

LETTING DATE
04-18-2023

PCC Pavement - Grade and New
TSF--063-2(174)-92-90

WAPELLO COUNTY



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
WAPELLO COUNTY
PCC Pavement - Grade and New
Eddyville Rd Intersection 0.8 mi S of Co Rd T67 (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

31

PROJECT IDENTIFICATION NUMBER

21-90-063-020

PROJECT NUMBER

TSF-063-2(174)-92-90

R.O.W. PROJECT NUMBER

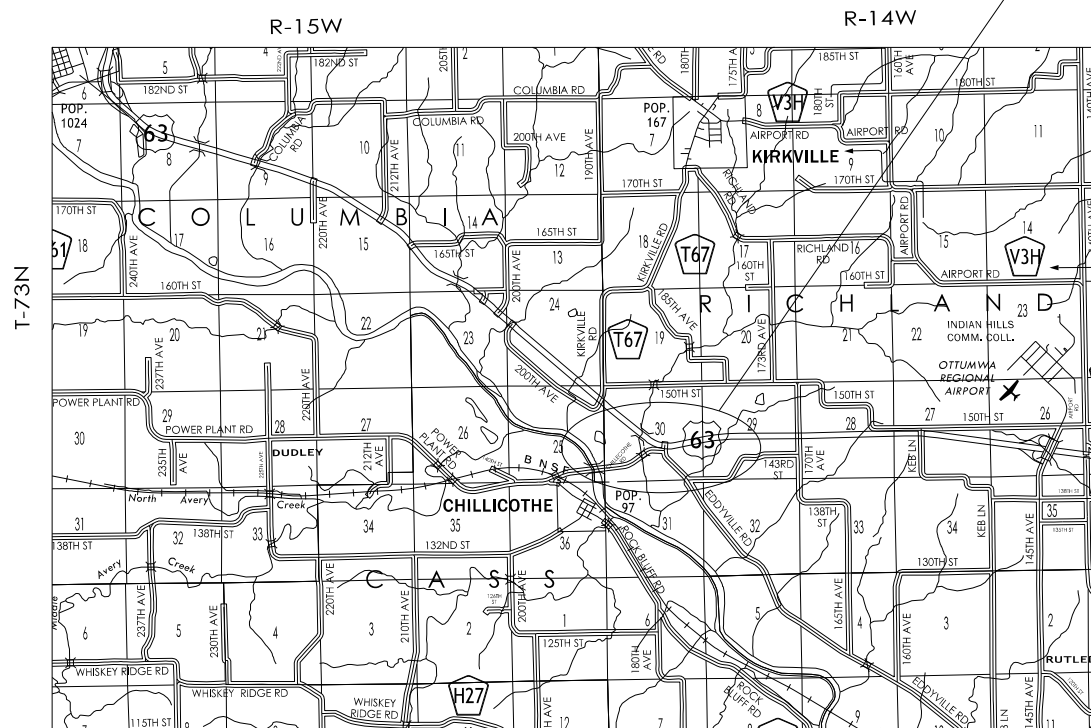
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No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
A.3	Field Exam Questions
A.4 - 8	Project Concept
B Sheets	Typical Cross Sections and Details
B.1 - 2	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	"Mainline Name"
E Sheets	Side Road Plan and Profile Sheets
* E.1	Iowa 23
* E.2	SR1A
G Sheets	Survey Sheets
G.1 - 2	Survey Info. & Control Map
G.3	Horizontal Control Tab. & Super for all Alignments
G.4	Alignment and Return Data
L Sheets	Geometric, Staking and Jointing Sheets
* L.1	Geometric & Staking "Mainline or Side Road Name"
* L.4	Jointing Detail
U Sheets	500 Series, Mod.Stds. and Detail Sheets
* U.1	500 Series, Modified Standards and Detail Sheets
W Sheets	Mainline/Side Road Cross Sections
* W.1 - 10	Turnlane Cross Sections
	* Color Plan Sheets

PROJECT LOCATION



SCHEDULE	
DM5	1/03
D08	2/07

US 63 N	
DESIGN DATA RURAL	
2019 AADT	9400 V.P.D.
20 -- AADT	-- V.P.D.
20 -- DHV	-- V.P.H.
TRUCKS	11.95 %
Total Design ESALs	--

CHILLECOTHE ROAD	
DESIGN DATA RURAL	
2018 AADT	1300 V.P.D.
20 -- AADT	-- V.P.D.
20 -- DHV	-- V.P.H.
TRUCKS	-- %
Total Design ESALs	--

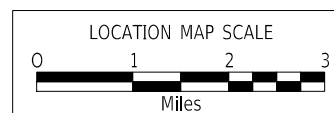
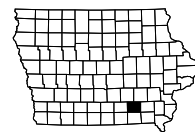
EDDYVILLE ROAD	
DESIGN DATA RURAL	
2018 AADT	2600 V.P.D.
20 -- AADT	-- V.P.D.
20 -- DHV	-- V.P.H.
TRUCKS	-- %
Total Design ESALs	--

INDEX OF SEALS		
	X	
X	X	X

PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - Date: 11-09-2022



TO OFFICE: District 5

DATE: April 30th, 2021

ATTENTION: Bob Younie

COUNTY: Wapello
PROJ. NO.: NHSN-063-2(174)- -2R-90

FROM: Jared Klein

PIN: 21-90-063-020

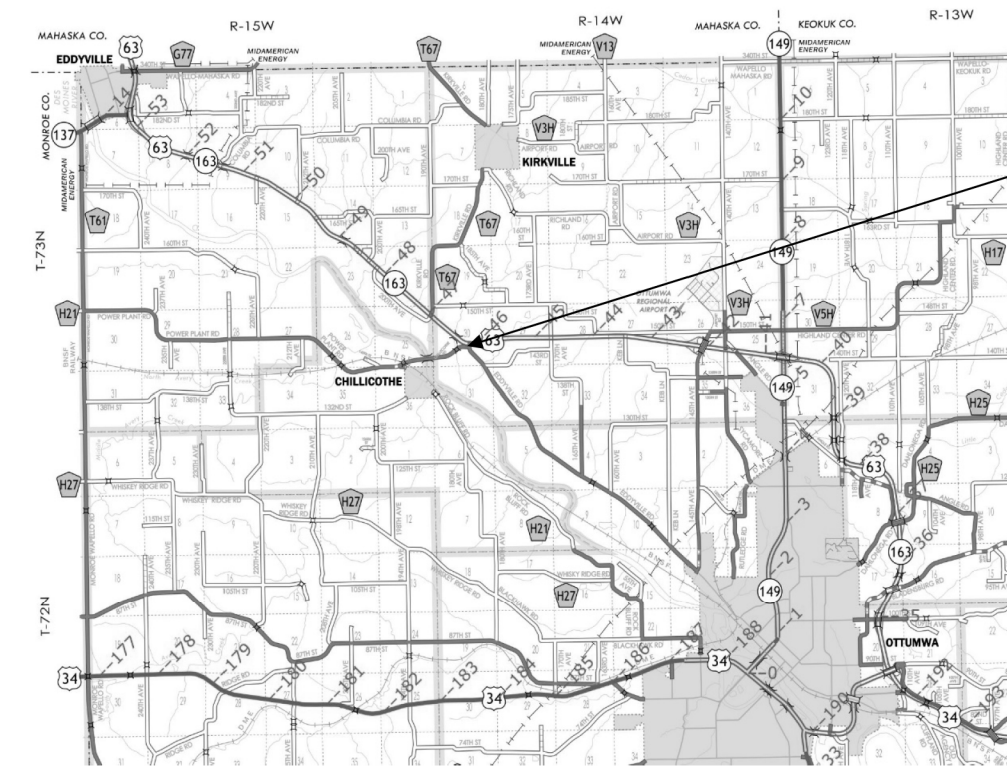
OFFICE: District 5 Design

SUBJECT: FY 2023 Grade and Pave Concept Statement - Final

PROJECT LOCATION:

IA 163EB/SB and Eddyville Rd at the Chillicothe Rd. Intersection

ProjectWise link to GoogleEarth Map: [21-90-063-020 Project Package.kmz](#)



MM 46.12 - US 63 / Chillicothe Rd Intersection

TRAFFIC:

US 63 N (Last Counted: 2019)

Passenger Vehicle AADT: **7777**

Single Unit Truck AADT: **500**

Combination Truck AADT: **1123**

Total Average Annual Daily Traffic:
9400 Vehicles

System Totals

CHILLECOTHE ROAD (Last Counted: 2018)

Average Annual Daily Traffic: **1300 Vehicles**

Functional Class: **MAJOR COLLECTOR**

Jurisdiction: **COUNTY HIGHWAY**

System Code: **Farm to Market**

EDDYVILLE ROAD (Last Counted: 2018)

Average Annual Daily Traffic: **2600 Vehicles**

Functional Class: **MAJOR COLLECTOR**

Jurisdiction: **COUNTY HIGHWAY**

System Code: **Farm to Market**

PROJECT DATA:

ROUTE: US 63

PLANNING CLASSIFICATION: 2

MAINTENANCE SERVICE LEVEL: B

NHS ROUTE: Yes

PURPOSE AND NEED:

Signage was modified as a first step to improve the safety at this intersection. It is still felt that that a geometric improvement is needed to reduce additional crashes. A geometric improvement will help the line of sight looking northwest as vehicles approach the intersection as shown in the photo below. The van turning right is somewhat blocking the car in the inside lane, if that van was a larger profile vehicle it would completely block the other vehicles from the view. An offset right turn lane would separate this movement and allow a better line of sight to see mainline traffic.



With this type of improvement, the existing ICWS system could remain in place. Further analysis would be required.



FEASIBLE ALTERNATIVES:

Alternate No. 1:

Exhibit A - Offset Right Turn Lane, IA 163, MM 46.1:



MM 46.12 - Eddyville Rd Intersection

Alternate No. 1 Offset Right Turn Lane

This alternate shifts the right turn lane further off of the mainline to separate it from the mainline traveled way. It would provide visual separation from the mainline traffic. The Wapello County Engineer mentioned permitted oversized loads that get delivered to the nearby power plant. He stated that the average the length of vehicles they get permits have an overall length of 75' to 85' long. But the longest permit in the last 2 years was 133' that went through that intersection.

ESTIMATE #1 (Exhibit A):

Estimate Items Report

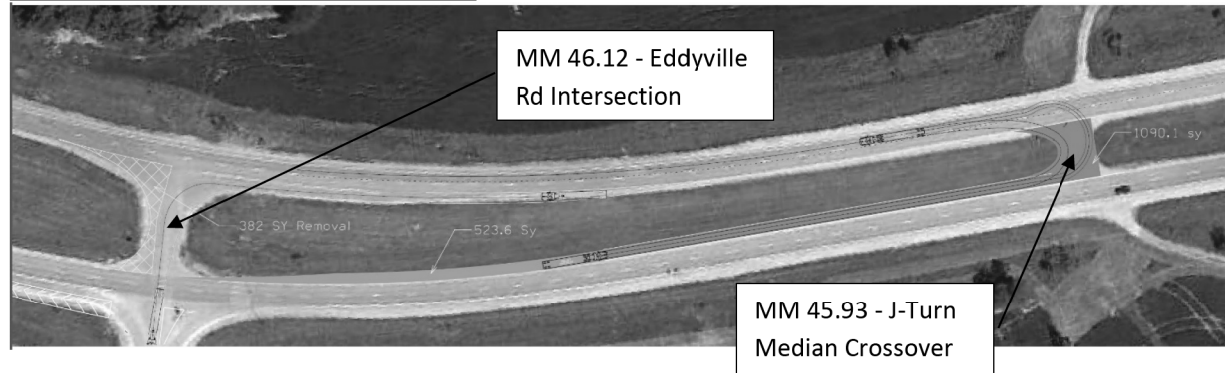
Version D00-New Version
Project 5310-016-88430

Item Number	Item Description	Units	Quantity	Cost Used	Suggested Cost	Line Total	Estimator Notes
Offset Right						SubTotal:	\$265,913.20
2115-0100000	MODIFIED SUBBASE	CY	295.000	\$53.97	\$53.97	\$15,921.15	
2121-7425020	GRANULAR SHLD, TYPE B	TON	504.000	\$32.26	\$32.26	\$16,259.04	
2301-1033100	STD/S-F PCC PAVT, CL C CL 3, 10"	SY	883.600	\$96.19	\$96.19	\$84,993.48	
2527-9263109	PAINTED PAVT MARK, WATERBORNE/SOLVENT	STA	20.500	\$121.33	\$121.33	\$2,487.27	
2528-8445110	TRAFFIC CONTROL	LS	1.000	\$13,295.66	5.00 %	\$13,295.66	
2533-4980005	MOBILIZATION	LS	1.000	\$13,295.66	5.00 %	\$13,295.66	
PCT-010-010	EARTHWORK (010-010)	% of Project	265,913.200	15.00 %	9.03 %	\$39,886.98	
PCT-999	UNQUANTIFIED	% of Project	265,913.200	30.00 %	0.00 %	\$79,773.98	
Total:						\$265,913.20	

Alternate No. 2:

This alternate is providing a J-turn style option intersection. Half the existing crossover would be removed, this would only allow traffic heading westbound to turn left onto Eddyville Rd. at MM 46.12. Traffic coming to US 63 to head north would have turn right then make a U-turn type movement at the next available location, MM 45.93, this is shown in the image below.

