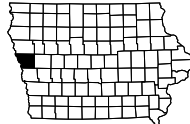


Monona COUNTY

Bridge Replacement
BRF-141-2(070)--38-67

LETTING DATE
11/21/2028



INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 6	Design Criteria
B Sheets	Typical Cross Sections and Details
B.1	Typical Cross Sections and Details
D Sheets	Mainline Plan and Profile Sheets
D.1	Plan & Profile Legend & Symbol Information Sheet
D.2	IA 141
E Sheets	Side Road Plan and Profile Sheets
E.1 - 2	70th Street
G Sheets	Survey Sheets
G.1 - 3	Horizontal Control Tab. & Super for all Alignments
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.2 - 4	Detour Route Maps
V Sheets	Bridge and Culvert Situation Plans
V.1	Bridge Situation Plan
W Sheets	Mainline Cross Sections
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 9	IA 141 Cross Sections
X Sheets	Side Road Cross Sections
X.1 - 16	170th Street Cross Sections



PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
Monona COUNTY
Bridge Replacement
IA 141 at Soldier River 3.9 mi W of IA 183

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



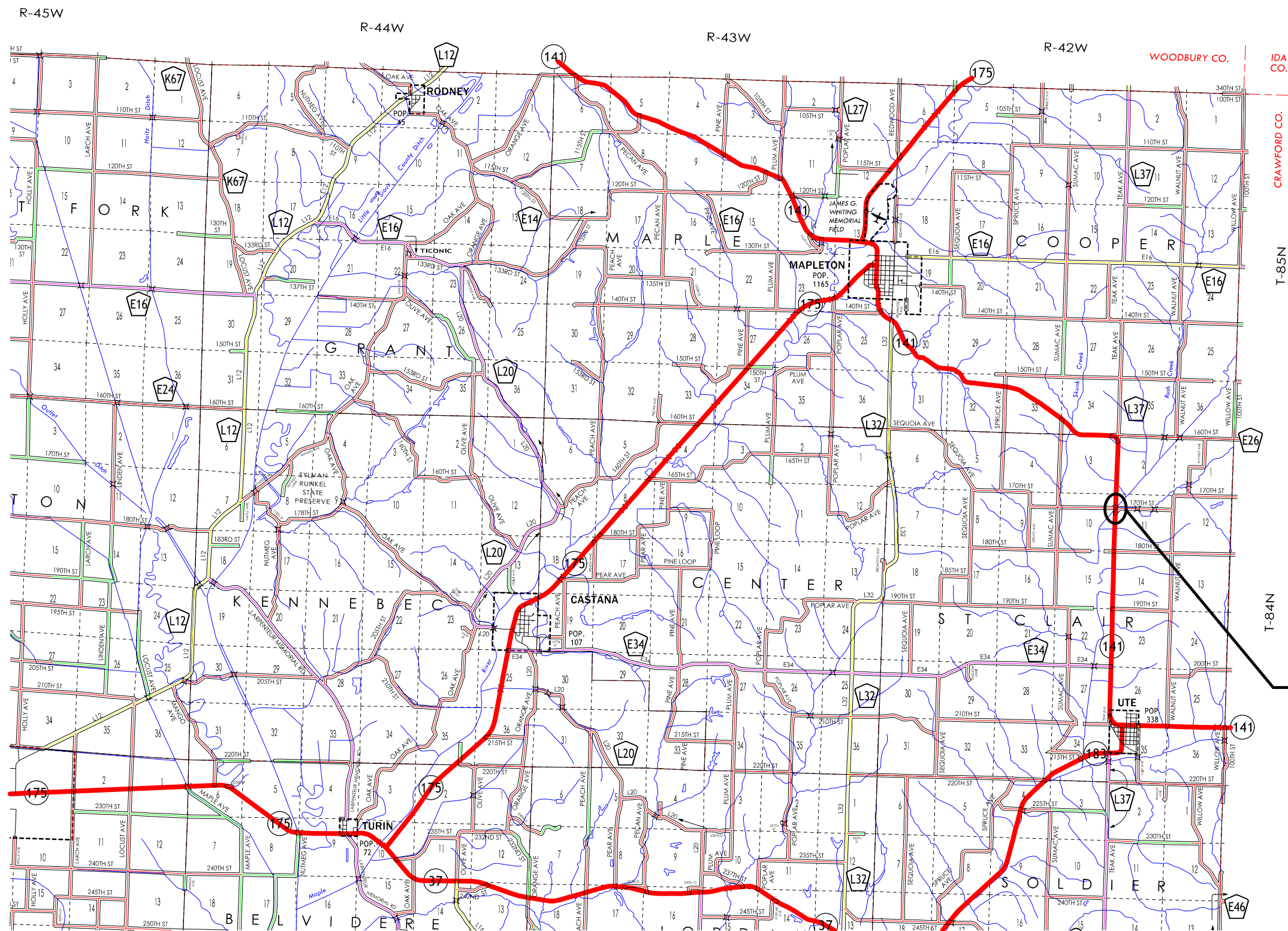
REVISIONS

TOTAL	
44	
PROJECT IDENTIFICATION NUMBER	
24-16-030-030	
PROJECT NUMBER	
BRF-141-2(070)--38-67	
R.O.W. PROJECT NUMBER	
12345	
56478	
98765	

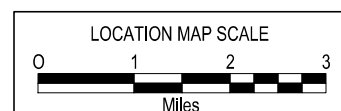
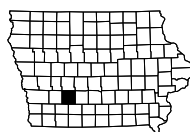
PRELIMINARY PLANS

Subject to change by final design.

D2 PLAN - 9/12/2025



**PROJECT
LOCATION
STA. 1682+79.20
FHWA NO. 036790**



Roadway	IA-141			
PIN Number	24-67-141-030		Submittal Date	
Project Number	BRF-141-2(070)--38-67			Approval Date
District	District 3	Assistant District Engineer		Shane Tymkowicz
County	MONONA	or		
Route	IA-141	Office Director		
Location	IA-141 Bridge over Soldier Creek			
Work Type	Bridge Replacement			
Segment Manager				
Designer	HR Green, Inc.			
Design Manual Section 1C-1 Last Updated: 04-29-19	Rural Two-Lane Highways (Rural Arterials)			
Design Element		Preferred	Acceptable	Project Values
Design speed (mph)		60	50	60
Maximum superelevation rate (Refer to Section 2A-2)		6%	8%	NA
Design lane width (ft)		12	12	12
Full depth paved width (ft)		12	12	12
Right turn lane (ft)		12	10	NA
Climbing Lane (ft)		12	12	NA
Left turn lane (ft)		12	10	NA
Pavement cross-slope (on tangent sections)	Through lanes	2%	1.5% minimum, 2% maximum	2%
	Auxiliary and turn lanes	3%	3% maximum	NA
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)		4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard	NA
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	NA
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	10:1 for 4' then 4:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3:1
	Curbed roadways	2%	not steeper than 3:1	NA
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	2.5:1
Transverse Slopes	w/ drainage structures	8:1	6:1	6:1
	w/o drainage structures	10:1	6:1	6:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	–	Match Existing
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	NA
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	40
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft. offset left and right	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 trusses and pedestrian bridges	17.5	17	NA
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	
Level of Service		B	B	NA
*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exeption is required)				

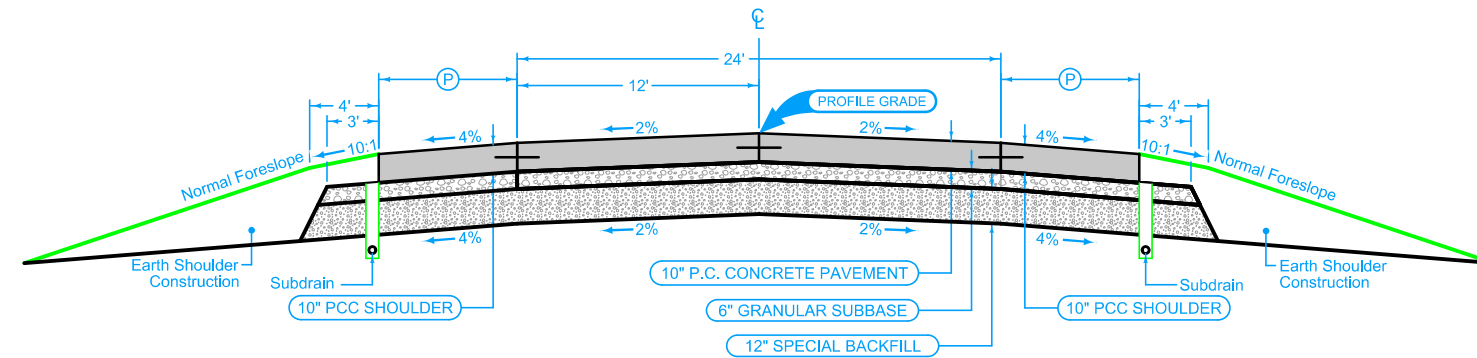
Roadway Design Speed (mph) =			60												
Design Manual Section 1C-1 Last Updated: 04-29-19			Design Criteria for High Speed Roadways												
Design Element			Preferred Criteria						Acceptable Criteria						Project Values
			Design Speed, mph						Design Speed, mph						
			50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)			425	495	570	645	730	820	425	495	570	645	730	820	570
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e _{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	1330
		e _{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	NA
Minimum vertical curve length (ft) (Refer to Section 2B-1)			150	165	180	195	210	225	150	165	180	195	210	225	180
Minimum rate of vertical curvature (K)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	151
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	136
		roadways with fixed- source lighting	96	115	136	157	181	206	54	66	78	91	106	121	136
Minimum gradient (%)	(Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.5
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	4		3				7	6	6	--	--	--	3
		Rural roadways							5	5	4	4	4	4	3
		Interstates							5	5	4	4	4	4	3
Clear zone			See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						32

Roadway		170th St			
PIN Number		24-67-141-030		Submittal Date	
Project Number		BRF-141-2(070)--38-67		Revision Date	
District		District 3			
County		MONONA			
Route		170th St			
Location		IA-141 Bridge over Soldier Creek			
Work Type		Bridge Replacement			
Segment Manager					
Designer		HR Green, Inc.			
Design year ADT =		50			
Design Manual Section 1C-1 Last Updated: 04-29-19		Secondary Roads			
Design Elements		Project value		Local Systems I.M. 3.210 value	
Design speed (mph)		50		50	
Design lane width (ft.)		10		10	
Shoulder width (ft.)		3		3	
Bridge width - new (ft.)		NA		NA	
Bridge width - existing (ft.)		NA		NA	
Maximum super elevation rate (%)		6		6	
Minimum radius (ft.)		250*		758	
Stopping sight distance (ft.)		425		425	
Vertical curve length (ft.)		150		150	
Minimum rate of vertical curvature (K)		Crest		84	
		Sag		79*	
Minimum gradient (%)		0		0	
Maximum gradient (%)		6		6	
Foreslope		4:1		2:1	
Backslope		3:1		2:1	
Traverse slopes		6:1		6:1	
Clearzone		14		14	
Notes:					
Design Criteria based on Design Aids for Local Roads with Level Terrain I.M. 3.210 unless noted otherwise.					
*Used 30mph design speed near intersection with IA-141.					
FILE NO.		ENGLISH		DESIGN TEAM	
		HR Green, Inc.		Monona COUNTY	
				PROJECT NUMBER	
				BRF-141-2(070)--38-67	
				SHEET NUMBER	
				A.6	

1:19:30 PM9/12/2025jverrypw:\\projectwise.dot.int.lan:P\\Main\\Documents\\Projects\\6714103024\\Design\\CADD_Files\\Sheet_Files\\A01_67141070

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

2_P_FullIPCC 04-15-25		
STATION TO STATION		 Feet
1677+75.00	1679+84.84	8
1679+84.84	1680+53.20	9.7-11.3
1685+05.25	1685+58.49	10.1-12.2
1685+58.49	1687+75.00	8



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

2P.	
04-21-20	
STATION TO STATION	
1677+75.00	1680+53.20
1685+05.25	1687+75.00

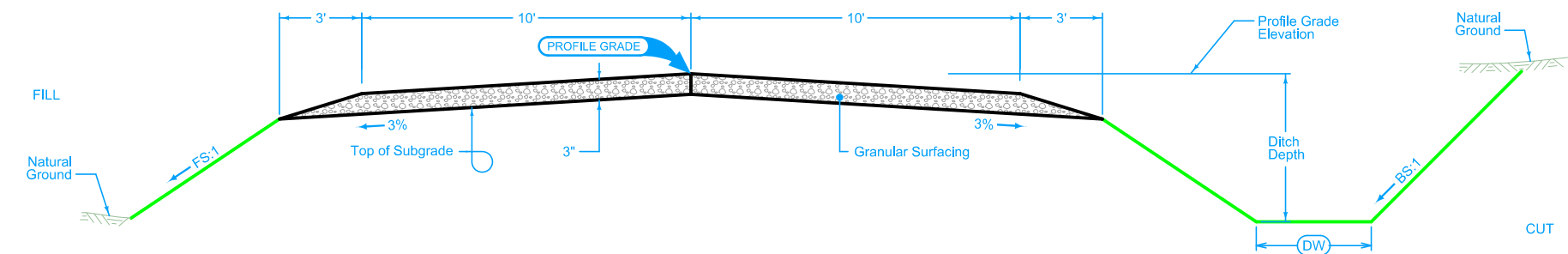
Shoulder Jointing:
Longitudinal joint: BT-2, or L-2
Transverse joints: C at 17' spacing

2_P_FullPCC_04-15-25		
STATION TO STATION		 Feet
1677+75.00	1679+99.87	8
1679+99.87	1680+53.20	9.4-11.1
1685+05.24	1685+73.53	9.5-11.1
1685+73.53	1687+75.00	8

A 141

[illegible]

G_2_GradeGran	
10-17-17	



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

GRADING AND GRANULAR SURFACING

170th Street

	Interstate Highway Symbol
	U.S. Highway Symbol
	Iowa Highway Symbol
	County Road Highway Symbol
	Evergreen Tree
	Deciduous Tree
	Fruit Tree
	Shrub (Bushes)
	Timber
	Hedge
	Stump
	Swamp
	Rock Outcrop
	Broken Concrete
	Revetment (Rip Rap)
	Cemetery
	Grave
	Cave
	Sink Hole
	Board Fence
	Chain Link or Security Fence
	Wire Fence
	Terrace
	Earth Dam or Dike (Existing)
	Tile Outlet
	Edge of Water
	Existing Drainage
	Right of Way Rail or Lot Corner
	Concrete Monument
	Well
	Windmill
	Beehive Intake
	Existing Intake
	Existing Utility Access (Manhole)
	Fire Hydrant
	Water Hydrant (Rural)

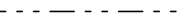
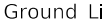
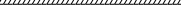
	Septic Tank
	Cistern
	L.P. Gas Tank (No Footing)
	Underground Storage Tank
	Latrine
	Satellite TV Dish
	WHU Water Hook Up
	RT Radio Tower
	TA Tower Anchor
	Guardrail (Beam or Cable)
	GP Guard Post (one or two)
	Guard Post (over two)
	FP Filler Pipe
	GV Gas Valve
	WV Water Valve
	SL Speed Limit Sign
	MM Mile Marker Post
	SIGN Sign
	TCB Traffic Signal Control Box
	RRB Rail Road Signal Control Box
	TSB Telephone Switch Box
	EB Electric Box

(WINIA) WINDSTREAM COMMUNICATIONS
Company name : WINDSTREAM COMMUNICATIONS
Design contact: Zingula, Lisa A
Phone: 8002891901
Email: Lisa.Zingula@windstream.com

