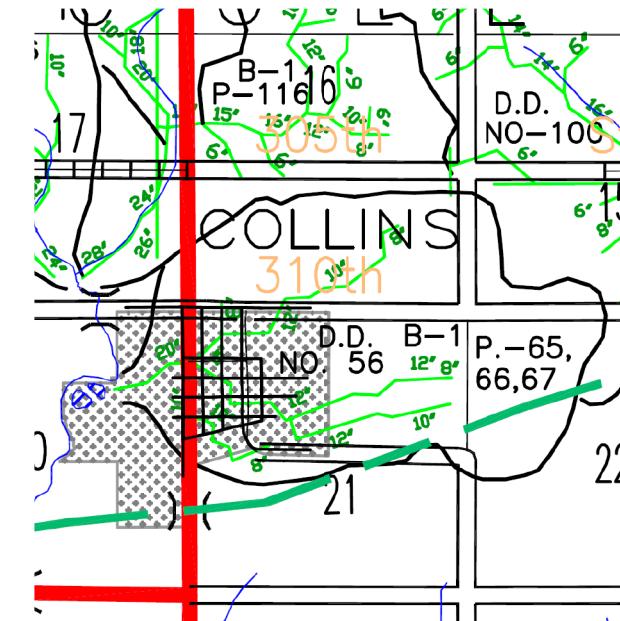
II. PROJECT CONCEPT

A. Project Description

Alternative #1 – Replace with 16' x 4' RCB culvert, 0 degree skew, detour

Remove the existing 10' x 4' RCB culvert and replace with a single 16' x 4' x 58' RCB culvert with 0 degree skew and a buried flowline, parallel wing headwall at the outlet, and custom wingwall headwall at the inlet. Grade inlet and extend retaining wall. Grade and ditch outlet to properly drain culvert.

The site was flooded in the summer of 2024 from a storm event that exceeded that significantly exceeded the design storm. Dave Claiman (Iowa DOT), the designer for the 2013 culvert replacement plans, stated that 6 to 8 inches of rainfall was reported within a 12-hour period, which is equivalent to a 100-to-500-year recurrence interval. Dave also mentioned that this event was the first reported overtopping of US 65 at this location.



The drainage pattern at the project site is complex, involving surface runoff through the ditches, storm sewers, and drainage tiles that run parallel with the culvert, as indicated by the drainage map in the above figure. The drainage tiles, which are owned/managed by Drainage District No. 56, drain fields north and east of Collins, as well as portions of the City through multiple intakes. At the outlet of the existing culvert is a beehive that is connected to the 26" tile that drains the culvert during low flows since the outlet of the culvert is not properly graded to drain the culvert. Currently, there is approximately a foot of draw (El. 981.97 to 982.98) from the culvert flowline, which causes ponding in the vicinity of the culvert.

A site visit was performed on July 11, 2025, to check the condition of the culvert and analyze the site. The visit was performed during a downpour and ponding was observed in the culvert inlet with no flow downstream. The existing 10' x 4' built in 1939 was observed to be in good condition. A discussion with the Public Works Director during the site visit revealed that the culvert acts as a bottleneck during significant storm events.

The culvert was slated to be replaced in 2013, project number BRFN-065-5(30)-39-85. The project included another culvert replacement south of the City, reconstruction of US 65, addition of sidewalks, and storm sewer replacement. The proposed 12' x 3' RCB culvert was designed for a Q_{50} of 250 cfs that was based on the Iowa Runoff chart with a drainage area of 770 acres. The drainage area was

described as flat and tiled, with a land factor of 0.25. Since then, newer methods to estimate annual exceedance-probability discharge (AEPD) have been available.

Streamstats 2015-5055, adjusted for the delineated drainage area of 792 acres, is recommended for the project site. The resulting Q_{50} was determined to be 390 cfs which represents a 56% increase from the 2013 design discharge. While the actual capacity of the existing culvert is closer to 340 cfs before allowable headwater is exceeded, it is still undersized for the current design discharge. The drainage delineation conservatively assumes that all flows will go to the culvert since the capacity of the drainage tile and storm sewer networks will most likely be exceeded in higher storm events.

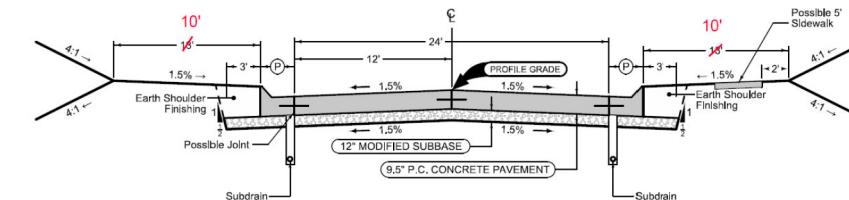
	TR-55 (cfs)	Iowa Runoff Chart (LF=0.3) (cfs)	WRIR 87-4132 (Reg. 1) (cfs)	SIR 13-5086 (Single Var.) (cfs)	SIR 2015-5055 (Streamstats) (cfs)	Design Discharge (Streamstats) (cfs)
Q_2	243		241	52	57	60
Q_5	351	155	571	132	142	130
Q_{10}	451	217	861	205	220	200
Q_{25}	608	249	1,289	317	340	300
Q_{50}	742	311	1,707	414	443	390
Q_{100}	886	373	2,139	517	553	490
Q_{200}	1,045			630	673	600
Q_{500}	1,265			789	842	750

Streamstats SIR 2015-500 discharge was based on drainage area of 1.41 sq. mi. of 903 acres.

Drainage delineation using elevation profile yielded 792 acres. This matched the Drainage Districts drainage area and closely resembles 2013 existing plans (770 acres).

Recommend use of Streamstats SIR 2015-5055 adjusted for drainage area (792/903) by a factor of 0.88

Results from preliminary hydraulic analysis indicates a 16' x 3' x 58' RCB culvert will be required to accommodate the current design discharge. A standard 16' x 4' RCB is proposed with 1' buried flowline to create a 16' x 3' opening. The 16' x 3' opening of the proposed culvert is shallower compared to the existing 10' x 4' to accommodate the lowered vertical profile of US 65, as shown in the 2013 plans. The plans show the future US 65 profile to be lowered approximately a foot at the culvert location and a maximum of approximately 3' north of the culvert. The length of the proposed culvert is based on a 31' curb and gutter roadway section, as proposed in the 2013 plans, with a 10' lateral offset from the back of the curb, which matches the preferred clear zone shown in Section 8A-2 of the Design Manual. This deviation from the 2013 lateral offset of 13' allows the inlet to be ditch appropriately. The wider and longer proposed culvert will require a custom wingwall headwall and reconfiguration of the existing flume at the inlet.



The proposed typical cross section is shown in the figure above. The roadway will be constructed on the existing vertical and horizontal alignment. While the proposed 16' x 3' RCB culvert is designed considering the proposed improvements in the 2013 plans to be completed in the future, no profile grade lowering is proposed for this project.

The existing outlet condition should also be addressed as part of this project. Currently, the draw of about 1 ft above the culvert outlet flowline causes ponding in the culvert. The existing plans for the 12' x 3' RCB in 2013 had a note to ditch draw to drain, but this work was never completed. Addressing this concern would require temporary easements, as it is beyond DOT right-of-way. The estimated length of ditching is about 130'. With the outlet ditched accordingly, the existing beehive intake can be removed.

CULVERT ESTIMATE:				
Item	Quantity	Unit	Rate	Amount
Existing Culvert Removal	97	CY	\$80	\$7,760
New RCB Culvert	111	CY	\$1,200	\$133,200
Custom Headwall at Inlet	20	CY	\$1,200	\$24,000
Parallel Wing Headwall at Outlet	20	CY	\$1,200	\$24,000
Concrete Retaining Wall	12	CY	\$1,200	\$14,400
Engineering Fabric	257	SY	\$4	\$1,028
Revetment	118	TON	\$50	\$5,900
Mobilization	1	LS	10%	\$21,029
	Base Cost:			\$231,317
	Contingency:	20%		\$46,263
	0 Years Inflation:	4.5%		
	BRIDGE TOTAL:			\$277,580
ROADWAY ESTIMATE:				
Item	Quantity	Unit	Rate	Amount
Excavation, Class 10	334	SY	\$15	\$5,010
Removal of Pavement	356	SY	\$10	\$3,560
Modified Subbase	178	CY	\$50	\$8,900
PCC Pavement	178	SY	\$60	\$10,680
Erosion Control	1	LS	\$5,000	\$5,000
ROW Acquisition/Temporary Easement	1	LS	\$25,000	\$25,000
Ditching and Grading Outlet	1	LS	\$5,000	\$5,000
Traffic Control	1	LS	10%	\$6,315
Additional Roadway Items	1	LS	15%	\$10,420
Mobilization	1	LS	10%	\$7,989
	Base Cost:			\$87,874
	Contingency:	20%		\$17,575
	0 Years Inflation:	4.5%		
	ROADWAY TOTAL:			\$105,449
	PROJECT TOTAL:			\$383,029

Other Alternatives ConsideredRetain existing culvert and add addition 10'x 3' RCB

This alternative would extend the existing culvert given its good condition, add an additional 10' x 4' RCB at 0-degree skew with parallel wing headwalls at the outlet, and build a custom wingwall headwall at the inlet. It would also require extending retaining wall at inlet and ditching the inlet and outlet to drain, similar to the preferred alternative.

