

Index of Sheets	
No.	Description
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Section and Details
B.1 - B.2	Typical Cross Section and Details
D Sheets	Mainline Plan and Profile Sheets
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2	US 6 Plan and Profile
G Sheets	Survey Sheets
G.1	Survey Information
G.2	Control Point Vicinity Map
G.3	Horizontal and Vertical Project Control Coordinate Listing
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.2	511 Travel Restrictions
J.3	Coordinated Operations
J.4	Detour Details
V Sheets	Culvert Situation Plan
V.1 - V.2	Culvert Situation Plan
W Sheets	Cross Sections
W.1 - W.5	US 6 Cross Sections



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
JASPER COUNTY
Culvert Replacement

U.S. 6 over Drainage Ditch
0.25 mi E of E 60th St

<<<<H SHEETS

Refer to the Plan Sheets for list of applicable specifications.

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

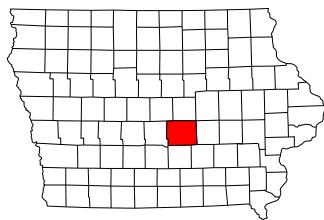
Revisions

TOTAL	20
PROJECT IDENTIFICATION NUMBER	25-50-006-010
PROJECT NUMBER	STP-006-4(204)--2C-50
R.O.W. PROJECT NUMBER	-
PROJECT DIRECTORY NUMBER	5000601025



Preliminary
Not For Construction

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



Design Data Rural

2027 AADT	2,700	V.P.D.
2047 AADT	2,900	V.P.D.
2047 DHV	300	V.P.H.
TRUCKS	6	%

Index of Seals

Sheet No.	Name	Type
A.1	Mark C. Currie	Structural & Roadway Design

Structural & Roadway Design

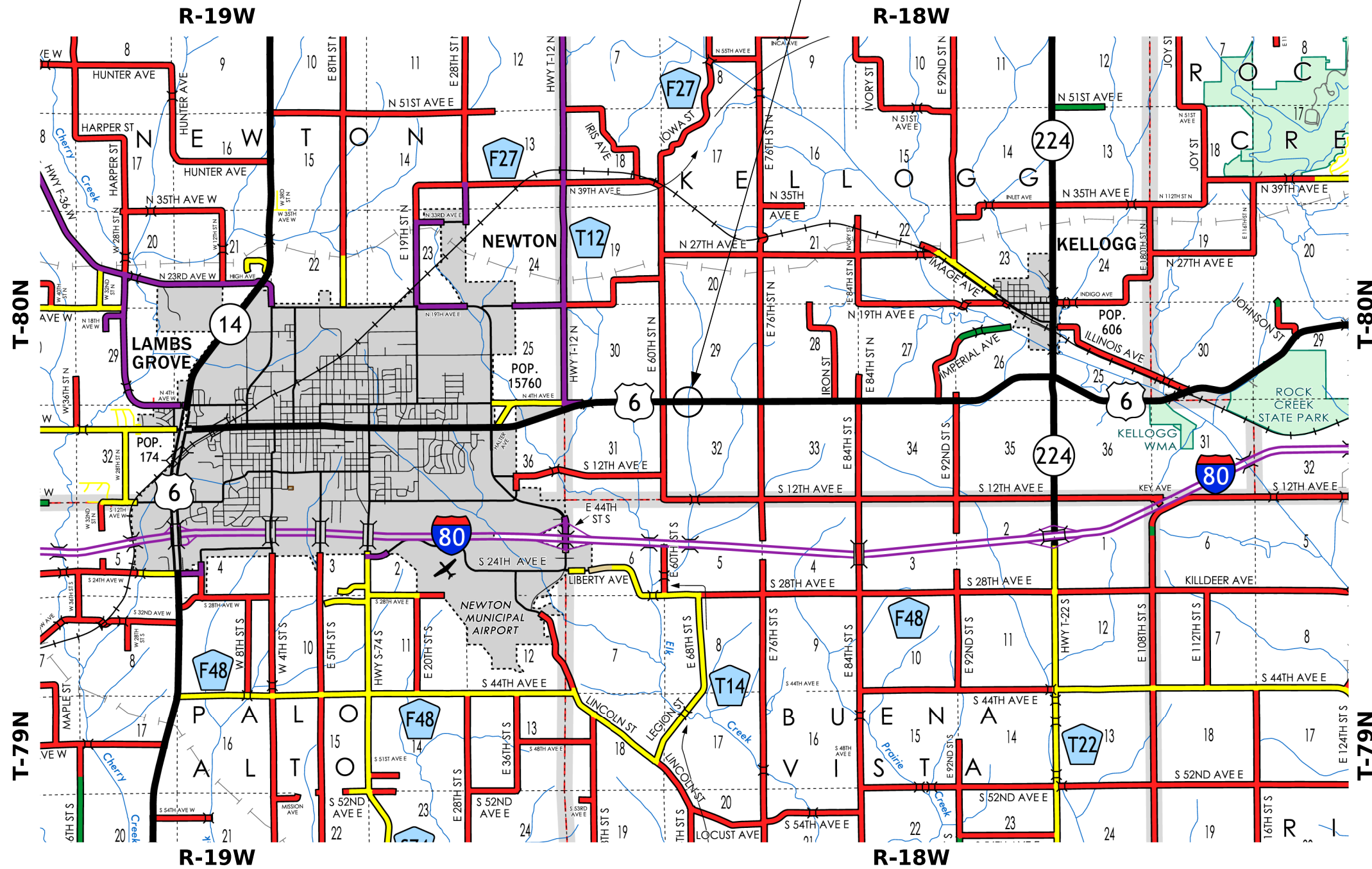


I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Preliminary Plans 04-03-2026
 Signature Mark C. Currie Date
 Printed or Typed Name
 My license renewal date is December 31, 2027

