LETTING DATE
Oct 20 2026

PCC - Pavement - Grade and Replace
STP-149-1(88)--2C-90

Wapello COUNTY

REVISIONS

	TOTAL
PROJECT IDENTIFICATION NUMBER	
20-90-149-010	
PROJECT NUMBER	
STP-149-1(88)--2C-90	
R.O.W. PROJECT NUMBER	
STPN-149-1(89)-2J-90	

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

Wapello COUNTY

PCC - Pavement - Grade and Replace

Des Moines River Bridge to W Woodland Ave in Ottumwa

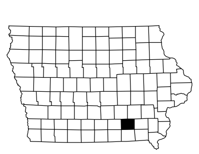
SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

Project Event Dates
D5 - 04/05/2024
R1 - 08/02/2024
P9 - 10/16/2024
DM5 - 06/30/2026
D8 - 08/04/2026



DESIGN DATA URBAN

2022	AADT	13,200	V.P.D.
2042	AADT	13,900	V.P.D.
20 --	DHV	--	V.P.H.
TRUCKS		4	%
Total Design ESALs		--	

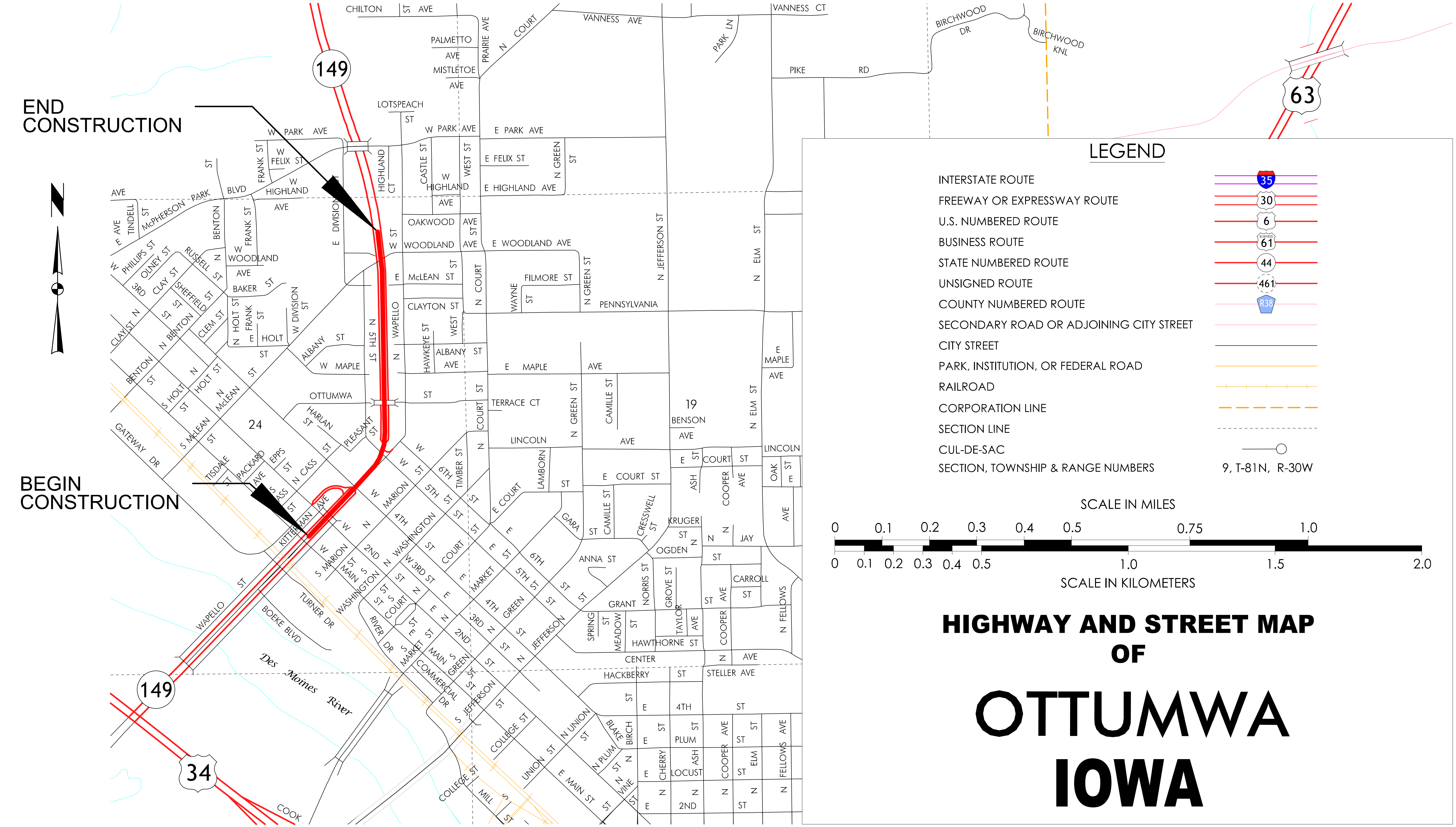
INDEX OF SEALS

SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	X	Primary Signature Block	X
X	X	X	X

PRELIMINARY PLANS

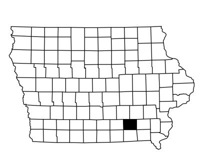
Subject to change by final design.

D2 PLAN - 9/28/23



HIGHWAY AND STREET MAP OF

OTTUMWA IOWA



LOCATION MAP SCALE
0 0.1 0.2 0.3
Miles

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER A.2

12:02:11 PM 9/26/2023 jryan3 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_A1.dgn

IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 5

DATE: June 9, 2022

ATTENTION: Bob Younie

PROJECT: Wapello County
STP-149-1(88)--2C-90
PIN: 20-90-149-010

FROM: John E. Bartholomew

OFFICE: Design

SUBJECT: Project Concept Statement; (Final Approval, D0)

This project involves the reconstruction of IA 149 from the Des Moines River Bridge to W Woodland Avenue in Ottumwa.

Concept review meetings were held on the following:
August 26, 2021
Participants:
District 5—Bob Younie, James Webb, Dale Harmon, James Phillips, Steve McElmeel, Bonnie Clancy, Hector Torres-cacho, Marv May
PreDesign—John Bartholomew, Kevin Patel, Yuejia Gu

December 8, 2021
Participants:
District 5—Steve McElmeel
Methods—Elijah Gansen, Kevin Hockett
PreDesign—John Bartholomew, Kevin Patel, Yuejia Gu

March 14, 2022
Participants:
District 5—Steven McElmeel
City of Ottumwa—Larry Seals, Phillip Burgmeier
PreDesign—John Bartholomew, Yuejia Gu

The alternative considered was:

1. PCC reconstruction of IA 149 and reconfiguration of on/off ramps south of 4th Street and 5th Street intersection **(Estimated cost $3,429,000)**

Alternative 1 is the preferred alternative after input from the City of Ottumwa and the need for reduced points of conflict around the 4th and 5th Street intersections. (see attached concept for details). Additional right of way/right of entry will be required. Traffic will be maintained during construction by placing traffic head to head on half of the roadway.

The Draft Project Concept Statement was sent out for review and comment with concerns to be resolved by Wednesday, June 8, 2022. Comments received during the review period have been considered and resolved.

This project is recommended for construction in FY 2027. The Office of Design will coordinate plan preparation with assistance from the District 5 Office.

JEB:
Attach.
cc:

C. Purcell	M. J. Kennerly	K. D. Nicholson
S. J. Megivern	J. S. Nelson	M. Nop
M. A. Swenson	R. A. Younie	D. E. Sprengeler
S. Majors	A. Poole	K. Brink
D. L. Newell	B. Bradley	J. W. Laaser-Webb
W. A. Sorenson	E. C. Wright	M. E. Ross
A. A. Welch	J. Harris	C. C. Poole
B. Hofer	G. Karssen	B. E. Azeltine
S. J. Gent	S. Anderson	D. Stokes
T. Jerman	K. K. Patel	S. Godbold
J. Vortherms	M. Todsen	S. McElmeel
J. R. Webb	B. Beavers	B. Lauderman
J. R. Phillips	J. Garton	J. Woodcock
B. M. Clancy	B. Porter	H. Torres-Cacho

IOWA DEPARTMENT OF TRANSPORTATION

TO OFFICE: District 5

DATE: June 9, 2022

ATTENTION: Bob Younie

PROJECT: Wapello County
STP-149-1(88)--2C-90
20-90-149-010

FROM: John Bartholomew

OFFICE: Design

SUBJECT: Project Concept Statement - **FINAL**

__**Dates of Review**__:
August 26, 2021
Participants:
District 5—Bob Younie, James Webb, Dale Harmon, James Phillips, Steve McElmeel, Bonnie Clancy, Hector Torres-cacho, Marv May
PreDesign—John Bartholomew, Kevin Patel, Yuejia Gu

December 8, 2021
Participants:
District 5—Steve McElmeel
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PreDesign—John Bartholomew, Kevin Patel, Yuejia Gu

March 14, 2022
Participants:
District 5—Steven McElmeel
City of Ottumwa—Larry Seals, Phillip Burgmeier
PreDesign—John Bartholomew, Yuejia Gu

__**Project Description:**__
This project involves the reconstruction of IA 149 from the Des Moines River Bridge to W Woodland Avenue in Ottumwa.

The alternative considered was:

1. PCC reconstruction of IA 149 and reconfiguration of on/off ramps south of 4th Street and 5th Street intersection

Alternative 1 is the preferred alternative after input from the City of Ottumwa and need for reduced points of conflict around the 4th and 5th Street intersections.

__**Project Data:**__
Route: Iowa 149
From: Des Moines River Bridge to W Woodland Ave, Station 53+23.50 to Station 85+45
Length: 0.7 Miles

Planning Classification: Area Development
Maintenance Service Level: C
Traffic: 2022—13,230 ADT With 4% Trucks
2042—13,890 ADT With 4% Trucks
Present Pavement Surface: PCC
Present Pavement Width: Varies
Present Shoulder Width: N/A
Type: Curb

MP to MP	Direction	Type	Avg. Structural No.	80% Structural No.	Joint Structural No.	PCI	IRI	K Value
1.34-3.53	2	3 - Composite	8.72	7.38	Null	59	56	115
0.53-1.34	2	1 - PCC	4.49	1.84	87	27	297.48	91
0.53-1.34	1	1 - PCC	4.26	3.17	null	12	240.83	105
1.34-3.53	1	3 - Composite	6.26	4.06	null	60	132.7	190

__**Need for Project:**__
IA 149 within the project limits is a 4-lane road. The existing pavement is a 10" Portland cement concrete pavement (PCCP) originally constructed in 1967 (formerly designated U.S. 63). The coarse aggregate originates from Douds Mine. Patching and grinding was done in 2004. PCC patching was done in 2019.

Overall, the pavement is in poor condition. There is considerable patching and deterioration within the project limits. There is a small amount of patching in the remainder of the project. There is some spalling occurring along the centerline joint which is a maintenance issue. Sidewalks along IA 149 are in poor condition.

Due to the condition of the pavement, PCC reconstruction is recommended.

__**Pavement History:**__
PCC PAVING:
49' wide, 10" PCC
4' earth median w/ 6" integral curb
Type "A" gutter & closed ditch from Station 64+38 to 75+50 and Station 81+25 to 84+38 (left side); from Station 64+38 to 75+75 and Station 81+50 to 84+88 (right side)

49' wide, 9.5" PCC

6" integral curb
Station 58+77.09 to Station 64+40
YEAR: 1955
FROM: Station 57+80 to Station 119+79.6 (in Ottumwa)

PCC PAVING:
57' wide, 10" PCC
4' concrete raised median
6" integral curb
YEAR: 1967
FROM: the north edge of the pavement of relocation U.S. 34 over the new Des Moines River channel, over the CRI&P R.R. and CB&Q R.R. to the intersection of Fourth and Wapello
Station 53+23.50 to Station 57+14.10

PATCHING & GRINDING:
YEAR: 2004
FROM: Station 57+13.65 to Station 63+75

PCC PATCHING:
YEAR: 2019
FROM: U.S. 34 in Ottumwa to U.S. 63 Interchange
Station 0+00 to Station 253+96.8 (Division 2 Urban)
Including on and off ramps along IA 149 south of 4th Street

Safety Considerations:

There are no bridges located within the project limits.

Crash History
During the five-year study period from January 1, 2017 through December 31, 2021, there were 84 crashes including 5 minor injury crashes, 22 possible or unknown injury crashes, and 57 personal property crashes. The crash rate is 497/HMVM which is higher than the statewide municipal city street average of 382/HMVM.

Feasible Alternatives:

Alternative #1 – Reconstruction of IA 149 with 4th and 5th Street Intersection Changes
This project is on the north and southbound lanes of IA 149, from the Des Moines River bridge (MP 0.60) to W Woodland Ave (MP 1.30), a distance of approximately 0.70 miles not including bridge approaches. This project also includes the off and on ramps at the 4th Street intersection and realignment of the 5th Street intersection roadways. IA 149 (formerly U.S. 63) is a 4-lane divided highway with curb and raised median.

New Storm Sewer Pipes and Intakes

The existing pavement, curb, and raised medians will be removed. The new roadway typical section will consist of a 53' wide, 4-lane roadway with 12' inner lanes and 14.5' outer lanes, similar to Figure 8 in Section 3A-1 of the Design Manual as pictured below. The location for back of curb will remain the same as existing. The existing foreslopes will be used as constructed. Superelevation will not be required unless necessary and a normal crown along the centerline will be constructed in place of the existing raised median.
The new pavement will consist of 9.5" thick PCC Class C Class 3 over 12" modified subbase with 100% subdrain coverage. The raised medians will be removed and existing median drains will be relocated to the outside curb. A sloped face will be constructed on the bridge raised median at the end of the bridge approach and the painted lanes will shift south of the 4th Street intersection to accommodate the raised median on the Des Moines River Bridge. New 6" integral curb will be constructed along both sides.
New storm sewer intake tops will be constructed while existing center median storm sewers will be plugged and abandoned. Existing subdrains will be removed and replaced.
A normal crown typical section can be used to eliminate the need for superelevation.

Four Lane Urban Roadways

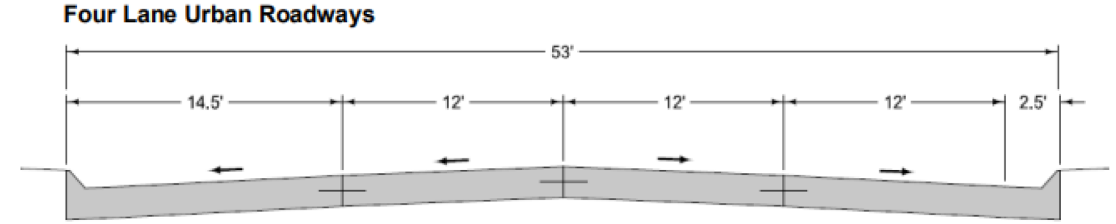

Figure 8: Four lane urban roadway.

~~The on and off ramps for IA 149 south of the 4th Street intersection will be reconstructed as shown below in Figure 1. The existing raised median will be removed along with the traffic island dividing the ramps and new pavement will consist of 9.5" thick PCC Class C Class 3 over 12" modified subbase with 100% subdrain coverage. The new typical will consist of a 26' wide, 2-lane roadway with curb and gutter as seen in Figure 4 in Section 3A-1 of the Design Manual attached below. In order to accommodate the new roadway placement, a retaining wall will be required adjacent to the nearby property.~~

Off-ramp will be removed. On-ramp will be reconstructed.

Figure 1: Reconstructed ramps south of 4th Street (final section will not include raised median)

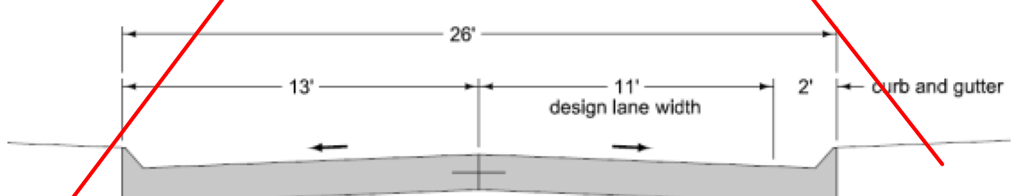

Figure 4: Two lane urban roadway with a standard paver width of 26 feet.

~~The intersection of IA 149 and N Wapello Street/5th Street will be reconfigured as shown below in Figure 2. The existing slip ramp for northbound traffic on IA 149 and the connection of W 5th Street with IA 149 will be removed. One way traffic heading west on W 5th Street will merge with traffic from IA 149 heading north to N Wapello Street, which will remain a two-way road. New pavement will be constructed to accommodate this movement and connect W 5th Street with N Wapello Street and consist of 9.5" thick PCC Class C Class 3 over 12" modified subbase with 100% subdrain coverage. The existing pavement widths of W 5th Street and N Wapello Street will be maintained.~~

A hammerhead turnaround will be constructed at 5th. St. This will result in 5th St. being converted to 2-way.

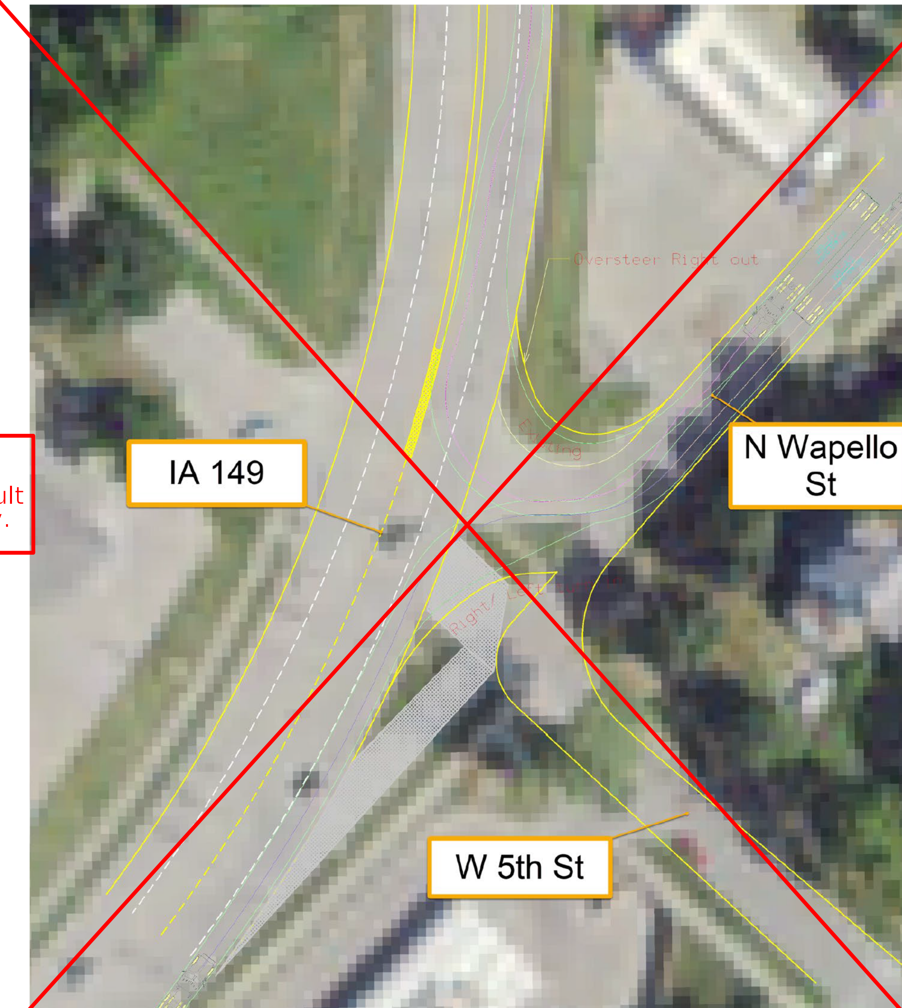

Figure 2: Reconfigured 5th Street intersection (final section will not include raised median)

Right of way will be required.

Roadway Items	Estimated Cost
Curb & Gutter, PCC, 1.5'	$305,300
STD/S-F PCC Pavement, QM-C CL 3, 9.5"	$780,800
Sidewalk, PCC, 4"	$25,400
Modified Subbase, 12"	$296,400
Earth Shoulder Construction	$30,100
Removal of Pavement	$178,500
Removal of Curb	$44,900
Removal of PCC Median	$52,600
Excavation, Class 13 Waste	$83,000
Embankment in Place, Contractor Furnished	$88,100

Compaction with Moisture Control	$8,700
Longitudinal Subdrains (Excludes Outlets)	$46,800
Subdrain Outlets	$3,300
Removal of Subdrains	$10,500
Storm Sewer Intake Tops	$8,000
Retaining Walls	$68,400
Mitigation	$50,000
Right of Way	$10,000
Erosion Control (1.97%)	$50,000
Traffic Control (2.5%)	$85,900
Mobilization (5%)	$171,800
Miscellaneous & Contingency (30%)	$1,030,500
Total Alternative #1	**$3,429,000**

Detour/Staging Analysis:

During construction of IA 149, traffic will be placed head to head in either the northbound or southbound lanes while the other half of the road undergoes construction. Signing will be provided by the DOT. The ramps south of 4th Street and the intersection at 5th Street will be closed while under construction for approximately 3 weeks. This will be discussed in more detail during project development.

Crossovers will be placed at the intersection of W Woodland Avenue and IA 149 as well as the Des Moines River Bridge near the beginning of the project to direct traffic into two lanes.

Recommendations:

The recommended alternative for this project is Alternative #1. The estimated cost for this alternative is $3,429,000.

Construction Sequence:

It is anticipated that all work on this project will be awarded to one prime contractor.

ADA Accommodations:

Sidewalk sections at the intersection of IA 149 and 5th Street must be removed to redirect pedestrian and cyclist traffic south to the IA 149 and 4th Street intersection. These sections are circled in red as shown below in Figure 3 and Figure 4. The adjoining sidewalks to these sections must be ADA compliant and reconstructed as needed.

New sidewalk must be constructed to the east of IA 149 and south of 4th Street as shown in Figure 5. Sidewalk to the west of IA 149 shown in Figure 5 must be reconstructed with appropriate signals, crosswalk markings, and/or signage for pedestrians and cyclists to cross the reconstructed ramps. All sidewalks and crossings must be ADA compliant.

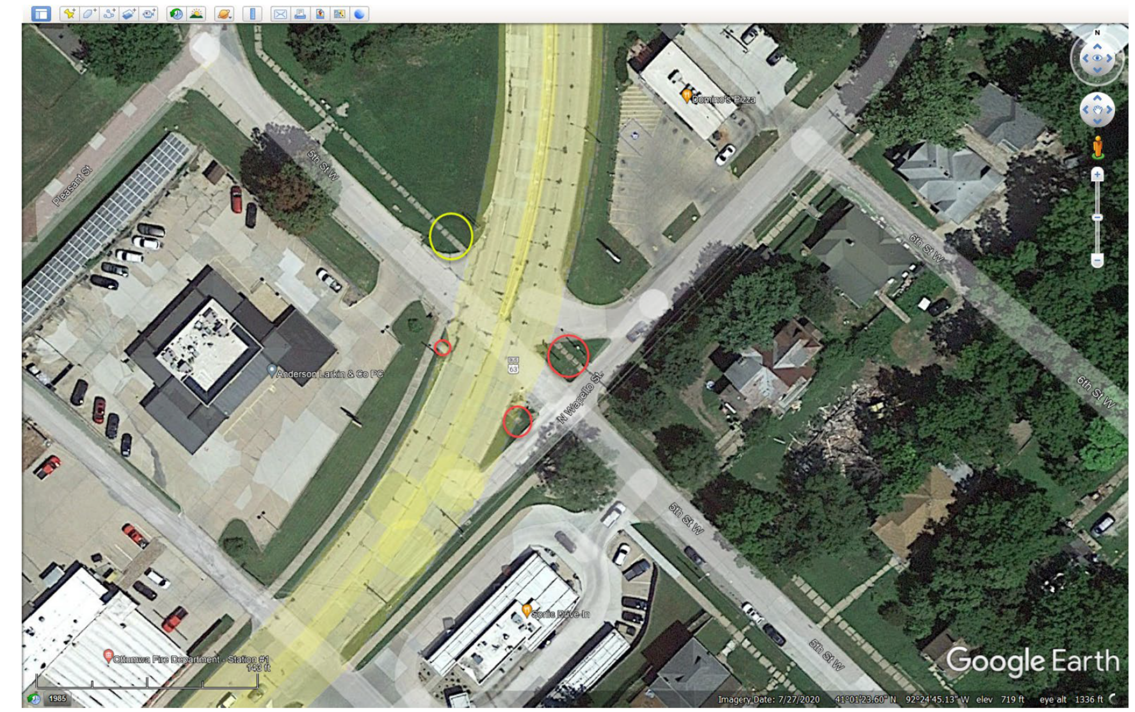

Figure 3: Aerial view of IA 149 (NB/SB) in the center intersecting with 5th Street. Sidewalks to be removed are circled in red. Sidewalk which must be reconstructed to face south is circled in yellow.

Figure 4: Street view facing west down 5th Street intersecting with EB/WB N Wapello Street and IA 149. Sidewalk sections to be removed are circled in red.

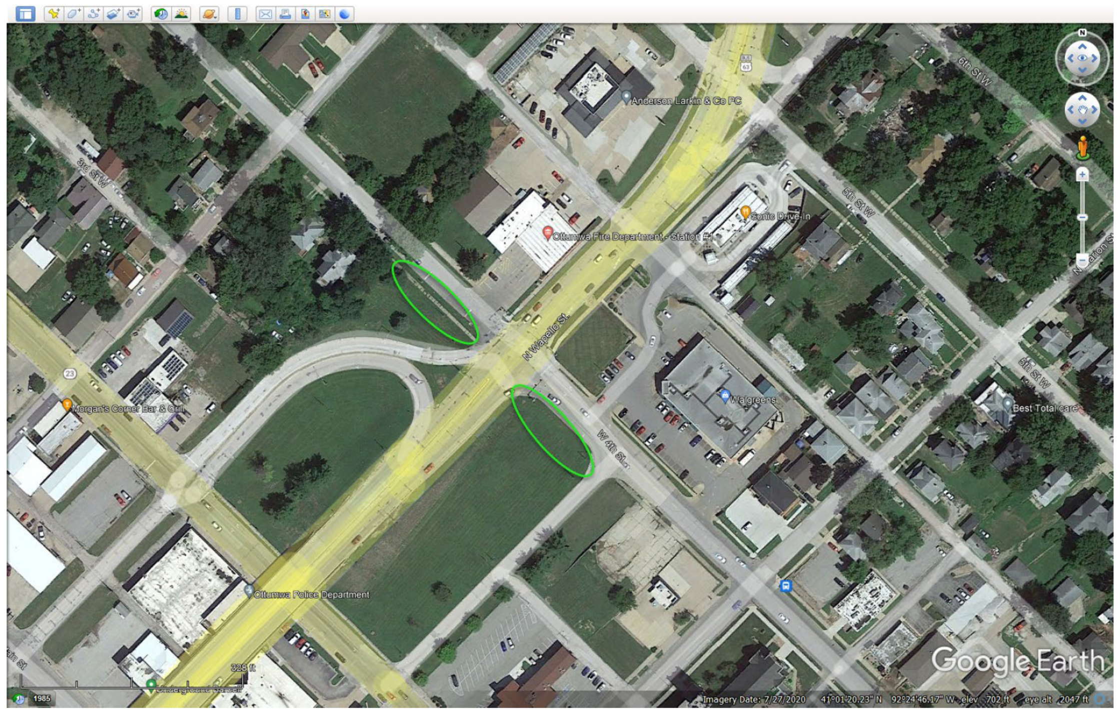

Figure 5: Aerial view of IA 149 (labeled N Wapello St) and 4th Street. Areas where new sidewalks must be constructed are circled in green.

Special Considerations:
Anticipated traffic volumes during construction do not warrant special construction scheduling.

Ottumwa Waterworks is planning to relocate the water main located near the Ottumwa Fire Station around 4^{th} and 5^{th} Street. Additional coordination with the Design Bureau, City of Ottumwa, and Ottumwa Waterworks will be required to determine construction sequence.

Additional survey is anticipated to be required for the ramps south of IA 149 and 4^{th} Street.

Right of way will be required.

The Location and Environment Bureau has not reviewed this project at this time. Once their review is completed, a W00 memo will be issued. This is scheduled to be completed by August 15, 2022.

Funds Programmed:
This project is listed in the draft 2023-2027 Iowa Transportation Improvement Program, with $4,715,000 programmed for grade and pave in FY 2027. A schedule of events for plan development will be determined following approval of the Project Concept.
JEB: YG

cc:

Utilities

(ASE) Alliant Energy
Contact Name: Alliant Energy Field
Engineer Contact Phone: 800-255-4268
Email: locate_IPL@alliantenergy.com

(CTLIA01) Centurylink
Contact Name: Sadie Hull
Contact Phone: 918-547-0147
Email: sadie.hull@lumen.com

(ICN) Iowa Communications Network
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Contact Phone: 800-572-3940
Email: icnoutsideplantiowaonecall@iowa.gov

(LTD) LTDS Corporation
Contact Name: Frazer Jones
Contact Phone: 641-919-9645
Contact Email: fjones@liscocorp.com

(M55G) MidAmerican Gas
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Contact Phone: 641-683-4171
Contact Email: jelough@midamerican.com

(OMW) Ottumwa Water & Hydro
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Contact Phone: 515-684-4606
Contact Email: bturner@pcsia.com

(OTL) Ottumwa Fiber LLC
Contact Name: Brad Timberlake
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Contact Email: bradt@pcsia.com

(OWA) City of Ottumwa
Contact Name: Chris Reinhard
Contact Phone: 641-683-0680
Contact Email: banksona@ci.ottumwa.ia.us

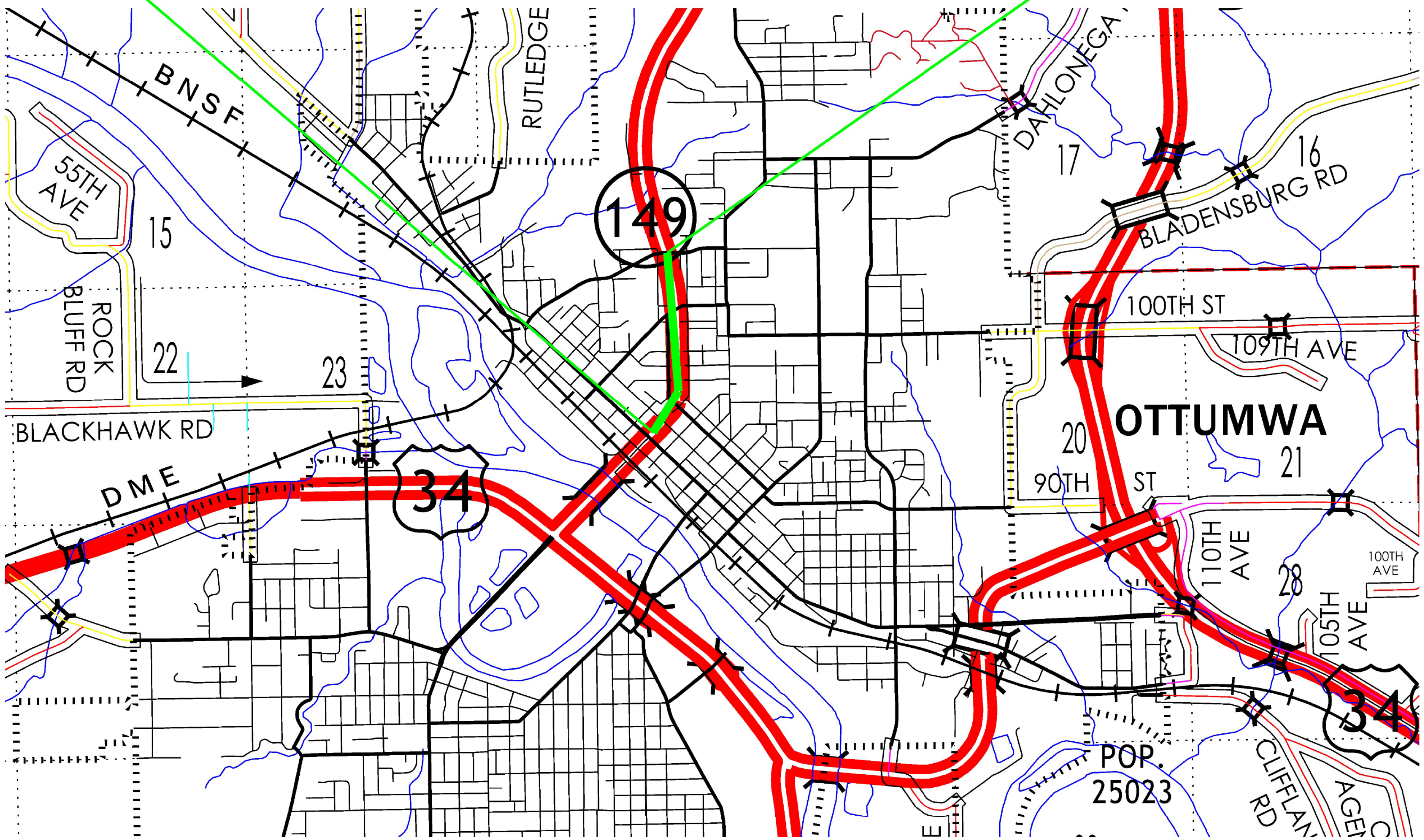
(TC8) Mediacom Cable
Contact Name: Darrin Walker
Contact Phone: 319-759-3786
Email: dwalker@mediacomcc.com

(WINIA) Windstream Communications
Contact Name: Locate Desk
Contact Phone: 800-289-1901
Email: locate.desk@windstream.com

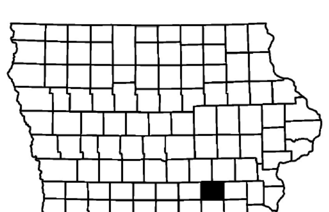
WAPELLO COUNTY

BEG. PROJECT
MILEPOST 0.60
STATION 53+23.50

END PROJECT
MILEPOST 1.30
STATION 85+45
WOODLAND AVE



IA 149 FROM DES MOINES RIVER BRIDGE TO
W WOODLAND AVE IN OTTUMWA
STP-149-1(88)--2C-90
PIN: 20-90-149-010



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FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER A.9

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Iowa DOT Design Manual 8A-2 Safety Design
Revised: 11-12-20
Clear Zones for Low Speed Urban Facilities

Low Speed Urban Facilities

Preferably, all roadside objects should be placed beyond the chosen clear zone distance. If this placement is not practical, devices proven to be breakaway, such as fire hydrants and certain sign supports, may be constructed or allowed to remain in place within the clear zone – with appropriate lateral offset. Keep in mind that breakaway objects could become airborne during a crash ; therefore, breakaway devices may not be recommended for locations between the curb and sidewalk if high volumes of pedestrian traffic are expected.

For curbed urban roadways, measuring clear zone distance from the back of curb is preferred; however, measuring from the edge of traveled way is acceptable. For non-curbed sections, the clear zone distance is measured from the edge of traveled way.

For roadways with a posted speed of 35 mph or less, the preferred clear zone distance is 10 feet and the acceptable clear zone distance is 8 feet. Where the speed limit is 25 mph or less, the preferred clear zone distance remains the same, but the acceptable clear zone distance may be reduced to 6 feet. If sidewalks are not present, consider using a clear zone value that will accommodate them in the future.

If a turning lane, auxiliary lane, or paved shoulder results in a curb that lies outside the normal roadway width, provide a minimum 4 foot clear zone measured from the back of this curb. Provide appropriate lateral offset behind the face of curb.

Whenever practical, the maximum amount of clear zone should be provided, especially on projects where safety is the principal goal. Where minimums cannot be met, design variances may be justified on a case-by-case basis.

Portions of side streets under a city's jurisdiction may be reconstructed as part of a project on a primary highway. For these streets, follow the guidance in the Local Systems Bureau's I.M. 3.240. The Department retains the right to ensure that adequate sight distance is provided at intersections or accesses.