This alternative would double the capacity of the existing culvert. However, retaining the existing culvert will conflict with plans to eventually lower US 65 at this location and will necessitate its removal in the future. In addition, the existing culvert is 86 years old and near the end of its useful life. Furthermore, the cost of extending the culvert and adding another 10' x 3' RCB will be higher than replacing the existing RCB with a single 16' x 4'. For these reasons, this alternative was not moved forward.

Replace with 12' x 3' RCB per 2013 plans

The 12' x 3' RCB culvert in the 2013 plans was designed for a Q_{50} of 250 cfs, using the Iowa Runoff Chart with LF of 0.25. Since 2013, newer methods to estimate peak discharge have been available, including Streamstats. Newer Q_{50} peak discharge estimates of 390 cfs makes the 12' x 3' RCB inadequate to handle current design storm events.

Do Nothing

Even though the newer estimated discharge necessitates a larger culvert, the existing 10' x 4' RCB seems to be functioning. The only recorded flooding on the site was caused by abnormally heavy rainfall that had a 100 to 500 year recurrence interval. It is apparent, however, that it does not have reserve capacity for higher flow discharge.

Furthermore, while the existing RCB culvert is in good condition, it is already 86 years old and nearing the end of its useful life. Because of these reasons it was deemed necessary to replace the culvert and not move this alternative forward.

B.

Detour Analysis

The preference for construction is to close the road and provide an offsite detour route. It is anticipated that the detour will be in place for approximately 60 days. The identified detour route will follow IA 210 west to 653rd Ave/650th Ave, then

north to US 30, then east to US 65. The route is based on the 2013 RCB culvert replacement plans. The out-of-distance travel is 18.2 miles.

The detour route is primarily intended for trucks and thru traffic. Locals should be able to navigate around the culvert construction without significant delay.

C. Recommendations

It is recommended that the present structure be removed and replaced as described in Alternative No. 1.

D. Construction Sequence

It is anticipated all work on this project will be awarded to one prime contractor. Veenstra & Kimm, Inc. will coordinate the plan preparation with the assistance of the Project Management Bureau, the Design Bureau, and the Bridges and Structures Bureau.

The project duration is estimated to be 2 months.

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to US 65 currently, but the 2013 plans depict a future 5' sidewalk on the east side. Therefore, ADA accommodations are planned in conjunction with this project, specifically, providing enough lateral offset (10') from back of curb to construct the planned sidewalk.

F. Special Considerations

This will not be a traffic critical project.

The Accelerated Bridge Construction (ABC) Rating Score of 42 for an off-site detour with 0.8 miles out-of-distance travel. The score is less than the first stage filter threshold of 50, therefore no further evaluation is considered.

No bike path or sidewalk will be required as part of this project.

Standard survey coverage will be required.

Right-of-Way will be required for this project.

A listing of existing utilities present within the project limits are shown in Attachment A.

The District cultural resources manager has not yet completed a cultural resources review on this project.

The Location and Environment Bureau has not reviewed this project at this time. Once their review is completed, comments will be incorporated into the final concept statement.

G. Program Status

Site data has been developed by Veenstra & Kimm, Inc. This project is listed Masterworks with \$250,000 budget for construction in FY 2028. A schedule of events will be developed following approval of the Project Concept.

Following page has a map of the county and location of project area.

Attachment A - utilities

ATTACHMENT A

STORY COUNTY (042)

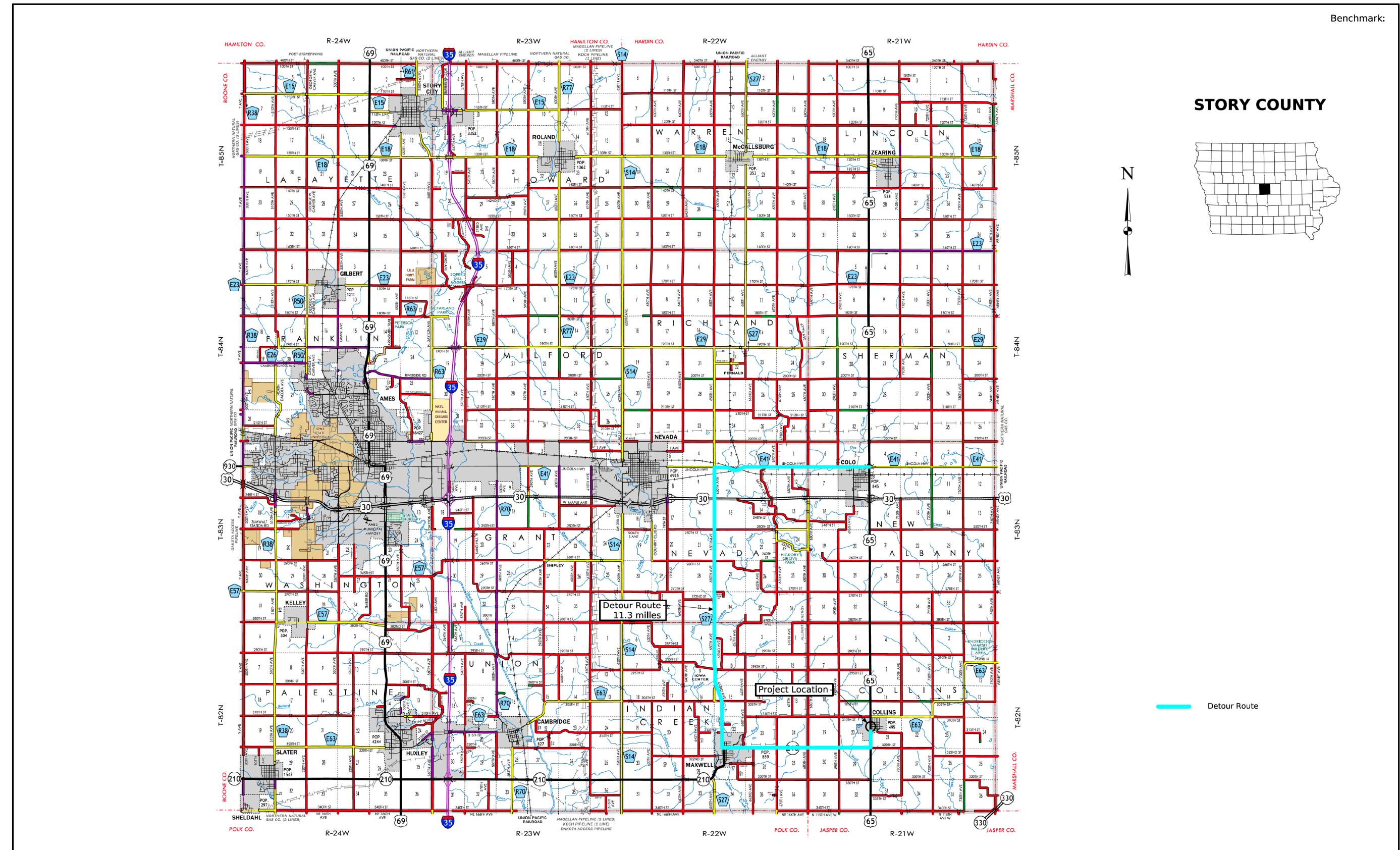
(ANW) ALLIANT ENERGY
Company name : ALLIANT ENERGY
Design contact: Alliant Energy Field Engineer
Phone: 8002554268
Email: locate_IPL@alliantenergy.com

(CNS) COLLINS, CITY OF
Company name : COLLINS, CITY OF
Design contact: Darwin Oaks
Phone: 6413852205
Email: collinsc@midowa.net

(COT) COLO TELEPHONE COMPANY
Company name : COLO TELEPHONE COMPANY
Design contact: Larry Springer
Phone: 6413772202
Email: support@colotel.org

(WINIA) WINDSTREAM COMMUNICATIONS
Company name : WINDSTREAM COMMUNICATIONS
Design contact: LOCATE DESK
Phone: 8002891901
Email: LOCATE.DESK@WINDSTREAM.COM

FILE NO. -	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Story COUNTY	PROJECT NUMBER STP-065-5(042)--2C-85	SHEET NUMBER A.10	
------------	---------	--	--------------	---	--------------------------	--



Story County Map

Not to Scale

FILE NO. ENGLISH DESIGN TEAM Veenstra & Kimm, Inc. Jasper COUNTY PROJECT NUMBER STP-006-4(204)-2C-50 SHEET NUMBER J.1

FILE NO. - ENGLISH DESIGN TEAM Veenstra & Kimm, Inc. Story COUNTY PROJECT NUMBER STP-065-5(042)--2C-85 SHEET NUMBER A.11