Pages or sheets covered by this seal: _____

Design No. 328
Asset ID No. 901065

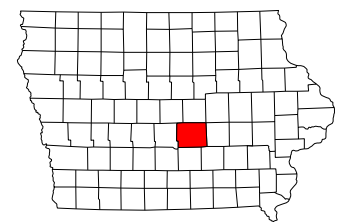


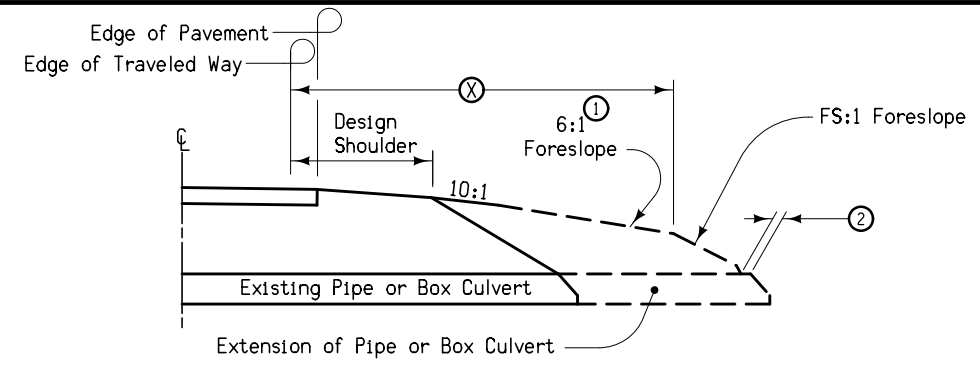
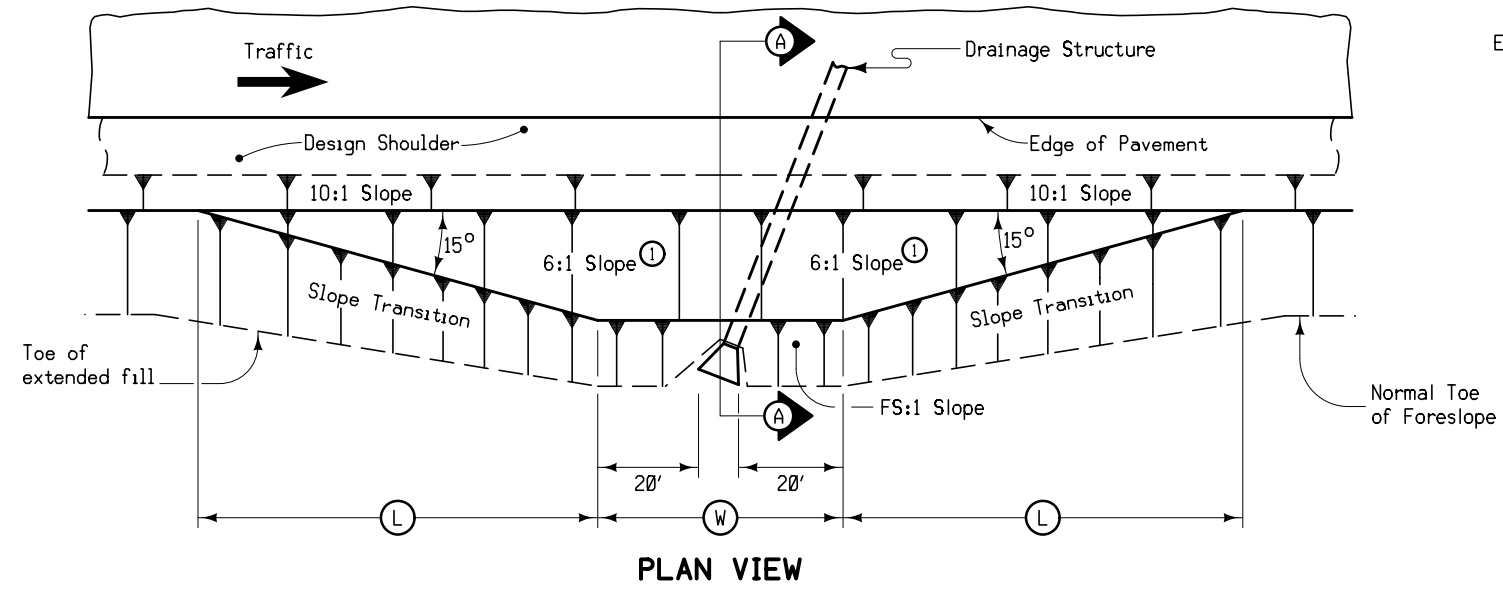
LEGEND

INTERSTATE HIGHWAY	
PRIMARY HIGHWAY-DIVIDED	
PRIMARY HIGHWAY	
PORTLAND CEMENT CONCRETE ROAD	
ASPHALT ROAD	
BITUMINOUS ROAD	
GRAVEL ROAD	
EARTHEN ROAD	
INTERSTATE HIGHWAY	
UNITED STATES HIGHWAY	
STATE HIGHWAY	
COUNTY HIGHWAY	
RAILROAD	
PIPELINE	
AIRPORT	
HYDROLOGY	
BRIDGE	
STATE BOUNDARY	
COUNTY BOUNDARY	
CORPORATE BOUNDARY	
TOWNSHIP LINE	
SECTION LINE	
ROAD NAMES	
UNINCORPORATED PLACE	

Jasper County Location Map

Not To Scale





- At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten as indicated so as to cover the structure. Minimum earth cover is 6 inches.
- ① Slope may be flatter than 6:1.
 - ② 6 inch minimum for pipe installations or to top of headwall on RCB.
 - ③ At C of roadway.
 - Ⓜ = Pipe or RCB opening width plus 20 feet each side.