Roadway	**IA 149**		
PIN Number	20-90-149-010	**Submittal Date**	
Project Number	STP-149-1(88)--2C-90		**Approval Date**
District	District 5	**Assistant District Engineer**	
County	WAPELLO	**or**	
Route	IA 149	**Office Director**	
Location	Des Moines River Bridge to W. Woodland Ave. in Ottumwa		
Work Type	PCC Pavement - Grade and Replace		
Segment Manager			
Designer	Jia/Miller/Schoenrock		

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

Urban Multilane Roadways (Urban Arterials)

Design Element		Preferred	Acceptable Criteria	Project Values
Design speed (mph)		The anticipated posted speed limit	30	35
Maximum superelevation rate (Refer to Section 2A-2)		4%	8%	RC
Design lane width (ft)		12	11	12
Full depth paved width (ft)	Outside lane	Design lane width + curb and gutter unit or 12 feet for roadways with shoulders	Match design lane width	14.5
	Inside lane(s)	Design lane width + curb and gutter unit. 12' for roadways without a curb and gutter unit	Match design lane width	12
Right turn lane or an auxiliary lane (ft)		12	10	12.5
Left turn lane (ft)	With raised or painted median	12 ft + median	10 ft + median	NA
	With depressed median	12	10	NA
Two-way left turn lane (ft)		14	11	NA
Parking lane width (ft)		10	7	NA
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	2-3
	Auxiliary and turn lanes	3%	3% maximum	3
	Crown break at centerline	4%	4% maximum	4
Shoulder cross-slope (on tangent sections)	Shoulders	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 and gutter units	Match pavement cross-slope	6% maximum	Match
	Parking lanes	1% greater than pavement cross-slope	6% maximum	NA
Curb type (Refer to Section 3C-2)	Design speed ≤ 45 mph	6-inch standard	any shape	6-inch Standard
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	6:1 of Flatter
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	NA
	Curbed roadways	2%	not steeper than 3:1	6:1 or Flatter
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	NA
Transverse Slopes	w/ drainage structures	8:1	6:1	NA
	w/o drainage structures	10:1	6:1	NA
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	NA
Median width (ft) (Refer to Section 3E-1)		See Section 3E-1	0	NA
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths or design lane width + 3 ft each side in curb and gutter section	design lane widths + effective shoulder widths or curb-to-curb width in curb and gutter section**	NA
	Bridge length > 200 ft	design lane widths + effective shoulder widths or design lane width + 3 ft each side in curb and gutter section	design lane widths + 4 ft offset each side for roadways with shoulders or curb-to-curb width in curb and gutter section**	NA
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 widths	NA
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	NA
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	NA
	Over railroad	23.3	23.3	NA
	Sign truss and pedestrian crossings	17.5	17	NA
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	
Level of Service		C	D	

*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exception required)
** If travel lanes are less than 12 ft wide contact the Methods Section for assistance.

Design year ADT =	13,900

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		
Turn lanes with curbs	6		See Section 3C-2		Turn lanes with curbs	6		0		
Expressways	Outside		Median Side		Expressways	Outside		Median Side		
	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	8
On roadways approaching urban areas (due to increased bike traffic)	10	10	6	6						
On all curves with a superelevation rate of 7.0% or greater	10	10	6	6	On all other Expressways (Multilane Arterials)	8	0*	4	4	
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:

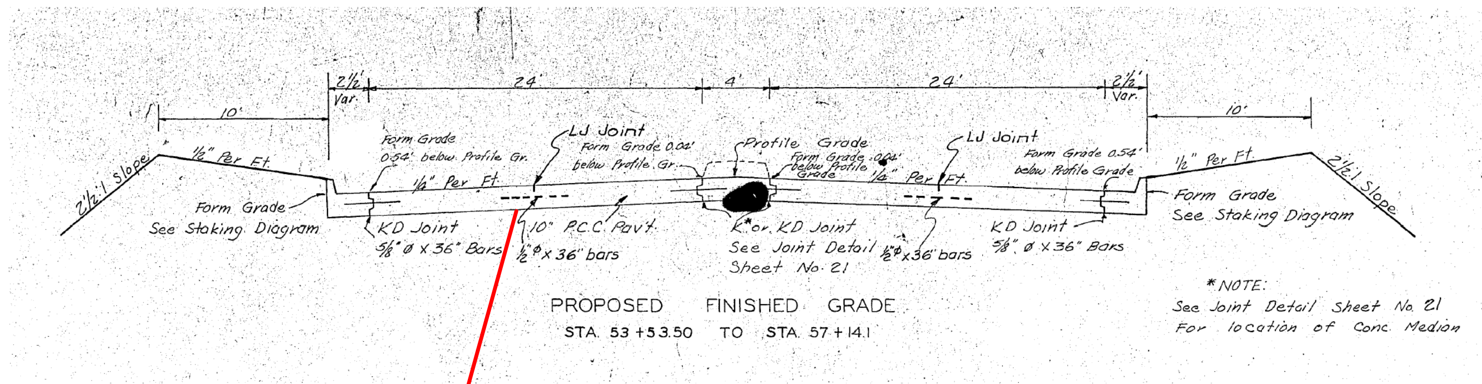
Roadway Design Speed (mph) = 35

Design Manual Section 1C-1
Last Updated: 05-26-17

Design Criteria for Low Speed Roadways

Design Element			Preferred Criteria – Design Speed, mph 25	30	35	40	45	Acceptable Criteria – Design Speed, mph 25	30	35	40	45	Project Values
Stopping sight distance (ft) (Refer to Section 6D-1)			155	200	250	305	360	155	200	250	305	360	250
Minimum horizontal curve radius (ft) and superelevation rate (Refer to Sections 2A-2 and 2A-3)	Method 2 superelevation and side friction distribution	e = 4% max	See Table 10 in Section 2A-3					--					575
	Method 5 superelevation and side friction distribution	e_{max} = 6%	144	231	340	485	643	144	231	340	485	643	
		e_{max} = 8%	--	--	--	--	--	134	214	314	444	587	
Minimum vertical curve length (ft) (Refer to Section 2B-1)			75	90	105	120	135	75	90	105	120	135	> 105
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		12	19	29	44	61	12	19	29	44	61	> 29
	sag vertical curves	roadways without fixed-source lighting	26	37	49	64	79	26	37	49	64	79	> 49
		roadways with fixed-source lighting	26	37	49	64	79	14	20	27	35	44	> 49
Minimum gradient (%)	(Refer to Section 2B-1)		0.5					0.3% with a curb, 0.0% without a curb					> 0.3%
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	5					–	9	8	8	7	< 6.1%
		Rural roadways						–	–	–	6	6	
Clear zone			See "Preferred Clear Zone" table in Section 8A-2					See "Acceptable Clear Zone" table in Section 8A-2					

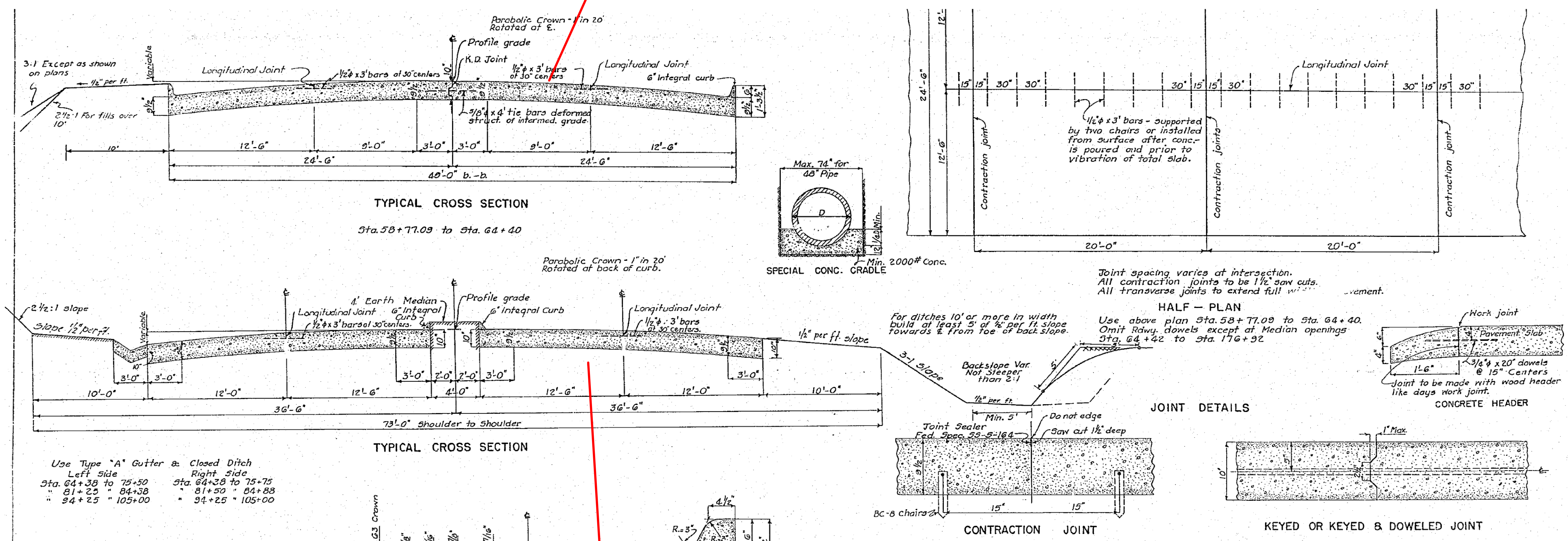
As Built 1967 PCC Paving



BOP - 4th St.

As Built 1955 PCC Paving

4th St. - 5th St.



5th St. - EOP

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER A.14

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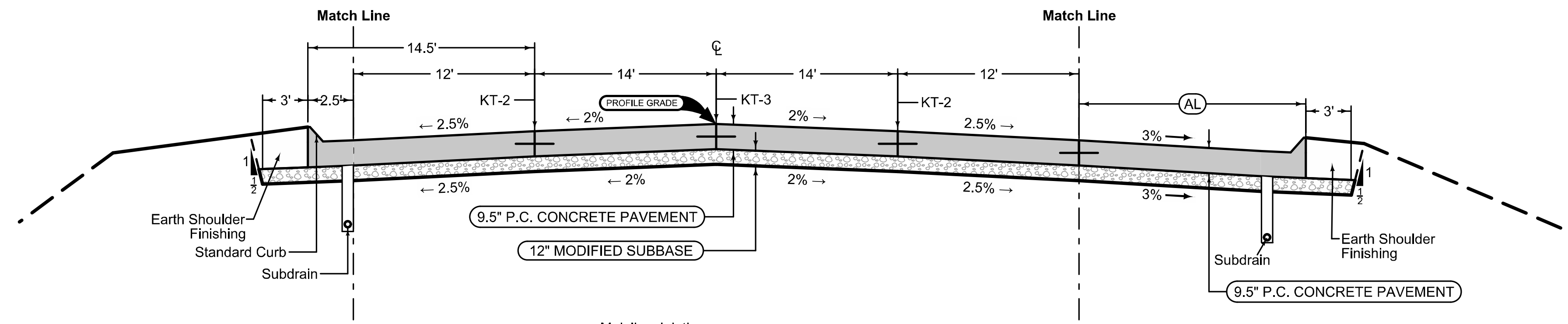
PROJECT REVIEW ITEMS	
-	------

FIELD EXAM NOTES	



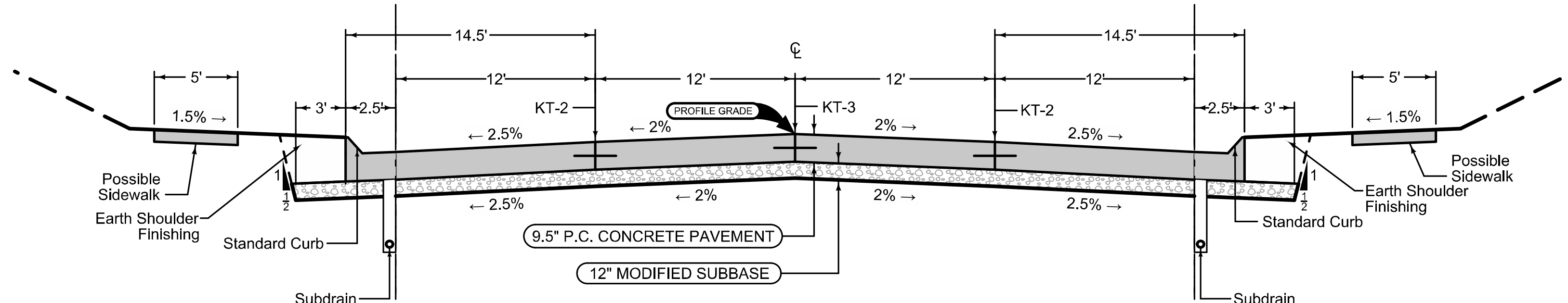
Mainline Jointing:
Transverse joints: CD at 17' spacing

	4UP_ 04-21-20	
STATION TO STATION		
--	--	

Auxiliary Lane

Longitudinal joint: L or KT
Transverse joint: Match Mainline

STATION TO STATION		AL Feet	Curb Type See PV-102
--	--	2.5-12.5	Standard



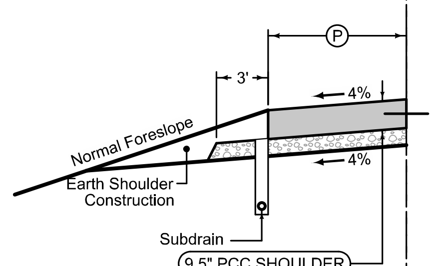
Mainline Jointing:
Transverse joints: CD at 17' spacing

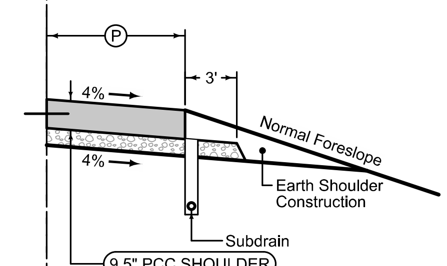
	4UP_ 04-21-20	
STATION TO STATION		
--	--	

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: C at 17' spacing

4_P_FullPCC_ 04-20-21			
Direction of Travel	BEGIN STATION	END STATION	P Feet
--	--	--	8





Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: BT-2, L-2 or KT-2
Transverse joints: C at 17' spacing

4_P_FullPCC_ 04-20-21			
Direction of Travel	BEGIN STATION	END STATION	P Feet
--	--	--	8

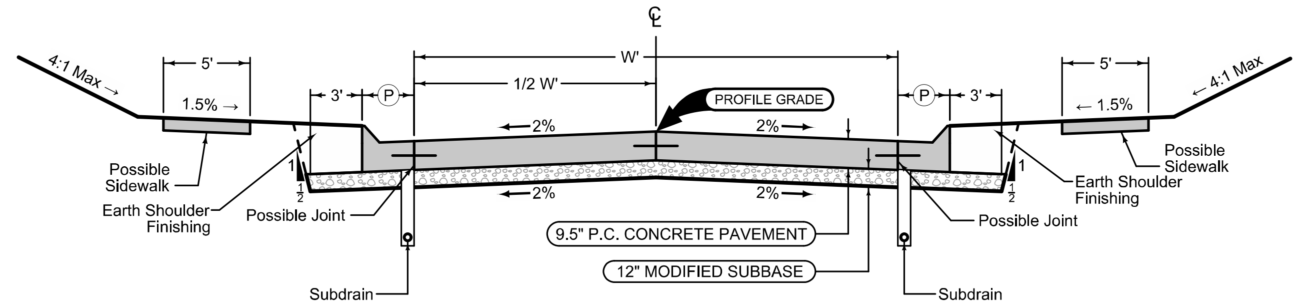
IA 149 Mainline

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

2_Curb_ MODIFIED				
STREET IDENTIFICATION	STATION TO STATION		P Feet	Curb Type See PV-102
4th St (W)	1528+00.00	1528+54.20	4.5'	6" Std.
5th (W)	0+00.00	0+00.00	2.5'	6" Std.
5th (E)	0+00.00	0+00.00	2.5'	6" Std.
N Wapello St	0+00.00	0+00.00	3.5'	6" Std.



Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

2_Curb_ MODIFIED				
STREET IDENTIFICATION	STATION TO STATION		P Feet	Curb Type See PV-102
4th (W)	1528+00.00	1528+54.20	4.5'	6" Std.
5th (W)	0+00.00	0+00.00	2.5'	6" Std.
5th (E)	0+00.00	0+00.00	2.5'	6" Std.
N Wapello St	0+00.00	0+00.00	3.5'	6" Std.

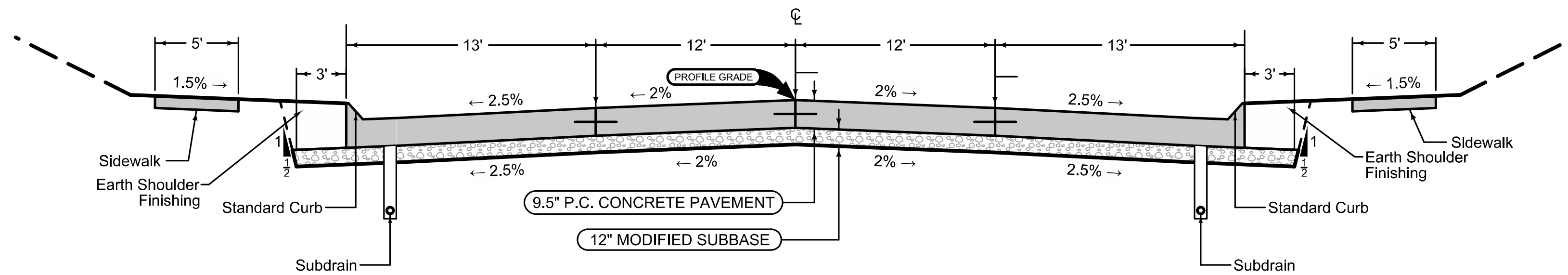
Mainline Jointing:
Transverse joints: CD at 17' spacing
Longitudinal joint: L-2

2P_ MODIFIED			
STREET IDENTIFICATION	STATION TO STATION		W Feet
4th (W)			24
5th (W)			23
5th (E)			23
N Wapello St			24

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

2 Lane Side Street



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

4UP_ MODIFIED		
STREET IDENTIFICATION	STATION TO STATION	
4th (E)		

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

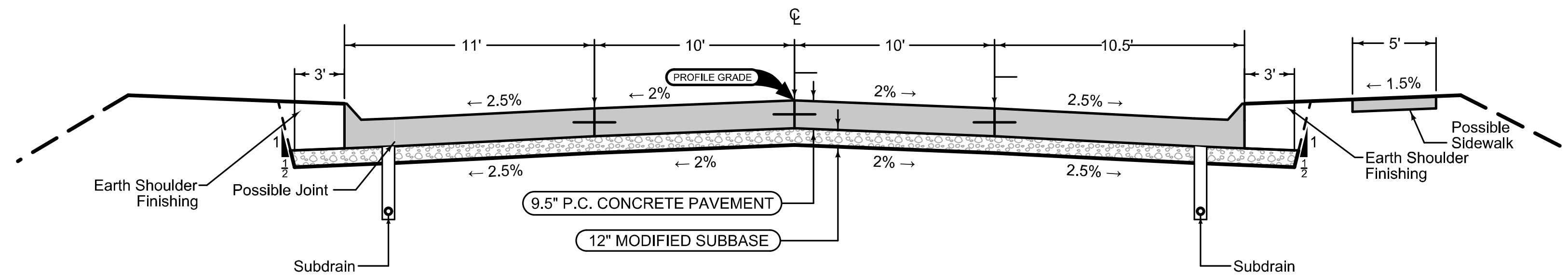
4th Street (E)

Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

			2_Curb_ MODIFIED
STREET IDENTIFICATION	STATION TO STATION		Curb Type See PV-102
Woodland Ave (W)			6" Std.



Curbed Shoulder

Shoulder Jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
Staged : KT-2
Transverse: C at 17' spacing

			2_Curb_ MODIFIED
STREET IDENTIFICATION	STATION TO STATION		Curb Type See PV-102
Woodland Ave (W)			6" Std.

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

		4UP_ MODIFIED
STREET IDENTIFICATION	STATION TO STATION	
Woodland Ave (W)		

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

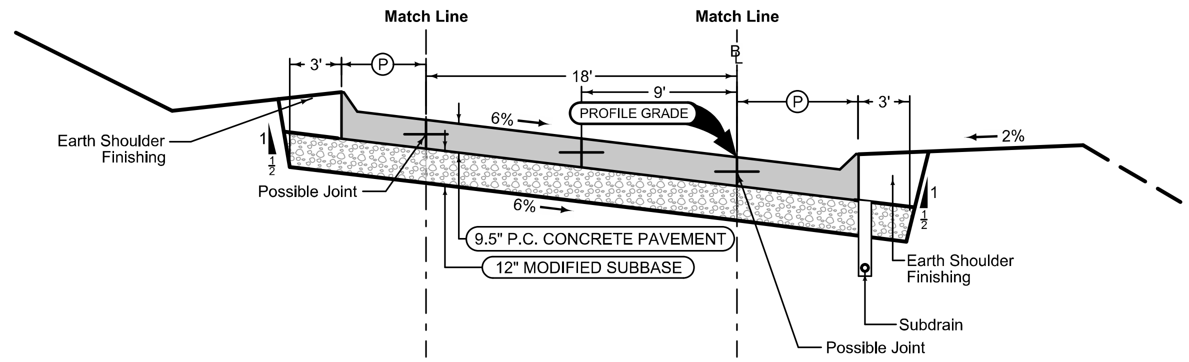
Woodland Ave.

Curbed Shoulder

Shoulder jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 15' spacing
Single pour: L-2
Staged : KT-2

1R_Curb_ 10-18-22			
BEGIN STATION	END STATION	P Feet	Curb Type See PV-102
		2.5	6" Std.



Curbed Shoulder

Shoulder jointing:
Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 15' spacing
Single pour: L-2
Staged : KT-2

1R_Curb_ 10-18-22			
BEGIN STATION	END STATION	P Feet	Curb Type See PV-102
		2.5	6" Std.

Section shown in the direction of traffic.

Loop Jointing:
Transverse joints: CD at 15' spacing
Longitudinal joint: L-2

1LP_ 04-20-21	
BEGIN STATION	END STATION

IA 149 SB Loop

SURVEY SYMBOLS

AST, Above Ground Storage Tank
BB, Billboard
BBB, Bottom of Bridge Beam
BCL, Bridge Centerline
BD, Bridge Deck
BIN, Grain Bin
BL, Topo Breakline
BLD, Building or Foundation
BLS, Bridge Low Steel
BM, Bench Mark
BNK, Stream Bank
BRG, Bridge
C, Centerline BL of Road -ML or SR
CAV, Cave
CEL, Cell Phone Tower
CIS, Cistern
CON, Concrete or A/C Slab
CP, Control Point
CRP, Corporation Line
CS, Curve Point
CU, Back of Curb
CUL, Culvert
D, Centerline Draw or Stream -Down
DAB, Drainage Area Boundary
DIK, Centerline of Dike or Dam
DTM, Photogrammetry Elv Control Check
DU, Centerline Draw or Stream -Up
EB, Electrical Box
EG, Edge of Gravel Road
ENP, Edge Paved Entrance and Park Lot
ENT, Centerline BL of Entrance
ENU, Edge Unpaved Entrance and Parking
EP, Edge of Paved Roads -ML or SR
EW, Edge of Water
FCL, Chain Link and Security Fence
FENO, FENO Monument
FHD, Fire Hydrants
FLG, Flag Poles
FP, Filler Pipe
FW, Wire Fence
FWD, Wood Fence
GDC, Guard Rail Cable
GDL, Guard Rail Steel
GP, Guard Post -Less Than 4 Posts
GPR, Guard Post -4 or More Posts
GR, Ground Shot
GRV, Grave
GU, Gutter In Front of Curb
GV, Gas Valve
HDG, Hedge Row
HS, Hydric Soil -Wetlands
HT, Electrical Highline Tower
IN, Storm Sewer Intake
INB, Storm Sewer Beehive Intake
LC, Lot Corner
LIN, Miscellaneous Line
LP, L.P. Tank
LUM, Luminaire
MH, Utility Access -Manhole
MIS, Miscellaneous
MM, Mile Marker Post
OUT, Tile Outlet
PC, Curve Point
PCP, Photo Control Point
PCT, Photo Control Target
PI, Tangent Point
PIP, Pipe Culvert
PL, Location of Photo -Wetlands
PLG, Location of General Photo
POC, Curve Point
POST, Spiral Point
PR, Electric Riser Pole
PRO, Profile Shot
PT, Curve Point
REF, Reference Tie Point
RET, Retaining Walls
RIP, Rip-Rap
ROC, Rock Outcropping
ROW, Right of Way Mark
RR, Centerline of Railroad Tracks
RRB, Railroad Signal Box
RRF, Railroad Frog
RRR, Railroad Rail
RRS, Railroad Signal
RRW, Railroad Switch
RT, Radio Tower
S, Soil Sampling Site -Wetlands
SBR, Size of Bridge
SC, Spiral Point
SCR, Section Corner
SEP, Septic Tank
SF, Silt Fence -Wetlands
SG, Staff Gauge -Wetlands
SH, Paved Shoulder
SHR, Shrub
SI, Sign
SL, Speed Limit Sign
SLN, Section Line
SLO, Silo
SNK, Sink Hole
SNP, Unpaved Shoulder
SP, Stream Profile
STP, Stump
SWK, Sidewalk
SWP, Swamp or Marsh
TA, Tower Anchor
TBO, Telephone Booth
TCB, Traffic Signal Box
TDC, Tree Deciduous
TDL, Trafic Detection Loop
TER, Terrace
TEV, Evergeen Tree
TFR, Tree Fruit
TGP, Telegraph Pole
TIL, Tile Line
TLNL, Tree Line Left
TLNR, Tree Line Right
TOP, Top of Bridge Pier
TPA, Telephone Pole Co. 1
TPB, Telephone Pole Co. 2
TPC, Telephone Pole Co. 3
TR, Telephone Riser Pole
TRL, Trail
TS, Spiral Point
TSB, Telephone Switch Box
TSG, Traffic Signal
TSL, Traffic Signal and Luminare
TV, Satelite TV Dish
TVP, TV Pedestal
TW, Top of Water
UB, Utility Box
UE, Utility Elevation
UPH, Utility Pot Hole - Quality A
UST, Underground Tank
UV, Underground Utility Vault
VS, Channel Cross Section
WC, Wild Card -Misc. Field Shot
WEL, Well
WHD, Water Hydrant
WHU, RV Water Hook Up
WM, Wind Mill
WND, Wind Turbine
WV, Water Valve

UTILITY LEGEND

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

PPA, Alliant Energy
FO — FO1D, CenturyLink - Quality D
FO2 — FO2D, Windstream Communications - Quality D
FO3 — FO3D, ICN - Quality D
FO4 — FO4D, Ottumwa Fiber Optic - Quality D
FO5 — FO5D, LTDS Corp - Quality D
G — GL1D, MidAmerican-Gas - Quality D
T1 — TL1D, CenturyLink - Quality D
SAN — SAID, City of Ottumwa- Quality D
W — WL1D, City of Ottumwa - Quality D
W2 — WL2D, Ottumwa Water & Hydro - 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
C/A Access Control
Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER D.1

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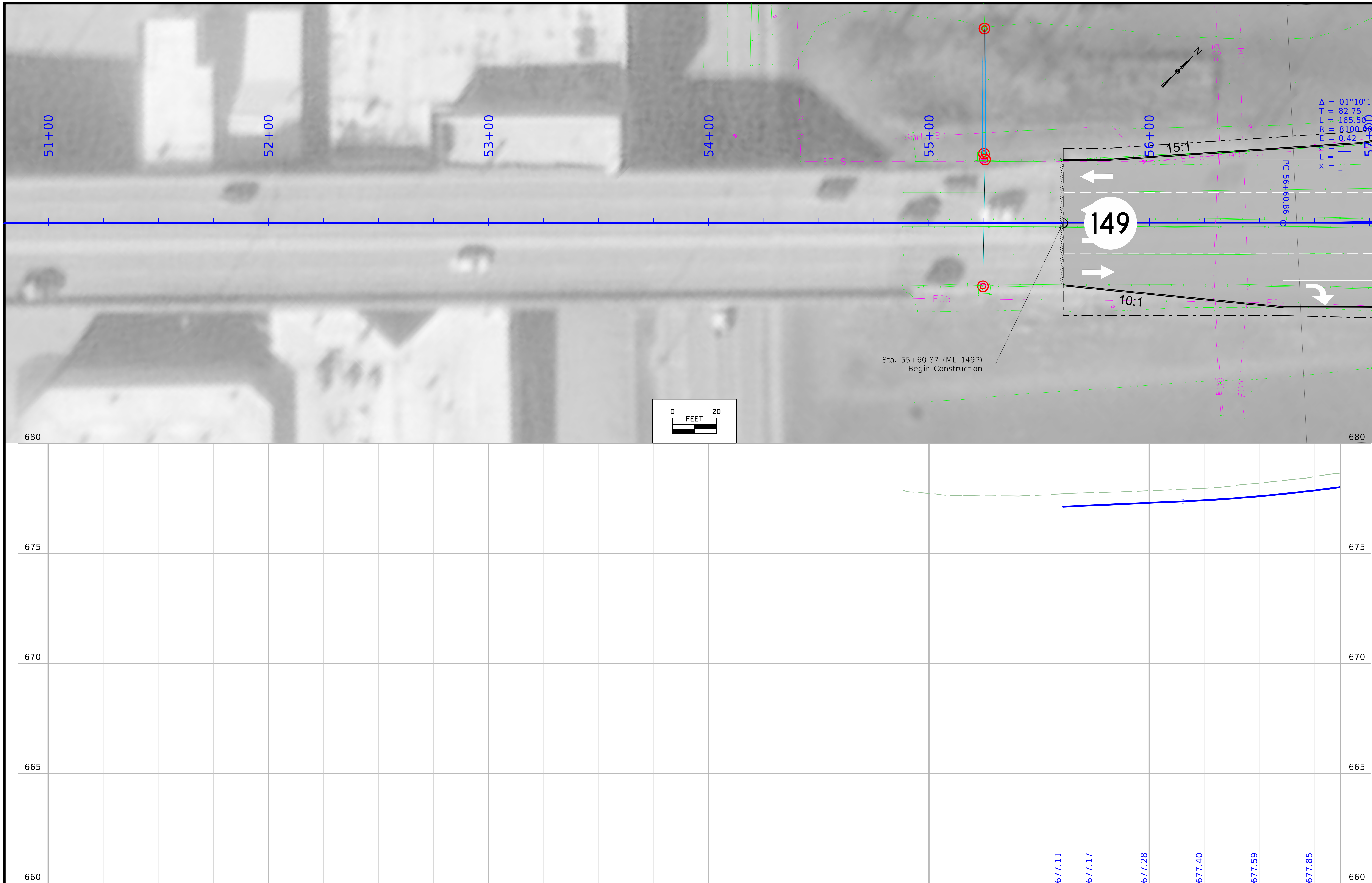

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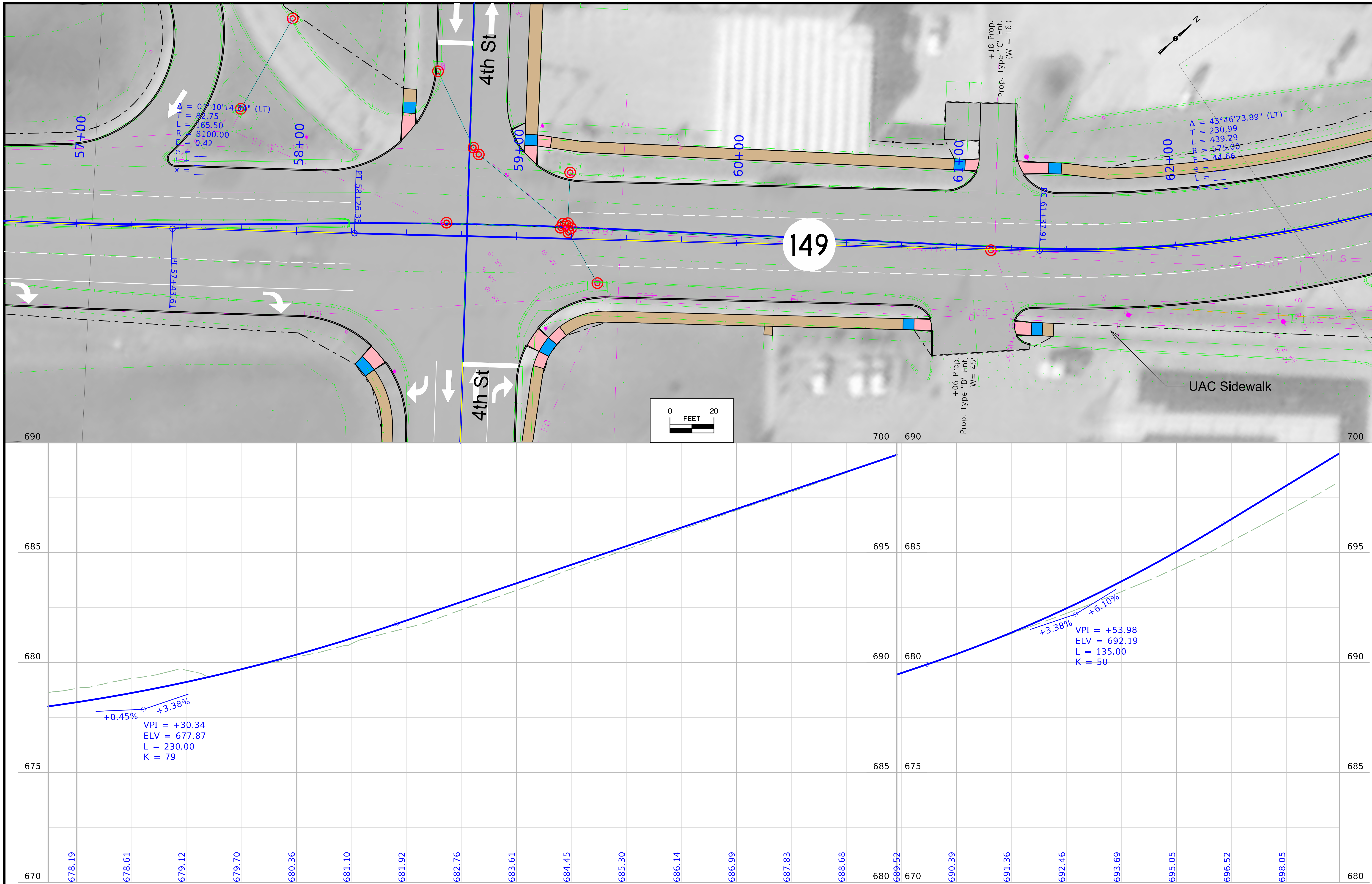

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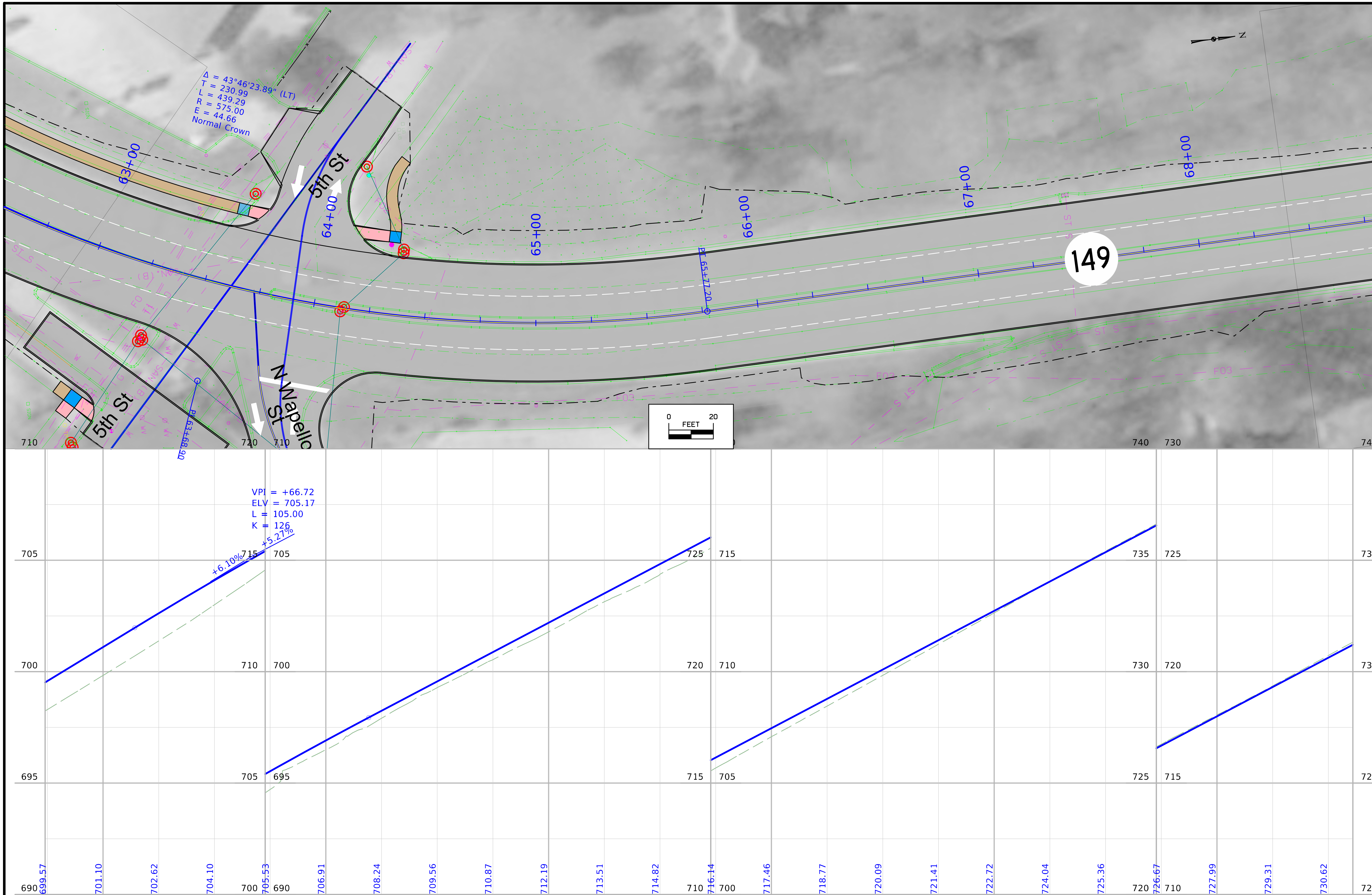