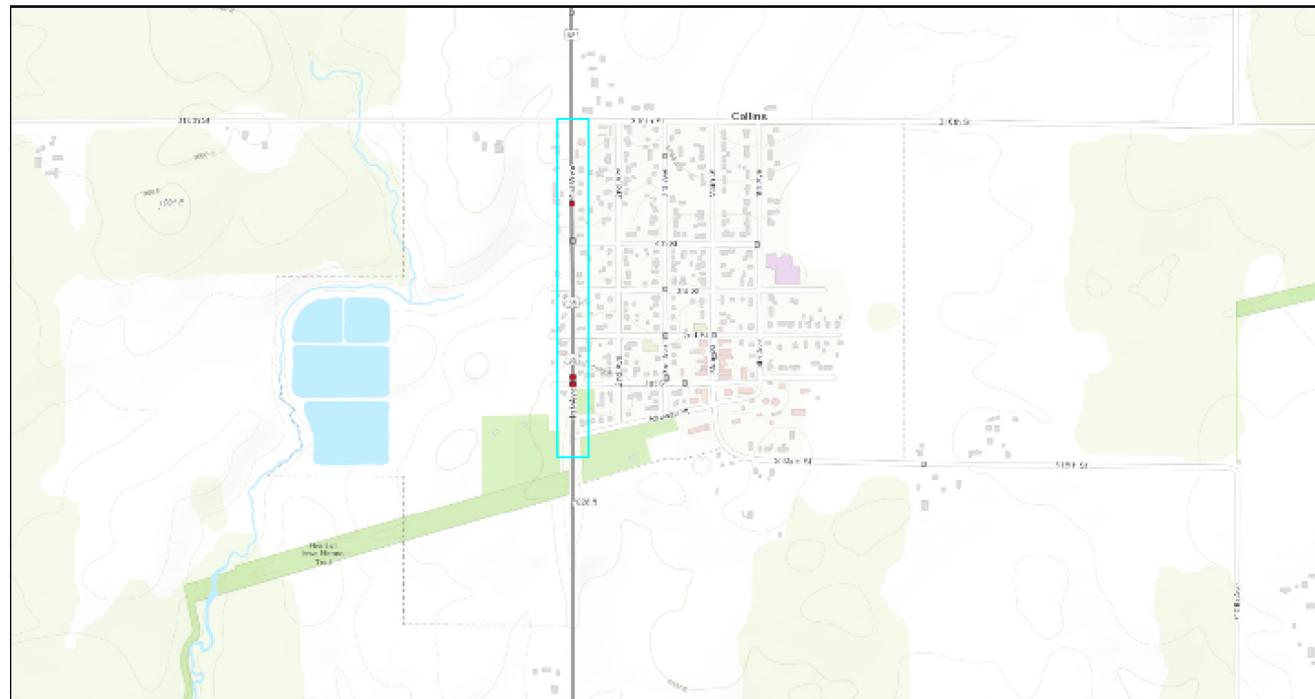


Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Crash Severity	3
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	1
Property Damage Only	2

Injury Status Summary	1
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	1
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	19,000.00
Average (per crash dollars):	6,333.33
Total Vehicles:	6.00
Average (per crash):	2.00
Total Occupants:	8.00
Average (per crash):	2.67



07/31/2025

1 of 10



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Time of Day/Day of Week														
Day of Week	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Not reported	Total
Sunday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monday	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	1	1	0	0	0	0	3

Month	3
January	0
February	1
March	0
April	0
May	2
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Not reported	0

Contributing Circumstance - Environment	3
None apparent	1
Weather conditions	2
Visual obstruction	0
Non-motorist action	0
Glare	0
Animal in roadway	0
Severe crosswind	0
Not reported	0
Other	0
Unknown	0

Light Condition	3
Daylight	3
Dusk	0
Dawn	0
Dark - roadway lighted	0
Dark - roadway not lighted	0
Dark - unknown roadway lighting	0
Unknown	0
Not reported	0

Weather Conditions	3
Clear	1
Cloudy	1
Fog, smoke, smog	0
Freezing rain/drizzle	0
Rain	1
Sleet, hail	0
Snow	0
Blowing snow	0
Severe winds	0
Blowing sand, soil, dirt	0
Not reported	0
Other	0
Unknown	0

07/31/2025

2 of 10



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Major Cause		3
Animal	0 Ran traffic signal	0
Ran stop sign	0 Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0 FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0 FTYROW: From yield sign	0
FTYROW: Making left turn	0 FTYROW: From driveway	0
FTYROW: From parked position	0 FTYROW: To pedestrian	0
FTYROW: Other	1 Drove around RR grade crossing gates	0
Disregarded RR Signal	0 Crossed centerline (undivided)	0
Crossed median (divided)	0 Traveling wrong way or on wrong side of road	0
Aggressive driving/road rage	0 Driving too fast for conditions	1
Exceeded authorized speed	1 Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0 Followed too close	0
Passing: On wrong side	0 Passing: Where prohibited by signs/markings	0
Passing: With insufficient distance/inadequa...	0 Passing: Through/around barrier	0
Passing: Other passing	0 Made improper turn	0
Driver Distraction: Manual operation of an e...	0 Driver Distraction: Talking on a hand-held d...	0
Driver Distraction: Talking on a hands free ...	0 Driver Distraction: Adjusting devices (radio...	0
Driver Distraction: Other electronic device ...	0 Driver Distraction: Passenger	0
Driver Distraction: Unrestrained animal	0 Driver Distraction: Reaching for object(s)/f...	0
Driver Distraction: Inattentive/lost in thou...	0 Driver Distraction: Other interior distracti...	0
Driver Distraction: Exterior distraction	0 Ran off road - right	0
Ran off road - straight	0 Ran off road - left	0
Lost control	0 Swerving/Evasive Action	0
Over correcting/over steering	0 Failed to keep in proper lane	0
Failure to signal intentions	0 Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0 Other: Vision obstructed	0
Other: Improper operation	0 Other: Disregarded warning sign	0
Other: Disregarded signs/road markings	0 Other: Illegal off-road driving	0
Downhill runaway	0 Separation of units	0
Towing improperly	0 Cargo/equipment loss or shift	0
Equipment failure	0 Oversized load/vehicle	0
Other: Getting off/out of vehicle	0 Failure to dim lights/have lights on	0
Improper backing	0 Improper starting	0
Illegally parked/unattended	0 Driving less than the posted speed limit	0
Operator inexperience	0 Other	0
Unknown	0 Not reported	0
Other: No improper action	0	0



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Manner of Crash Collision	3	Location of First Harmful Event	3
Non-collision (single vehicle)	0	On roadway	3
Head-on (front to front)	0	Shoulder	0
Rear-end (front to rear)	1	Median	0
Angle (oncoming left turn)	0	Roadside	0
Broadside (front to side)	1	Gore	0
Sideswipe (same direction)	1	Outside trafficway	0
Sideswipe (opposite direction)	0	In parking lane/zone	0
Rear to rear	0	Continuous left turn lane	0
Rear to side	0	Separator	0
Not reported	0	Not reported	0
Other	0	Other	0
Unknown	0	Unknown	0

Event Summary - Non-Collision							Total Vehicles: 6
First Harmful	Most Harmful	Sequence					Overturn/rollover
		1st	2nd	3rd	4th	5th	
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

07/31/2025

3 of 10

07/31/2025

4 of 10



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Event Summary - Collision With							Total Vehicles: 6
Sequence							
First Harmful	Most Harmful	1st	2nd	3rd	4th		
0	0	0	0	0	0	0	Thrown or falling object
0	0	0	0	0	0	0	Animal
0	0	0	0	0	0	0	Non-motorist (see non-motorist section - NOT ...)
3	4	5	1	0	0	0	Vehicle in traffic
0	0	0	0	0	0	0	Re-entering roadway
0	0	0	0	0	0	0	Parked motor vehicle
0	0	0	0	0	0	0	Work zone maintenance equipment
0	0	0	0	0	0	0	Railway vehicle/train
0	0	0	0	0	0	0	Struck/struck by object/cargo/person from oth...
0	0	0	0	0	0	0	Other non-fixed object

Event Summary - Collision With Fixed Object							Total Vehicles: 6
Sequence							
First Harmful	Most Harmful	1st	2nd	3rd	4th		
0	0	0	0	0	0	0	Bridge overhead structure
0	0	0	0	0	0	0	Bridge pier or support
0	0	0	0	0	0	0	Bridge/bridge rail parapet
0	0	0	0	0	0	0	Curb/island/raised median
0	0	0	0	0	0	0	Ditch
0	0	0	0	0	0	0	Ground
0	0	0	0	0	0	0	Guardrail - face
0	0	0	0	0	0	0	Concrete traffic barrier (median or right sid...
0	0	0	0	0	0	0	Cable barrier
0	0	0	0	0	0	0	Utility pole/light support
0	0	0	0	0	0	0	Traffic signal support
0	0	0	0	0	0	0	Fire hydrant
0	0	0	0	0	0	0	Tree
0	0	0	0	0	0	0	Snow bank
0	0	0	0	0	0	0	Wall
0	0	0	0	0	0	0	Other fixed object



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Event Summary - Miscellaneous Events							Total Vehicles: 6
Sequence							
First Harmful	Most Harmful	1st	2nd	3rd	4th		
0	0	0	0	0	0	0	Fire/explosion
0	0	0	0	0	0	0	Immersion
0	0	0	0	0	0	0	Hit and run
0	0	0	0	0	0	0	Eluding law enforcement
0	0	0	0	0	0	0	Gas inhalation/asphyxiation
0	0	0	0	0	0	0	Vehicle out of gear/rolled

Fixed Object Struck							6
Bridge overhead structure	0	Bridge pier or support	0				
Bridge/bridge rail parapet	0	Curb/island/raised median	0				
Ditch	0	Embankment	0				
Ground	0	Culvert/pipe opening	0				
Guardrail - face	0	Guardrail - end	0				
Concrete traffic barrier (median or right sid...	0	Other traffic barrier	0				
Cable barrier	0	Impact attenuator/crash cushion	0				
Utility pole/light support	0	Traffic sign support	0				
Traffic signal support	0	Other post/pole/support	0				
Fire hydrant	0	Mailbox	0				
Tree	0	Landscape/shrubbery	0				
Snow bank	0	Fence	0				
Wall	0	Building	0				
Other fixed object	0	None (no fixed object struck)	6				