STRUCTURE LOCATION		Ⓜ	Ⓛ	Ⓧ	FS
STATION ③	SIDE	Feet	Feet	Feet	
1542+25.70	L	90	45	26	3
1542+25.70	R	114	45	26	3

BARNROOF FORESLOPE AT SKEWED DRAINAGE STRUCTURE

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
- Telephone Pedestal
- Electric Box

UTILITY LEGEND

- E1 Alliant Energy
- F0 Aureon Networks Service (Mapped Utility)
- F02 Windstream (Mapped Utility)
- W Iowa Regional Utilities Association (Mapped Utility)

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		Transparency
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.		Transparency
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

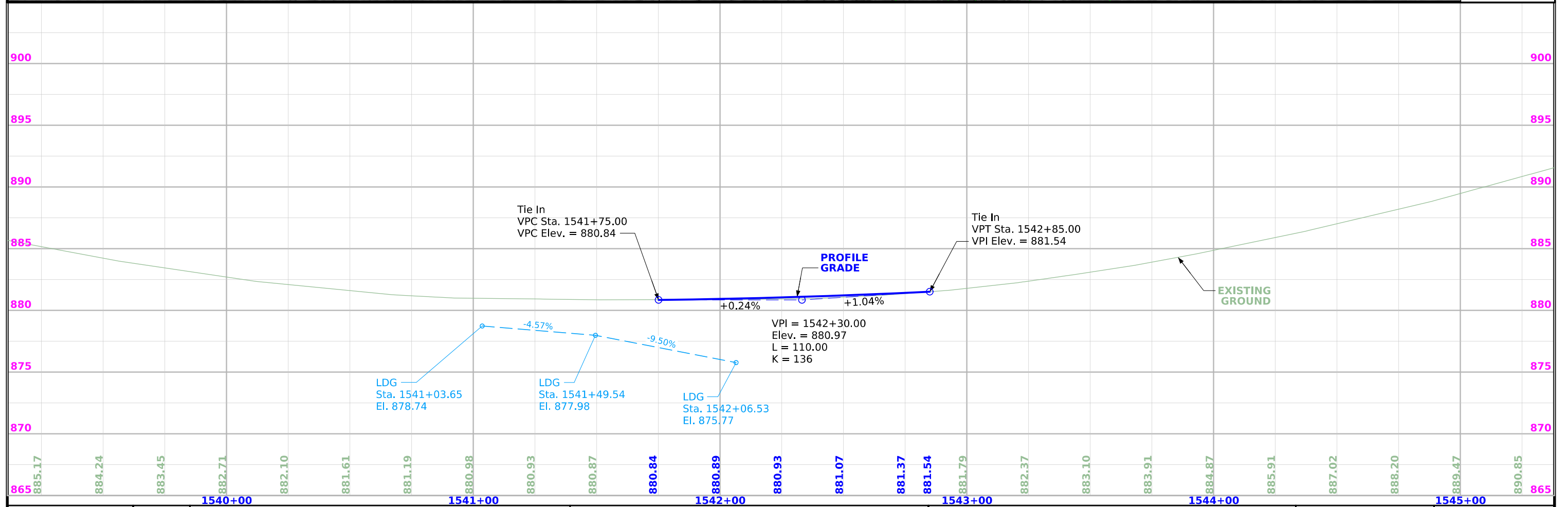
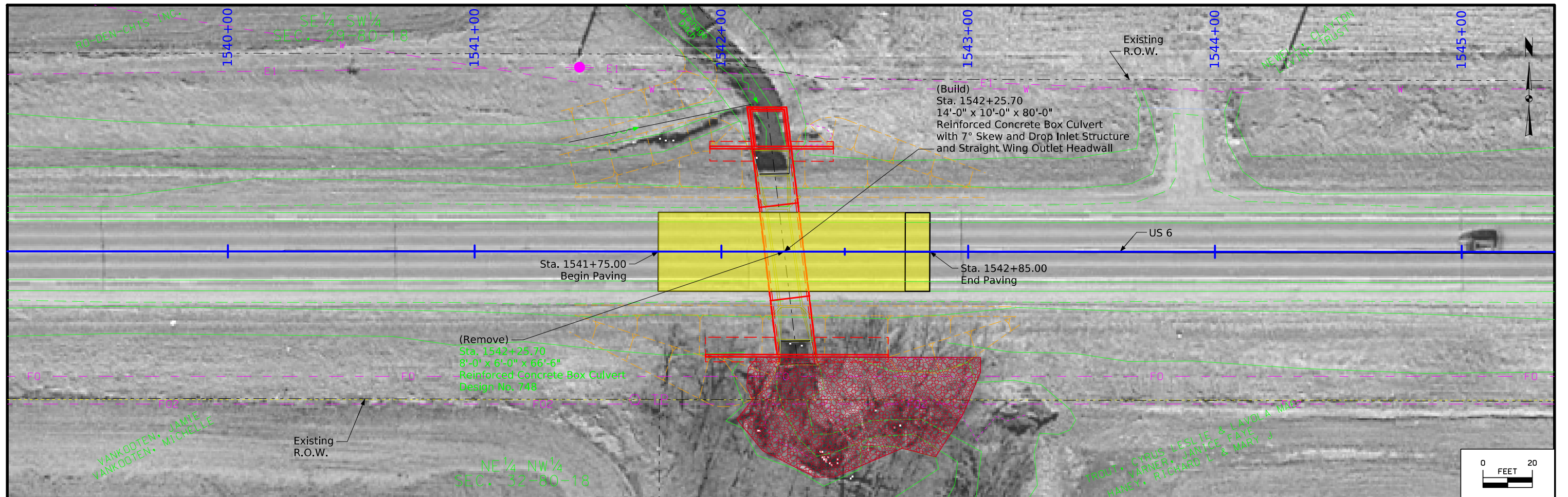
- Reference Point
- Station
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way 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
- C/A Access Control
- Property Line Symbol
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



