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PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
Dubuque COUNTY
Bridge Replacement - PPCB
Middle Branch Catfish Cr and CC RR
0.6 mi E of NW Arterial in Dubuque (WB)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



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REVISIONS

TOTAL
..
PROJECT IDENTIFICATION NUMBER
19-31-020-030
PROJECT NUMBER
BRF-020-9(261)--38-31
R.O.W. PROJECT NUMBER
NHSN-020-9(262)--2R-31

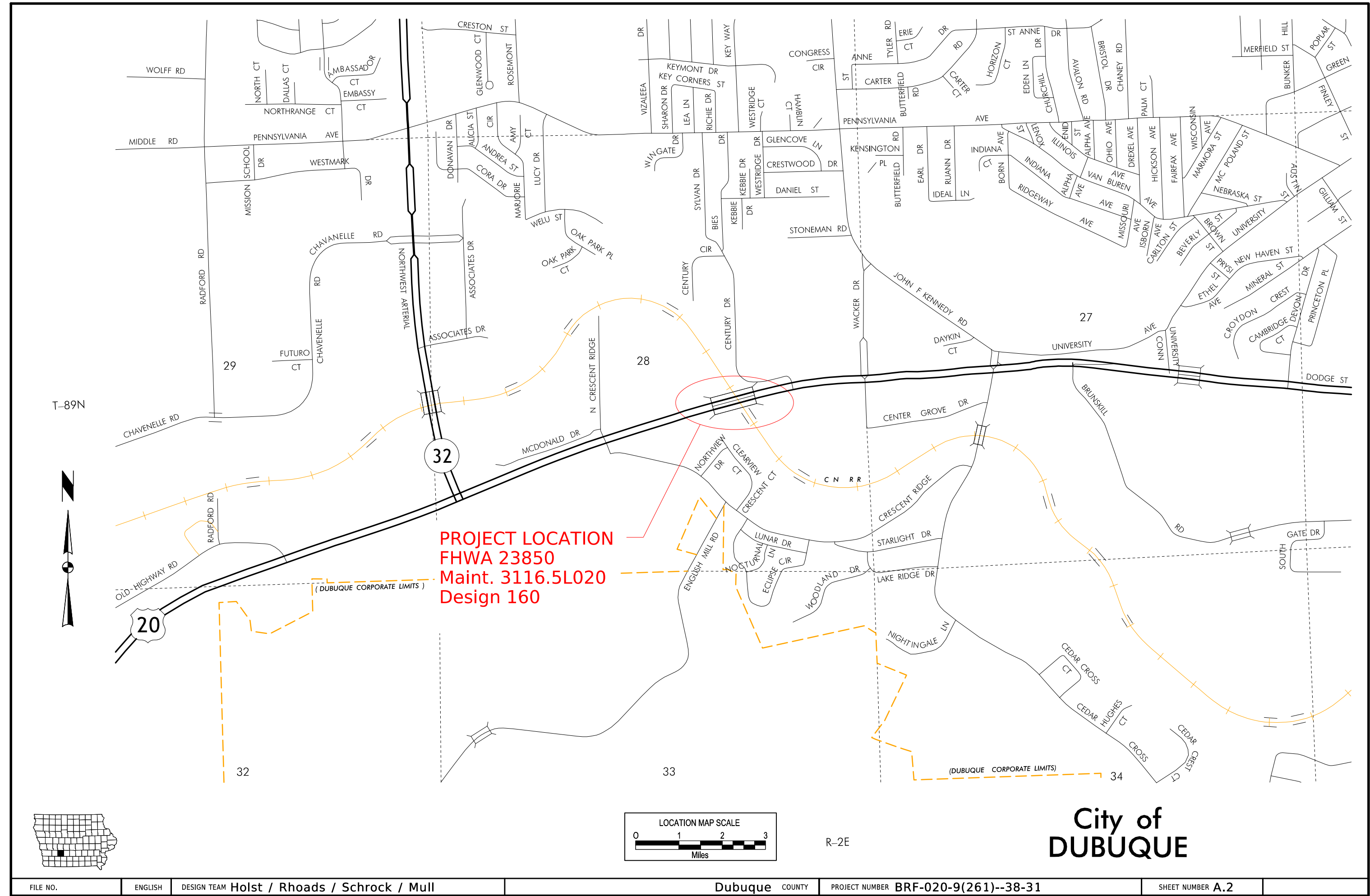
DESIGN DATA URBAN				
2025	AADT	37,200	V.P.D.	
2045	AADT	53,100	V.P.D.	
2045	DHV	5486	V.P.H.	
TRUCKS		8	%	
Total				
Design ESALs		--		

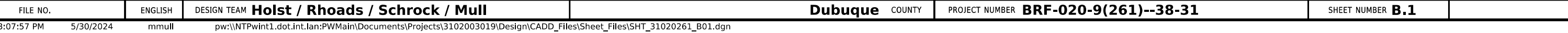
INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block

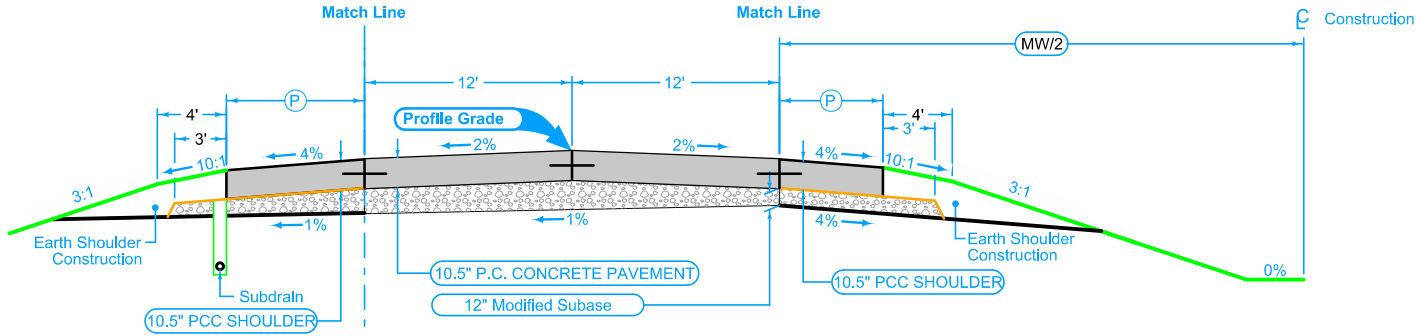
PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN- Date: 7-12-24







Full Depth PCC Shoulder

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

4_P_FullPCC_04-21-20			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
WB	22+00	30+00	10

Section shown in the direction of traffic.

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

4DP_04-21-20			
Direction of Travel	BEGIN STATION	END STATION	(MW) Feet
WB	22+00	30+00	50

Full Depth PCC Shoulder

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

4_P_FullPCC_04-21-20			
Direction of Travel	BEGIN STATION	END STATION	(P) Feet
WB	22+00	30+00	6

See Tab 100-24 for pavement quantities.
See Tab 112-9 for shoulder quantities.

US 20 PCC PAVING

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, Traffic Detection Loop
	TER, Terrace
	TEV, Evergreen 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, Satellite 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

	E1 - Electric Line Alliant
	F0(B) - Fiber Optic Central Scott
	F0(C) - Fiber Optic ICN
	F0 - Fiber Optic ComElec
	F02 - Fiber Optic City of Dubuque
	F03 - Fiber Optic IMON Fiber
	SAN.(C) - Sanitary Sewer City of Dubuque
	ST 52(C) - Storm Sewer Iowa DOT

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

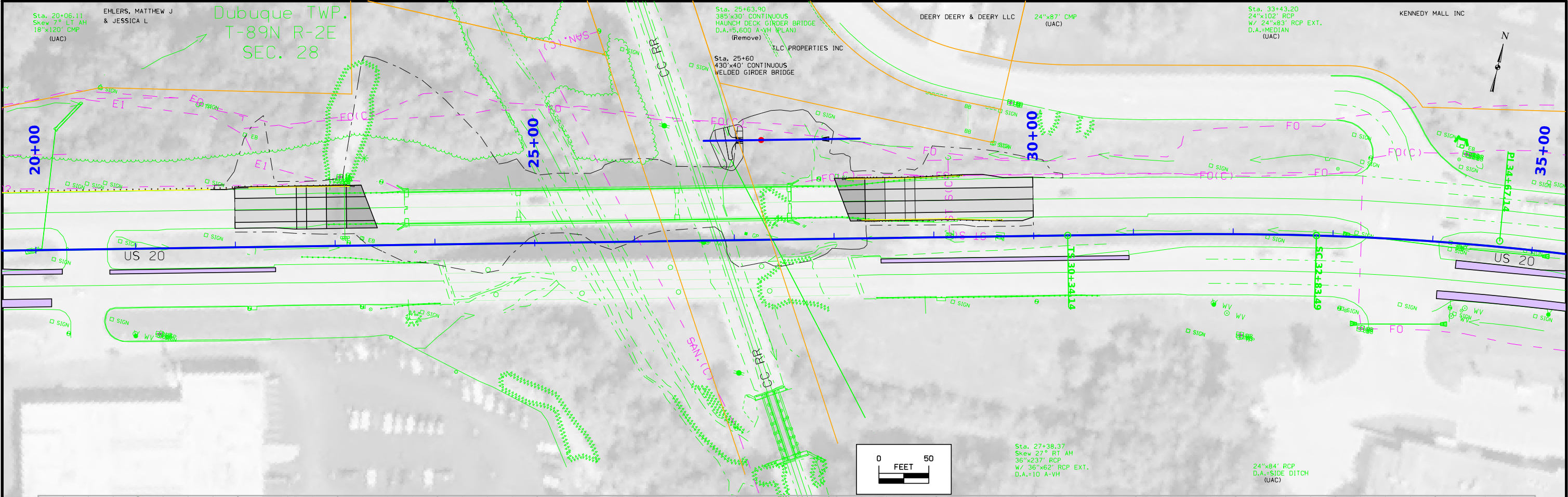
	Reference Point
	Station
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	HighTension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