Exhibit B - J-Turn Sketch at MM 45.93:



Estimate #2 (Exhibit B):

Estimate Items Report

Version D00-New Version
Project 5310-016-88430

Item Number	Item Description	Units	Quantity	Cost Used	Suggested Cost	Line Total	Estimator Notes
Left/U-turn						SubTotal:	\$453,784.34
2115-0100000	MODIFIED SUBBASE	CY	538.000	\$51.72	\$51.72	\$27,825.36	
2121-7425020	GRANULAR SHLD, TYPE B	TON	375.000	\$33.56	\$33.56	\$12,585.00	
2301-1033100	STD/S-F PCC PAVT, CL C CL 3, 10"	SY	1,614.000	\$96.19	\$96.19	\$155,250.68	
2510-6745850	RMVL OF PAVT	SY	382.000	\$17.18	\$17.18	\$6,562.76	
2527-9263109	PAINTED PAVT MARK, WATERBORNE/SOLVENT	STA	13.300	\$148.81	\$148.81	\$1,979.17	
2528-8445110	TRAFFIC CONTROL	LS	1.000	\$22,689.22	5.00 %	\$22,689.22	
2533-4980005	MOBILIZATION	LS	1.000	\$22,689.22	5.00 %	\$22,689.22	
PCT-010-010	EARTHWORK (010-010)	% of Project	453,784.330	15.00 %	9.03 %	\$68,067.68	
PCT-999	UNQUANTIFIED	% of Project	453,784.330	30.00 %	0.00 %	\$136,135.30	
Total:						\$453,784.34	

Alternate No. 3:

Intersection Relocation from MP 46.1, east to MP 45.95

The third option, shown in Exhibit C, is to relocate the intersection further to the east to create better sight triangles and have more familiar intersection geometry (no adverse mainline curve or super-elevation). This option would have a safety benefit and is the most expensive alternate. This alternate could also include an offset right turn lane at this relocated intersection.

The J turn option, if incorporated in the future would utilize the next median crossover to the east at MP 45.65.

Exhibit C - Intersection Relocation:



Estimate #3 & #4 (Exhibit C):

Estimate Items Report

Version D00-New Version
Project 5310-016-88430

Item Number	Item Description	Units	Quantity	Cost Used	Suggested Cost	Line Total	Estimator Notes
						SubTotal:	\$2,225,117.27
2102-5020010	OBLITERATE OLD ROADBED	STA	19,000	\$459.15	\$459.15	\$8,723.83	
2111-8174100	GRANULAR SUBBASE	SY	11,320,000	\$8.17	\$8.17	\$92,484.40	
2115-0100000	MODIFIED SUBBASE	CY	200,000	\$57.05	\$57.05	\$11,410.00	
2301-1033080	STD/S-F PCC PAVT, CL C CL 3, 8"	SY	10,580,000	\$70.07	\$70.07	\$741,340.60	
2301-1033100	STD/S-F PCC PAVT, CL C CL 3, 10"	SY	1,110,000	\$106.41	\$106.41	\$118,115.10	
2510-8745850	RMVL OF PAVT	SY	5,100,000	\$11.15	\$11.15	\$56,887.44	
2528-8445110	TRAFFIC CONTROL	LS	1,000	\$117,499.11	5.00 %	\$117,499.11	
2533-4980005	MOBILIZATION	LS	1,000	\$110,927.27	5.00 %	\$110,927.27	
PCT-010-010	EARTHWORK (010-010)	% of Project	2,218,545.430	9.14 %	9.14 %	\$202,775.05	
PCT-010-050	DRAINAGE (010-050)	% of Project	2,218,545.430	2.61 %	2.61 %	\$57,904.04	
PCT-040	EROSION CONTROL (040)	% of Project	2,218,545.430	1.87 %	1.87 %	\$41,486.80	
PCT-999	UNQUANTIFIED	% of Project	2,218,545.430	30.00 %		\$665,563.63	
						Total:	\$2,225,117.27

Estimate Items Report

Version D00-New Version
Project 5310-016-88430

Item Number	Item Description	Units	Quantity	Cost Used	Suggested Cost	Line Total	Estimator Notes
						SubTotal:	\$2,360,537.45
2102-5020010	OBLITERATE OLD ROADBED	STA	19,000	\$459.15	\$459.15	\$8,723.83	
2111-8174100	GRANULAR SUBBASE	SY	11,320,000	\$8.17	\$8.17	\$92,484.40	
2115-0100000	MODIFIED SUBBASE	CY	430,000	\$53.72	\$53.72	\$23,099.60	
2301-1033080	STD/S-F PCC PAVT, CL C CL 3, 8"	SY	10,580,000	\$70.07	\$70.07	\$741,340.60	
2301-1033100	STD/S-F PCC PAVT, CL C CL 3, 10"	SY	1,560,000	\$102.23	\$102.23	\$159,478.80	
2510-8745850	RMVL OF PAVT	SY	5,100,000	\$11.15	\$11.15	\$56,887.44	
2528-8445110	TRAFFIC CONTROL	LS	1,000	\$144,250.40	5.00 %	\$144,250.40	
2533-4980005	MOBILIZATION	LS	1,000	\$116,646.69	5.00 %	\$116,646.69	
PCT-010-010	EARTHWORK (010-010)	% of Project	2,332,933.740	9.14 %	9.14 %	\$213,230.14	
PCT-010-050	DRAINAGE (010-050)	% of Project	2,332,933.740	2.61 %	2.61 %	\$60,889.57	
PCT-040	EROSION CONTROL (040)	% of Project	2,332,933.740	1.87 %	1.87 %	\$43,625.88	
PCT-999	UNQUANTIFIED	% of Project	2,332,933.740	30.00 %	0.00 %	\$699,880.12	
						Total:	\$2,360,537.45

Recommendation:

Below is a link to the Alternate Evaluation Table
[042221 bc Final Alternate Evaluation la 163 and Eddyville Rd \(174\).xlsx](#)

Alternate 1 was chosen as the preferred alternate due to cost and the ability to utilize the existing ICWS infrastructure. This alternate provides a better line of sight for vehicles entering onto US 63. With the offset right turn lane there would be a separation of that movement from the mainline traffic. Traffic at the stop sign should be able to distinguish between a turning vehicle and one still traveling on the mainline. The Safety Benefit was determined for this alternate and it has a benefit to cost ratio of nearly 35:1. This alternate would likely stay within the confines of the existing ROW.

FUNDS PROGRAMMED:

FY 2023 has \$ 300,000 of 3R funds.

SAFETY

Crash Analysis:

See the link below to the crash report.

[Saver.pdf](#)

Intersection Crash History:

Over the course of 10 years, 2010-2021, 42 crashes are reported of major causes.

The crash severities are:

- 4 Fatal
- 5 Serious Major injury
- 14 Minor injury
- 8 Possible / Unknown
- 26 Property Damage only

See the links below to the benefit/cost spreadsheets:

[Alt 1 - Benefit Cost - US63@Chillicothe.xls](#) B:C - 34.85 : 1

[Alt 2 - Benefit Cost - US63@Chillicothe.xls](#) B:C - 13.58 : 1

[Alt 3 - Benefit Cost - US63@Chillicothe.xls](#) B:C - 6.25 : 1

Alternate 1 had the highest B:C ratio at **34.85 : 1**.

Railroads:

None

Additional Safety & Operation Considerations:

n/a

PROJECT IMPACTS:

Impacts Map:

See the Project Prioritization / Scoping tool for all Office of Location and Environment Hotspots, Outstanding Iowa Waters, major utilities, etc.

Environmental:

See the above Project Prioritization / Scoping tool US 63 Charter summary link for wetlands, parks, historic/cultural resources, etc.

Clearing and Grubbing information within the clear zone, is pending field data collection.

TSMO/Traffic Control:

Traffic to be maintained at all construction times with Traffic Control devices.

ROW:

None Anticipated with Alternate No. 1

Project Coordination:

None

Future Projects List:

None

Funds Programmed:

Currently proposed for programming in Fiscal year 2023.

Funding source: 3R

Development Schedule:

D00: Apr. 30, 2021

Letting: July 19, 2022

US 63 Production Schedule –

County : Wapello
Route : 063

21-90-063-020 Eddyville Rd Intersection 0.8 mi S of Co Rd T67 (SB)
Corridor : None
District : 5
Project Manager : Bob Younie
Segment Manager : Bob Younie

Project Type : Improvement
Project Group :
Metric : No
Miles : 0.11
5 Year PIN(s) :

Consultant :
404 Permit :
Plan Study No :

		Start Date	Act. Start	Finish Date	Act. Finish	Notes
D00	(174)	06/16/2020		04/30/2021		
TE0	(174)	07/14/2020		05/28/2021		
U00	(174)	04/29/2021		05/28/2021		
W00	(174)	05/28/2021		05/28/2021		
D01	(174)	10/19/2021		10/29/2021		
D02	(174)	12/09/2021		12/17/2021		
D03	(174)	12/28/2021		12/30/2021		
H00	(174)	01/13/2022		01/21/2022		
B02	(174)	11/17/2021		02/04/2022		
S03	(174)	01/18/2022		02/04/2022		
A01	(174)	06/14/2022		06/14/2022		
Bob Younie		PCC Pavement - Grade and New		Eddyville Rd Intersection 0.8 mi S of Co Rd T67 (SB)		
D08	(174)	09/17/2021		05/03/2022	0.10	NHSN-063-2(174)--2R-90
L03	(174)	05/03/2022		07/19/2022		
C02	(174)	07/20/2022		11/18/2022		

Design Team :
Program Est. \$ 0
Develop. Est. \$ 388

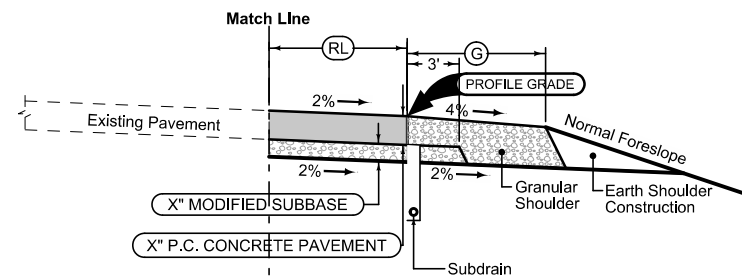
cc:

C. Purcell
S. J. Megivern
M. Nop
S. Majors
J. W. Laaser-Webb
E. C. Wright
N. M. Miller
B. E. Azeltine
S. Anderson
K. K. Patel
B. Lauderman
J. Woodcock
H. Torres-Cacho
J. Ridlen

M. J. Kennerly
J. S. Nelson
M. A. Swenson
K. Brink
W. A. Sorenson
M. E. Ross
C. C. Poole
T. D. Crouch
D. Stokes
S. Godbold
J. R. Webb
J. R. Phillips
B. M. Clancy