Survey Information

SURVEY INDEX

County: Jasper
PIN: 25-50-006-010
Project Number: STP-006-4(204)--2C-50
Location: 0.25 mi E of E 60th St
Type of Work: Culvert
Project Directory: 5000601025

Survey Personnel

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

Date(s) of Survey

Begin Date 09/18/2025
End Date 10/06/2025

General Information

Measurement units for this survey are US survey feet. This survey is for proposed revetment for Jasper County Culvert under HWY 6; 0.25 mi E of E 60th St.

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 MH1063 and MH0207. Vertical control was checked with IARTN checks. This survey observed MH1063 and MH0207.
MH0207 – disk set in concrete monument
Elevation = 922.629
MH1063 - disk set in concrete monument
Elevation = 1030.378

Horizontal Control

The project coordinate system for this survey is Iowa RCS zone 09 (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 conducting a 5-minute observation in the morning, afternoon, and evening. Coordinates were then averaged between the three to determine the final coordinate. Real Time Network reference stations. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IARTN 2019 ADJUSTMENT)
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 09
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2018u3 or 2018u2

Alignment Information

The horizontal alignment for U.S. Hwy 6 is a retrace of the existing alignment. Survey stationing was equated to Sta. 1542+25.70 and carried back and ahead without equation throughout the survey.

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 09 (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.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING
 HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)
 Ia. Regional Coordinate System Zone 09 (U.S. Survey Foot)
 VERT. DATUM: NAVD88
 Geoid Model: 2018u3 or 2018u2

Point Name	Northing	Easting	Elevation	Code Description
cp500	7729411.22	19456926.31	885.35	CP 5/8" rebar 1' deep; 220.86' East of Box Culvert and 5.84' North of Edge of Asphalt
cp501	7729367.89	19456926.30	885.41	CP 5/8" rebar 1' deep; 212.46' East of Box Culvert and 5.77' South of Edge of Asphalt
cp502	7729410.88	19456448.99	881.79	CP 5/8" rebar 1' deep; 244.08' West of Box Culvert and 6.25' North of Edge of Asphalt
cp503	7729366.66	19456449.18	881.75	CP 5/8" rebar 1' deep; 252.59' West of Box Culvert and 6.24' South of Edge of Asphalt

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

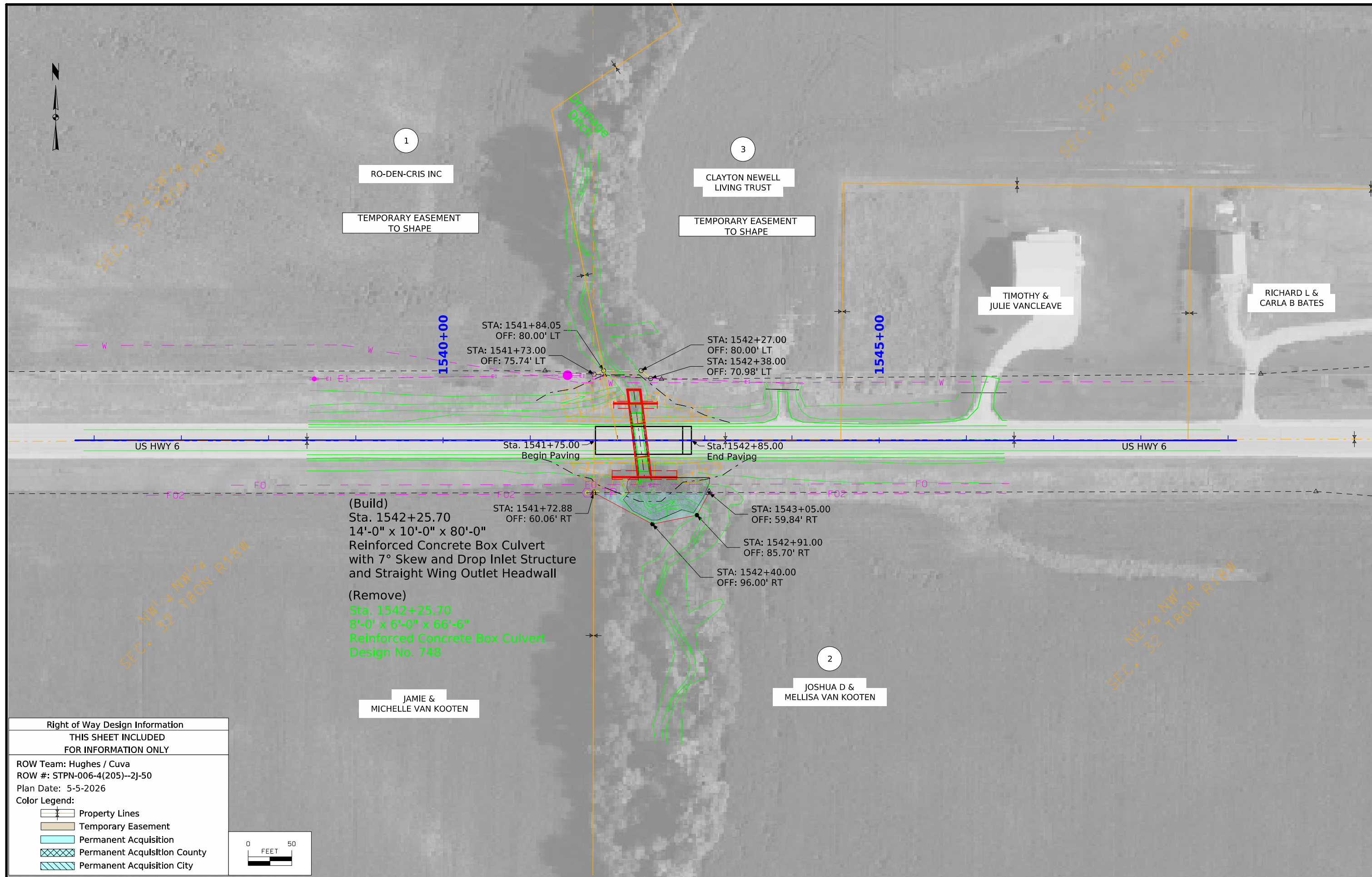
Jasper STPN-006-4(205)--2J-50
 0.25 mi E of E 60th St
[5000601025](#)