Drug/Alcohol Related							3
Drug	0						
Alcohol (< Statutory)	0						
Alcohol (Statutory)	0						
Drug and Alcohol (< Statutory)	0						
Drug and Alcohol (Statutory)	0						
Refused	0						
Under Influence of Alcohol/Drugs/Medications	0						
None Indicated	3						

Non-Motorist Type							0
Pedestrian	0						
Pedalcyclist (bicycle/tricycle/unicycle/pedal...	0						
Pedalcycle passenger	0						
In or on building	0						
Horse and buggy	0						
Skater, personal conveyance, wheelchair	0						
Not reported	0						
Other non-motorist	0						
Unknown	0						



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

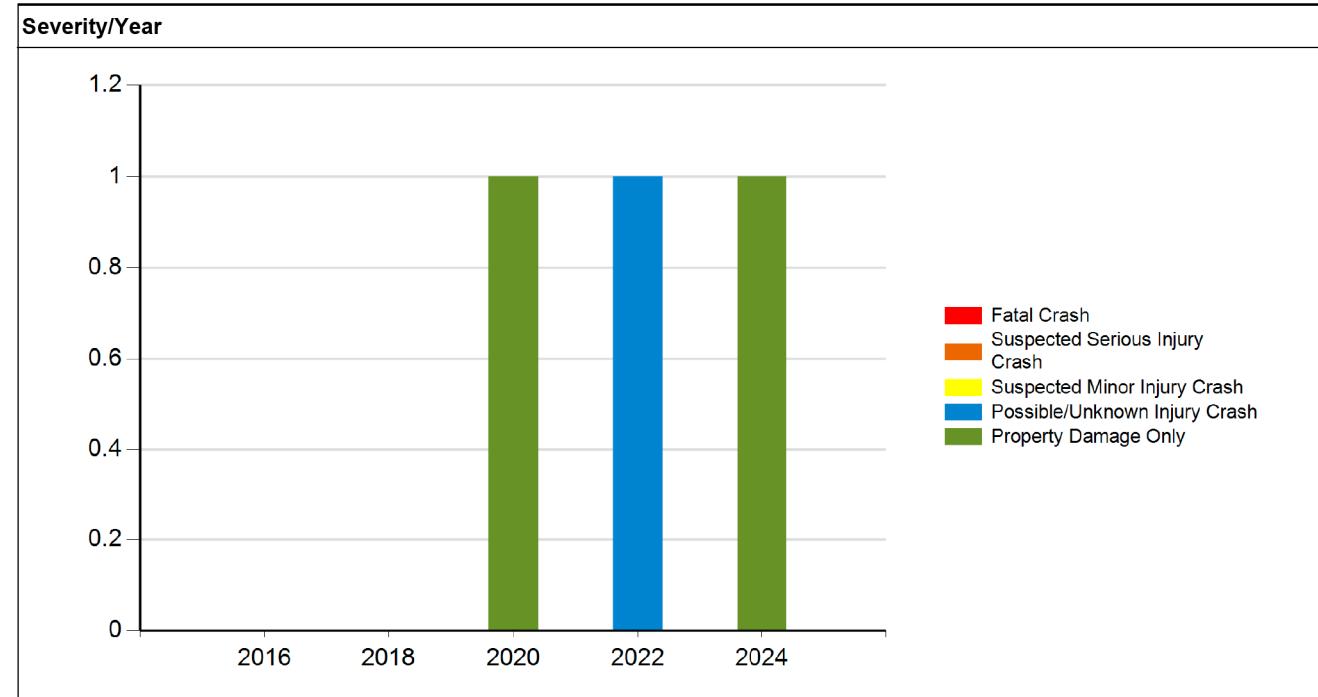
Road Classification	3
Interstate	0
US Route	3
Iowa Route	0
Secondary Road	0
Municipal Road	0
Institutional Road	0
Other	0
Unknown	0
Work Zone Type	0
Lane closure	0
Lane switch/crossover	0
Work on shoulder or median	0
Intermittent or moving work	0
Not reported	0
Other	0
Unknown	0
Work Zone Location	0
Before work zone warning sign	0
Advance warning area	0
Transition area	0
Within or adjacent to work activity	0
Termination area	0
Not reported	0
Other	0
Unknown	0
Work Zone Activity	0
Construction	0
Maintenance	0
Utility	0
Not reported	0
Other	0
Unknown	0
Workers Present	0
Workers only	0
No workers present	0
Workers and officer present	0
Law enforcement only	0
No one present	0
Not reported	0
Other	0
Unknown	0
Work Zone Related	0
Yes	0
No	0
Unknown	0
Not reported	0

Intersection Classification	2
Interstate - Interstate	0
Interstate - US Route	0
Interstate - IA Route	0
Interstate - Secondary	0
Interstate - Municipal	0
Interstate - Institutions	0
US Route - US Route	0
US Route - IA Route	0
US Route - Secondary	0
US Route - Municipal	0
US Route - Institutions	0
IA Route - IA Route	0
IA Route - Secondary	0
IA Route - Municipal	0
IA Route - Institutions	0
Secondary - Secondary	0
Secondary - Municipal	0
Secondary - Institutions	0
Municipal - Municipal	0
Municipal - Institutions	0
Institutions - Institutions	0
Not Indicated as an Intersection	2
Unlocated or Unknown	0
Contributing Circumstance - Road	3
None apparent	1
Surface condition (e.g., wet, icy)	2
Debris	0
Ruts/holes/bumps	0
Work Zone (roadway-related)	0
Slippery, loose, or worn surface	0
Obstruction in roadway	0
Traffic control obscured	0
Shoulders (none, low, soft, high)	0
Non-highway work	0
Traffic backup, prior crash	0
Traffic backup, regular congestion	0
Traffic backup, prior non-recurring incident	0
Disabled vehicle	0
Not reported	0
Other	0
Unknown	0



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Crash Severity - Annual						
Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	Total
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	1	1
2021	0	0	0	0	0	0
2022	0	0	0	1	0	1
2023	0	0	0	0	0	0
2024	0	0	0	0	1	1
2025	0	0	0	0	0	0
Total	0	0	0	1	2	3



07/31/2025

7 of 10

07/31/2025

8 of 10

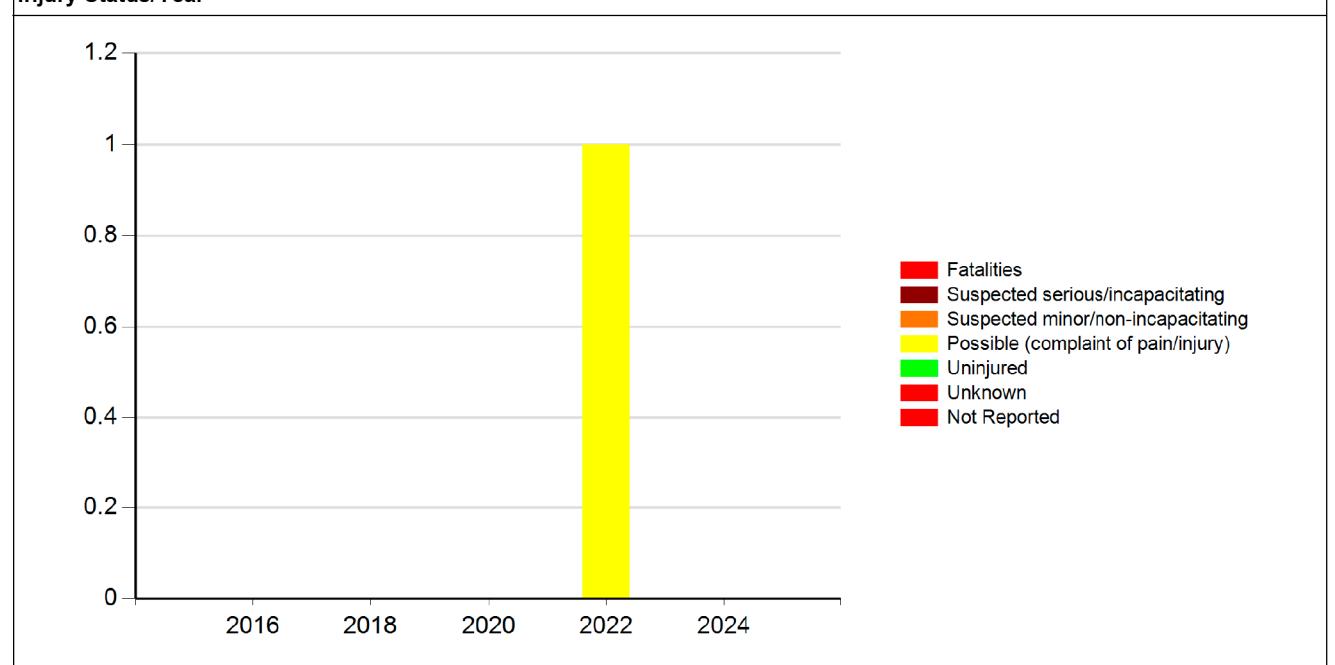


Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	Total
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	1	0	0	0	1
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	1

Injury Status/Year



Iowa Crash Analysis Tool
Crash Characteristics
2020-2025

Meeting the following criteria

Jurisdiction: Counties (Story)
Year: 2020, 2021, 2022, 2023, 2024, 2025
Map Selection: Yes
Filter: None

Analyst Information

US 65_Story County 042

07/31/2025

9 of 10

07/31/2025

10 of 10

General Input	
FHWA or Structure Number	NA
PIN Number	25-85-065-010
Project Number	STP-065-5(042)--2C-85
Design Number	NA
County Name	Story
Route Carried	US 65
Feature Crossed	Unnamed Ditch
Location Description	0.2 mi S of Co Rd E63/310th St in Collins

Required SI&A Input for Calculation of ABC Rating Score			
SI&A Item No.	SI&A Item	SI&A Item Value	SI&A Units
5B	Route Signing Prefix	2	
19	Bypass, Detour Length	18	miles
29	Average Daily Traffic (On)	2,500	
29	Average Daily Traffic (Under)	0	
45	Number of Spans in Main Unit	1	
46	Number of Approach Spans	0	
109	Average Daily Truck Traffic	23	%

Note: If the ABC Rating Score is less than 50 and the structure is an interstate bridge or the detour is greater than or equal to 30 miles then the score is set to 50.

