



REVISIONS

TOTAL
16

PROJECT IDENTIFICATION NUMBER
20-23-136-060
PROJECT NUMBER
BRF-136-1(103)--38-23
R.O.W. PROJECT NUMBER

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
* A.1	Title Sheet
* A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 136
G Sheets	Survey Sheets
G.1 - 3	Reference Ties and Bench Marks
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
V Sheets	Bridge and Culvert Situation Plans
* V.1	Bridge and Culvert Situation Plan
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 5	Mainline Cross Sections
* Color Plan Sheets	

<----- H Sheets

PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
CLINTON COUNTY
Bridge Replacement
Elwood Creek 4.0 mi N of US 61

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



DESIGN DATA RURAL			
2025	AADT	800	V.P.D.
2045	AADT	900	V.P.D.
2045	DHV	100	V.P.H.
TRUCKS		11	%
Total Design ESALs		..	

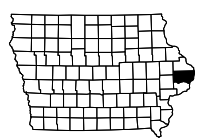
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Michael J. Janecek	Primary Signature Block
V.1	Phillip M. Harpole	Hydraulic Design

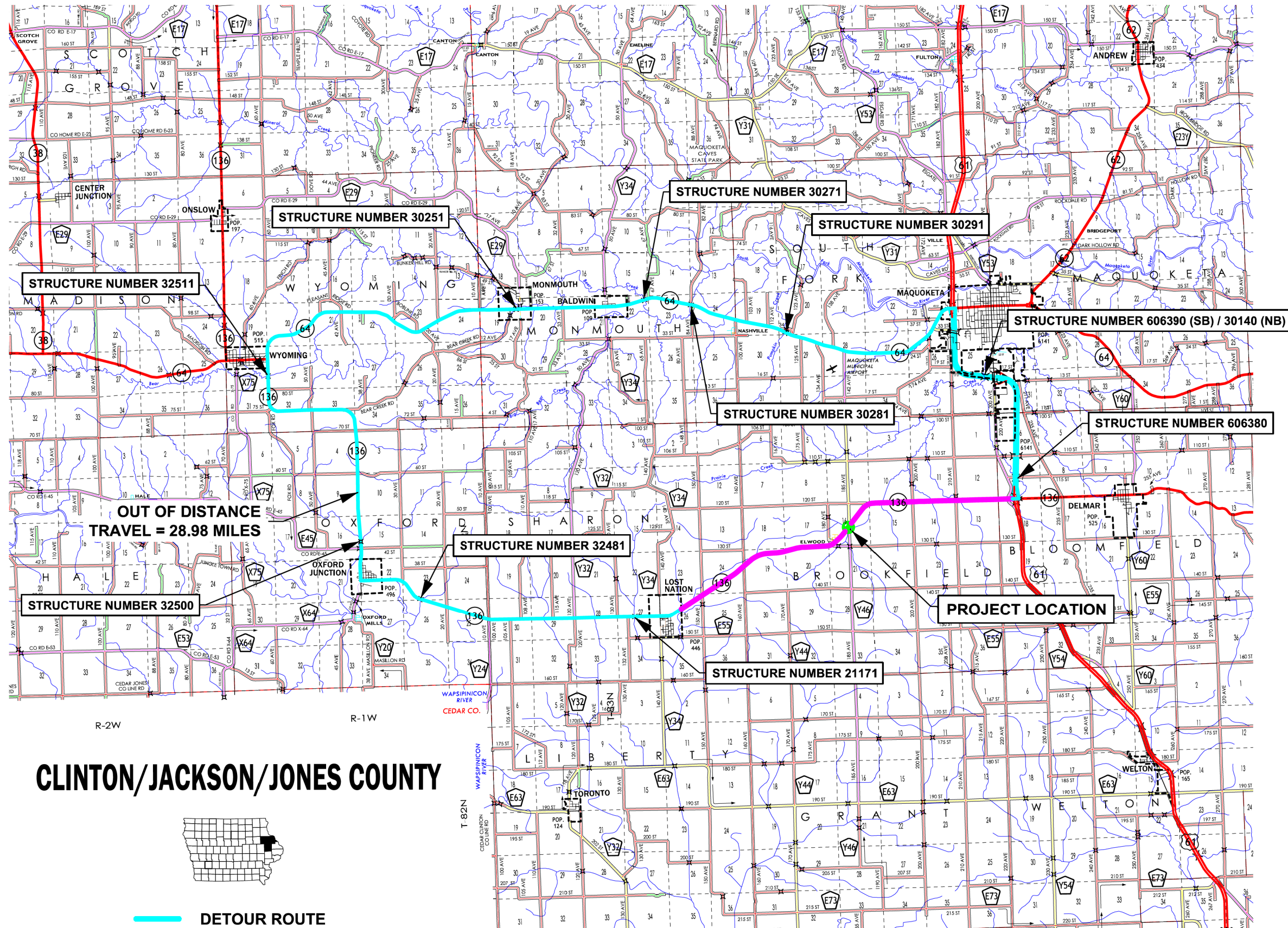
D2 PLAN – June 18, 2024

PRELIMINARY PLANS

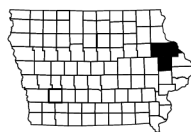
Subject to change by final design.