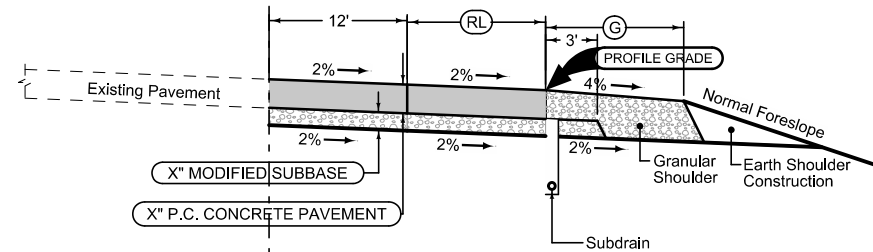
K. D. Nicholson
B. Bradley
D. L. Newell
D. E. Sprengeler
A. A. Welch
B. Hofer
S. J. Gent
J. Vortherms
B. Beavers
J. Garton
A. J. Klein
R. Porter
FHWAProgram.Delivery-IA@dot.gov

QUESTIONS



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

2P_	
04-21-20	
STATION TO STATION	
1414+47.82	1417+06.95
1420+50.18	1422+65.59



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

2P_	
04-21-20	
STATION TO STATION	
1417+06.95	1420+50.18

Granular Shoulder

		1R_G_ MODIFIED	
BEGIN STATION	END STATION	ⓇL Feet	Ⓞ Feet
1414+47.82	1417+06.95	Var.	6
1420+50.18	1422+65.59	Var.	10

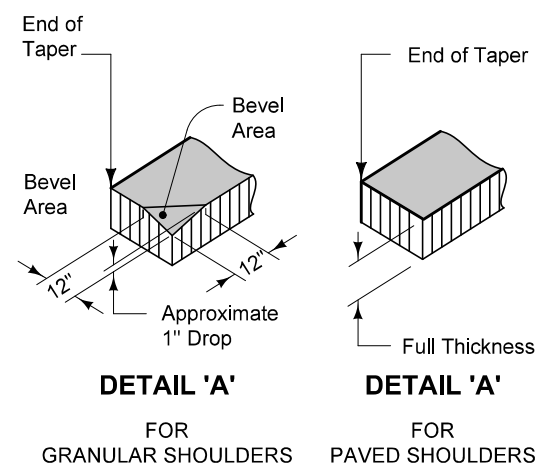
TYPICAL DETAIL OF PAVEMENT WIDENING

Granular Shoulder

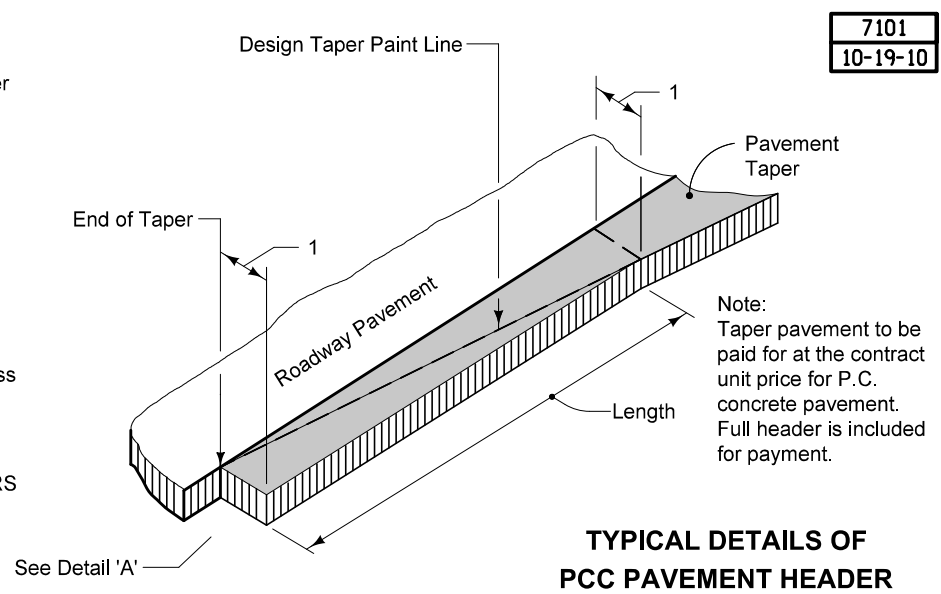
		1R_G_ MODIFIED	
BEGIN STATION	END STATION	ⓇL Feet	Ⓞ Feet
1417+06.95	1419+46.64	Var.	6
1419+46.64	1419+79.23	Var.	Var.
1419+79.23	1420+50.18	Var.	10

TYPICAL DETAIL OF PAVEMENT WIDENING

US 63



1 Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).



SURVEY SYMBOLS

	BL, Topo Breakline
	BL, Topo Breakline
	C, Centerline BL of Road -ML or SR
	C, Centerline BL of Road -ML or SR
	CON, Concrete or A/C Slab
	CON, Concrete or A/C Slab
	CP, Control Point
	CU, Back of Curb
	CU, Back of Curb
	D, Centerline Draw or Stream -Down
	D, Centerline Draw or Stream -Down
	DU, Centerline Draw or Stream -Up
	DU, Centerline Draw or Stream -Up
	EB, Electrical Box
	ENT, Centerline BL of Entrance
	ENT, Centerline BL of Entrance
	ENU, Edge Unpaved Entrance and Parking
	ENU, Edge Unpaved Entrance and Parking
	EP, Edge of Paved Roads -ML or SR
	EP, Edge of Paved Roads -ML or SR
	Existing Terrain Boundary
	GR, Ground Shot
	GU, Gutter In Front of Curb
	GU, Gutter In Front of Curb
	LUM, Luminaire
	MH, Utility Access -Manhole
	OUT, Tile Outlet
	PIP, Pipe Culvert
	PIP, Pipe Culvert
	SH, Paved Shoulder
	SH, Paved Shoulder
	SI, Sign
	SNP, Unpaved Shoulder
	SNP, Unpaved Shoulder
	SOP, Size of Pipe or Culvert
	TDL, Traffic Detection Loop
	TDL, Traffic Detection Loop
	TIL, Tile Line
	TIL, Tile Line
	TSG, Traffic Signal
	UE, Utility Elevation
	UV, Underground Utility Vault
	WC, Wild Card -Misc. Field Shot

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

	E1	ELID, Iowa DOT - Quality C
	T1	PPA, Alliant Energy
		TLID, CenturyLink - 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

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

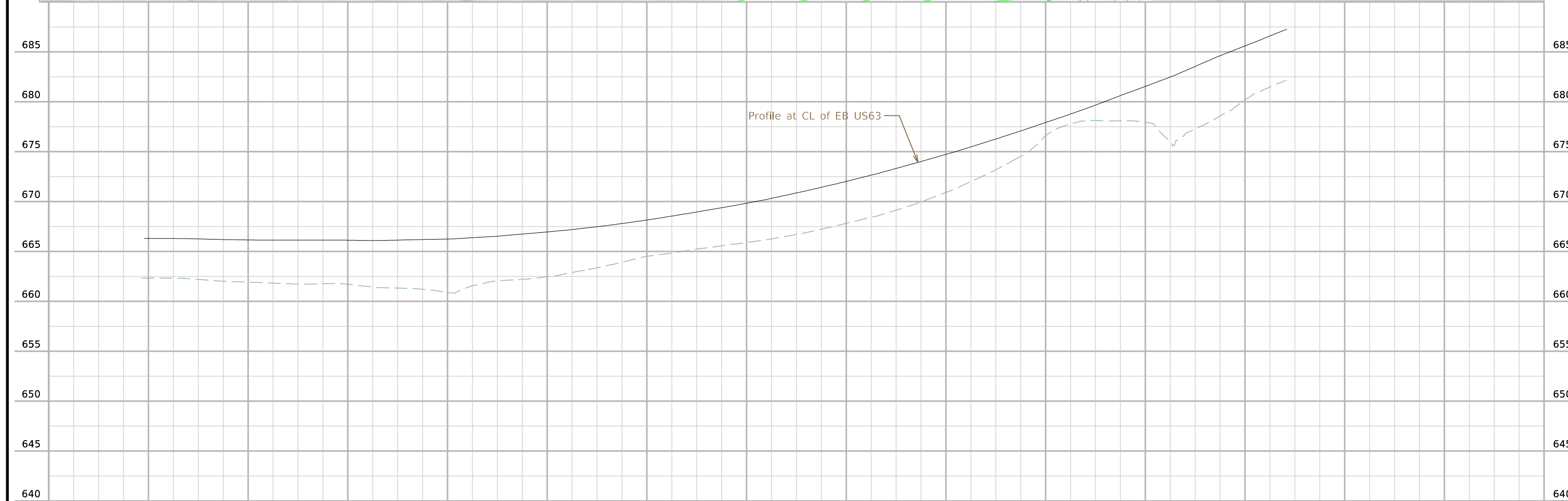
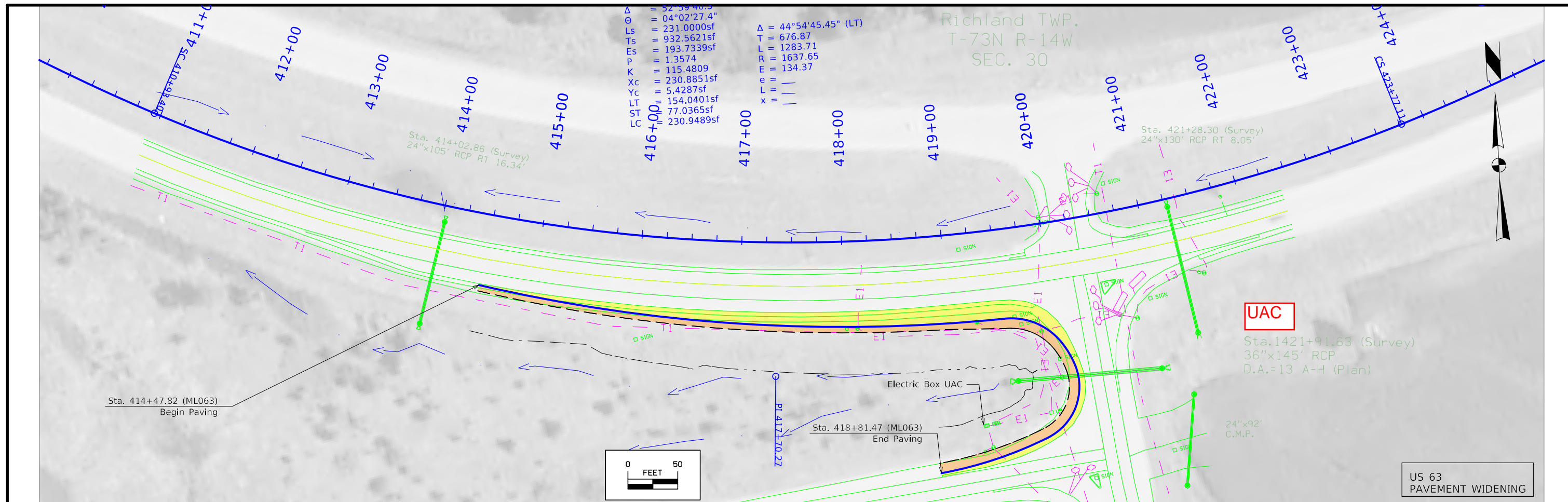
Symbol	Description
	Reference Point
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

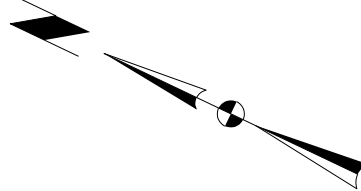
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



FILE NO.	ENGLISH	DESIGN TEAM	HOLST/TAMRAKAR/FINCH	WAPELLO COUNTY	PROJECT NUMBER	TSF--063-2(174)-92-90	SHEET NUMBER	D.2
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UAC

Sta. 1421+91.63 (Survey)
36"x145' RCP
D.A.=13 A-H (Plan)

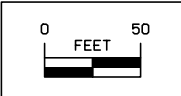
Sta. 421+28.30 (Survey)
24"x130' RCP RT 8.05'