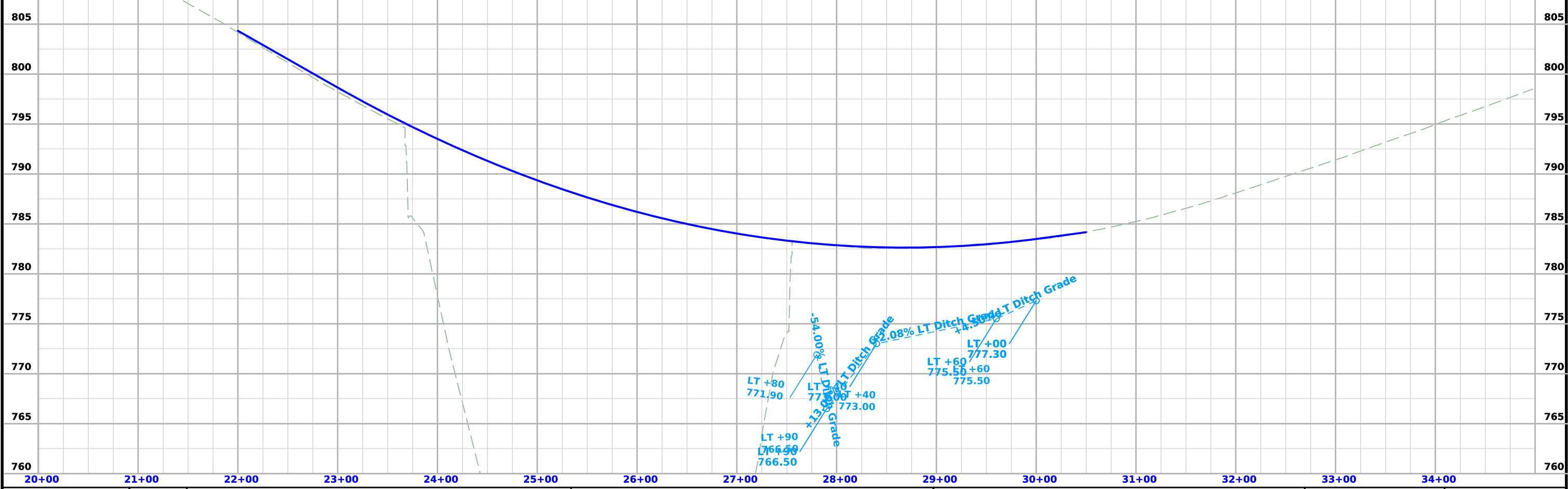
	Proposed Right-of-Way
	Existing Right of Way
	Existing and Proposed Right-of-Way
	Easement and Existing Right-of-Way
	Easement (Temporary)
	Easement
	Access Control
	Property Line

PLAN AND PROFILE
LEGEND AND SYMBOL
INFORMATION SHEET

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



Profile shown along the existing WB centerline



Survey Information

SURVEY INDEX

County: Dubuque
PIN: 19-31-020-030
Project Number: BRF-020-9(261)--38-31
Location: HWY-20 over Middle Branch Catfish Creek and CC RR,
approximately 0.5 miles East of NW Arterial to Wacker Drive
Type of Work: Bridge - Unspecified
Project Directory: 3102003019

Survey Personnel

Jeremy Leemon Survey Project Manager
Chris Ries Assistant Survey Project Manager
CJ Beckman Instrument
Jacob Powers Instrument

Date(s) of Survey

Begin Date 02/8/2022
End Date 04/30/2022

General Information

Measurement units for this survey are US survey feet. This is a Partial DTM survey for US Hwy 20 Bridge Replacement over Catfish Creek at locations 570 feet E of the intersection at N Crescent Ridge and Dodge St to the intersection of Wacker Drive and Dodge Street. Approximately 2,700 feet long.

Project Control

A calibration was performed utilizing the Dubuque GIS network system. 6 Dubuque County monuments encompassing the project were observed for 3 minute observations. The monuments were converted from Iowa North Zone to the Iowa Regional Coordinate Zone system 11 utilizing Trimble Business Center. The Horizontal Scale Factor is: 0.9999927547. Additional control was established from the calibration along the site. For additional details of the control survey, contact the Preliminary Survey department.

PROJECT DATUM: NAD83(2011) EPOCH 2010.00
VERTICAL DATUM: NAVD88 – GEOID MODEL 18
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 11

Alignments Information

The horizontal alignment for this survey is a retrace of As-Built Grading & Paving Plans STP-A-20-9(165)—22-31. Survey stationing was equated to the plan ST at STA 38+99.62 at point #4003, Found ½” Rebar 6” Deep, and run back and forward without equation to the throughout the survey.

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

POT Sta. 15+00.00 Plan
= Survey POT Sta. 15+00.00

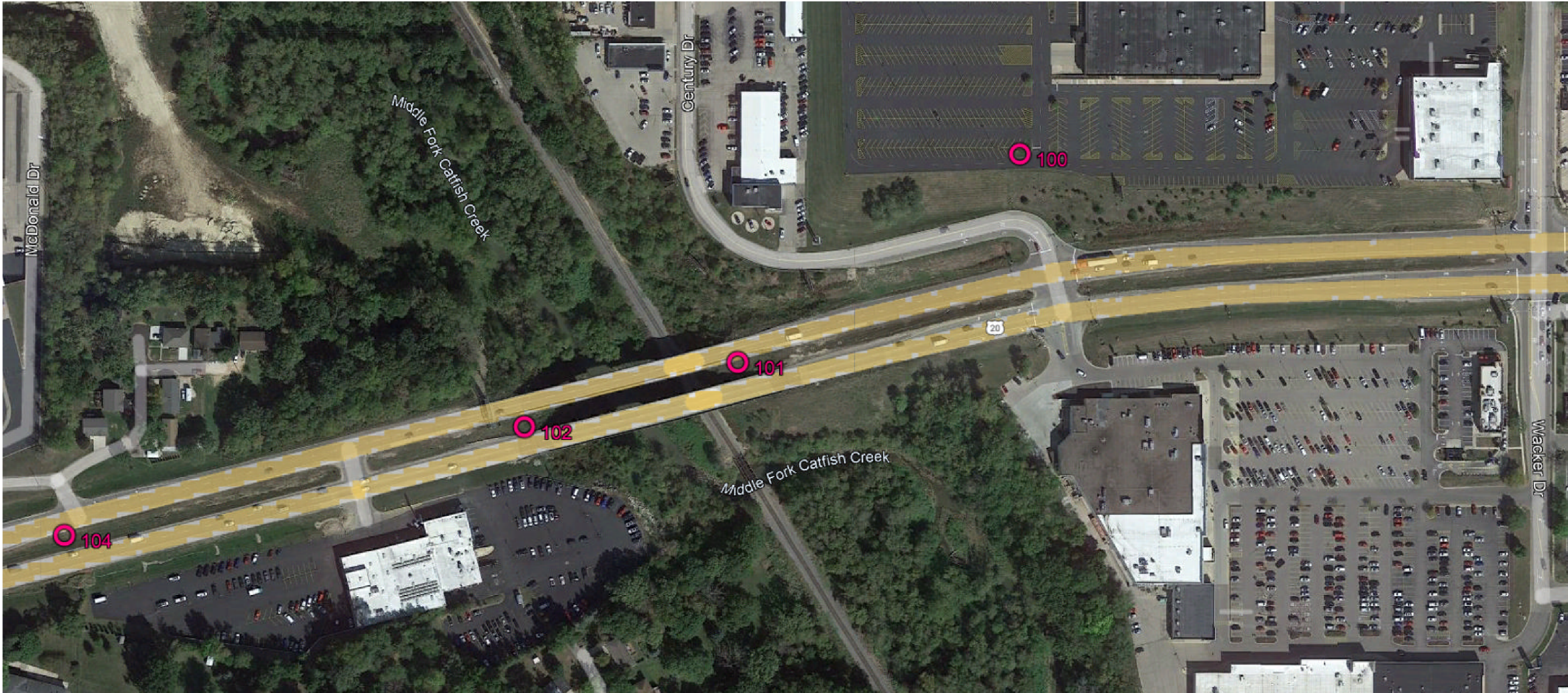
PC Sta. 50+13.66 Plan
= Survey POT Sta. 50+13.19

Utility Information

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

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00 - Ia. RCS Zone 11
VERT. DATUM: NAVD88 - Geoid Model 18

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

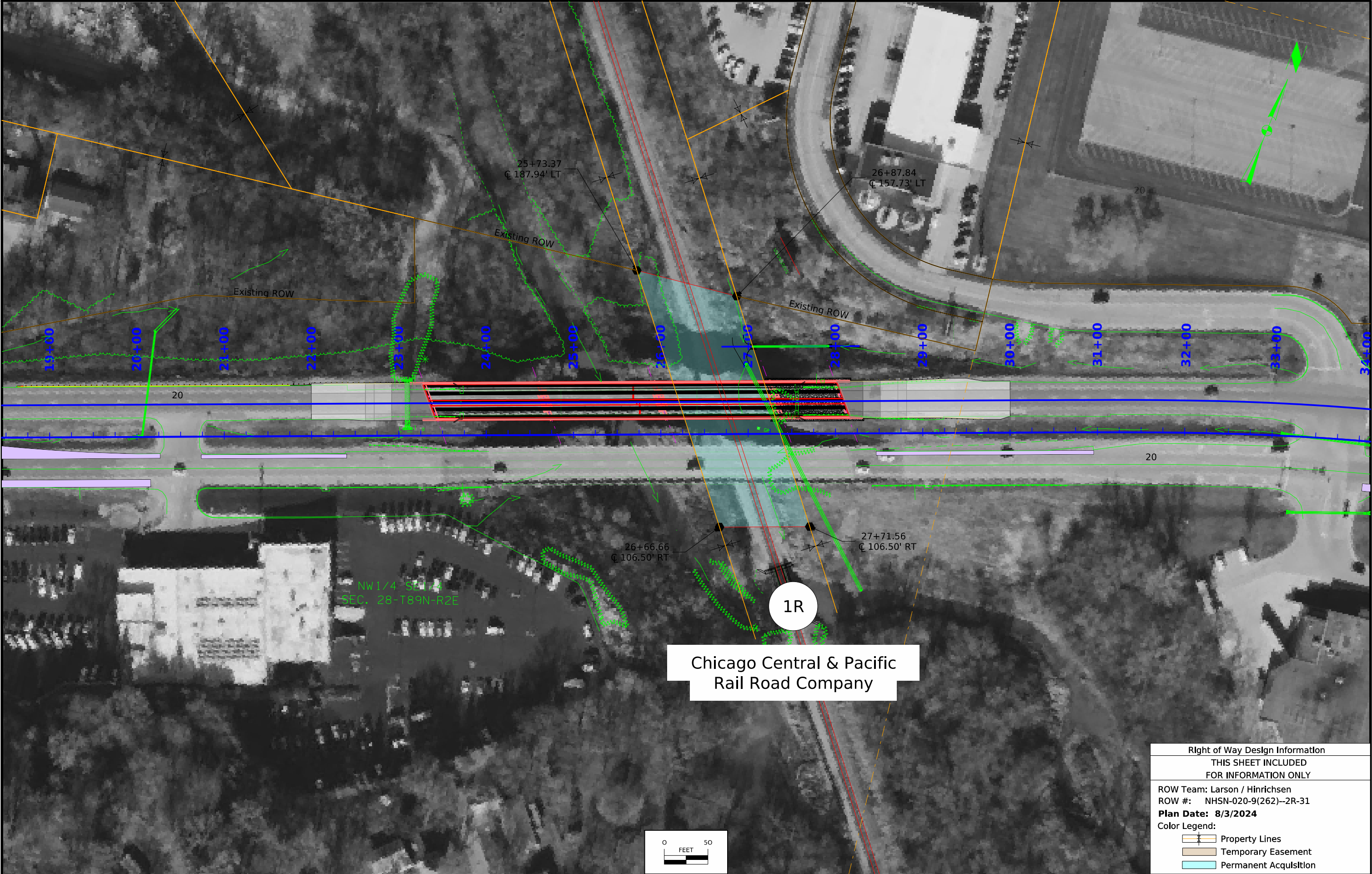
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
1a. Regional Coordinate System Zone 11