D5 PLAN – Sept 16, 2022

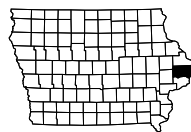




CLINTON/JACKSON/JONES COUNTY



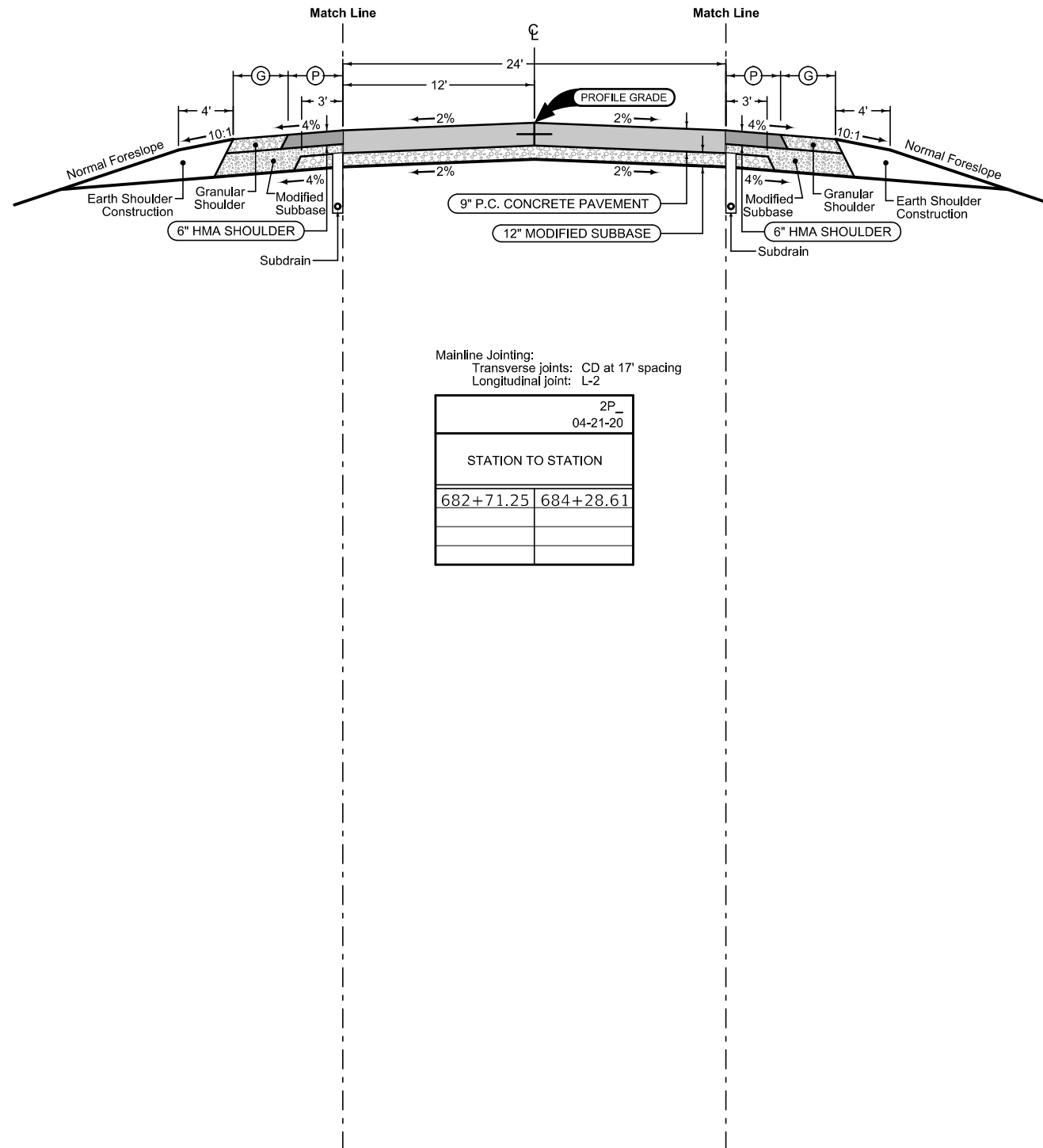
DETOUR ROUTE



Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

		2_C_04-21-20	
STATION TO STATION		(P) Feet	(G) Feet
682+71.25	684+28.61	4	4



Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

		2P_04-21-20	
STATION TO STATION			
682+71.25	684+28.61		

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

		2_C_04-21-20	
STATION TO STATION		(P) Feet	(G) Feet
682+71.25	684+28.61	4	4

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)
- 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
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- Sign
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box

UTILITY LEGEND

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
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
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
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
Green, Light	(225)		Existing Pavement Shading
Red	(3)		Proposed Structure 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
- Station
- Survey Line
- 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)

Survey Information

Clinton County
BRF-136-1(103)-38-23
State Highway 136 and 185th Avenue over Elwood Creek
PIN 20-23-136-060
Sap-766.5

datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by IARTN observations with appropriate occupation times. Additional control points were placed throughout the project using a Total Station setup relative to Point 1 and Point 2.

Utility Information

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 *Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data*.