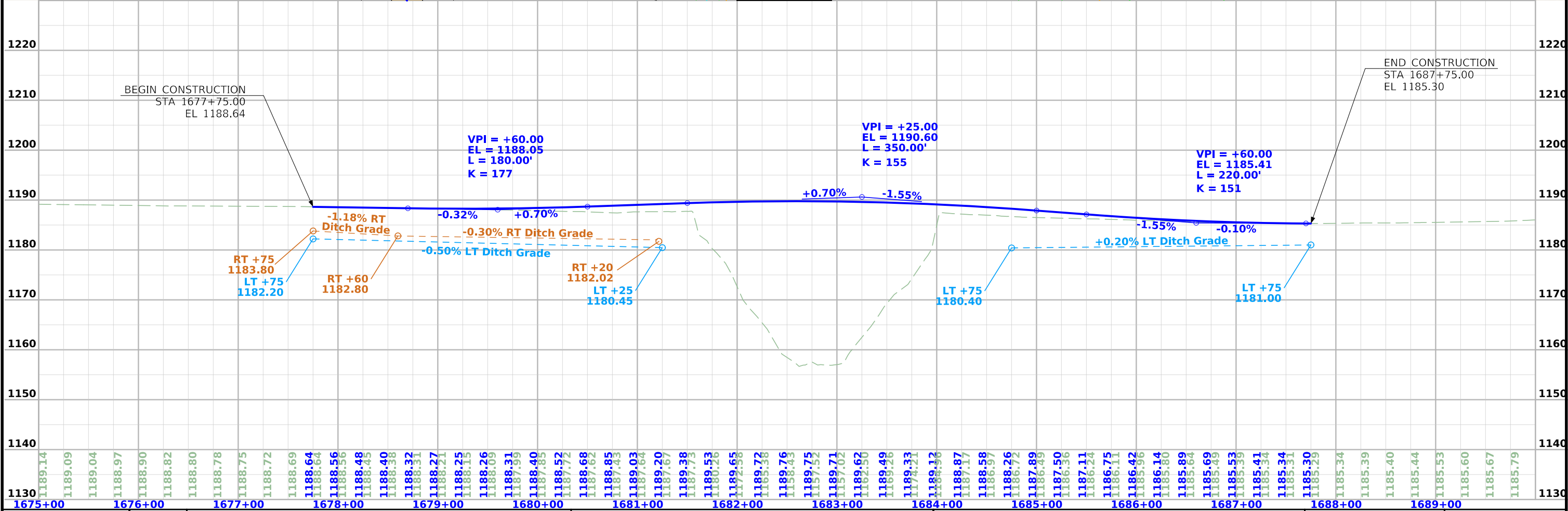
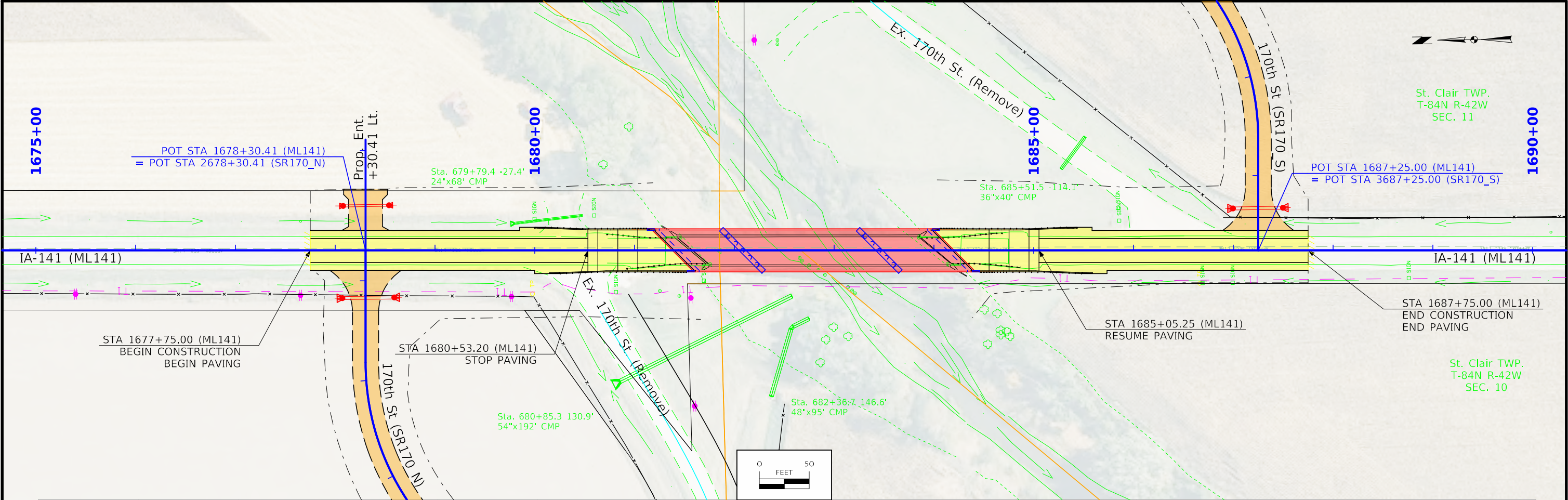
LINEWORK		Design Color No.
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING		Design Color No.
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed 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

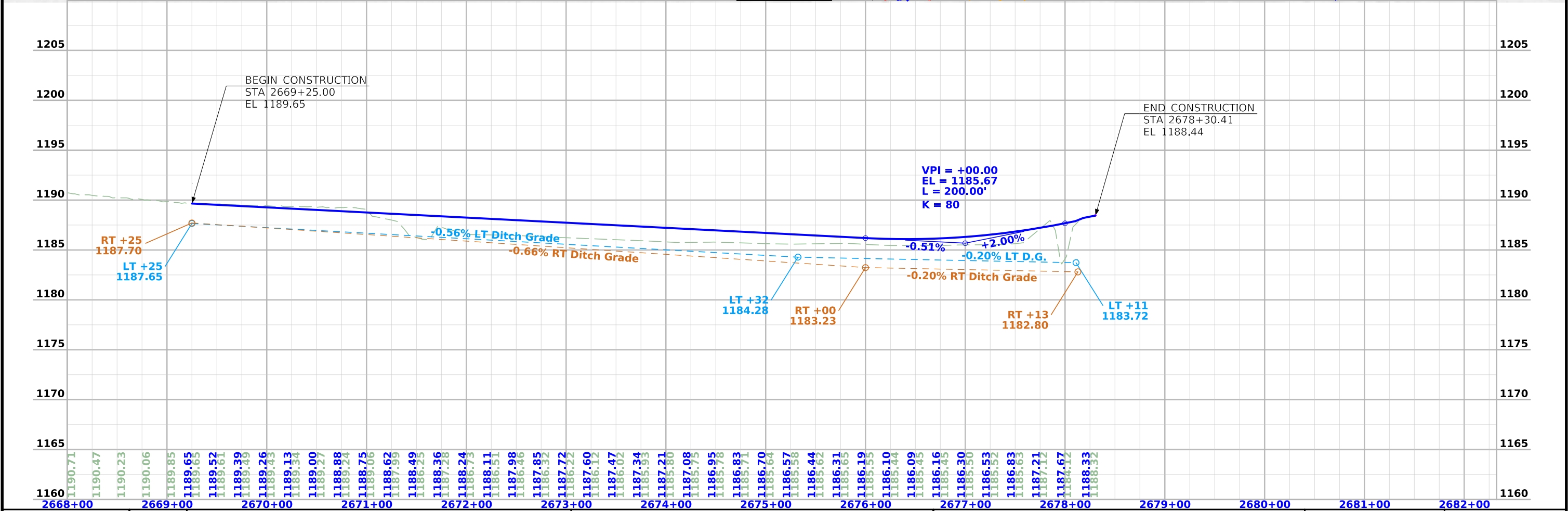
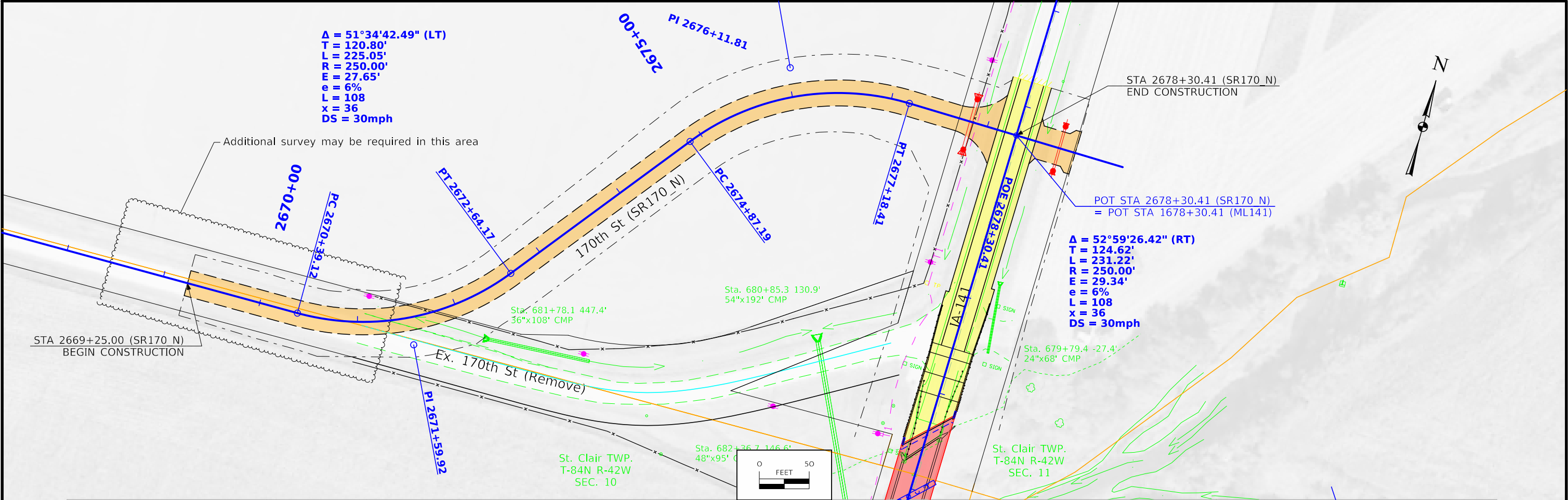
LINEWORK	Design	Color	No.	
Green	(10)		Existing	Ground Line Profile
Blue	(1)		Proposed	Profile and Annotation
Magenta	(5)		Existing	Utilities
Blue, Light	(230)		Proposed	Ditch Grades, Left
Black	(0)		Proposed	Ditch Grades, Median
Rust	(14)		Proposed	Ditch Grades, Right

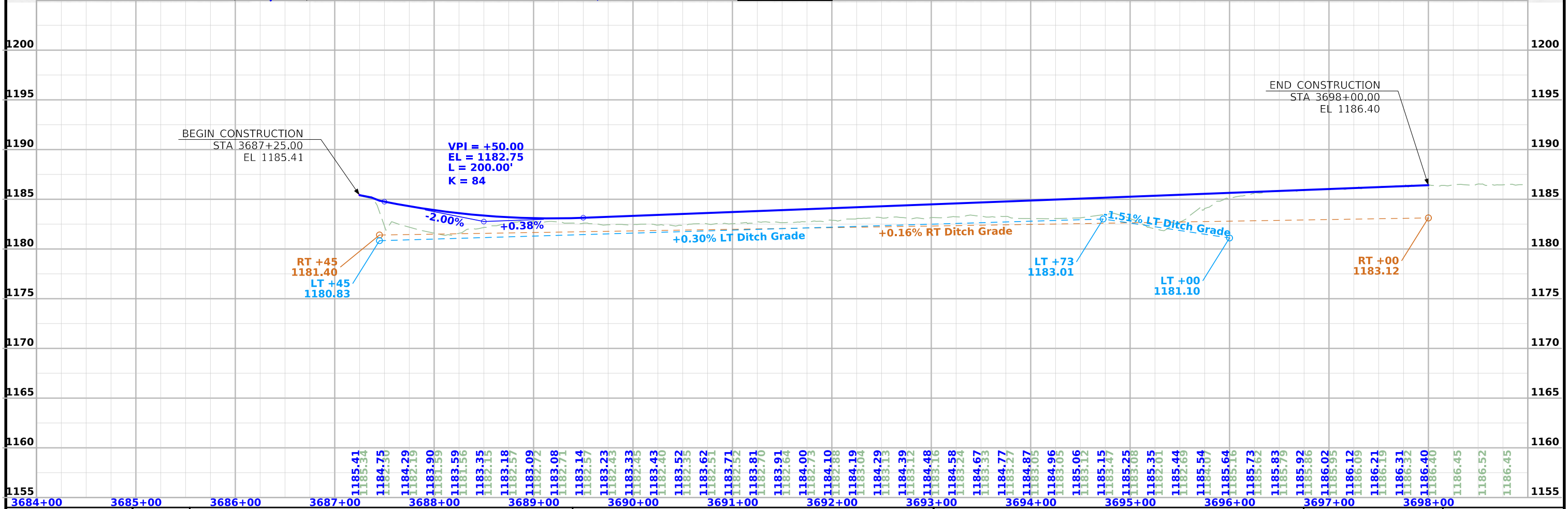
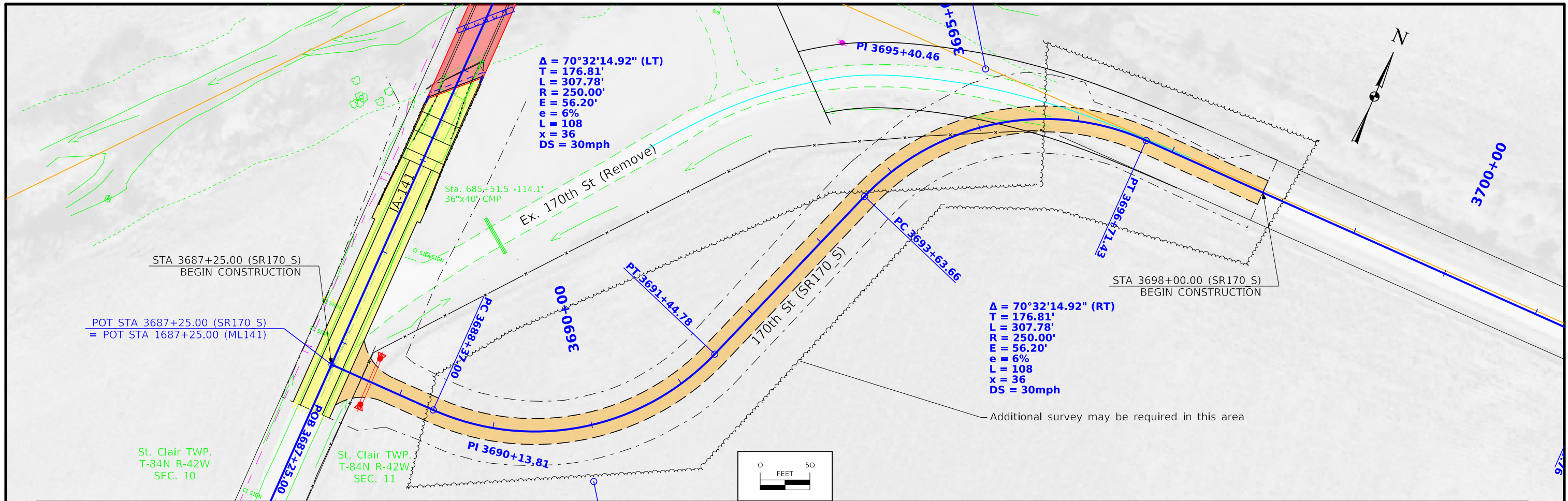
- Proposed Right-of-Way
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary)
- Easement
- Access Control
- Property Line

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

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







ALIGNMENT COORDINATES																			101_16 10/25/24
Name	Location	Point on Tangent Station	Point on Tangent Y Northing	Point on Tangent X Easting	Begin Spiral Station	Begin Spiral Y Northing	Begin Spiral X Easting	Begin Curve Station	Begin Curve Y Northing	Begin Curve X Easting	Simple Curve PI or Master PI Station	Simple Curve PI or Master PI Y Northing	Simple Curve PI or Master PI X Easting	End Curve Station	End Curve Y Northing	End Curve X Easting	End Spiral Station	End Spiral Y Northing	End Spiral X Easting
1	ML141	1668+74.43	7277768.08	16506224.90															
1	SR170_N	2665+75.31	7276438.89	16505102.91															
1	SR170_S	3687+25.00	7275917.69	16506198.89															
1	ENTL_167830	100+00.00	7276812.20	16506211.16															
1	ENTL_167830	101+00.00	7276810.82	16506311.15															

SPIRAL OR CIRCULAR CURVE DATA																101_17 1/17/24
Name	Location	SCS	S	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	C	T	L	R	E	Remarks
C1	SR170_N										51.578	120.797	225.054	250	27.654	
C2	SR170_N										52.991	124.620	231.215	250	29.339	
C1	SR170_S										70.537	176.805	307.778	250	56.203	
C2	SR170_S										70.537	176.805	307.778	250	56.203	

101_18
6/17/24

SUPERELEVATION DATA
See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius (FT)	e (%)	L (FT)	x (FT)	Standard Road Plan	Section A-A	Section A'-A'	Section B-B	Section C'-C'	Section C-C	Section D-D	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
170th St (North)	SR170_N	250.0	6.0	108.0	36.00	PV-301	3697+83.03		3697+47.03		3697+11.03	3696+39.03							
							2669+27.52		2669+63.52		2669+99.52	2670+71.52							
		250.0	6.0	108.0	36.00	PV-301	2673+75.77		2673+39.77		2673+03.77	2672+31.77							
							2673+75.59		2674+11.59		2674+47.59	2675+19.59							
170th St (South)	SR170_S						2678+30.01		2677+94.01		2677+58.01	2676+86.01							
									2678+10.41										
							3687+25.40		3687+61.40		3687+97.40	3688+69.40							
							3692+56.38		3692+20.38		3691+84.38	3691+12.38							
		250.0	6.0	108.0	36.00	PV-301	3692+52.06		3692+88.06		3693+24.06	3693+96.06							