Richland TWP.
T-73N R-14W
SEC. 30

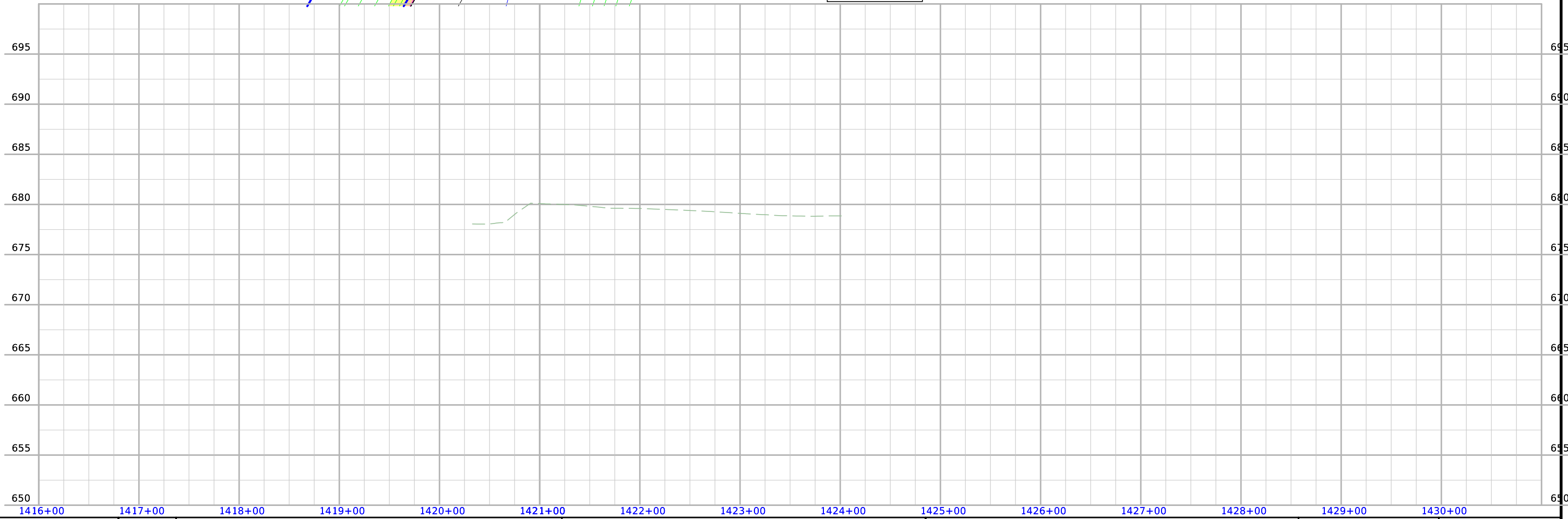
$\Delta = 49^\circ 39' 53.50''$ (LT)
TL = 266.79
PL = 499.75
EM = 576.53
X = 58.74

24"x92'
C.M.P.

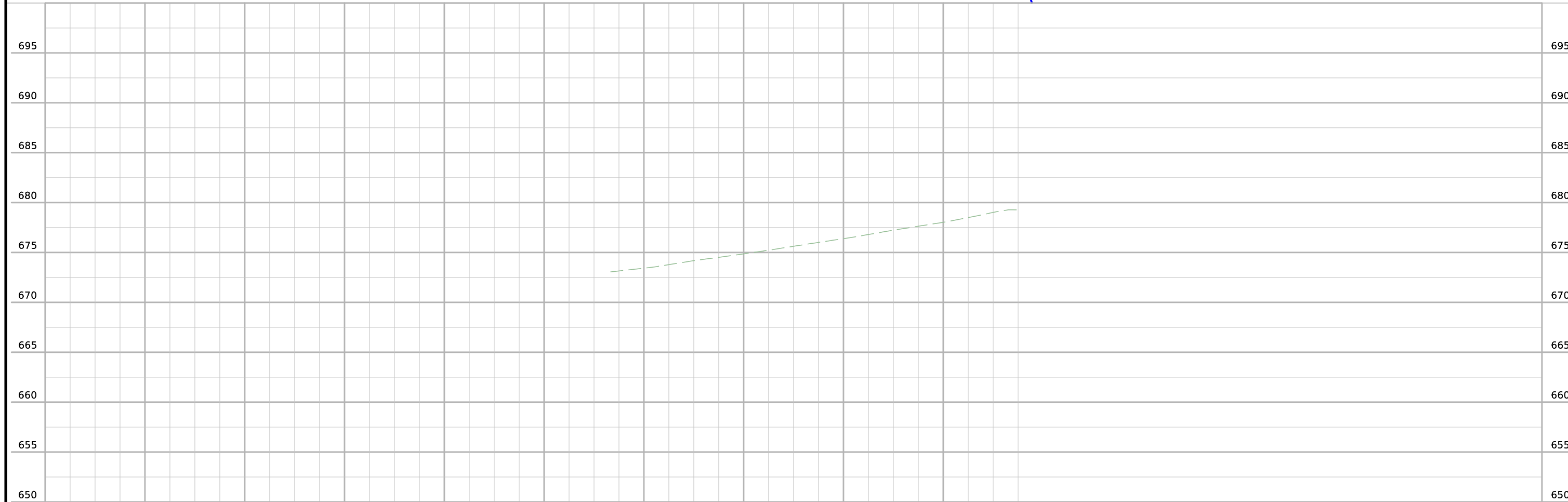
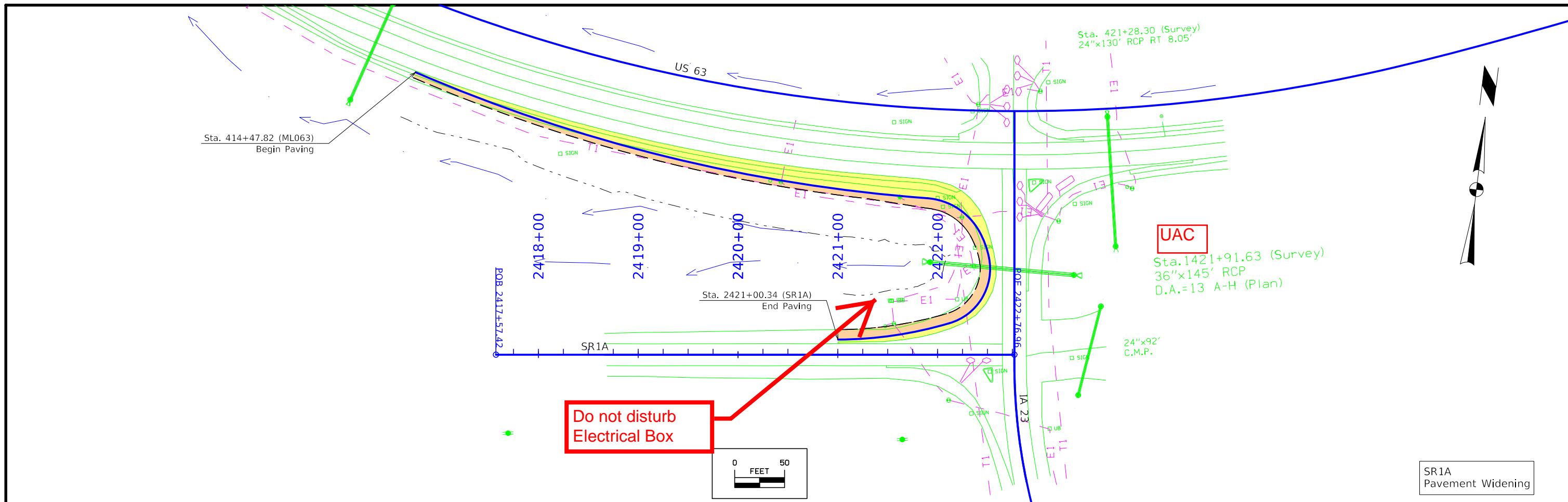
Sta. 1422+61.68 (SR23)
End Paving



Iowa 23
Pavement Widening



FILE NO.	ENGLISH	DESIGN TEAM	WAPELLO COUNTY	PROJECT NUMBER	TSF--063-2(174)-92-90	SHEET NUMBER	E.1
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FILE NO.	ENGLISH	DESIGN TEAM	HOLST/TAMRAKAR/FINCH	WAPELLO COUNTY	PROJECT NUMBER	NHSN-063-2(174)- -2R-90	SHEET NUMBER	E.2
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Survey Information

SURVEY INDEX

Wapello county
Pin:21-90-063-020
Project Number: NHSN-063-2(174)—2R-90
Location: Eddyville Rd Intersection 0.8 mi S of Co Rd T67 (SB)
Type of Work: Turn Lane
Project Directory: 9006302021

Survey Personnel

Nels Sutherland – Survey Party Chief
Myron Fox – Survey Party Chief

Date(s) of Survey

Begin Date 09/13/2021
End Date 09/30/2021

General Information

Measurement units for this survey are US survey feet. This survey is for US Hwy 63, pave and grade right turn lane at the intersection of IA 63 and Eddyville Rd.

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Two five-minute observations were taken with appropriate time spans 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) EPOCH 2010.00

VERTICAL DATUM: NAVD88

COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 12

Alignments Information

SURML063 is a retrace of as-built plan RP-23-1(21)—16-90. Stationing was held at TS Sta. 408+62.40 and ran ahead and back without equation. Survey stationing relates to As-built plan stationing as follows:

PI Sta. 399+21.84 Plan
= Survey PI Sta. 399+55.59

TS Sta. 408+62.40 Plan
= Survey PC Sta. 408+62.40

SC Sta. 410+93.40 Plan
= Survey SC Sta. 410+93.40

CS Sta. 423+74.30 Plan
= Survey CS Sta. 423+77.11

ST Sta. 426+05.30 Plan
= Survey ST Sta. 426+08.11

PC Sta. 438+44.84 Plan
= Survey POT Sta. 438+47.66

SURSREddyvilleRD is a retrace of as-built plan NHS-23-1(20)—19-90. Stationing was held at POT Sta. 1422+85.93 and ran ahead and back without equation. Survey stationing relates to As-built plan stationing as follows:

PI Sta. 1420+33.17 Plan
= Survey POT Sta. 1420+32.86

POT Sta. 1422+76.71 Plan
= Survey POT Sta. 1422+76.71

PC Sta. 1422+85.93 Plan
= Survey PC Sta. 1422+85.54

ST Sta. 1427+83.57 Plan
= Survey PT Sta. 1427+85.29

SURSRChillcotheRD is a retrace of as-built plan NHS-23-1(20)—19-90. Stationing was held at PI Sta. 2422+76.71 and ran back without equation. "Best Fit"

Utility Information

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

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

1a. Regional Coordinate System Zone 12

Coordinate listing from next sheet will be used with 1aRTN 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 12
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Code Description
900630463	6267937.631	22839921.293	663.309	CP IDOT FENO MON WITH BRASS DISC FROM THE INTERSECTION OF HWY63 AND EDDYVILLE RD PROCEED NW ALONG THE WBL OF HWY63 1110FT POINT IS 35FT NW OF THE CL WBL HWY63 4IN BELOW SURFACE
900630459	6267423.846	22841921.483	714.939	CP IDOT FENO MON WITH BRASS DISC FROM THE INTERSECTION OF HWY63 AND EDDYVILLE RD PROCEED NE ALONG THE EBL OF HWY63 1036FT POINT IS 47FT SW OF THE CL EBL HWY63 4IN BELOW SURFACE
900630451	6267871.349	22846411.945	760.418	CP FD 5/8IN REBAR FROM THE INTERSECTION OF HWY63 AND 170TH AVE PROCEED W ALONG WBL OF HWY63 1852FT POINT IS 33FT S OF THE CL WBL HWY63 4IN BELOW THE SURFACE

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.