Remark abbreviations

QLA – Quality Level A Highest guideline quality level

QLD – Quality Level D Lowest guideline quality level

A One-call utility locate request (Ticket# 552104696) was made August 02, 2021. The following Companies were listed:

<u>Company (Quality)</u>	<u>Symbol</u>	<u>Remark</u>
Alliant Energy (ASE)	PPA	Power Poles South of IA 136 & East of 185 th Ave; Clear
Lost Nation-Elwood Telephone (LN1)	FOA	Buried Fiber Optic Line North of IA 136; Marked

Following are the list of contacts made in the order they were received:

(ASE) ALLIANT ENERGY

Contact Name : Alliant Energy Field Engineer Contact Phone: 8002554268 Contact Email: locate_IPL@alliantenergy.com

(LN1) LOST NATION-ELWOOD TELEPHONE

Contact Name : Jody Holtz
Contact Phone: 5636782470
Contact Email: jody@lencomm.com

Party Personnel

Murray Berting – Survey Party Chief
Gavin Gear – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 08/23/2021
End Date 10/22/2021

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction and reconstruction of State Highway 136 and 185th Avenue, over Elwood Creek. Project datum and control information is provided by Shive-Hattery Inc. This project is a Preliminary DTM Field Survey. This survey request was for the (2) Bridges over Elwood Creek, State Highway 136 and 185th Avenue Corridor and Elwood Creek.

Vertical Control

IARTN
Vertical datum for this survey is NAVD88 (Computed using Geoid12B). Additional benchmarks were placed throughout the project using a Total Station setup relative to Point 1 and Point 2. Vertical control was verified between control points with check shots by Total Station through multiple setup from various occupation points with a vertical error of less than 0.05 feet.