Project Code 25-50-006-010

Route US 6

Parcel No	Owner Name	State			County			City			Excess	Temp Ease	Mitigation	Utility Ease	Relocation	TE Only	A/C Only	Total Acq
		Fee	Hwy Ease	Other Ease	Fee	Hwy Ease	Other Ease	Fee	Hwy Ease	Other Ease								
1	RO-DEN-CRIS INC											0.01 AC						
2	Joshua D & Mellisa Van Kooten		0.07 AC															
3	Clayton Newell Living Trust											0.01 AC						

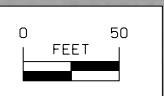
3 Parcels



(Build)
 Sta. 1542+25.70
 14'-0" x 10'-0" x 80'-0"
 Reinforced Concrete Box Culvert
 with 7° Skew and Drop Inlet Structure
 and Straight Wing Outlet Headwall

(Remove)
 Sta. 1542+25.70
 8'-0" x 6'-0" x 66'-6"
 Reinforced Concrete Box Culvert
 Design No. 748

Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: Hughes / Cuva	
ROW #: STPN-006-4(205)--2J-50	
Plan Date: 5-5-2026	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City



108_23A
8/15/22

TRAFFIC CONTROL PLAN

US 6 will be closed to traffic during construction. Traffic shall be maintained via offsite detour. See Sheet J.4 for detour route.

All construction traffic control shall be the responsibility of the Contractor including fabrication and installation of all traffic control and alternate route signing.

511 TRAVEL RESTRICTIONS

Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
	US 6	Both	Jasper	0.25 mi E of E 60th St	Drainage Ditch	Traffic Control Device	N/A	Horizontal					Detour

