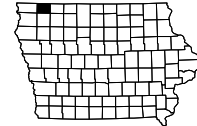
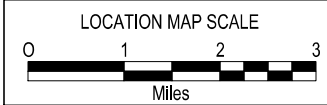
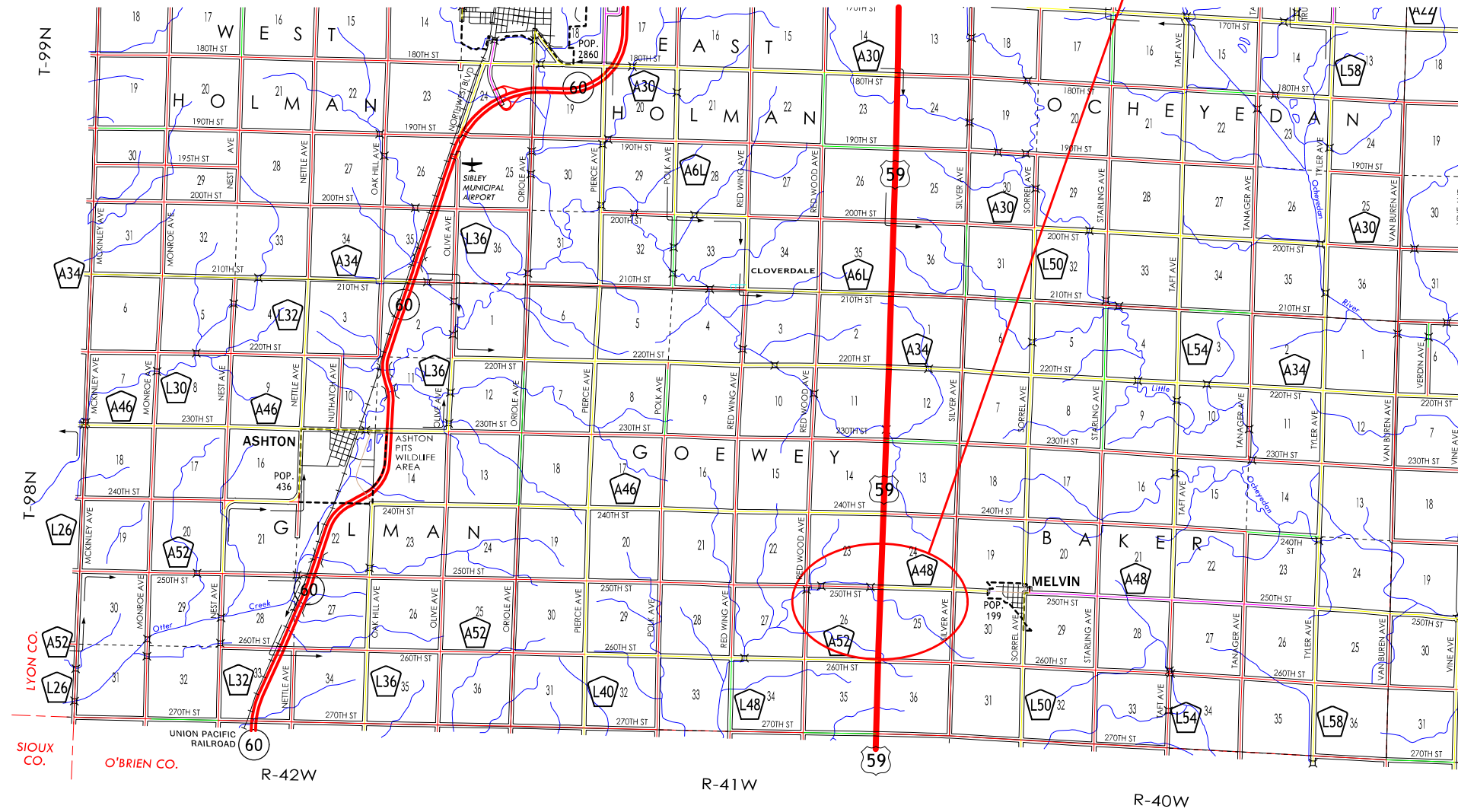




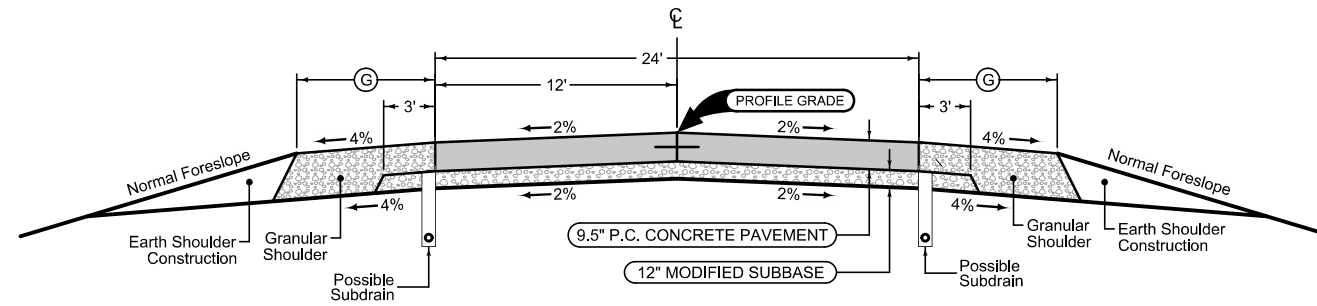
**PROJECT LOCATION**  
**STA. 94+47.38**  
**M.P. 200.91**





**Granular Shoulder**

2_G_SR_ 04-21-20		
STATION TO STATION		Ⓞ Feet
95+15.00	95+80.00	6



**Granular Shoulder**

2_G_SR_ 04-21-20		
STATION TO STATION		Ⓞ Feet
95+15.00	95+80.00	6

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

2P_ 04-21-20		
STATION TO STATION		
95+15.00	95+80.00	

US 59 Paving

### 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

- WL1D, Osceola Rural Water**
  - TL1D, Windstream Communications**
- Doug Westerman  
System Manager  
Osceola Rural Water System Water  
orwsdoug@windstream.net  
(712) 261-1131
- Hugh Carroll  
OSP Construction Manager  
Windstream Communications Fiber Distribution  
hugh.carroll@windstream.com  
(314) 239-3728