VERT. DATUM: NAVD88
Geoid Model 18
Project Control Marks are Bench Marks

Point Name	Northing	Easting	Elevation	Feature Definition-Description
100	8417226.426	21448583.759	826.097	SET 5/8" REBAR 6" DEEP IN ISLAND ON SOUTH END OF KENNEDY MALL PARKING LOT
101	8416847.436	21448057.913	781.039	SET T-BAR IN HWY 20 MEDIAN, EAST END OF BRIDGES
102	8416732.486	21447684.990	791.743	SET T-BAR IN HWY 20 MEDIAN, WEST END OF BRIDGES
104	8416538.949	21446836.538	842.106	SET T-BAR IN HWY 20 MEDIAN, AT INTERSECTION W/ OAK GROVE DR.

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.



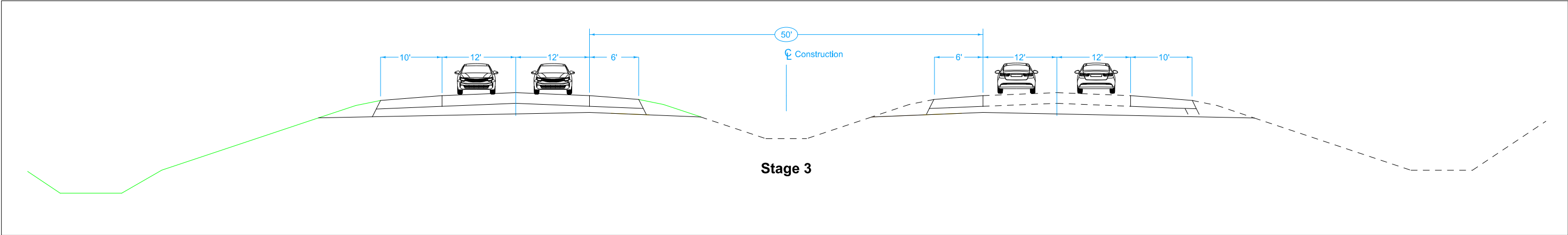
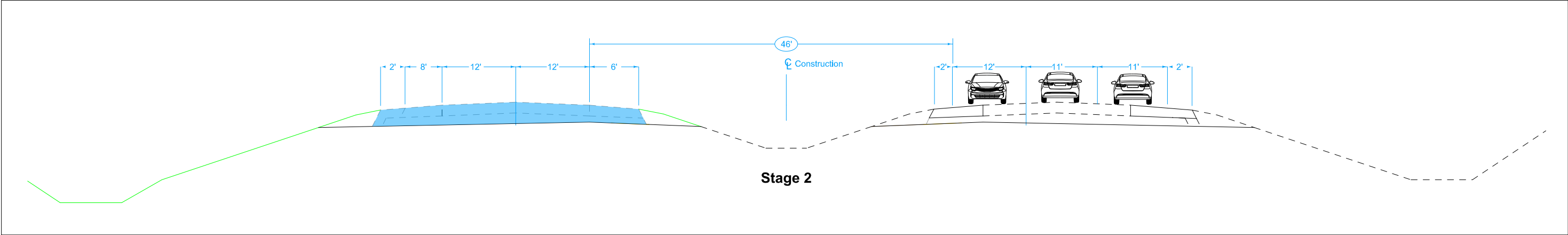
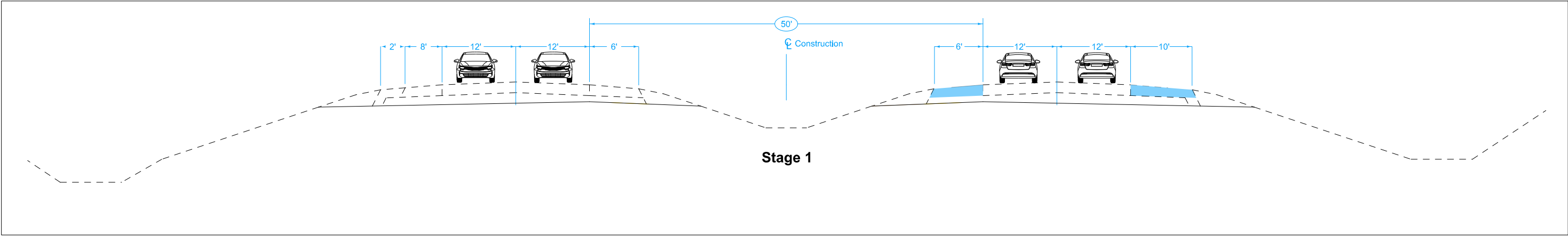
Chicago Central & Pacific
Rail Road Company

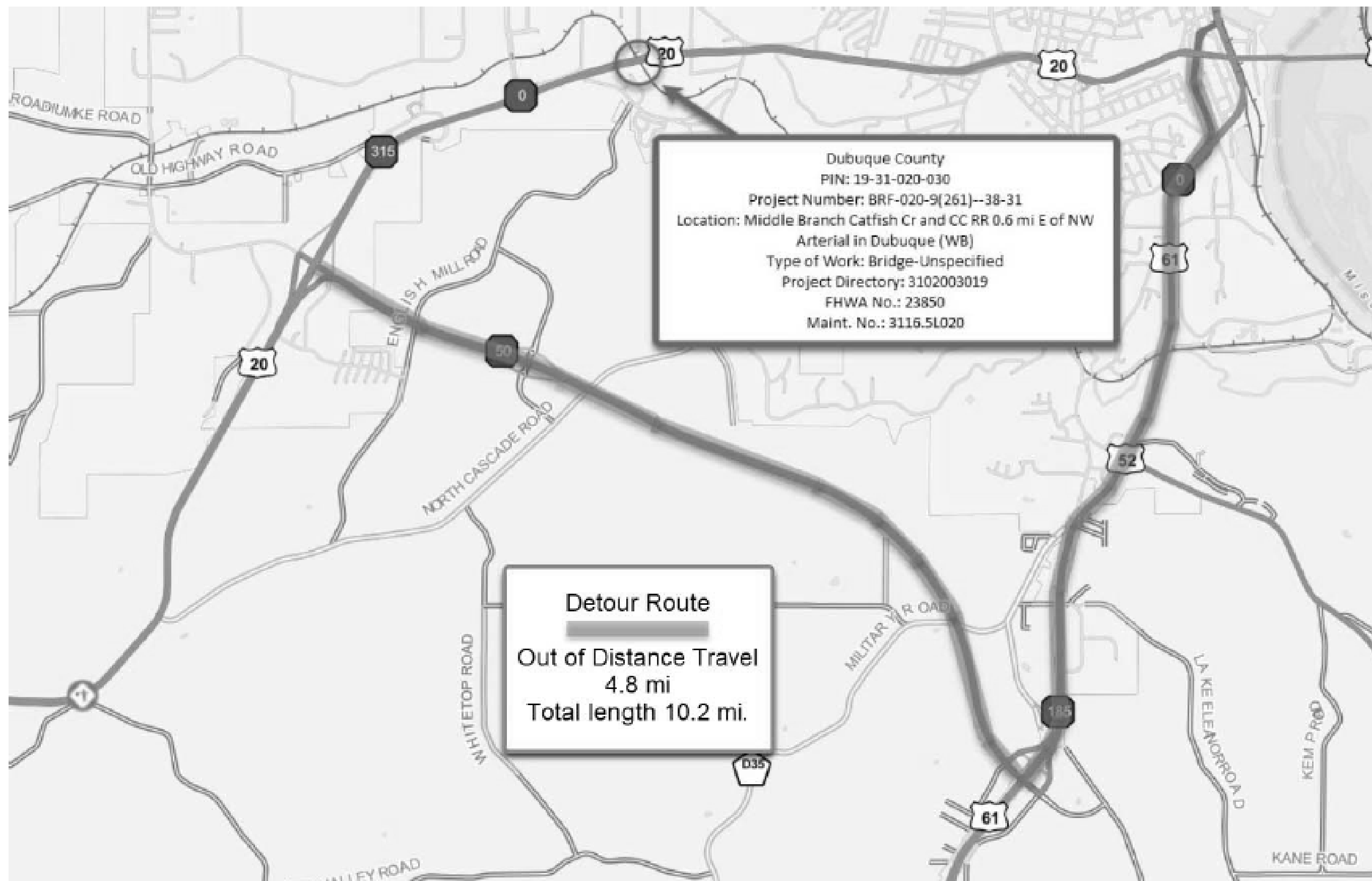
Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: Larson / Hinrichsen	
ROW #: NHSN-020-9(262)--2R-31	
Plan Date: 8/3/2024	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