Concept Measure Scores	
Concept Measure	Score
Average Annual Daily Traffic Combined value of 100% on and 25% under =	1
2,500	
Out of Distance Travel Value in miles =	4
18	
User Costs Value in \$ =	2
\$24,637.50	
Economy of Scale Value is total number of spans =	0
1	

ABC Rating Score Factors and Weights								
Concept Measure	Score	Weight Factor	Adjusted Score	Maximum Score	Adjusted Score			
Average Annual Daily Traffic	1	10	10	5	50			
Out of Distance Travel	4	10	40	5	50			
User Costs	2	10	20	5	50			
Economy of Scale	0	5	0	3	15			
	Total Score		70	Max. Score		165		
	Calculated ABC Rating Score					42		
	ABC Rating Score					42		

Roadway	US 65		
PIN Number	25-85-065-010	Submittal Date	09/18/25
Project Number	STP-065-5(042)--2C-85	Approval Date	
District	District 1	Assistant District Engineer	Jeremy Vortherms
County	STORY	or	
Route	US 65	Office Director	
Location	0.2 mi S of Co Rd E63/310th St in Collins		
Work Type	Culvert Addition		
Segment Manager			
Designer	Veenstra & Kimm, Inc.		
Design Manual Section 1C-1			
Last Updated: 04-29-19			
Urban Two-Lane Roadways (Urban Arterials)			
Design Element	Preferred	Acceptable Criteria	Project Values
Design speed (mph)	The anticipated posted speed limit	30	35
Maximum superelevation rate (Refer to Section 2A-2)	4%	6%	N/A
Design lane width (ft)	12	11	12
Full depth paved width (ft)	Design lane width + curb and gutter unit or 14 feet for roadways with shoulders	Match design lane width	16
Right turn lane (ft)	12	10	N/A
Left turn lane (ft)	With raised or painted median 12 ft + median With depressed median 12	10 ft + median 10	N/A
Two-way left turn lane	14	11	N/A
Parking lane width (ft)	10	7	N/A
Pavement cross-slope (on tangent sections)	Through lanes 2% Auxiliary and turn lanes 3% Crown break at centerline 4%	1.5% minimum, 2% maximum 3% maximum 4% maximum	2% N/A N/A
Shoulder cross-slope (on tangent sections)	Shoulders 4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Curb and gutter units	Match pavement cross-slope	6% maximum	2%
Parking lanes	1% greater than pavement cross-slope	6% maximum	N/A
Curb type (See Section 3C-2)	Design speed ≤ 45 mph 6-inch standard	any shape	N/A
Foreslope	Adjacent to shoulder 10:1 for 4' then 6:1	3:1	10:1 for 4' then 6:1
(For fill areas greater than 40 ft, Beyond standard ditch depth and contact the Soils Design Section for design clear zone assistance)	3.5:1	3:1	3.5:1
Curbed roadways	2%	not steeper than 3:1	N/A
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)	3:1	2.5:1	3:1
Traverse Slopes	w/ drainage structures 8:1 w/o drainage structures 10:1	6:1 6:1	N/A N/A
Ditches (See Section 3G-1)	Outside ditch (depth x width) (ft) 5 x 10	--	
Bridge width—new*	Bridge length ≤ 200 ft Bridge length > 200 ft	design lane widths + effective shoulder widths or curb-to-curb width in curb and gutter section** design lane widths + effective shoulder widths (curbed or uncurbed) or design lane width + 3 ft each side (curbed) which ever is greater design lane widths + 4 ft offset each side for roadways with shoulders or curb-to-curb width in curb and gutter section** which ever is greater	40' N/A
Bridge width—existing*		design lane widths + no less than 2 ft left and right	32'
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary 16.5 Over non-primary 16.5 at interchange locations, 15 at all other locations Over railroad 23.3 Over sign trusses and pedestrian bridges 17.5	16 14 23.3 17	N/A N/A N/A N/A
Structural Capacity	Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	
Level of Service	C	D	C

*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exemption is required)

** If travel lanes are less than 12 ft wide contact the Methods Section for assistance.

Design year ADT = 2500		Effective Shoulder Width and Type for Two-Lane Highways			
Design Manual Section 1C-1 Last Updated: 04-29-19					
Preferred (values shown in feet)		Acceptable (values shown in feet)		Project Values	
Turn lanes with shoulders	6	6	Turn lanes with shoulders	6	0
Turn lanes with curbs	6	See Section 3C-2	Turn lanes with curbs	6	0
Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	
Climbing Lanes	6	4	Climbing Lanes	4	0
Two-Lane Highways	Effective Shoulder Width	Paved Width	Two-Lane Highways	Effective Shoulder Width	Paved Width
Routes where bicycles are to be accommodated	10	10			
On roadways approaching urban areas (due to increased bike traffic)	10	10	Design year ADT > 2000 vpd	8	0*
On all curves with a superelevation rate of 7.0% or greater	10	10			
On roadways with design year ADT > 5000	10	6	Design year ADT between 400 - 2000 vpd	6	0*
On all other NHS	10	6			
On non-NHS routes with design year ADT > 3000	10	6	Design year ADT < 400 vpd	4	0*
On non-NHS routes with design year ADT < 3000	8	0*			
*Requires safety edge-Refer to Section 3C-6 Curbs should be located beyond the outer edge of the effective shoulder width in rural areas Refer to Section 3C-2 for curb offsets in urban areas					
Notes:					

Bridge Bureau Attachment for Concept Statement

Date: October 13, 2025

By: Veenstra & Kimm, Inc.

Location: US 65 over Drainage Ditch

County: Story County

Phase No.: STP-065-5(042)--2C-85

Project Code: 25-85-065-010

1. Regulatory/Coordination

- a. Iowa DNR Flood Plain permit = No
- b. Iowa DNR Sovereign Lands permit = No
- c. Local Record of Coordination = Yes
- d. Flood Insurance Study = No
- e. Drainage District = Yes, Story County D.D. #56
- f. Corps of Engineers Section 408 = No
- g. State Water Trail or Paddling Route = No
- h. Historic Structure = No
- i. Federally owned land in vicinity = No
- j. USGS or Iowa Flood Center (IFC) gage or sensor impacted? No
- k. Obstruction Evaluation/Airport Airspace Analysis per FAA website = No

2. Hydrologic/Hydraulic Analysis/RIDB Dataset

- a. Design discharge methodology = Streamstats (2015-5055)
- b. Hydraulic analysis done = Yes using Iowa Culvert Hydraulics
- c. If DA > 10 sq. mi. Riverine Infrastructure Database (RIDB) dataset is required with B1 submittal = No
- d. Coordinate flowlines with drainage district.

3. Structure/Roadway Layout Considerations

- a. A roadway profile grade raise is not anticipated.
- b. Culvert length and depth based on 2013 plans to lower US 65.

4. Special construction issues

- a. It is desirable for new structure foundations to avoid existing drainage tiles and utilities.
- b. An easement will be required to ditch outlet.

5. Special survey = No

6. Aesthetic enhancements = No

7. Other

- a. Maintenance of Traffic - Detour

Special Survey:

None.

~ 1 ~

12-22-2025
Field Exam Notes

D2 virtual field exam meeting was held on December 22, 2025. Those present included Jimmy Ellis, Yanxiao Jia, Christian Kennel, Daniel Hofer, John Bartholomew, Phil Mesher, Brad Hofer, David Claman, Sharihaboshra Diya, Jacob Imming from Iowa DOT, from Blake Walter from NEPA; Janee Becker, Jill Garton, Claire Asberry Brandy Beavers from the LEB; Frank Leong, Benjamin Adey, Sean Passick, Devendra Tamrakar, Shannon Hardman from Iowa DOT District 1, Scott Wall from Story County Drainage District, and Mark Currie, Edward Gapatan, Russ Lemke and Steven Messler from Veenstra & Kimm, Inc.

Mark C. discussed the existing culvert, the project site, flooding encountered in the site and 2013 plans to replace the culvert that was not completed. Discussion continued to with the concept, draft D2 letter and the proposed new culvert structure.

It was reiterated that the structure location shown is not yet final due to probable drainage tile and utility conflicts. Discussion went on to locations of presumed to be existing drainage tile and utilities, conflicting information from 1938 and 2013 existing plans and ultimately recommending potholing utilities to aid in determining final location and feasibility of construction a culvert. V&K stressed concerns about exposing the century old tiles and construction activities affecting these tiles/utilities.

