



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
OSCEOLA COUNTY
Bridge Replacement
Drainage Ditch 1.1 Mi S of Co Rd L36 (SB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

PROJECT IDENTIFICATION NUMBER	21-72-060-010
PROJECT NUMBER	BRFN-060-4(95)--39-72
R.O.W. PROJECT NUMBER	

D2 VIRTUAL FIELD EXAM
June 15, 2023

Attendees:
Iowa DOT:
Darwin Bishop
Michael Carlson
Tom Lovan
Phil Mescher
Kelly Mulvihill
Kevin Patel
Neha Raju

Shive-Hattery:
Jack Gebson
Arick Andersen
Grace Funderberger
Joe Appel
Kent Ellis
Mark Harpole
Mike Janechek

INDEX OF SHEETS

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A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
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B Sheets	Typical Cross Sections and Details
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D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 60
F Sheets	Detour or Temporary Pavement Sheets
* F.1	Detour Plan and Profile Sheets
G Sheets	Survey Sheets
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J Sheets	Traffic Control and Staging Sheets
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V Sheets	Bridge and Culvert Situation Plans
V.1	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

DATES PER MASTERWORKS
UPDATED:
D4: 8/19/2025
D5: 1/04/2024
D3: 9/01/2023
D2: 7/28/2023

D4 PLAN - Aug 19, 2025
D5 PLAN - Dec 8, 2023
D3 PLAN - Aug 4, 2023

**PROJECT WILL INVOLVE
RAILROAD COORDINATION**

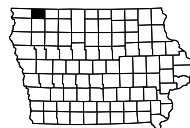
DESIGN DATA RURAL			
2026	AADT	5800	V.P.D.
2046	AADT	7100	V.P.D.
2046	DHV	740	V.P.H.
	TRUCKS	26	%
	Total		
	Design ESALs	--	

INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Michael J. Janechek	Primary Signature Block	X
V.1	Philip M. Harpole	Hydraulic Design	X

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - Jul 7, 2023



OSCEOLA COUNTY IOWA

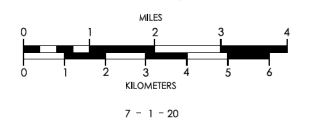


Prepared By
SYSTEMS PLANNING BUREAU
Phone: (515) 239-1664
WWW.IOWADOT.GOV/MAPS



In Cooperation With
United States
Department of Transportation

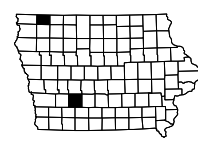
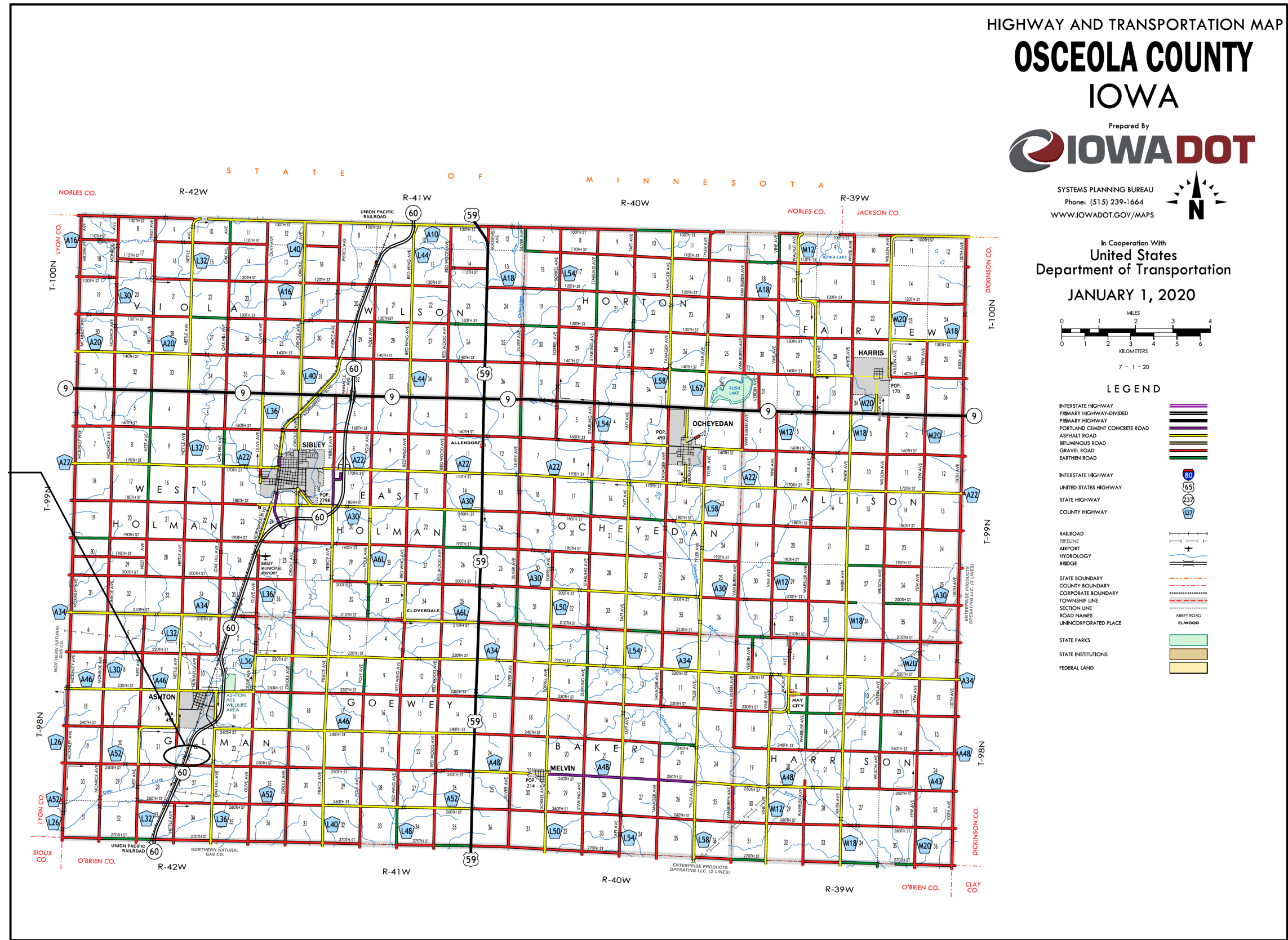
JANUARY 1, 2020



LEGEND

- INTERSTATE HIGHWAY
- FEDERAL 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

PROJECT LOCATION



IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 3
ATTENTION: Jessica Felix, P.E.
FROM: Mike Janechek
OFFICE: Shive-Hattery
SUBJECT: Project Concept Statement; (Final D0)

DATE: September 22, 2022
PROJECT: Osceola County
 BRFN-060-4(95)--39-72
 PIN: 21-72-060-010

S. Tymkowicz	L. Sievers	A. Poole
G. Karssen	M. Todsen	J. Bartholomew
N. Cuva	A. Yates	R. Meyer
E. Engle	M. Hobbs	

This project involves the replacement of the Osceola County bridge (Maint. No 7241.8L060) over a drainage ditch 1.1 miles south of Co Rd L36 (SB).