### 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.	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

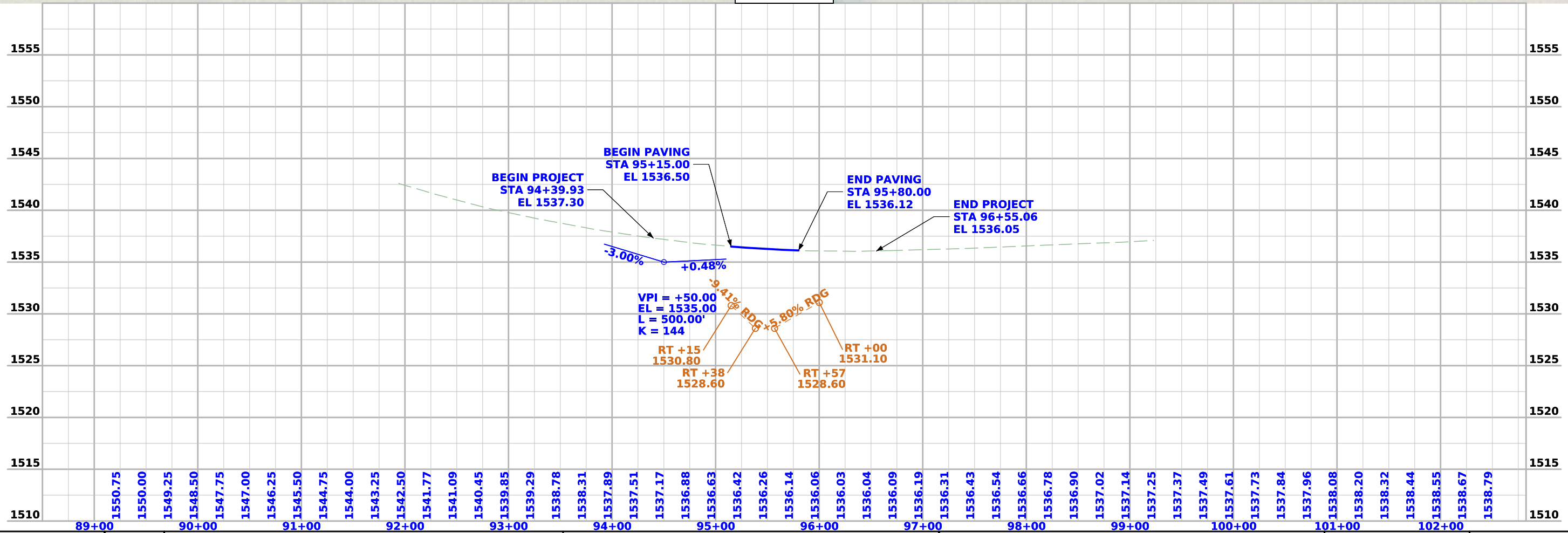
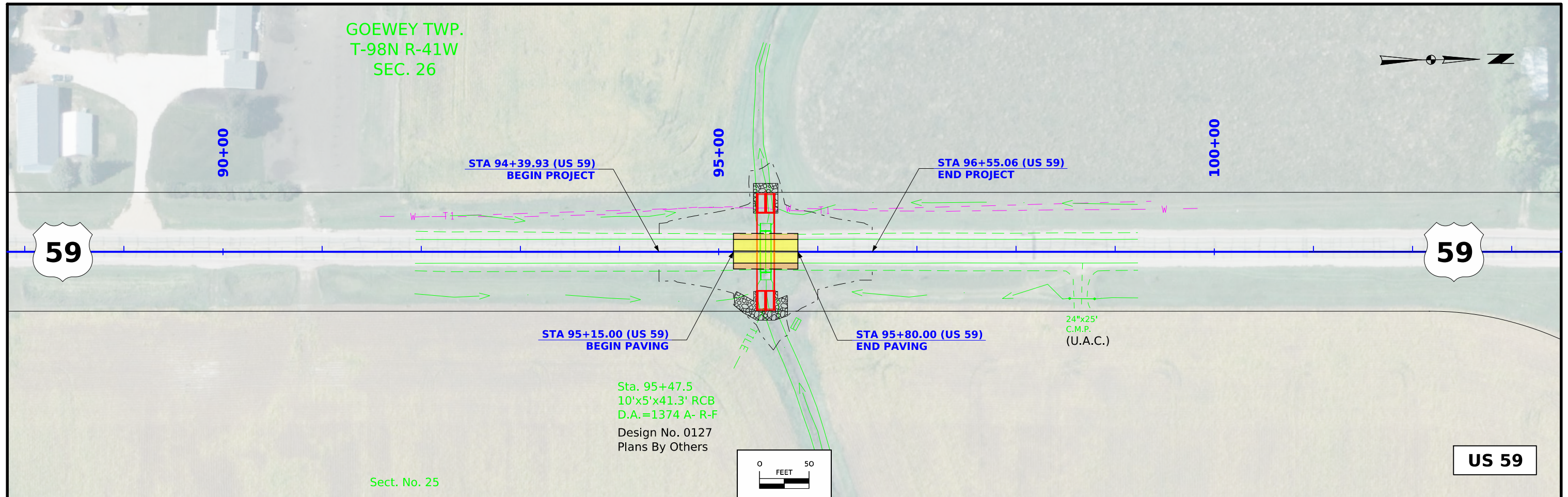
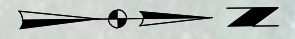
### RIGHT-OF-WAY LEGEND

- 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)

GOEWY TWP.  
T-98N R-41W  
SEC. 26



FILE NO.	ENGLISH	DESIGN TEAM Miller / Evans	Osceola COUNTY	PROJECT NUMBER STPN-059-9(019)--2J-72	SHEET NUMBER D.2
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## SURVEY INDEX

**County: Osceola**  
**PIN: 24-72-059-010**  
**Project Number: STPN-059-9(019)--2J-72**  
**Location: Approx 0.2 mi S of 250th St**  
**Type of Work: Culvert**  
**Project Directory: 7205901024**

### Survey Personnel

Daniel Duncan – Survey Party Chief

### Date(s) of Survey

Begin Date                    05/20/2024  
End Date                      06/12/2024

### General Information

This survey is for US Hwy 59 Box Culvert Project This project is a Full Field DTM survey.