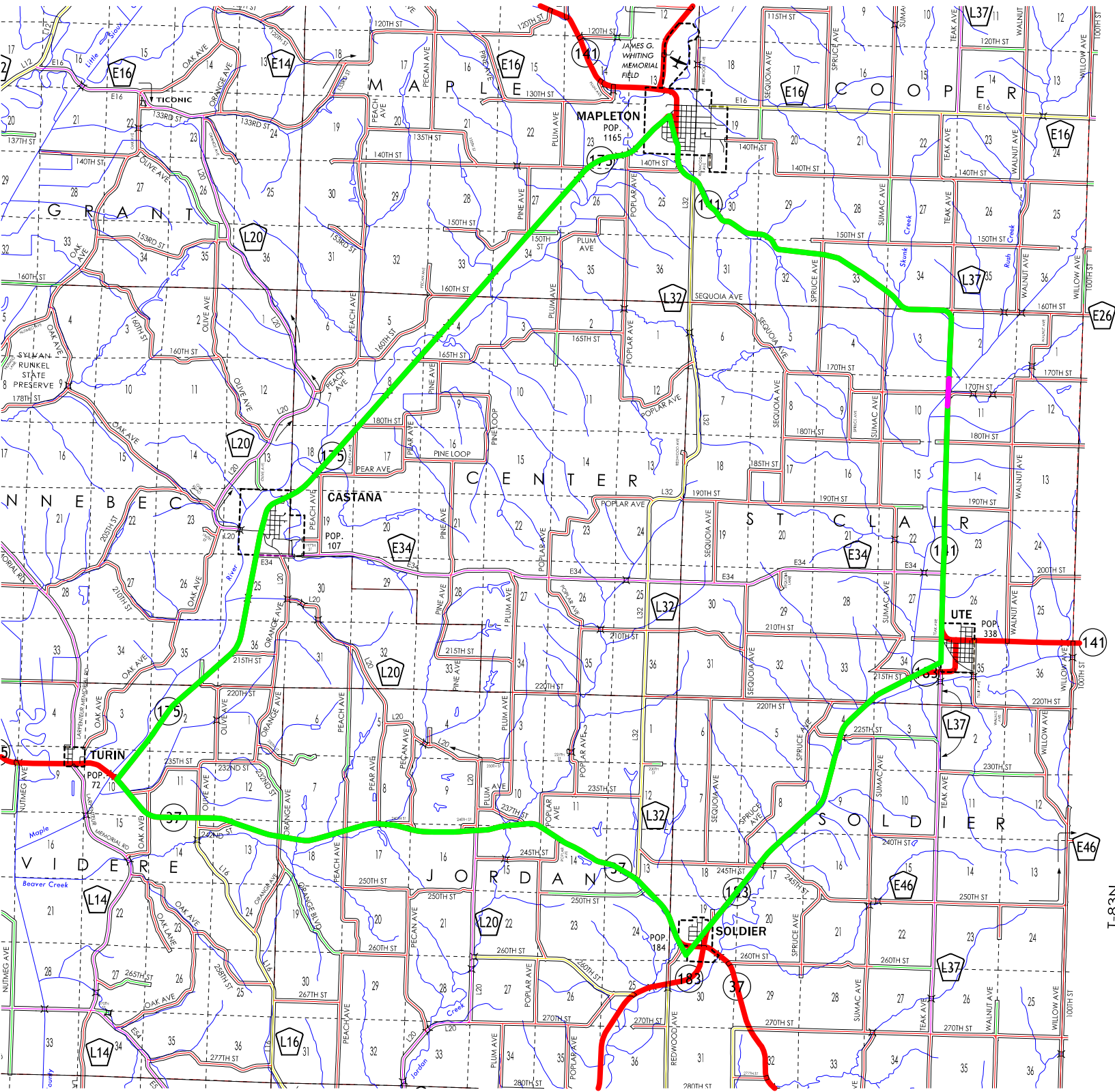
	108_23A 8/15/22
TRAFFIC CONTROL PLAN	
Traffic control on this project shall be in accordance with the specific layouts shown on these plans. Traffic along IA-141 and 170th Street shall be maintained via detours during construction. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Specifications.	
Contractor shall sign and maintain detours for IA-141. Permanent signing that conveys a message contrary to the message of the temporary detour signing or is not applicable to the working conditions shall be covered by the Contractor, as directed by the Engineer and stated in the Standard Specifications.	

	108_23A 8/15/22
TRAFFIC CONTROL PLAN	
Traffic control on this project shall be in accordance with the specific layouts shown on these plans. Traffic along IA-141 and 170th Street shall be maintained via detours during construction. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Specifications.	
Contractor shall sign and maintain detours for IA-141. Permanent signing that conveys a message contrary to the message of the temporary detour signing or is not applicable to the working conditions shall be covered by the Contractor, as directed by the Engineer and stated in the Standard Specifications.	

	108_23A 8/15/22
TRAFFIC CONTROL PLAN	
Traffic control on this project shall be in accordance with the specific layouts shown on these plans. Traffic along IA-141 and 170th Street shall be maintained via detours during construction. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Specifications.	
Contractor shall sign and maintain detours for IA-141. Permanent signing that conveys a message contrary to the message of the temporary detour signing or is not applicable to the working conditions shall be covered by the Contractor, as directed by the Engineer and stated in the Standard Specifications.	

	108_23A 8/15/22
TRAFFIC CONTROL PLAN	
Traffic control on this project shall be in accordance with the specific layouts shown on these plans. Traffic along IA-141 and 170th Street shall be maintained via detours during construction. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Specifications.	
Contractor shall sign and maintain detours for IA-141. Permanent signing that conveys a message contrary to the message of the temporary detour signing or is not applicable to the working conditions shall be covered by the Contractor, as directed by the Engineer and stated in the Standard Specifications.	

	108_23A 8/15/22
TRAFFIC CONTROL PLAN	
Traffic control on this project shall be in accordance with the specific layouts shown on these plans. Traffic along IA-141 and 170th Street shall be maintained via detours during construction. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Specifications.	
Contractor shall sign and maintain detours for IA-141. Permanent signing that conveys a message contrary to the message of the temporary detour signing or is not applicable to the working conditions shall be covered by the Contractor, as directed by the Engineer and stated in the Standard Specifications.	



(Not to Scale)

LEGEND

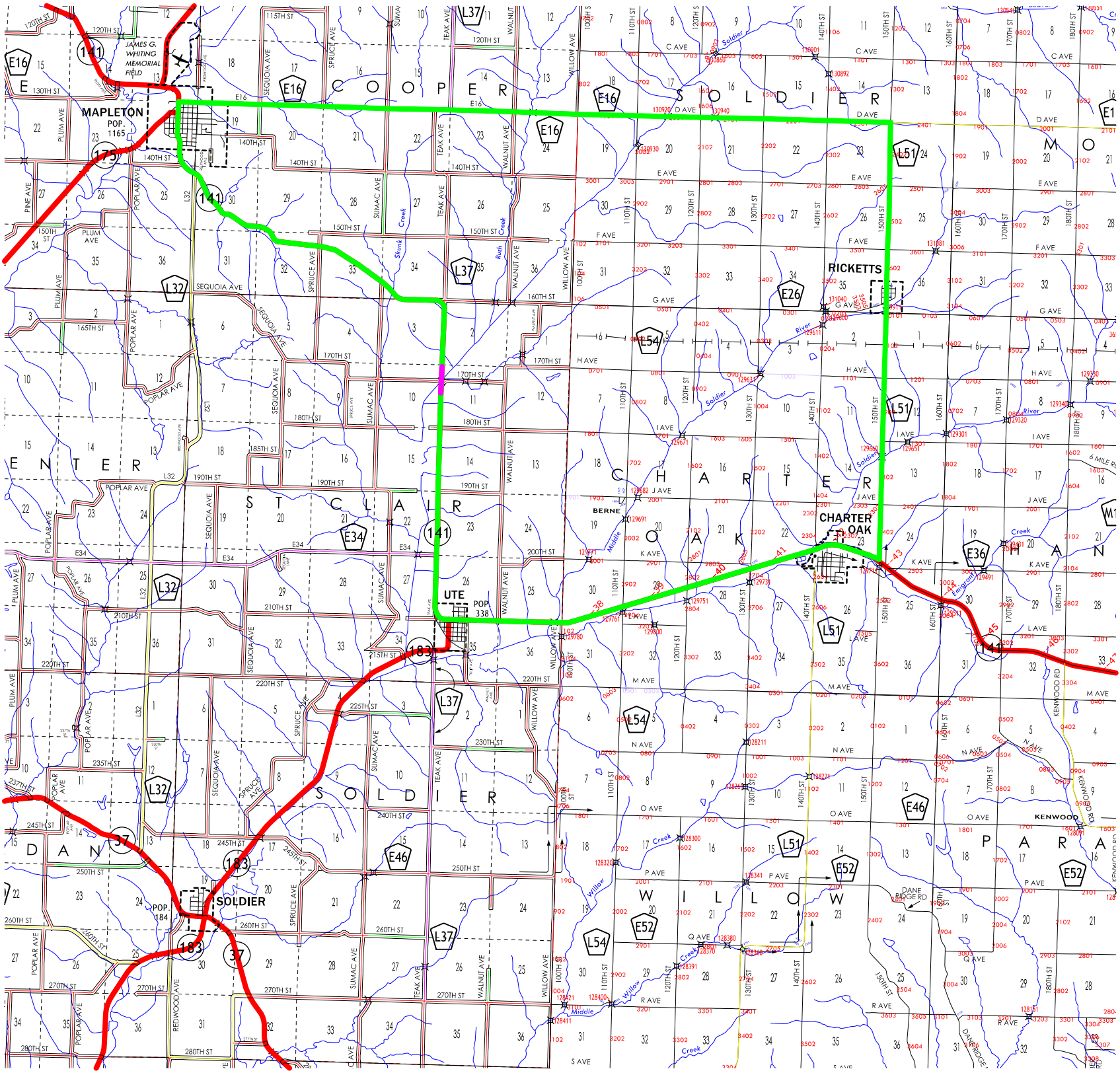
Detour Route

Road Closure

Detour Route

IA 141

Option 1



(Not to Scale)

LEGEND

Detour Route

Road Closure

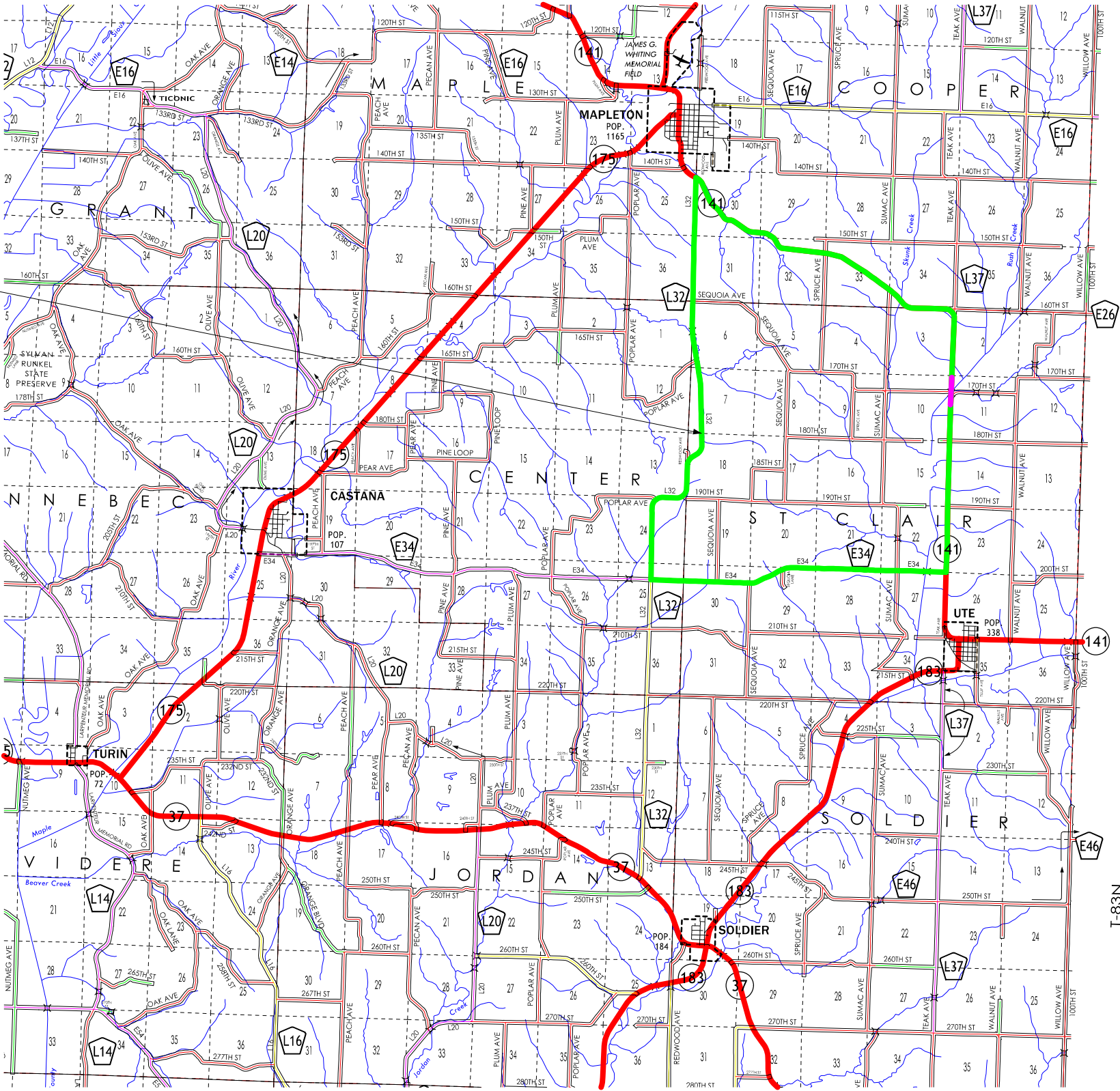
Detour Route

IA 141

Option 2



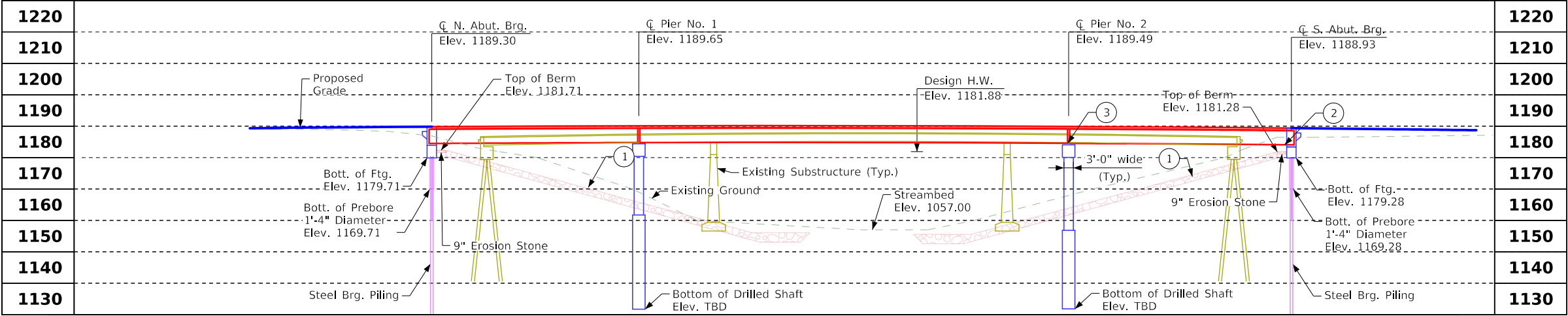
Note: During conceptual design, HWY L32 was noted to be in poor condition.



T-85N
T-84N
T-83N
CRA

(Not to Scale)	
LEGEND	
Detour Route	—
Road Closure	—
Detour Route IA 141 Option 3	

FILE NO.	ENGLISH	DESIGN TEAM HR Green, Inc.	Monona COUNTY	PROJECT NUMBER BRF-141-2(070)--38-67	SHEET NUMBER J.4
----------	---------	-----------------------------------	---------------	---	-------------------------



Section A-A (Longitudinal Section Along CL Prop. IA 141)

- ① Class E Revetment - 2' Thickness, 2.5:1 Max, slope normal to abutment.
- ② Operational Low Beam, Elev. 1183.19
- ③ Channel Low Beam, Elev. 1183.75
- ④ 274'-0" x 40'-0" PPCB Bridge, Sta. 1682+79.20

Hydraulic Data

SoldierR_37.48
Drainage Area = 136 Sq. Mi.
Stream Slope (HGL) = 0.00102 Ft./Mi.

Q₅₀ = 13,200 cfs
Stage = 1179.68
Channel Low Beam = 1183.75
Avg. Bridge Velocity = 3.71 fps

Q₁₀₀ = 15,200 cfs
Stage = 1181.45
Operational Low Beam = 1183.19
Backwater = (+)0.29 Ft.
Avg. Bridge Velocity = 3.85 fps

Q₅₀₀ Roadway Overtop occurs ±300' south of bridge.

- Design Notes:
- Top of bridge deck at centerline roadway is 0.03" below the profile grade to account for parabolic crown.
 - TL-4 Single Slope Bridge Railing proposed.
 - Non-Standard 3'-6" Integral Abutment width
 - Pier-Type - Frame Pier on Drilled Shafts. Foundation type to be confirmed during final design.
 - Beam Type - BTB.
 - Class E Revetment Stone is embedded.
 - Existing substructure and piles to be removed to 1' below prop. grade.
 - Final design to take into account that proposed abutment piling may be in conflict with existing piling.

Location

IA 141 over Soldier River
T-84N R-42W
Sections 10 & 11
Saint Clair Township
Monona County
Bridge Maint. No. 6731.95141
FHWA No. 036790
Latitude 42.106257°
Longitude -95.710483°

IA 141 Traffic Est.