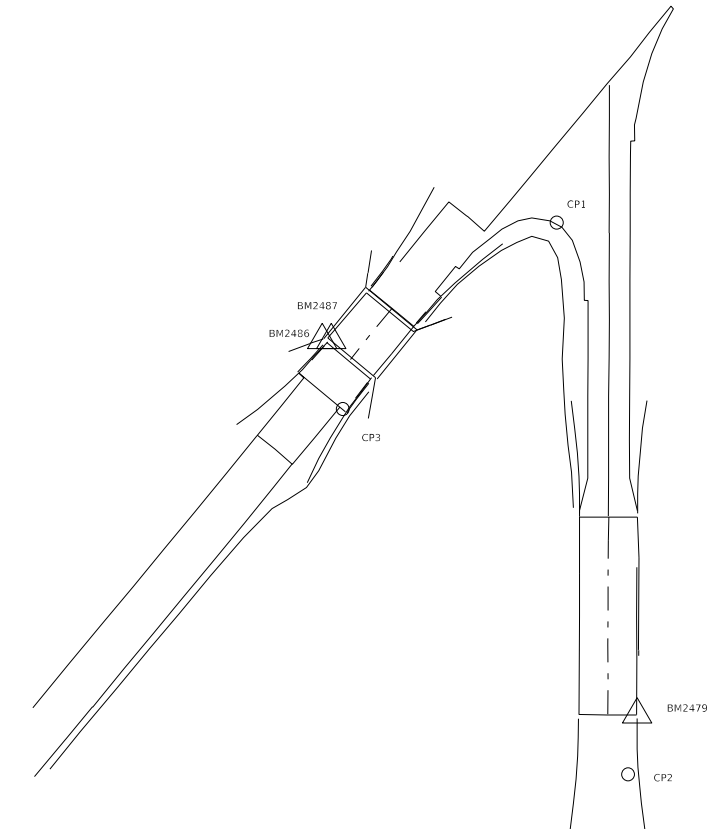
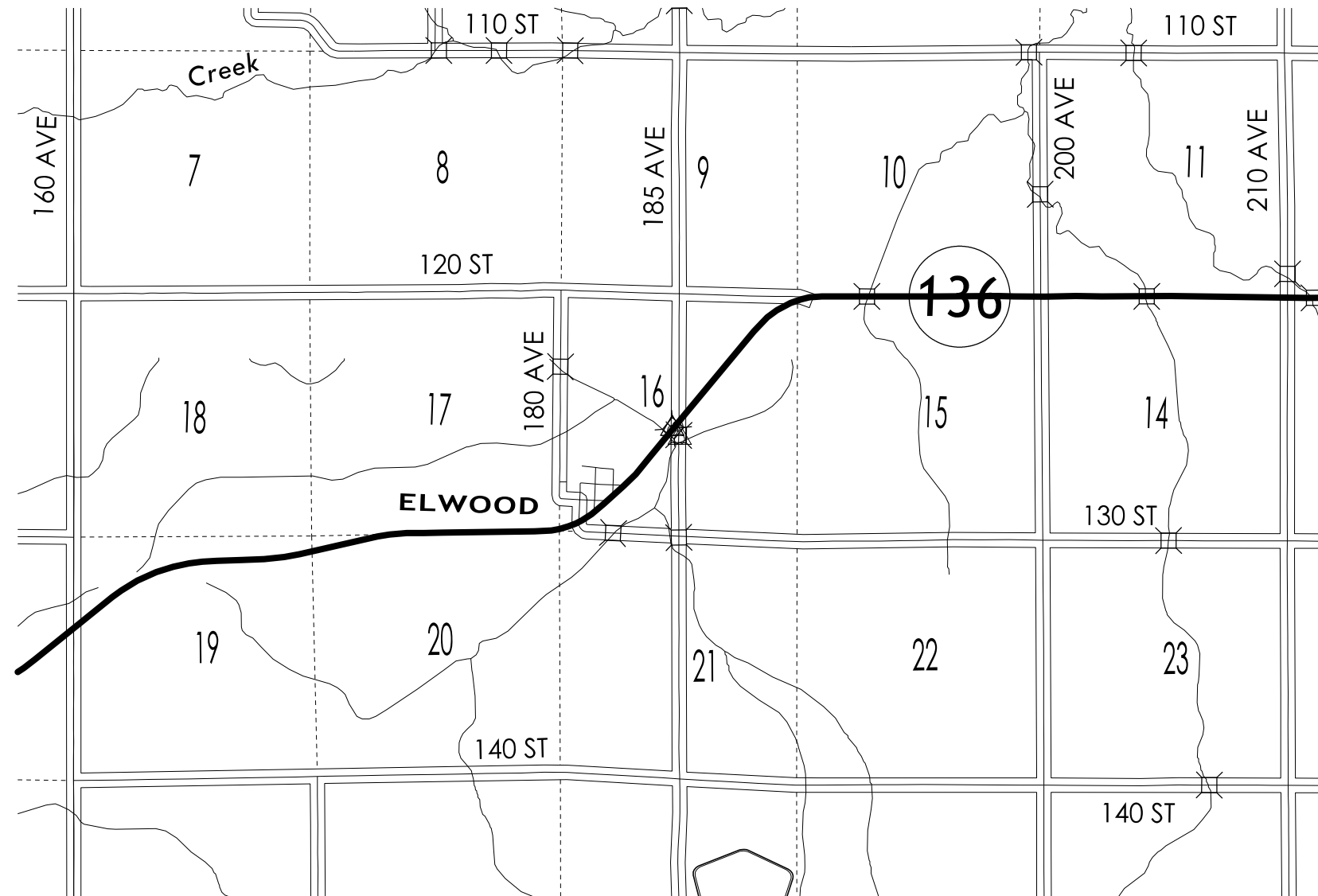
This survey found (3) local control benchmark monuments (benchmark disc on bridge abutment in SE corner bridge of 185th Avenue, benchmark 'cut X' and benchmark disc in the SW corner bridge of State Highway 136). No vertical information was available at the time field work was completed.