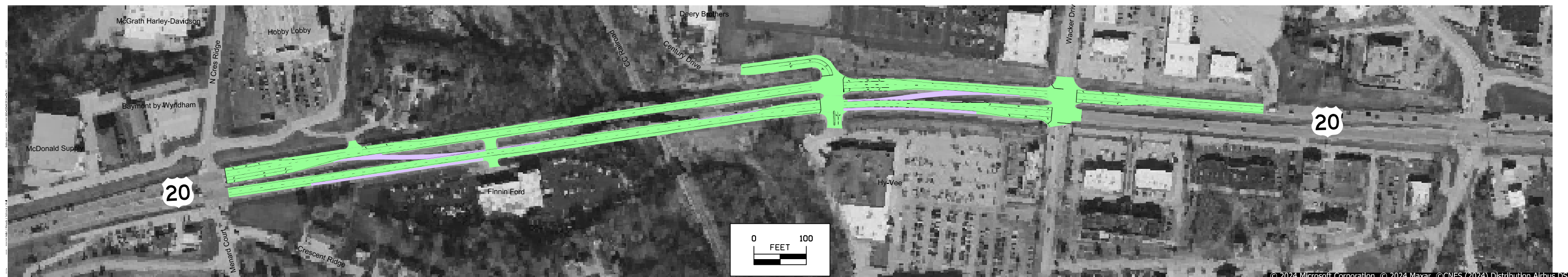
108-25 10-21-14												
511 TRAVEL RESTRICTIONS												
Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No., Structure ID, or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
			None anticipated									

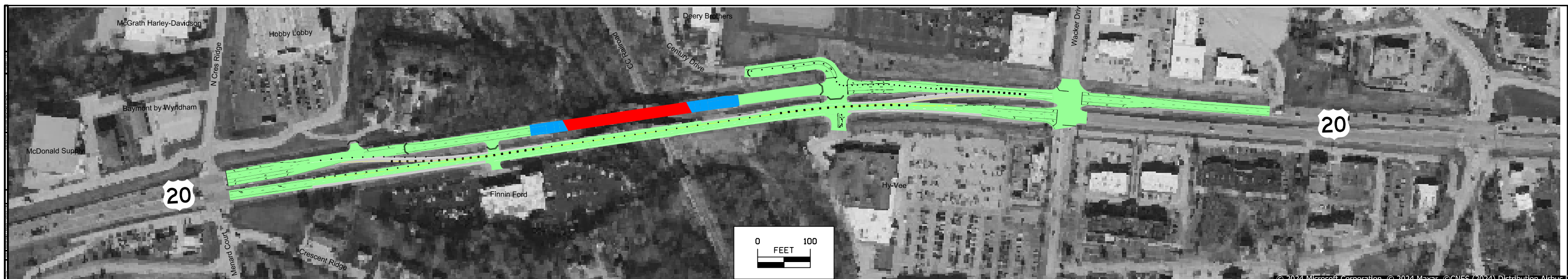
108-23A 08-01-08		108-26A 08-01-08	
TRAFFIC CONTROL PLAN		STAGING NOTES	
US 20 Route will remain open to traffic for the duration of the project. Century Drive Route will remain open to right-in-right-out traffic. Finnin Ford Route will remain open to right-in-right-out traffic. Second Entrance to Housing Development and Hobby Lobby Entrance will be closed to traffic for the duration of the project.		Stage 1 Construct crossovers on the east and west sides of the project, and preform shoulder strengthening. ***** Stage 2 Place traffic on EB lanes for two 11 ft EB lanes and one 12 ft WB lane. Reconstruct bridge and pavement. ***** Stage 3 Place WB traffic on new WB lanes. Reopen EB to two lanes of traffic.	

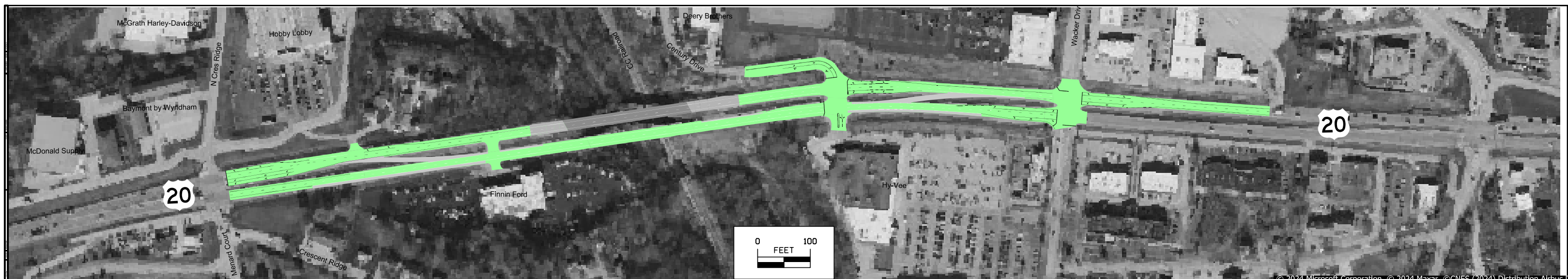
FILE NO.	ENGLISH	DESIGN TEAM	Holst\Schrock\Mull	DUBUQUE COUNTY	PROJECT NUMBER	BRF-020-9(261)--38-31	SHEET NUMBER	J.1
11/18/2022 12:57:03 PM kschroc c:\pw_work\pwwmain\kschroc\d1313901\SHT_31020261_001.xlsm								



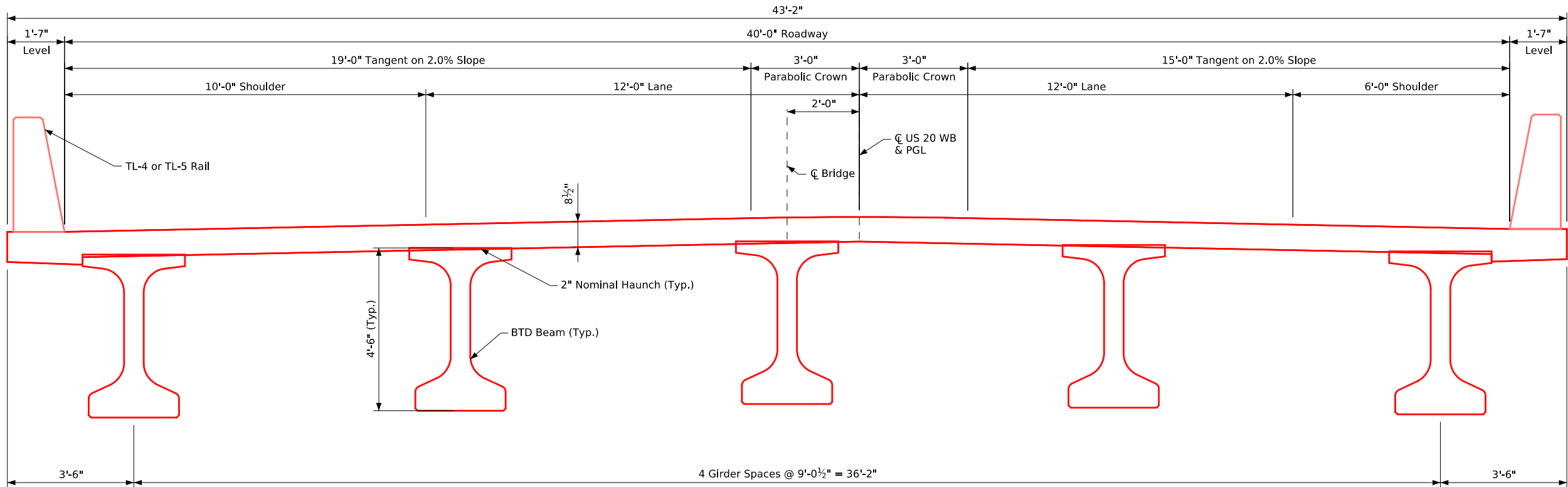




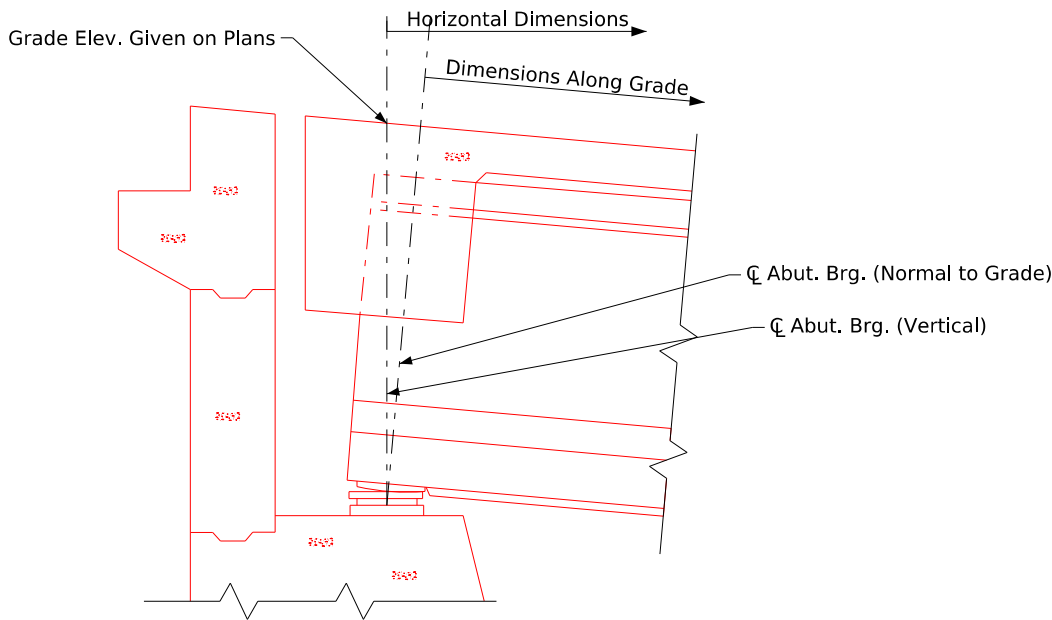




Storm sewer under development.