2022 AADT 770 V.P.D.
2044 AADT X,XXX V.P.D.
Trucks 17 %

Utilities Legend

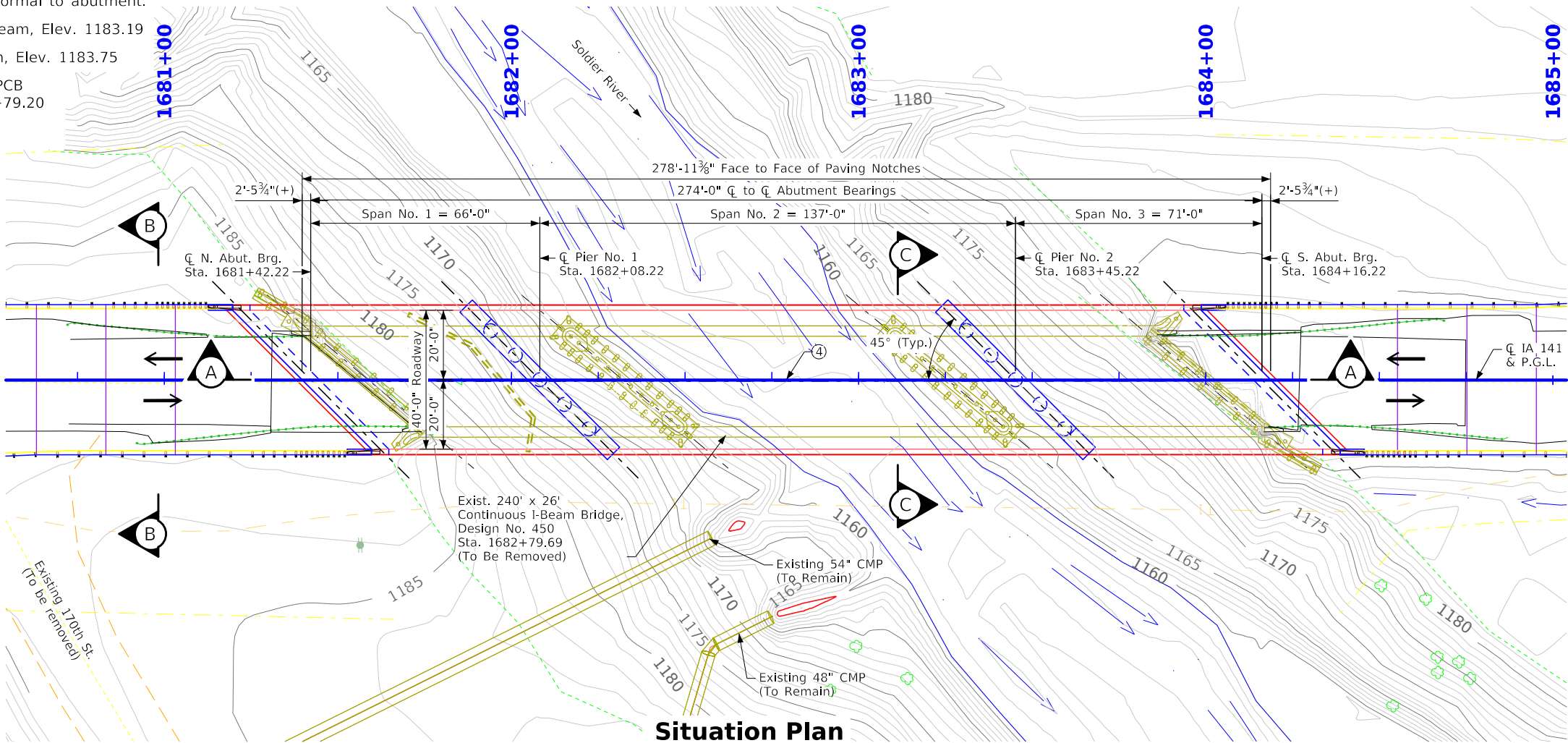
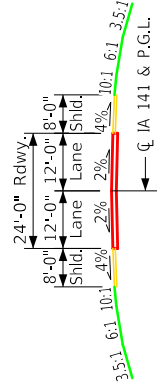
— Underground Telephone Line
— Power Pole
Utilities shown on this sheet are for information only, see Road Design sheets for final utility information.

- Notes:
- Drilled shafts are assumed for pier foundations. Verify with geotechnical information during Final Design.
 - 2.5:1 Berm slopes used to better match existing channel.

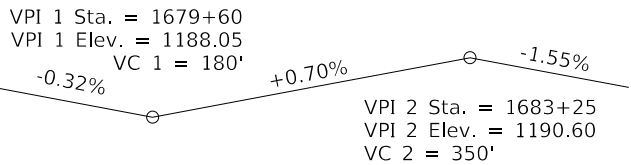
Preliminary

Design For 45° Skew (R.A.)
274'-0" x 40'-0" Prestressed Concrete Beam Bridge
66'-0" & 71'-0" End Spans 137'-0" Interior Span
Situation Plan
STA. 1682+79.20 (IA 141) Turn-in Date: Sept. 2025
Monona County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. ### Design Sheet No. 1 of 1 FHWA No. 036790

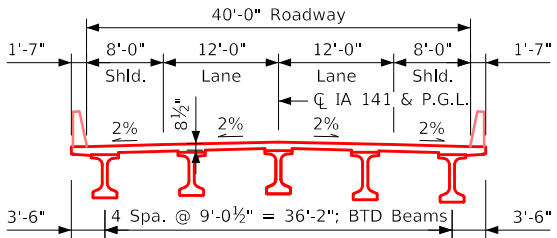
Section B-B (Typ. Appr. Sect.)



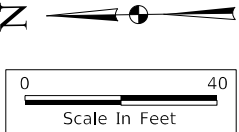
Situation Plan



Proposed Profile
Grade IA 141

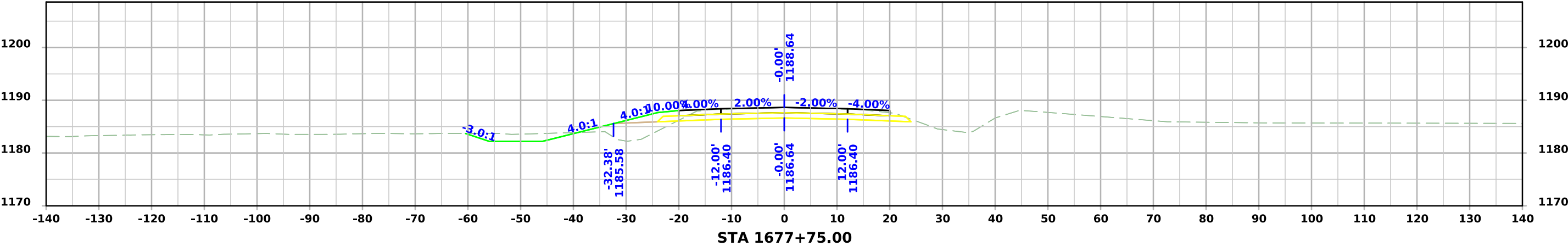
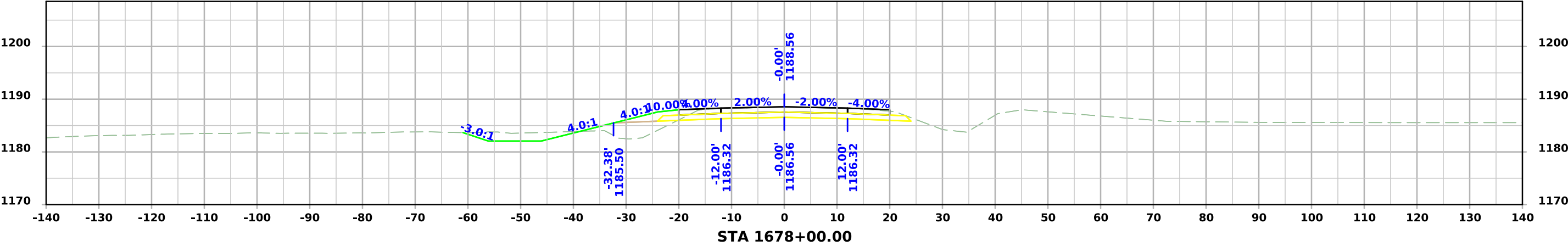
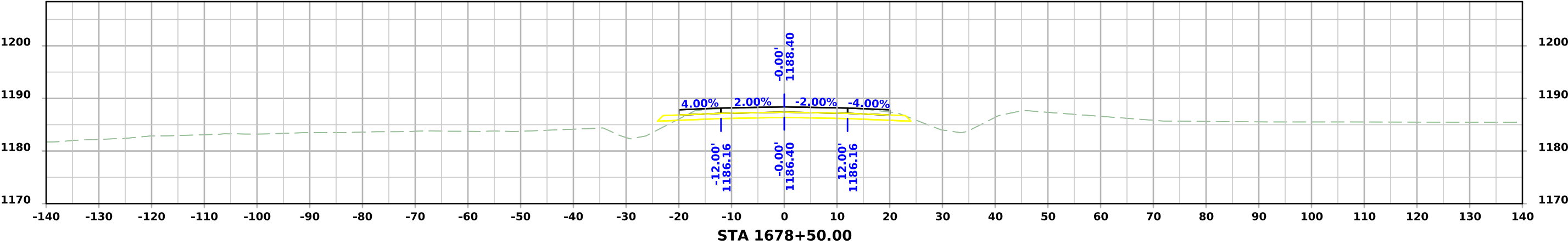


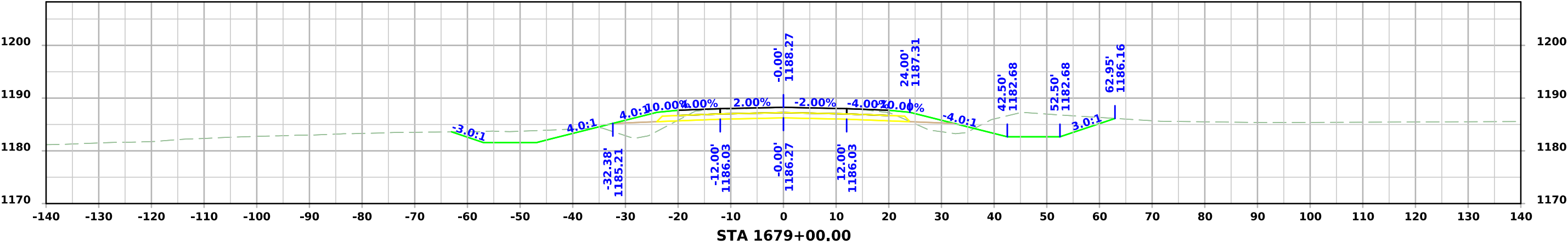
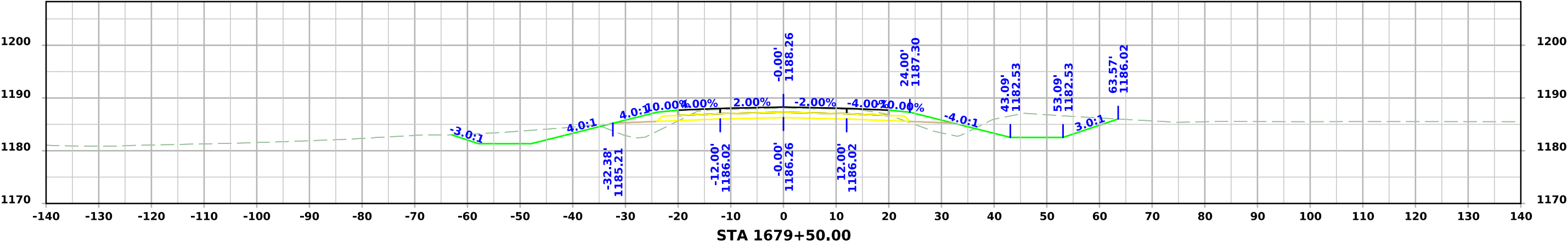
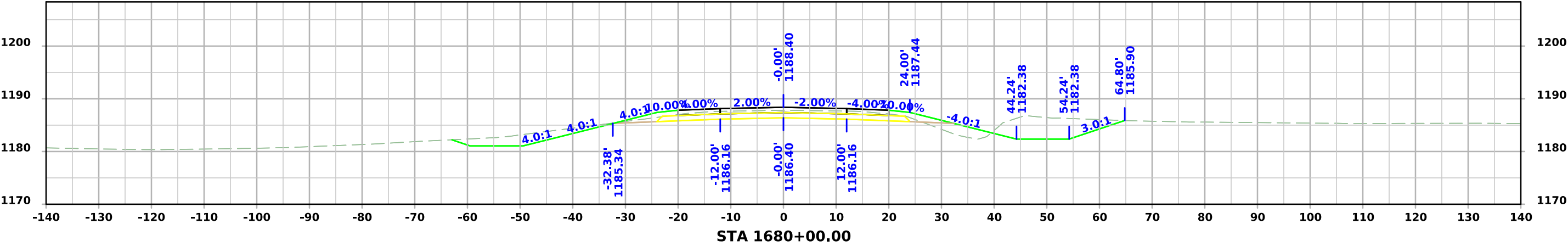
Section C-C (Typ. Bridge Sect.)

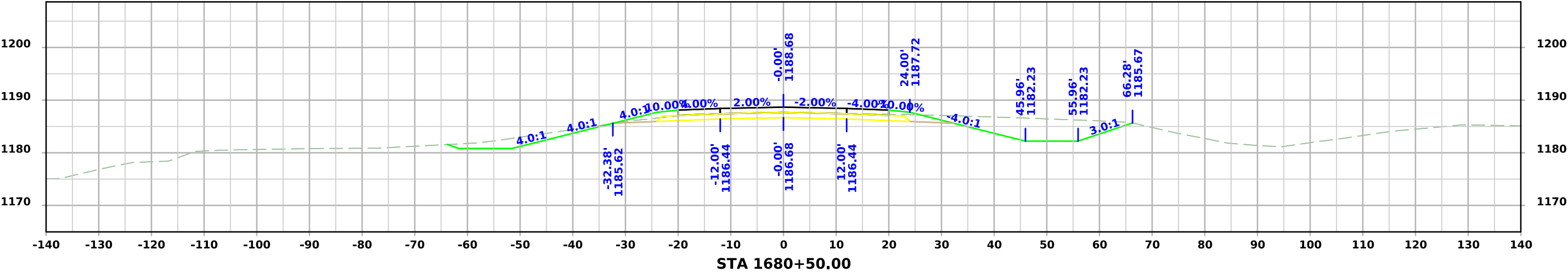
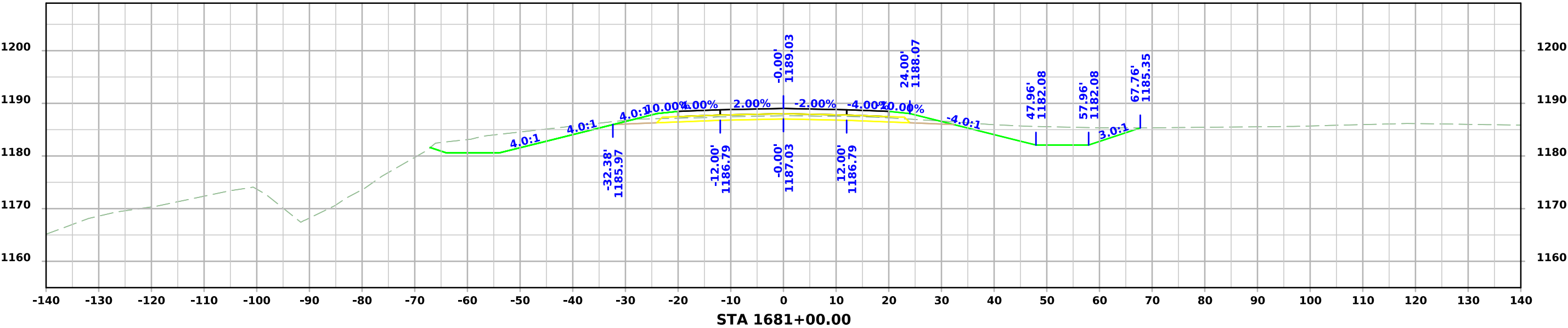


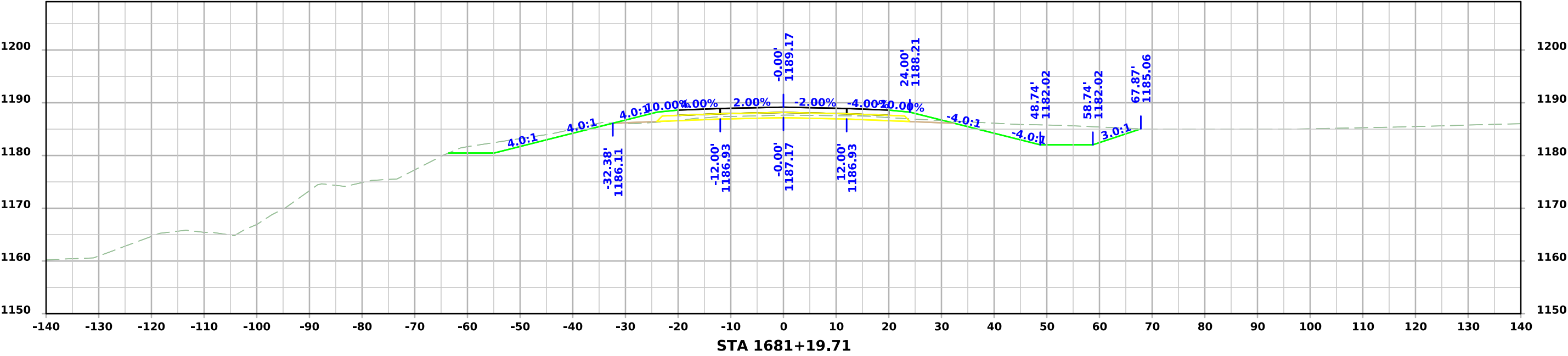
CROSS SECTION VIEW COLOR LEGEND			
Design Color No.	Feature	Design Color No.	Feature
Aggregate		Structural	
(64)	Choke Stone	(112)	Noise Wall
(42)	Engineering Fabric	(112)	Noise Wall Footing
(8)	Flooded Backfill	(112)	Retaining Wall Back
(92)	Macadam Stone	(112)	Retaining Wall Back Excavate
(20)	Modified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