A concept review was held on June 20, 2022. Those present included Shane Tymkowicz and Laura Sievers from the District 3 Office; Steven Schroder, Jim Ellis, and Kent Nicholson, and Kevin Patel from the Iowa DOT; and Nathan Hardisty, Joe Appel, Mike Janechek, Mark Harpole, and Cara Lindell from Shive-Hattery.

One alternative was considered:

1. Replace the existing structure with an extension of the adjacent triple 12' x 6' x 83' reinforced concrete box (RCB).

Alternative 1 is the preferred alternative due to the adjacent existing structure under north bound IA 60.

Traffic will be maintained by shifting traffic to accommodate two-lane, two-way traffic on the northbound lanes of IA 60 via median crossovers.

A special headwall parallel to the roadway will be used on the downstream end to avoid requiring right of way from the railroad.

The Draft Project Concept Statement was sent out for review and comment with concerns to be received by September 5, 2022. Comments received during the review period have been considered and resolved.

This project is recommended for construction in FY 2026. The Bridges and Structures Bureau will coordinate the plan preparation with the assistance of the Design Bureau and Shive-Hattery.

Cc:	C. Purcell	M. J. Kennerly	K. D. Nicholson
	S. J. Megivern	J. S. Nelson	M. Nop
	S. Majors	M. A. Swenson	R. A. Younie
	K. Brink	D. L. Newell	J. W. Laaser-Webb
	W. A. Sorenson	D. E. Sprengeler	E. C. Wright
	M. E. Ross	A. A. Welch	B. E. Azeltine
	B. D. Hofer	C. C. Poole	S. J. Gent
	S. Anderson	T. Jerman	K. K. Patel
	J. Hauber	A. Abu-Hawash	M. E. Khoda
	K. Olson	S. Neubauer	J. Vortherms
	B. Bradley	J. Harris	D. Stokes
	S. Seivert	D. Bishop	V. Brewer
	M. Carlson	B. Dolan	T. Huju
	K. Mulvihill	D. Schultz	J. Ellis

[SH Project #2142203910](#)

Shive-Hattery | 4125 Westown Parkway | Suite 100 | West Des Moines, IA 50266 | 515.223.8104 | shive-hattery.com



DRAFT PROJECT CONCEPT STATEMENT

IA 60 over a drainage ditch 1.1 mi S of Co Rd L36 (SB)

Osceola County
BRFN-060-4(95)--39-72
PIN: 21-72-060-010
Maint. No. 7241.8L060
FHWA No. 38530

Mike Janecek, P.E.
319-248-3378

September 30, 2022



I. STUDY AREA

A. Project Description

This project involves the replacement of the IA 60 SB bridge (Maintenance No. 7241.8L060) over a drainage ditch 1.1 mi. S of Co Rd L36 (SB)

The alternative considered was:

1. Replace the existing structure with an extension of the adjacent triple 12' x 6' x 131' reinforced concrete box (RCB) placed at a 0-degree skew.

Alternative 1 is the preferred alternative due to the site topography, adjacent existing structure, and safety considerations.

Traffic will be maintained by shifting traffic to accommodate two-lane, two-way traffic on the northbound lanes of IA 60 via median crossovers.

The preliminary project cost is \$1,749,800.

B. Need for Project

The bridge is a 38' x 44' steel beam bridge that was built in 1935, widened in 1961 with prestressed concrete box girders, and remodeled in 1986. The bridge deck was partially replaced in 1986 and is near the end of its useful life, needing replacement. The top and bottom of the deck has numerous hollow areas, leaching transverse cracks and rust staining. There are areas of section loss at the ends of the steel girders. The abutments have leaching cracks, hollows, and spalls. Because of the condition, this bridge should be replaced.

C. Present Facility

The existing structure is a 38' x 44' steel beam bridge that was built in 1935, widened in 1961.

Southbound IA 60 in the project area is 24' wide PCC pavement with 4' paved median shoulders and 10' effective outside shoulders (4' paved, 6' granular) and 6:1/3:1 foreslopes. Original IA 60 (current southbound lanes) was constructed in 1938. HMA/ACC resurfacing was accomplished in 1962, 1987, and 2006. (Northbound lanes were added in 2006).

D. Traffic Estimates

The 2026 construction year and 2046 design year average daily traffic estimates are 5800 with 26% trucks and 7100 with 26% trucks, respectively.

E. Sufficiency Ratings

IA 60 is classified as a principal arterial route and is a maintenance service level B roadway. The federal bridge sufficiency rating is 94.4.

F. Access Control

Access rights will not be acquired for this project.

G. Crash History

During the five-year study period from January 1, 2017 through December 31, 2021, there were 4 crashes including, 0 fatal crashes, 0 personal injury crashes, and 4 personal property crashes. All the crashes were animal related.

II. PROJECT CONCEPT

A. Feasible Alternatives

Alternative #1 - Replace with a culvert

The existing 38' x 44' bridge will be replaced with an extension of the adjacent triple 12' x 6' x 131' reinforced concrete box (RCB) placed at a 0-degree skew.

The typical cross section adjacent to the bridge will consist of a 24' wide roadway with 10' effective outside shoulder (6' paved and 4' granular) and 6' wide effective inside shoulder (6' paved).

The roadway will be reconstructed with a 3" grade raise on the existing horizontal alignment in

SH Project #2142203910

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SH Project 2142203910 | September 22, 2022

order to gain proper cover over the new structure. The existing ditches will need to be relocated to meet the inlet and outlet flowlines of the new RCB. Class E revetment will be placed at the outlet end and evaluated if needed at the inlet end.