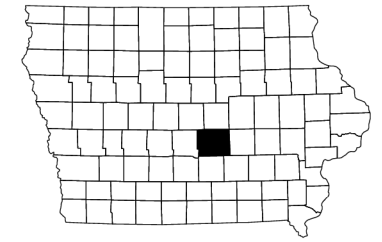
111_01
10/14/22

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
None	

JASPER COUNTY



LEGEND

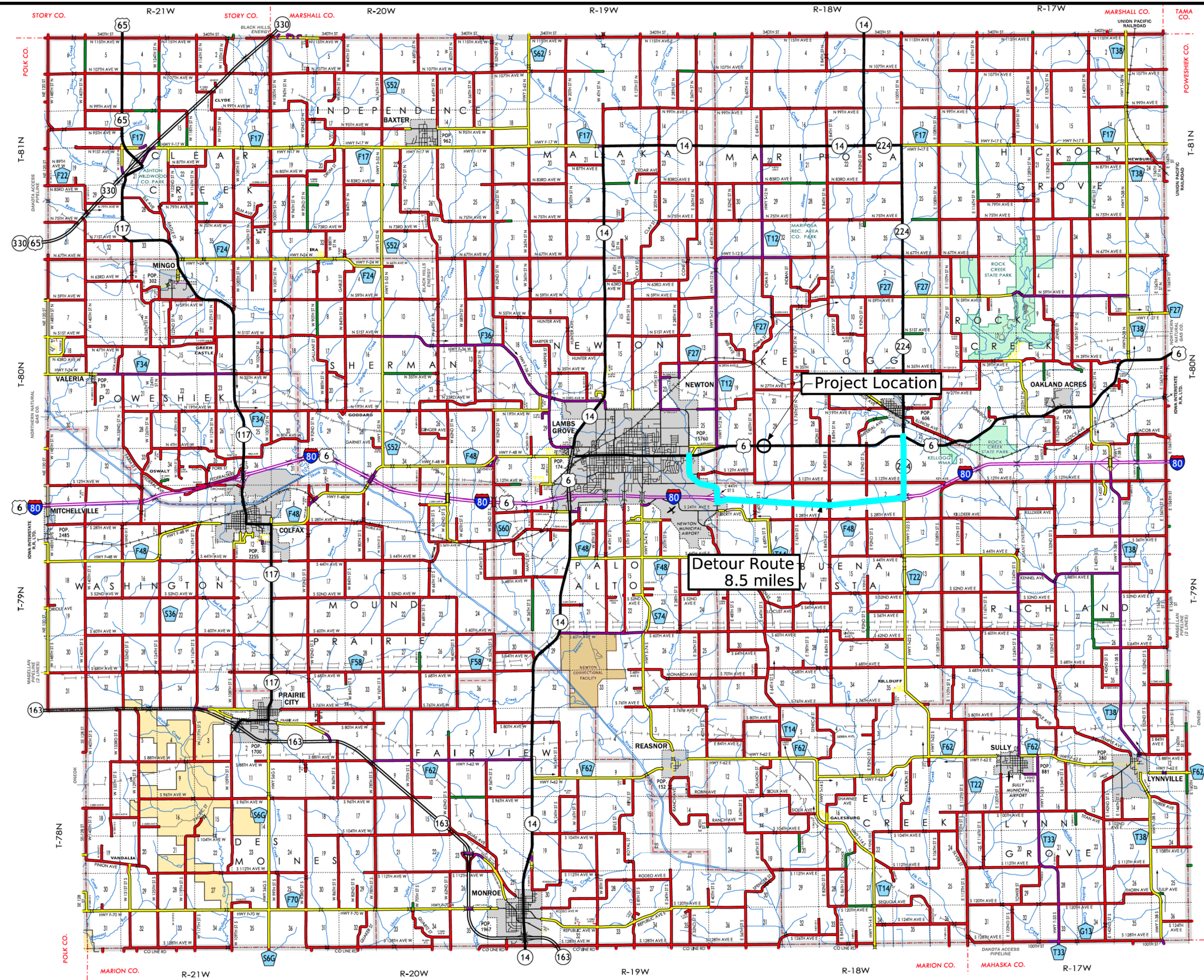
- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD

- INTERSTATE HIGHWAY
- UNITED STATES HIGHWAY
- STATE HIGHWAY
- COUNTY HIGHWAY

- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE

- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES
- UNINCORPORATED PLACE

- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

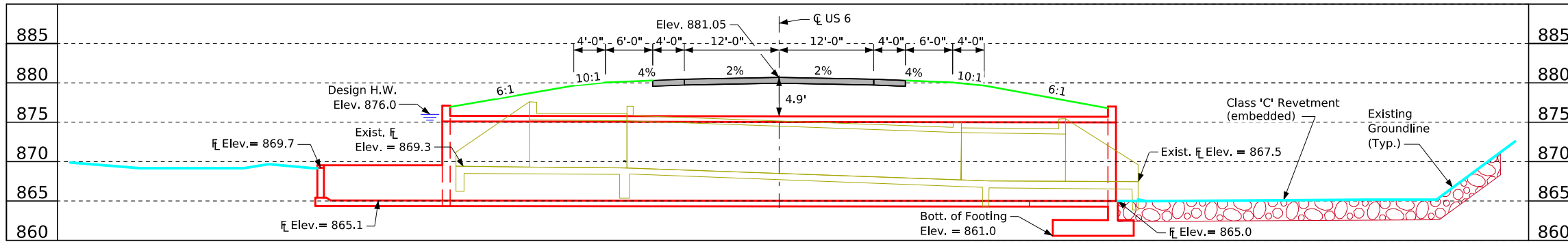


Detour Route

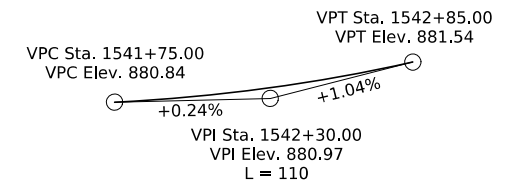
Jasper County Map

Not to Scale

Detour Details



Longitudinal Section along Centerline of Culvert



Proposed Profile Grade US 6

Hydraulic Data

Drainage Area = 1.31 Sq. Mi.
 Q₅₀ = 1370 CFS
 HW Elev. = 876.0
 Exit Velocity = 14.7 FPS
 Stream Slope = 52.7 Ft./Mi.

Utilities Legend:

- E1 Overhead Electric
- W Water (Mapped Utility)
- FO Fiber Optic (Mapped Utility)
- F02 Fiber Optic 2 (Mapped Utility)

General Notes

This design is for the replacement of the existing 8'-0" x 6'-0" Reinforced Concrete Box Culvert, Design No. 748.

Designer Notes

Drainage must be maintained through existing ditch/channel throughout construction. Custom drop inlet headwall and custom outlet headwall proposed. Cast-in-place option only. Consider adding safety rail in the Final Design. Class 'C' revetment is proposed at the culvert outlet due to the outlet velocity exceeding policy limits. Density used for Class 'C' quantity calculations is 1.6 T/cy