Horizontal Control

(Project Coordinates from Redundant IARTN Observations)

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

Ia. Regional Coordinate System Zone XX

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

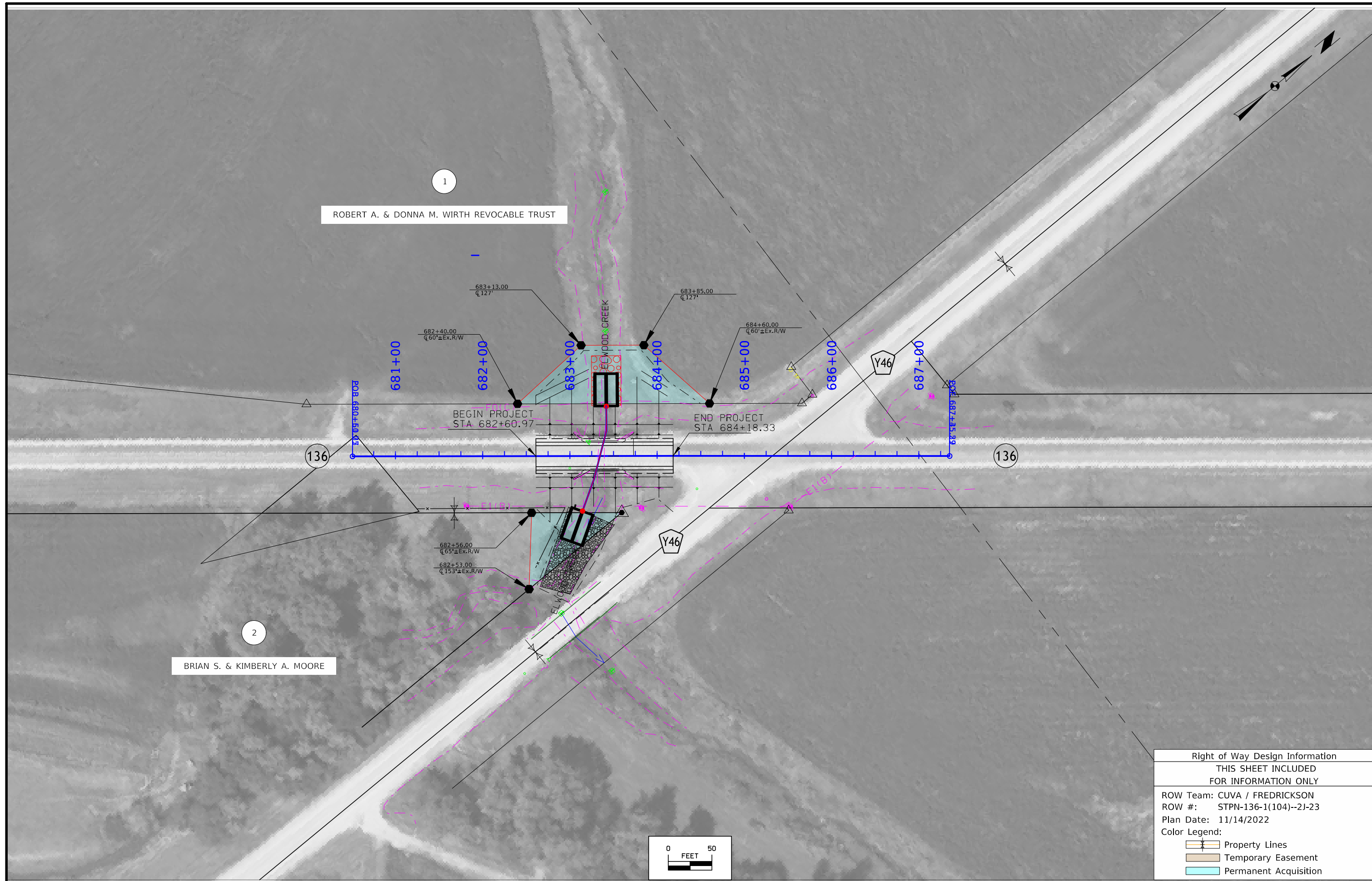
VERT. DATUM: NAVD88

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

POINT NAME	Y	X	Z	FEATURE DEFINITION - DESCRIPTION
1	8236239.306	21445635.030	732.929	CP1 CX (CUT 'X' IN PAVEMENT)
2	8236142.234	21445523.810	734.813	CP2 CX (CUT 'X' IN PAVEMENT)
3	8235951.975	21445671.990	733.413	CP3 CX (CUT 'X' IN PAVEMENT)
2479	8235983.807	21445677.470	736.445	BM B1657 1981
2786	8236177.857	21445513.480	737.904	BM DISC
2787	8236177.949	21445514.850	737.128	BM CX (CUT 'X' IN PAVEMENT)




NOTE:

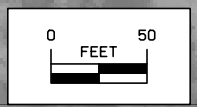
The first two digits in the control point name refer to the county number.
The next 3 digits refer to the highway number.
The next 3 digits refer to the highway milepost.
The last digit refers to the distance from the referenced milepost to the nearest tenth of a mile.



1
ROBERT A. & DONNA M. WIRTH REVOCABLE TRUST

2
BRIAN S. & KIMBERLY A. MOORE

Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: CUVA / FREDRICKSON	
ROW #: STPN-136-1(104)--2J-23	
Plan Date: 11/14/2022	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



108-26A
08-01-08

STAGING NOTES

Stage 1:
With IA 136 traffic using detour, remove and replace bridge over the stream with a culvert.

Stage 2:
Reopen IA 136 to normal traffic pattern.

108-23A
08-01-08

TRAFFIC CONTROL PLAN

1) While bridge and approaches are being removed and replaced with RCB culvert, IA 136 traffic shall be maintained via an off-site detour. Detours are furnished, maintained and removed by the Contractor. Refer to TC-252 for road closure and advanced signage details.

2) Contractor will furnish, install, maintain, and remove detour signs. All existing signs that conflict with detour shall be covered. These functions shall be included in the Traffic Control Bid Item.

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 Travel Restrictions Expected									

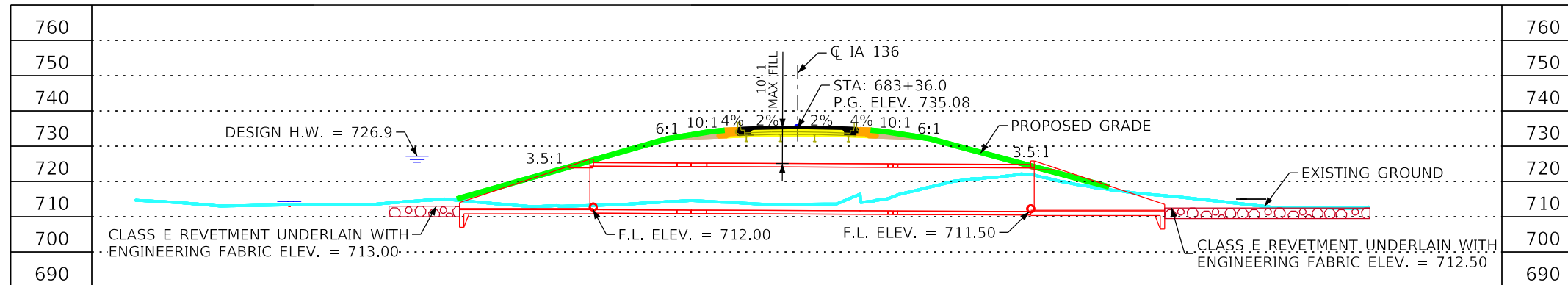
111-01
04-17-12

COORDINATED OPERATIONS

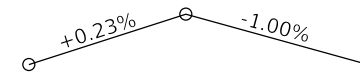
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work

Control Point: 2786, Y=8236177.857, X=21445513.480, Z=737.904, BM DISC



LONGITUDINAL SECTION ALONG \bar{C} CULVERT



VPI Sta. = 683+39.83 L = 90'
VPI Elev. = 735.20

**Proposed Profile
Grade IA 136**

Notes:

GENERAL NOTES

- THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 33'-3x30'-0 STEEL I BEAM BRIDGE DESIGN NO. 151, CLINTON FWHA NO. 21150, MAINT. NO. 2334.1s136

DESIGNER NOTES

- BURIED AND OVERHEAD UTILITIES TO BE RELOCATED TEMPORARILY OR PERMANENTLY AS REQUIRED FOR CONSTRUCTION

PLAN NOTES

- DRAINAGE THROUGH EXISTING CULVERT/CHANNEL MUST BE MAINTAINED THROUGHOUT CONSTRUCTION.
- FLOW LINE OF CULVERT HAS BEEN SET 1 FOOT BELOW STREAMBED.