- Jim concurred on potholing for utilities to verify exact location, both horizontal and vertical. He later added that 26" tiles are usually buried deep.
- V&K recommended probable change from 16x4 to 16x3 custom RCB to limit excavation and evaluation of the curtain wall.
- V&K proposed to route the existing water line in the west depending on potholing information.

It was reiterated that building the culvert serves two purpose – 1) to carry higher flow (move bottleneck) and 2) to allow for future lowering of US 65, change to curbed roadway with room for sidewalks.

Dave C. asked about the retaining wall to the east. He was curious if more ROW is required

- Impact unknown as of now and will need to reevaluated

Yanxiao J. commented on apron southwest of the RCB outlet. It should be rerouted to drain at the outlet of new RCB.

- V&K to evaluate between armoring vs routing it (add a bend/manhole). It was noted that the 2013 plan proposed to construct an intake south of the culvert that was not constructed. Jim E. noted that it is not ideal to project it to the RCB wall.

Proposed culvert will be cast in place / No precast option due to custom inlet headwall and design fill for future US 65 being less than 2'.

Discussion of on-site field exam (District preferred) for Collins and Colo Site. To be scheduled after potholing and checking project schedule.

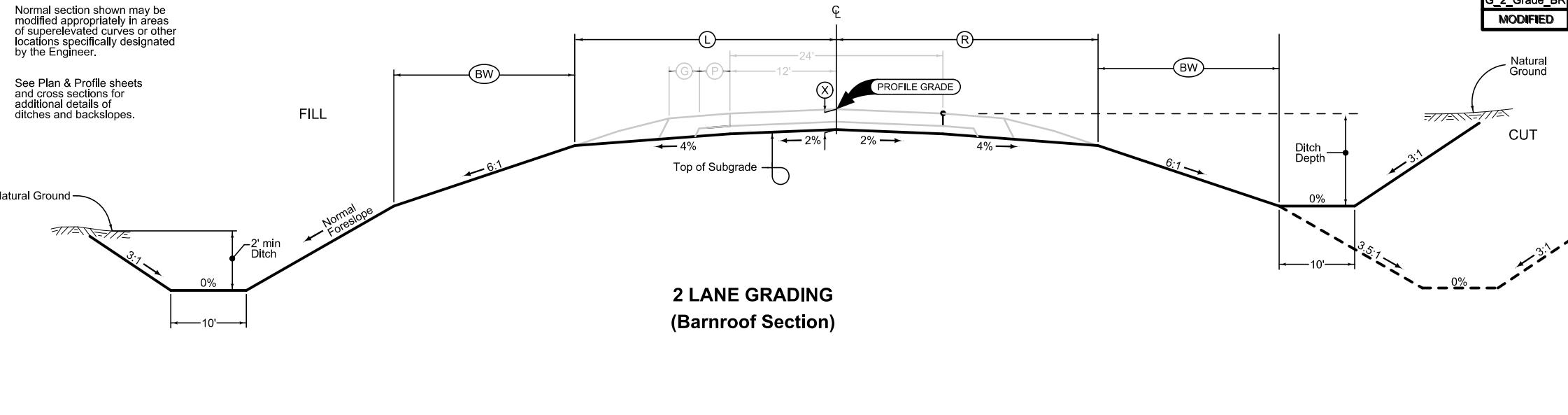
FIELD EXAM NOTES

FIELD EXAM NOTES

FIELD EXAM NOTES

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheet
and cross sections for
additional details of
ditches and backslopes

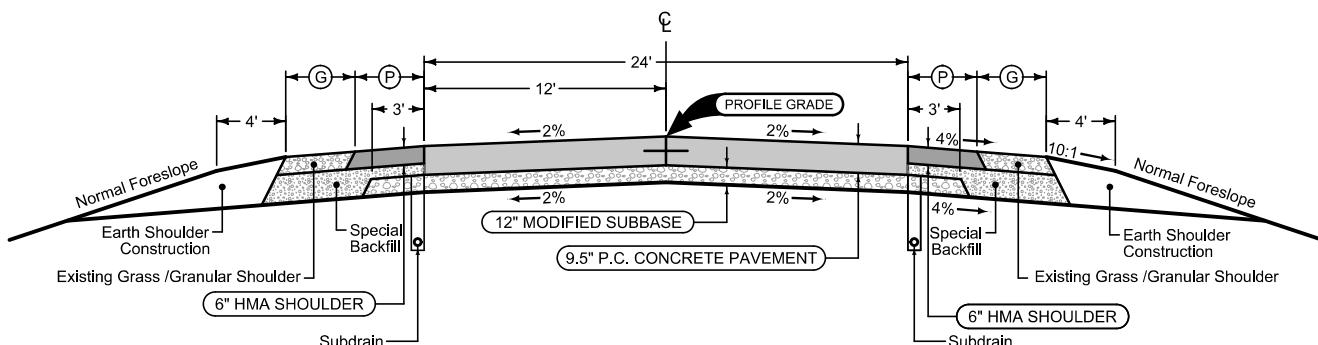


2 LANE GRADING (Barnroof Section)

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(P)	(G)
		Feet	Feet
1345+17.00	1346+01.00	4	4



Mainline Jointing:
Transverse joints: CD at 20' spacing
Longitudinal joint: L-2

2P
MODIFIED

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

		2, C
		04-21-20
STATION TO STATION		(P)
		Feet
1345+17.00	1346+01.00	4

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

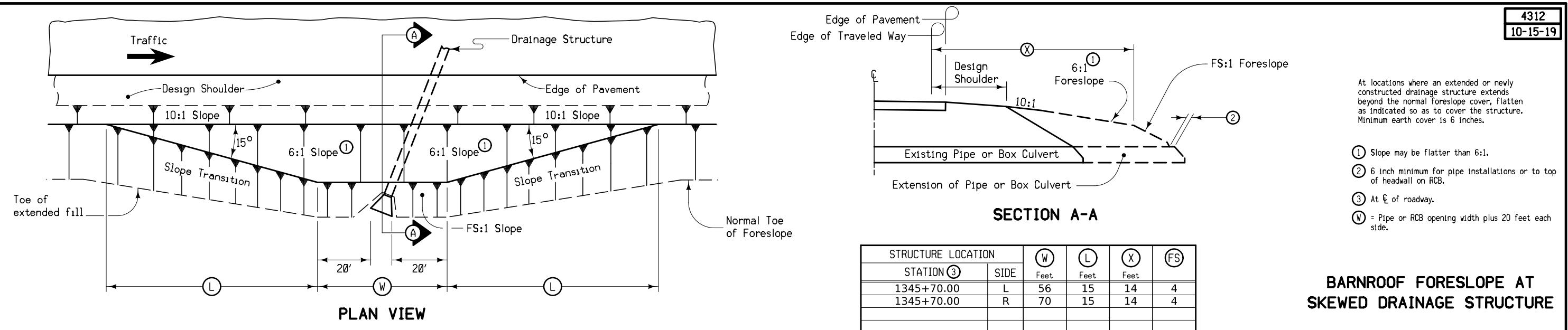
See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

See Tab 100-24 for pavement quantities.

See Tab 112-9 for non-curbed shoulder and earth shoulder quantities.

See U-sheets for shoulder transition details.

US 65



SURVEY SYMBOLS

	Interstate Highway Symbol
	U.S. Highway Symbol
	Iowa Highway Symbol
	County Road Highway Symbol
	Evergreen Tree
	Deciduous Tree
	Fruit Tree
	Shrub (Bushes)
	Timber
	Hedge
	Stump
	Swamp
	Rock Outcrop
	Broken Concrete
	Revetment (Rip Rap)
	Cemetery
	Grave
	Cave
	Sink Hole
	Board Fence
	Chain Link or Security Fence
	Wire Fence
	Terrace
	Earth Dam or Dike (Existing)
	Tile Outlet
	Edge of Water
	Existing Drainage
	Right of Way Rail or Lot Corner
	Concrete Monument
	Well
	Windmill
	Beehive Intake
	Existing Intake
	Existing Utility Access (Manhole)
	Fire Hydrant
	Water Hydrant (Rural)

UTILITY LEGEND

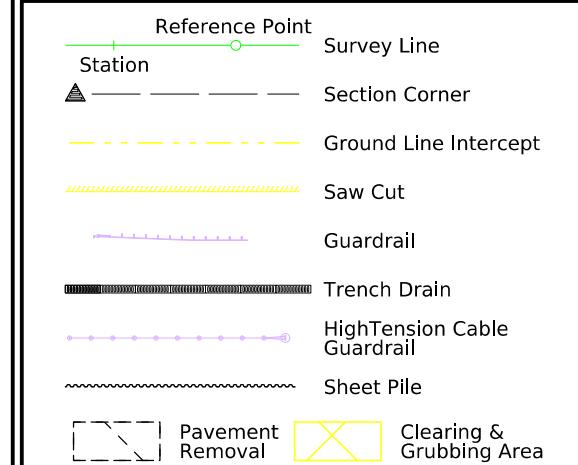
	Septic Tank
	Cistern
	L.P. Gas Tank (No Footing)
	Underground Storage Tank
	Latrine
	Satellite TV Dish
	Water Hook Up
	Radio Tower
	Tower Anchor
	Guardrail (Beam or Cable)
	Guard Post (one or two)
	Guard Post (over two)
	Filler Pipe

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.
Pink, Dark	(13)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.
Green	(10)	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