### 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

Coordinates were determined for primary project control points by conducting concurrent six-hour static observations. Post processing is constrained to nearby Iowa 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 01**  
**(U.S. SURVEY FOOT)**  
**VERTICAL DATUM: NAVD88**  
**GEOID MODEL: 2018u3**

## Alignment Information

The horizontal alignment for U.S. Hwy 59 this survey is a retrace of As-built Plans No. FA-734AB. Survey stationing was equated to the plan 10FT X 5FT RCB at Sta. 95+47.5 and carried back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 80+41.8 As-built Plans Project No. FA-734AB  
Survey PI Sta. 80+41.51

10FTX5FT RCB Sta. 95+47.5 As-Built Plans Project No. FA-734AB  
Survey Sta. 95+47.50

NE Cor. Sec. 26 Sta. 105+98.8 8.3' Lt As-built Plans Project No. FA-734AB  
Survey Station. 105+98.14 8.31' Lt

E ¼ Cor. Sec. 23 Sta. 132+49.3 1.8' Rt As-built Plans Project No. FA-734AB  
Survey Sta. 132+48.99 1.80' Rt

## 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)

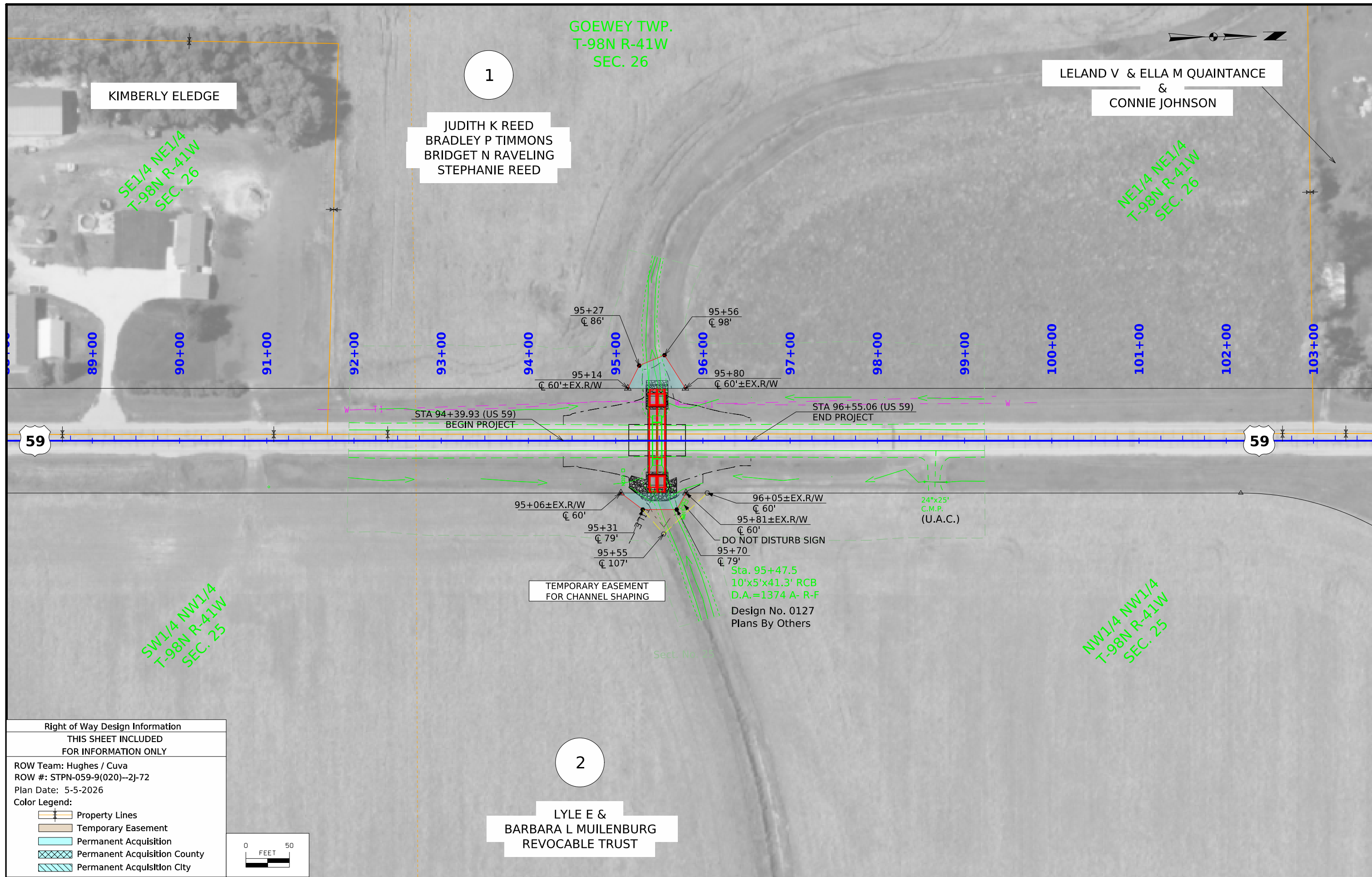
VERT. DATUM: NAVD88 - Geoid Model: 2018u3

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: 2018u3

Point Name	Northing	Easting	Elevation	Code-Description
7225001	9632113.91	11393441.96	1526.85	CP SET FENO MONUMENT 0.2 MI WEST OF US 59 AND 250TH STREET INTERSECTION
7225002	9632182.41	11397740.40	1559.96	CP SET FENO MONUMENT 0.5 MI EAST OF US 59 AND 250TH STREET INTERSECTION
720592008	9630659.45	11395110.34	1544.76	CP SET FENO MONUMENT 0.3 MI SOUTH OF US 59 AND 250TH STREET INTERSECTION
720592018	9636230.94	11395084.35	1556.05	CP SET FENO MONUMENT 0.8 MI NORTH OF US 59 AND 250TH STREET INTERSECTION

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



GOEWY TWP.  
T-98N R-41W  
SEC. 26

KIMBERLY ELEDGE

LELAND V & ELLA M QUAINANCE  
&  
CONNIE JOHNSON

JUDITH K REED  
BRADLEY P TIMMONS  
BRIDGET N RAVELING  
STEPHANIE REED

SE1/4 NE1/4  
T-98N R-41W  
SEC. 26

NE1/4 NE1/4  
T-98N R-41W  
SEC. 26

59

59

STA 94+39.93 (US 59)  
BEGIN PROJECT

STA 96+55.06 (US 59)  
END PROJECT

95+06±EX.R/W  
C 60'

95+31  
C 79'

95+55  
C 107'

96+05±EX.R/W  
C 60'

95+81±EX.R/W  
C 60'

95+70  
C 79'

24'x25'  
C.M.P.  
(U.A.C.)