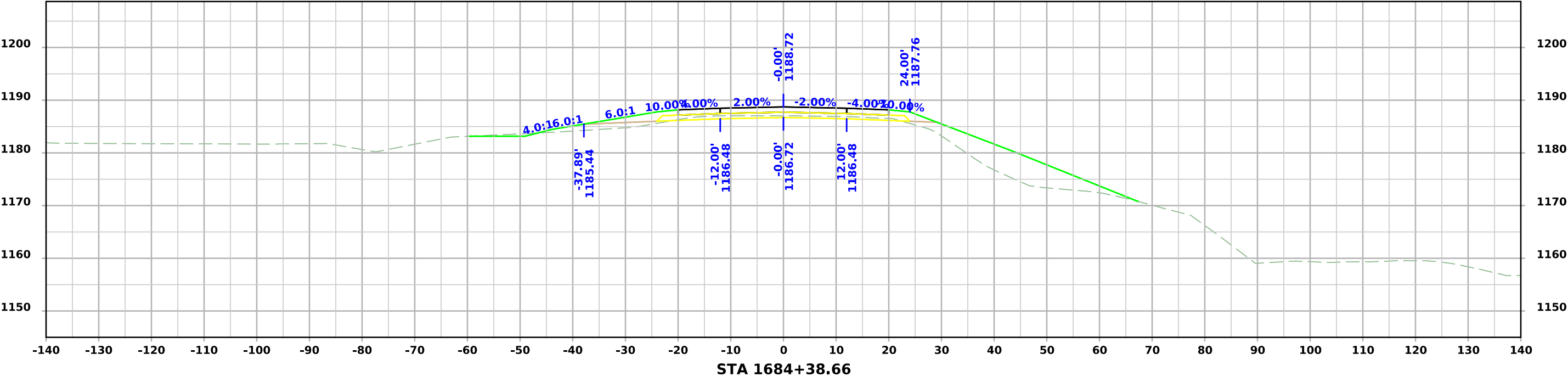
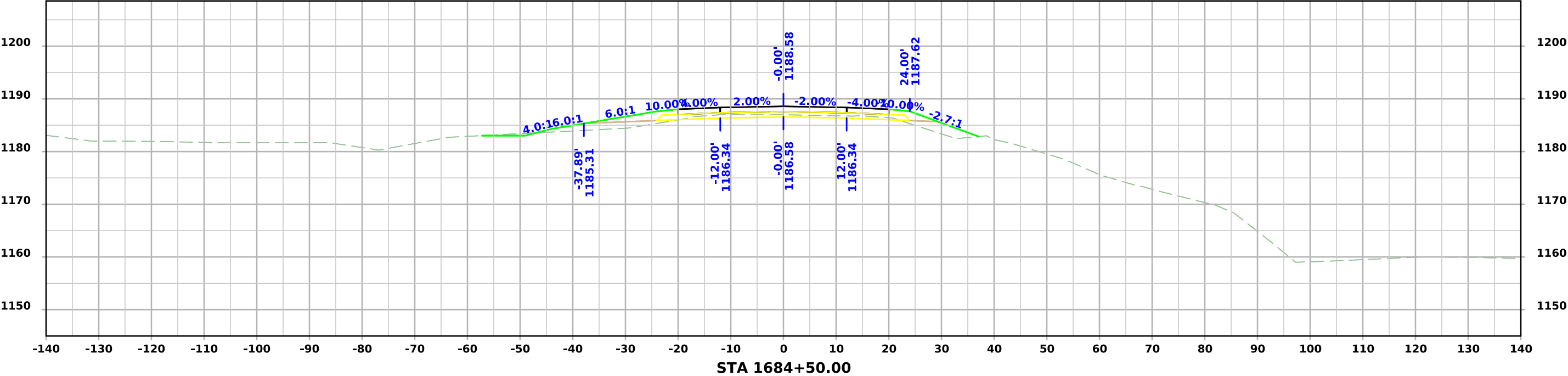
CROSS SECTIONS
LEGEND AND INFORMATION SHEET
(COVERS SHEET SERIES W, X, Y, & Z)

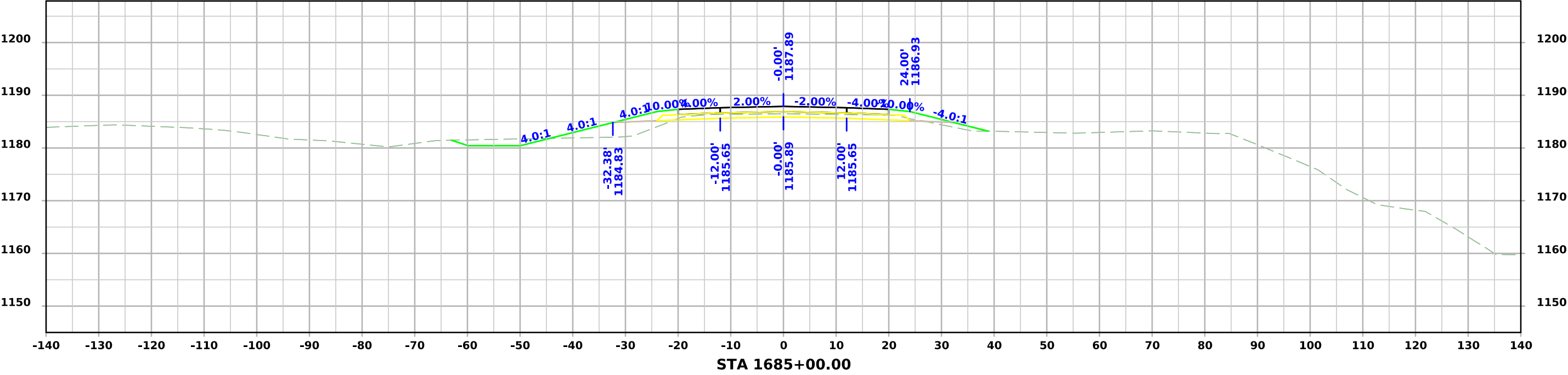
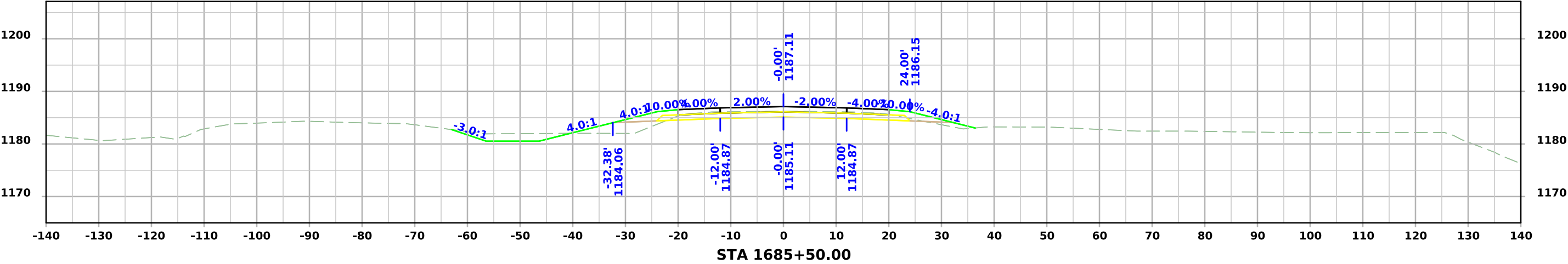


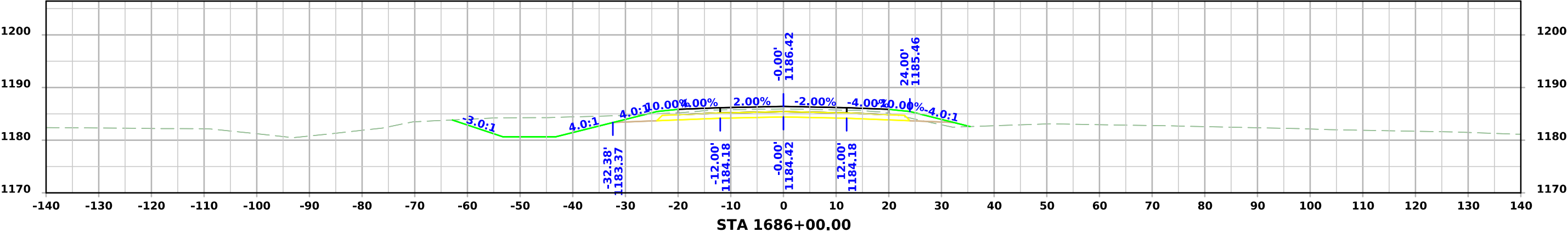
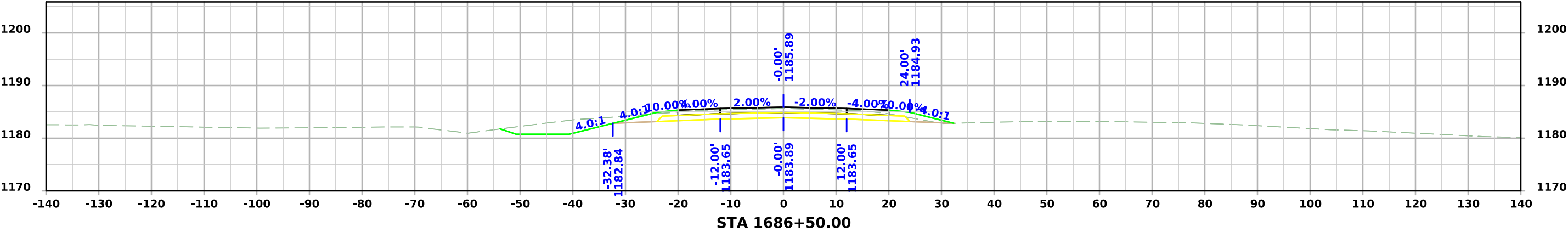
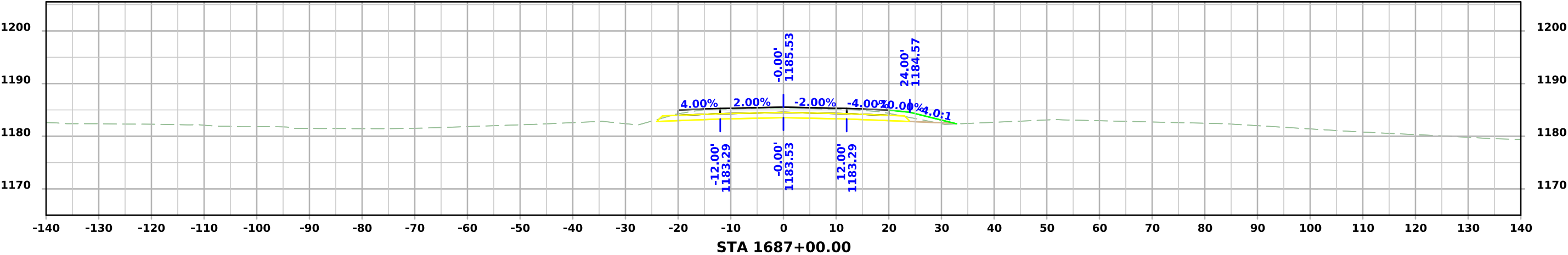


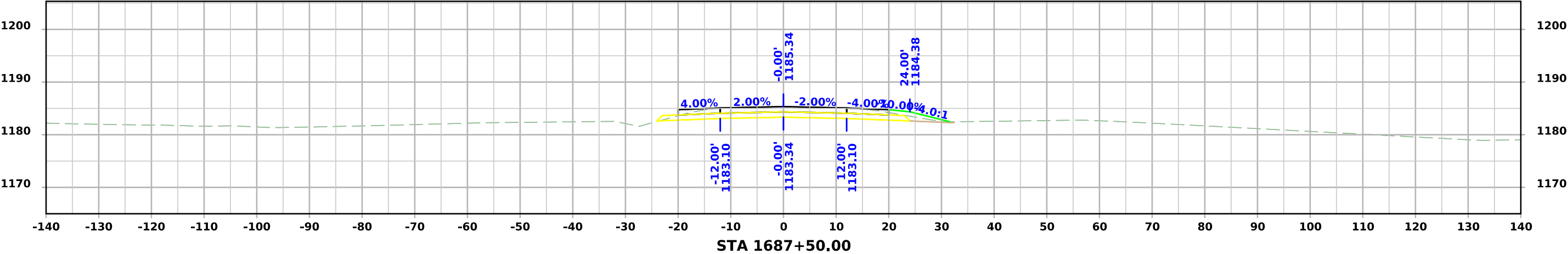
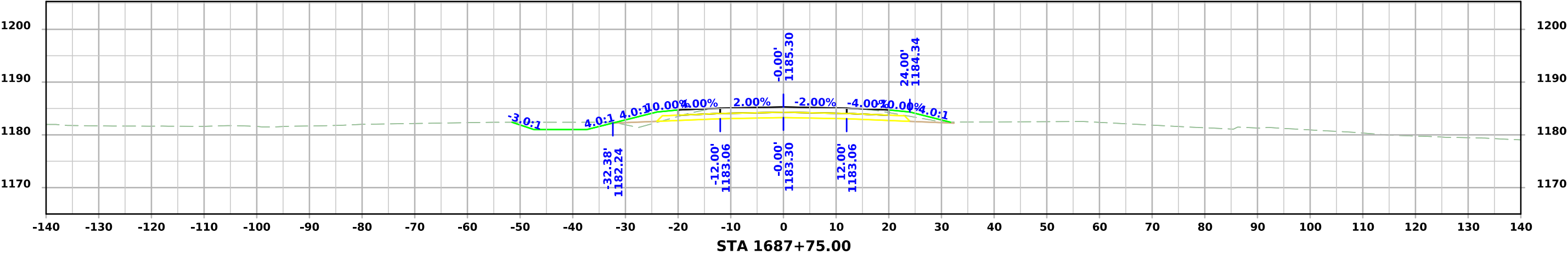




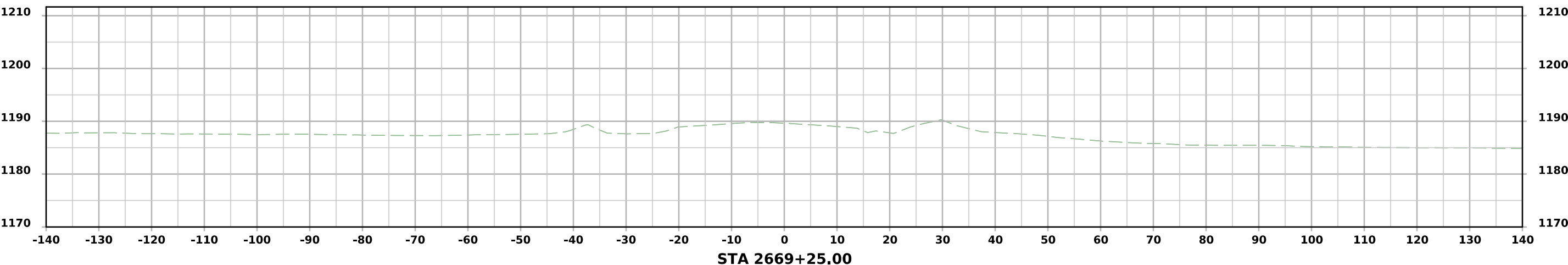
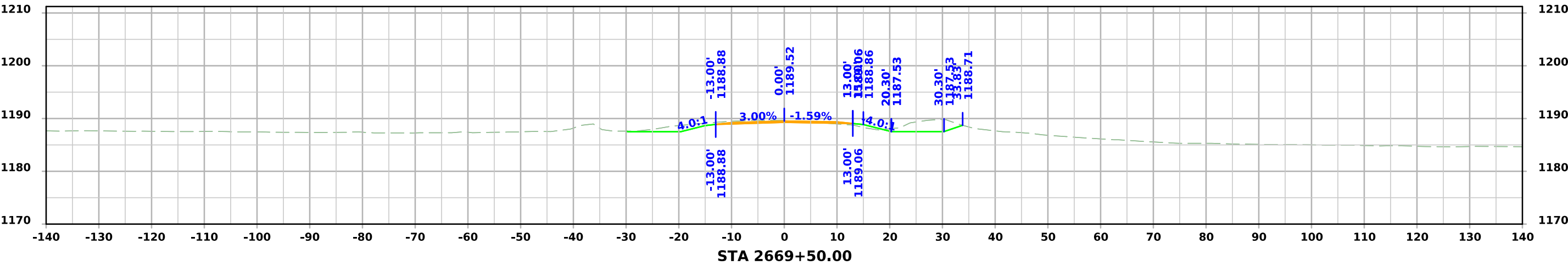
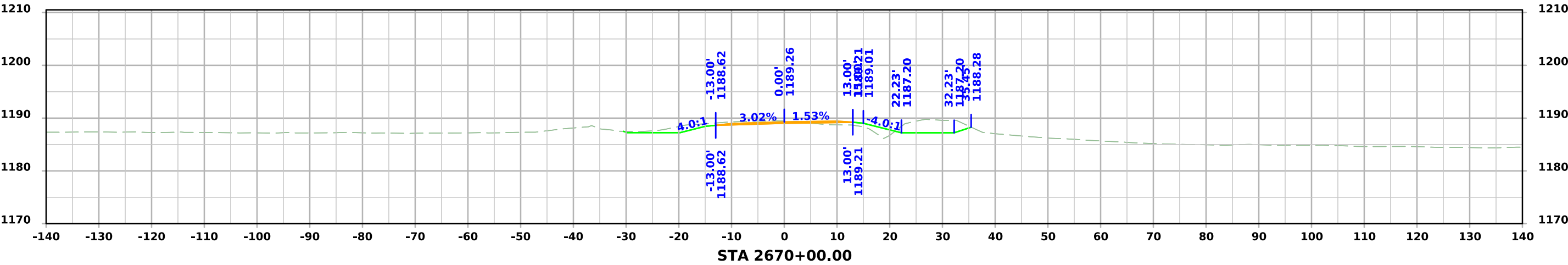