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
1	ML063	399+55.59	6268419.27	22839165.93															
2	ML063				408+62.40	6267827.26	22839852.82												
3	ML063							410+93.40	6267680.64	22840031.26	417+70.28	6267275.97	22840573.84	423+77.11	6267372.47	22841243.80			
4	ML063				423+77.11	6267372.47	22841243.80				424+54.15	6267383.45	22841320.05				426+08.11	6267416.10	
5	ML063	438+47.66	6267678.84	22842681.98															
1	SR23	142032.860 R1	6267359.26	22840903.02															
2	SR23							142285.542 R1	6267107.08	22840887.09	142552.332 R1	6266840.82	22840870.26	142785.287 R1	6266655.66	22841062.34			
3	SR23	143138.942 R1	6266410.21	22841316.95															
1	SR1A	241757.420 R1	6267148.54	22840369.13															
1	SR1A	242276.959 R1	6267115.92	22840887.64															
	RET063							541447.820 R1	6267435.80	22840306.52	541715.678 R1	6267314.46	22840545.32	541978.602 R1	6267277.62	22840810.63			
2	RET063							541978.602 R1	6267277.62	22840810.63	542013.385 R1	6267272.84	22840845.09	542042.478 R1	6267241.52	22840860.22			
3	RET063							542042.478 R1	6267241.51	22840860.22	542056.849 R1	6267228.58	22840866.47	542070.979 R1	6267214.33	22840868.38			
4	RET063							542070.979 R1	6267214.33	22840868.38	542122.922 R1	6267162.85	22840875.29	542155.140 R1	6267151.36	22840824.63			
5	RET063							542155.140 R1	6267151.36	22840824.63	542212.048 R1	6267138.78	22840769.14	542268.210 R1	6267142.04	22840712.32			

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks	
			Spiral Data						Curve Data							
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E
C1	ML063	52.995°	4.041°	231.000	932.562	193.734	230.885	5.429	154.040	77.036	44.913°	676.874	1283.710	1637.650	134.370	
C1	SR23										49.665°	266.790	499.745	576.530	58.737	
C1	RET063										19.031°	267.858	530.782	1598.000	22.294	

108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic on westbound US 63 shall maintain two thru lanes of traffic at all times.
 Traffic on eastbound US 63 shall maintain two thru lanes of traffic and right turn lane at all times with the following exception.
 - Close outside lane and right turn lane during construction of new right turn lane. A closure of the right turn lane without closing a thru lane on US 63 eastbound will not be allowed.
 Traffic on Eddyville Road shall be maintained at all times.
 Traffic on Chillicothe Road shall be maintained at all times.

111-01
04-17-12

COORDINATED OPERATIONS

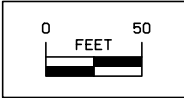
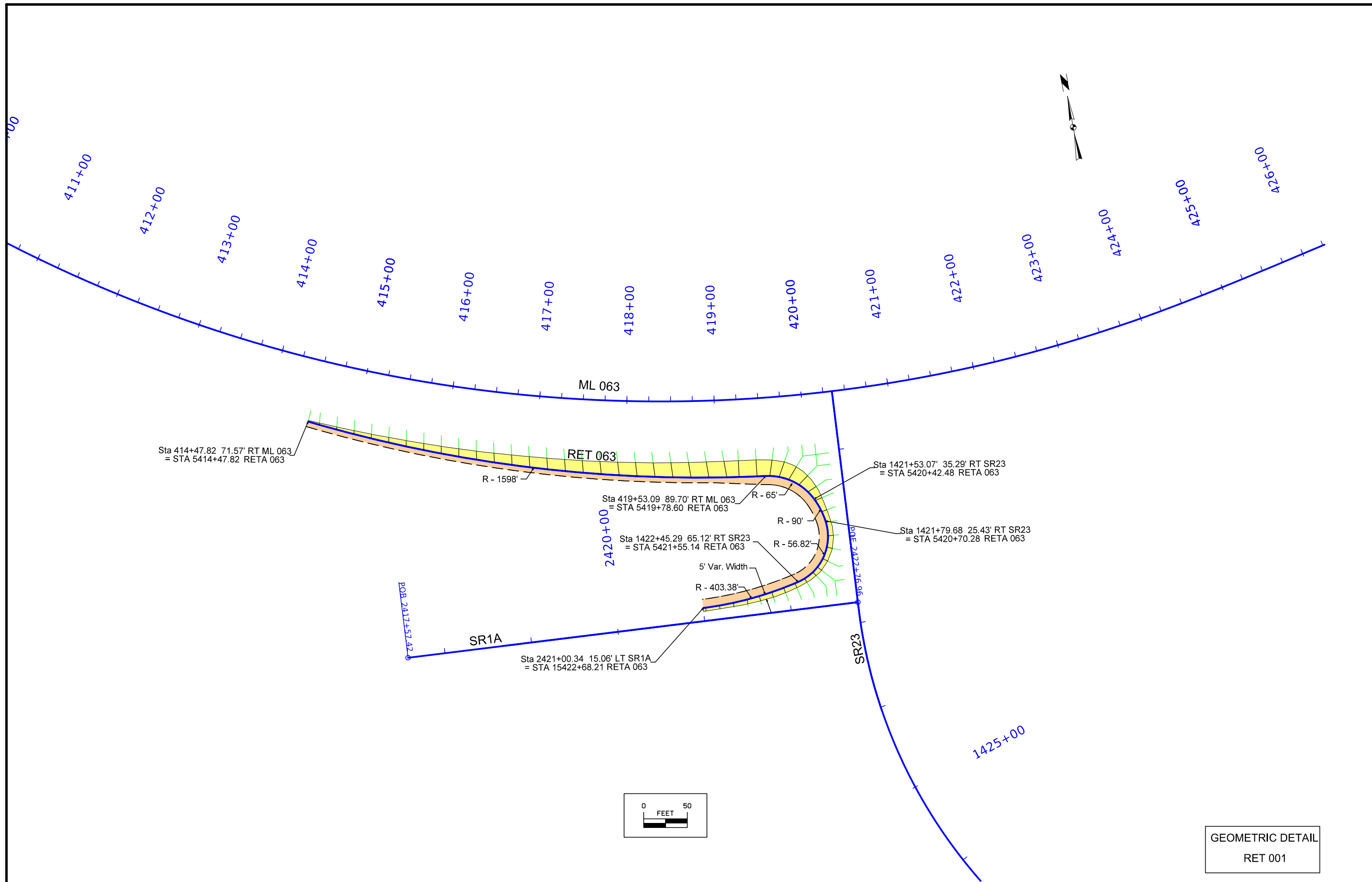
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work
None Provided	

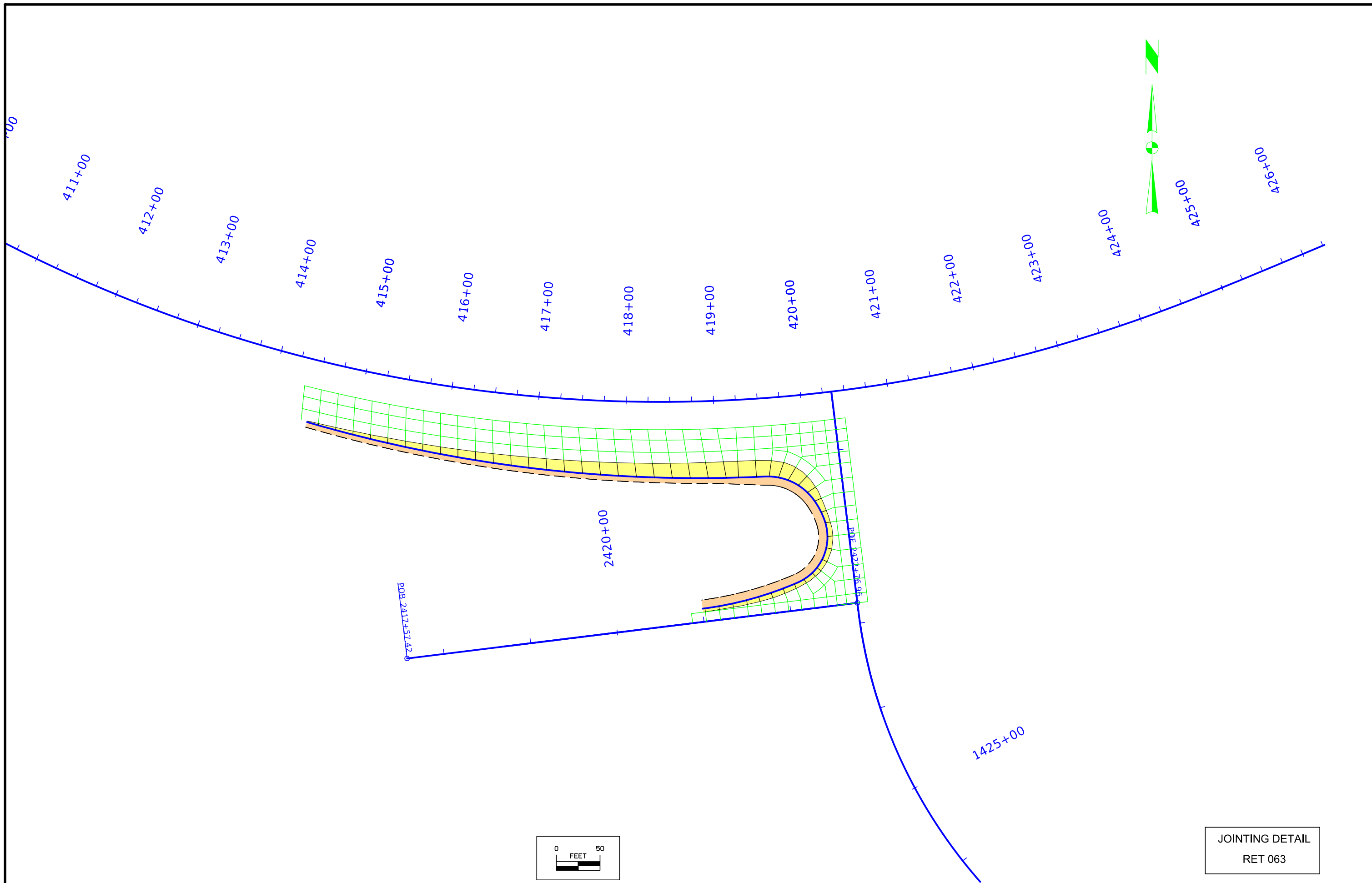
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10-21-14