TEMPORARY EASEMENT  
FOR CHANNEL SHAPING

Sta. 95+47.5  
10'x5'x41.3' RCB  
D.A.=1374 A- R-F  
Design No. 0127  
Plans By Others

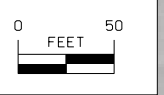
SW1/4 NW1/4  
T-98N R-41W  
SEC. 25

NW1/4 NW1/4  
T-98N R-41W  
SEC. 25

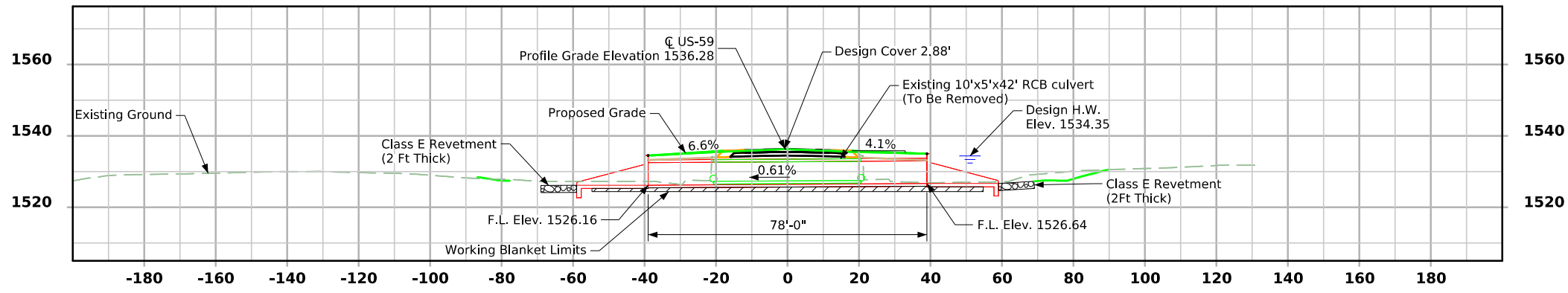
2

LYLE E &  
BARBARA L MUILENBURG  
REVOCABLE TRUST

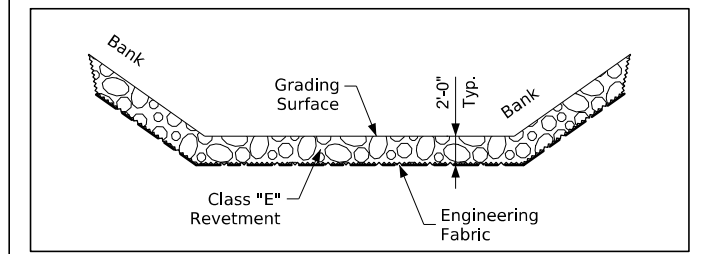
Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: Hughes / Cuva	
ROW #: STPN-059-9(020)--2J-72	
Plan Date: 5-5-2026	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition
	Permanent Acquisition County
	Permanent Acquisition City



Control Point: 7225001,CP set feno monument 0.2 mi west of us 59 and 250th street intersection. Elev. 1526.846, N.9632113.905, E.11393441.957



STA 95+47.50  
Longitudinal Section Along  $\bar{C}$  Culvert



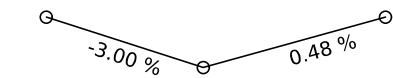
Typical Channel Protection

Estimated Revetment Quantities Included With Road Plans

Location	Revetment Class "E" (Ton)	Engineering Fabric (SY)	CL 13 Channel Excavation (CY)
Inlet	93	98	66
Outlet	39	41	27
Totals	132	139	93

Excavation quantity calculated from grading surface. Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans. Quantities shown for information only. See Road Sheets.

VPC Sta. = 92+00.00 VPT Sta. = 97+00.00  
VPC Elev. = 1542.50 VPT Elev. = 1536.19



VPI Sta. = 94+50.00  
VPI Elev. = 1535.00  
LVC = 500.00

Proposed Profile Grade US-59

**General Notes:**

This design is for the replacement of an existing single 10'-0" x 5'-0" x 42' RCB culvert with a twin 8'-0" x 6'-0" x 78'-0" RCB culvert, Asset ID No. 900910.

**Design Notes:**

- Design fill for this C.I.P culvert is 2.88'.
- Anticipated settlement is negligible.
- Revetment is proposed at the culvert inlet and outlet due to erosion concerns.

**Plan Notes:**

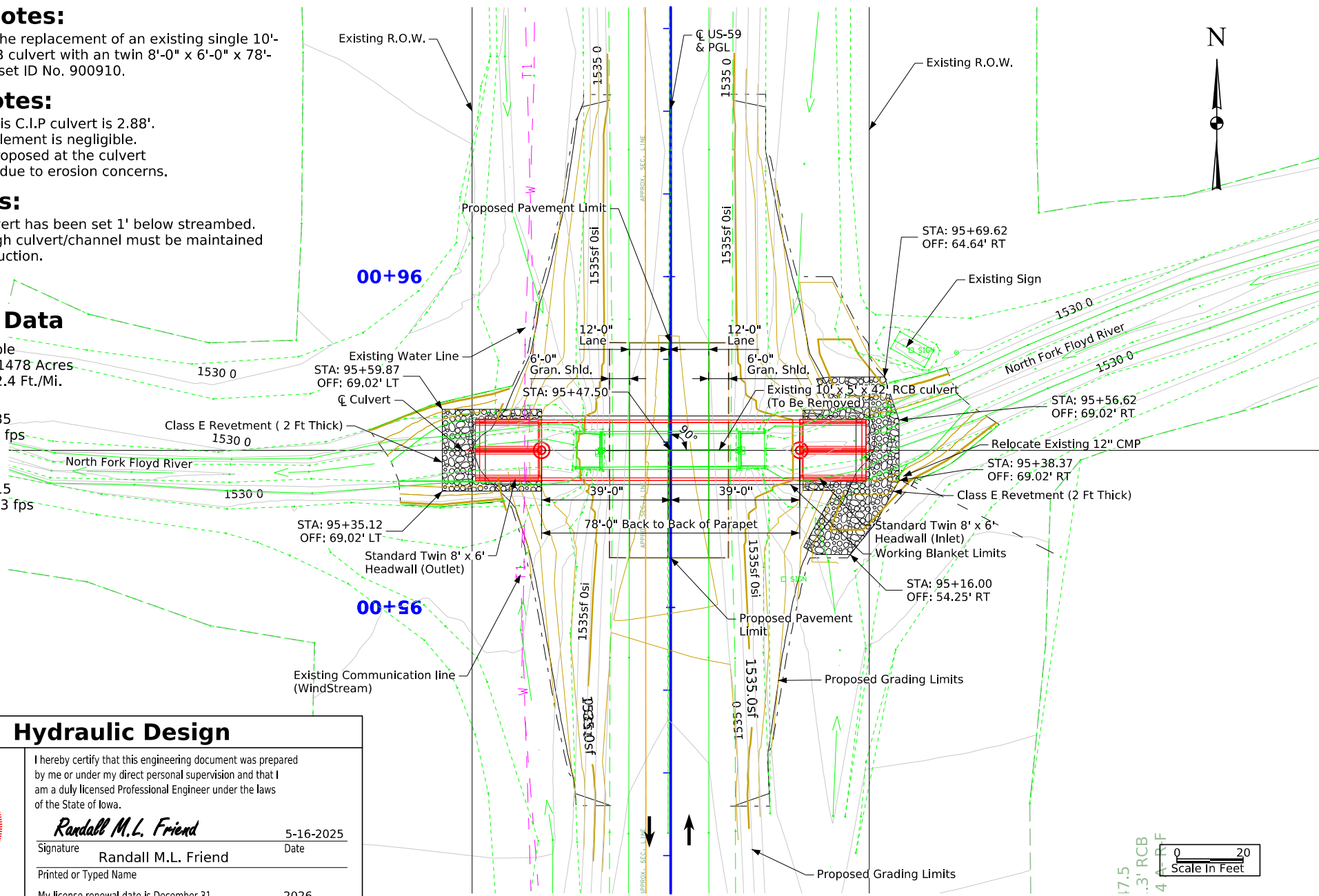
- Flow line of culvert has been set 1' below streambed.
- Drainage through culvert/channel must be maintained throughout construction.