Transverse Section
(Looking East)



Partial Longitudinal Detail At Abutment
(Stub Abutment Shown - Drawn for Schematic Purposes Only)

Designer Notes:

Final designer to coordinate with District and Traffic & Safety regarding removal of the existing Dynamic Message Sign (DMS) truss near the proposed West abutment. Bridge plans to include removal of the truss and and footings. DMS will be salvaged and delivered to an IA DOT maintenance garage.

West abutment berm slope is steeper than required by BDM 3.7.3 for long-term stability. Final designer to coordinate with Soils Design to show appropriate details and construction sequencing for potential slope stabilization measures (i.e. reinforced soil slope or rock toe buttress).

TL-5 barrier rail required over the railroad ROW. Final designer to determine if TL-5 or TL-4 height is used for the remainder of rail length based on constructability and cost.

Pier Type - Tee assumed 3'-6" width

Non-Standard Abutment Wing Walls Required (See lengths on Situation Plan).

An Iowa DNR Flood Plain Permit is required. Preliminary Design will submit the application and place the permit in the PW Regulatory_Permits subdirectory folder upon receipt.

Provide two 2" diameter conduits in the outside bridge rail for future use.

General Notes:

This design is for the replacement of the existing 385'-4" x 30' Steel Girder Bridge, Dubuque Design No. 160, FHWA No. 23850, Maint. No. 3116.5L020.

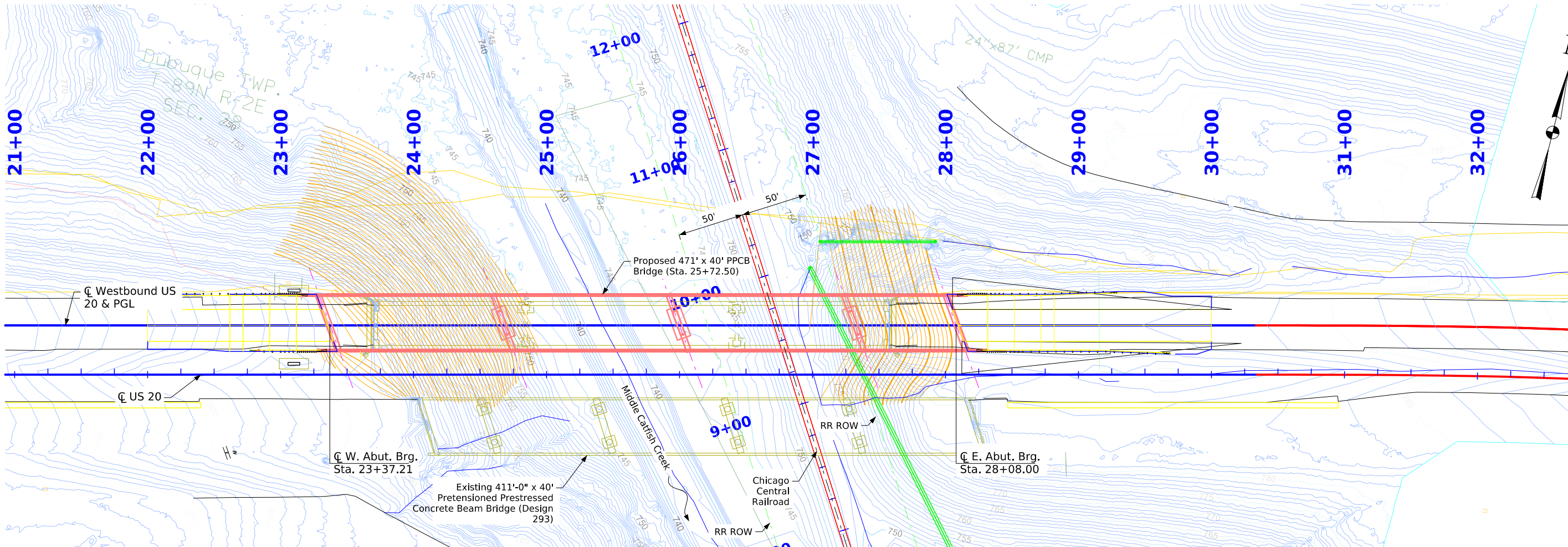
Plan Notes:

Top of bridge deck at centerline roadway is 0.03' below the profile grade to account for deck cross slope and parabolic crown.

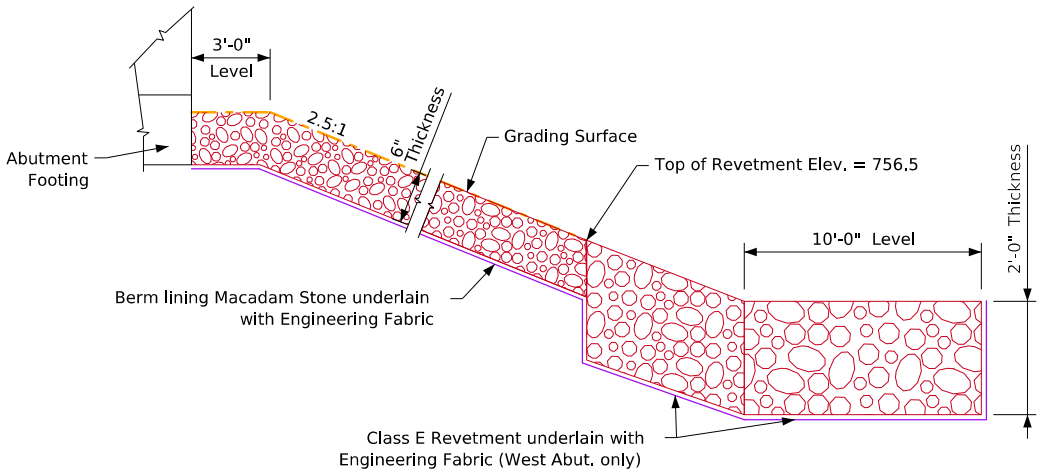
Berm lining and Class E revetment stone is embedded.

Preliminary

Design For 20° Skew RA
**471'-0" x 40'-0" Pretensioned
Prestressed Concrete Beam Bridge**
131'-0" & 76'-0" Exterior Spans BTD Beams 2 - 132'-0" Interior Spans
Situation Plan - Misc.
STA. 25+72.61 37' Lt. (CL US 20) Turn-in Date: May, 2024
Dubuque County
IOWA DEPARTMENT OF TRANSPORTATION
Design No. 426 Design Sheet No. 002 of 4 FHWA No. 23851



Site Plan
0 40
Scale In Feet



Section Thru Embedded Berm Lining
Normal to Berm Slope Preliminary

Minimum Vertical Clearance

Overhead Station = 26+81.21, Offset 20.92' Lt.
Overhead Elevation = 784.04
Depth of Superstructure = 64.5 in.
Deck Thickness = 8.5 in.
Estimated Haunch = 2 in.
Beam Depth = 54 in.
Underpass Station = 9+44.08, Offset 0.00'
Underpass Elevation = 753.27
Minimum Vertical Clearance = 25.39 ft.

Design For 20° Skew RA

471'-0" x 40'-0" Pretensioned
Prestressed Concrete Beam Bridge

131'-0" & 76'-0" Exterior Spans 2 - 132'-0" Interior Spans

Situation Plan - Site

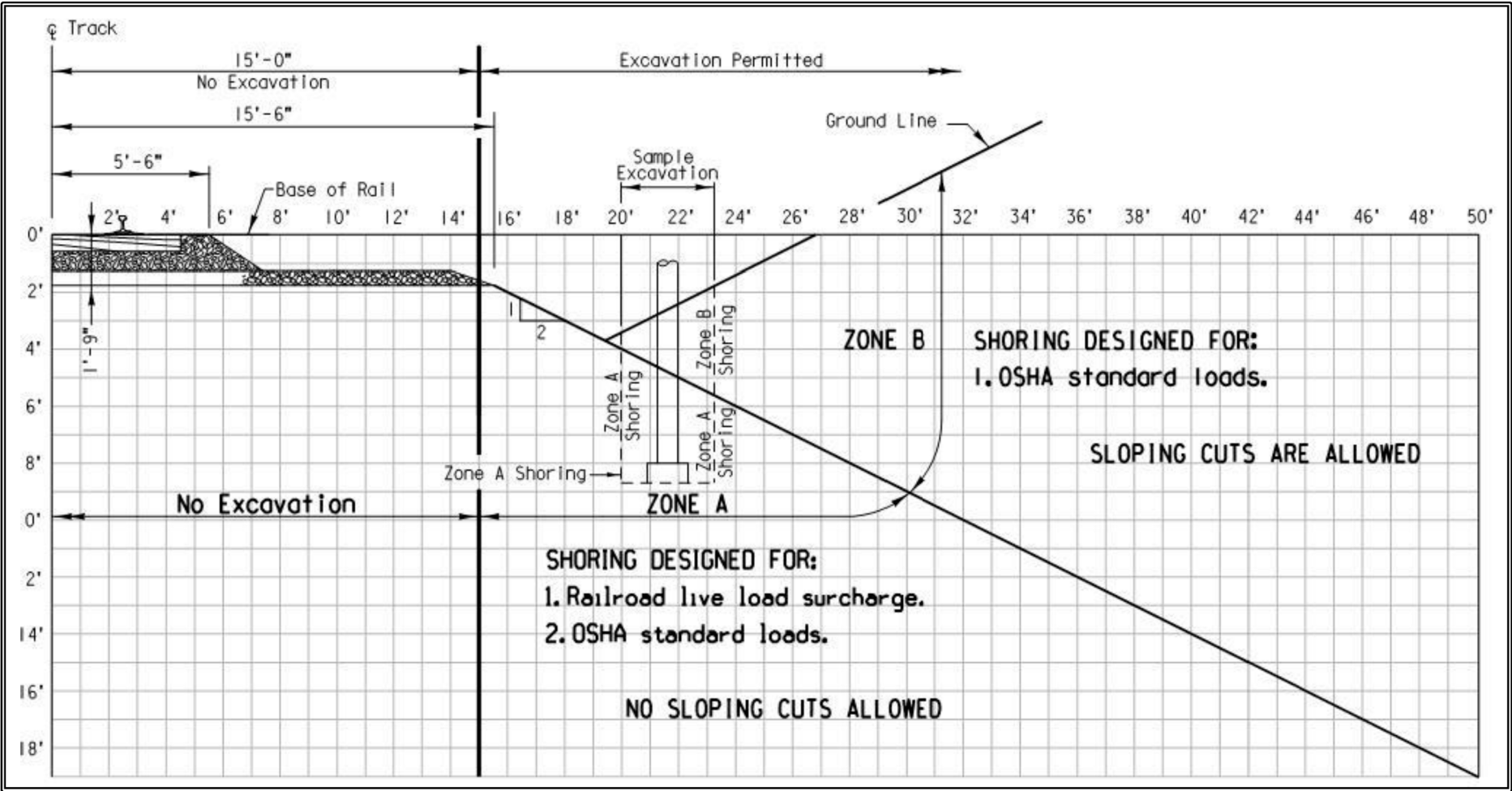
STA. 25+72.61 37' Lt. (C US 20) Turn-in Date: May, 2024

Dubuque County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 426 Design Sheet No. 003 of 4 FHWA No. 23851

Revised 07-2019: For UPRR, Changed Horizontal Distance of Minimum Construction Clearance Envelope to 15'-0" (Was 12'-0").
Revised 03-2022: Updated "General Excavation Zones" Detail and "General Shoring Notes" to Follow the "UPRR & BNSF Guidelines for Temporary Shoring, 2021".
Issued 12-2008.
MiscellaneousBridges.dgn - 1067 - This Sheet Re-Issued 11-2023. Sheet Format Update.