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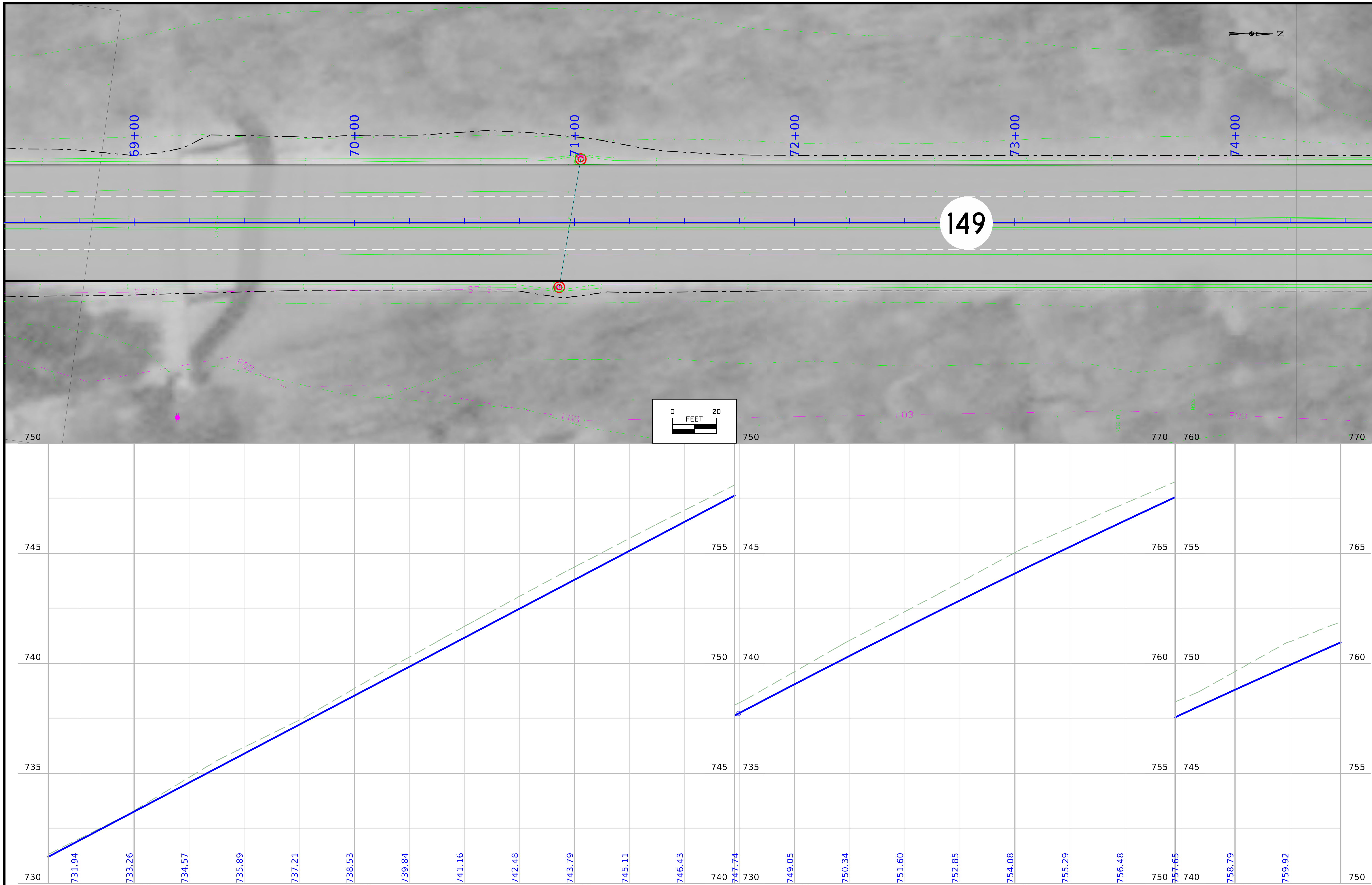

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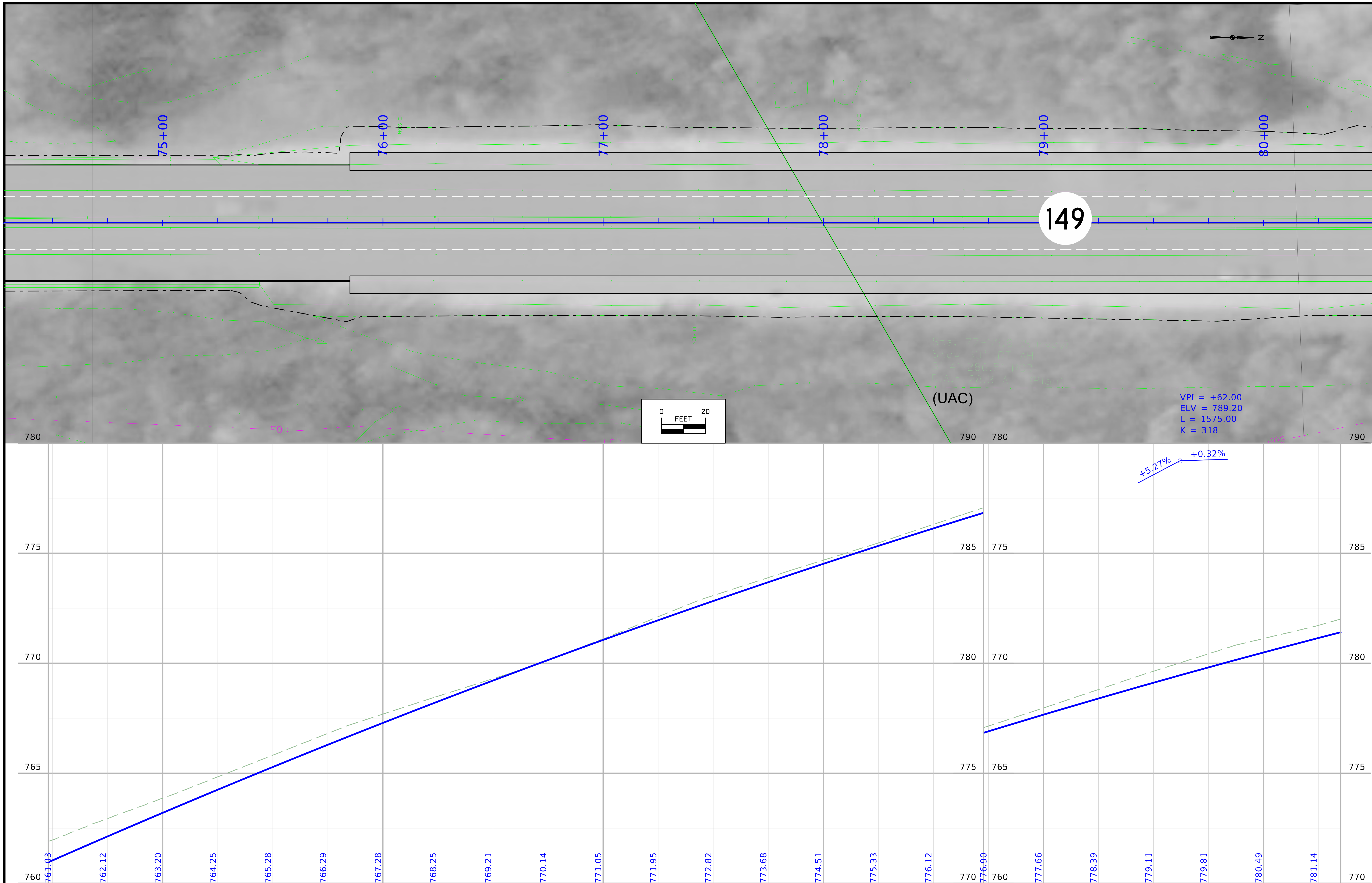

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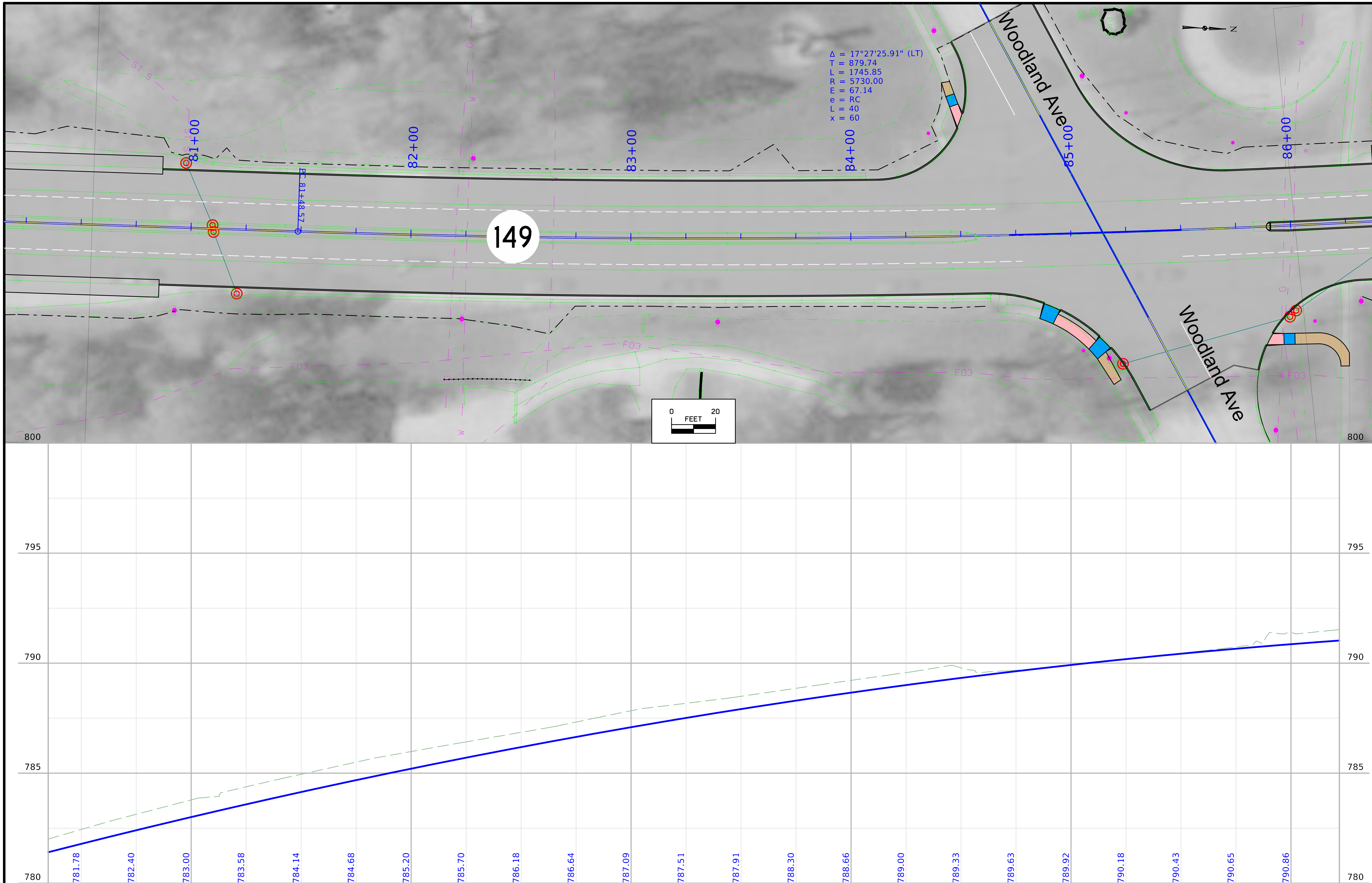

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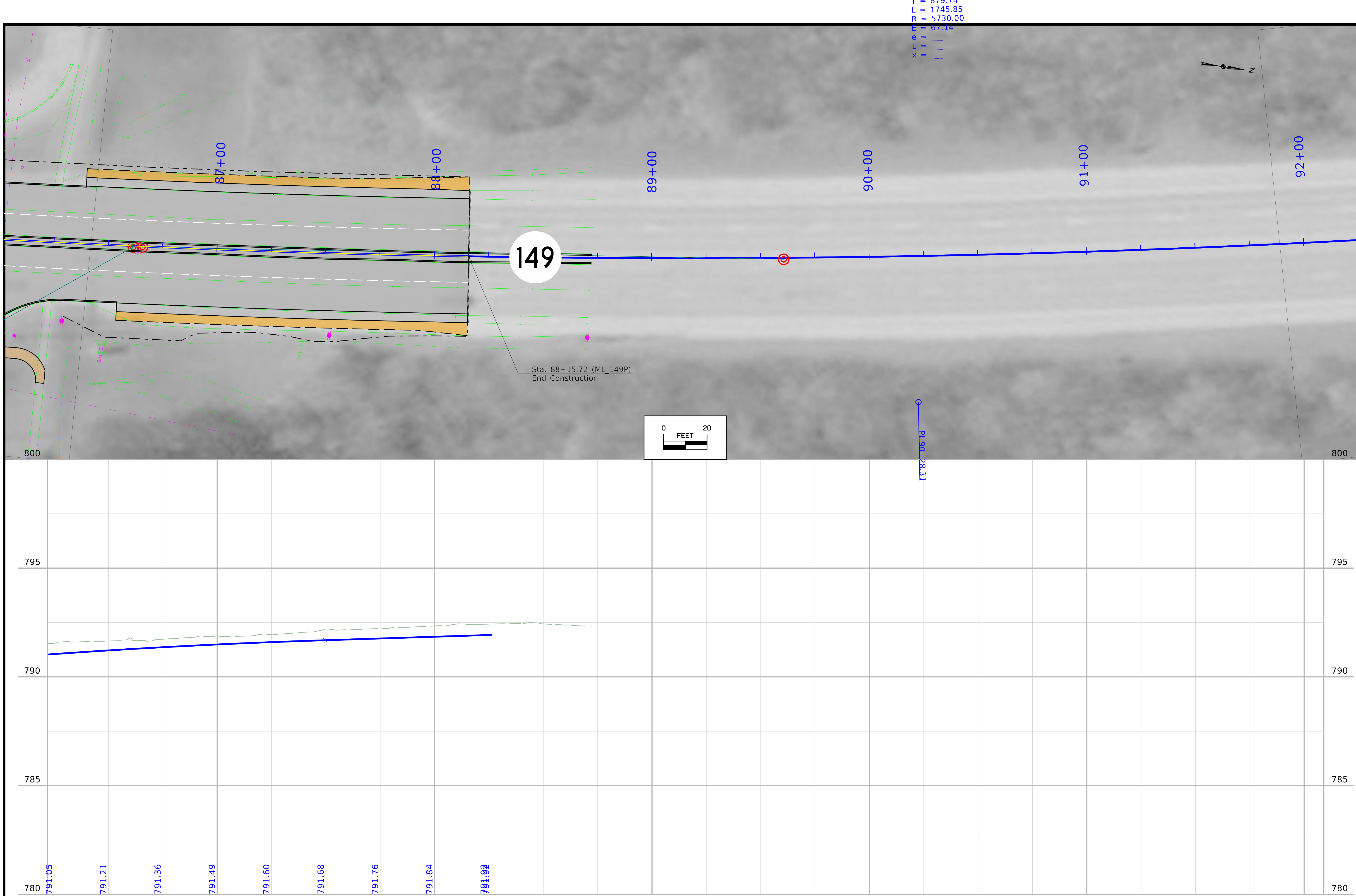

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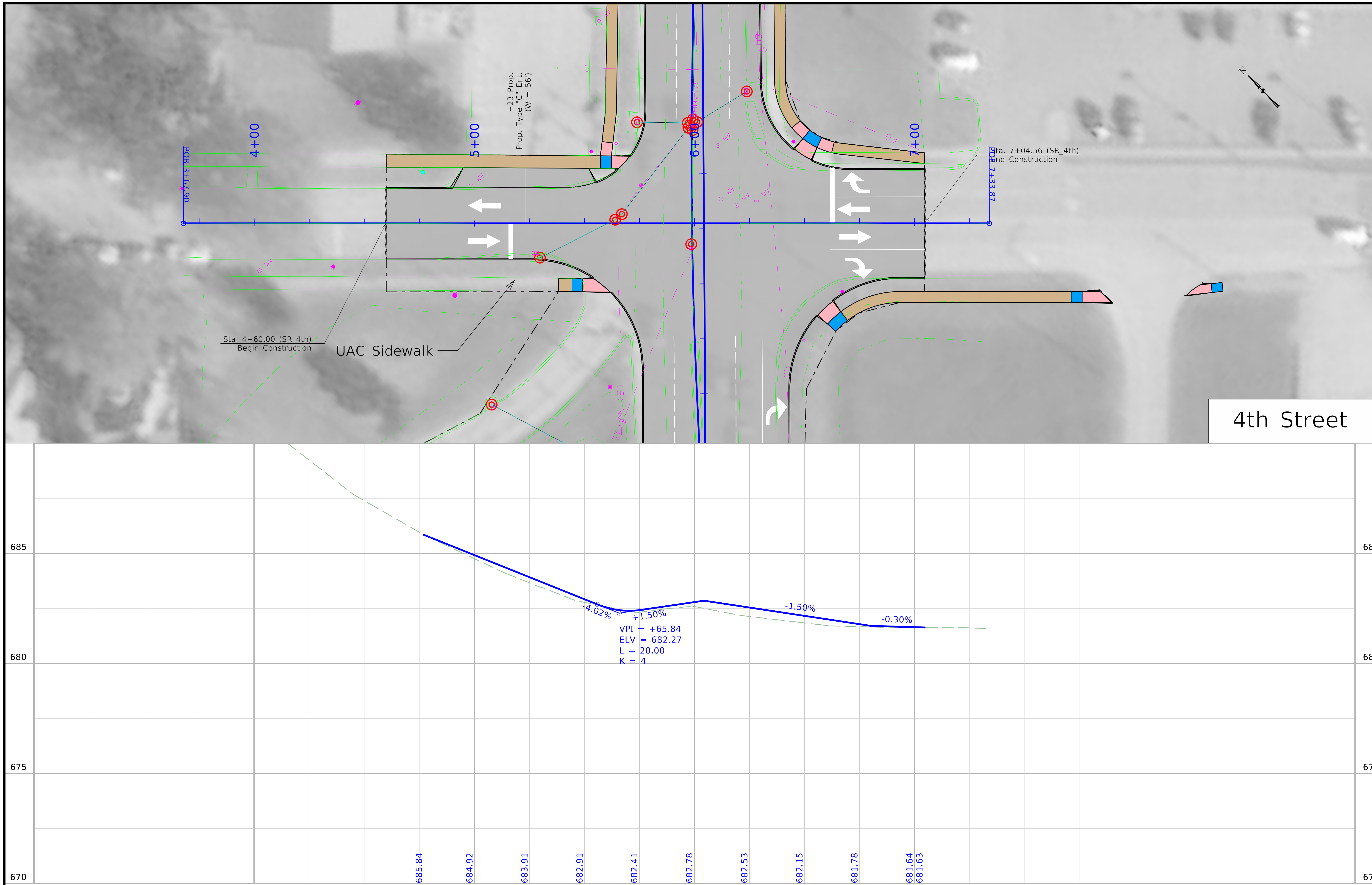

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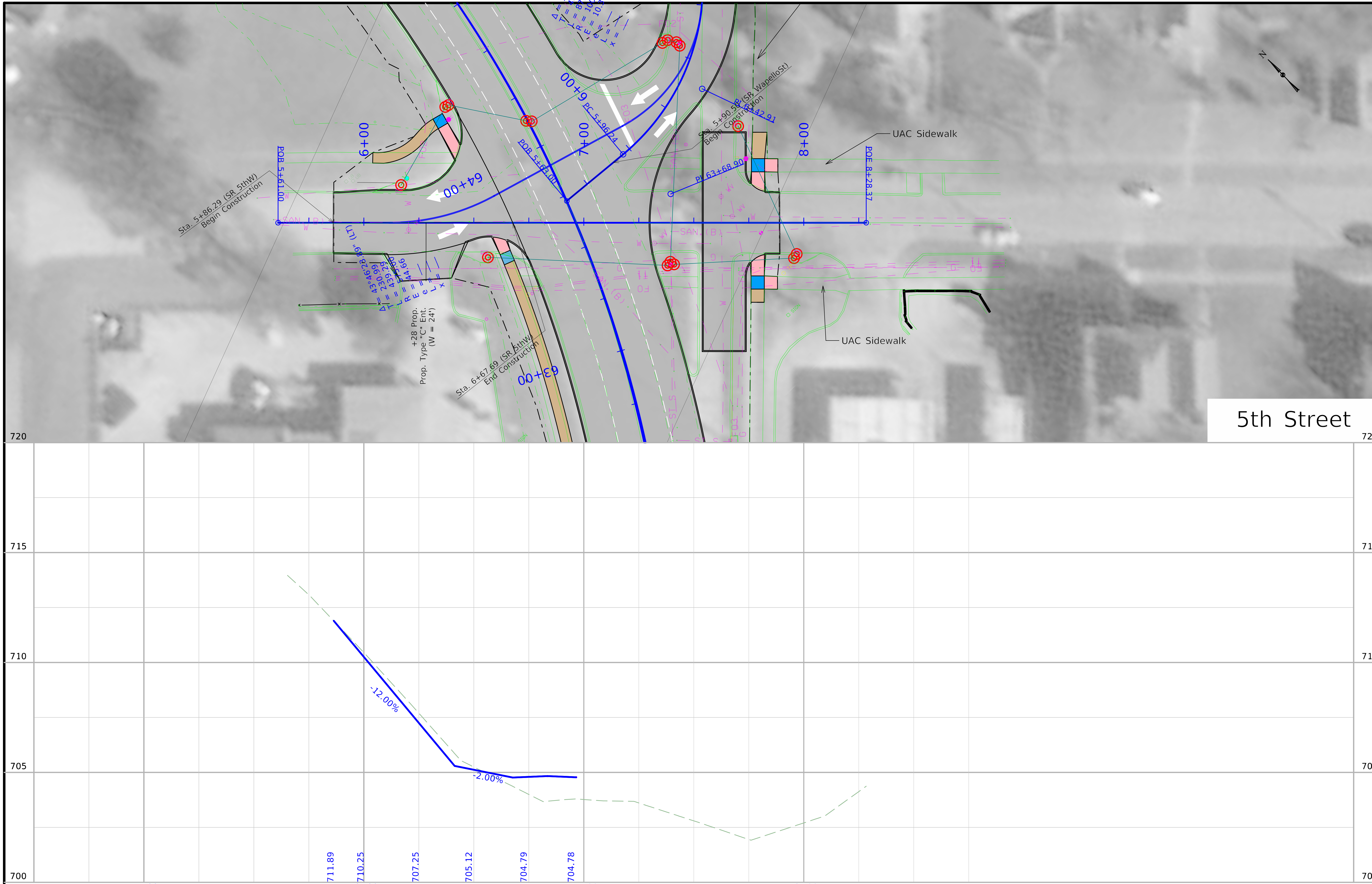

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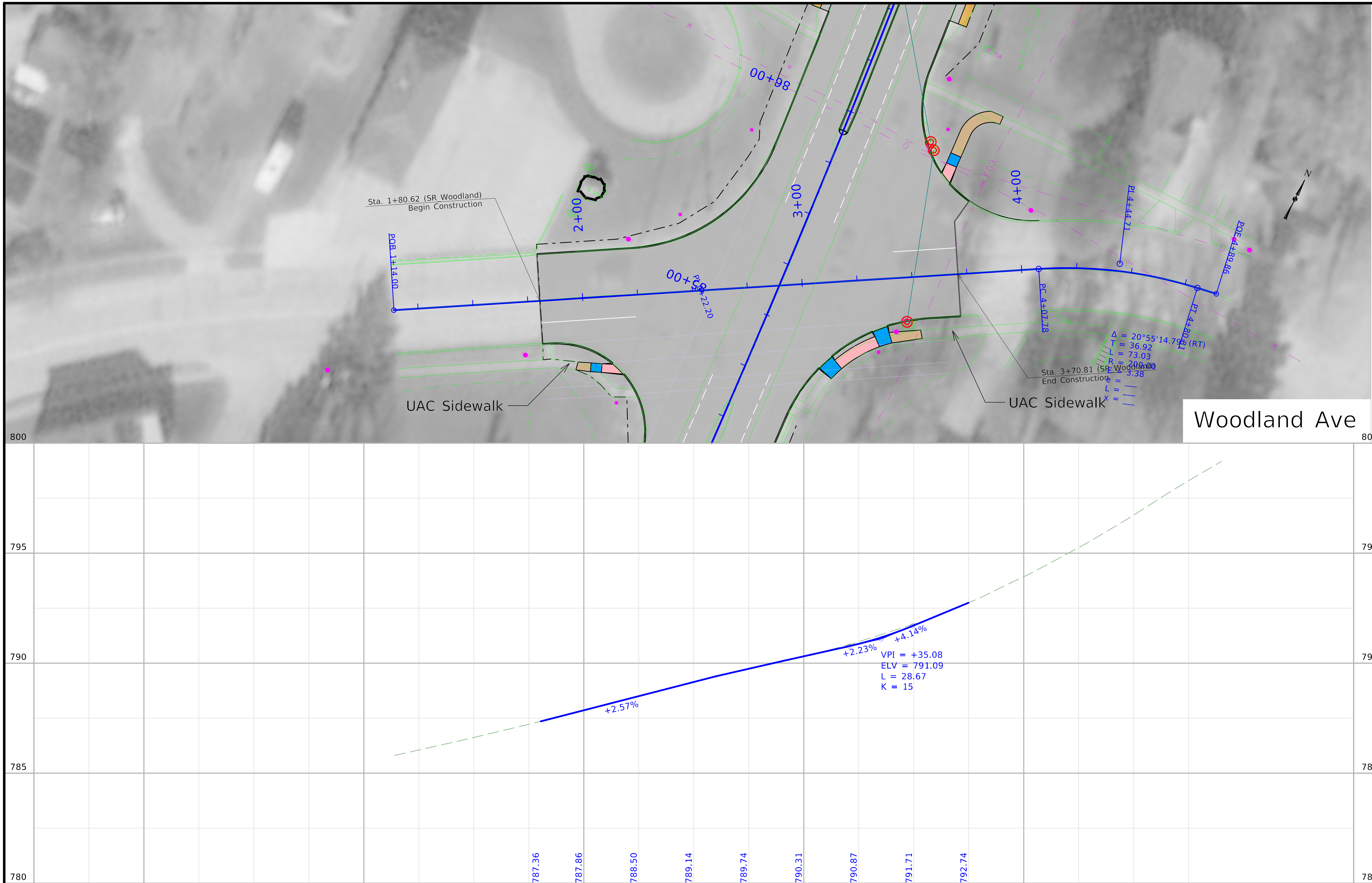
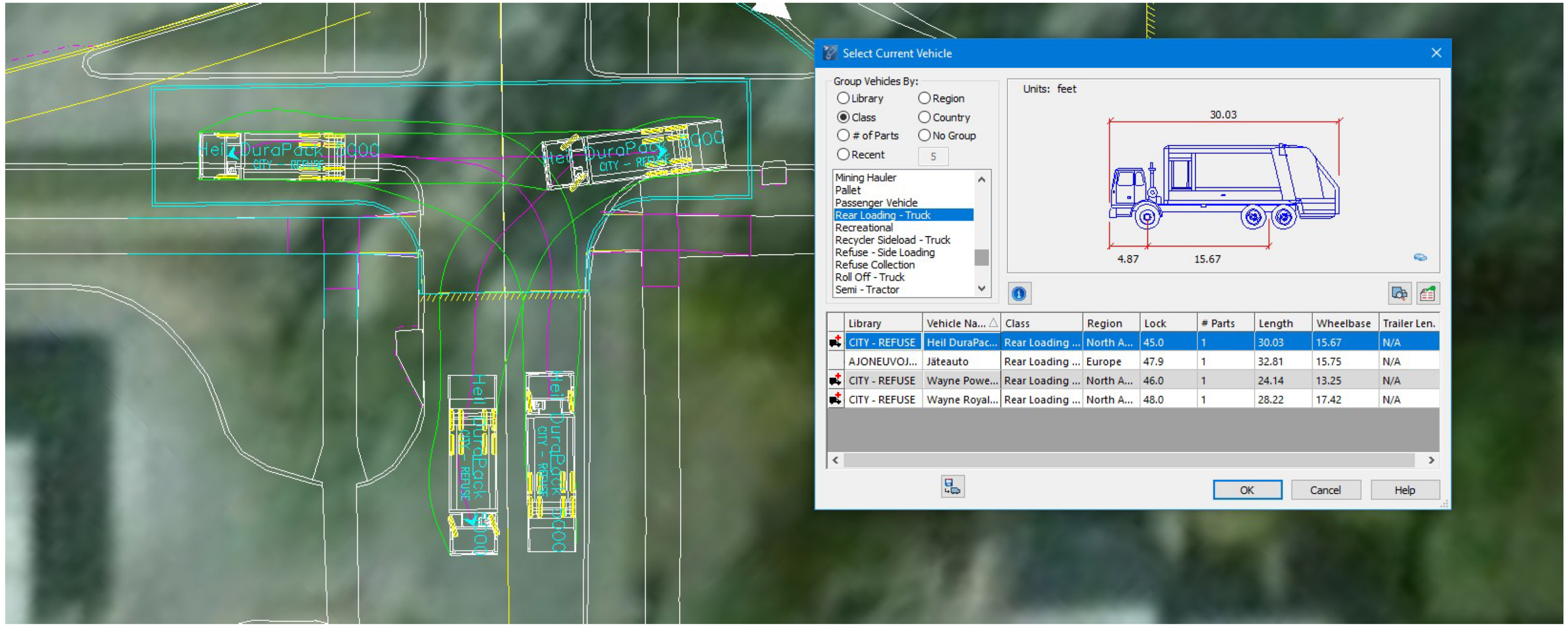
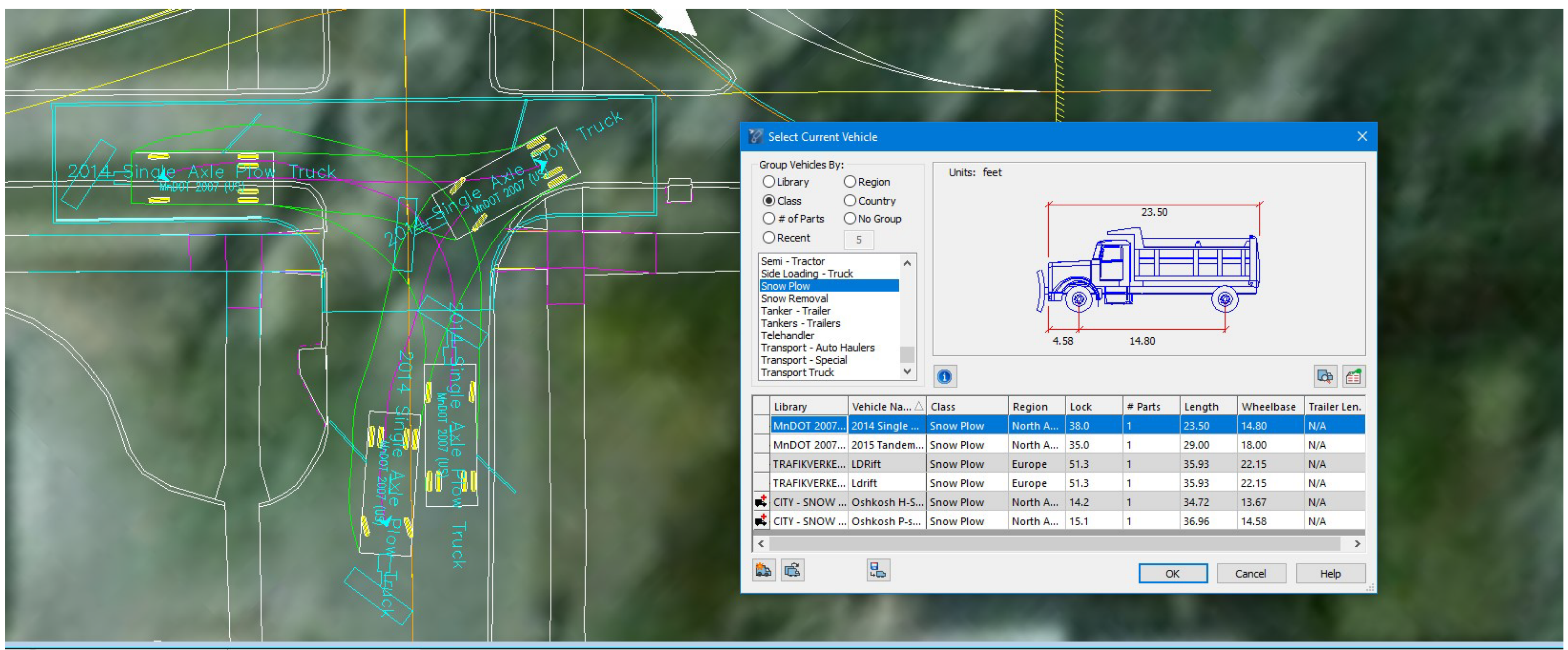


FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER E.4

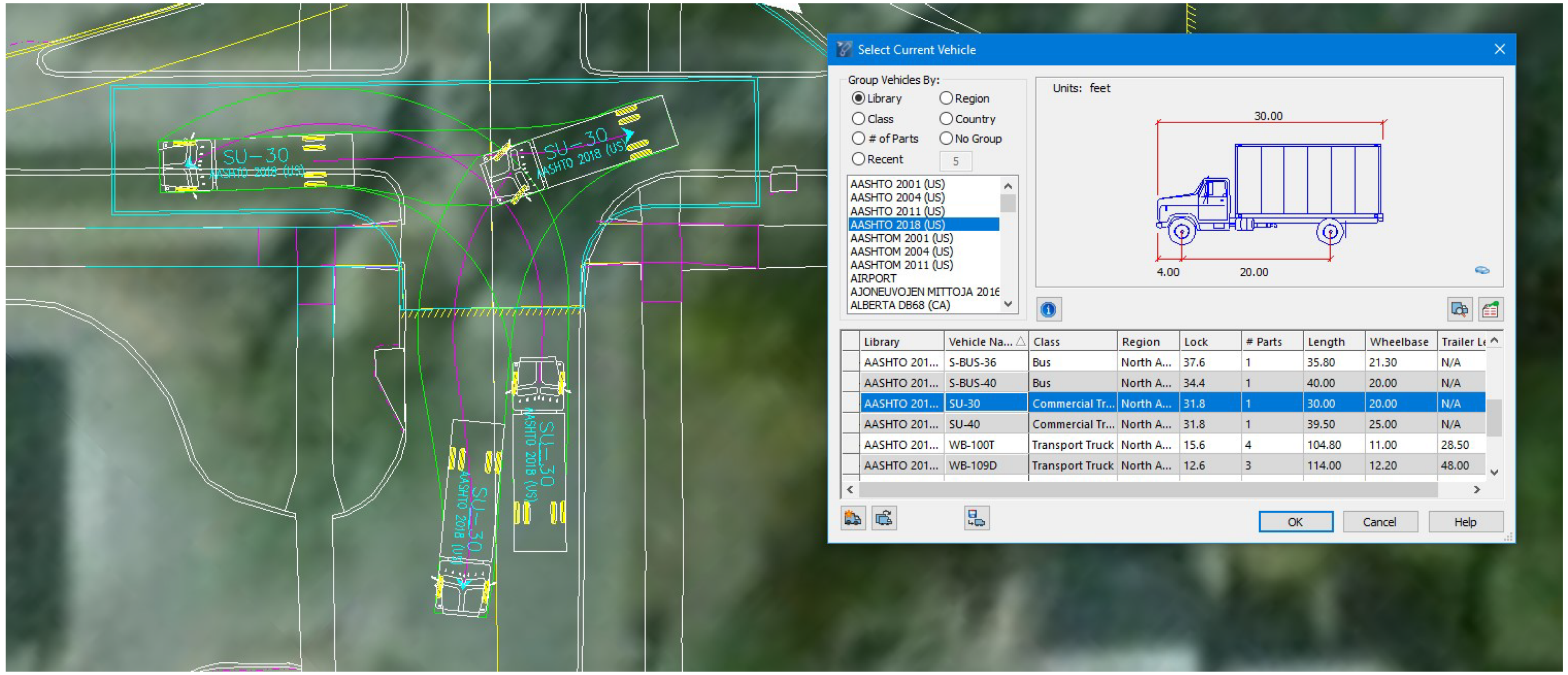
11:38:55 AM 9/26/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_E1.dgn



Select Current Vehicle
Group Vehicles By:
Library
Region
Class
Country
# of Parts
No Group
Recent
5
Mining Hauler
Pallet
Passenger Vehicle
Rear Loading - Truck
Recreational
Recycler Sideload - Truck
Refuse - Side Loading
Refuse Collection
Roll Off - Truck
Semi - Tractor
Units: feet
30.03
4.87
15.67
Library | Vehicle Na... | Class | Region | Lock | # Parts | Length | Wheelbase | Trailer Len.
CITY - REFUSE | Heil DuraPac... | Rear Loading ... | North A... | 45.0 | 1 | 30.03 | 15.67 | N/A
AJONEUVOJ... | Jäteauto | Rear Loading ... | Europe | 47.9 | 1 | 32.81 | 15.75 | N/A
CITY - REFUSE | Wayne Powe... | Rear Loading ... | North A... | 46.0 | 1 | 24.14 | 13.25 | N/A
CITY - REFUSE | Wayne Royal... | Rear Loading ... | North A... | 48.0 | 1 | 28.22 | 17.42 | N/A
OK
Cancel
Help



2014 Single Axle Plow Truck
Select Current Vehicle
Group Vehicles By:
Library
Region
Class
Country
# of Parts
No Group
Recent
5
Semi - Tractor
Side Loading - Truck
Snow Plow
Snow Removal
Tanker - Trailer
Tankers - Trailers
Telehandler
Transport - Auto Haulers
Transport - Special
Transport Truck
Units: feet
23.50
4.58
14.80
Library | Vehicle Na... | Class | Region | Lock | # Parts | Length | Wheelbase | Trailer Len.
MnDOT 2007... | 2014 Single ... | Snow Plow | North A... | 38.0 | 1 | 23.50 | 14.80 | N/A
MnDOT 2007... | 2015 Tandem... | Snow Plow | North A... | 35.0 | 1 | 29.00 | 18.00 | N/A
TRAFIKVERKE... | LDRift | Snow Plow | Europe | 51.3 | 1 | 35.93 | 22.15 | N/A
TRAFIKVERKE... | Ldrift | Snow Plow | Europe | 51.3 | 1 | 35.93 | 22.15 | N/A
CITY - SNOW ... | Oshkosh H-S... | Snow Plow | North A... | 14.2 | 1 | 34.72 | 13.67 | N/A
CITY - SNOW ... | Oshkosh P-s... | Snow Plow | North A... | 15.1 | 1 | 36.96 | 14.58 | N/A
OK
Cancel
Help



Library	Vehicle Na...	Class	Region	Lock	# Parts	Length	Wheelbase	Trailer Le
AASHTO 201...	S-BUS-36	Bus	North A...	37.6	1	35.80	21.30	N/A
AASHTO 201...	S-BUS-40	Bus	North A...	34.4	1	40.00	20.00	N/A
AASHTO 201...	SU-30	Commercial Tr...	North A...	31.8	1	30.00	20.00	N/A
AASHTO 201...	SU-40	Commercial Tr...	North A...	31.8	1	39.50	25.00	N/A
AASHTO 201...	WB-100T	Transport Truck	North A...	15.6	4	104.80	11.00	28.50
AASHTO 201...	WB-109D	Transport Truck	North A...	12.6	3	114.00	12.20	48.00

108-23A
08-01-08

TRAFFIC CONTROL PLAN

IA 149
- Traffic will be maintained during construction at all times via staging.
- Off ramp at 4th St. will remain open during Stages 1 and 2, then permanently removed in Stage 3.
- On loop at 4th St. will remain open during Stages 1 and 2. Traffic will be detoured during Stage 3.