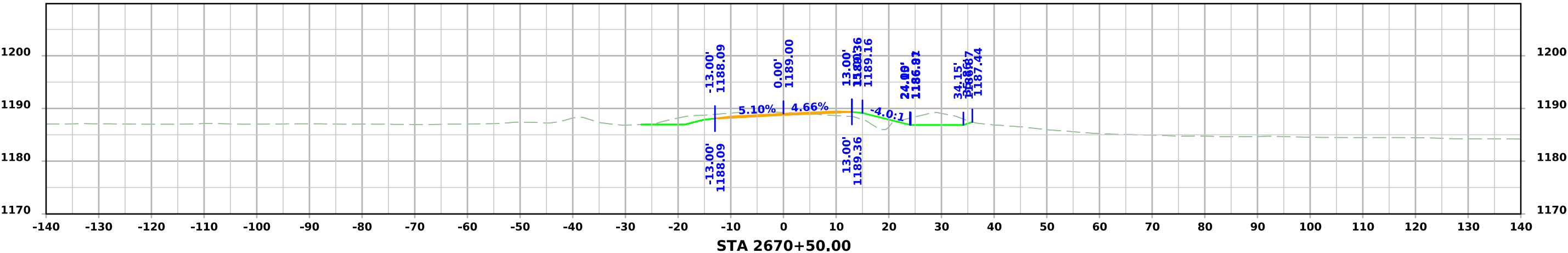
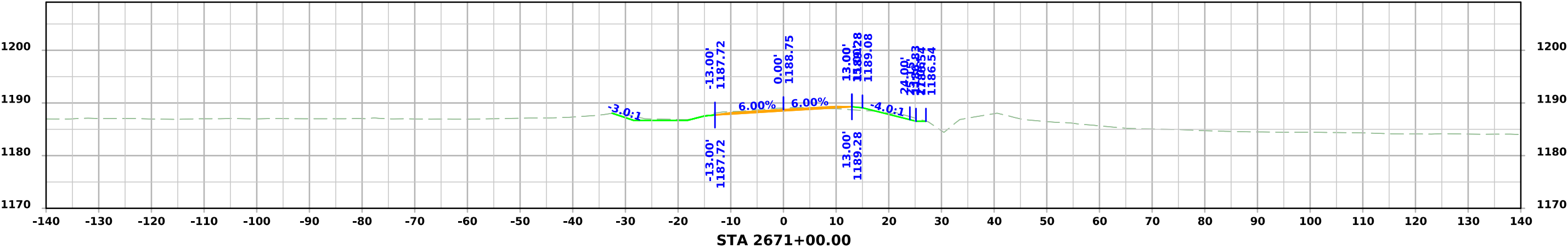
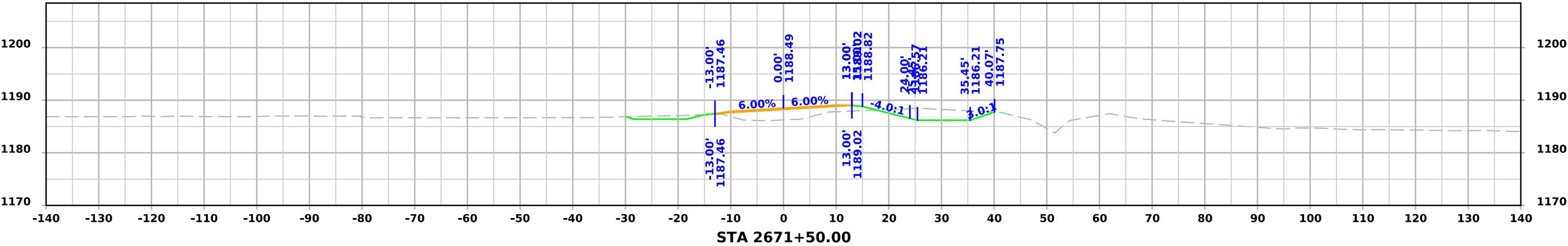




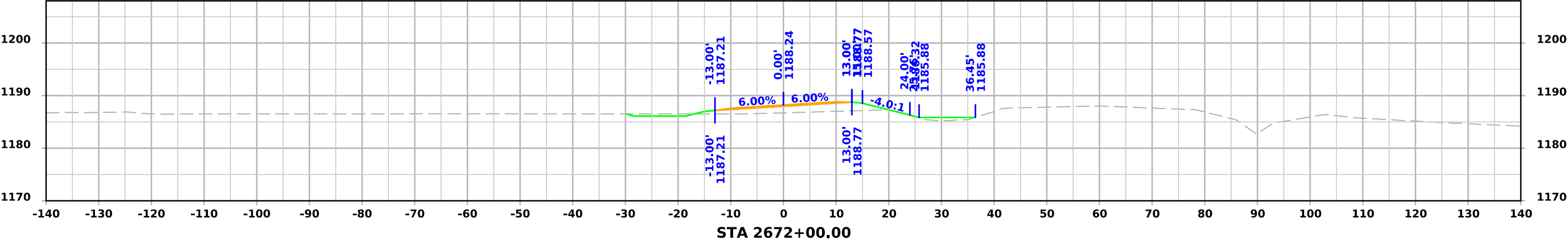
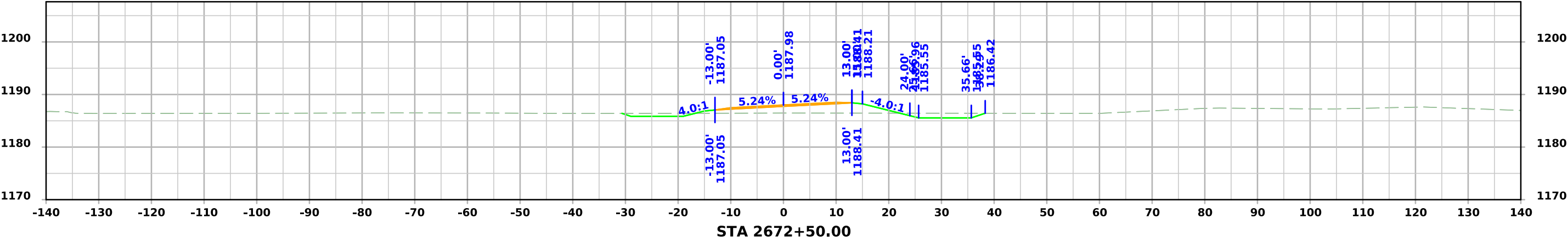
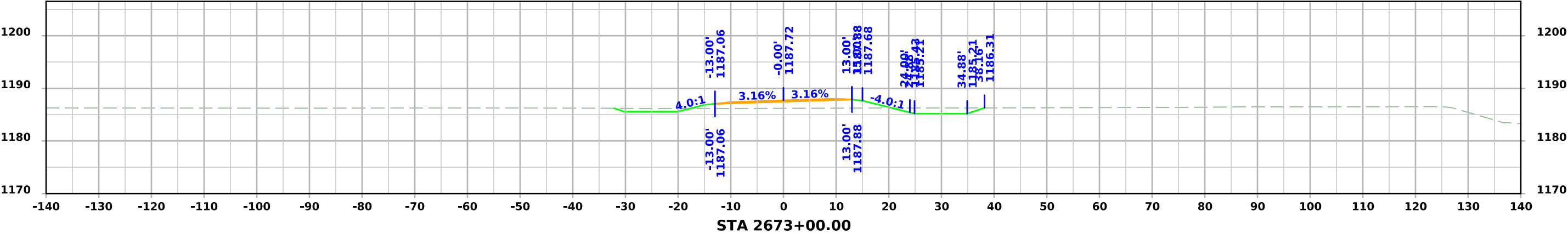
170th St. (North)



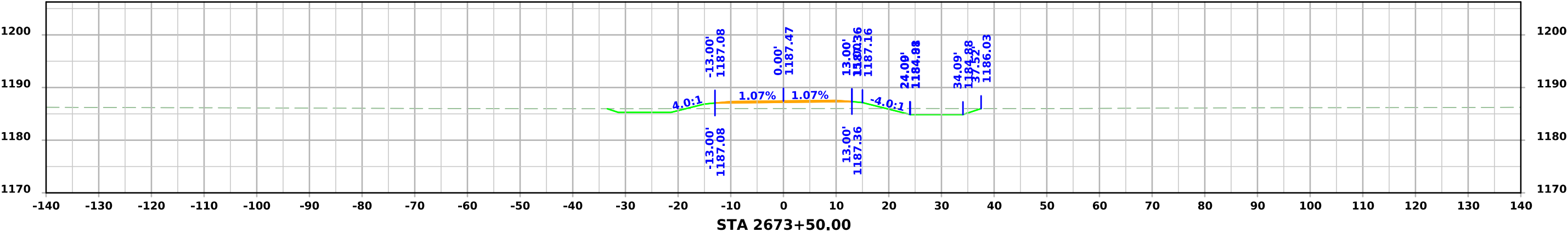
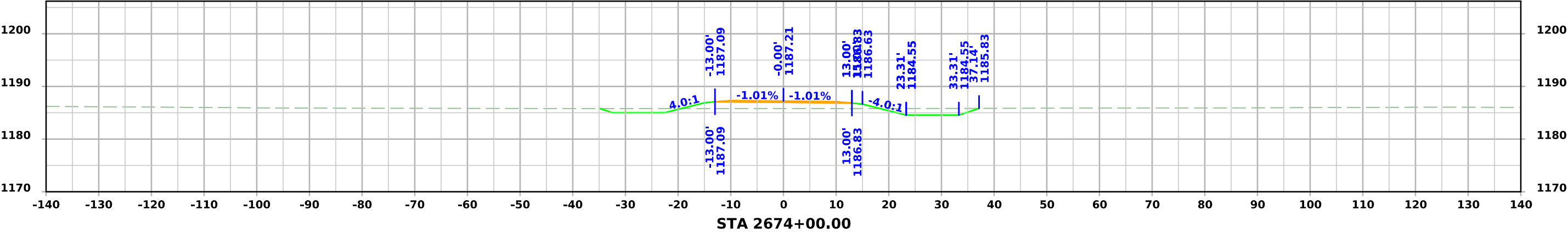
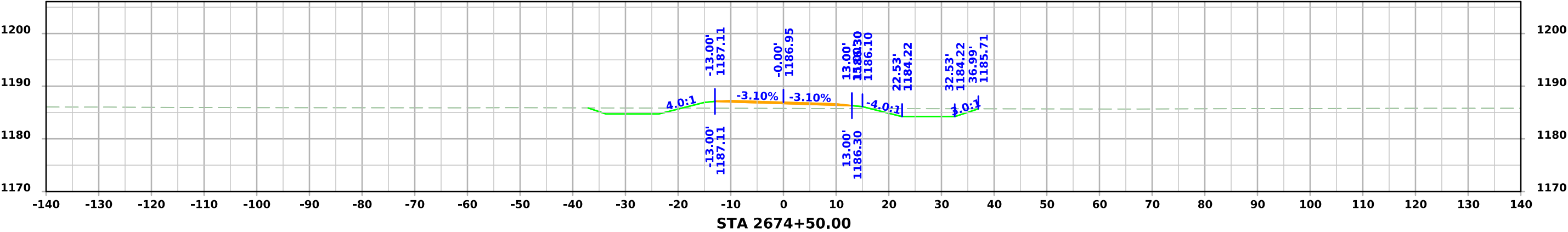
170th St. (North)



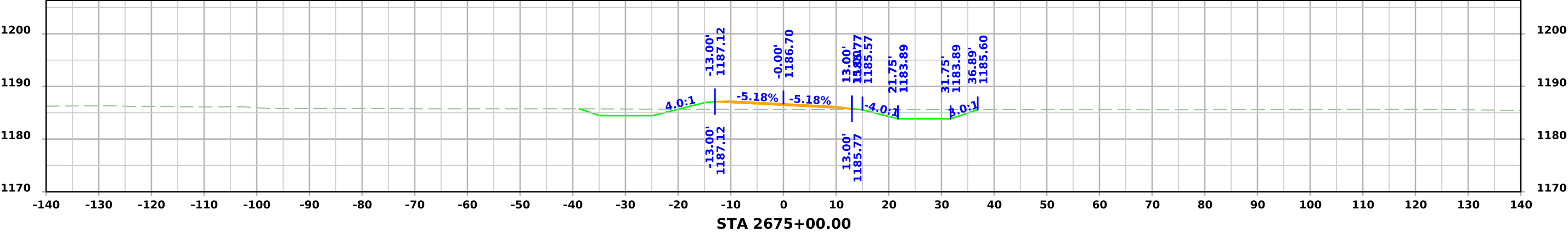
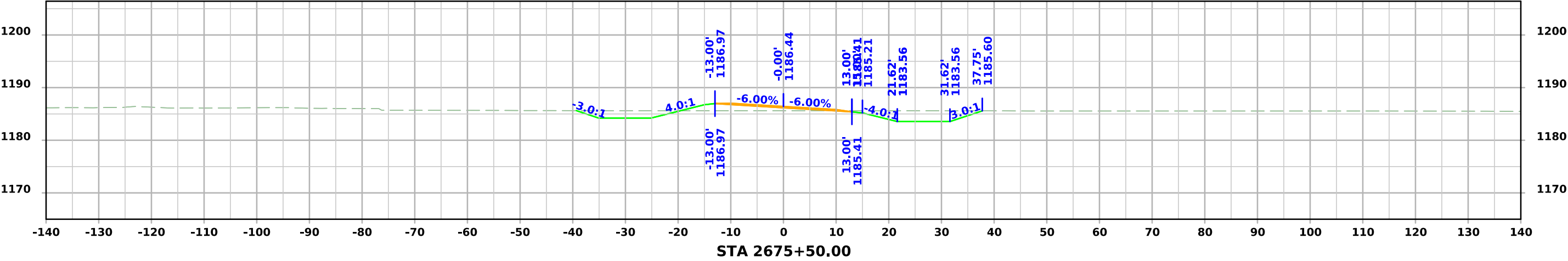
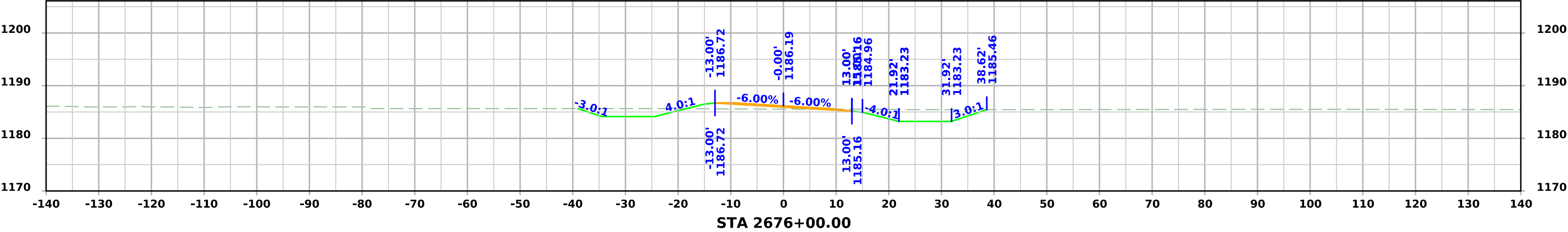
170th St. (North)