General Excavation Zones

Source: UPRR & BNSF Guideline for Temporary Shoring, 2021

Railroad General Notes:

Railroad review and approval of shoring, erection, demolition, and falsework is required. Allow a minimum of four weeks for the review and approval of each submittal.

The proposed grade separation project shall not increase the quantity and/or characteristics of the flow in the railroad's ditches and/or drainage structures.

The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the railroad prior to construction.

The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the railroad.

All shoring systems that impact the railroad's operations and/or supports the railroad's embankment shall be designed and constructed per current railroad guidelines for temporary shoring.

All demolitions within the railroad's right-of-way and/or demolition that may impact the railroad's tracks or operations shall be in compliance with the railroad's demolition guidelines.

Erection over the railroad's right-of-way shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

All construction phasing that may impact the railroad operations shall be designed to cause no interruption to the railroad's operation, enabling the track(s) to remain open to traffic per the railroad's requirements.

False-work clearances shall comply with minimum construction clearances.

All permanent clearances shall be verified before project closing.

For railroad coordination please refer to the railroad coordination requirements as part of special provisions.

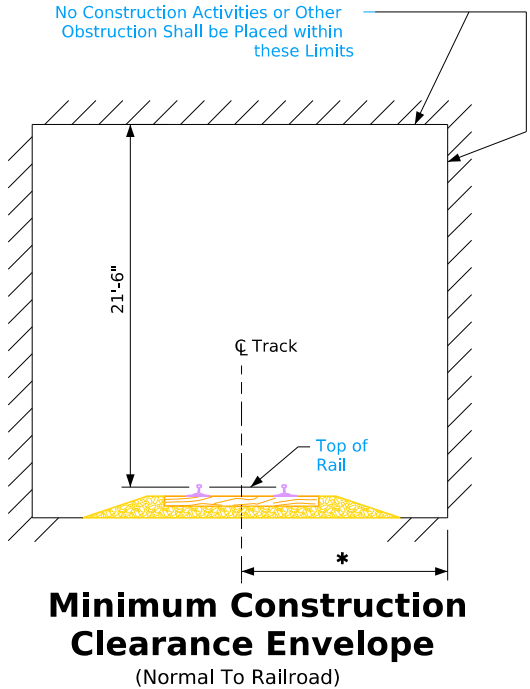
General Shoring Notes:

All dimensions are measured perpendicular to track.

Prior to commencing any work, the Contractor shall submit for approval by the Railroad detailed plans indicating the nature and extent of the track protection shoring proposed. The Contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system to comply with UPRR & BNSF Guidelines for Temporary Shoring.

For excavations which encroach into Zone A or B, shoring plans shall be accompanied by design calculations. Plans and calculations must be signed and stamped by a Professional Engineer registered in the State of Iowa.

Note:
BNSF = Burlington Northern Santa Fe Railroad
UPRR = Union Pacific Railroad



Minimum Construction Clearance Envelope

(Normal To Railroad)

* 15'-0" for BNSF and 15'-0" for UPRR

Top Of Rail Elevations

(Stations Increase with Milepost Increase)

Main Line			
Alignment: Left Rail		Alignment: Right Rail	
Station	Elevation	Station	Elevation
0+00	747.718	0+00	747.444
1+00	748.237	1+00	747.975
2+00	748.872	2+00	748.693
3+00	749.406	3+00	749.326
4+00	749.761	4+00	749.706
5+00	750.326	5+00	750.266
6+00	750.897	6+00	750.888
7+00	751.538	7+00	751.562
8+00	752.183	8+00	752.213
9+00	752.936	9+00	752.966
10+00	753.598	1 10+00	753.586
11+00	754.232	11+00	754.247
12+00	754.892	12+00	754.879
13+00	755.58	13+00	755.581
14+00	756.34	14+00	756.306
15+00	757.122	15+00	757.093
16+00	758.154	16+00	758.113
17+00	759.072	17+00	759.018
18+00	759.728	18+00	759.626
19+00	760.052	19+00	760.02
19+42.33	760.139	19+41.49	760.127

Preliminary

Design For 20° Skew RA

471'-0" x 40'-0" Pretensioned Prestressed Concrete Beam Bridge

131'-0" & 76'-0" End Spans BTD Beams 2 - 132'-0" Interior Spans

Railroad General Notes & Shoring

STA. 25+72.61 37' Lt. (☐ US 20)

Turn-in Date: May, 2024

Dubuque County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 426

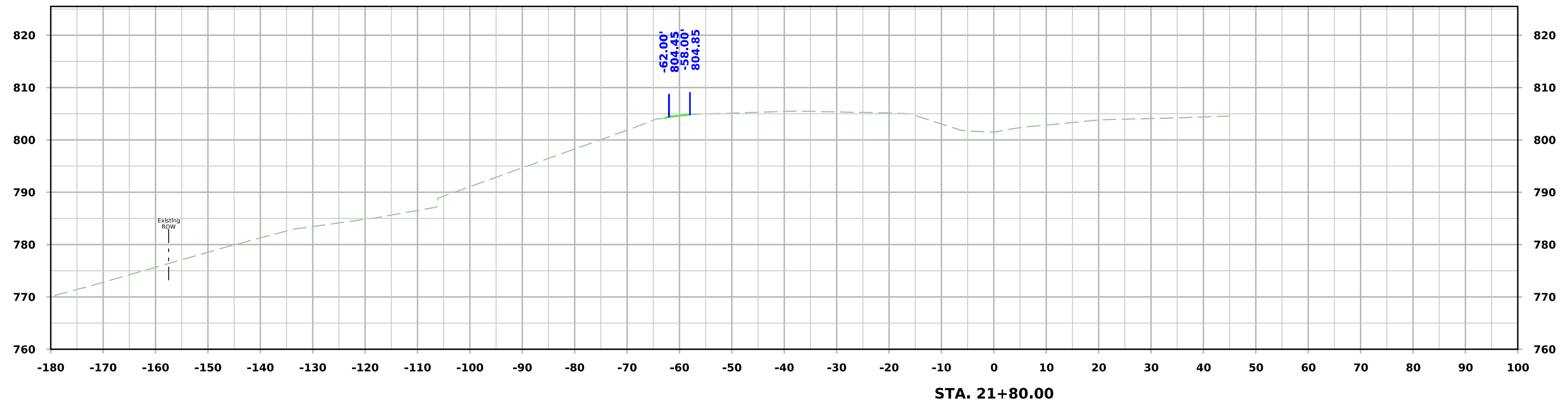
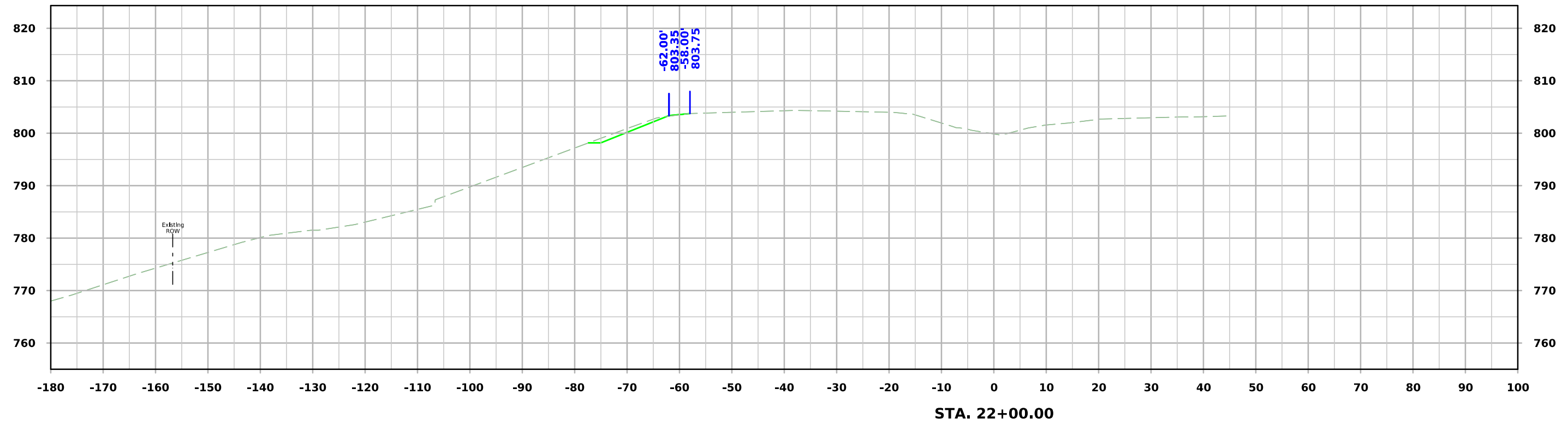
Design Sheet No. 004 of 4