Apply erosion control and rural seeding and fertilizing to all disturbed areas.

Right of way appears to be required for this project.

During construction, traffic will be shifted to accommodate two-lane, two-way traffic on the northbound lanes. This will be accomplished via the use of single lane median crossovers which will be constructed south and north of the proposed culvert. The crossovers will be removed at the completion of the project. See attached D.2 plan sheet for approximate crossover locations. Locations may need to be adjusted during preliminary design once survey is available for the project area.

The current design concept is based on LIDAR and will be confirmed and adjusted as needed once the topographic survey has been completed.

Bridge Items	<u>Estimated Costs</u>
New Culvert	\$424,700
Bridge Removal	\$18,300
Asbestos Removal	\$2,500
Revetment	\$8,700
Engineer Fabric	\$700
Mobilization - 10%	\$45,500
M & C - 20%	<u>\$100,100</u>
Bridge Costs	\$ 600,500

Roadway Items	
Clearing and Grubbing	\$5,000
Special Backfill	\$68,000
Embankment in place, Contractor Furnished	\$24,000
Excavation Class 10	\$5,000
Modified Subbase	\$12,600
Granular Shoulder	\$11,900
Paved Shoulder	\$18,900
PCC Pavement	\$46,000
Detour Pavement	\$256,500
Flooded Backfill	\$14,400
Uncl. Culvert Pipe	\$22,200
Longitudinal Subdrain	\$3,200
Subdrain Outlet	\$2,400
Removal of Pavement	\$57,000
Topsoil	\$10,000
Erosion Control	\$35,000
Right of Way	\$50,000
Wetland Mitigation	\$50,000
Traffic Control - 5%	\$57,000
Mobilization - 5%	\$57,000
M & C - 30%	<u>\$343,200</u>
Roadway Costs	\$ 1,149,300

Project Total **\$1,749,800**

B. Detour Analysis

Southbound IA 60 will be closed and traffic will be shifted to accommodate two-lane, two way traffic on the northbound lanes via median crossovers. Therefore, no detour analysis was completed.

C. Recommendations

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

D. Construction Sequence

It is anticipated that all work on this project will be awarded to one prime contractor. The Bridges and Structures Bureau will coordinate the plan preparation with assistance from the Design Bureau and Shive-Hattery.

E. ADA Accommodations

There are no bike paths or sidewalks adjacent to IA 60; therefore, no ADA accommodations are planned in conjunction with this project.

F. Special Considerations

This will be a traffic critical project. (TCP checklist submitted to Iowa DOT for confirmation.)

The ABC Rating Score of 36 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.

Any additional survey requested to include the downstream railroad bridge and embankment.

Right of Way appears to be required for this project.

Once the Location and Environment Bureau has completed their review, comments will be incorporated into the final concept statement.

G. Program Status

Site data has been developed by Shive-Hattery. This project is listed in the 2023-2027 Iowa Transportation Improvement Program, with \$5,000 programmed for right of way in FY 2026, and \$750,000 for replacement in FY 2026. Costs for this project may be eligible for bridge replacement funds. A schedule of events will be developed following approval of the Project Concept.

Following page has a map of the county showing the location of the project area and the anticipated detour route.

Attachment A - Utilities

Osceola County Utility List

BRFN-060-4(95)--39-72

(CTLIA01) CENTURLINK

Contact Name : SADIE HULL

Contact Phone: 9185470147

Contact Email: sadie.hull@lumen.com

(FCI) FRONTIER COMMUNICATIONS

Contact Name : Uranan Thao

Contact Phone: 5155731268

Contact Email: frontierlocatemapsia@ftr.com

(ICN) IOWA COMMUNICATIONS NETWORK

Contact Name : Shannon Marlow

Contact Phone: 8005723940

Contact Email: icnoutsideplantiowaonecall@iowa.gov

(LBIA07) LONG LINES BROADBAND

Contact Name : Miles Patton

Contact Phone: 7122715550

Contact Email: miles.patton@longlines.biz

(OCR) OSCEOLA COUNTY RURAL WATER

Contact Name : Douglas Westerman

Contact Phone: 7127356795

Contact Email: orwsdoug@windstream.net

(OSE) OSCEOLA ELECTRIC COOPERATIVE

Contact Name : Tommy Storey

Contact Phone: 7127542519

Contact Email: tstorey@osceolaelectric.com

(PR9) PREMIER COMMUNICATIONS

Contact Name : Tim Dykshorn

Contact Phone: 7127223451

Contact Email: timd@mypremieronline.com

(ZAY) ZAYO GROUP LLC

Contact Name : George Huss

Contact Phone: 4434032023

Contact Email: venus.minucciani@zayo.com

Project 2142203910

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Roadway			
PIN Number	21-72-060-010	Submittal Date	08/19/22
Project Number	BRFN-060-4(95)--39-05	Approval Date	
District	District 3	Assistant District Engineer	Shane Tymkowicz, P.E.
County	OSCEOLA	or	
Route	IA 60 SB	Office Director	
Location	Drainage Ditch 1.1 mi. S of Co Rd L36 (SB)		
Work Type	Bridge Replacement		
Segment Manager	Shane Tyymkowicz, P.E.		
Designer	Shive-Hattery		

[Design Manual Section 1C-1](#)
[Last Updated: 04-29-19](#)

Rural Expressways (Rural Arterials)

Design Element	Preferred	Acceptable Criteria	Project Values
Design speed (mph)	70	50	70
Maximum superelevation rate (Refer to Section 2A-2)	6%	8%	6%
Design lane width (ft)	12	12	12
Full depth paved width (ft)	Outside lane	12	12
	Inside lane(s)	12	12
Right turn lane or an auxiliary lane (ft)	12	10	N/A
Left turn lane (ft)	12	10	N/A
Pavement cross-slope (on tangent sections)	Through lanes	2%, However, when adjacent lanes slope in the same direction, increase slope by 0.5% per lane up to 3%	1.5% minimum, 3% maximum
	Auxiliary and turn lanes	3%	3% maximum
	Crown break at centerline	4%	4% maximum
Shoulder cross-slope (on tangent sections)	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 type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1
	Curbed roadways	2%	not steeper than 3:1
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
Transverse Slopes	w/ drainage structures	8:1	6:1
	w/o drainage structures	10:1	6:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--
	Median ditch depth (ft)	4	2
Median width (ft) (Refer to Section 3E-1)	64	50	Match Exst
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft left and right of the design lane widths
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14
	Over railroad	23.3	23.3
	Sign trusses and pedestrian crossings	17.5	17
Structural Capacity	Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	
Level of Service	B	B	B