4th Street (East)
- Traffic will be maintained during construction at all times via staging.

4th Street (West)
- Traffic will be maintained during Stages 1 and 2.
- Traffic will be detoured during Stage 3.

5th Street (East)
- Traffic will be maintained during Stage 1.
- Permanently closed to through traffic in Stage 2.

5th Street (West)
- Traffic will be maintained during Stages 1 and 2.
- Traffic will be detoured during Stage 3.

Wapello Street
- Traffic will be maintained during Stages 1 and 3.
- Traffic will be detoured during Stage 2.

Woodland Ave. (East) - Full closure or Staged?

Woodland Ave. (West) - Full closure or Staged?

Intersections
- 4th Street (West) and 5th Street (West) shall not be closed at the same time.
- 4th Street (West) and Woodland (West) shall not be closed at the same time.

108-26A
08-01-08

STAGING NOTES

STAGE 1 CONSTRUCTION
- Construct temporary pavement widening on SB IA 149.
- Remove paved median south of 4th St.

STAGE 2 CONSTRUCTION
- Construct NB lanes of IA 149.

STAGE 3 CONSTRUCTION
- Construct SB lanes of IA 149.

111-01
04-17-12

COORDINATED OPERATIONS

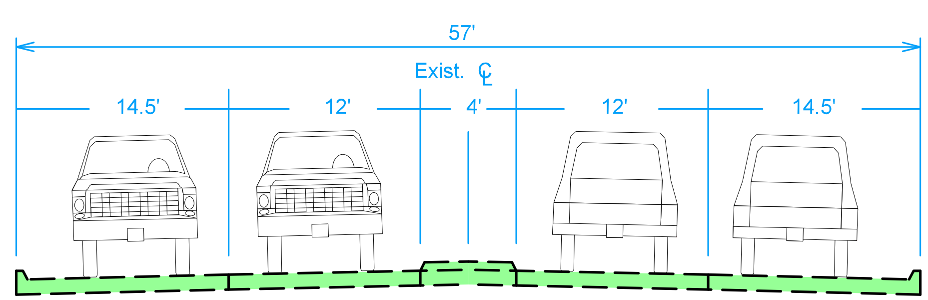
Other work in progress during the same period of time will include the construction of the projects listed. Coordinate operations with those of other contractors working within the same area.

Project	Type of Work

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



Stage 1a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.3	

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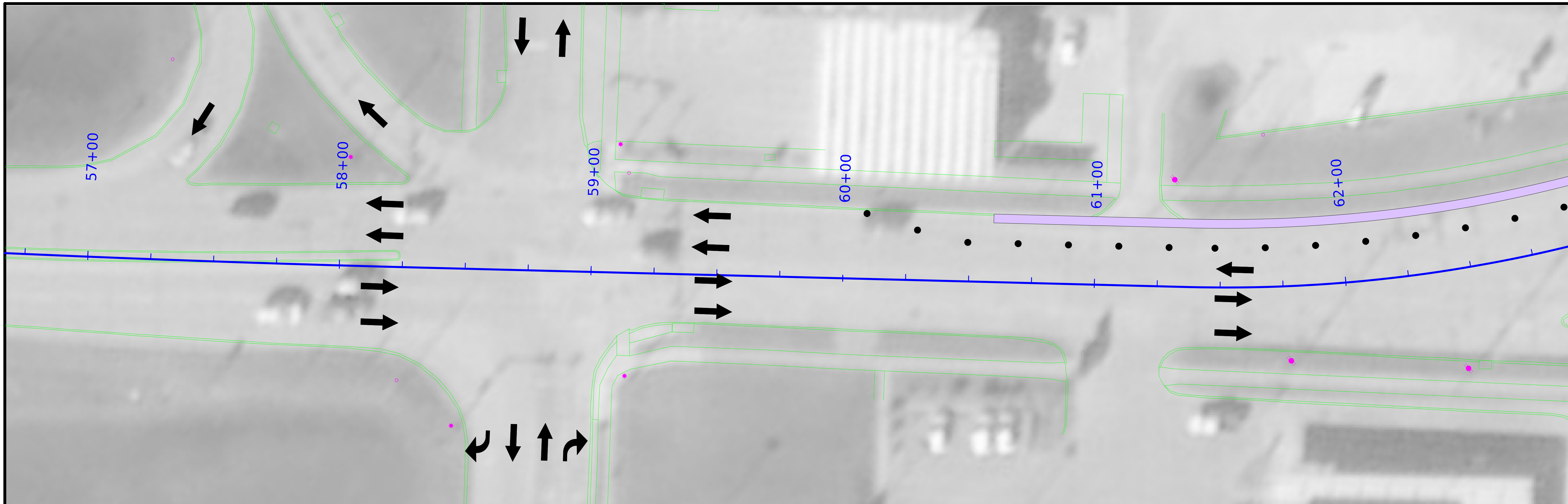

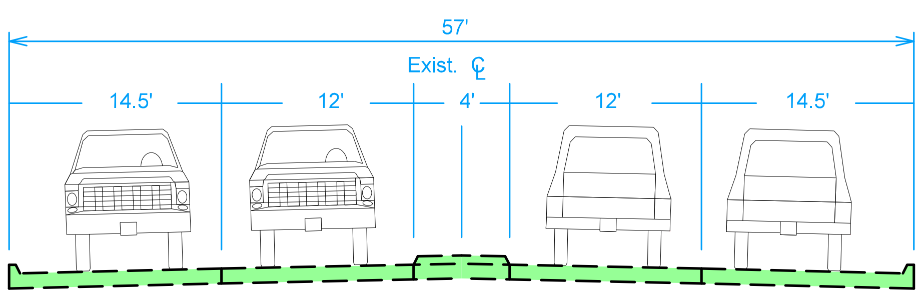

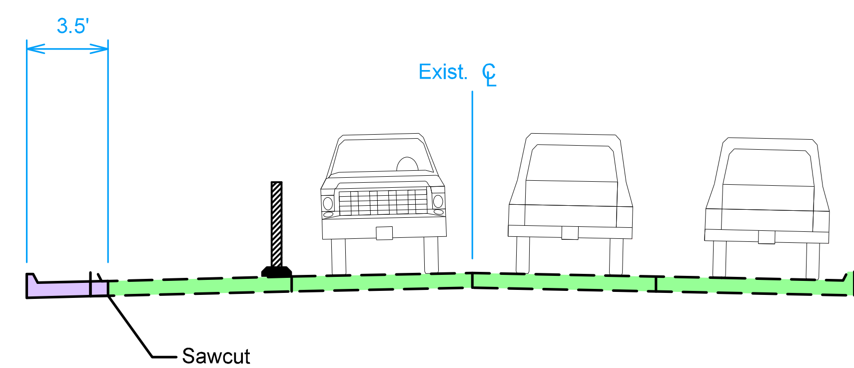

Stage 1a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.4	

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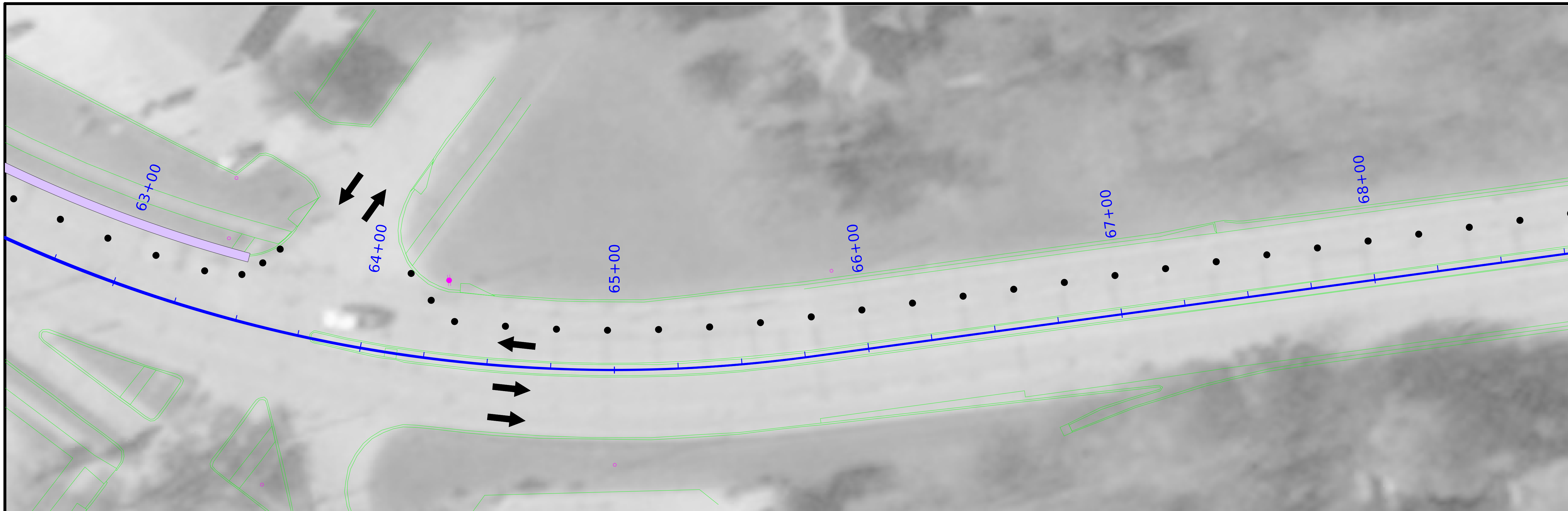

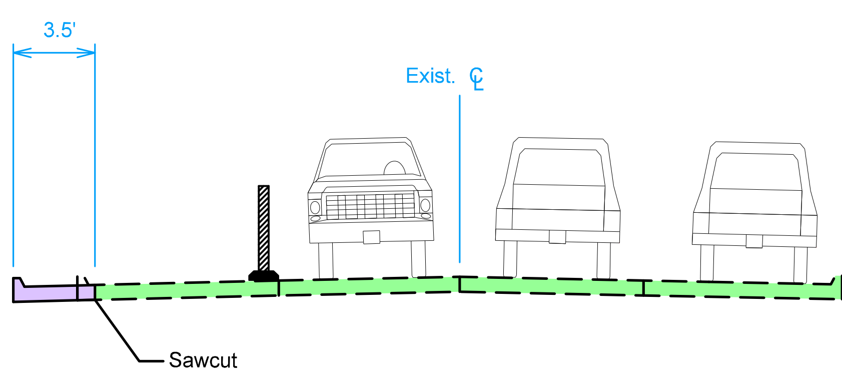

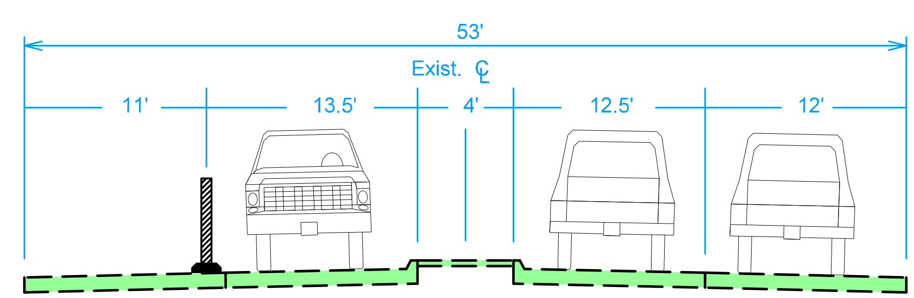

Stage 1a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.5	

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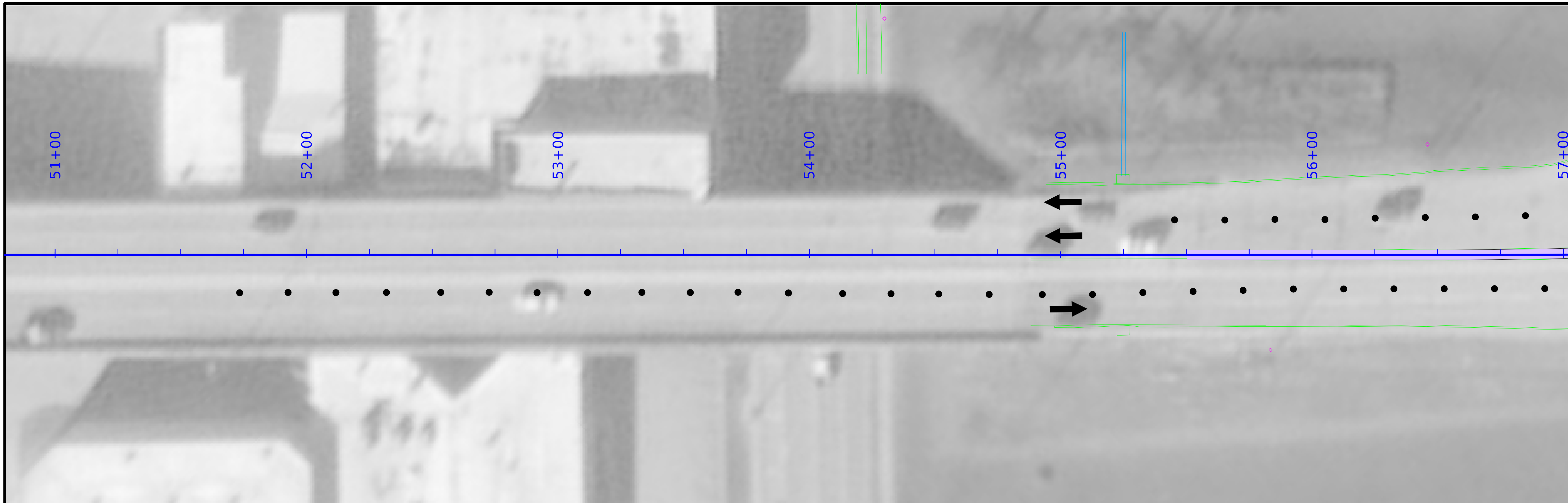

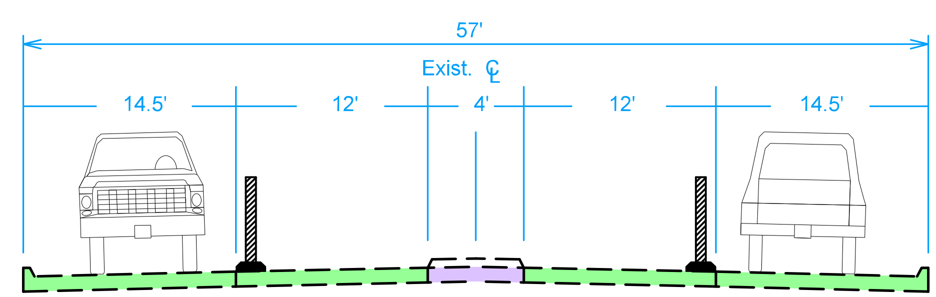

Stage 1b

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.6	

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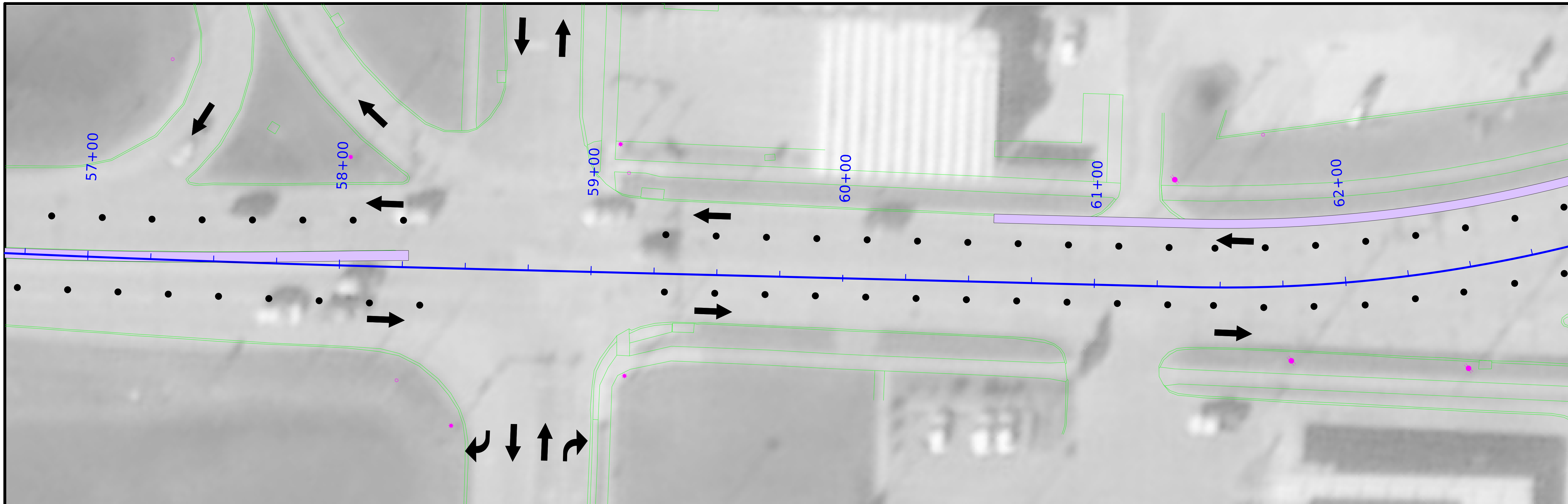

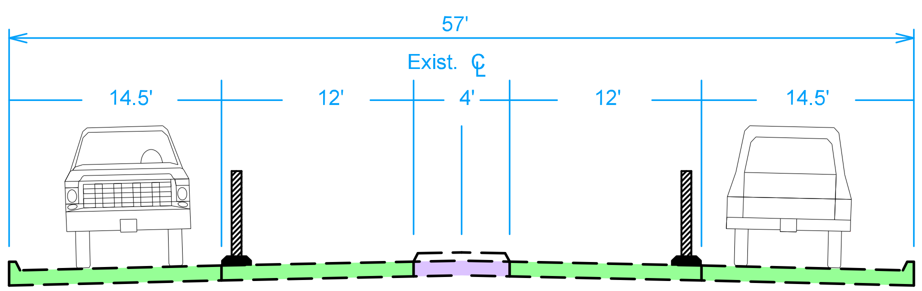

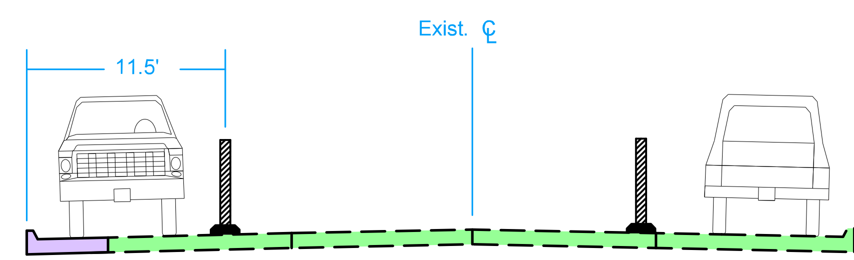

Stage 1b

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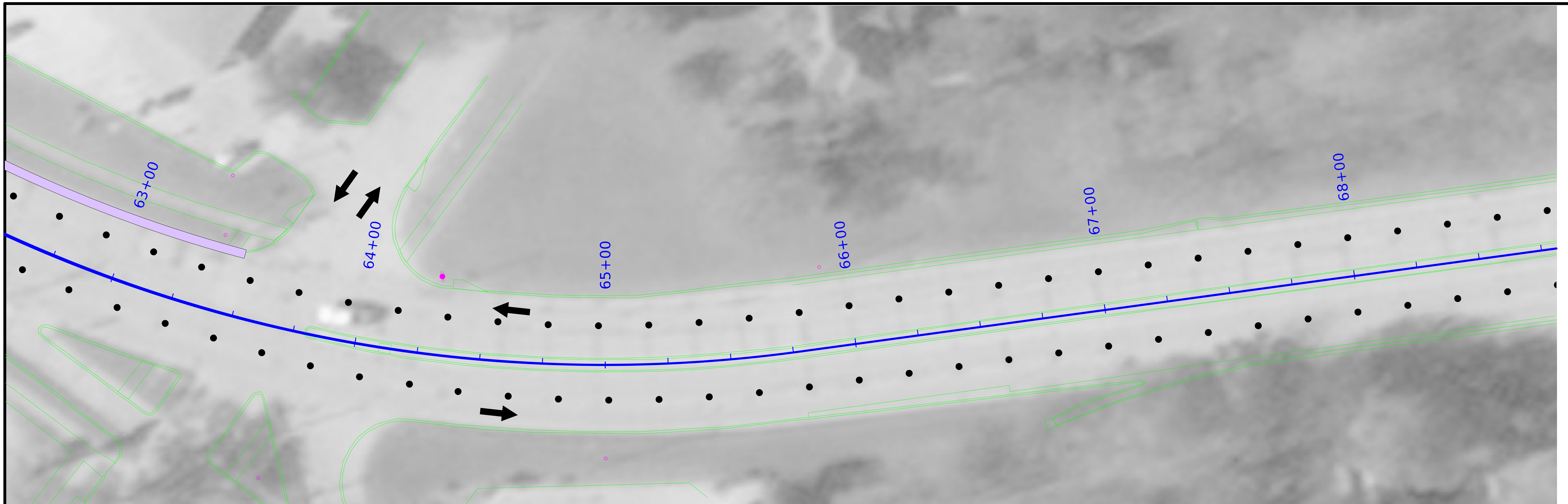

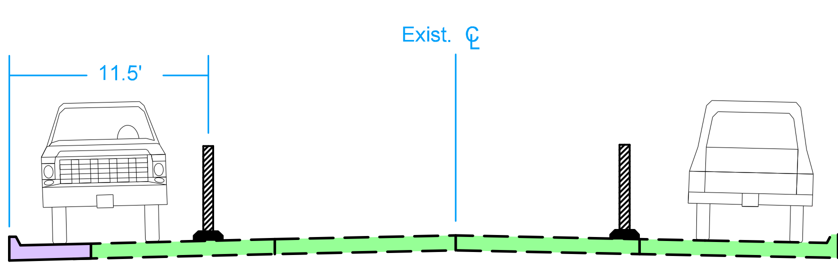

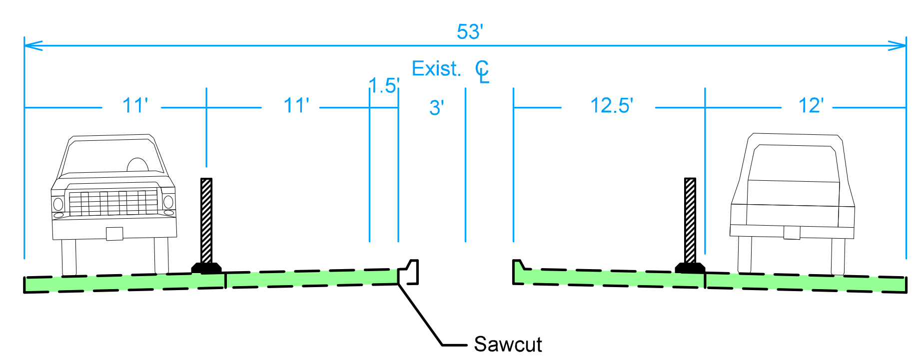

Stage 1b

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.8

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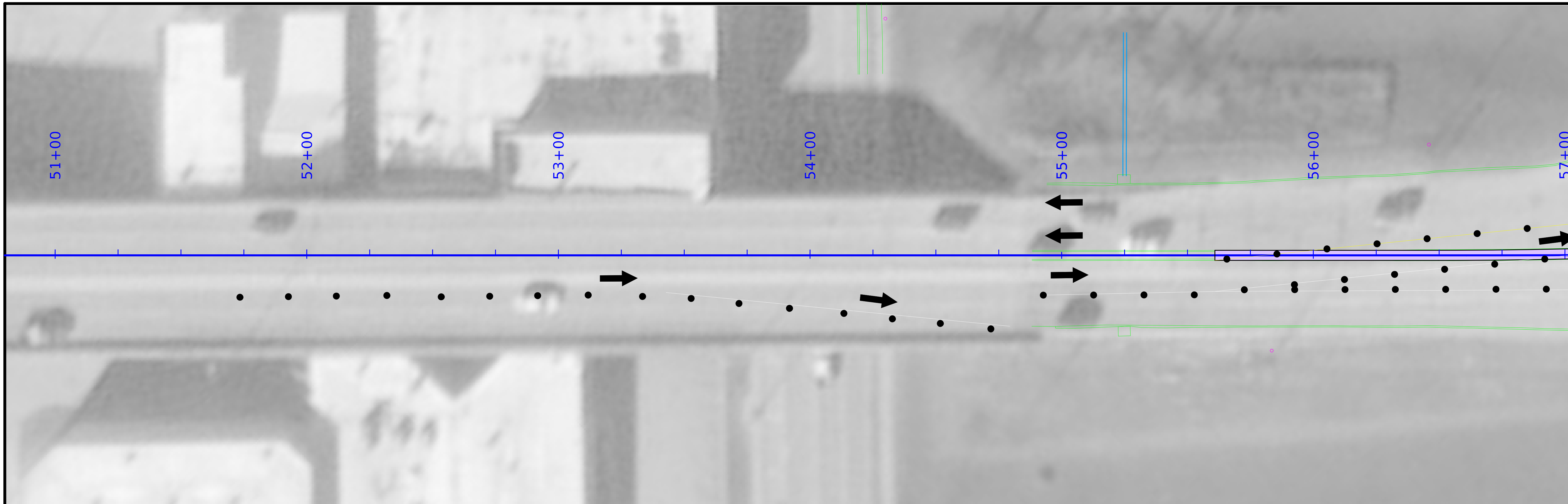

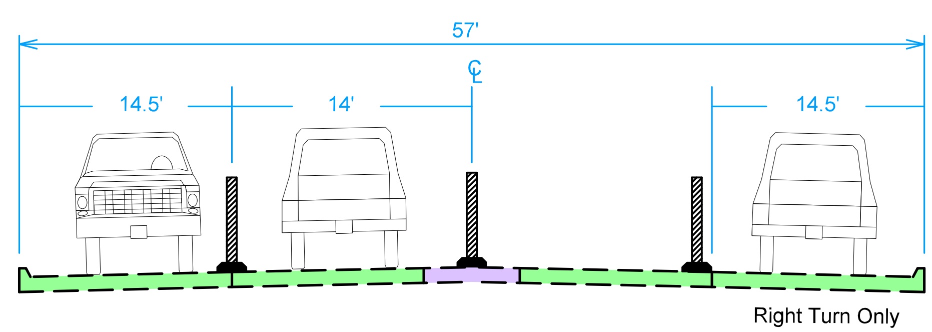

Stage 2a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.9	

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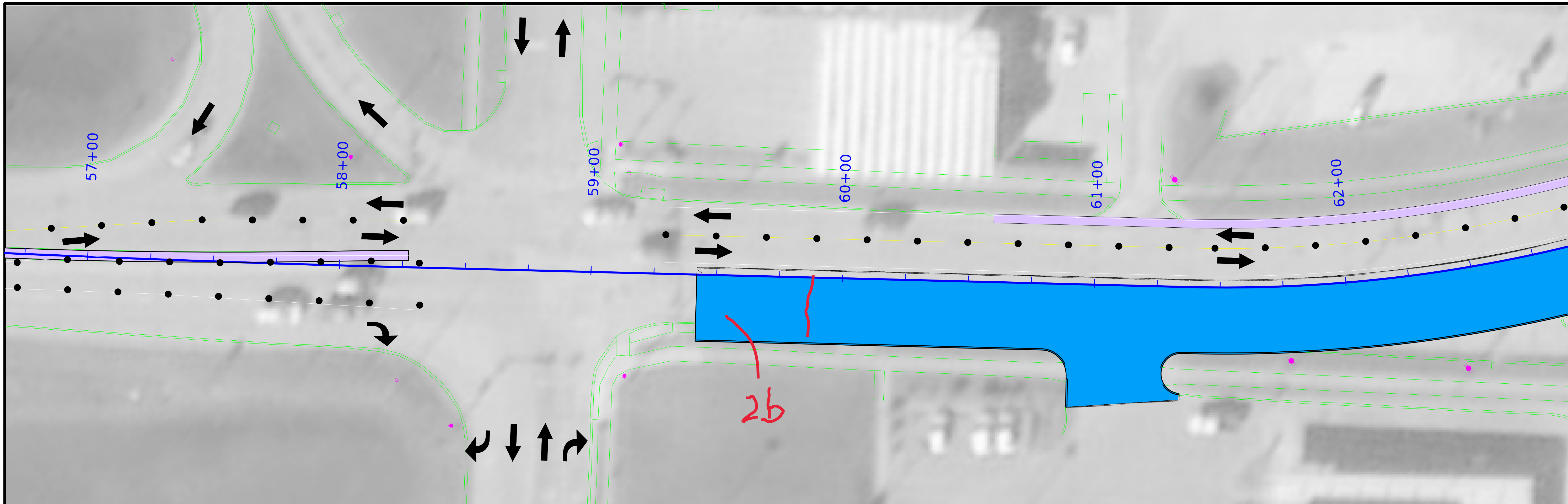

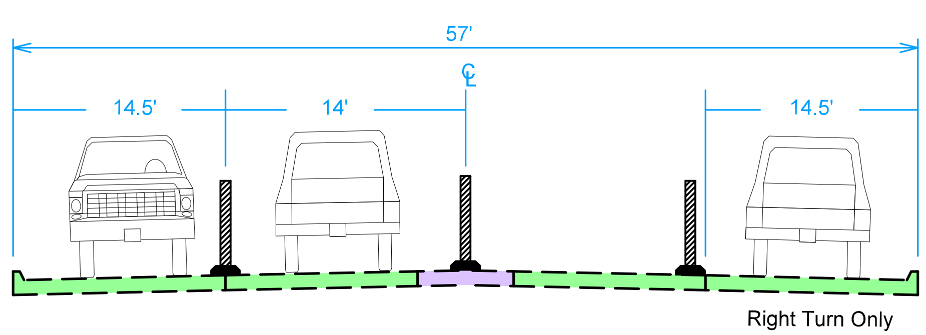

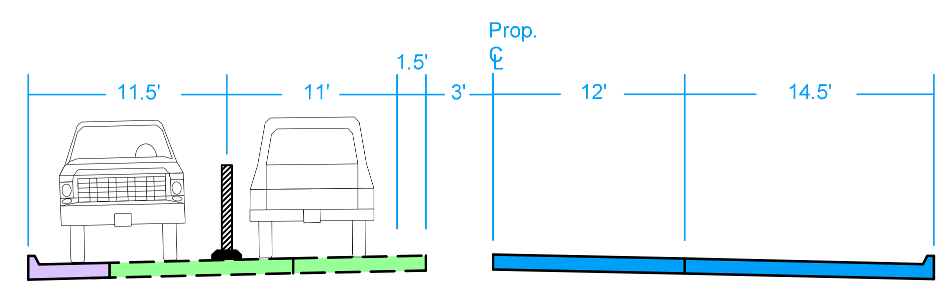

Stage 2a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.10

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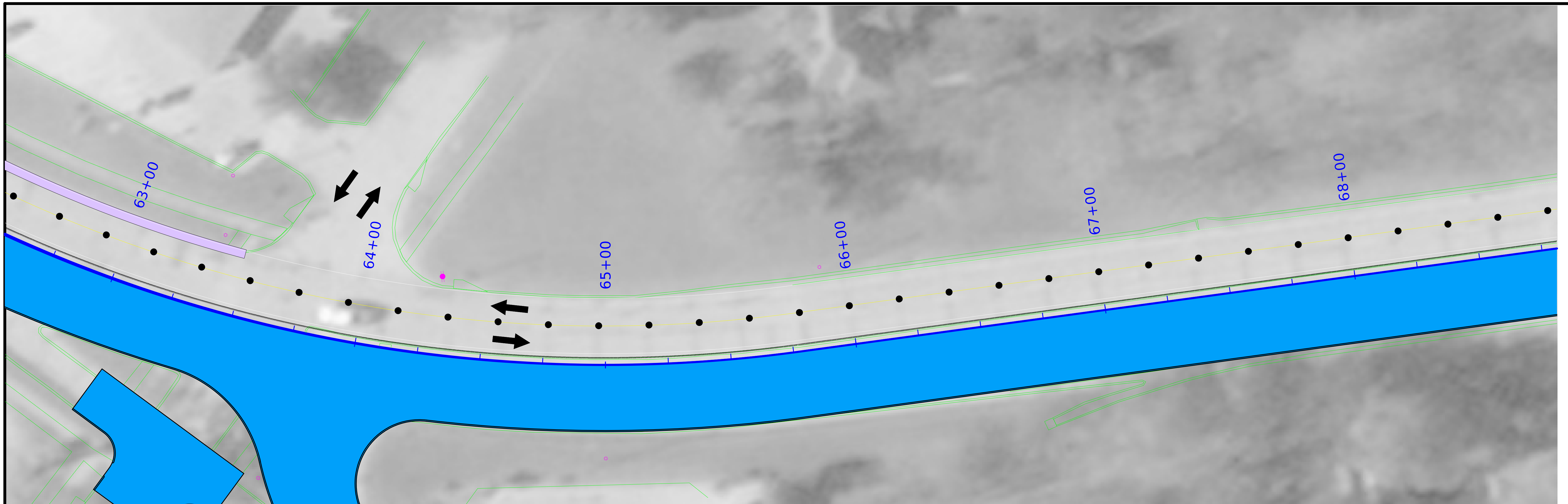