**Hydraulic Data**

RIDB: Not Applicable  
Drainage Area = 1478 Acres  
Stream Slope = 12.4 Ft./Mi.

Q<sub>50</sub> = 400 cfs  
HW Elev. = 1534.35  
Exit Velocity = 5.0 fps

Q<sub>100</sub> = 490 cfs  
HW Elev. = 1535.15  
Exit Velocity = 6.13 fps



Situation Plan

**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.

*Randall M.L. Friend* 5-16-2025  
Signature Date

Randall M.L. Friend

Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: P28452  
V.1 and V.2

**Location**

US-59 over North Fork Floyd River  
T-98N R-41W  
Section 25  
Goewey Township  
Osceola County  
Bridge Maint. No. 7200.9B059  
Asset ID No. 900910  
Latitude 43.284656°  
Longitude -95.644065°

**Traffic Estimate**

2023 AADT	1170 V.P.D.
2047 AADT	1750 V.P.D.
20?? DHV	- V.P.H.
TRUCKS	29 %
Total	-
Design ESALs	-

**Utilities Note:**

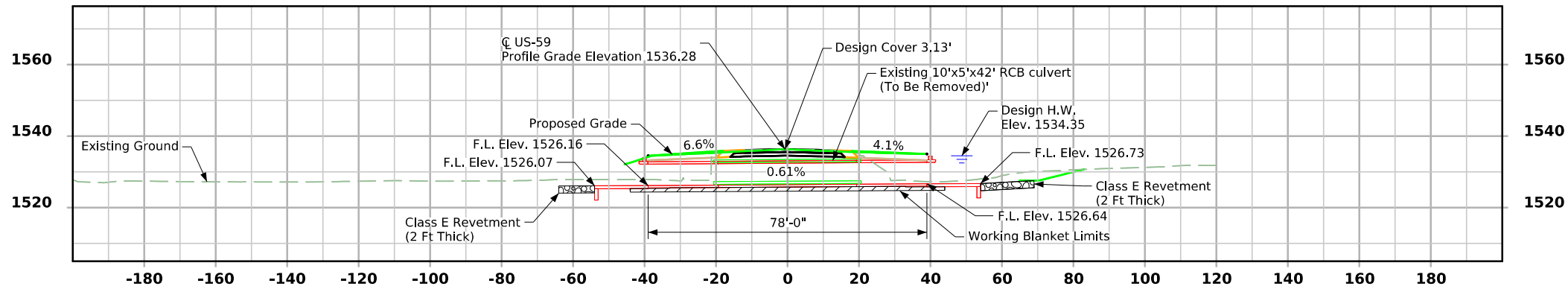
Utilities shown on this sheet are for information only. See Road Design sheets for utility information.

**General Utility Symbols:**

- E - Electric Line
- G - Gas Line
- SAN. - Sanitary Sewer
- T - Telephone Line
- W - Water Line
- FO - Fiber Optic Line
- GHP - Gas High Pressure
- ST S - Storm Sewer
- TV - TV
- Power Poles

Design For 0°  
**Twin 8'-0" x 6'-0" x 78'-0" Reinforced Concrete Box Culvert**  
Situation Plan - C.I.P.  
STA. 95+47.50 (US-59) Turn-in Date: May 2025  
**Osceola County**  
IOWA DEPARTMENT OF TRANSPORTATION  
Design No. 0127 Design Sheet No. 1 of 2 FHWA/Asset 900910

Control Point: 7225001,CP set feno monument 0.2 mi west of us 59 and 250th street intersection. Elev. 1526.846, N.9632113.905, E.11393441.957



STA 95+47.50  
Longitudinal Section Along Culvert

**General Notes:**

This design is for the replacement of an existing single 10'-0" x 5'-0" x 42' RCB culvert with an twin 8'-0" x 6'-0" x 78'-0" RCB culvert, Asset ID No. 900910.

**Design Notes:**

1. Design fill for this P.C. culvert is 3.13'.
2. Anticipated settlement is negligible.
3. Revetment is proposed at the culvert inlet and outlet due to erosion concerns.

**Plan Notes:**

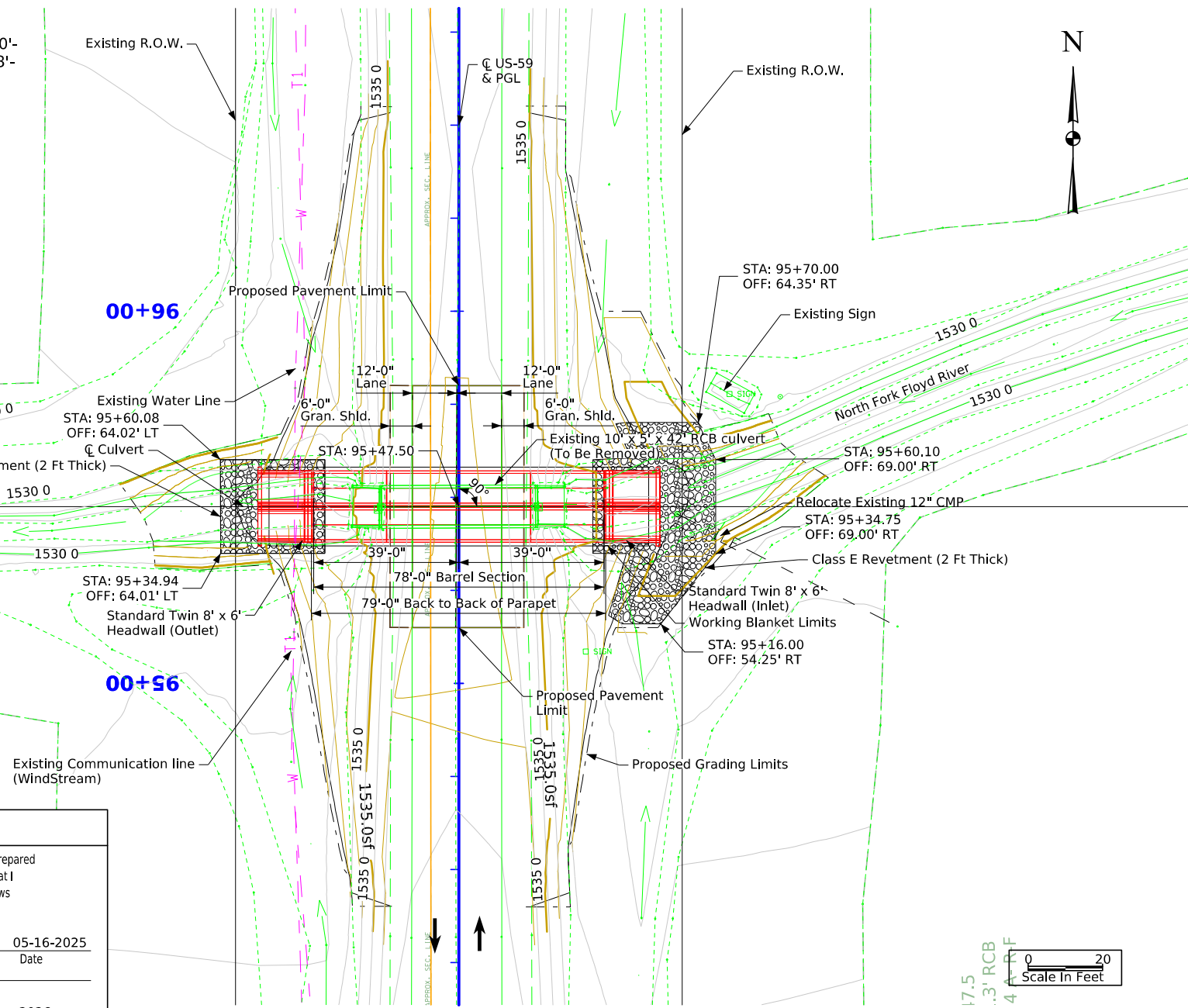
1. Flow line of culvert has been set 1' below streambed.
2. Drainage through culvert/channel must be maintained throughout construction.