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

Roadway Design Speed (mph) = 75

Design Criteria for High Speed Roadways															
Design Element		Preferred Criteria						Acceptable Criteria						Project Values	
		Design Speed, mph						Design Speed, mph							
		50	55	60	65	70	75	50	55	60	65	70	75		
Stopping sight distance (ft) (Refer to Section 6D-1)		425	495	570	645	730	820	425	495	570	645	730	820	820	
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e _{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	2500
		e _{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	--
Minimum vertical curve length (ft) (Refer to Section 2B-1)		150	165	180	195	210	225	150	165	180	195	210	225	225	
Minimum rate of vertical curvature (K)		crest vertical curves						sag vertical curves							
(Refer to Section 2B-1)		roadways without fixed-source lighting						roadways with fixed-source lighting							
		84	114	151	193	247	312	84	114	151	193	247	312	312	
Minimum gradient (%) (Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.5	
Maximum gradient (%) (Refer to Section 2B-1)		Urban roadways		3				7	6	6	--	--	--		
		Rural roadways		4				5	5	4	4	4	4	4	
		Interstates		4				5	5	4	4	4	4	4	
Clear zone		See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						32'	

Design year ADT = 6100

Design Manual Section 1C-1
Last Updated: 04-29-19

Effective Shoulder Width and Type for Multilane Arterials

Preferred (Values shown in feet)					Acceptable (Values shown in feet)					Project Values		
Rural Roadways		Urban Roadways			Rural Roadways		Urban Roadways					
Auxiliary lanes or turn lanes with shoulders	6		6			Auxiliary lanes or turn lanes with shoulders	6		0			6
Turn lanes with curbs	6		See Section 3C-2			Turn lanes with curbs	6		0			N/A
Expressways	Outside		Median Side			Expressways	Outside		Median Side			Outside Effective = 10' Paved = 6' Median Effective = 6' Paved = 6'
	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width			Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width		
Routes where bicycles are to be accommodated	10	10	6	6		Routes where bicycles are to be accommodated	8	4	4	4		
On roadways approaching urban areas (due to increased bike traffic)	10	10	6	6		On all other Expressways (Multilane Arterials)	8	0*	4	4		
On all curves with a superelevation rate of 7.0% or greater	10	10	6	6								
On roadways with design year ADT > 6500 vpd	10	6	6	6								
On all other Expressways (Multilane Arterials)	10	6	6	6								

*Requires safety edge-See 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

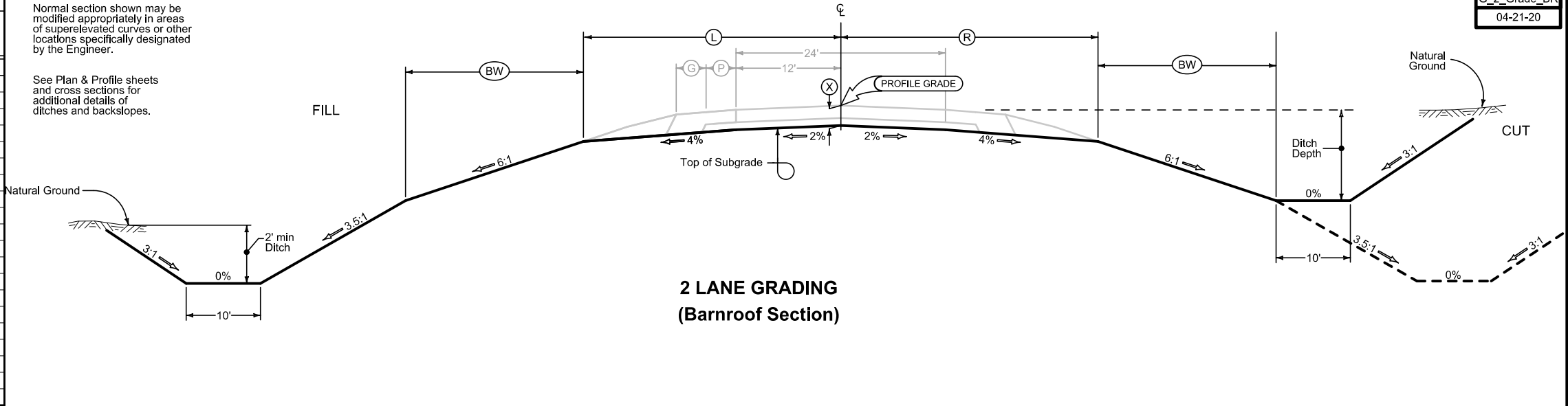
Notes: Existing Shoulder 4' paved, right, 4' paved, 6' aggregate, left

LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	(BW) Feet
IA 60	2159+27.70 2159+04.70			22	

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.