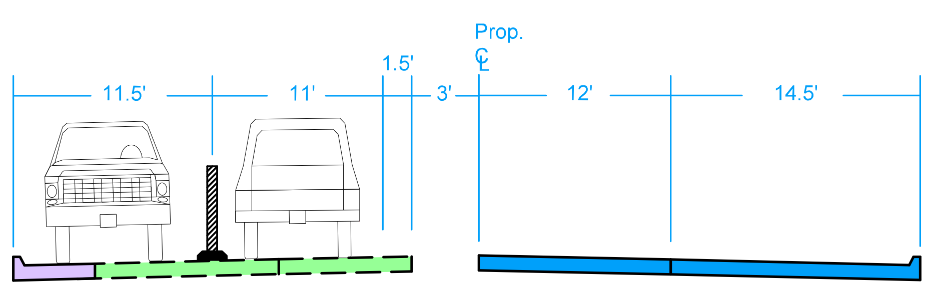

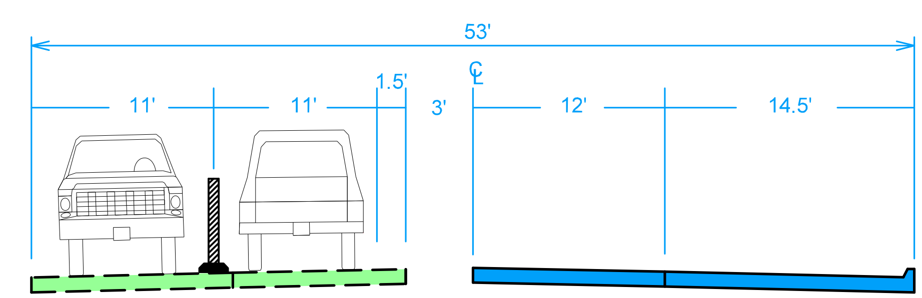

Stage 2a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.11	

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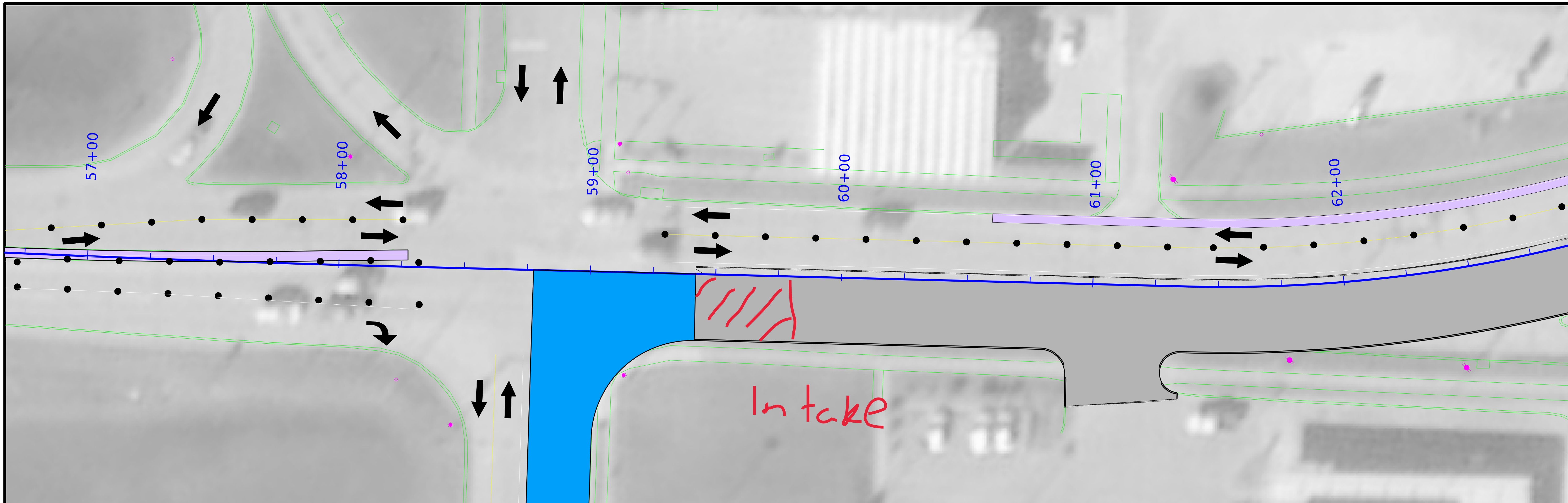

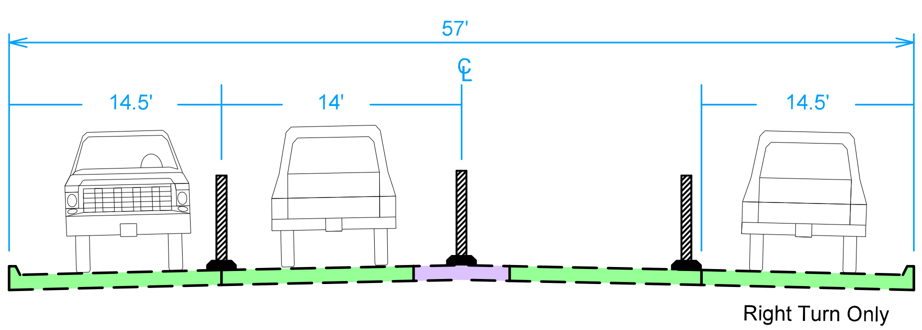

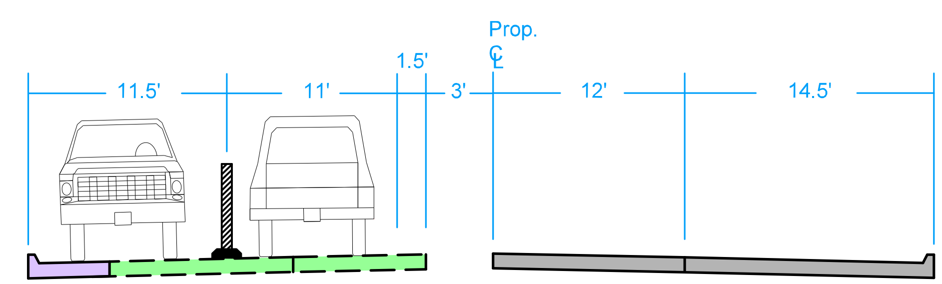

Stage 2b

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.12

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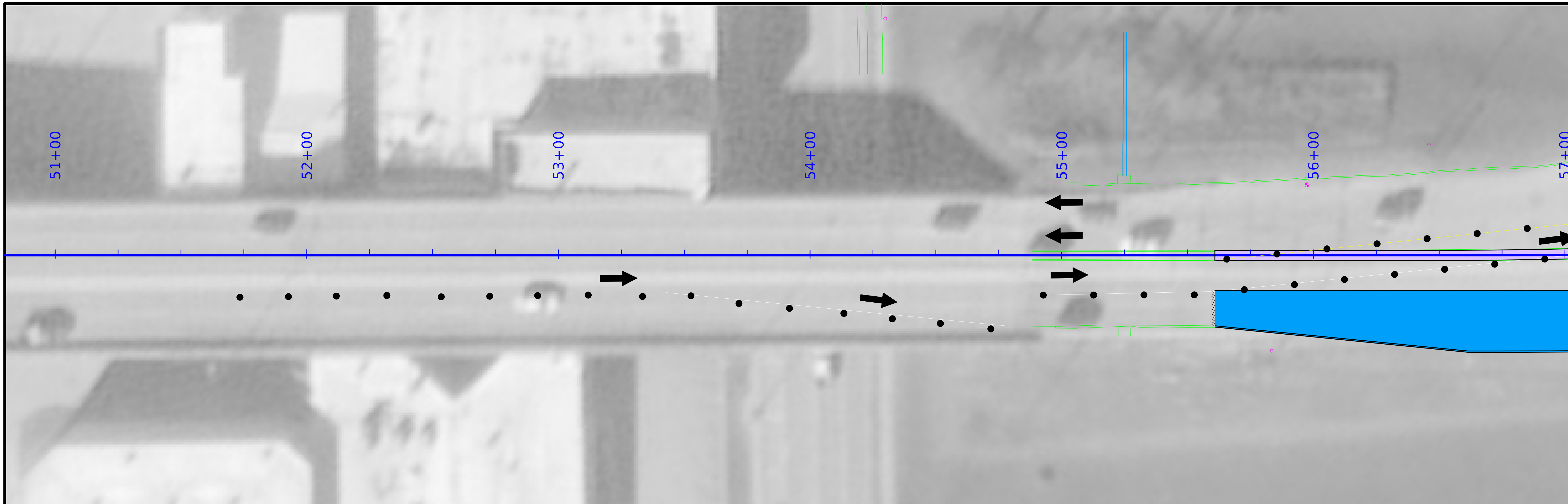

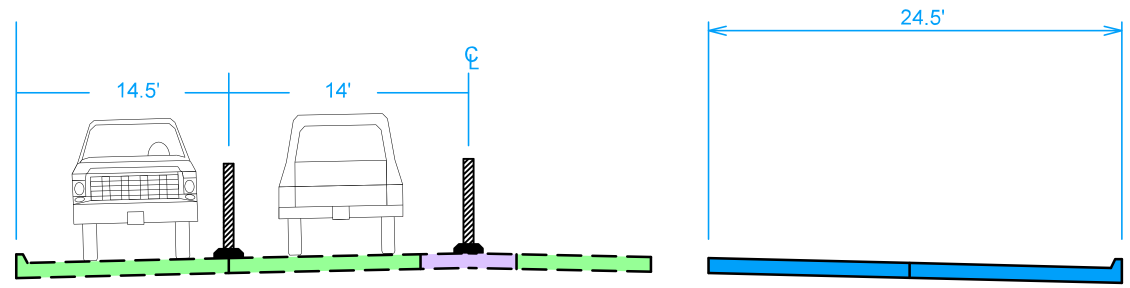

Stage 2c

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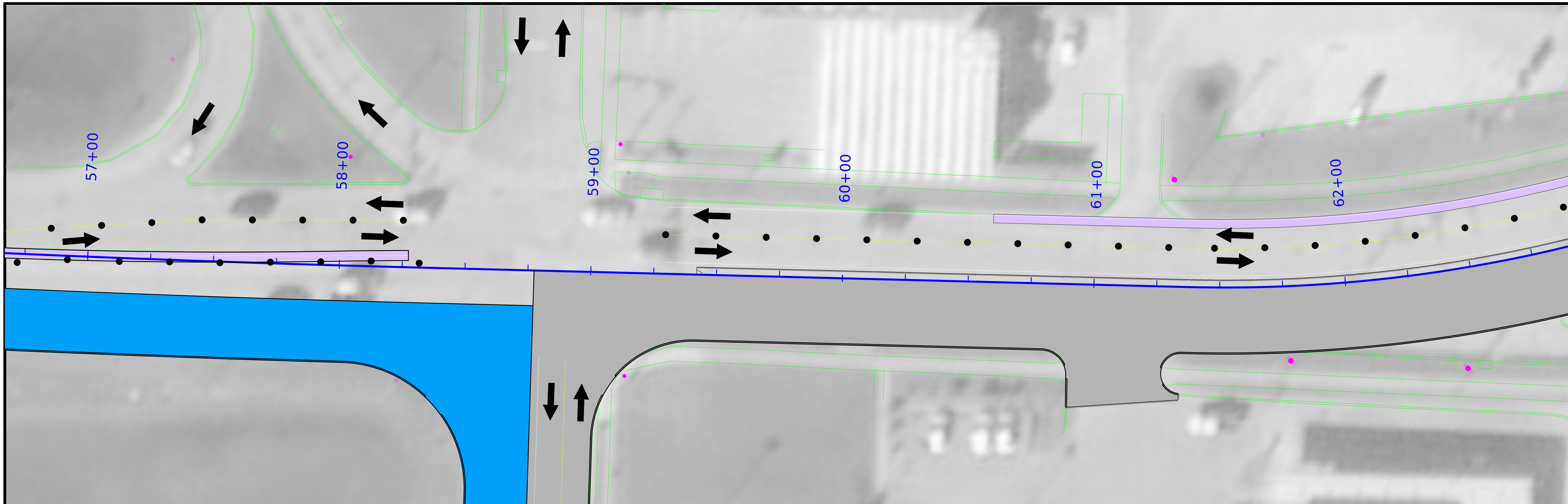
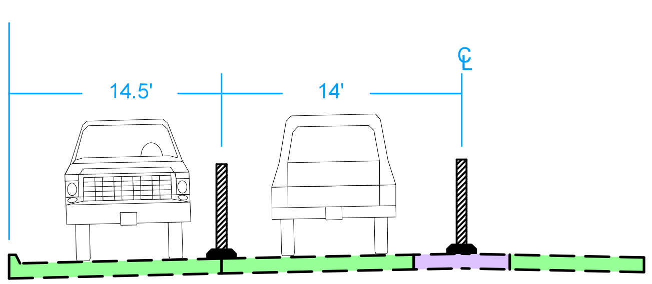
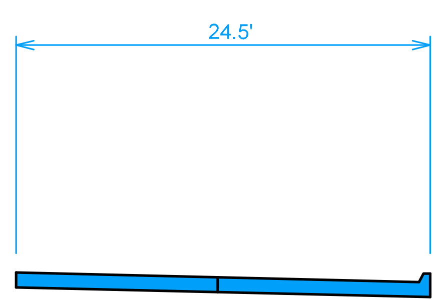
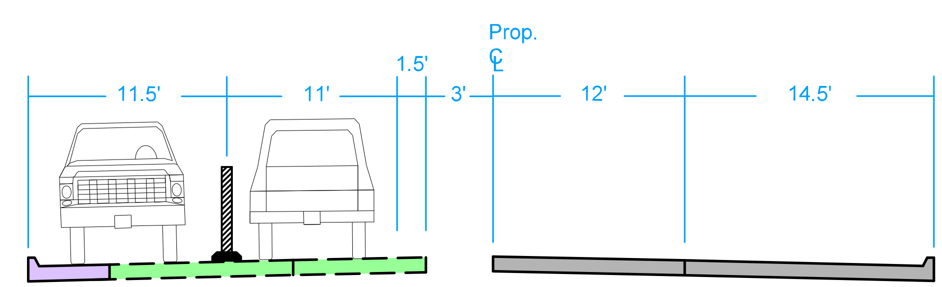






Right Turn Lane



Stage 2c

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.14

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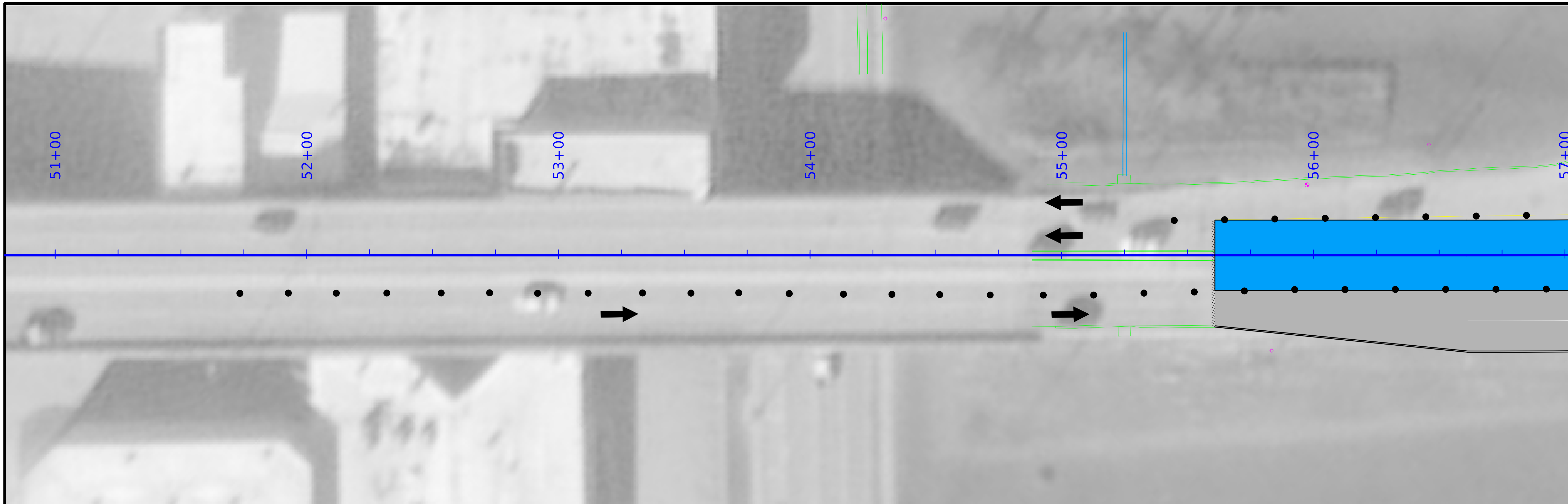

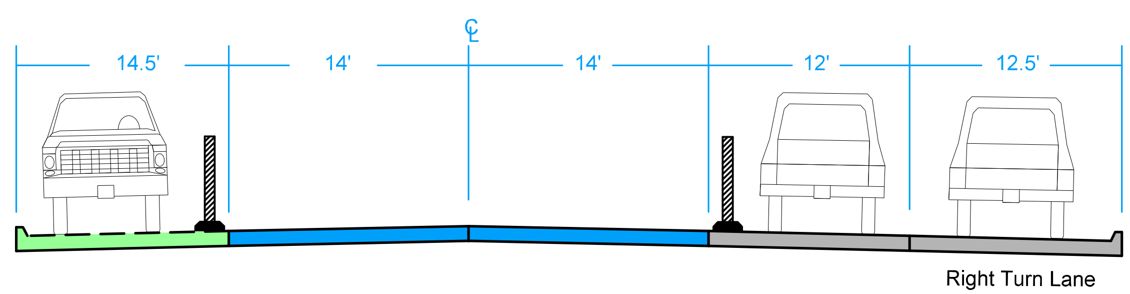

Stage 2d

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.15	

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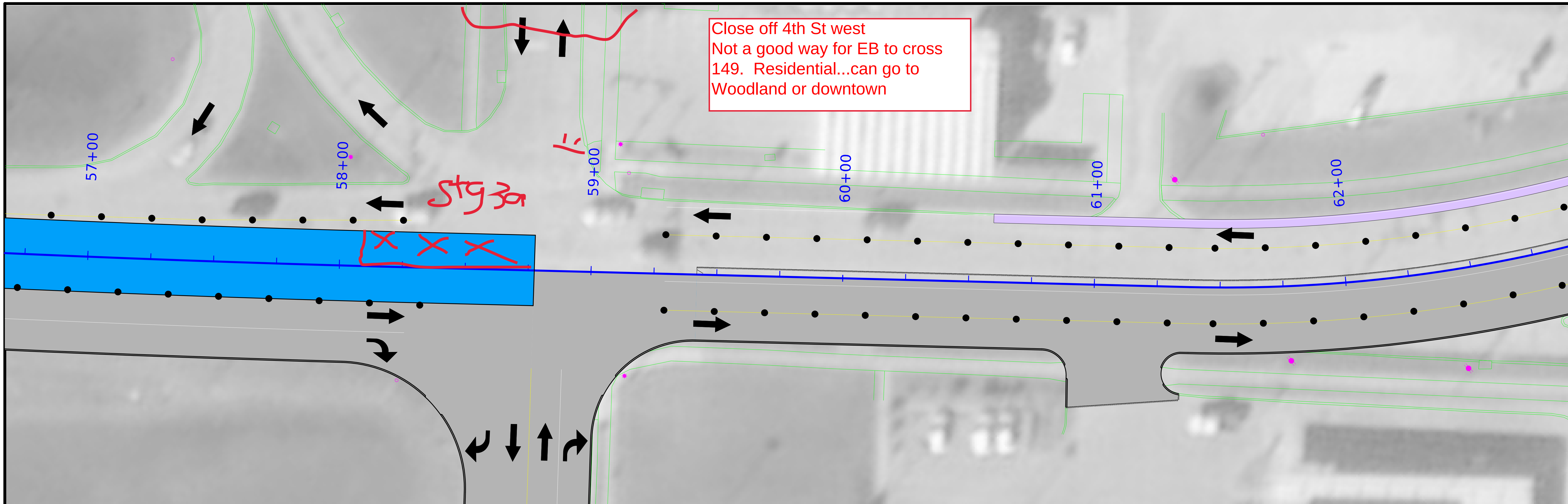
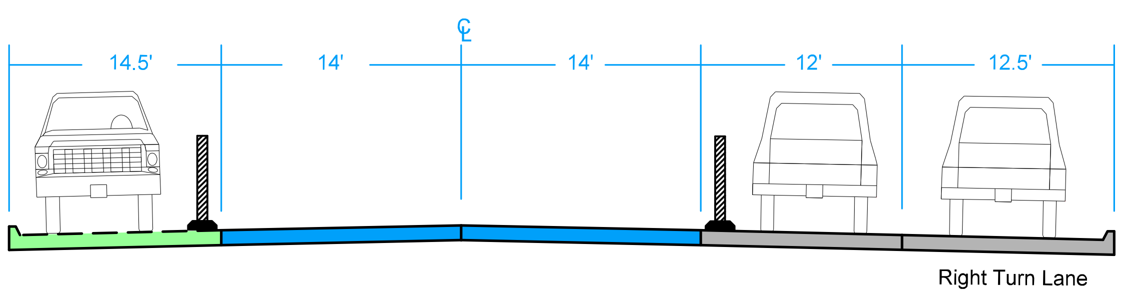
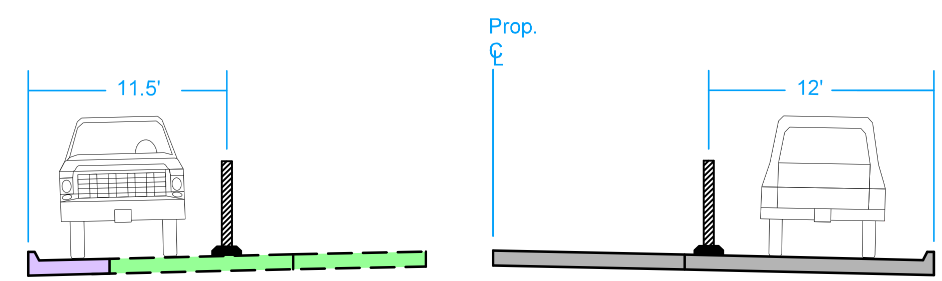


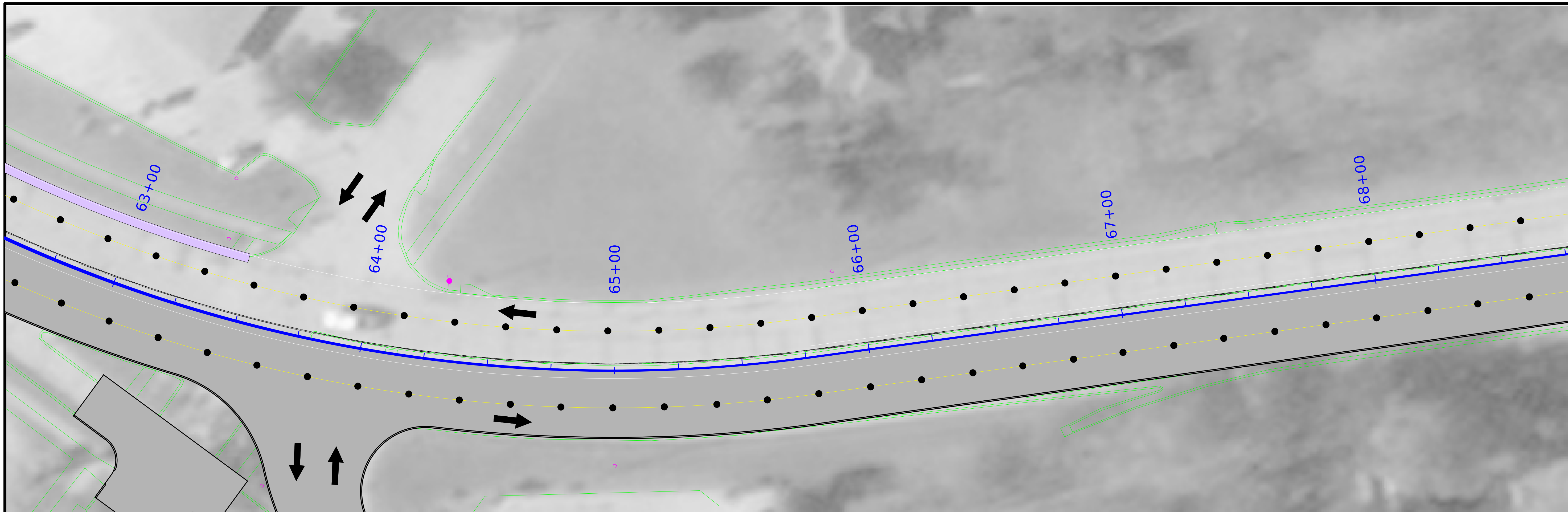
Close off 4th St west
Not a good way for EB to cross 149. Residential...can go to Woodland or downtown

Combine WB thru + right turn to single lane, shift yellow line over...give more room for left turns from IA 149. Keep WB traffic where it was from Stage 2C.





Stage 2d



Stage 2d

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.17

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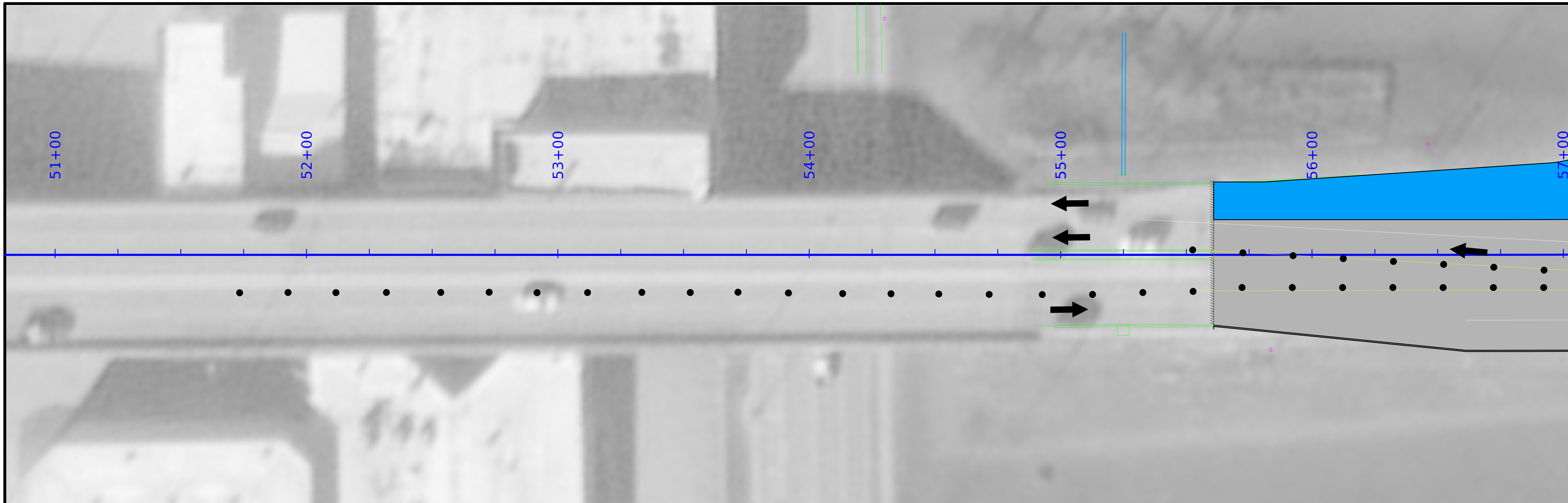

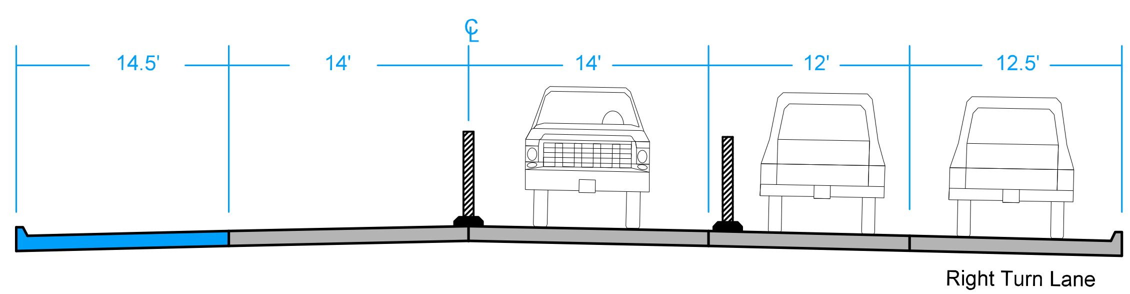

Stage 3a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.18	

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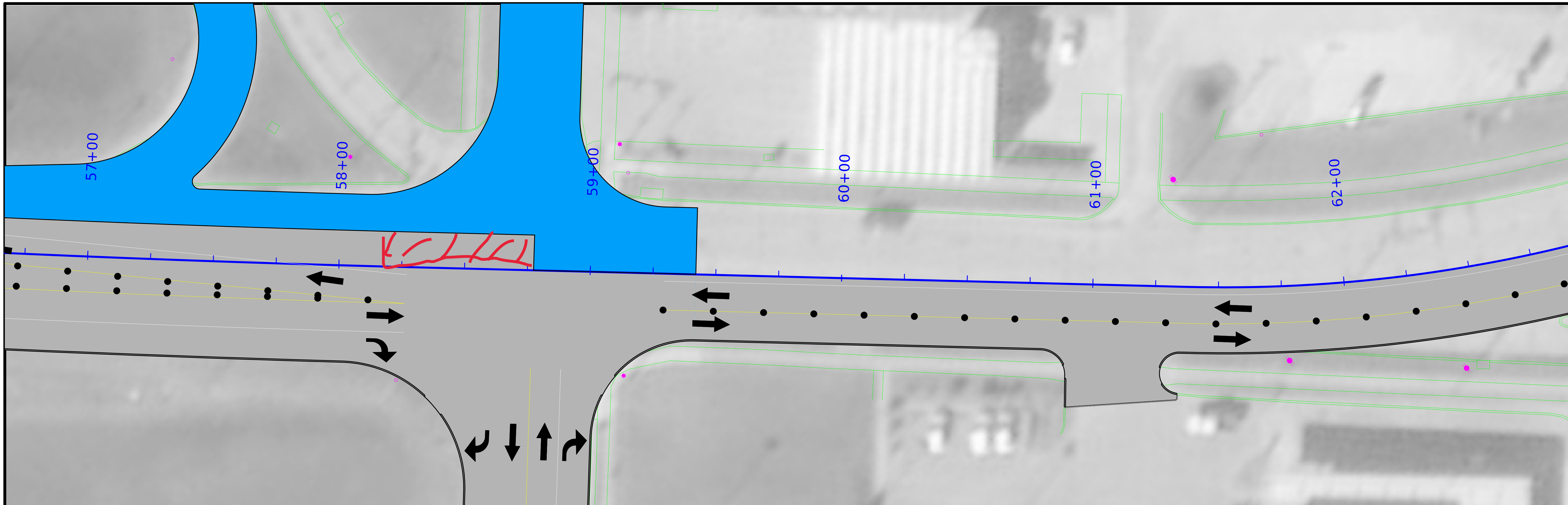
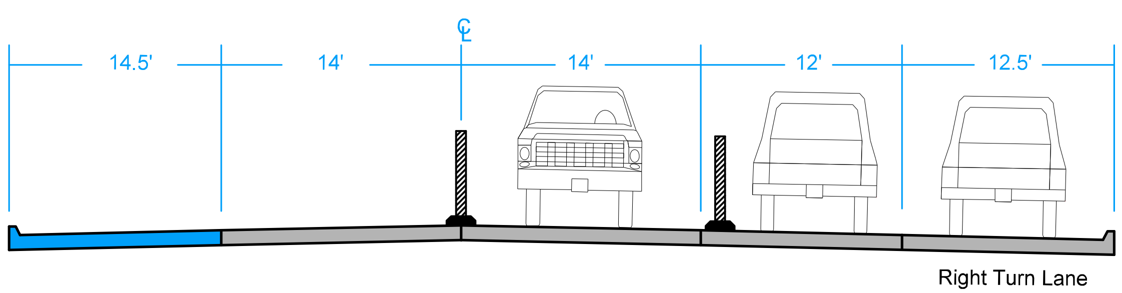
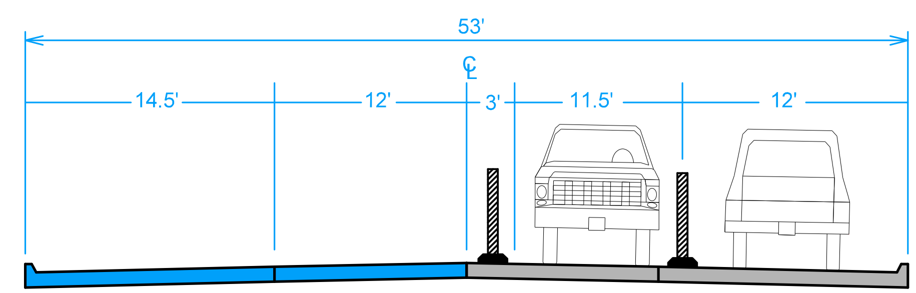


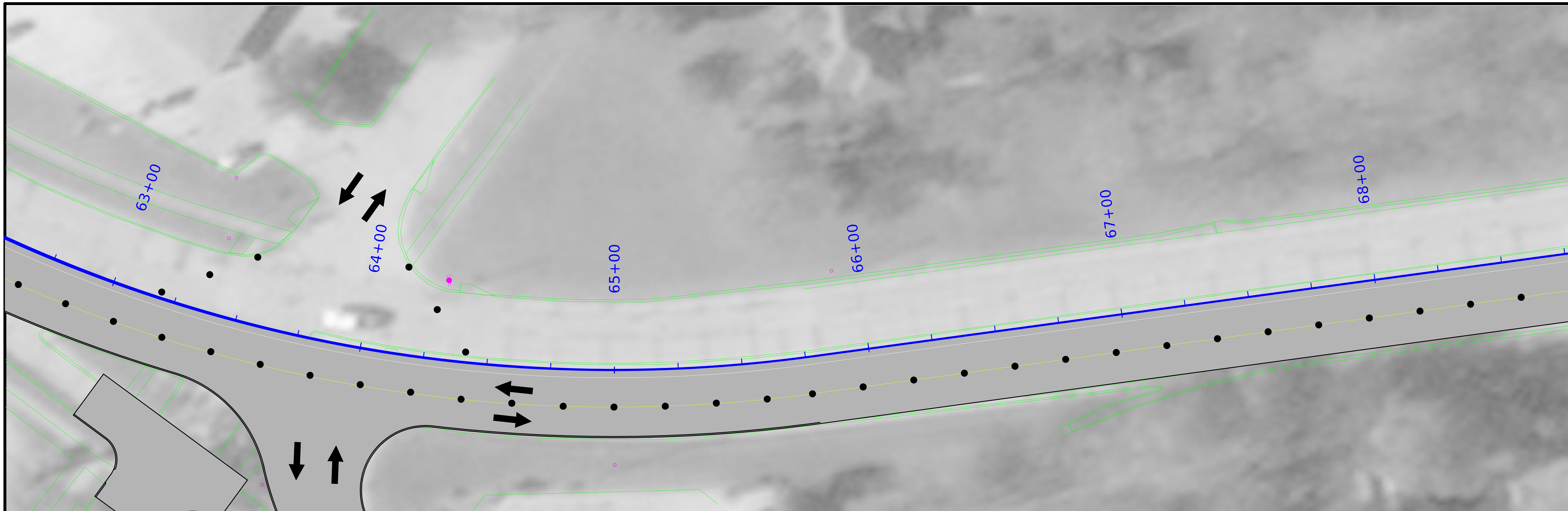


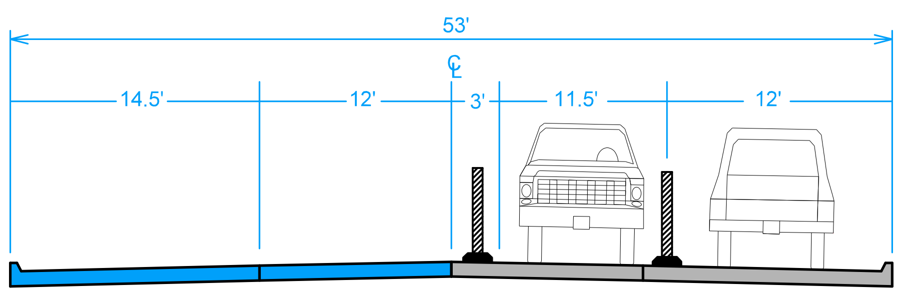


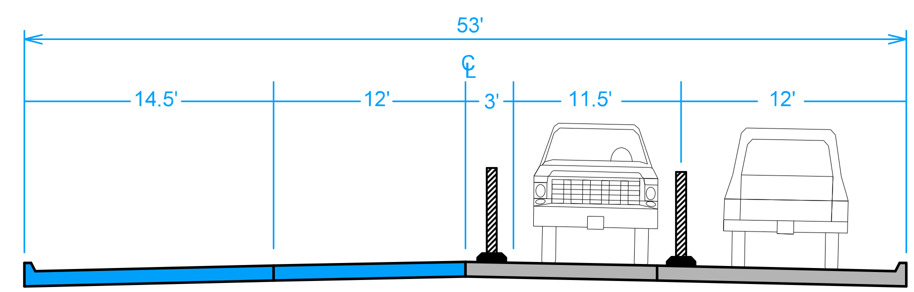
Stage 3a

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.19

12:29:21 AM 9/28/2023 rmille3 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Staging\SHT_90149088_J2.dgn