**Hydraulic Data**

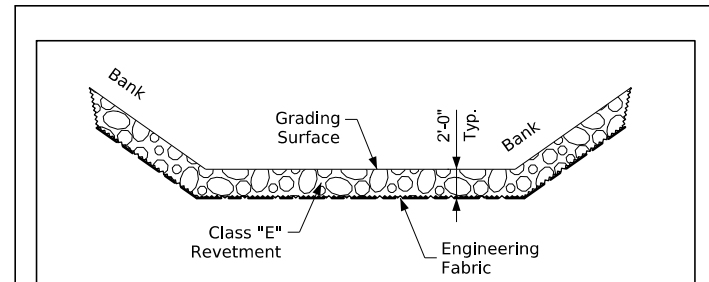
RIDB: Not Applicable  
Drainage Area = 1478 Acres  
Stream Slope = 12.4 Ft./Mi.

Q<sub>50</sub> = 400 cfs  
HW Elev. = 1534.35  
Exit Velocity = 5.0 fps

Q<sub>100</sub> = 490 cfs  
HW Elev. = 1535.15  
Exit Velocity = 6.13 fps



Situation Plan



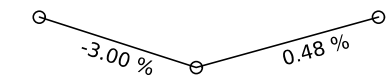
**Typical Channel Protection**

**Estimated Revetment Quantities Included With Road Plans**

Location	Revetment Class "E" (Ton)	Engineering Fabric (SY)	CL. 13 Channel Excavation (CY)
Inlet	119	126	84
Outlet	44	46	31
Totals	163	172	115

Excavation quantity calculated from grading surface. Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans. Quantities shown for information only. See Road Sheets.

VPC Sta. = 92+00.00 VPT Sta. = 97+00.00  
VPC Elev. = 1542.50 VPT Elev. = 1536.19



VPI Sta. = 94+50.00  
VPI Elev. = 1535.00  
LVC = 500.00

**Proposed Profile Grade US-59**

**Location**

US-59 over North Fork Floyd River  
T-98N R-41W  
Section 25  
Goewey Township  
Osceola County  
Bridge Maint. No. 7200.9B059  
Asset ID No. 900910  
Latitude 43.284656°  
Longitude -95.644065°

**Traffic Estimate**

2023 AADT 1170 V.P.D.  
2047 AADT 1750 V.P.D.  
20?? DHV ??? V.P.H.  
TRUCKS 29 %  
Total  
Design ESALs ???

**Utilities Note:**

Utilities shown on this sheet are for information only. See Road Design sheets for utility information.

**General Utility Symbols:**

- E - Electric Line
- G - Gas Line
- SAN - Sanitary Sewer
- T - Telephone Line
- W - Water Line
- FO - Fiber Optic Line
- GHP - Gas High Pressure
- ST S - Storm Sewer
- TV - TV
- Power Poles

**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.

*Randall M.L. Friend* 05-16-2025  
Signature Date

Randall M. L. Friend  
Printed or Typed Name

My license renewal date is December 31, 2026



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

P28452

Design For 0°  
Twin 8'-0" x 6'-0" x 78'-0" Reinforced Concrete Box Culvert

Situation Plan - P.C.  
STA. 95+47.50 (US-59) Turn-In Date: May 2025

Osceola County  
IOWA DEPARTMENT OF TRANSPORTATION  
Design No. 0127 Design Sheet No. 2 of 2 FHWA/Asset 900910