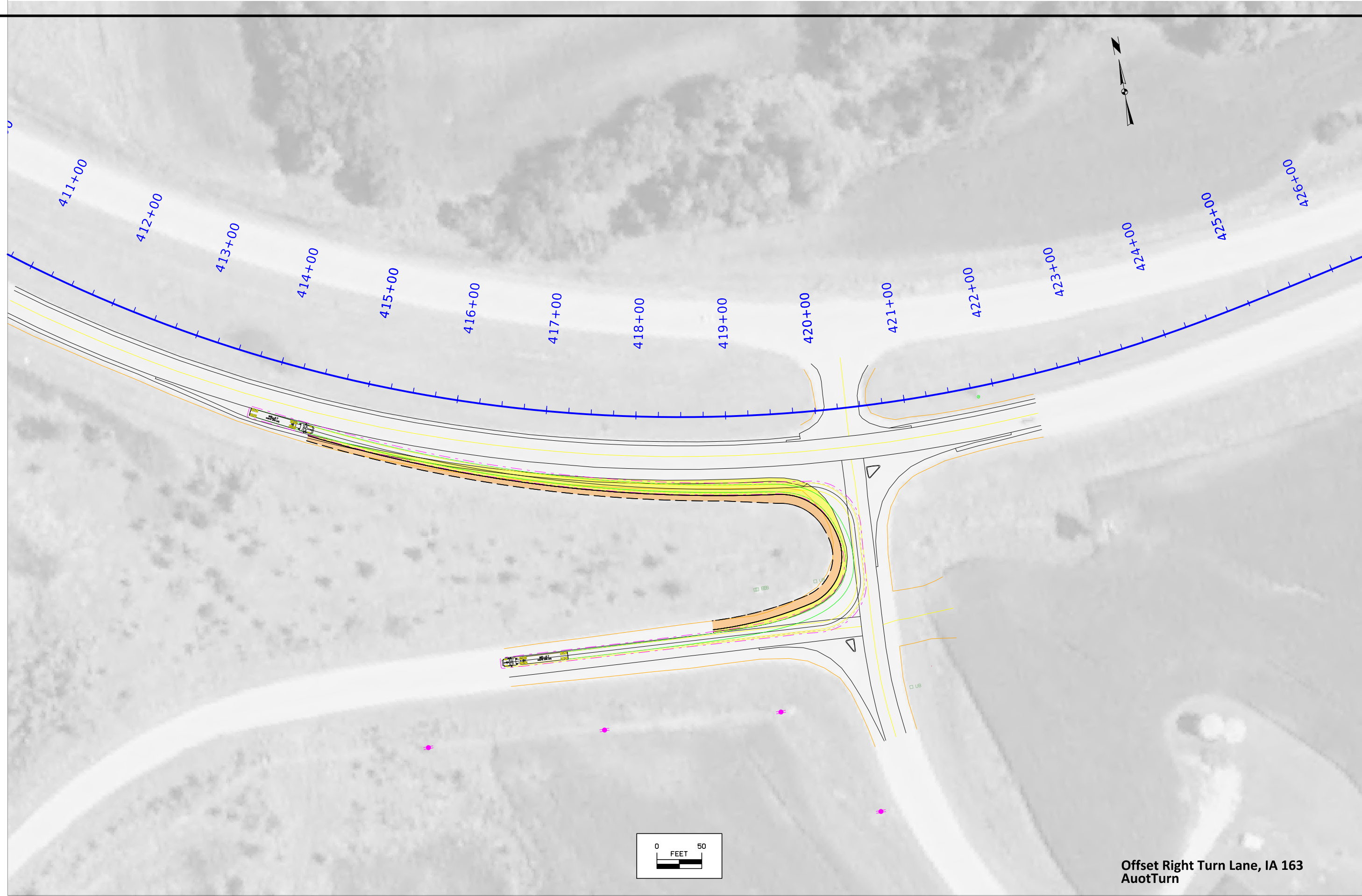
511 TRAVEL RESTRICTIONS

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
			None									



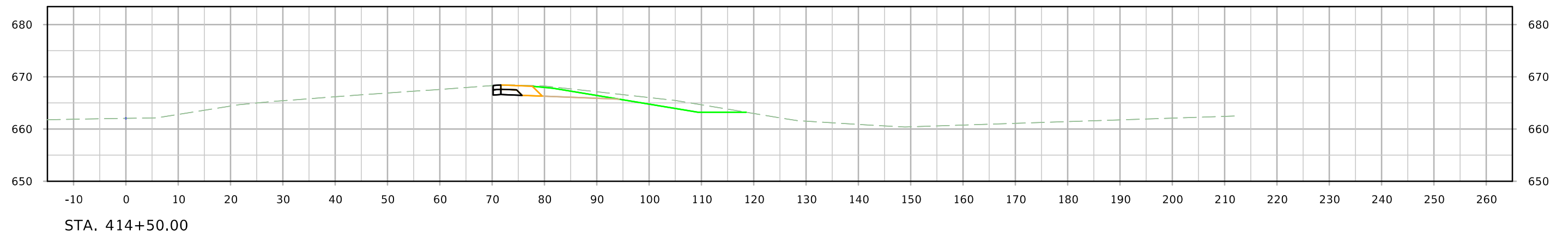
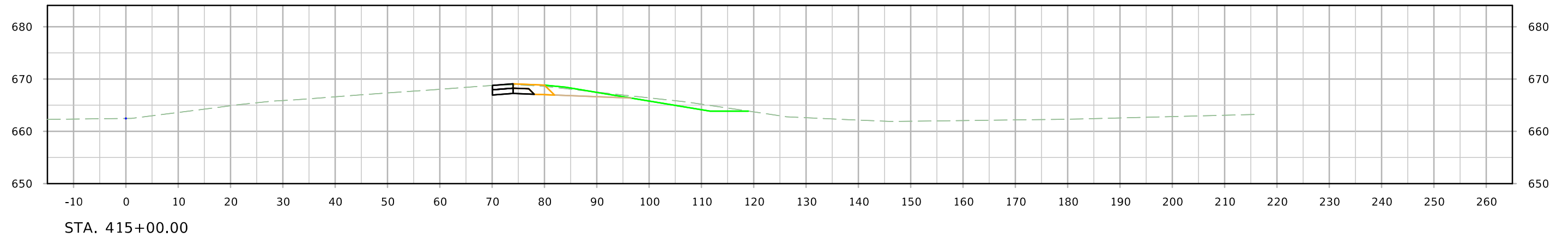
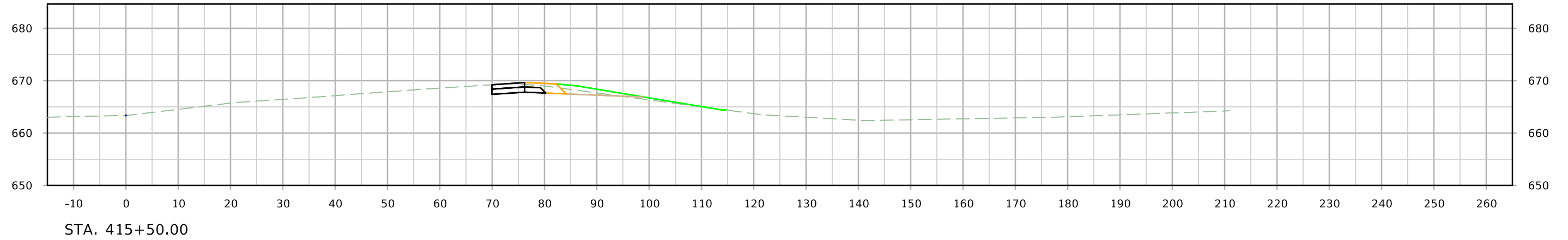
GEOMETRIC DETAIL
RET 001



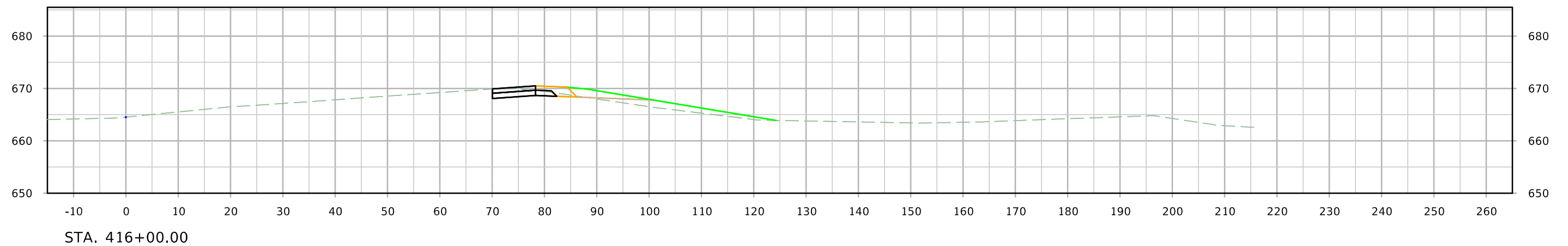
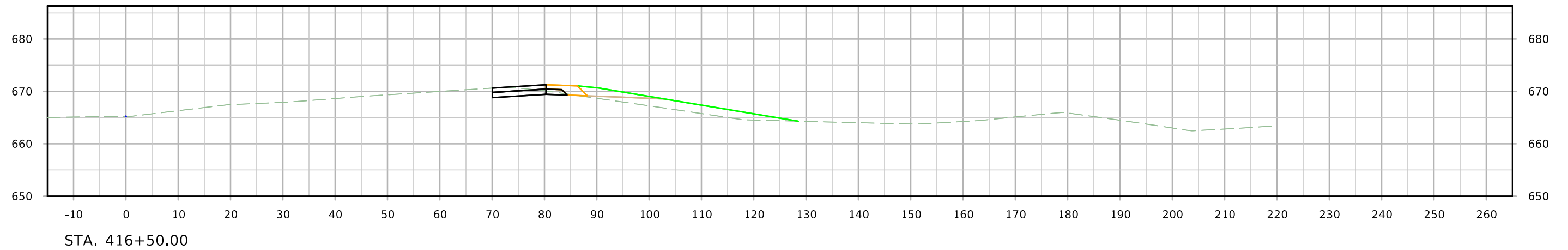
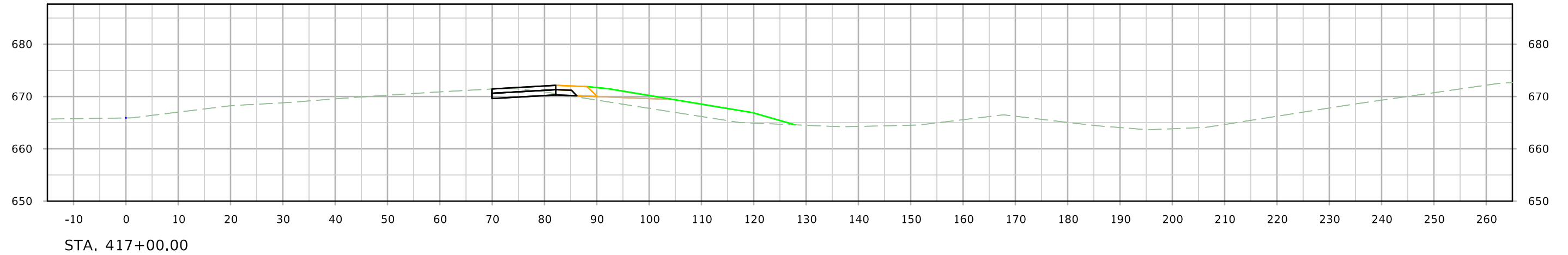


Offset Right Turn Lane, IA 163
AuotTurn

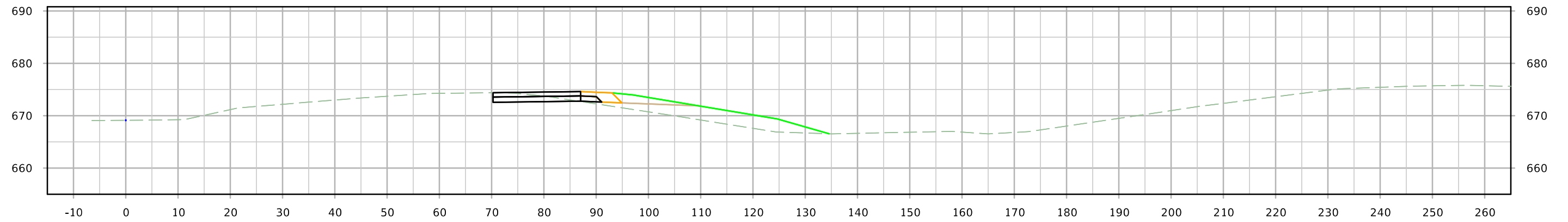
ML - US 63



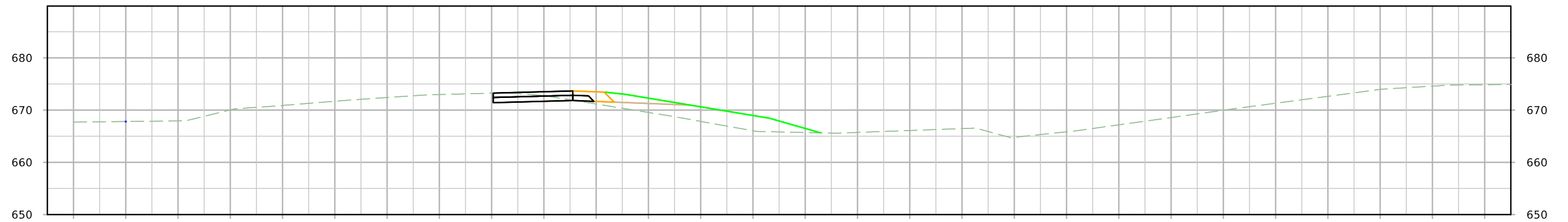
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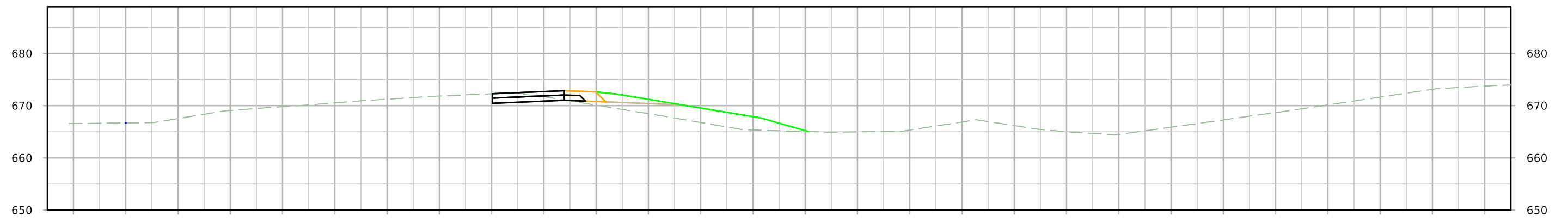
ML - US 63