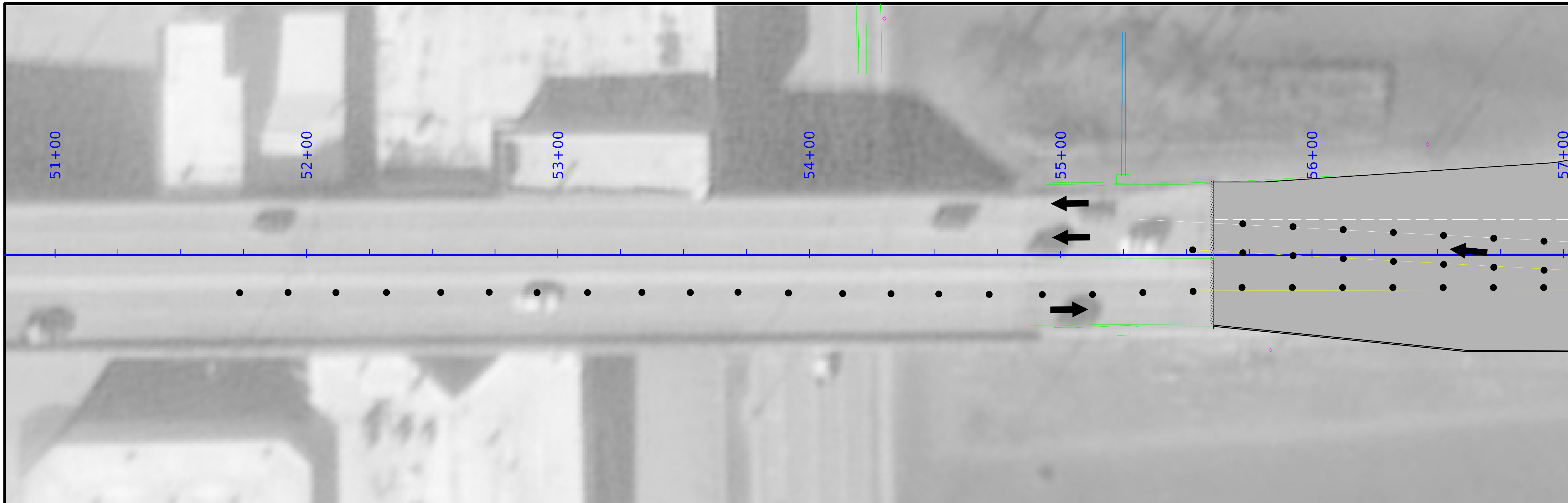


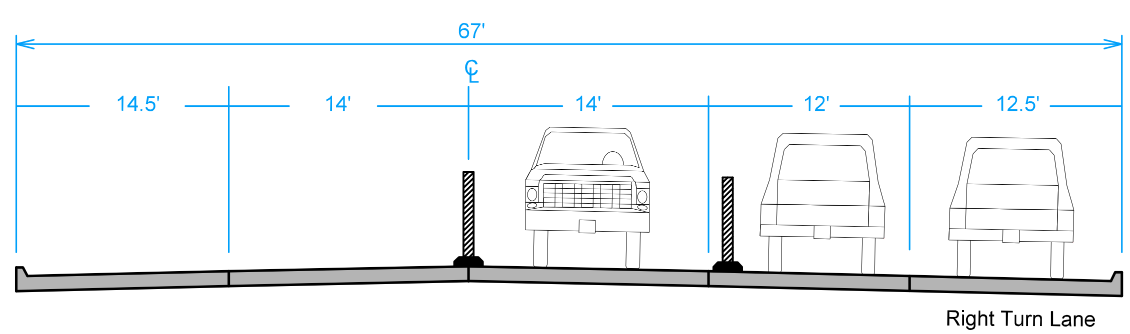


Stage 3a

FILE NO.	ENGLISH	DESIGN TEAM	COUNTY	PROJECT NUMBER	SHEET NUMBER J.20

12:29:22 AM 9/28/2023 rmille3 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Staging\SHT_90149088_J2.dgn

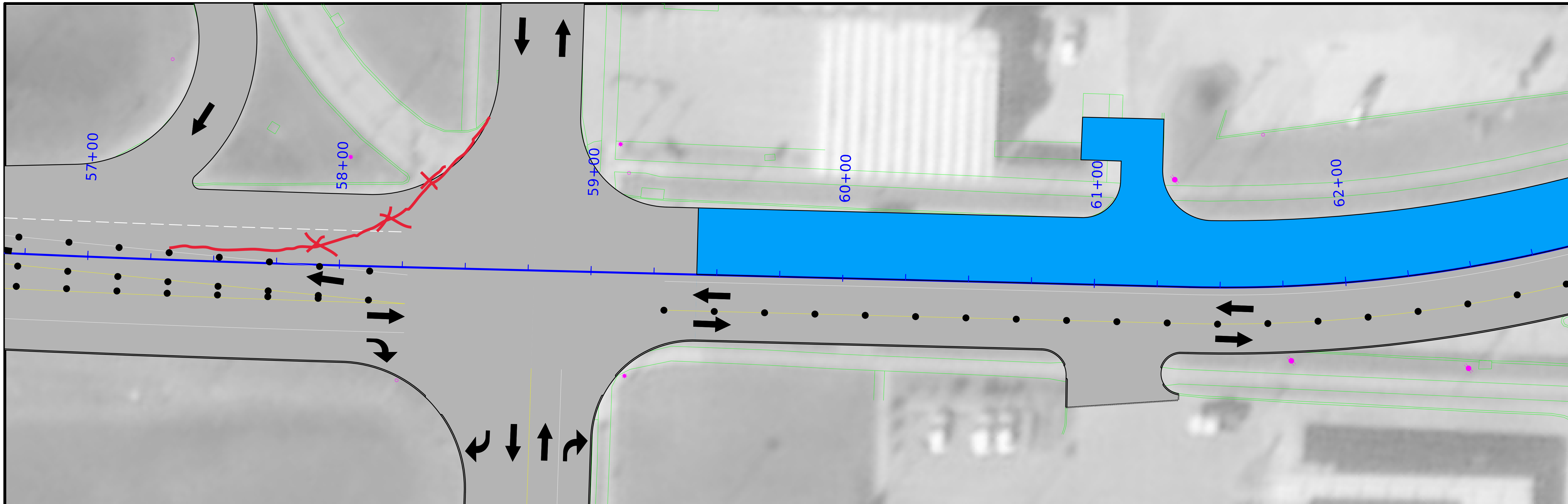




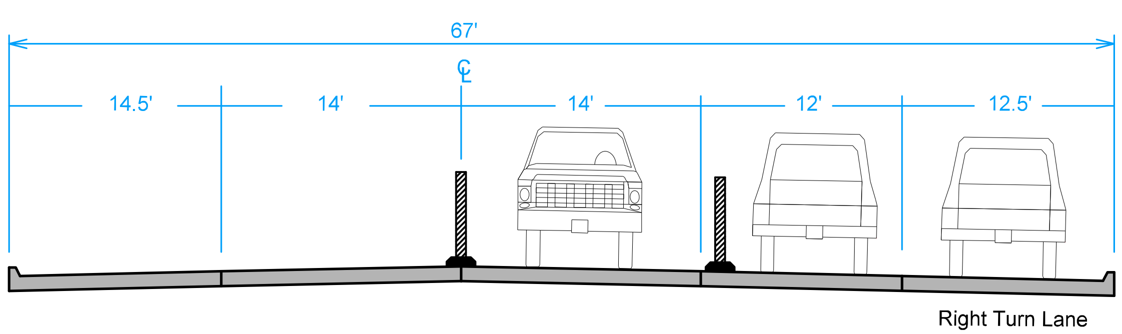
Stage 3b

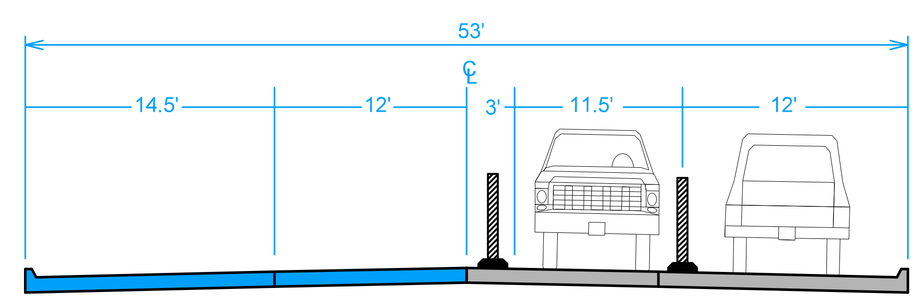
FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.21

12:29:23 AM 9/28/2023 rmille3 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Staging\SHT_90149088_J2.dgn

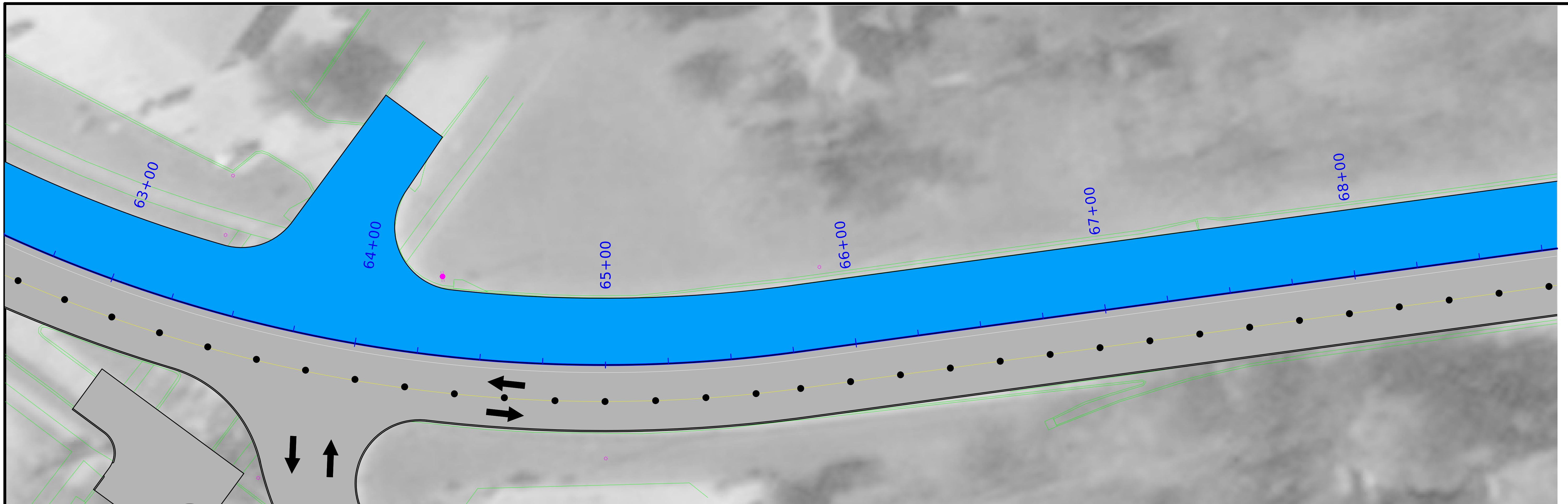


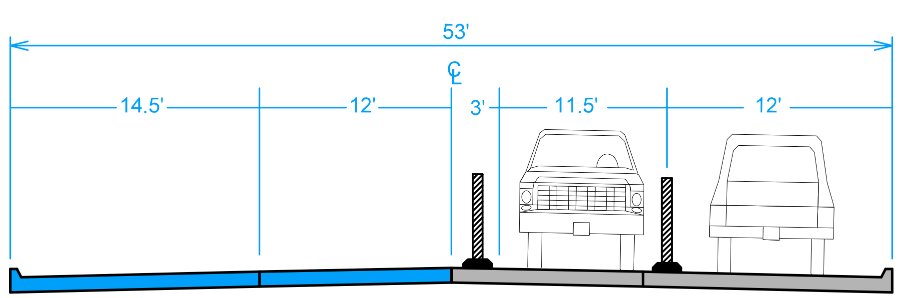
Where does a 4th St EB to 149 SB driver turn? Which lane? How does this merge with 4th St WB left turn?

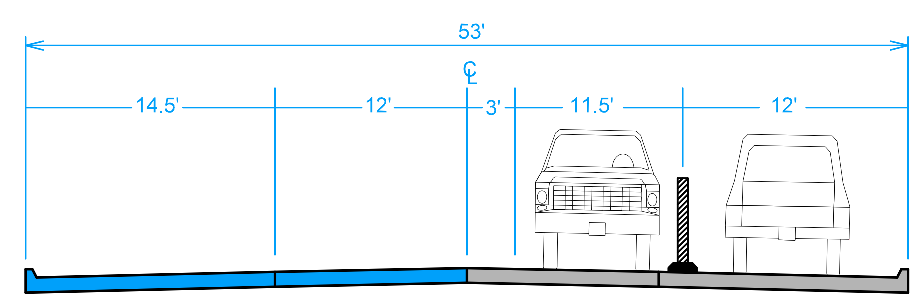




Stage 3b



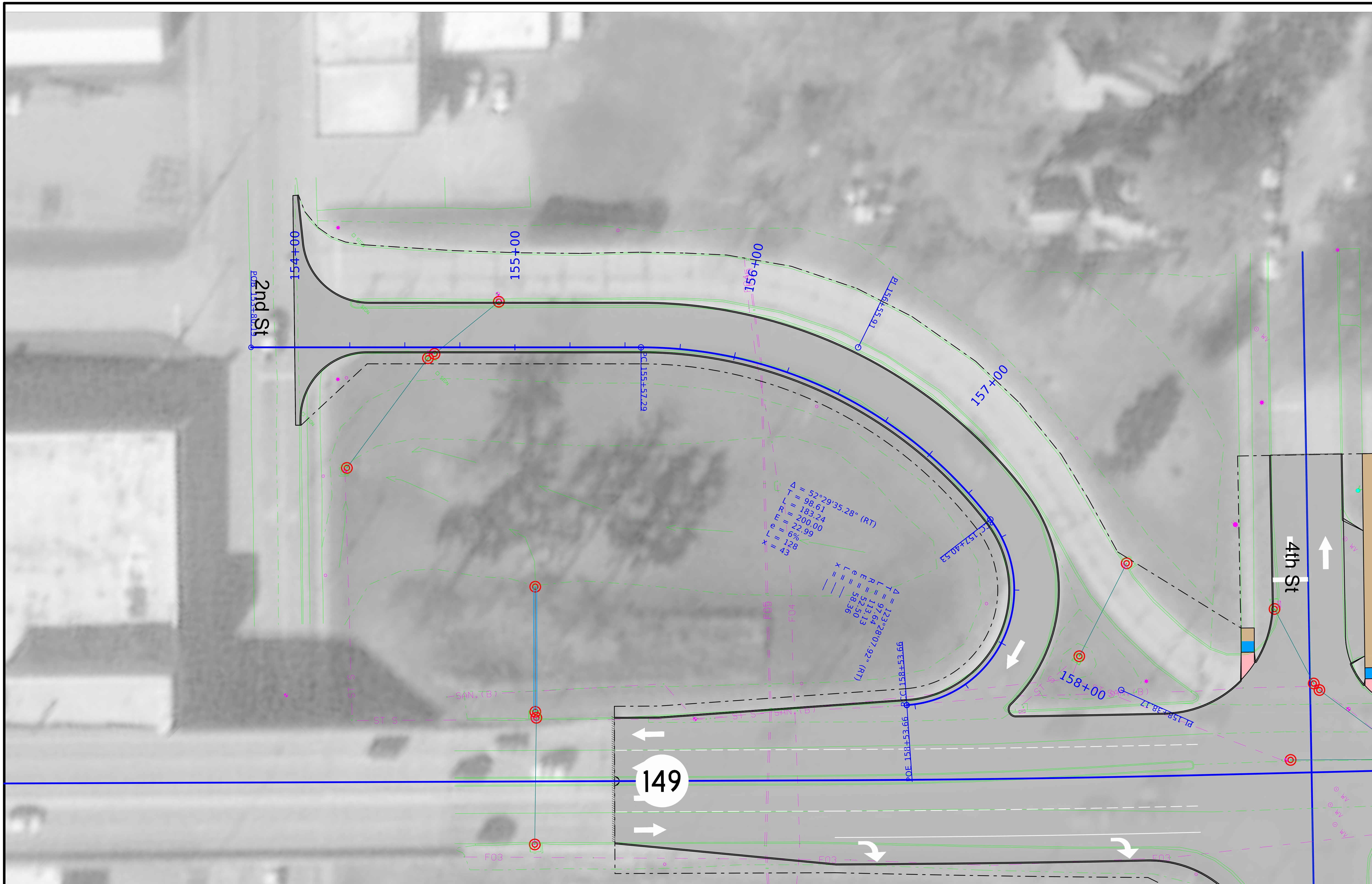




Stage 3b

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER J.23

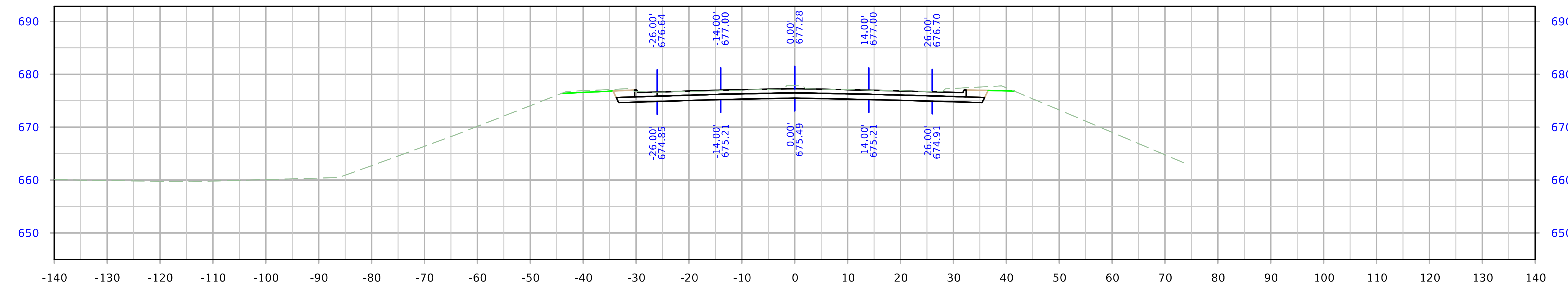
12:29:25 AM 9/28/2023 rmille3 pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Staging\SHT_90149088_J2.dgn



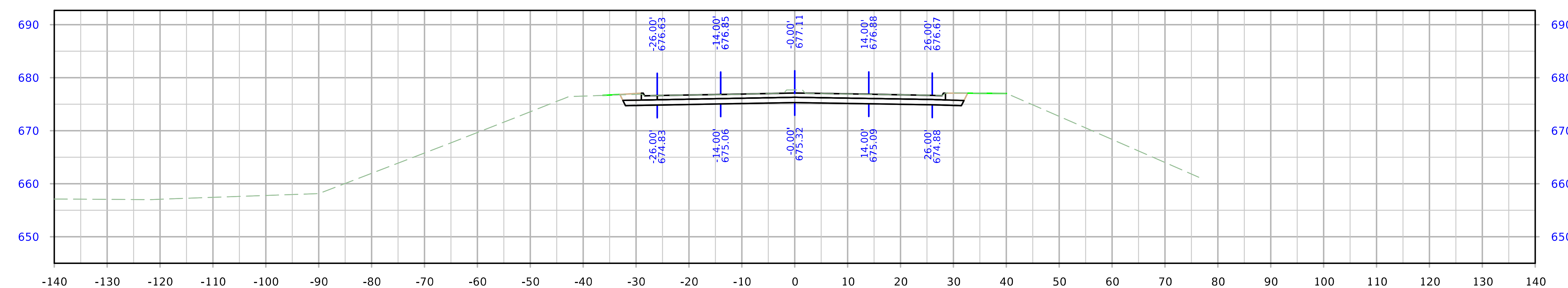
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER K.1

4:28:21 PM 9/26/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_K1.dgn

ML IA 149



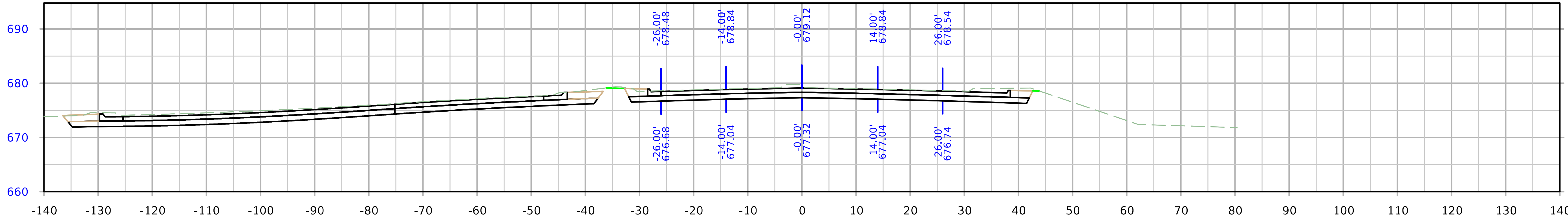
STA. 56+00.00



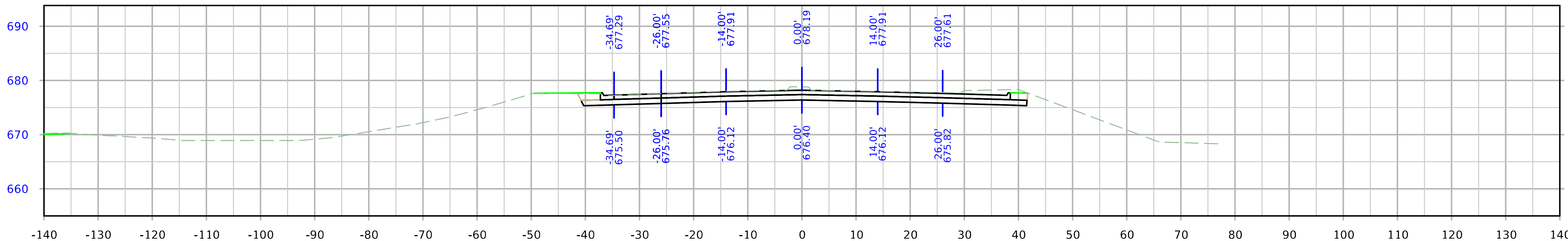
STA. 55+60.87

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.1	

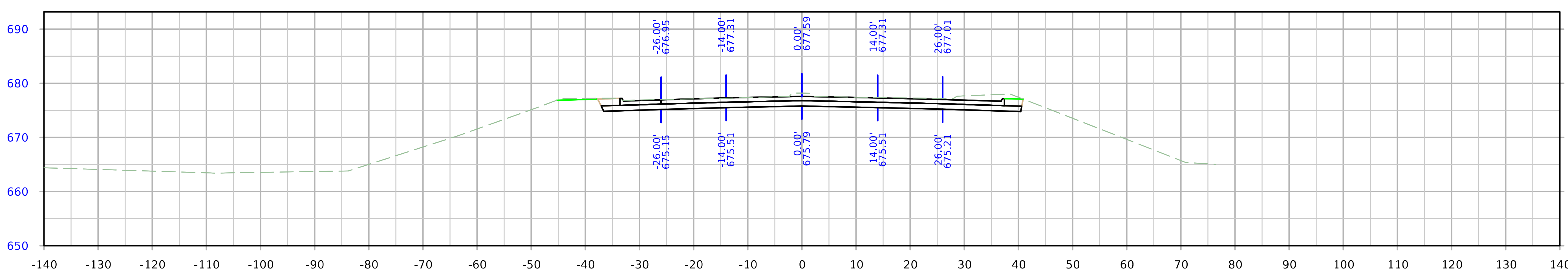
ML IA 149



STA. 57+50.00

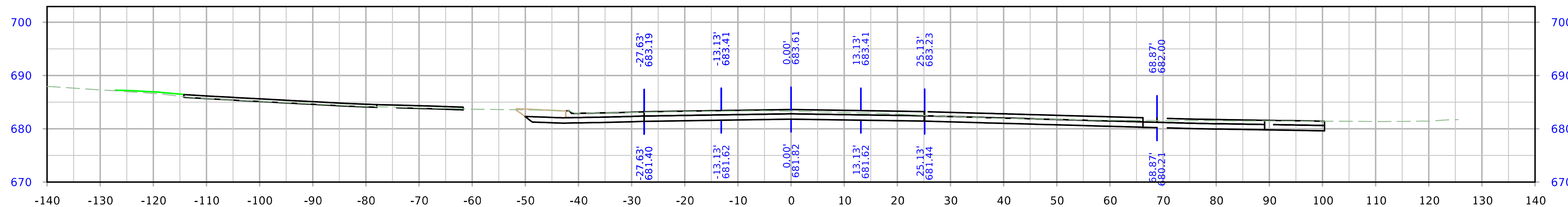


STA. 57+00.00

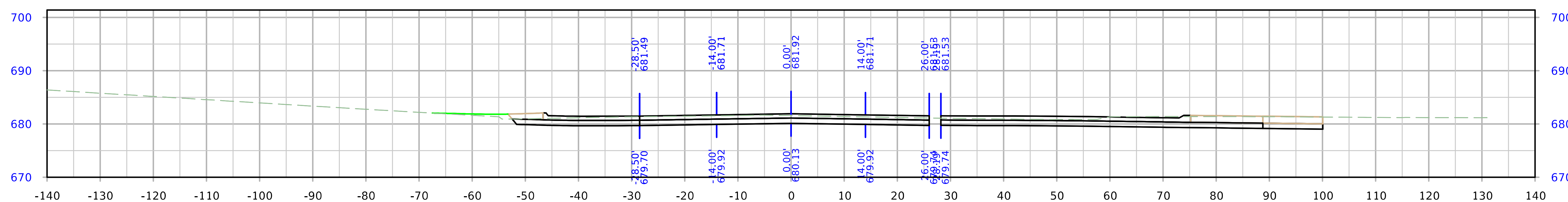


STA. 56+50.00

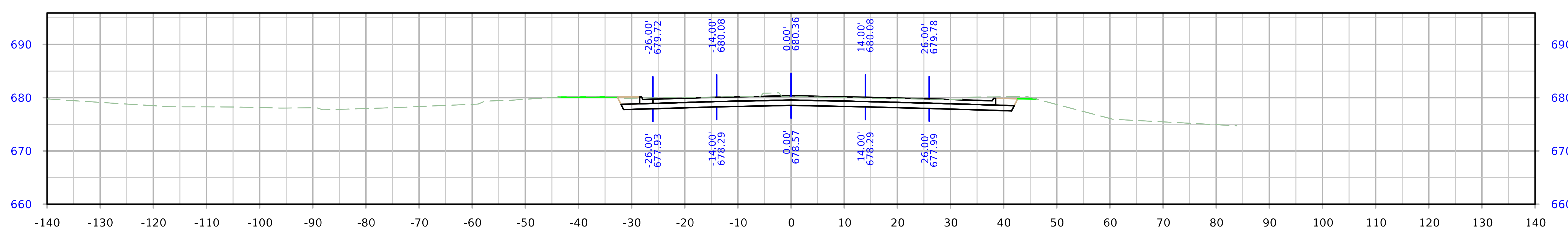
ML IA 149



STA. 59+00.00



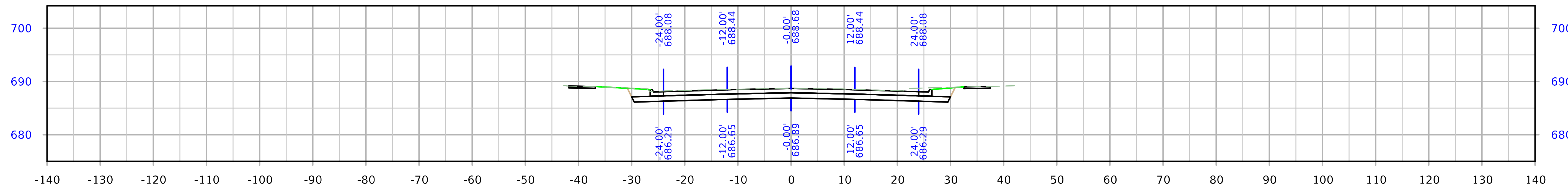
STA. 58+50.00



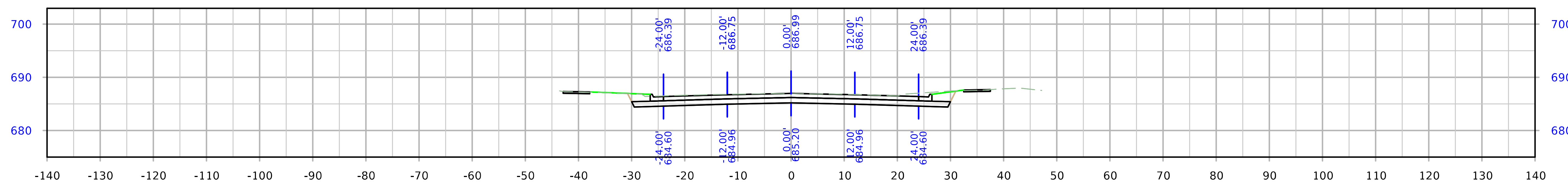
STA. 58+00.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.3

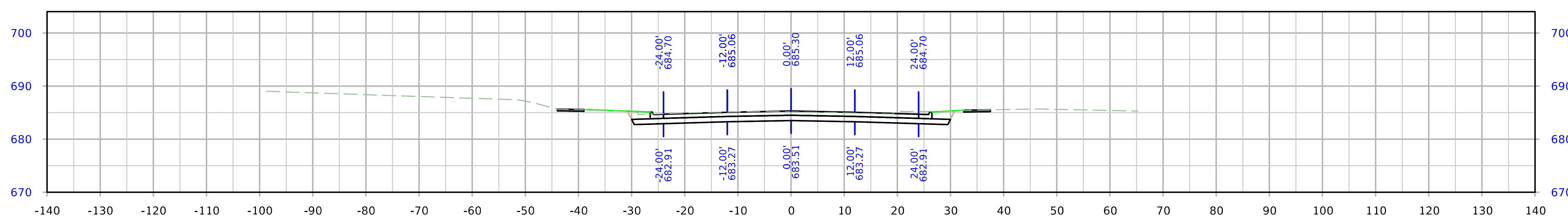
ML IA 149



STA. 60+50.00



STA. 60+00.00

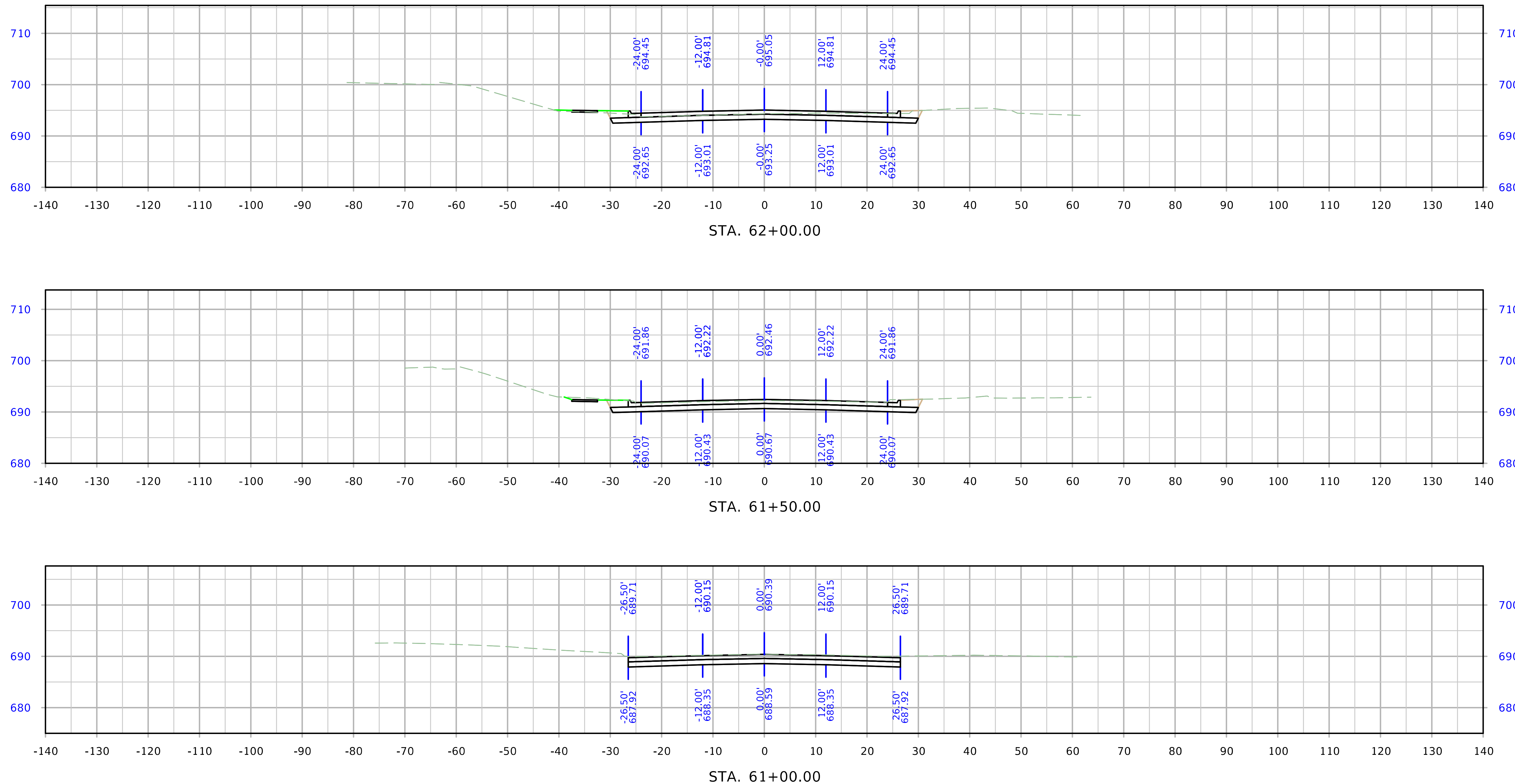


STA. 59+50.00

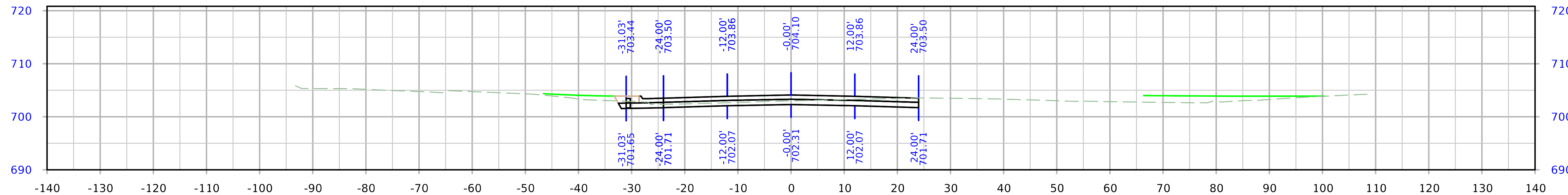
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.4