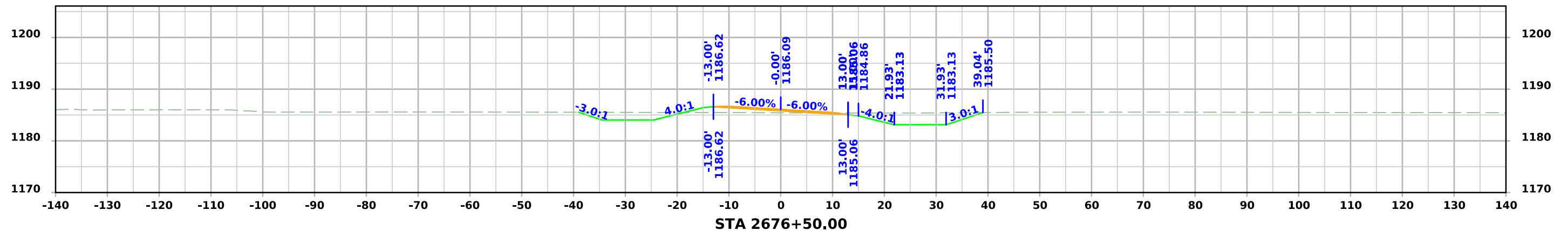
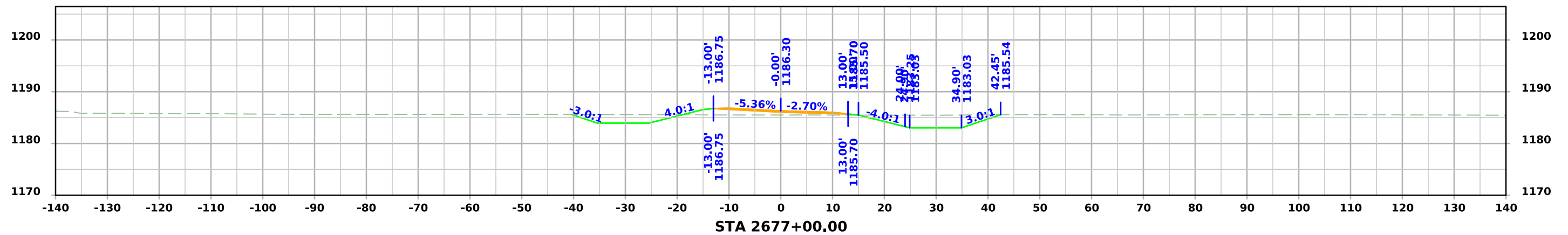
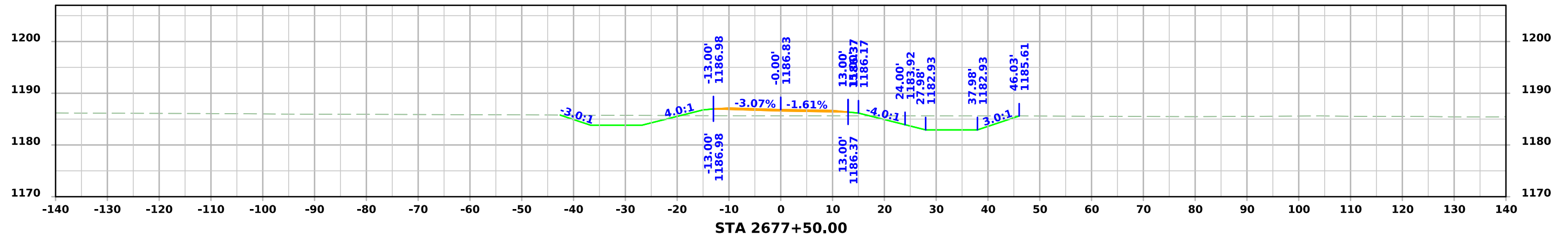
170th St. (North)



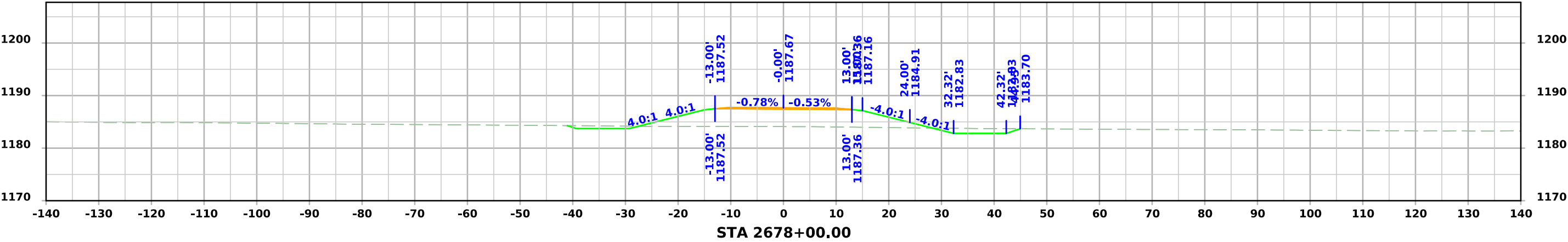
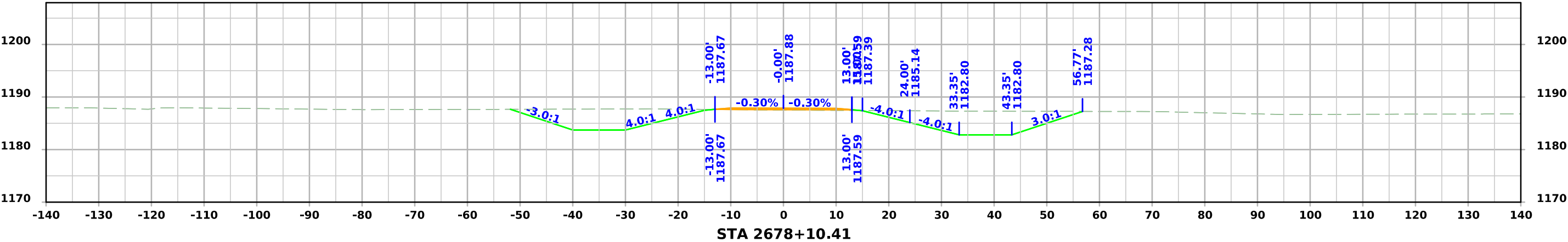
170th St. (North)



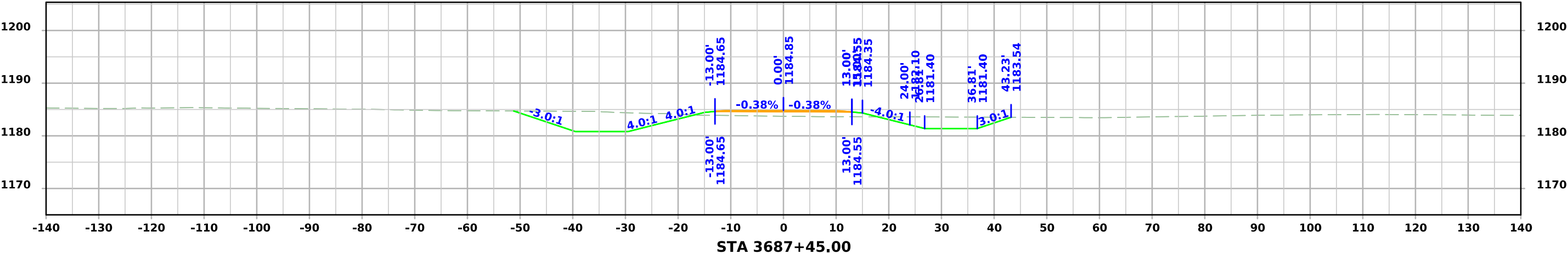
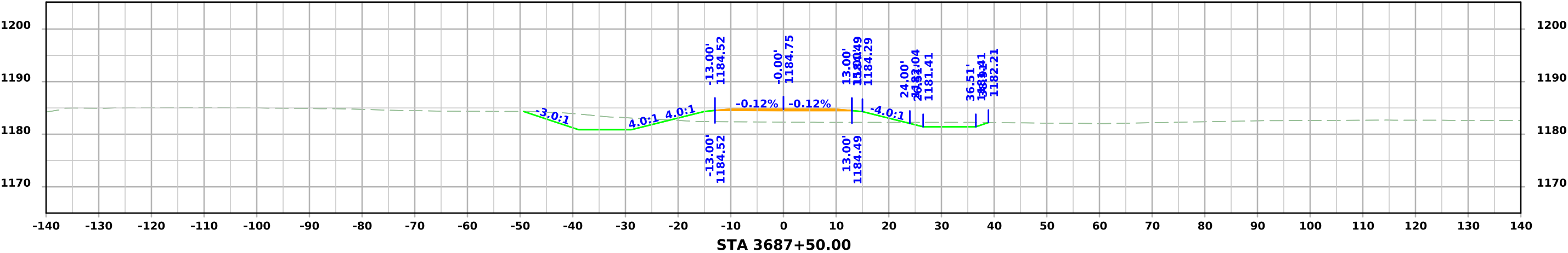
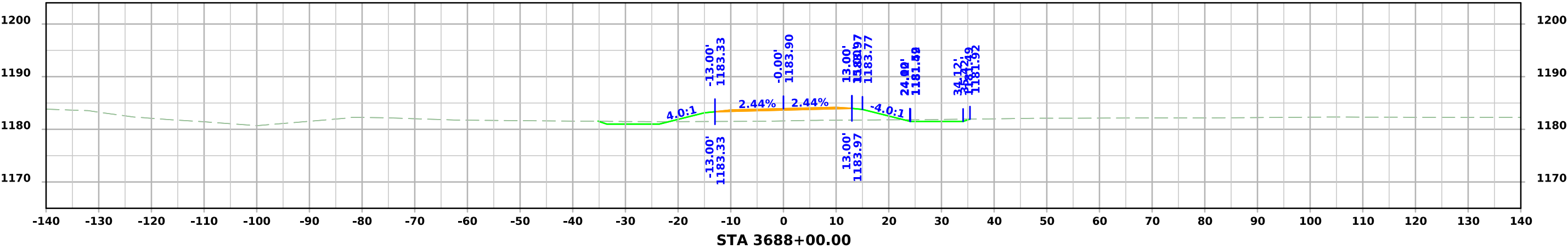
170th St. (North)



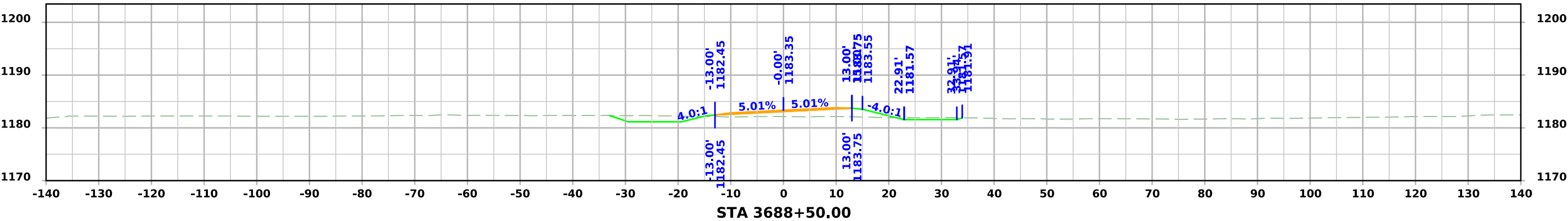
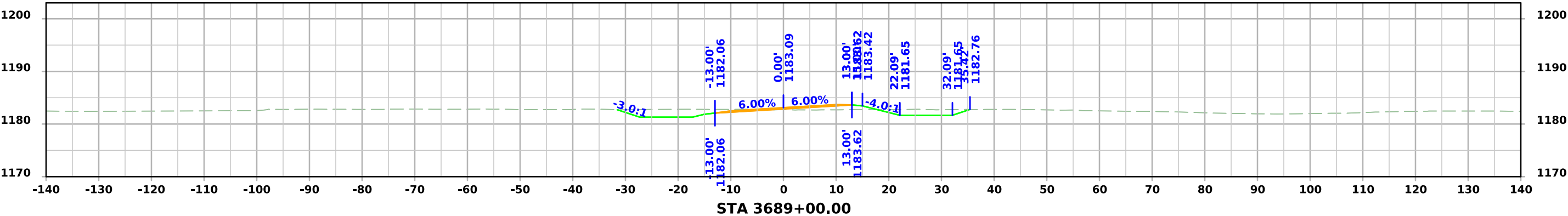
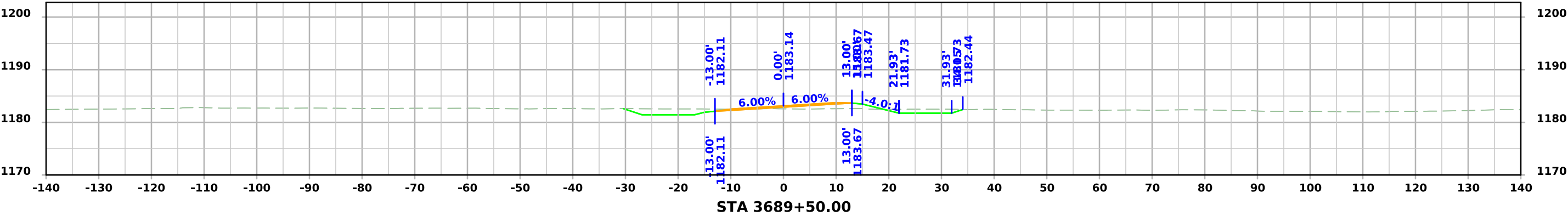
170th St. (North)



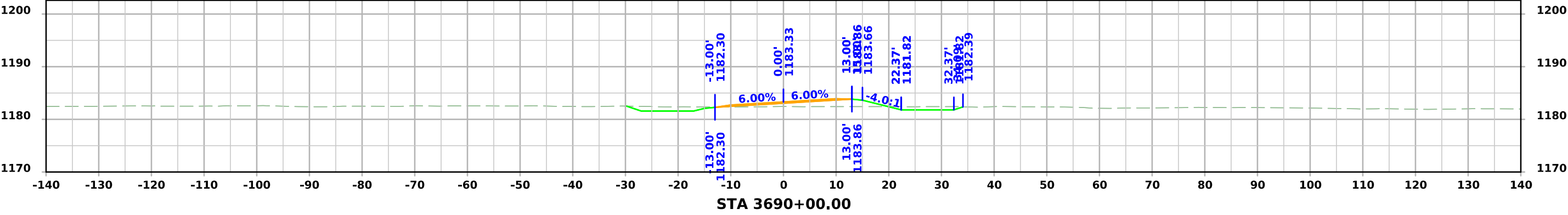
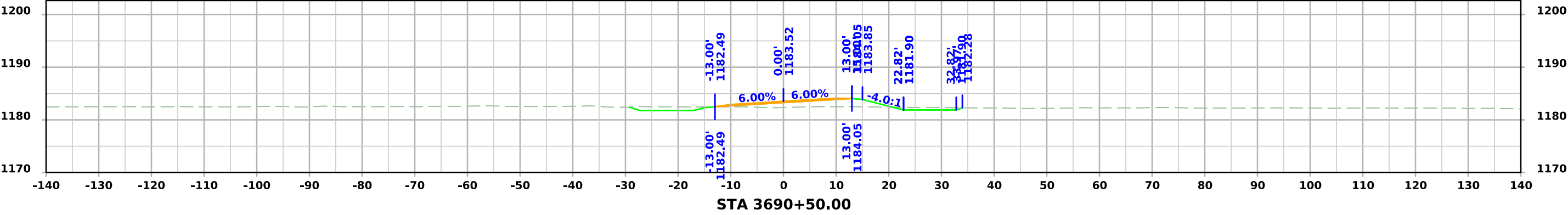
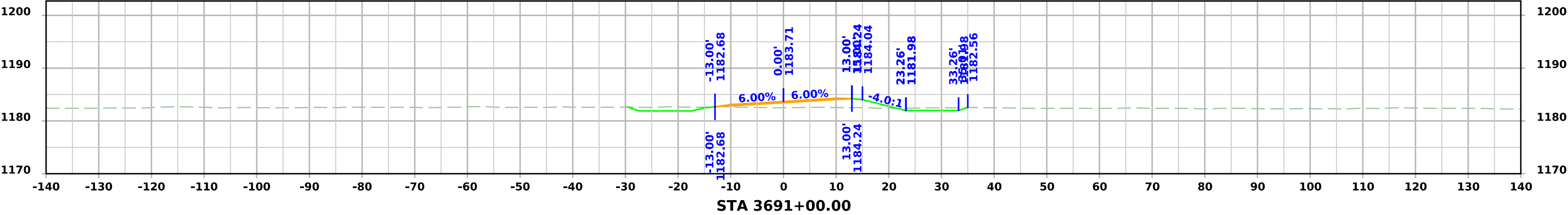
170th St. (South)