FHWA No. 23851

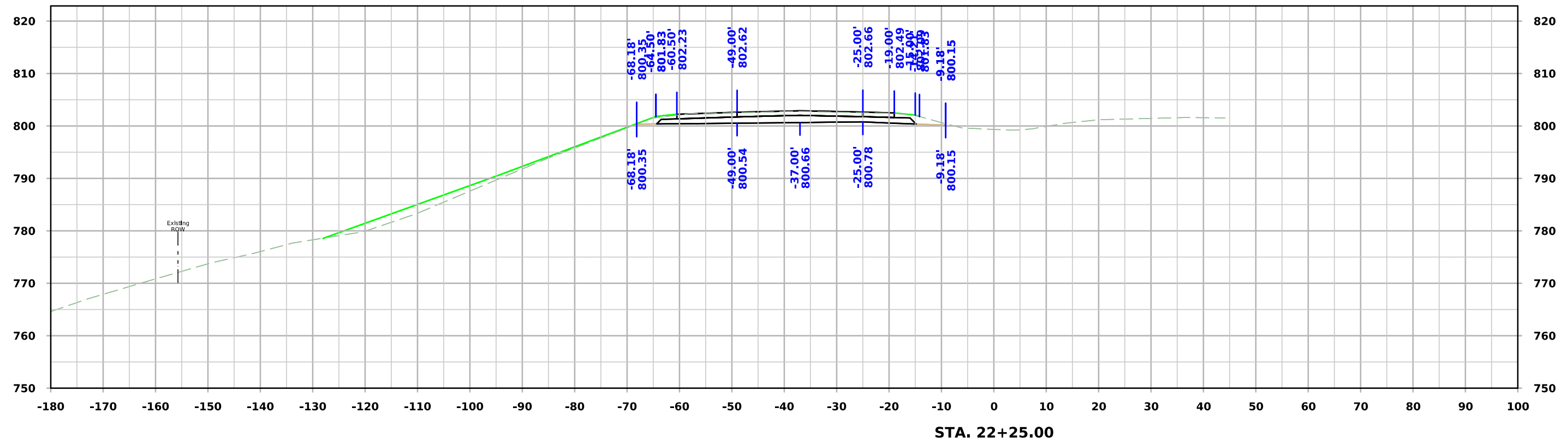
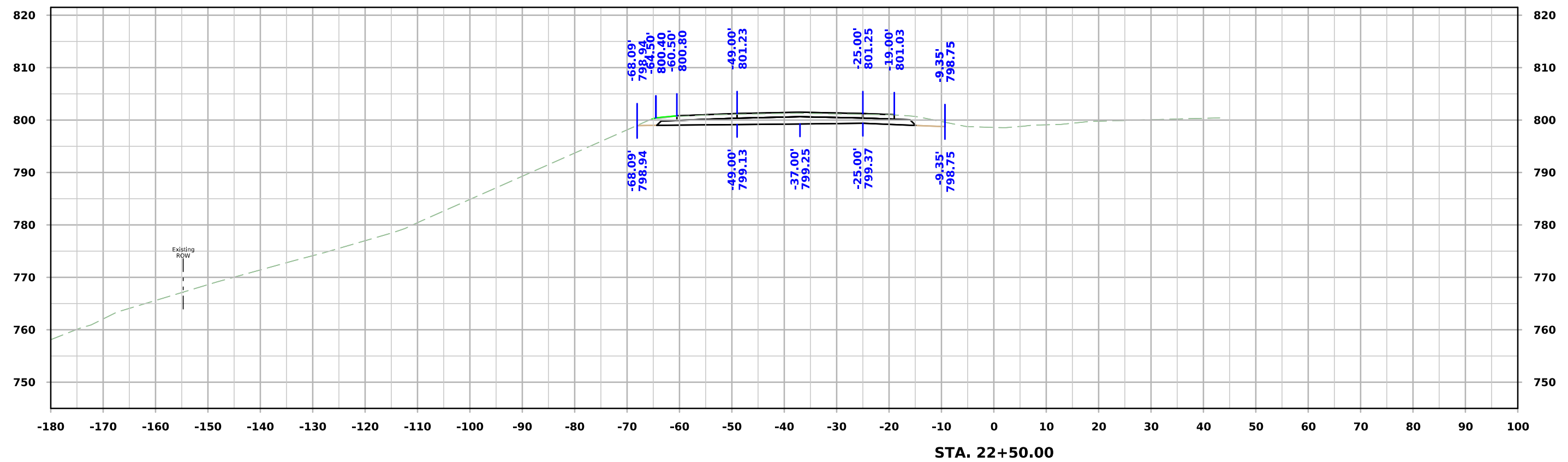
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V.4