10:19:23 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

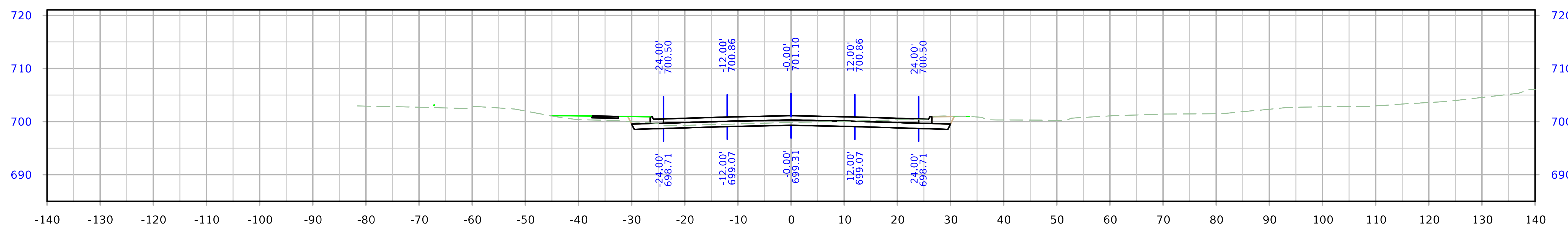
ML IA 149


-24.00' 694.45
-12.00' 694.81
-0.00' 695.05
12.00' 694.81
24.00' 694.45
-24.00' 692.65
-12.00' 693.01
-0.00' 693.25
12.00' 693.01
24.00' 692.65
STA. 62+00.00
-24.00' 691.86
-12.00' 692.22
0.00' 692.46
12.00' 692.22
24.00' 691.86
-24.00' 690.07
-12.00' 690.43
0.00' 690.67
12.00' 690.43
24.00' 690.07
STA. 61+50.00
-26.50' 689.71
-12.00' 690.15
0.00' 690.39
12.00' 690.15
26.50' 689.71
-26.50' 687.92
-12.00' 688.35
0.00' 688.59
12.00' 688.35
26.50' 687.92
STA. 61+00.00

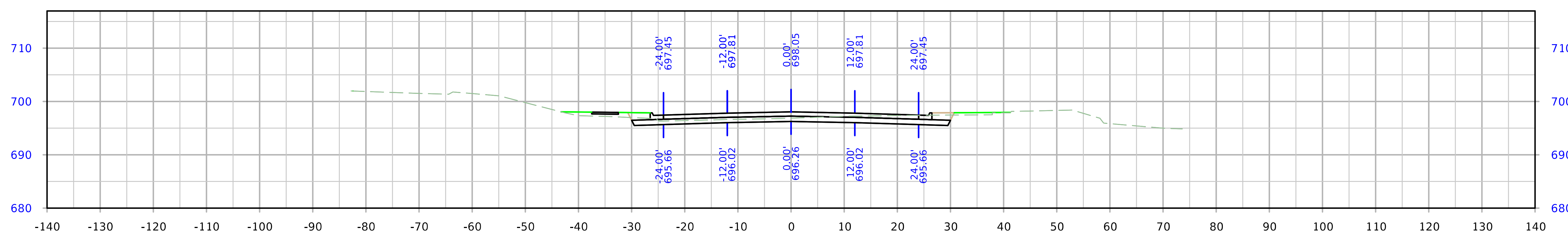
ML IA 149



STA. 63+50.00

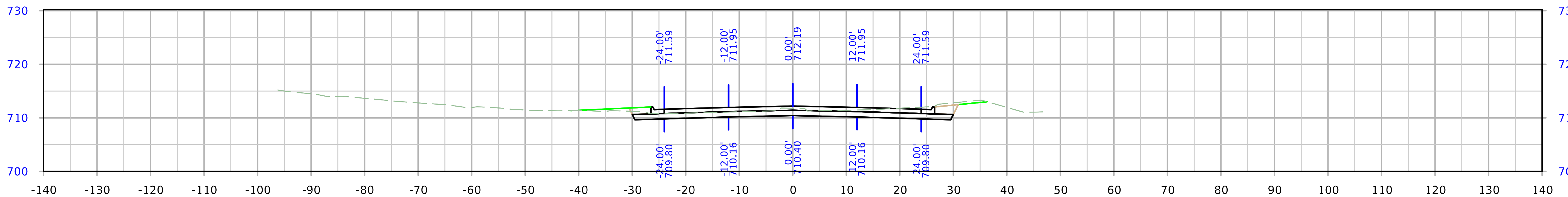


STA. 63+00.00

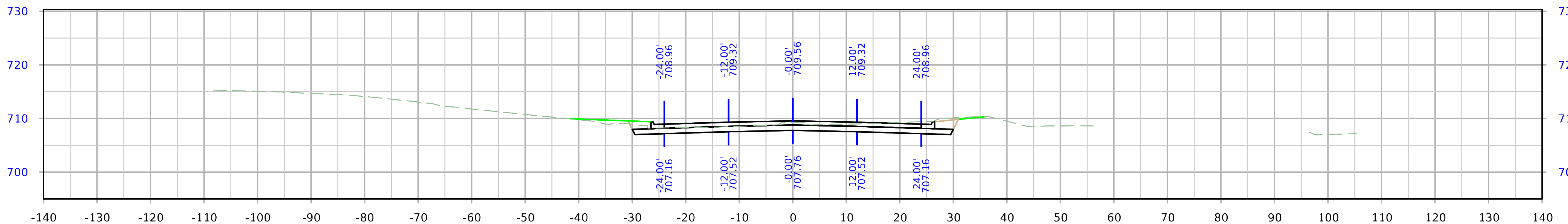


STA. 62+50.00

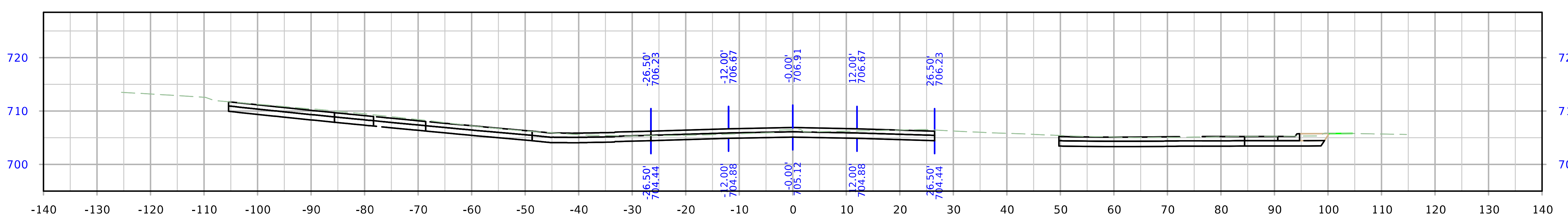
ML IA 149



STA. 65+00.00



STA. 64+50.00

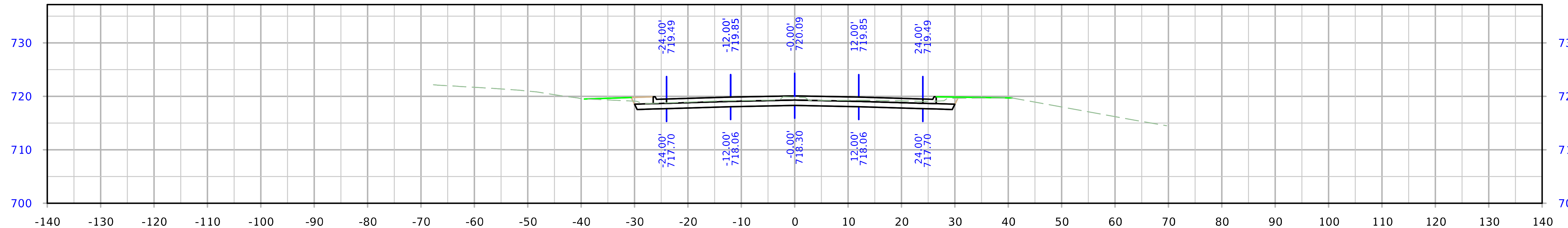


STA. 64+00.00

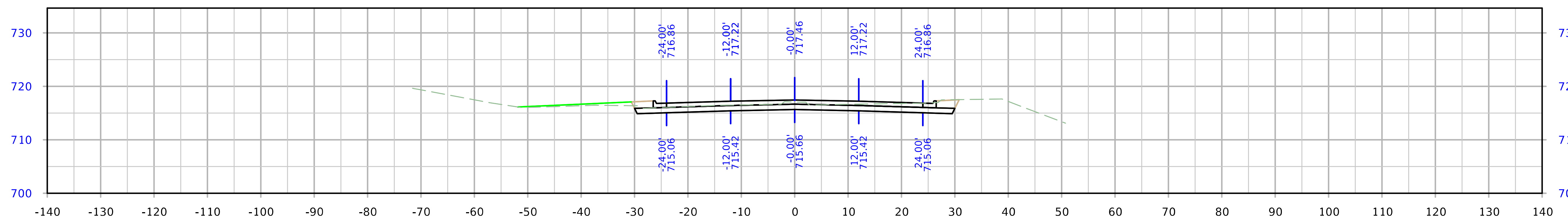
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.7

10:19:26 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

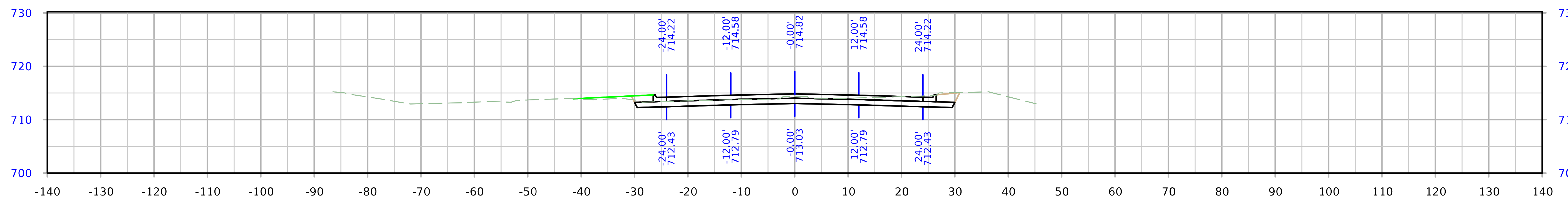
ML IA 149



STA. 66+50.00



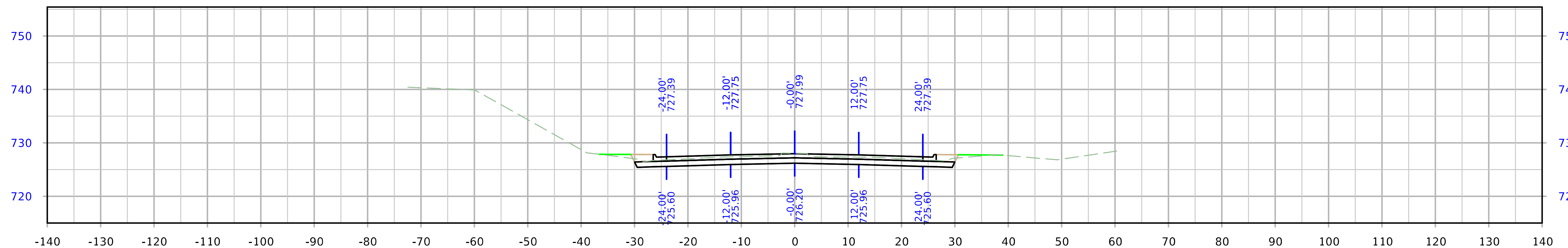
STA. 66+00.00



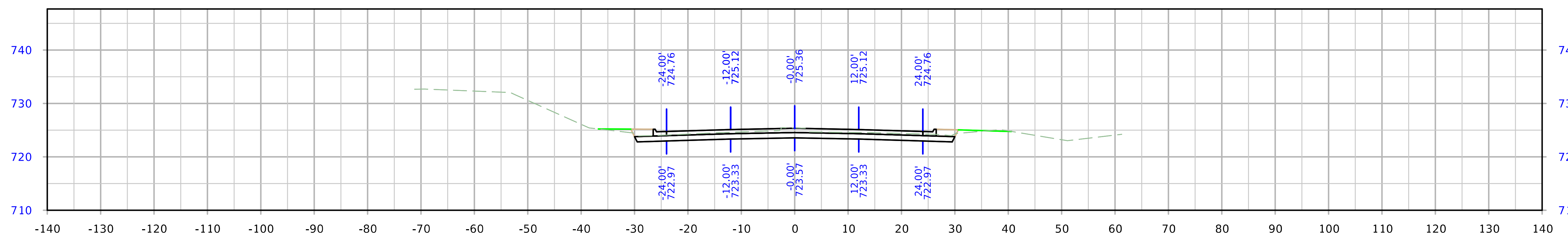
STA. 65+50.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.8

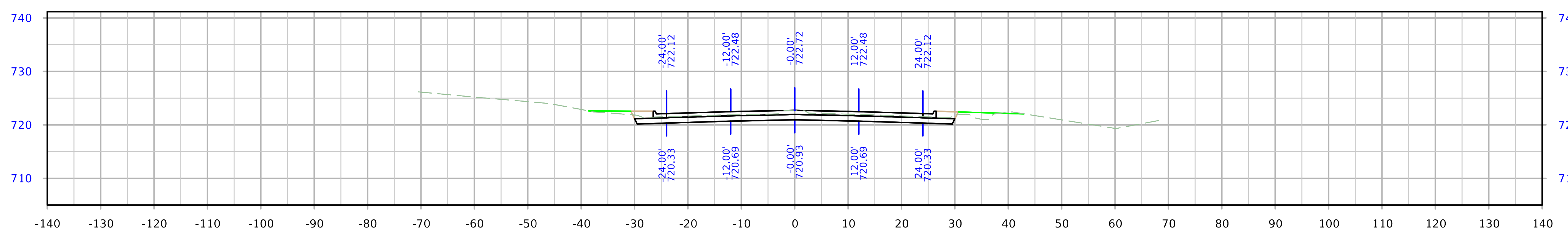
ML IA 149



STA. 68+00.00



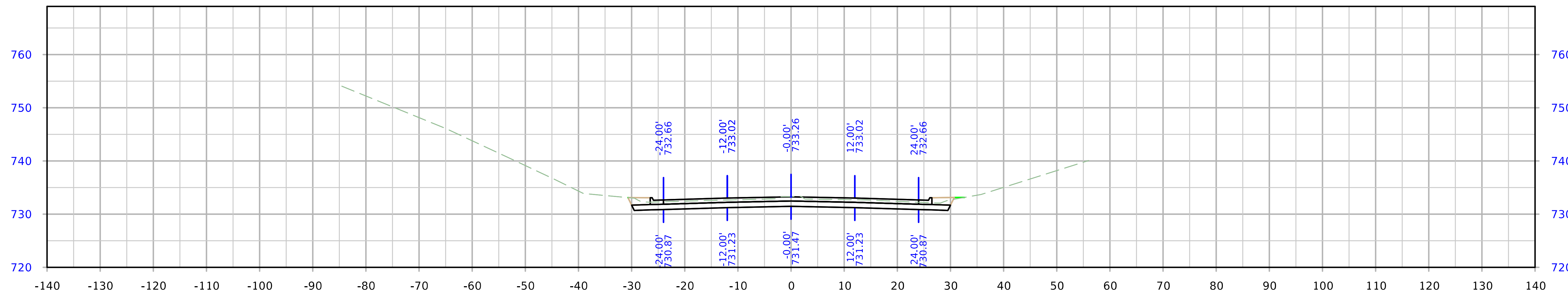
STA. 67+50.00



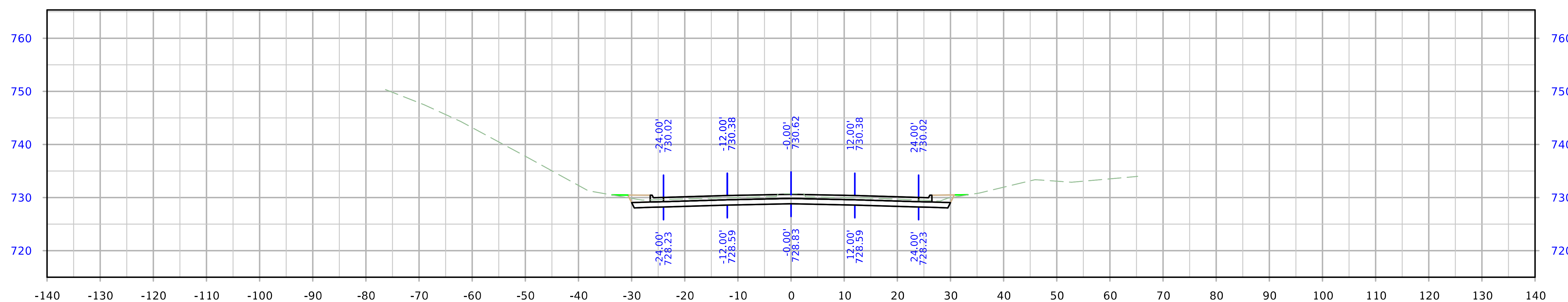
STA. 67+00.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.9

ML IA 149



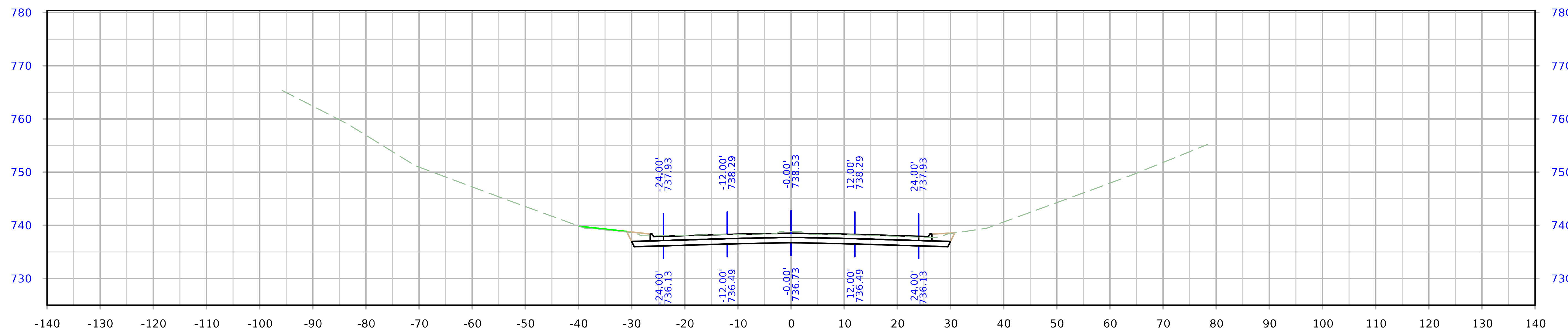
STA. 69+00.00



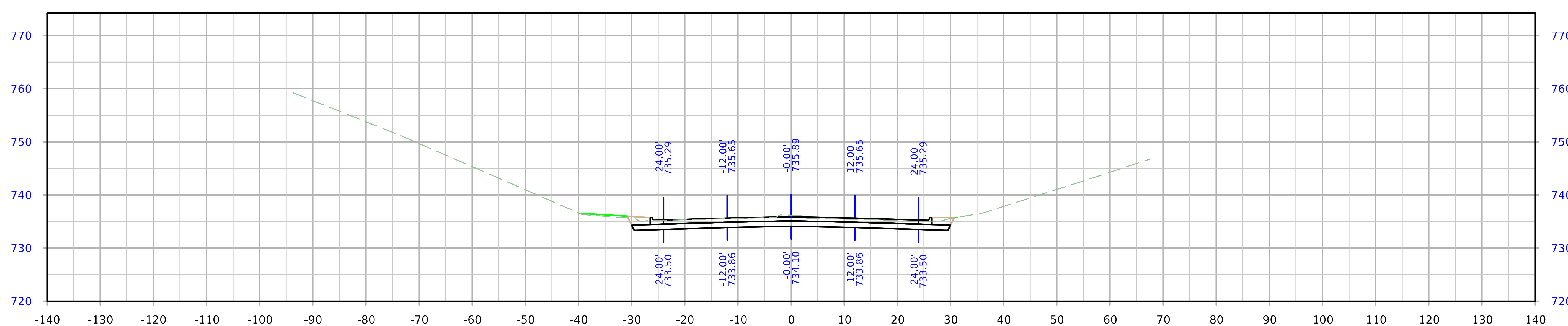
STA. 68+50.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.10

ML IA 149

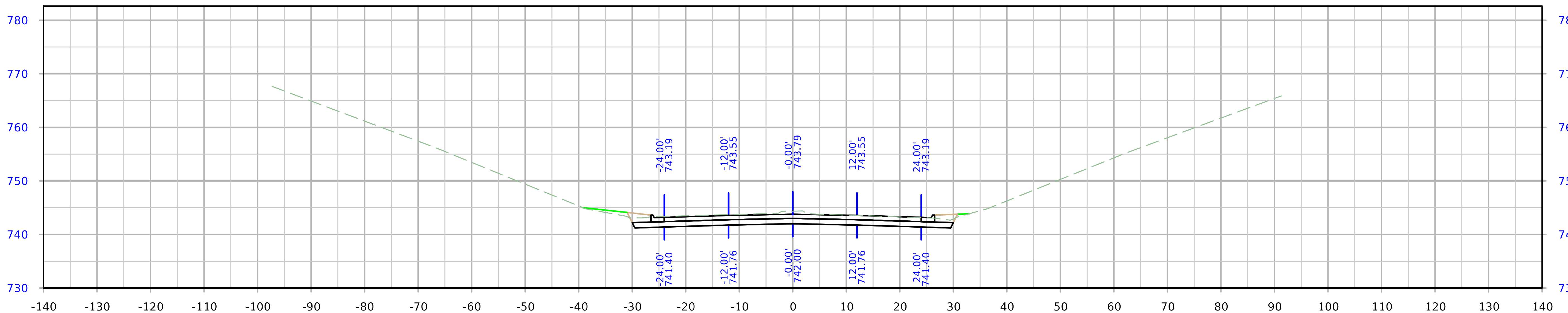


STA. 70+00.00

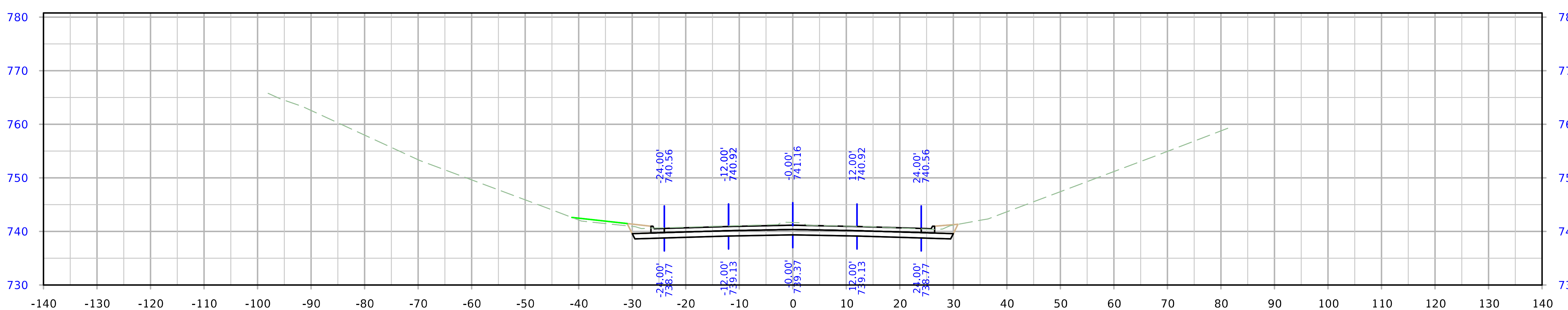


STA. 69+50.00

ML IA 149



STA. 71+00.00

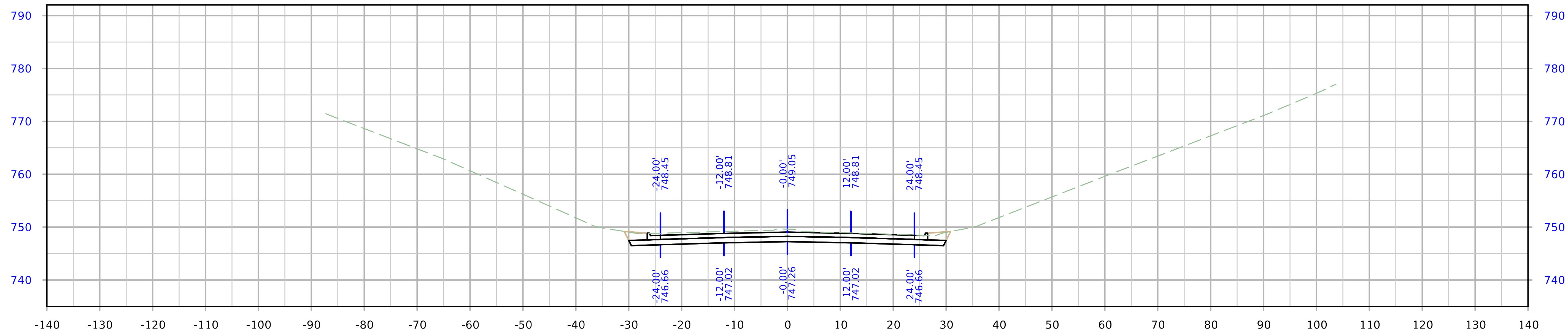


STA. 70+50.00

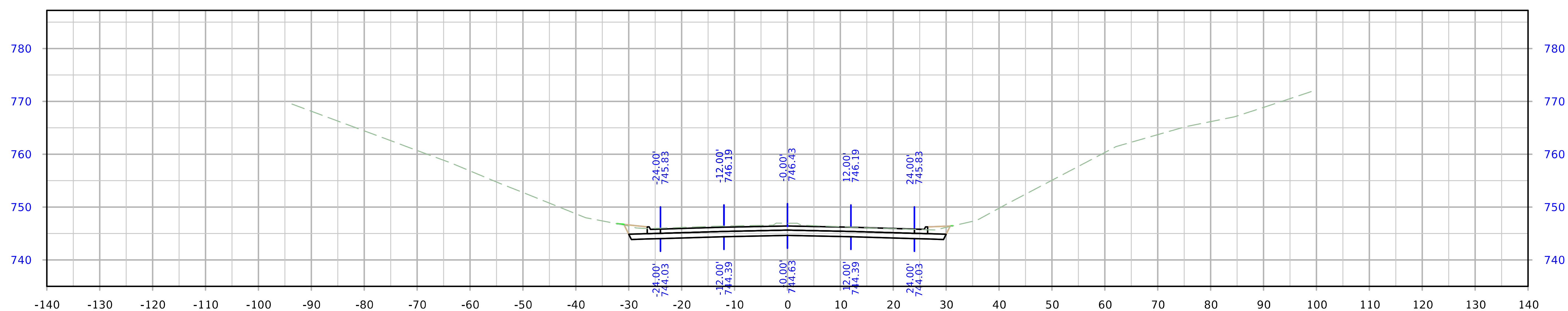
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.12

10:19:30 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

ML IA 149



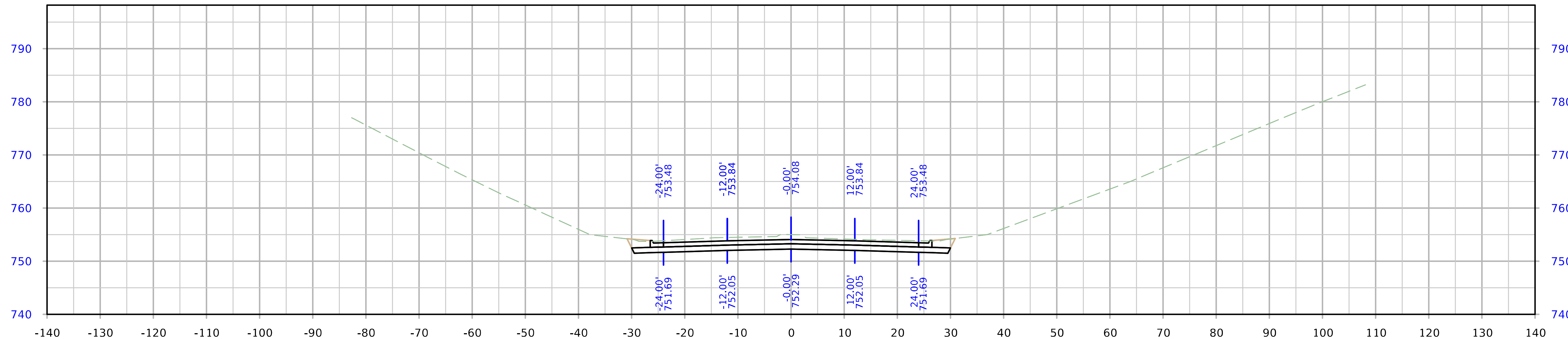
STA. 72+00.00



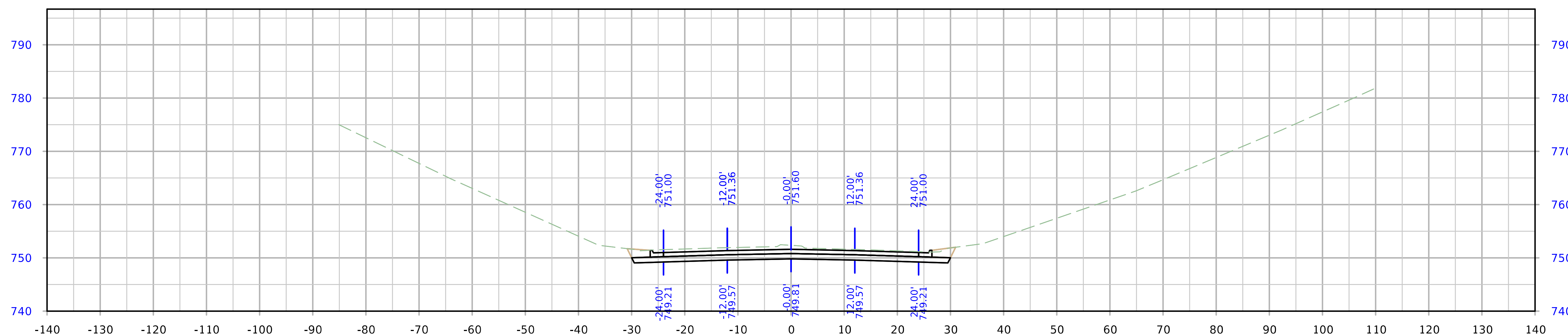
STA. 71+50.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.13

ML IA 149



STA. 73+00.00

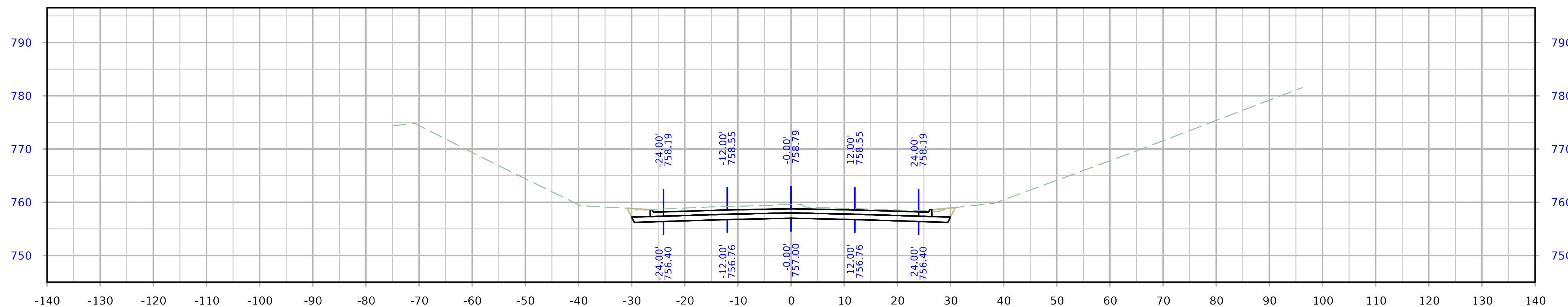


STA. 72+50.00

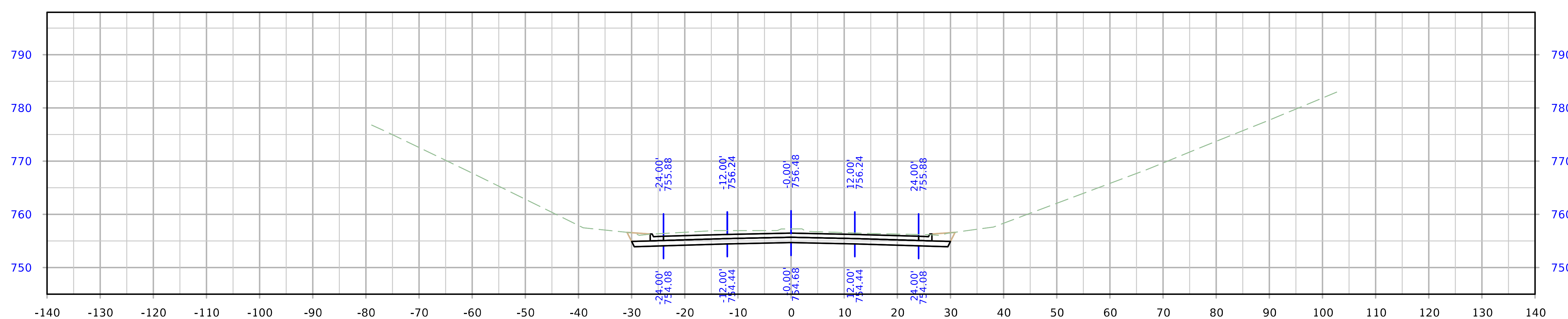
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.14

10:19:32 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

ML IA 149



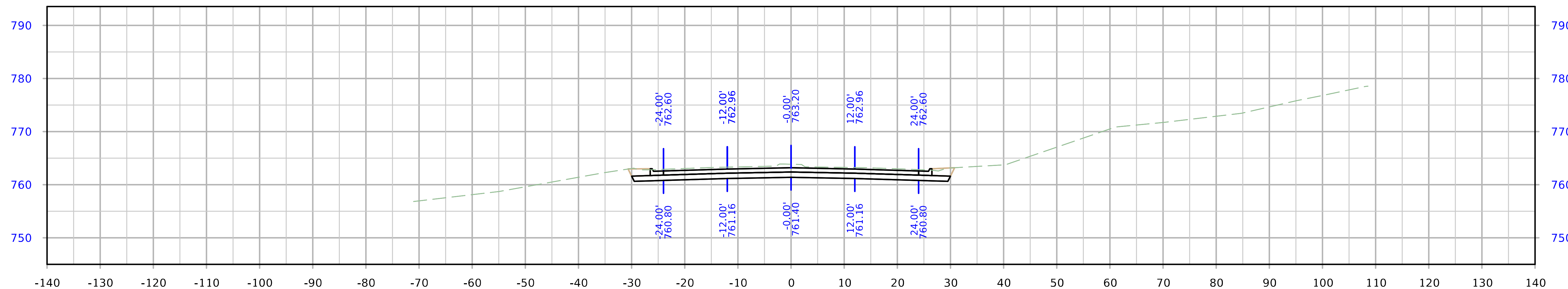
STA. 74+00.00



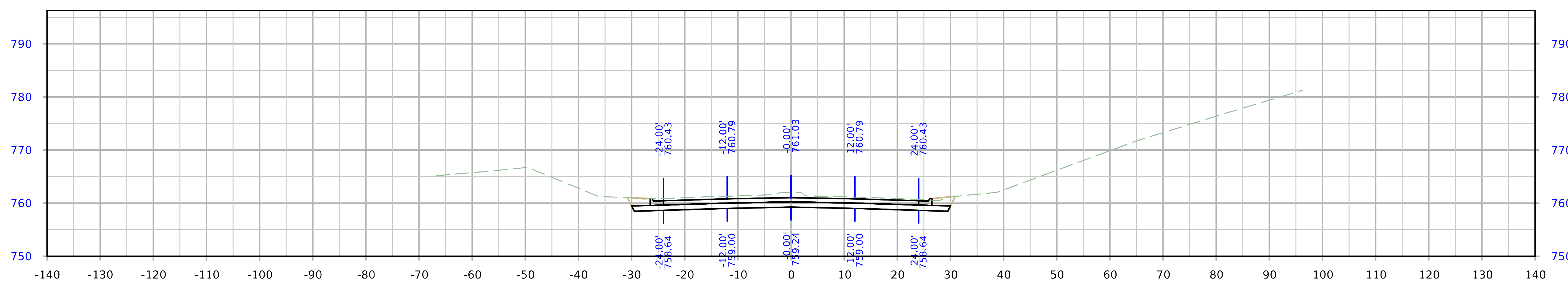
STA. 73+50.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.15