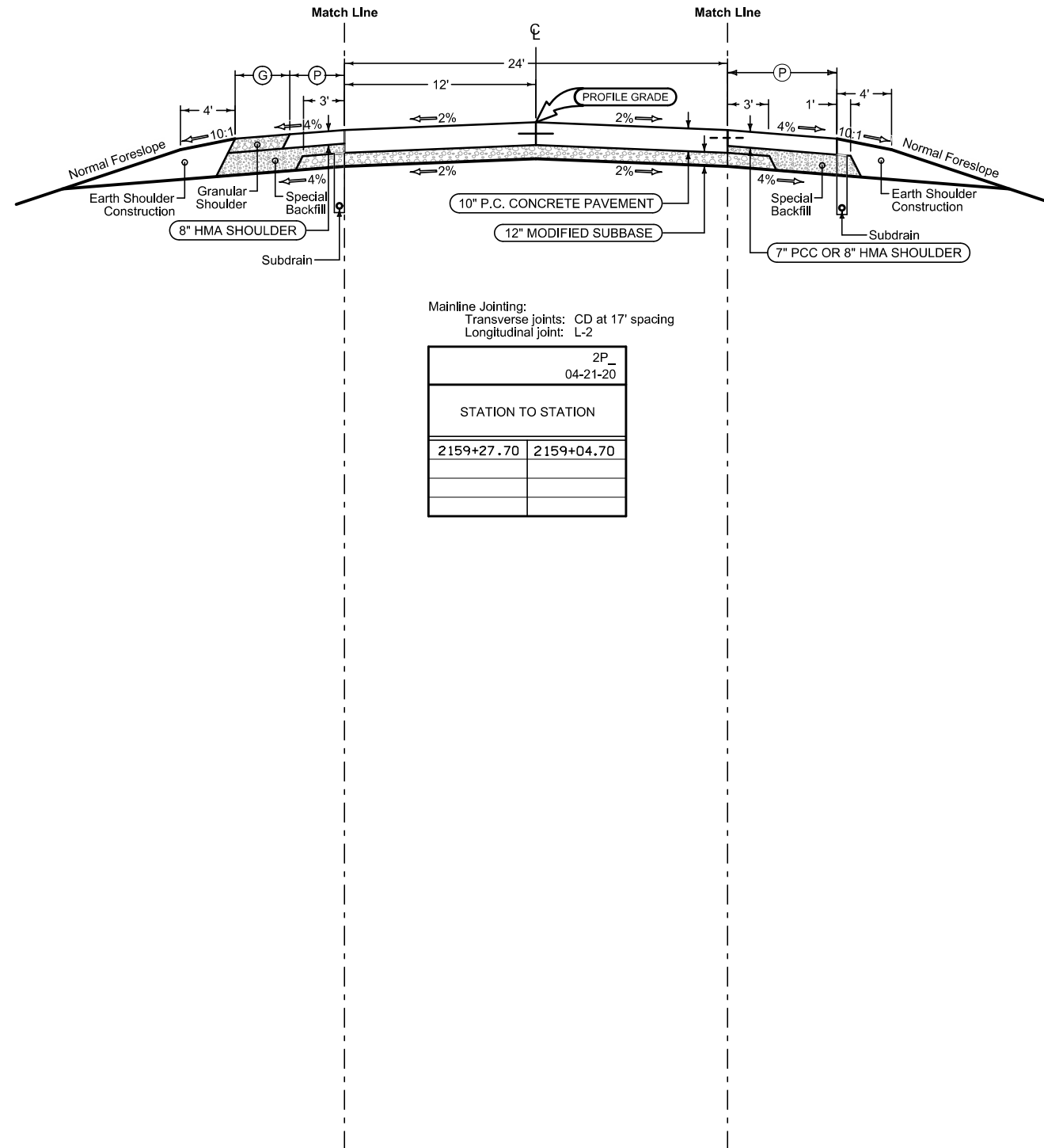
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Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(P) Feet	(G) Feet
2159+27.70	2159+04.70	6	4



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

STATION TO STATION	
2159+27.70	2159+04.70

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(P) Feet
2159+27.70	2159+04.70	6

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

SURVEYED UTILITY OWNER SYMBOLS

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

- FO1D1, Premier Communications - Quality D
- FO2D2, CenturyLink - Quality D
- FO3D3, Zayo Group - Quality D
- FO4D4, Long Lines - 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
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
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

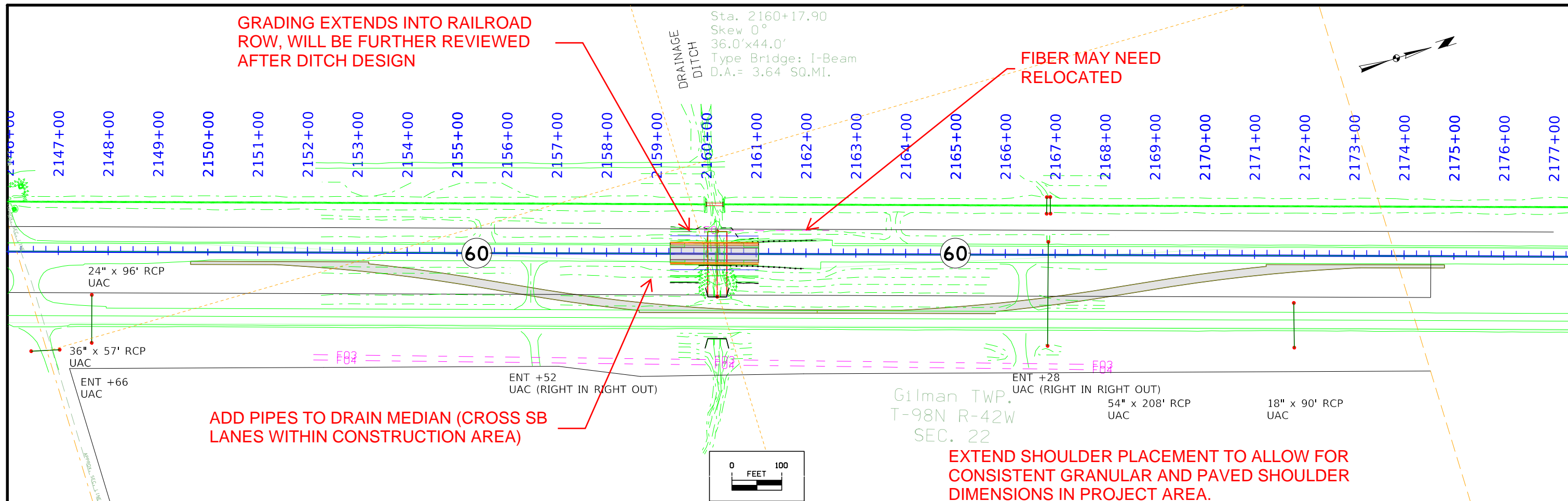
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

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)