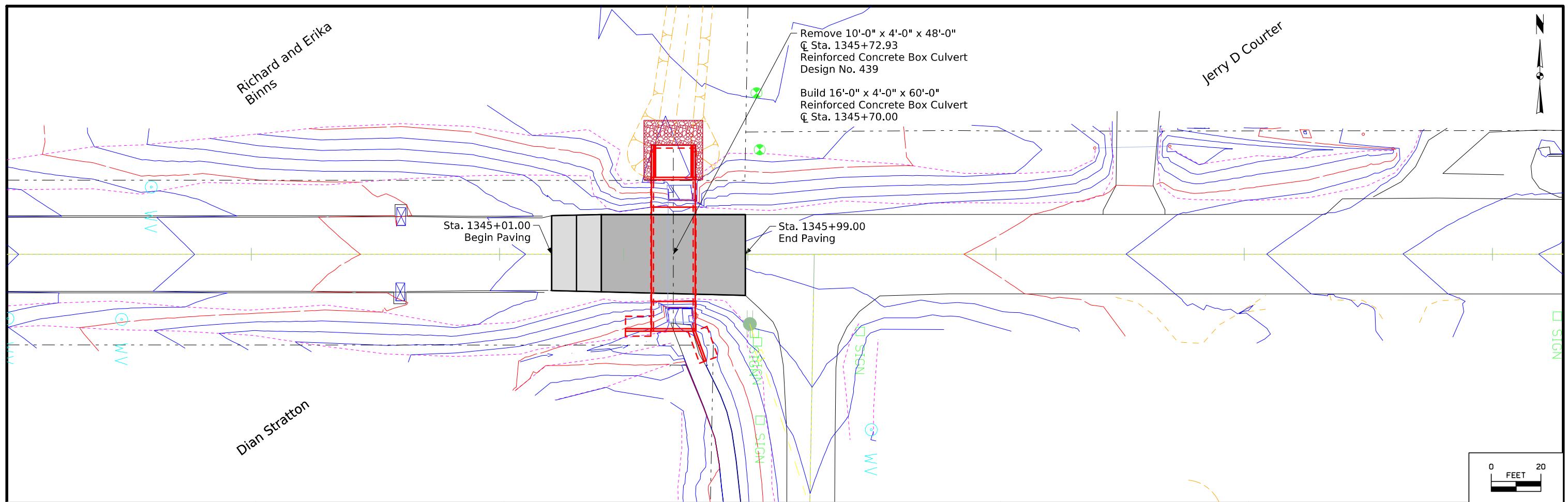


RIGHT-OF-WAY LEGEND

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

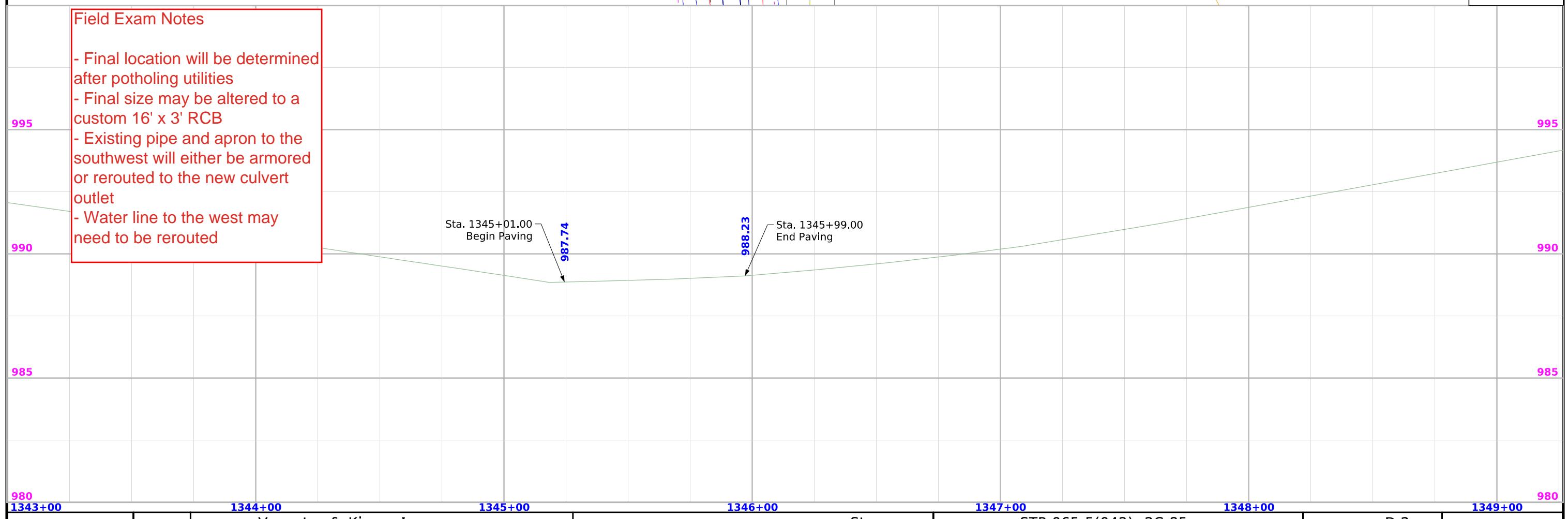
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Field Exam Notes

- Final location will be determined after potholing utilities
- Final size may be altered to a custom 16' x 3' RCB
- Existing pipe and apron to the southwest will either be armored or rerouted to the new culvert outlet
- Water line to the west may need to be rerouted



Survey Information

SURVEY INDEX

County: Story
PIN: 25-85-065-010
Project Number: STP-065-5(042)--2C-85
Location: 0.2 mi S of Co Rd E63/310th St in Collins
Type of Work: Culvert
Project Directory: 8506501025

This survey observed AE2152, NK0704, and DP4568.
AE2152 – disk set in concrete monument
Elevation = 1014.042
NK0704 - disk set in concrete monument
Elevation = 1149.359
DP4568 - disk set in concrete monument
Elevation = 1054.295

Horizontal Control

The project coordinate system for this survey is Iowa RCS zone 08 (U.S. Survey Feet). This survey control is relative to IARTN reference stations IARTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011). Coordinates were determined by conducting a 5-minute observation in the morning, afternoon, and evening. Coordinates were then averaged between the three to determine the final coordinate.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 08 (U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3 or 2018u2

Alignment Information

The horizontal alignment for U.S. Hwy 65 is a retrace of the existing alignment. Survey stationing was equated to Sta. 1345+73.00 and carried back and ahead without equation throughout the survey.

Survey Personnel

Jerett Still – Party Chief
Craig Beedle – PLS
TJ Coyle – Assistant Survey Party Chief

Date(s) of Survey

Begin Date	08/29/2025
End Date	09/09/2025

General Information

Measurement units for this survey are US survey feet. This survey is for proposed revetment of Story County – Culvert under HWY65; 1010.62 feet South of 310th Street and 311.61 feet North of 3rd Street in Collins, IA.