## CROSS SECTION VIEW COLOR LEGEND

Design Color No.	Feature	Design Color No.	Feature
<b>Aggregate</b>			
(64)	Choke Stone	(8)	Behind Curb Cut
(42)	Engineering Fabric	(6)	Granular
(8)	Flooded Backfill	(13)	Granular Back Fill
(92)	Macadam Stone	(48)	Rock Undercut
(20)	Modified	(8)	Shoulder Earth Fill
(12)	Plowing Shaping	(2)	Side Slopes
(14)	Porous Backfill	(226)	Side Slopes Dressing
<b>Grading</b>			
(8)	Revetment Class A	<b>Substrata</b>	
(6)	Revetment Class B	(128)	Boulder
(62)	Revetment Class C	(209)	Boulder Removed
(188)	Revetment Class D	(48)	Broken Weathered
(28)	Revetment Class E	(210)	Broken Weathered Removed
(12)	Shoulder Special Backfill	(3)	Core Out
(12)	Special Backfill	(115)	Core Out Remove Only
(20)	Subbase	(195)	Core Out Remove and Replace
(20)	Subbase Lower	(203)	Existing Pavement
(20)	Subbase Upper	(184)	Existing Pavement Remove Only
(118)	Subgrade Treatment	(200)	Existing Pavement Remove and Replace
<b>Asphalt</b>			
(207)	HMA Base Course	(6)	Loam
(207)	HMA Interim Course	(211)	Loam Removed
(207)	HMA Surface Course	(80)	Rock
<b>Bridge</b>			
(0)	Bridge	(212)	Rock Removed
<b>Concrete</b>			
(0)	Barrier Concrete	(4)	Select Sand
(0)	Barrier Concrete Footing	(214)	Select Sand Removed
(0)	Curb Gutter	(3)	Shale
(48)	Flowable Mortar	(215)	Shale Removed
(0)	Median Concrete	(10)	Topsoil
(0)	PCC Pavement	(2)	Topsoil Remove Only
(0)	Sidewalk	(4)	Topsoil Remove and Replace
<b>Unsuitable / Waste</b>			
(0)	Existing Pavement	(3)	Unsuitable Type A
(209)	Shoulder HMA	(216)	Unsuitable Type A Removed
(0)	Shoulder PCC	(13)	Unsuitable Type B
(6)	Shoulder Granular	(217)	Unsuitable Type B Removed
(112)	Noise Wall	(11)	Unsuitable Type C
(112)	Noise Wall Footing	(218)	Unsuitable Type C Removed
(112)	Retaining Wall Back	(3)	Waste
(112)	Retaining Wall Back Excavate	(219)	Waste Removed
(112)	Retaining Wall Face		
(112)	Retaining Wall Front Excavate		
(112)	Retaining Wall Front Footing		
(112)	Retaining Wall MSE Gutter		
(112)	Retaining Wall Reinforced Earth		
<b>Structural</b>			

**NOTES:**

Text

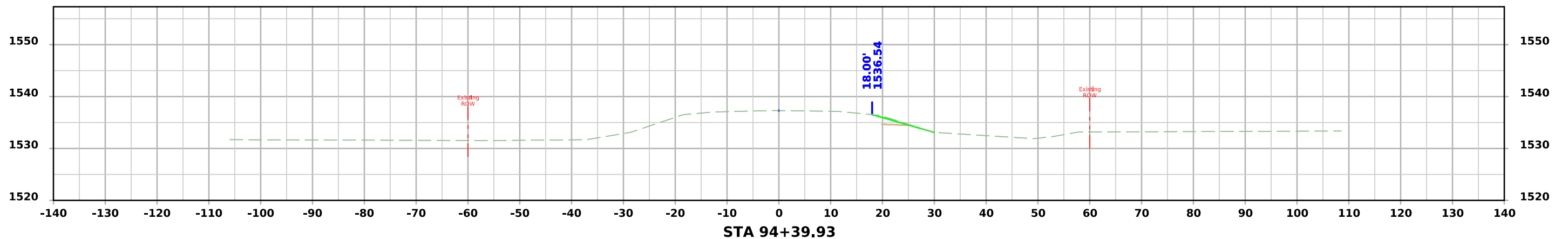
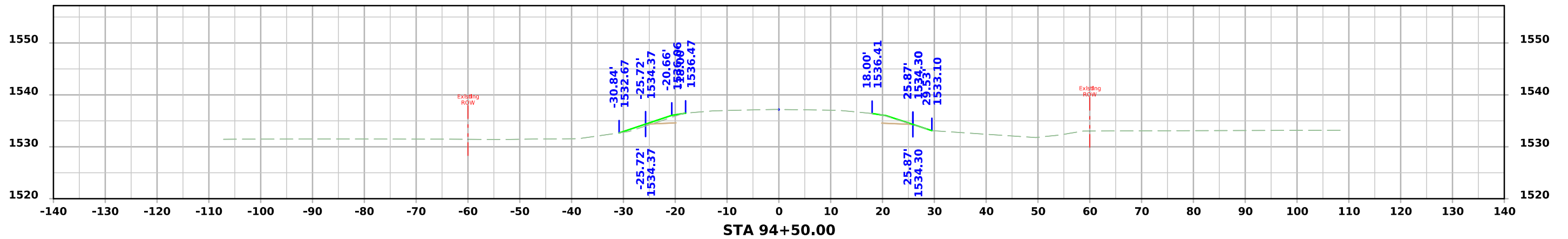
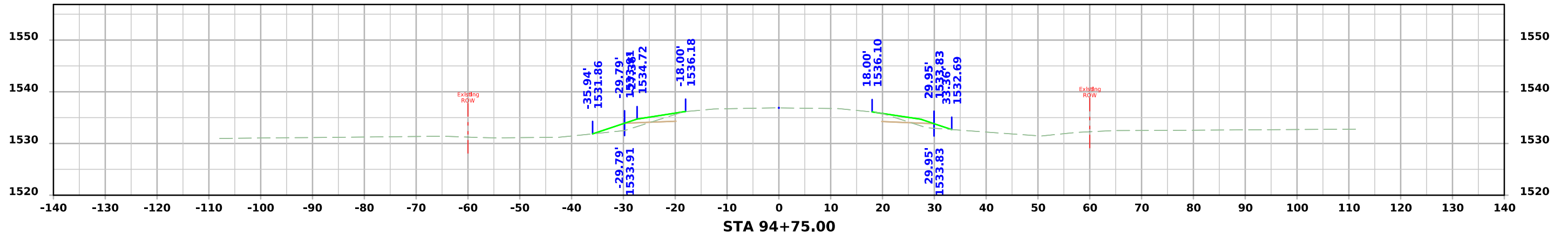
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Text