STA. 418+50.00

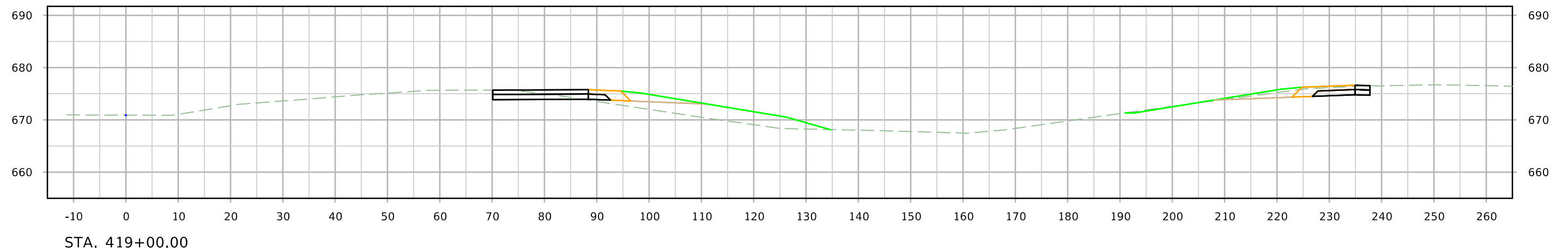
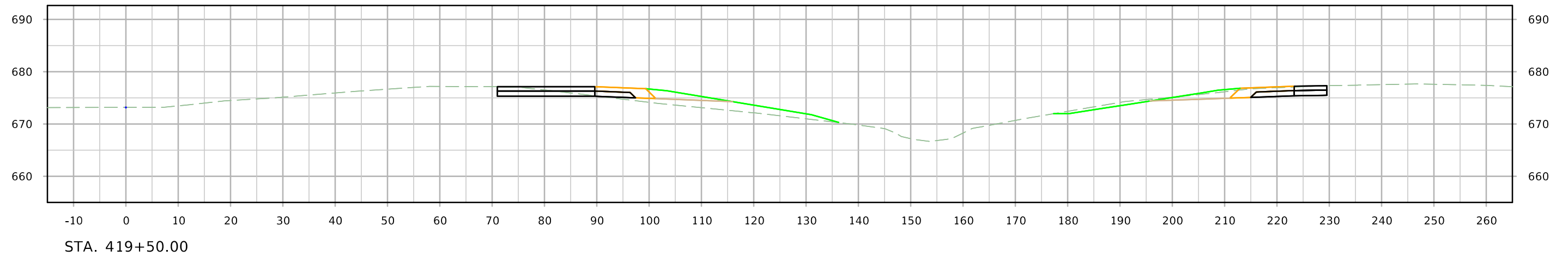
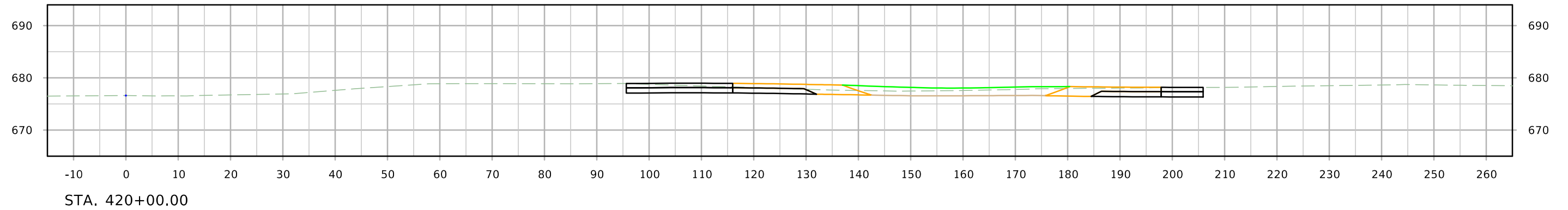


STA. 418+00.00

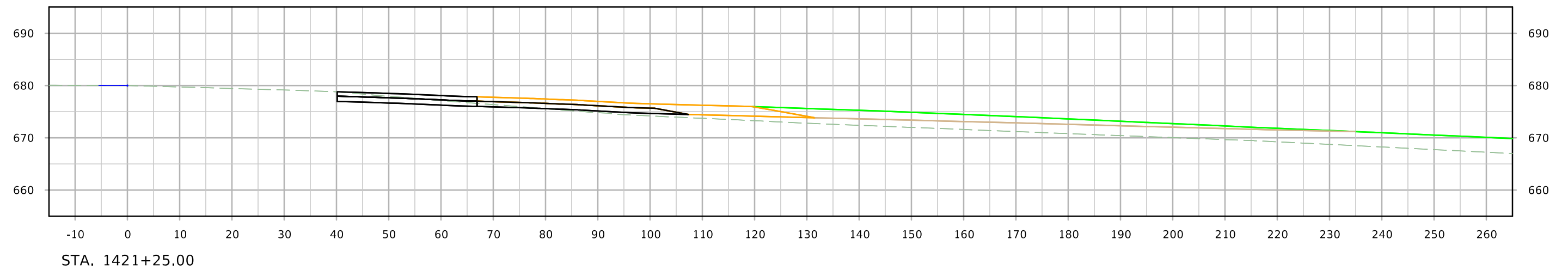
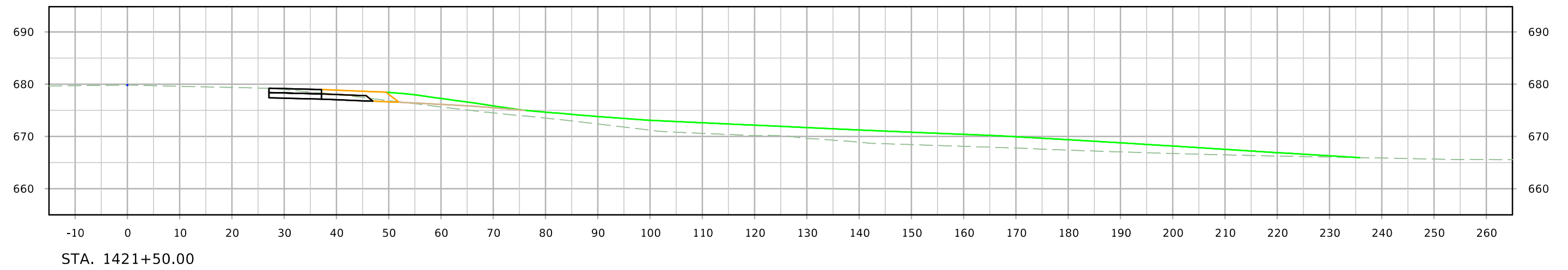
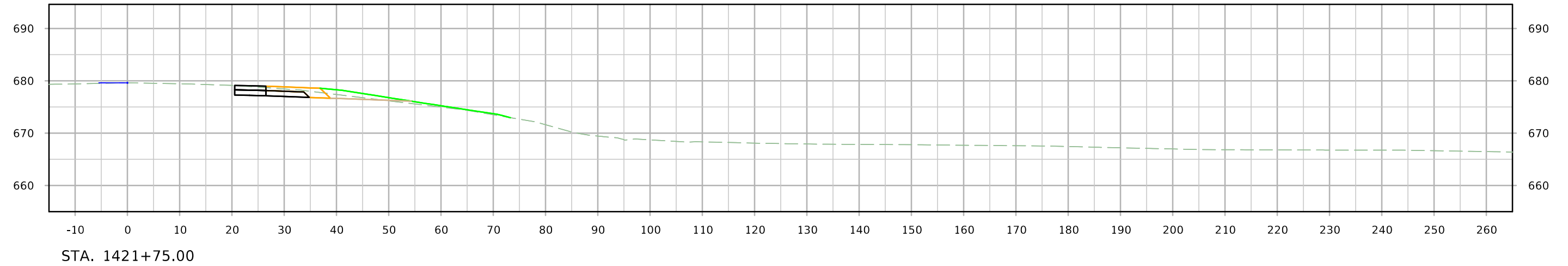


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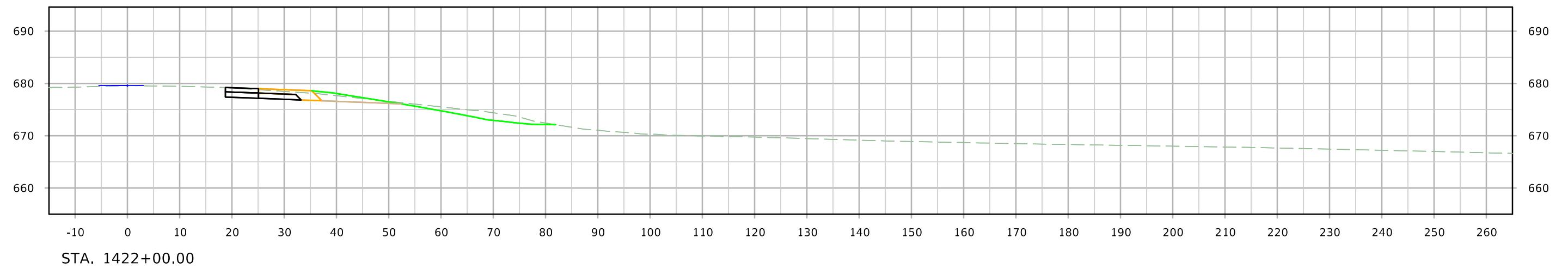
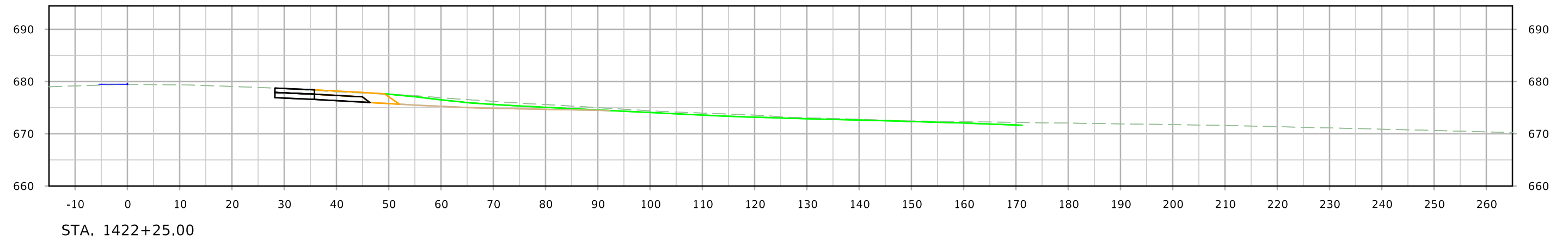
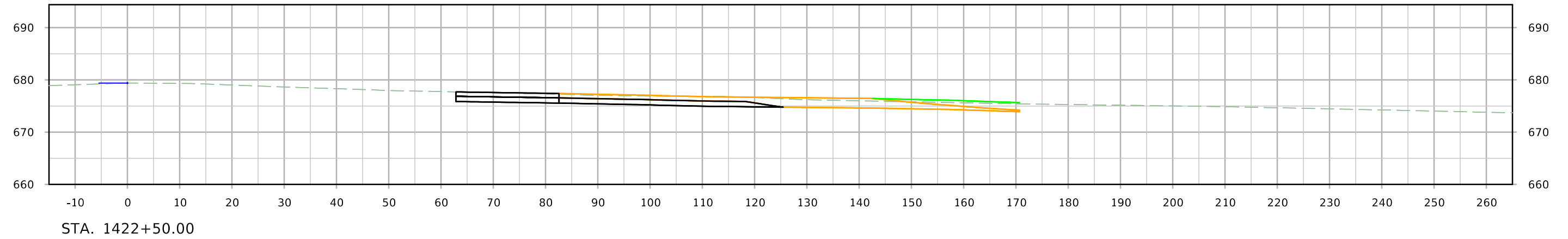
ML - US 63