Utility Information

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

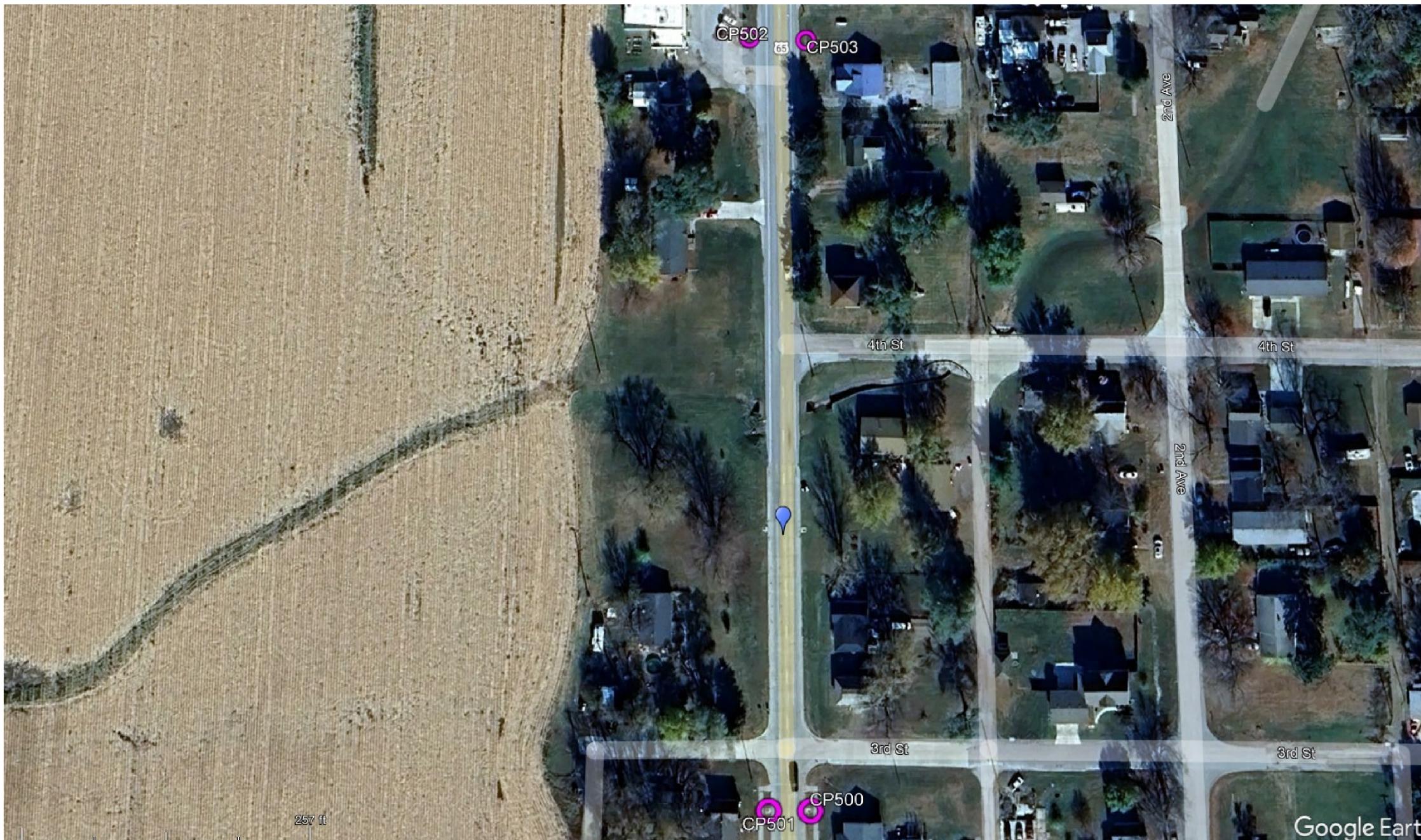
Project Control

Vertical Control

Vertical control was established by verifying one NGS monument. Vertical datum for this survey is relative to NAVD88. Geoid 2018 was used in processing. The height was computed at AE2152, NK0704, and DP4568. Vertical control was checked with IARTN checks.

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) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 08 (U.S. Survey Foot)

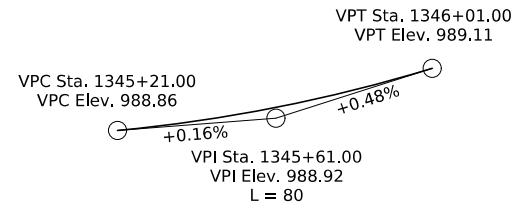
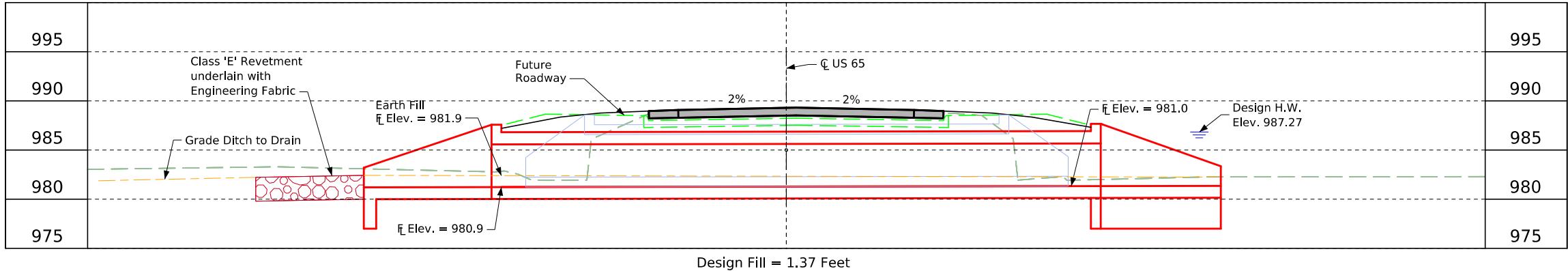
VERT. DATUM: NAVD88 - Geoid Model: 2018u3 or 2018u2

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

FILE NO. -	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Story COUNTY	PROJECT NUMBER STP-065-5(042)--2C-85	SHEET NUMBER G.2	
------------	---------	--	--------------	---	-------------------------	--

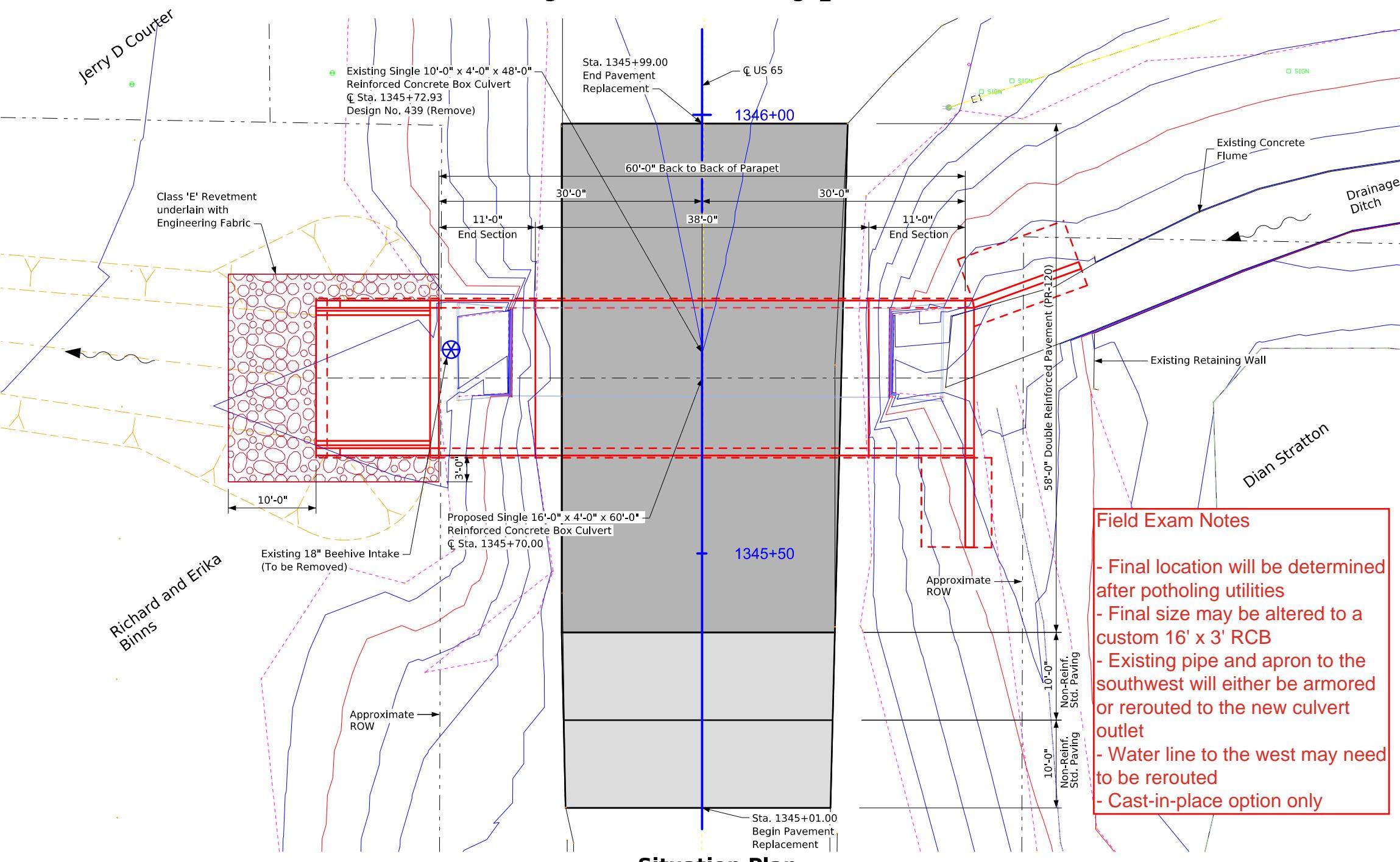
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
Ia. Regional Coordinate System Zone 08 (U.S. Survey Foot)
VERT. DATUM: NAVD88
Geoid Model: 2018u3 or 2018u2

Point Name	Northing	Easting	Elevation	Code Description
cp500	7602459.39	18610984.50	992.92	CP 5/8" rebar 1' deep; 3.45' East of back of curb; 367.53' South of edge of culvert
cp501	7602459.23	18610947.27	992.85	CP 5/8" rebar 1' deep; 4.17' West of back of curb; 367.47' South of edge of culvert
cp502	7603182.08	18610928.36	991.80	CP 5/8" rebar 1' deep; 10.82' West of edge of Asphalt; 345.64' North of edge of culvert
cp503	7603179.73	18610982.51	992.79	CP 5/8" rebar 1' deep; 8.34' East of edge of Asphalt; 342.72' North of edge of culvert



Proposed Profile Grade US 65

Longitudinal Section along Q Culvert



Hydraulic Data

Drainage Area = 1.24 Acres
 $Q_{50} = 390 \text{ CFS}$
 HW Elev. = 987.27
 Stream Slope = 21.7 Ft./Mi.

Utilities Legend:

— E1 — - Overhead Electric

Designer Notes

1. Flow line of culvert nominally buried 1.0 foot.
2. Design fill based on future lowering of US 65.
3. Custom headwall at inlet.

Location

US 65 over Drainage Ditch
 T-82N R-21W
 Section 20/21
 Collins Township
 Story County
 Latitude 41.903722°
 Longitude -93.309086°

Traffic Estimate

2027 AADT	2,300	V.P.D.
2047 AADT	2,500	V.P.D.
2047 DHV	250	V.P.H.
Trucks	22 %	

Design For 0 degrees
16'-0" x 4'-0" x 60'-0" Reinforced Concrete Box Culvert

Situation Plan

STA. 1345+70.00 (U.S. 65)
 Story County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design Sheet No. 1 of 1
 FHWA/Asset