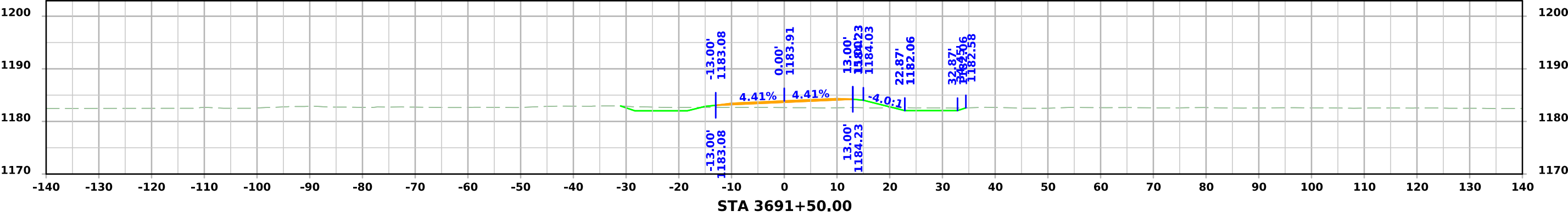
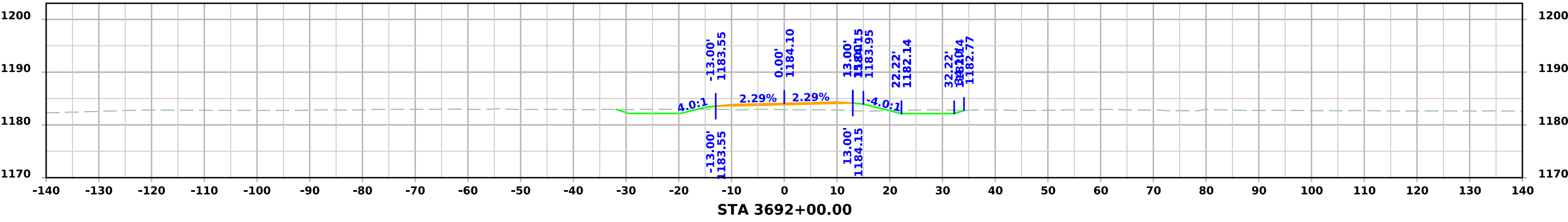
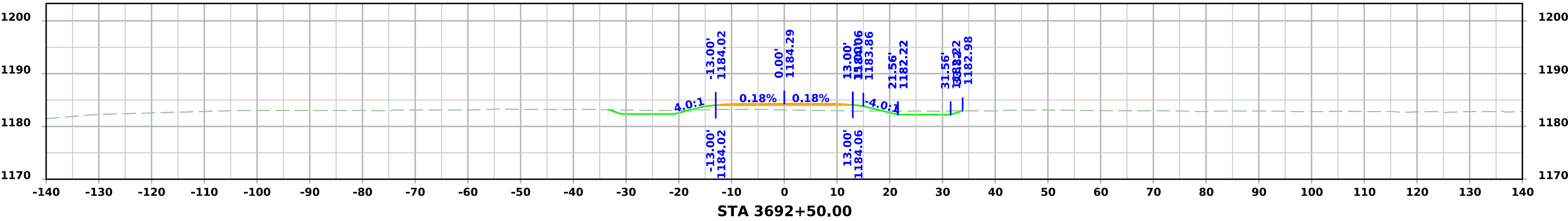
170th St. (South)



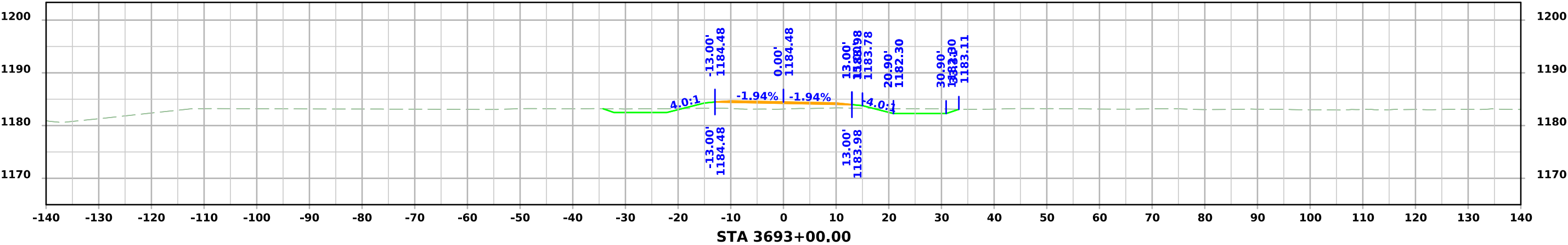
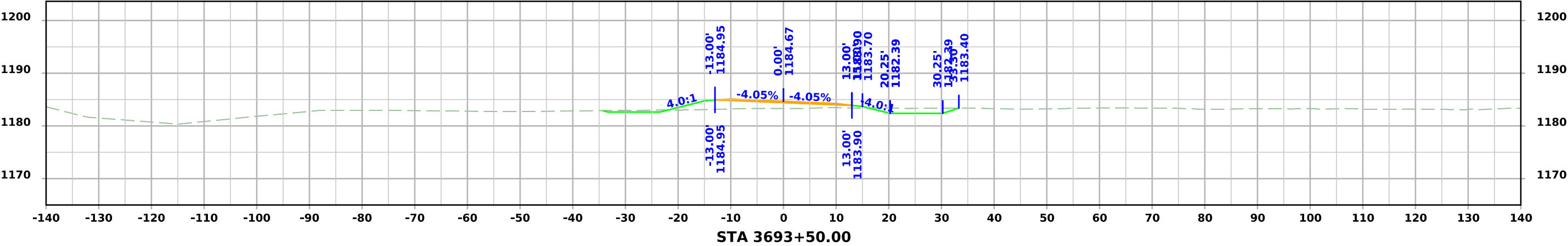
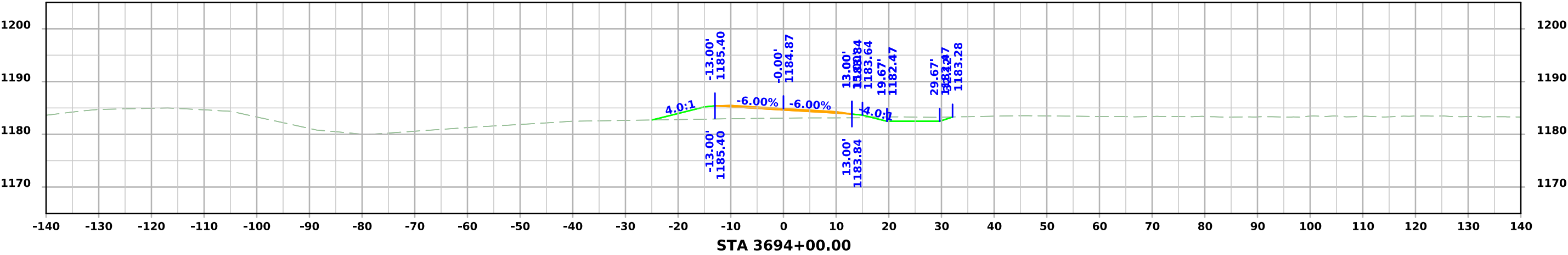
170th St. (South)

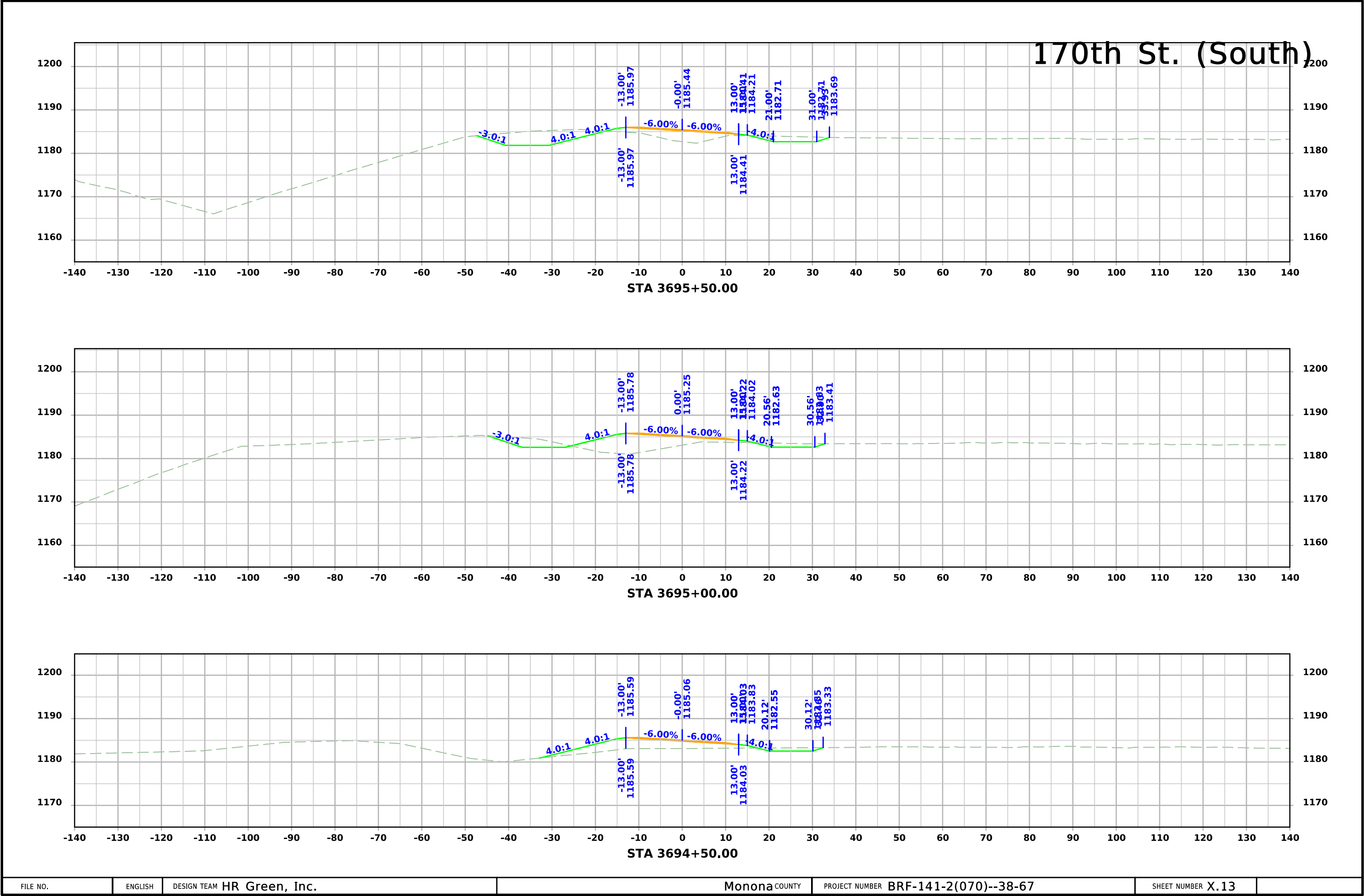


170th St. (South)



170th St. (South)





1200

1190

1180

1170

140

130

120

110

100

90

80

70

60

50

40

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

-110

-120

-130

-140

STA 3694+50.00

13.00'

1185.59

-13.00'

1185.59

-6.00%

1185.06

-0.00'

1185.06

-6.00%

13.00'

1184.03

-13.00'

1184.03

-4.0:1

20.12'

1182.55

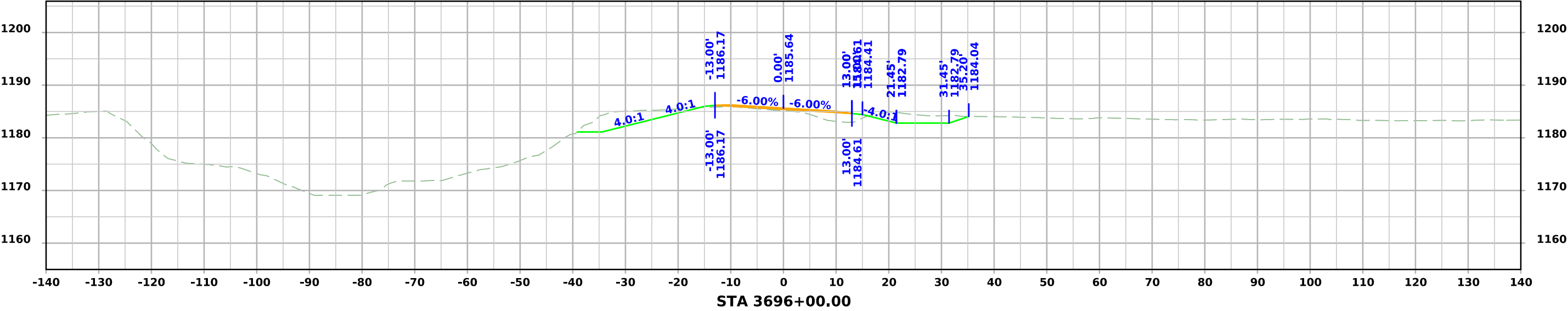
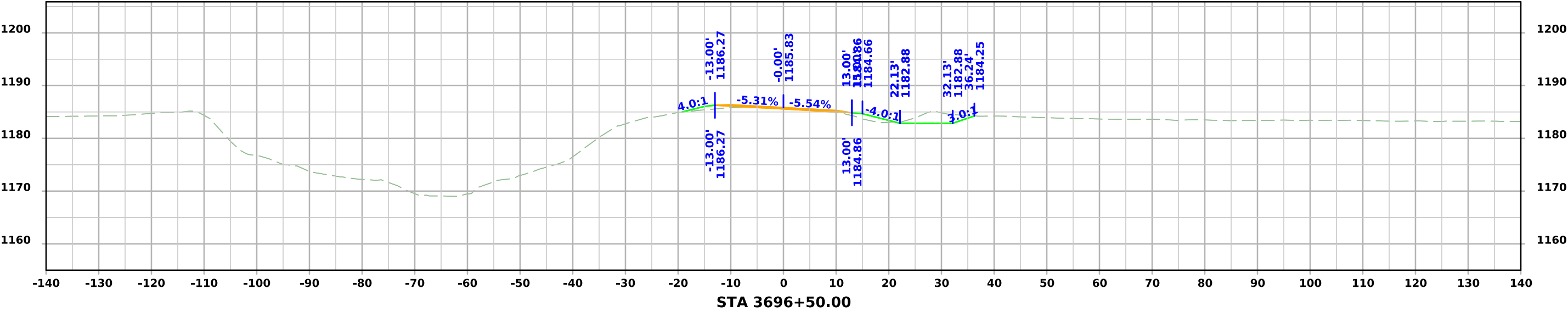
30.12'

1183.33

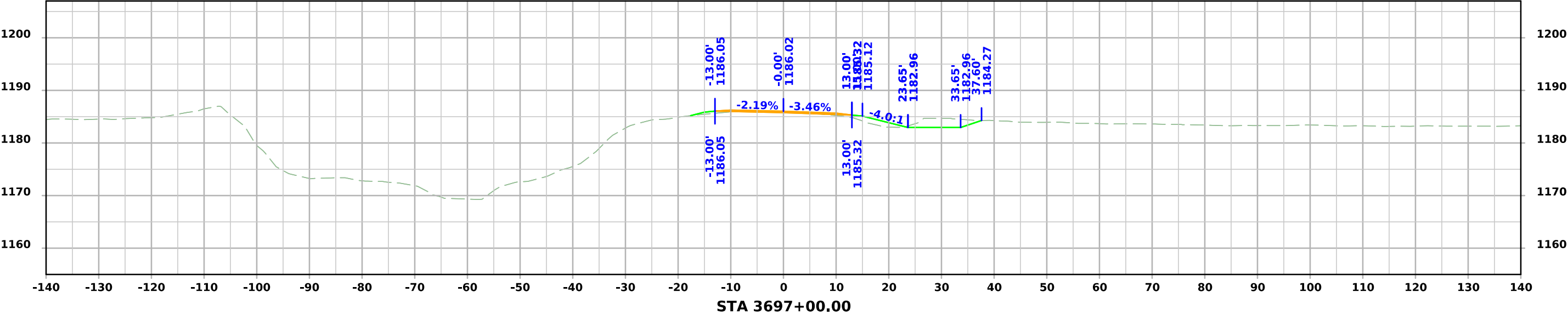
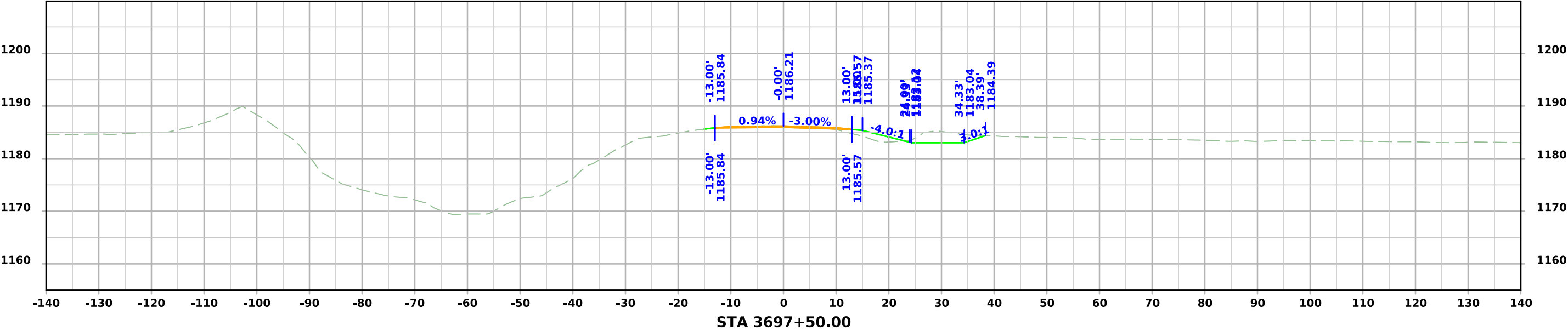
30.12'

1183.33

170th St. (South)



170th St. (South)



170th St. (South)