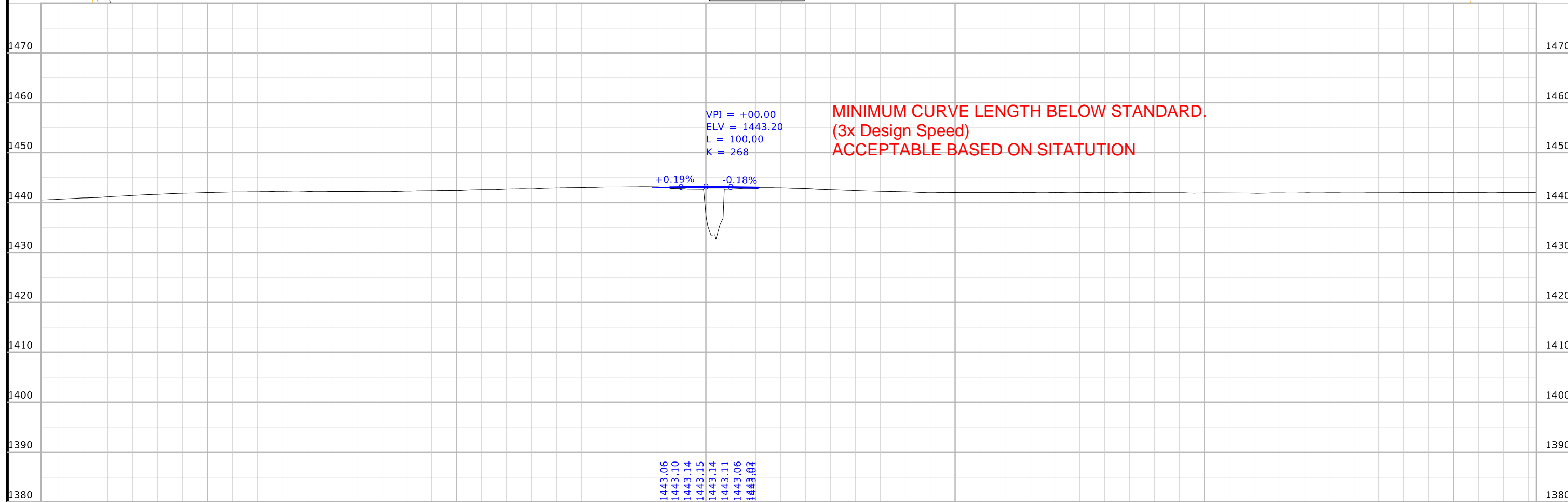
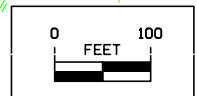


GRADING EXTENDS INTO RAILROAD ROW, WILL BE FURTHER REVIEWED AFTER DITCH DESIGN

FIBER MAY NEED RELOCATED

ADD PIPES TO DRAIN MEDIAN (CROSS SB LANES WITHIN CONSTRUCTION AREA)

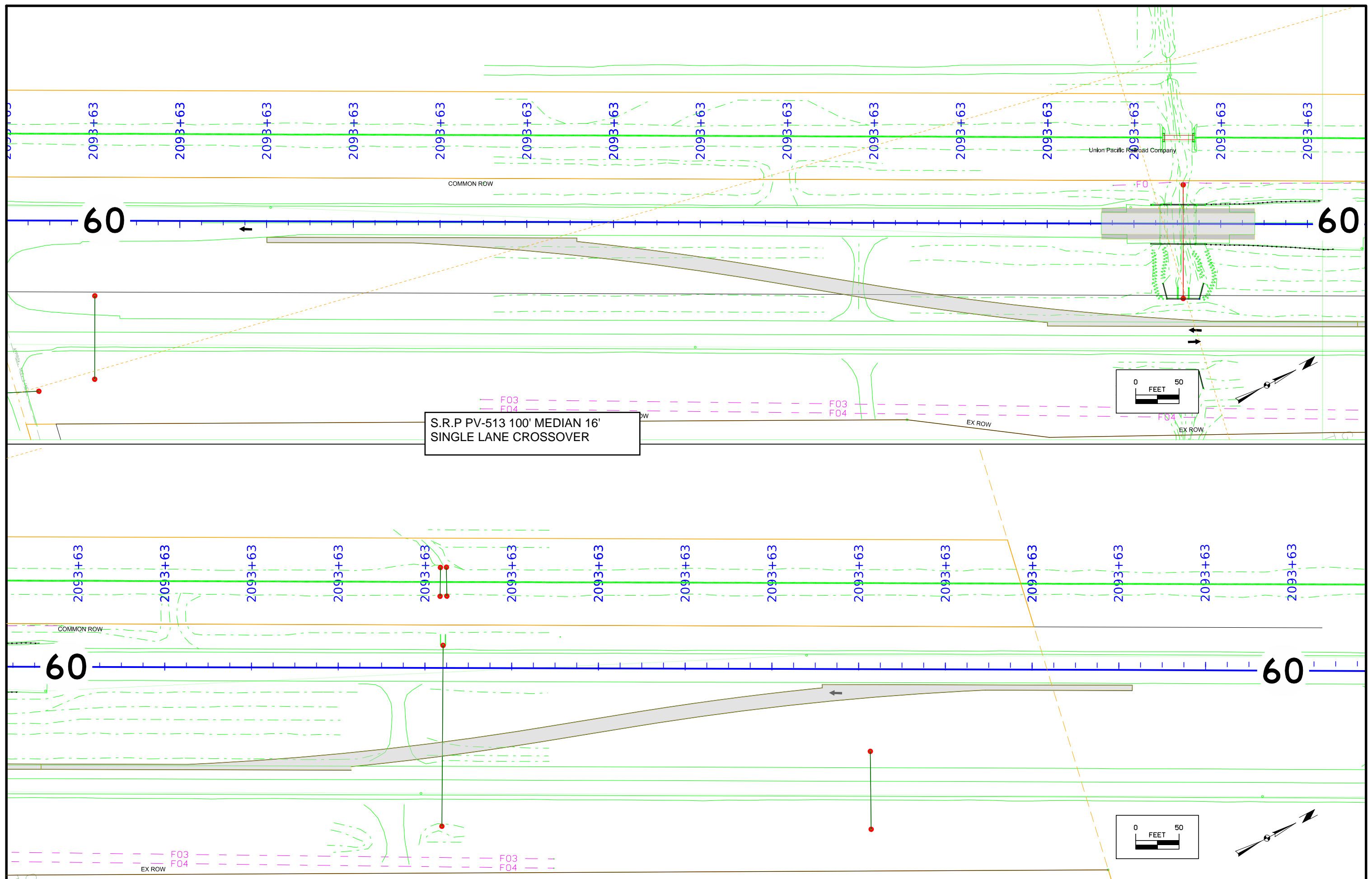
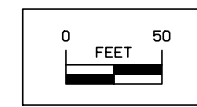
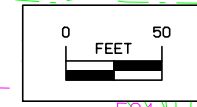
EXTEND SHOULDER PLACEMENT TO ALLOW FOR CONSISTENT GRANULAR AND PAVED SHOULDER DIMENSIONS IN PROJECT AREA.