ML IA 149

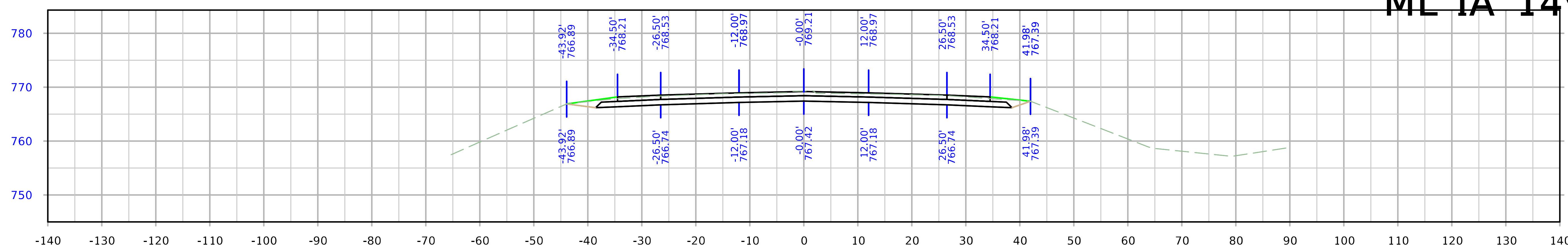


STA. 75+00.00

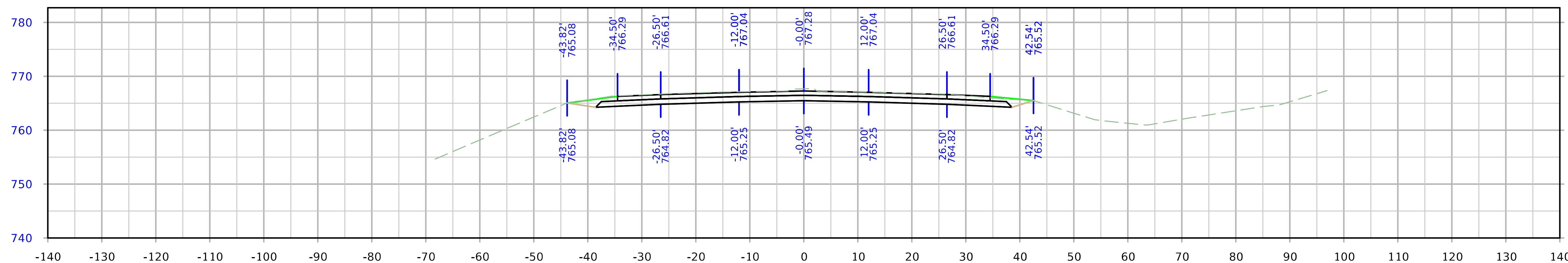


STA. 74+50.00

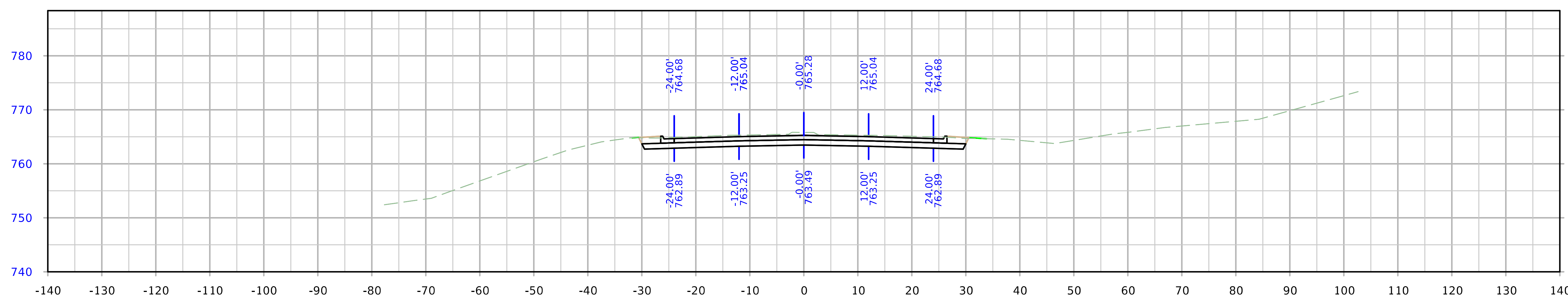
ML IA 149



STA. 76+50.00



STA. 76+00.00

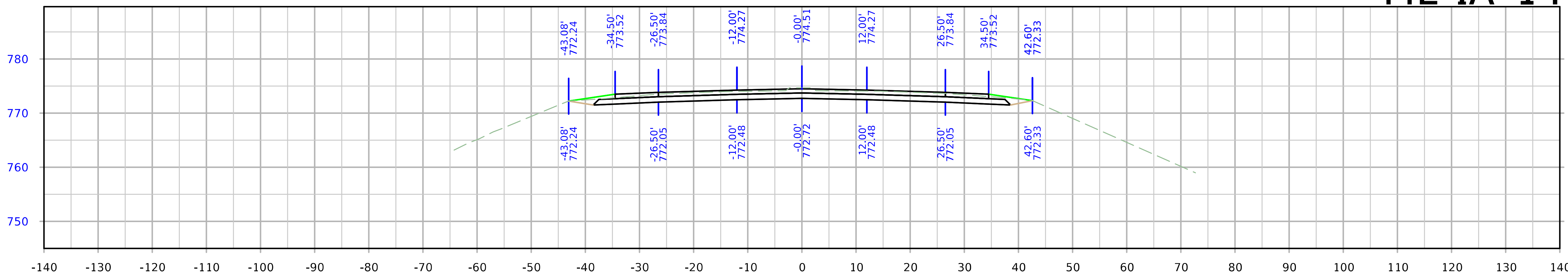


STA. 75+50.00

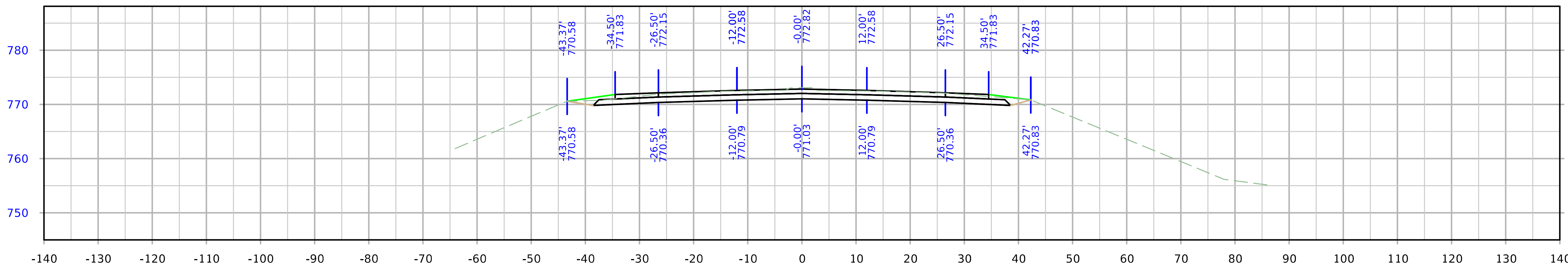
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.17

10:19:34 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

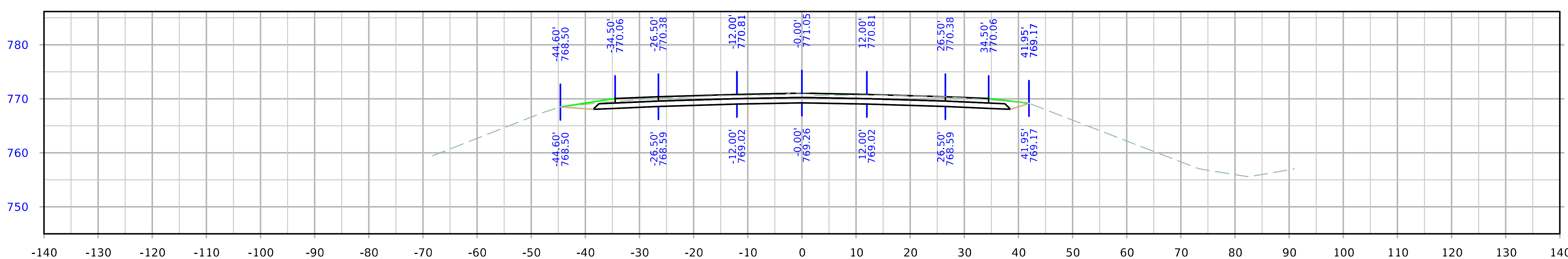
ML IA 149



STA. 78+00.00



STA. 77+50.00

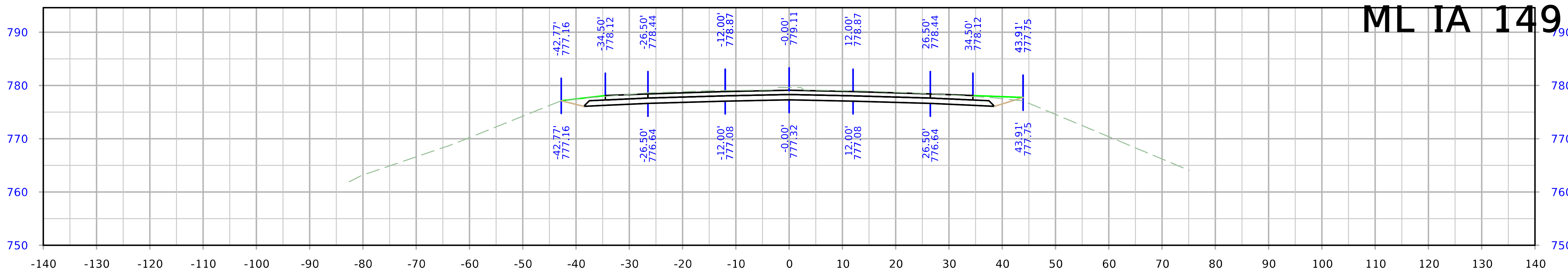


STA. 77+00.00

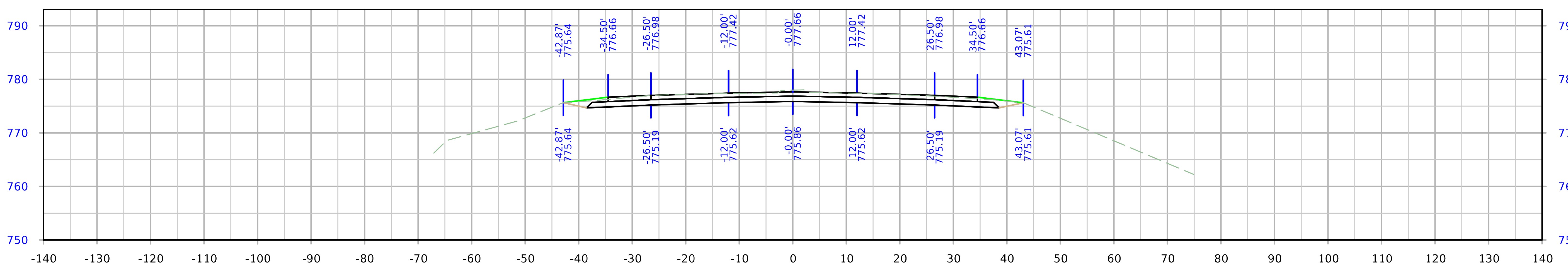
FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.18

10:19:35 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

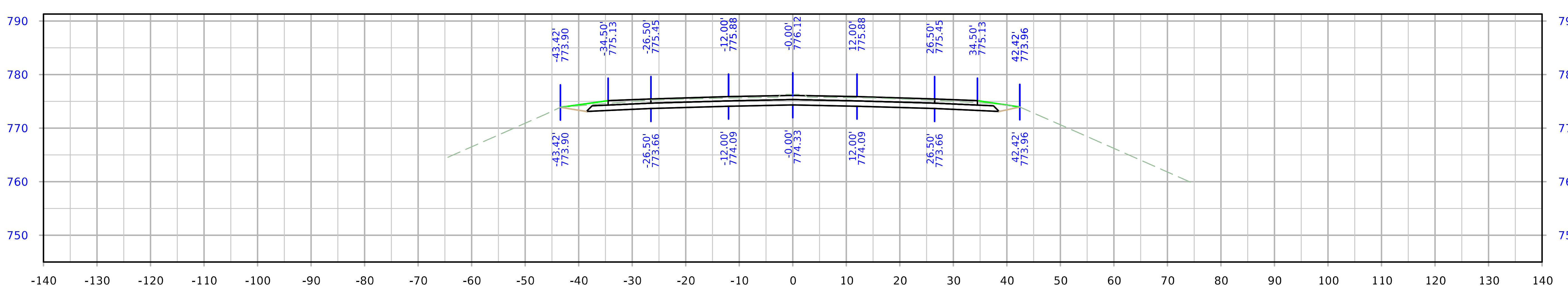
ML IA 149



STA. 79+50.00



STA. 79+00.00

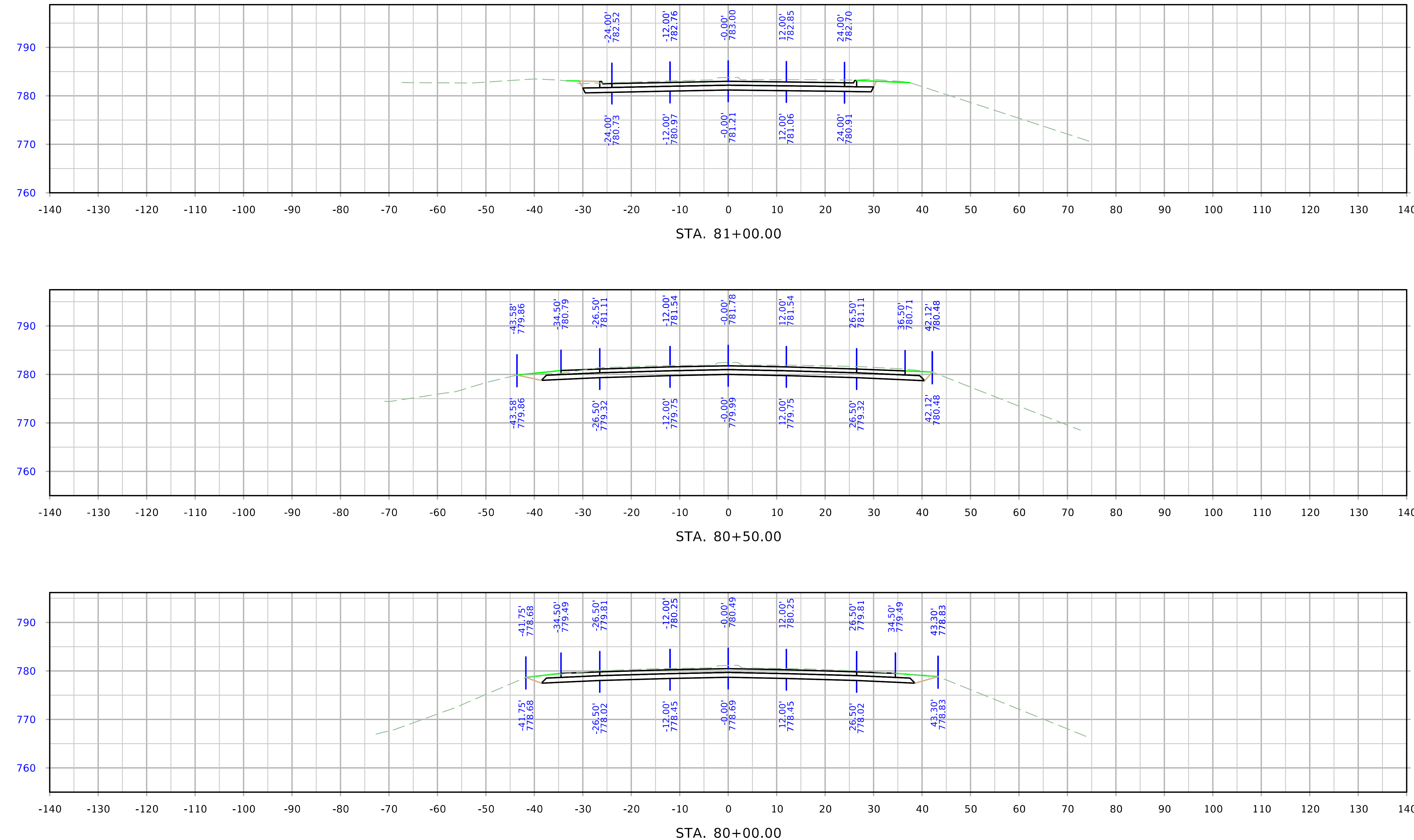


STA. 78+50.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock	Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.19

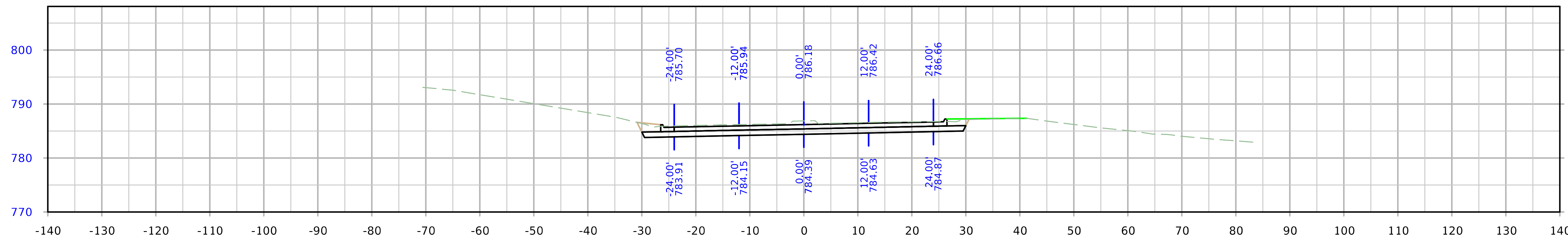
10:19:36 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn

ML IA 149

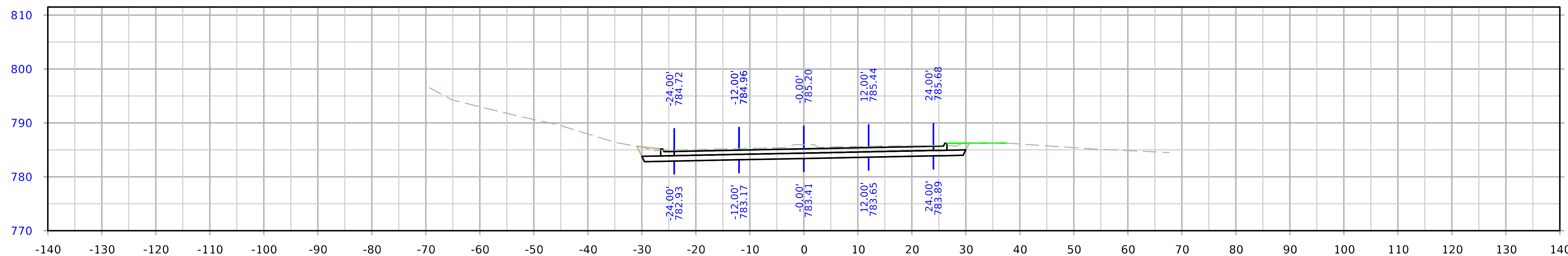


FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.20

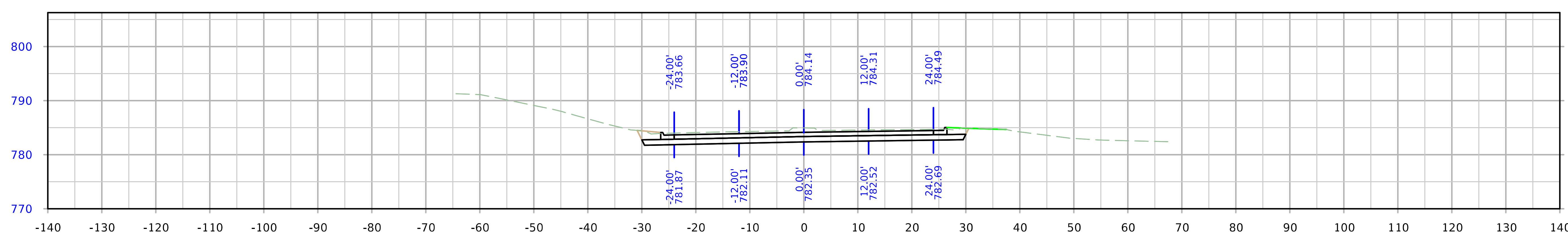
10:19:36 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn



STA. 82+50.00

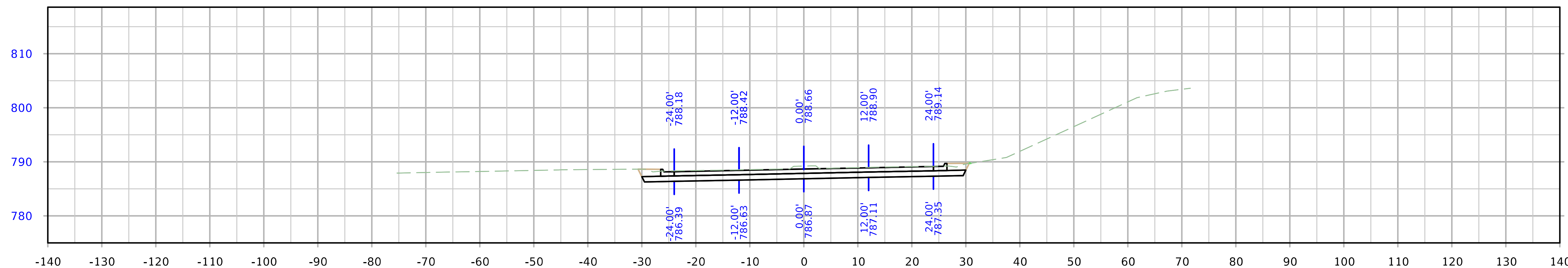


STA. 82+00.00

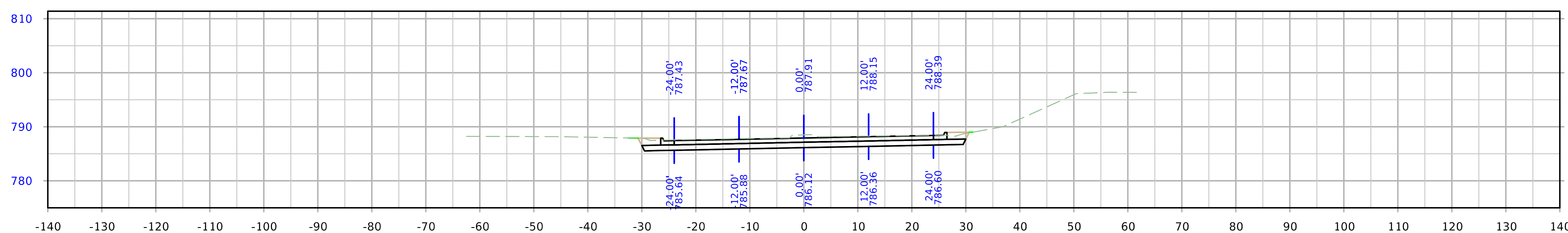


STA. 81+50.00

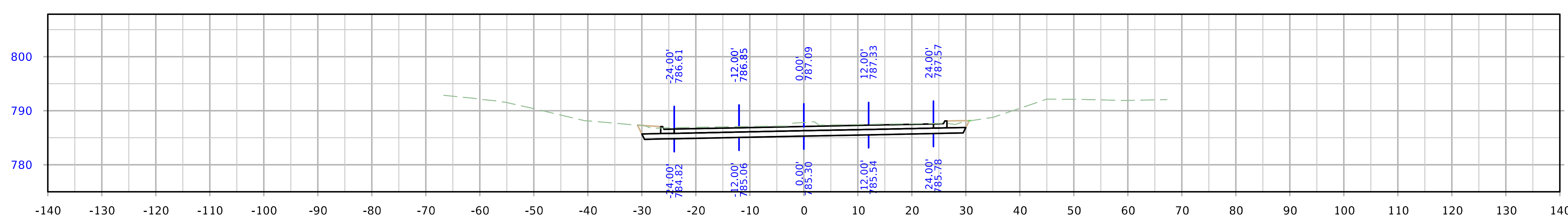
FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER W.21



STA. 84+00.00



STA. 83+50.00



STA. 83+00.00

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER W.22	

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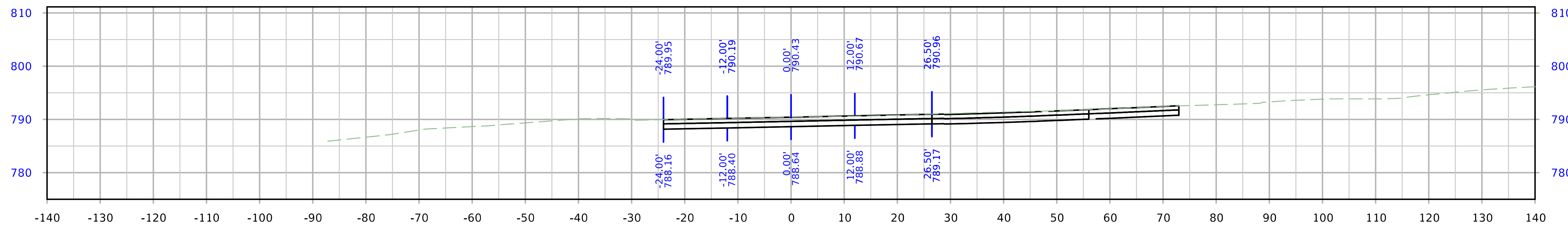
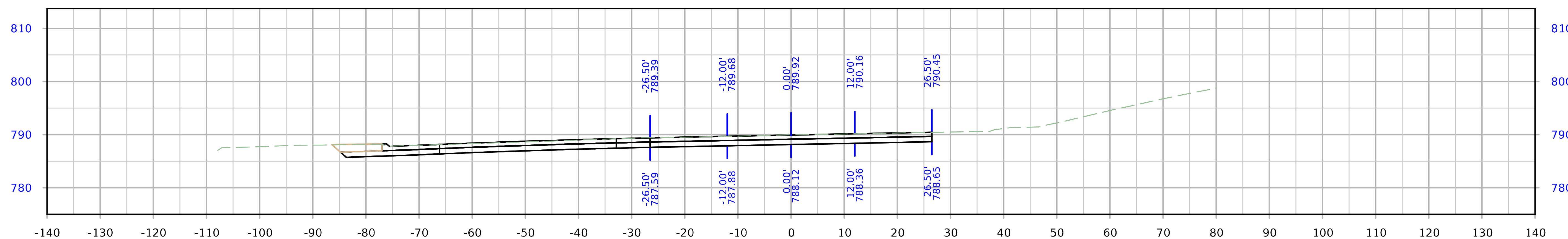
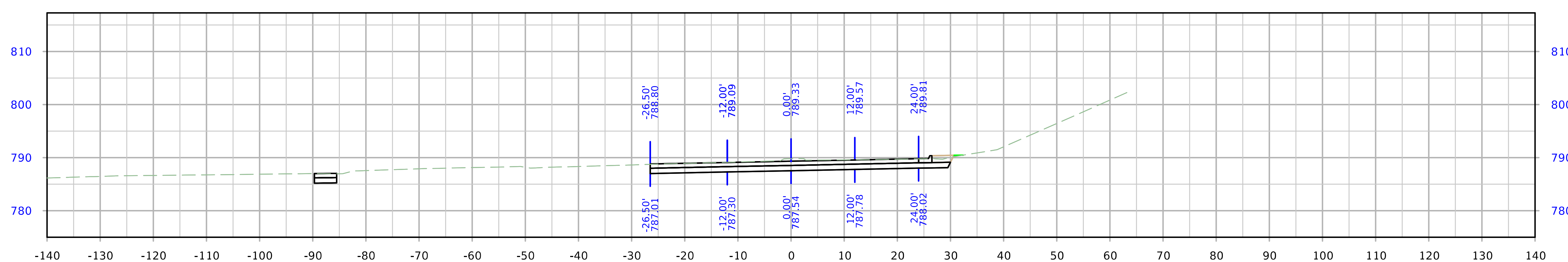
ML IA 149



STA. 85+50.00



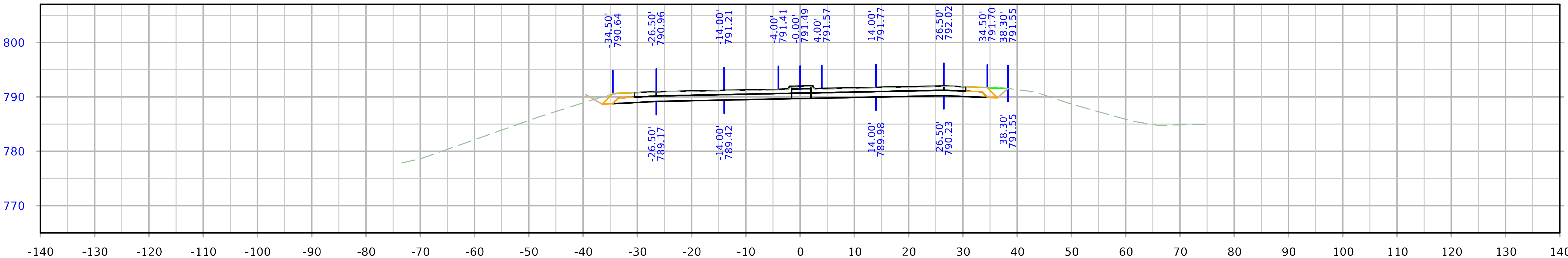
STA. 85+00.00



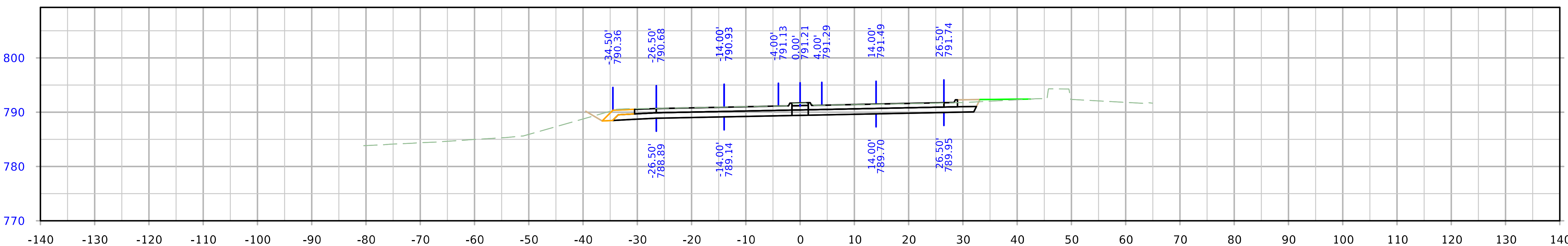
STA. 84+50.00

FILE NO.	ENGLISH	DESIGN TEAM Miller\ Schoenrock		Wapello COUNTY	PROJECT NUMBER STP-149-1(88)--2C-90	SHEET NUMBER W.23

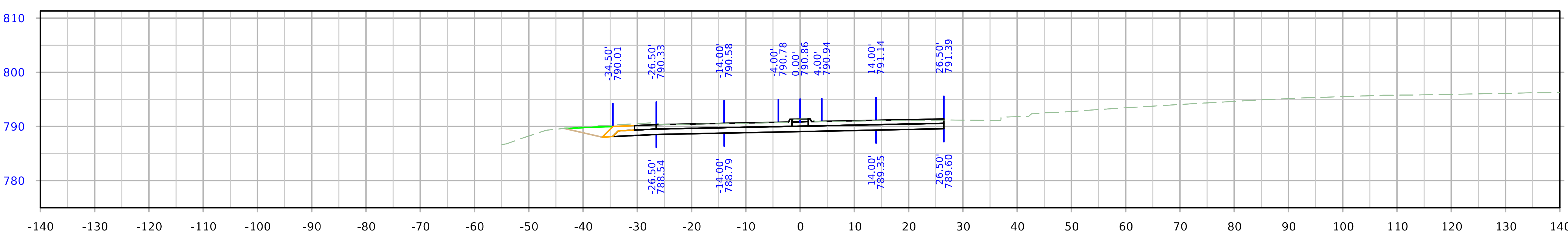
10:19:39 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn



STA. 87+00.00



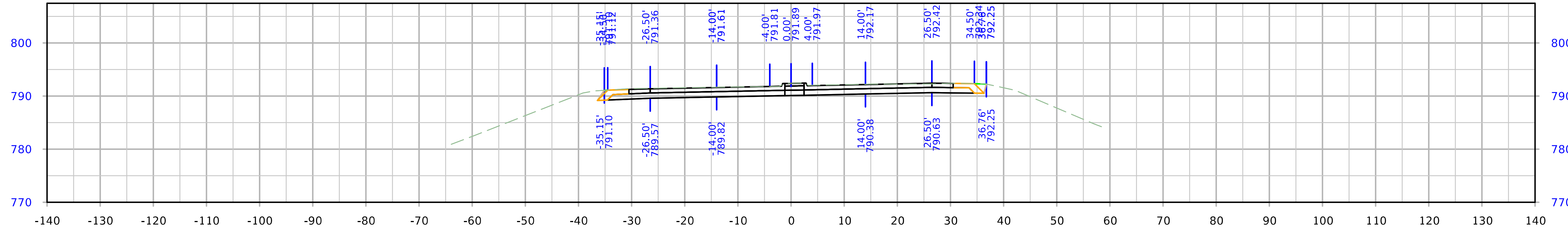
STA. 86+50.00



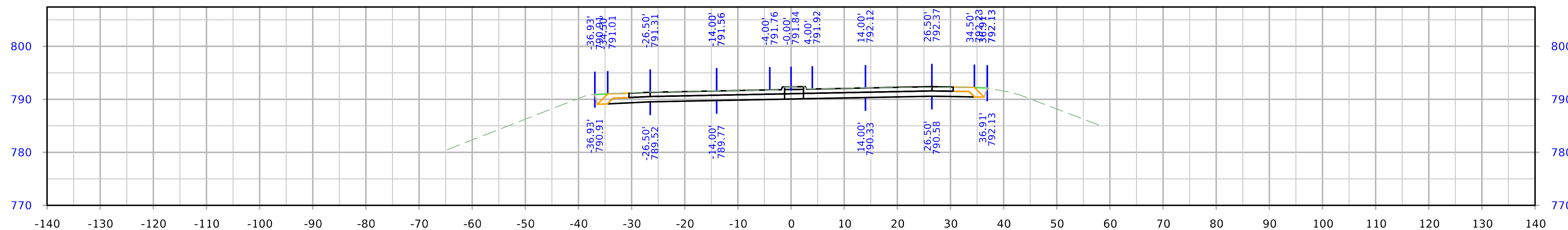
STA. 86+00.00

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER W.24	

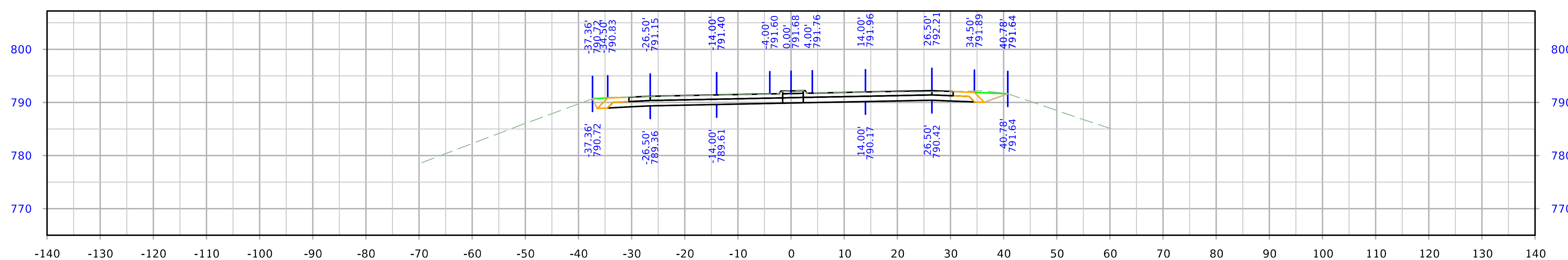
ML IA 149



STA. 88+15.77



STA. 88+00.00



STA. 87+50.00

FILE NO. | ENGLISH | DESIGN TEAM Miller\ Schoenrock | Wapello COUNTY | PROJECT NUMBER STP-149-1(88)--2C-90 | SHEET NUMBER W.25

10:19:41 AM 9/27/2023 tschoen pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\9014901020\Design\CADD_Files\Sheet_Files\SHT_90149088_W1.dgn