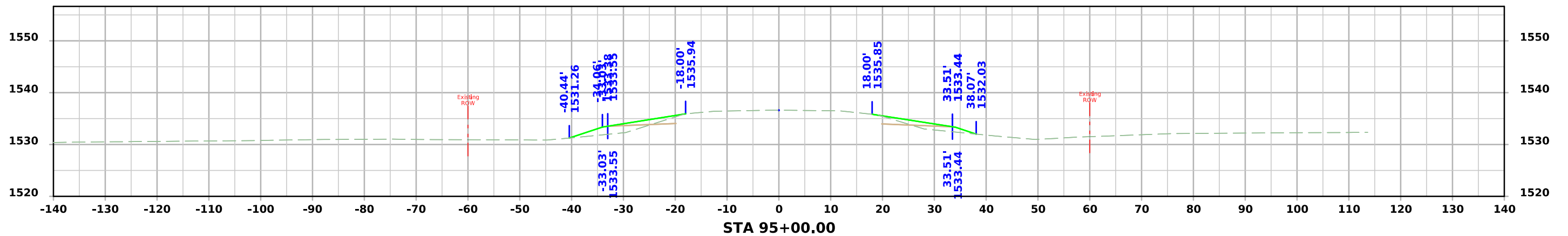
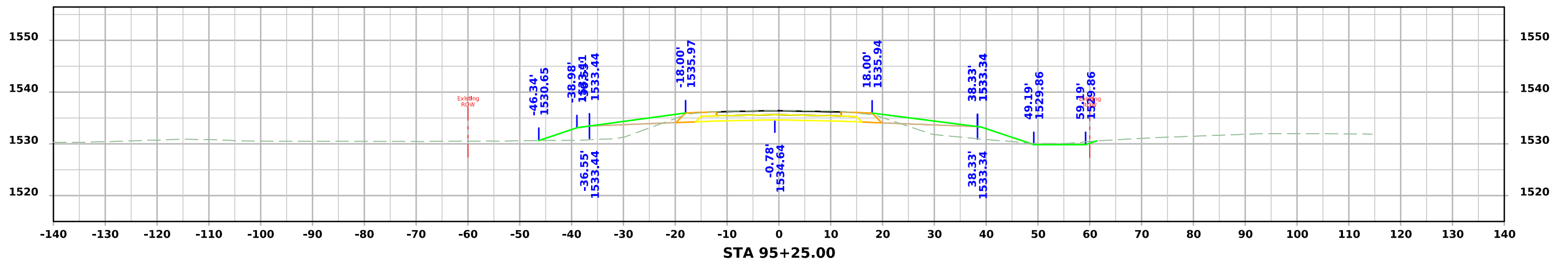
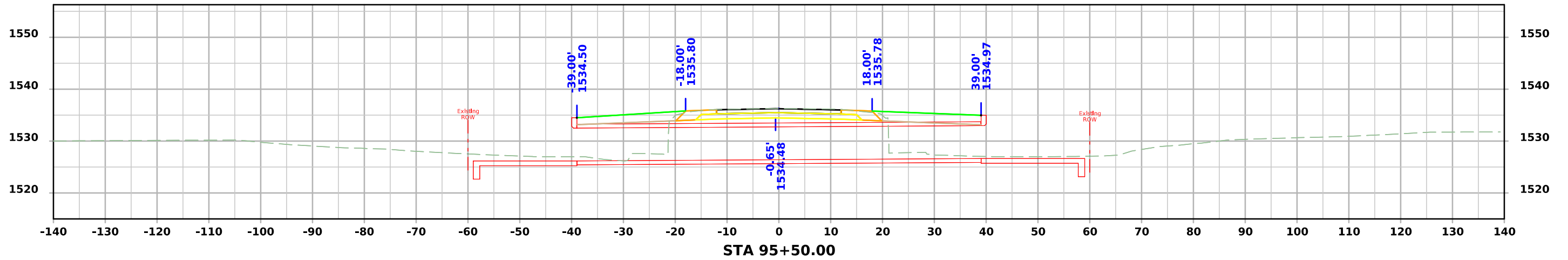
## CROSS SECTIONS LEGEND AND INFORMATION SHEET

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

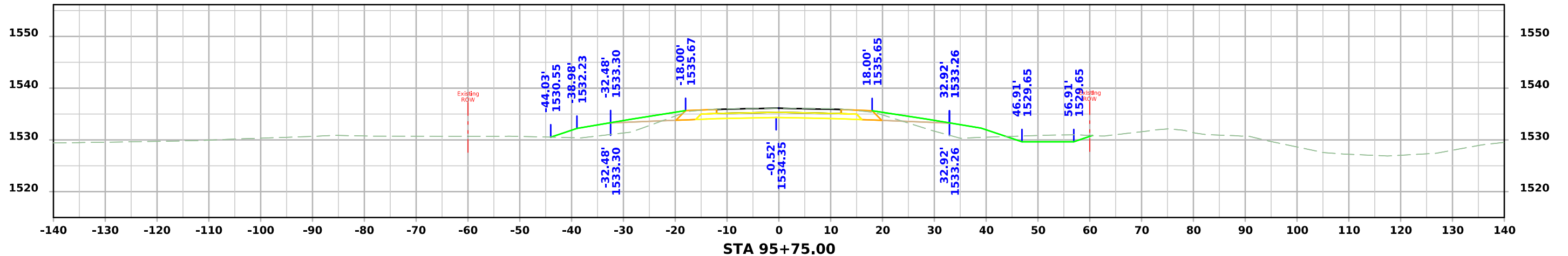
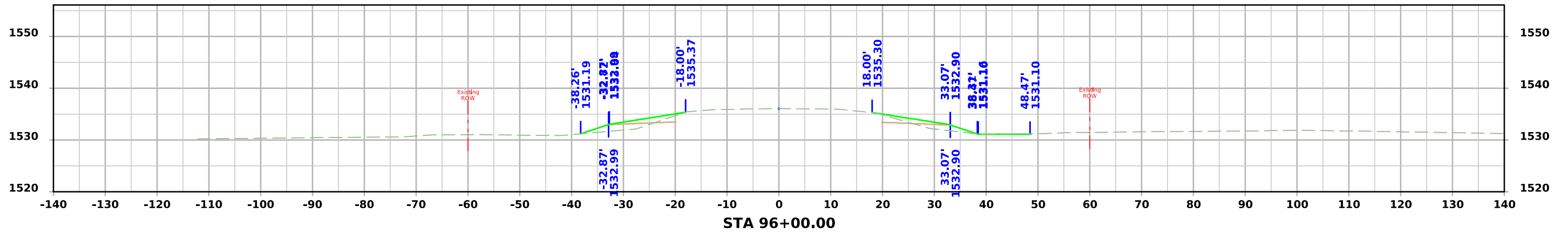
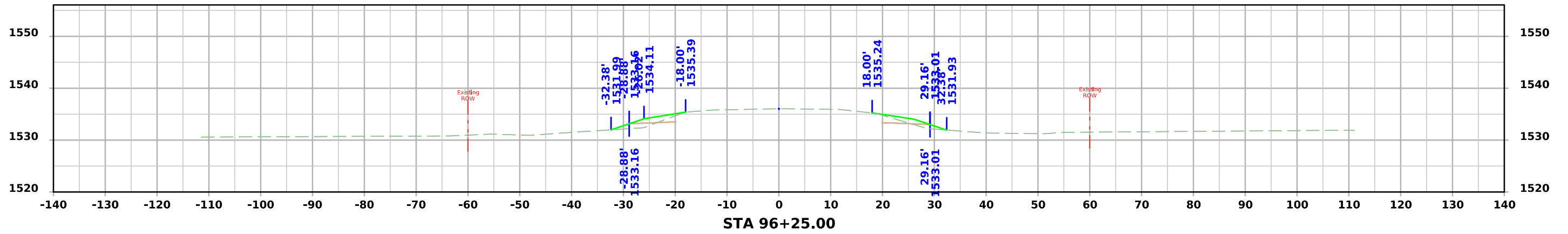
# ML - US59



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# ML - US59



# ML - US59