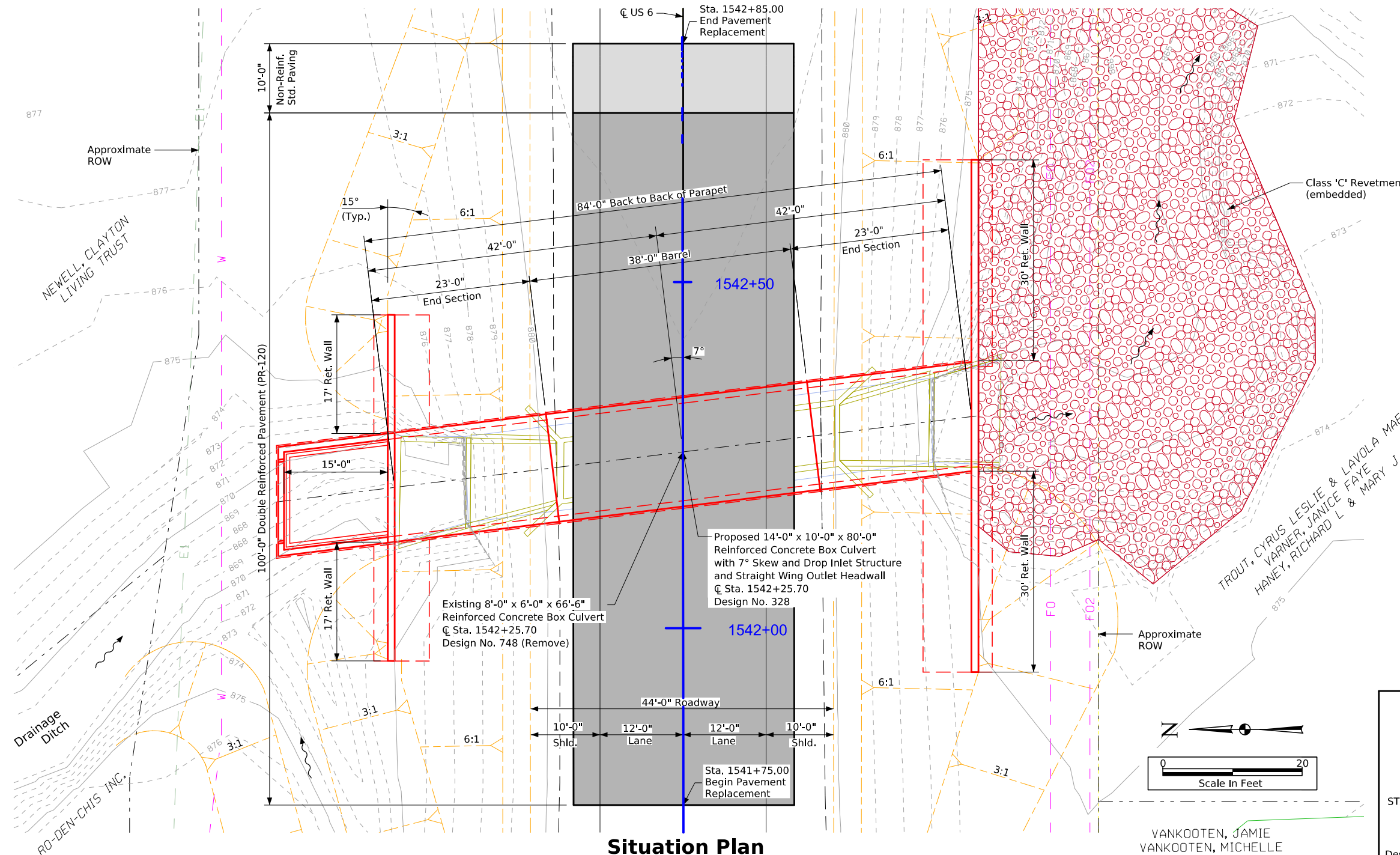
Location

US 6 over Drainage Ditch
 T-80N R-18W
 Section 29/32
 Kellogg Township
 Jasper County
 Latitude 41.702845°
 Longitude -92.975230°