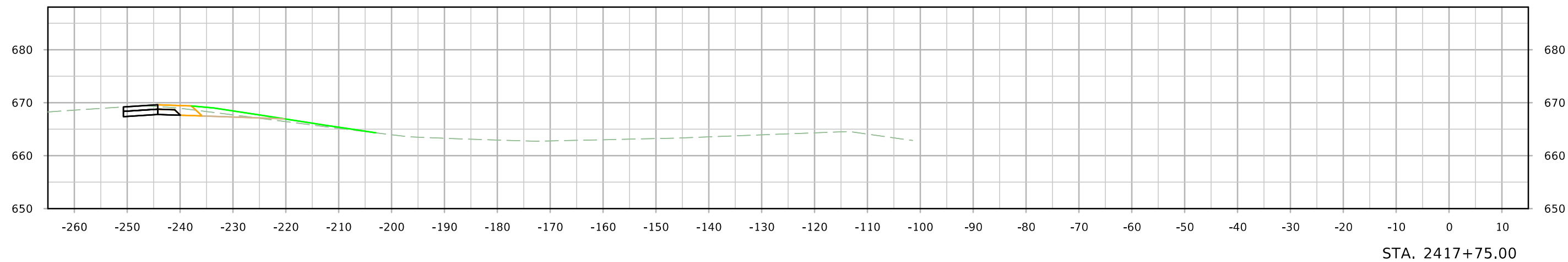
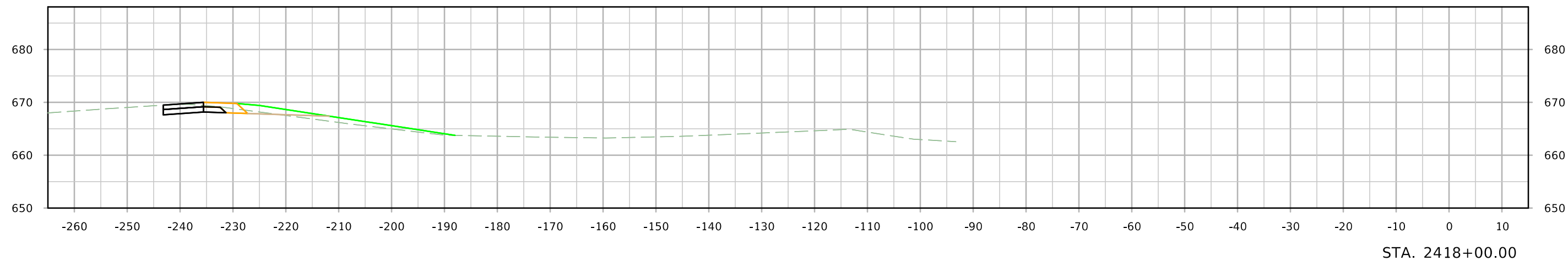
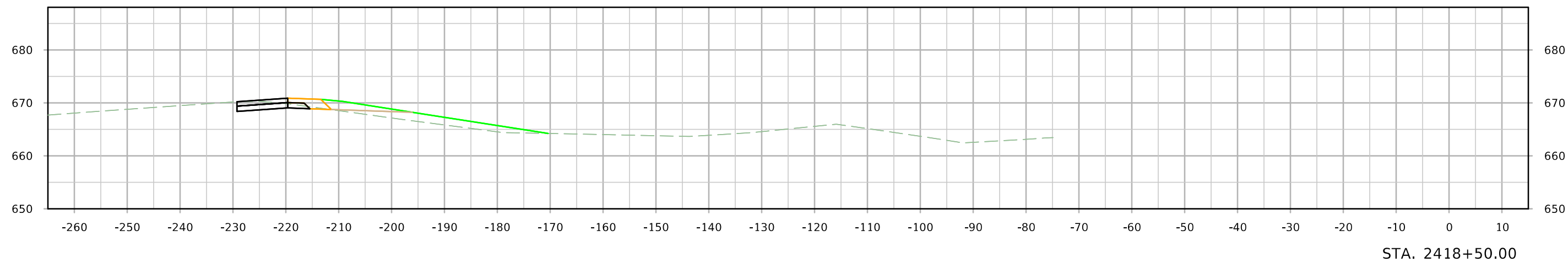
SR - Eddyville Rd



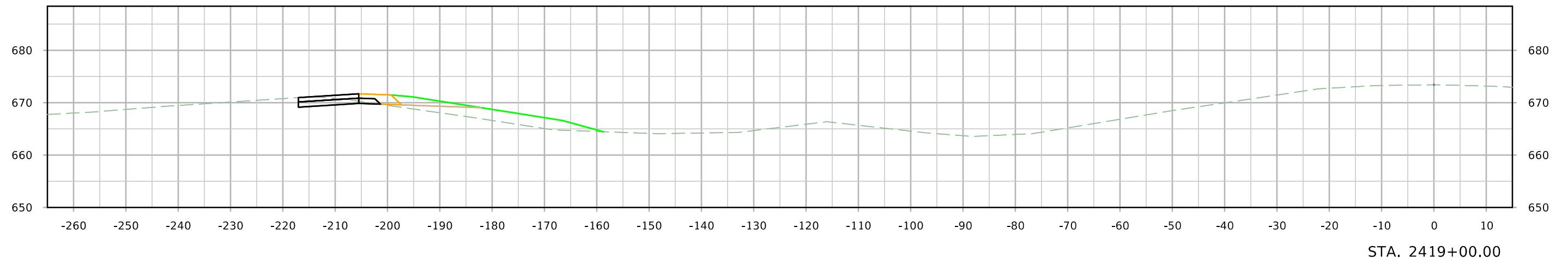
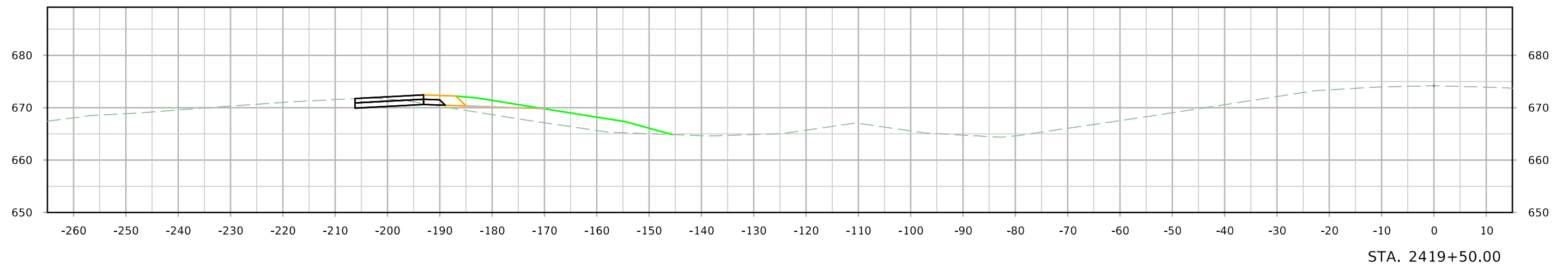
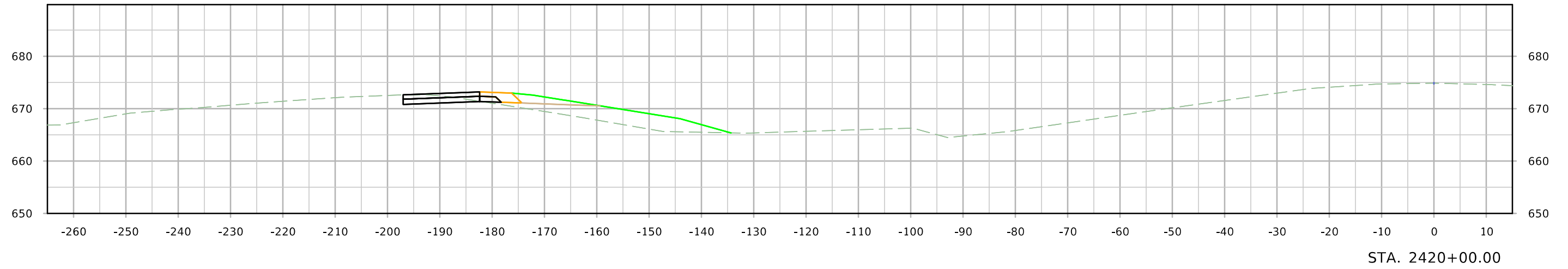
SR - Eddyville Rd



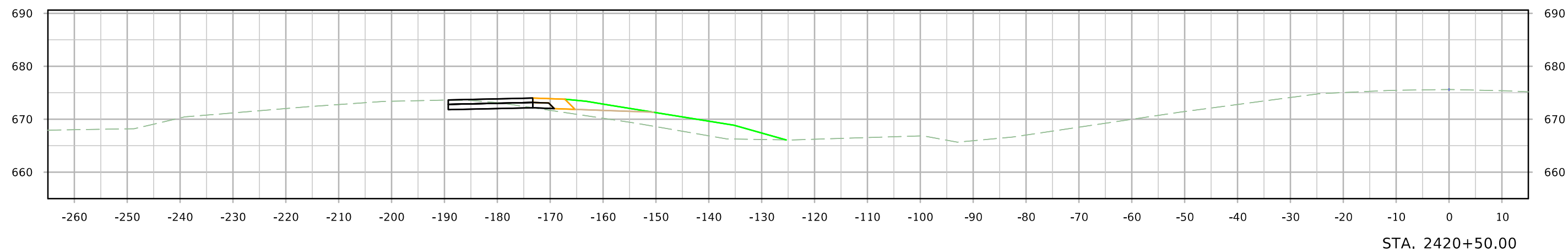
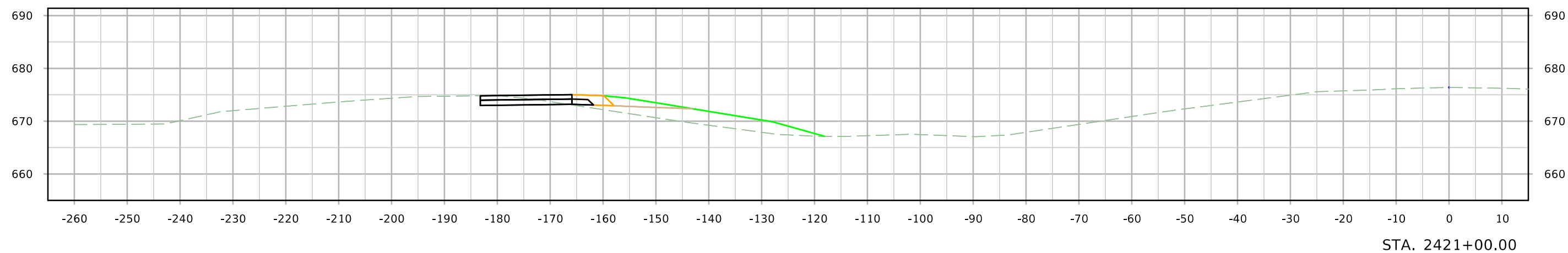
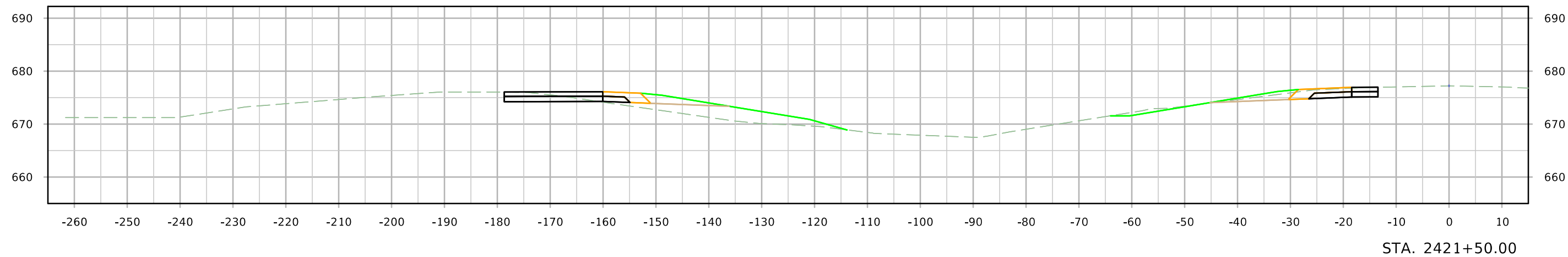
SR - Chillicothe Rd



SR - Chillicothe Rd



SR - Chillicothe Rd



SR - Chillicothe Rd