Hydraulic Data

Drainage Area = 4.26 Sq. Mi.
Q₅₀ = 2,200 CFS
HW Elev. = 726.9
Stream Slope = 29.0 Ft./Mi.

Q₁₀₀ = 2,610 CFS
HW Elev. = 728.6

Q₅₀₀ = 3,710 CFS
HW Elev. = 733.6

Utilities Legend

- F0(C) — Fiber Optic Line
- E1(B) — Electric Line
- ⊕ Power Pole

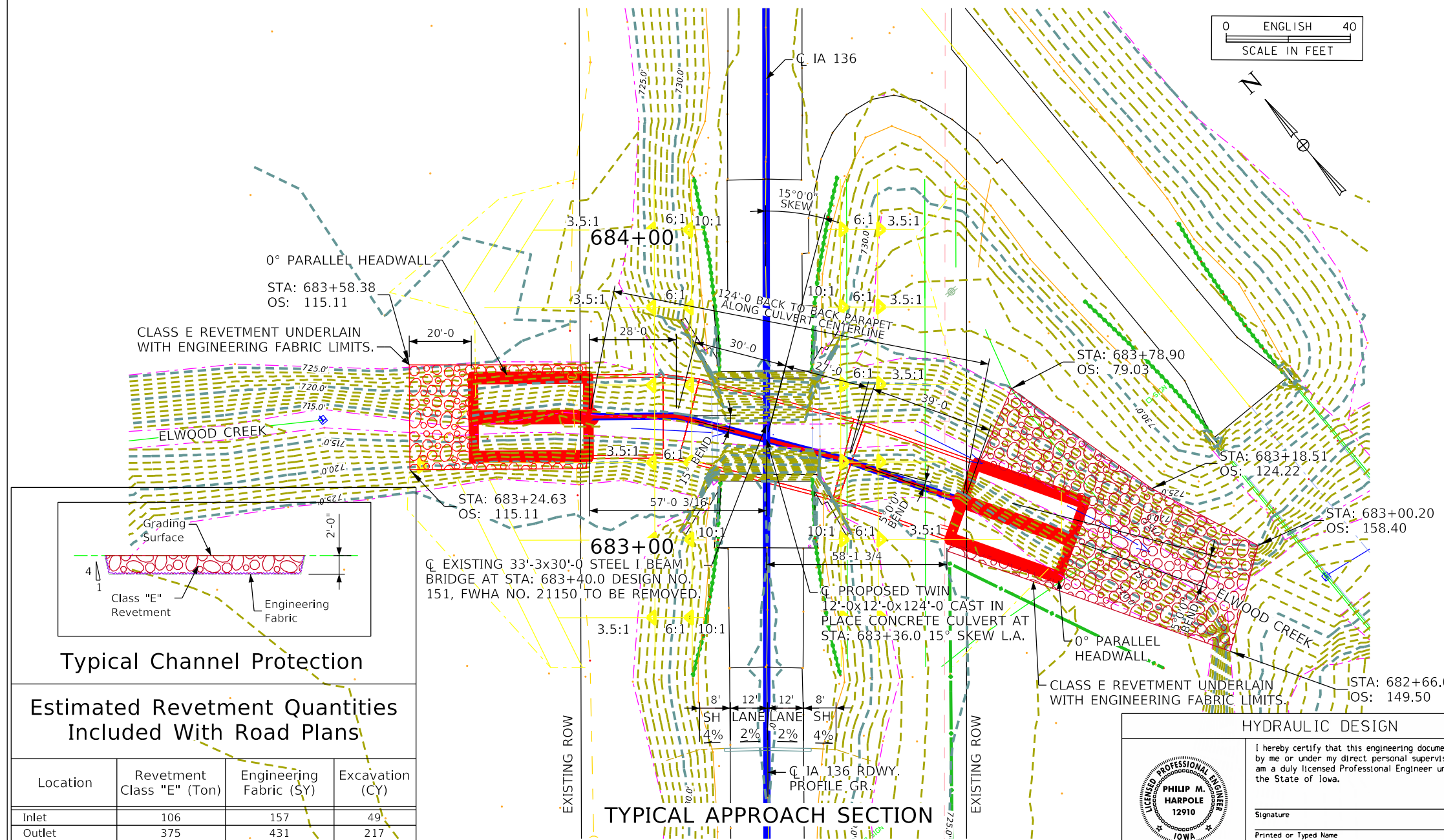
UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