MINIMUM CURVE LENGTH BELOW STANDARD. (3x Design Speed) ACCEPTABLE BASED ON SITUATION

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/Shive-Hattery	OSCEOLA COUNTY	PROJECT NUMBER BRFN-060-4(95)--39-72	SHEET NUMBER D.2
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S.R.P PV-513 100' MEDIAN 16'
SINGLE LANE CROSSOVER



Survey Information

SURVEY INDEX

County: Osceola
PIN: 21-72-060-010
Project Number: BRFN-060-4(95)--39-72
Location: Drainage Ditch 1.1 mi S of Co Rd L36 (SB)
Type of Work:
Project Directory: 7206001021

Survey Personnel

Murray Berting – PLS
Gavin Gear – Land Survey Technician

Date(s) of Survey

Begin Date 11/04/2022
End Date 04/03/2023

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge reconstruction and reconstruction of State Highway 60 1.1 mi South of County Road L36 (SB). Project datum and control information is provided by Shive-Hattery Inc. This project is a Preliminary Survey. This survey request was for the bridge over the drainage ditch (near Otter Creek), triple box culvert under northbound US 60, downstream railroad bridge and farm crossing, State Highway 60 corridor and the drainage area.

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. (3) three-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values. 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 01
(U.S. SURVEY FOOT)
VERTICAL DATUM: NAVD88
GEOID MODEL: 2012bu2

Alignment Information

The horizontal alignment for U.S. Hwy 60 for this survey is a retracement of As-built Plans No. AB-498-12 ABCF Paving – As-builts and NHSX-60-4(31)-3H-72 HMA Pavement - New. Survey stationing was equated to the plan POT at Sta. 652+50.00(m) and run back and ahead without equation throughout the survey.

Survey stationing relates to as-built plan stationing as follows:

POT Sta. 652+50(m) As-built Plans Project No. NHSX-60-4(31)-3H-72
Survey POT Sta. 2140+63.94(ft)

POT Sta. 662+69.00(m) As-built Plans Project No. NHSX-60-4(31)-3H-72
Survey POT Sta. 2174+53.67(ft)

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 01 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2012bu2

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 01 (U.S. Survey Foot)
 VERT. DATUM: NAVD88
 Geoid Model: 2012bu2

POINT NUMBER	NORTHING	EASTING	ELEVATION	FEATURE DEFINITION
301	9631228.457	11353871.95	1431.829667	CP 1"GAS PIPE CAP IDOT 651+41.88
302	9631565.594	11353989.76	1435.177667	CP 1" GAS PIPE CAP IDOT 652+50
303	9633134.388	11354469.4	1440.879333	CP 1" GAS PIPE CAP IDOT 657+50
304	9633497.407	11354436.55	1441.94	CP CUT X N COR BOX CULVERT
305	9634802.085	11354997.48	1436.798	CP 1" GAS PIPE CAP IDOT 662+69
401	9629485.848	11353188.85	1429.051	CP 1" GAS PIPE CAP IDOT 345+54
402	9631228.438	11353871.94	1431.84	CP 1" GAS PIPE CAP IDOT 651+41.88
403	9635776.35	11355295.31	1438.378	CP 1" GAS PIPE CAP IDOT 665+95.894

108-23A
08-01-08

TRAFFIC CONTROL PLAN

- 1) While southbound lanes are being reconstructed, southbound IA 60 traffic will be shifted to the inside northbound lanes by means of median crossover (TC-61).
- 2) Northbound and Southbound IA 60 traffic through work area will be reduced to one lane in each direction (TC-61).
- 3) IA 60 traffic will return to normal operation with shoulder closures as necessary to remove median crossovers.

108-26A
08-01-08

STAGING NOTES

- Stage 1:
Construct median crossovers.
- Stage 2:
Remove southbound IA 60 lanes with traffic routed on northbound US 60 lanes. Construct culvert and replace roadway.
- Stage 3:
With IA 60 traffic under normal operation, remove median crossovers and restore median.

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
IA 60	Both	OSCEOLA	Bridge over Drainage Ditch	Drainage Ditch	Bridge		None					

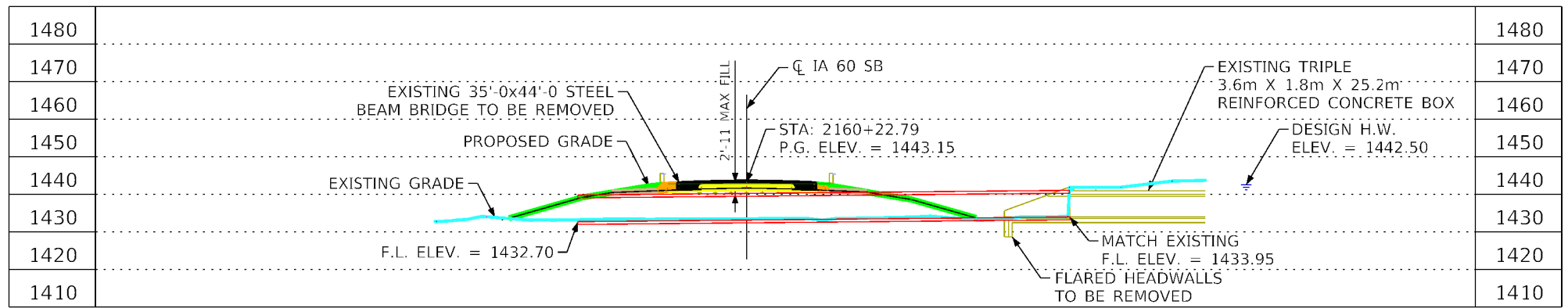
111-01
04-17-12

COORDINATED OPERATIONS

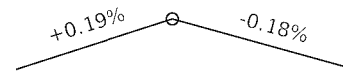
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None Provided	

Control Point:



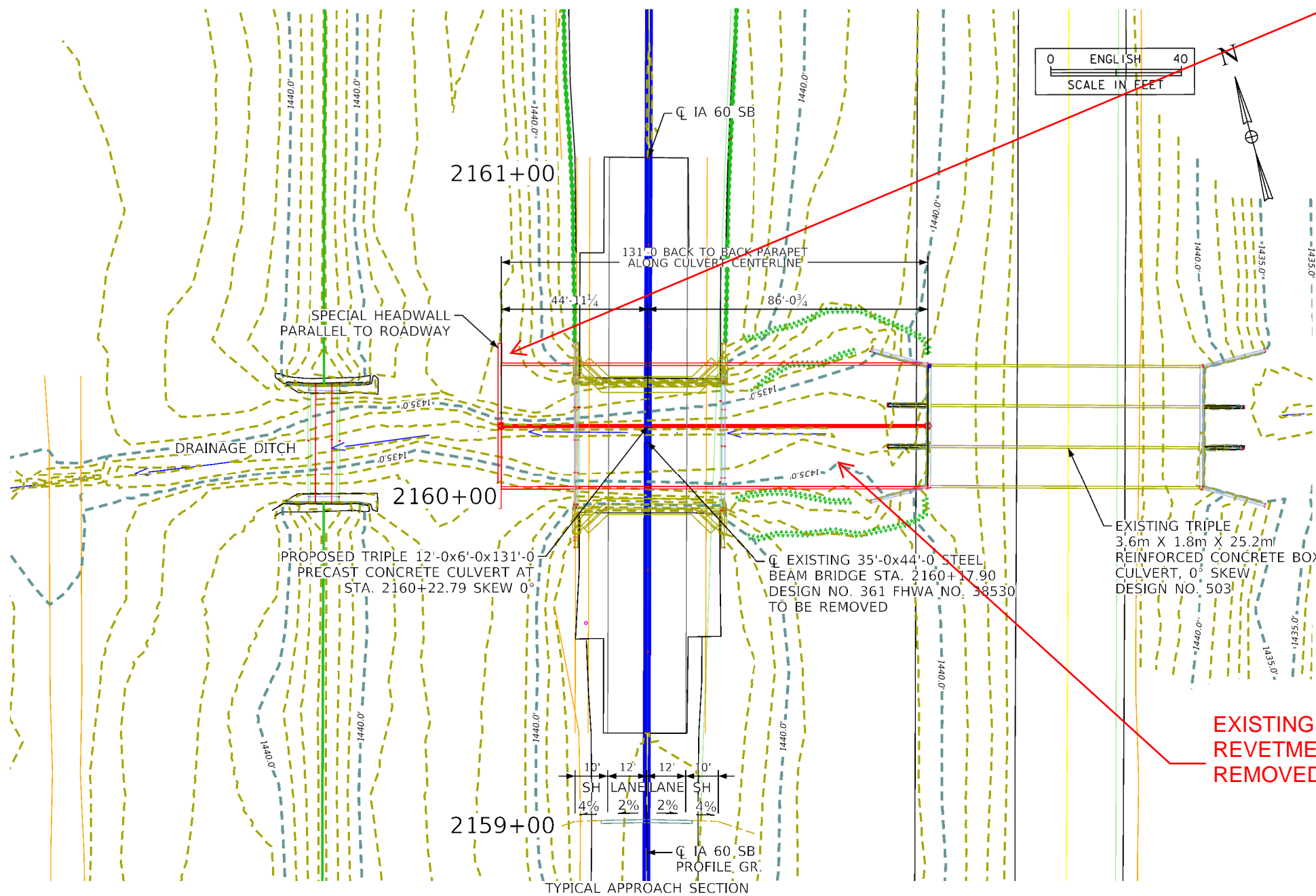
LONGITUDINAL SECTION ALONG CL CULVERT



VPI Sta. = 2160+00.00
VPI Elev. = 1443.20
LVC = 100'

**Proposed Profile
Grade IA 60**

**PARALLEL
HEADWALL
(DESIGN BY FINAL
BRIDGE DESIGNER)**



SITUATION PLAN

Hydraulic Data

Drainage Area = 3.64 Sq. Mi.
Stream Slope = 23.4 Ft./Mi.

Q₅₀ = 1,400 CFS
HW Elev. = 1442.5

Q₁₀₀ = 1,690 CFS
HW Elev. = 1443.8

Q₅₀₀ = 2,290 CFS
HW Elev. = 1443.8

Roadway Overtop
Sta. 2164+80.0
Elev. 1443.21

Utilities Legend

Symbol - Type

Utilities shown on this sheet are for information only, see road design sheets for final utility information.

Location

IA 60 SB over Drainage Ditch
T-98N R-42W
Section 22
Gilman Township
Osceola County
FHWA No.
Bridge Maint. No. 7241.8L060
Latitude 43.290594°
Longitude -95.797022°

Traffic Estimate

2026 AADT	5,800	V.P.D.
2046 AADT	7,100	V.P.D.
2046 DHV	740	V.P.H.
Trucks	26	%
Total		
Design ESALS	22,222	

Design For 0° Skew
**TRIPLE 12'-0 x 6'-0 x 131'-0
PRECAST CONCRETE CULVERT**

SITUATION PLAN

STA. 2160+22.79 (IA 60 SB) JUNE 2023
Osceola County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. ##### Design Sheet No. 001 of 001 FHWA/Asset #####

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		
(188)	Revetment Class D	Grading	
(28)	Revetment Class E	(8)	Behind Curb Cut
(12)	Shoulder Special Backfill	(6)	Granular
(12)	Special Backfill	(13)	Granular Back Fill
(20)	Subbase	(48)	Rock Undercut
(20)	Subbase Lower	(8)	Shoulder Earth Fill
(20)	Subbase Upper	(2)	Side Slopes
(118)	Subgrade Treatment	(226)	Side Slopes Dressing
Asphalt			
(207)	HMA Base Course	Substrata	
(207)	HMA Interim Course	(128)	Boulder Substrata
(207)	HMA Surface Course	(48)	Broken Weathered Substrata
Concrete			
(0)	Barrier Concrete	(3)	Core Out Substrata
(0)	Barrier Concrete Footing	(203)	Existing Pavement Substrata
(0)	Curb Gutter	(6)	Loam Substrata
(48)	Flowable Mortar	(80)	Rock Substrata
(0)	Median Concrete	(4)	Select Sand Substrata
(0)	PCC Pavement	(3)	Shale Substrata
(0)	Sidewalk	(10)	Topsoil Substrata
Shoulder			
(209)	Shoulder HMA	Unsuitable / Waste	
(0)	Shoulder PCC	(3)	Unsuitable Type A
(6)	Shoulder Granular	(13)	Unsuitable Type B
		(11)	Unsuitable Type C
		(3)	Waste
Existing			
(0)	Existing Pavement		

NOTES:

Text

NOTES:

Text

CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