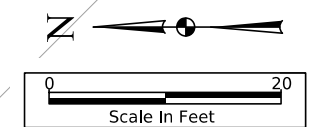
Traffic Estimate

2027 AADT	2,700	V.P.D.
2047 AADT	2,900	V.P.D.
2047 DHV	300	V.P.H.

Trucks 6 %



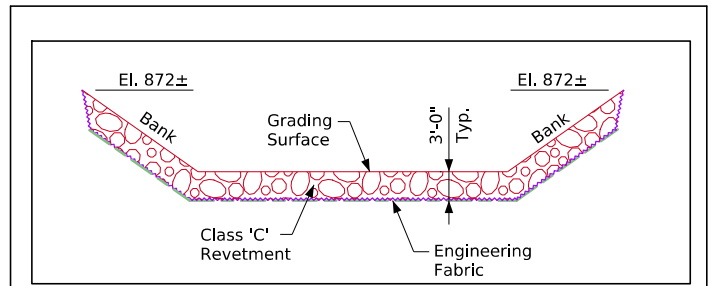
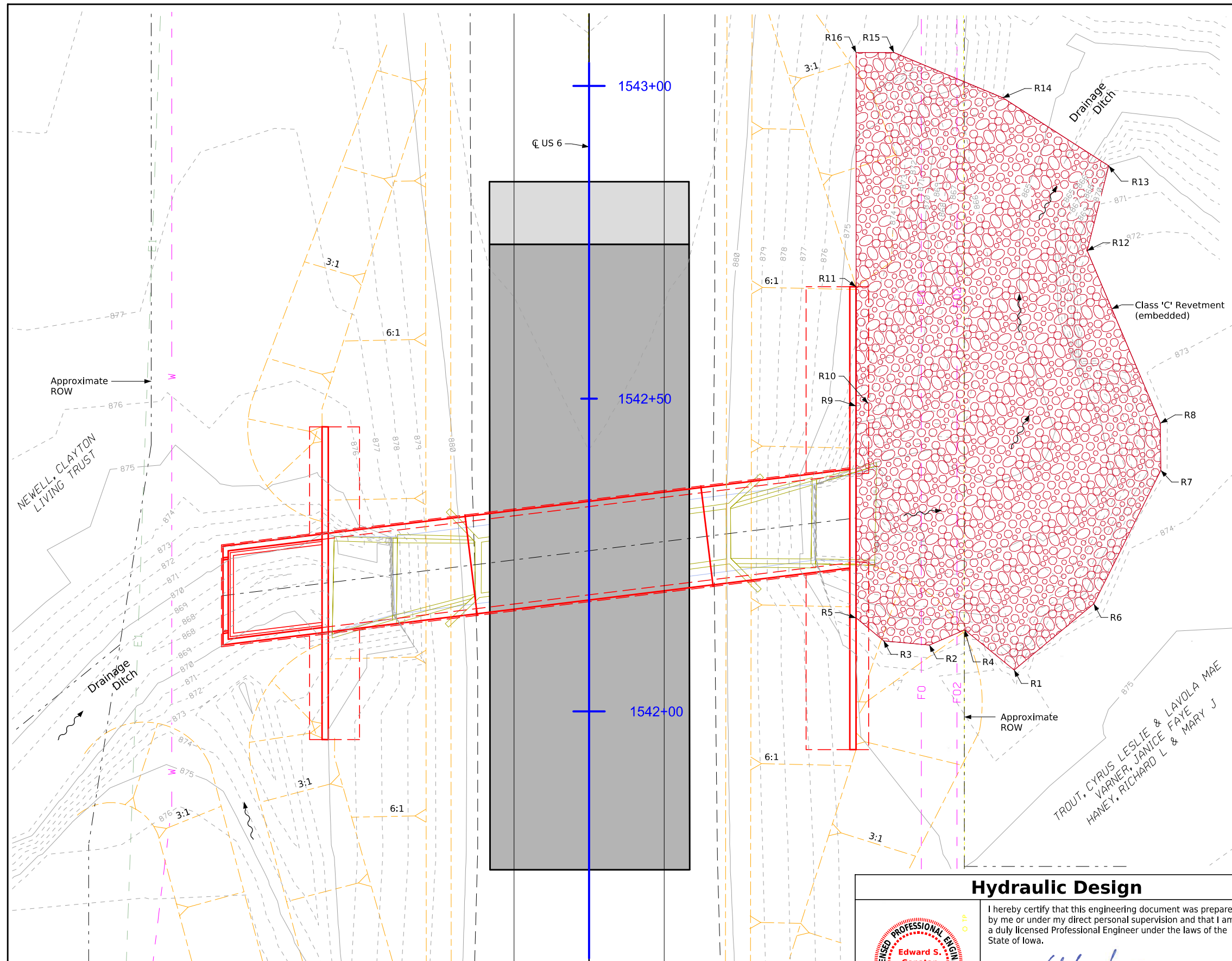
Situation Plan



Design For 7 degrees (R.A.)
14'-0" x 10'-0" x 84'-0" Reinforced Concrete Box Culvert
 Situation Plan
 STA. 1542+25.70 (US 6) Turn-In Date: February 2026
Jasper County
 IOWA DEPARTMENT OF TRANSPORTATION
 Design No. 328 Design Sheet No. 1 of 1 Asset ID 901065

Revetment Location Table

Points	Station	Offset	Elev.	Northing	Easting
R1	1542+07.29	67.65' Rt.	872.0	7729336.82	19456723.08
R2	1542+10.91	54.41' Rt.	872.0	7729350.36	19456727.04
R3	1542+11.59	47.11' Rt.	872.0	7729357.67	19456727.72
R4	1542+13.34	60.07' Rt.	872.0	7729344.70	19456729.48
R5	1542+15.27	42.69' Rt.	872.0	7729362.08	19456731.40
R6	1542+17.55	80.60' Rt.	872.0	7729324.07	19456733.64
R7	1542+38.86	91.40' Rt.	872.0	7729313.36	19456754.99
R8	1542+46.39	91.35' Rt.	872.0	7729313.42	19456762.53
R9	1542+49.10	42.69' Rt.	872.0	7729362.08	19456765.28
R10	1542+49.50	44.58' Rt.	872.0	7729360.16	19456765.68
R11	1542+68.21	42.69' Rt.	877.3	7729362.08	19456784.34
R12	1542+73.97	79.61' Rt.	872.0	7729325.15	19456790.10
R13	1542+87.53	83.07' Rt.	870.0	7729321.70	19456803.66
R14	1542+98.33	66.24' Rt.	866.0	7729338.62	19456814.55
R15	1543+05.66	48.72' Rt.	875.2	7729356.05	19456821.79
R16	1543+05.66	42.69' Rt.	875.8	7729362.08	19456821.79



Typical Channel Protection


Estimated Revetment Quantities Included With Road Plans

Location	Revetment Class 'C' (Ton)	Engineering Fabric (SY)	CL. 10 Channel Excavation (CY)
Inlet	---	---	---
Outlet	685.3	518.2	428.3
Totals	685.3	518.2	428.3

Excavation quantity calculated from grading surface.

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: *Edward S. Gapatan* Date: 02-27-2026
 Printed or Typed Name: Edward S. Gapatan
 My license renewal date is December 31, 2027

Pages or sheets covered by this seal: V.1 - V.2

Design For 7 degrees (R.A.)

14'-0" x 10'-0" x 84'-0" Reinforced Concrete Box Culvert

Situation Plan - Site

STA. 1542+25.70 (US 6) Turn-In Date: February 2026

Jasper County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 328 Design Sheet No. 2 of 2 Asset ID 901065

Site Plan

US 6