Location

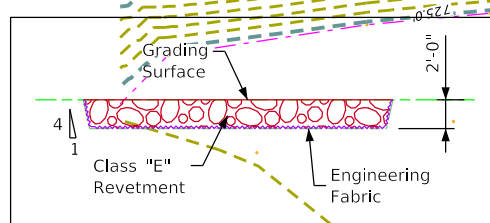
IA 136 Over Branch
Elwood Creek
T-83N R-2E
Section 16
Brookfield Township
Clinton County
FHWA No.
Bridge Maint. No. 2334.1s136
Latitude 41.995817°
Longitude -90.733619°

Traffic Estimate

2025 AADT	800	V.P.D.
2045 AADT	900	V.P.D.
2045 DHV	100	V.P.H.
Trucks	11	%
Total		
Design ESALS		



TYPICAL APPROACH SECTION
SITUATION PLAN



Typical Channel Protection

**Estimated Revetment Quantities
Included With Road Plans**

Location	Revetment Class "E" (Ton)	Engineering Fabric (SY)	Excavation (CY)
Inlet	106	157	49
Outlet	375	431	217
Totals	481	588	266

Excavation quantity calculated from grading surface. Quantities shown for information only. See Road Sheets.

HYDRAULIC DESIGN

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.

Signature: _____ Date: _____
Printed or Typed Name: _____
My license renewal date is December 31, 2023

Pages or sheets covered by this seal: 1/1

Design For 15° Skew L.A.

**TWIN 12'-0x12'-0x124'-0 CAST
IN PLACE CONCRETE CULVERT**

SITUATION PLAN

STA. 683+36.0 (IA 136) August 2022

Clinton County
Iowa Department of Transportation
Design No. XXX Design Sheet No. 001 of 001 FHWA No. XXXXXX

CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
Aggregate			
(64)	Choke Stone	(112)	Noise Wall
(42)	Engineering Fabric	(112)	Noise Wall Footing
(8)	Flooded Backfill	(112)	Retaining Wall Back
(92)	Macadam Stone	(112)	Retaining Wall Back Excavate
(20)	Modified	(112)	Retaining Wall Face
(12)	Plowing Shaping	(112)	Retaining Wall Front Excavate
(14)	Porous Backfill	(112)	Retaining Wall Front Footing
(8)	Revetment Class A	(112)	Retaining Wall MSE Gutter
(6)	Revetment Class B	(112)	Retaining Wall Reinforced Earth
(62)	Revetment Class C	Grading	
(188)	Revetment Class D	(8)	Behind Curb Cut
(28)	Revetment Class E	(6)	Granular
(12)	Shoulder Special Backfill	(13)	Granular Back Fill
(12)	Special Backfill	(48)	Rock Undercut
(20)	Subbase	(8)	Shoulder Earth Fill
(20)	Subbase Lower	(2)	Side Slopes
(20)	Subbase Upper	(226)	Side Slopes Dressing
(118)	Subgrade Treatment	Substrata	
Asphalt			
(207)	HMA Base Course	(128)	Boulder Substrata
(207)	HMA Interim Course	(48)	Broken Weathered Substrata
(207)	HMA Surface Course	(3)	Core Out Substrata
Concrete			
(0)	Barrier Concrete	(203)	Existing Pavement Substrata
(0)	Barrier Concrete Footing	(6)	Loam Substrata
(0)	Curb Gutter	(80)	Rock Substrata
(48)	Flowable Mortar	(4)	Select Sand Substrata
(0)	Median Concrete	(3)	Shale Substrata
(0)	PCC Pavement	(10)	Topsoil Substrata
(0)	Sidewalk	Unsuitable / Waste	
Shoulder			
(209)	Shoulder HMA	(3)	Unsuitable Type A
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(11)	Unsuitable Type C
(3)		(3)	Waste
Existing			
(0)	Existing Pavement		

NOTES:

Text

NOTES:

Text

CROSS SECTIONS LEGEND AND INFORMATION SHEET

(COVERS SHEET SERIES W, X, Y, & Z)