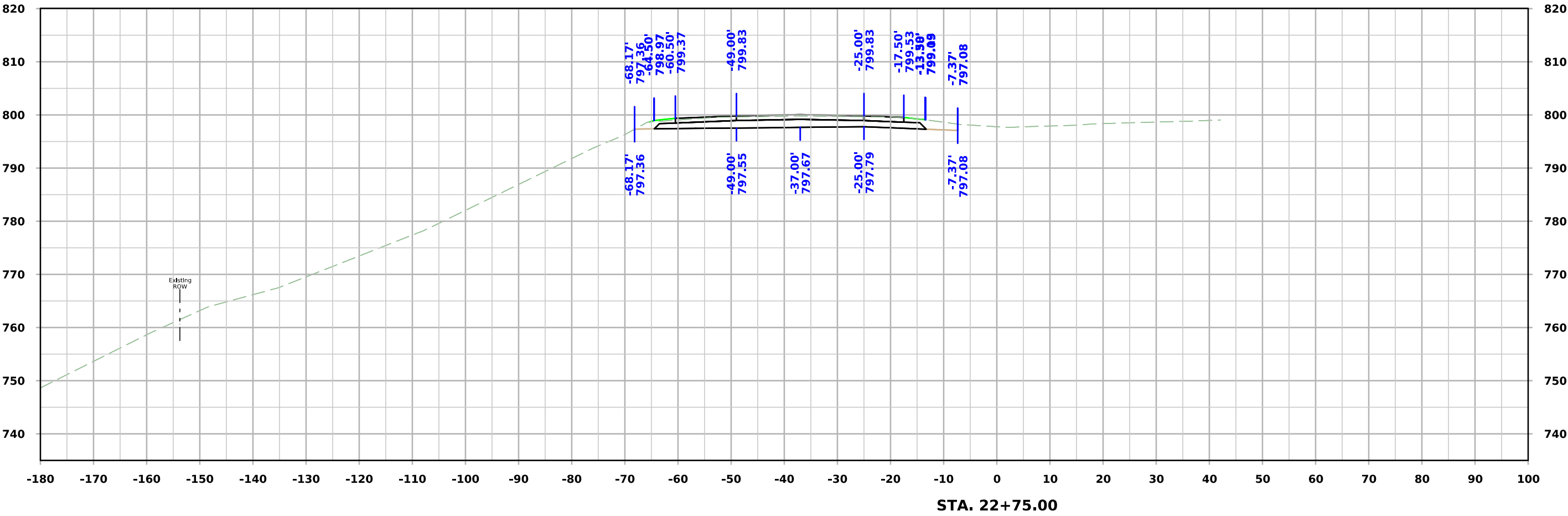
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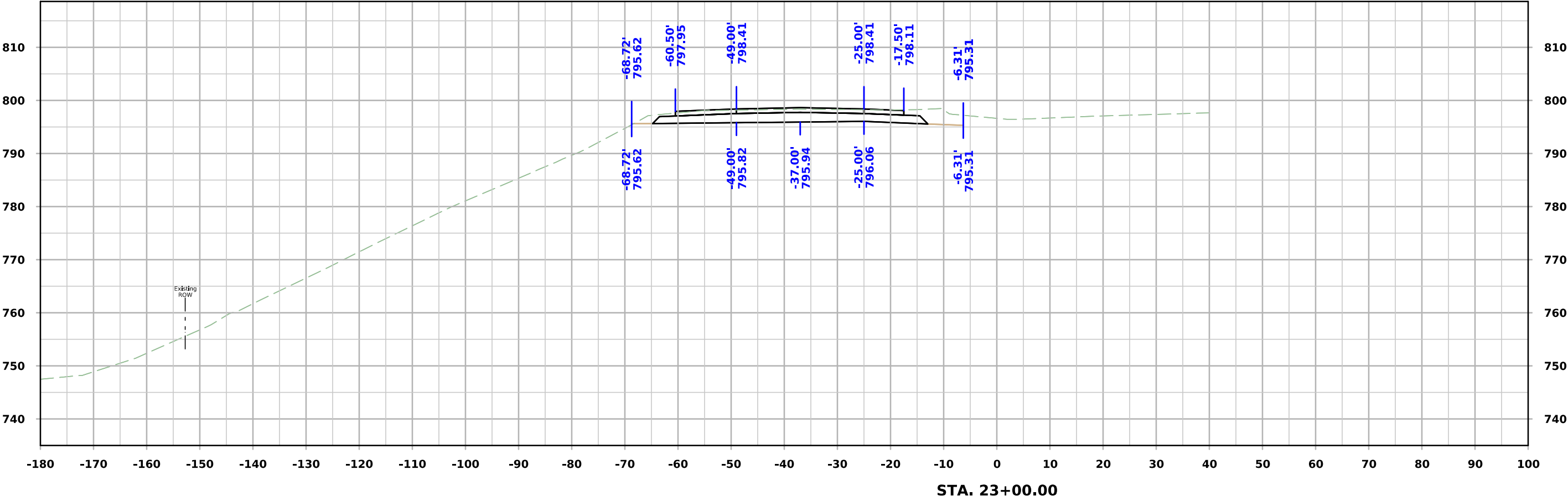
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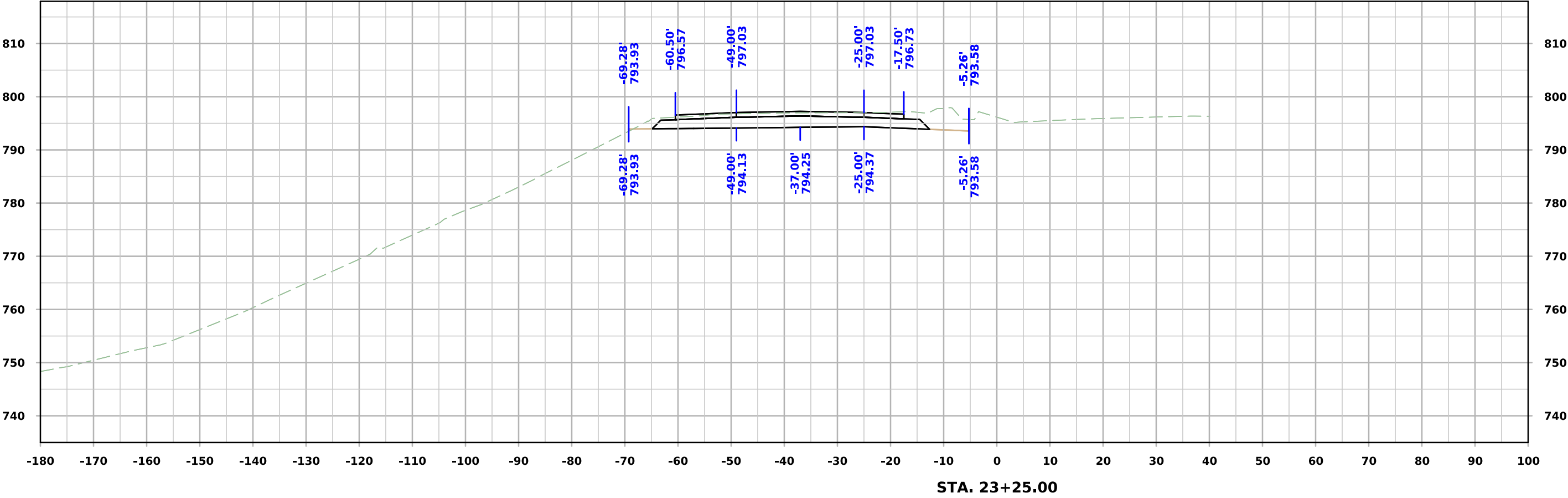
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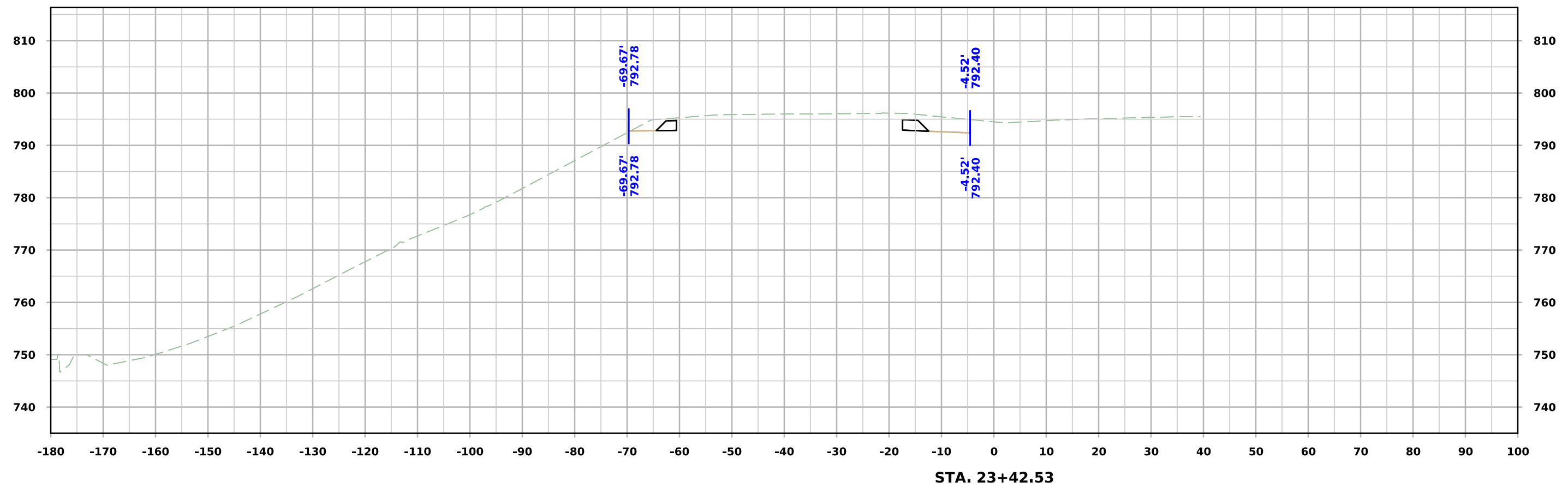
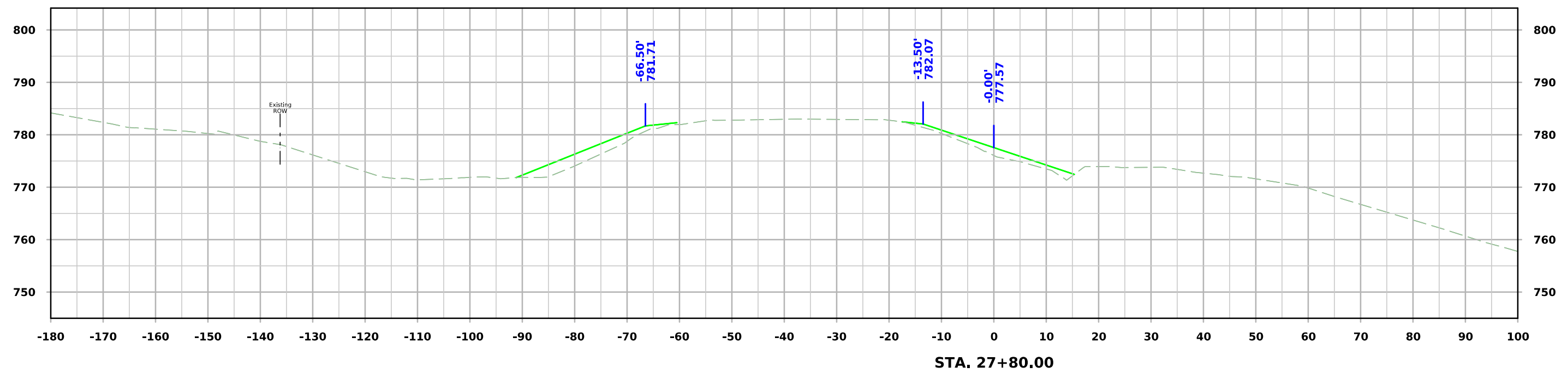
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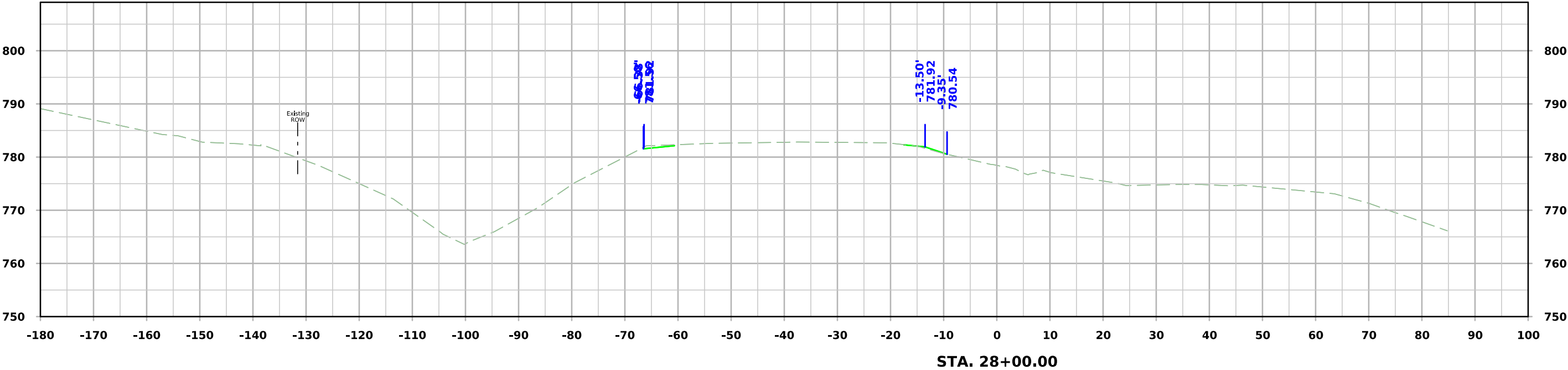
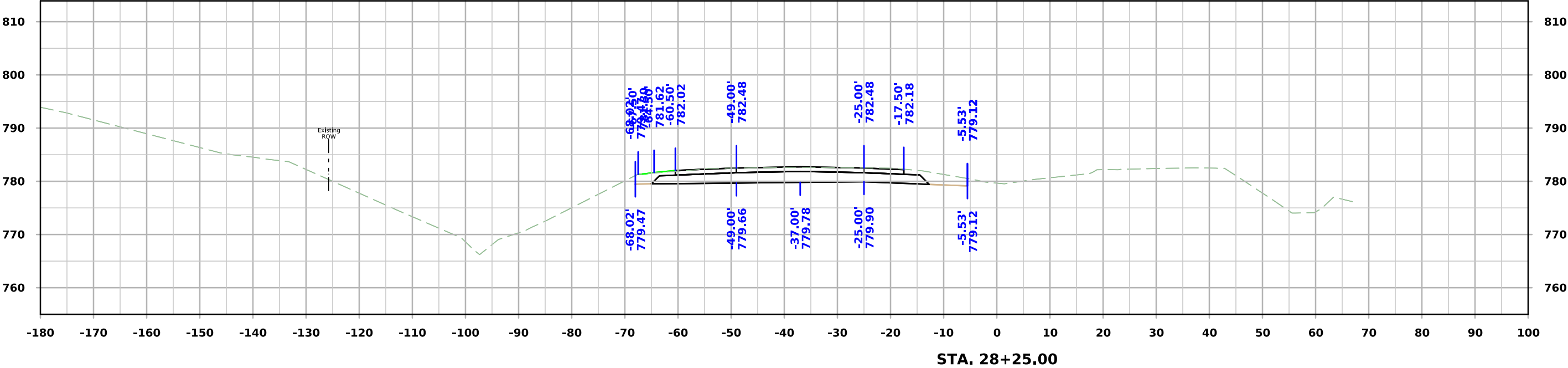
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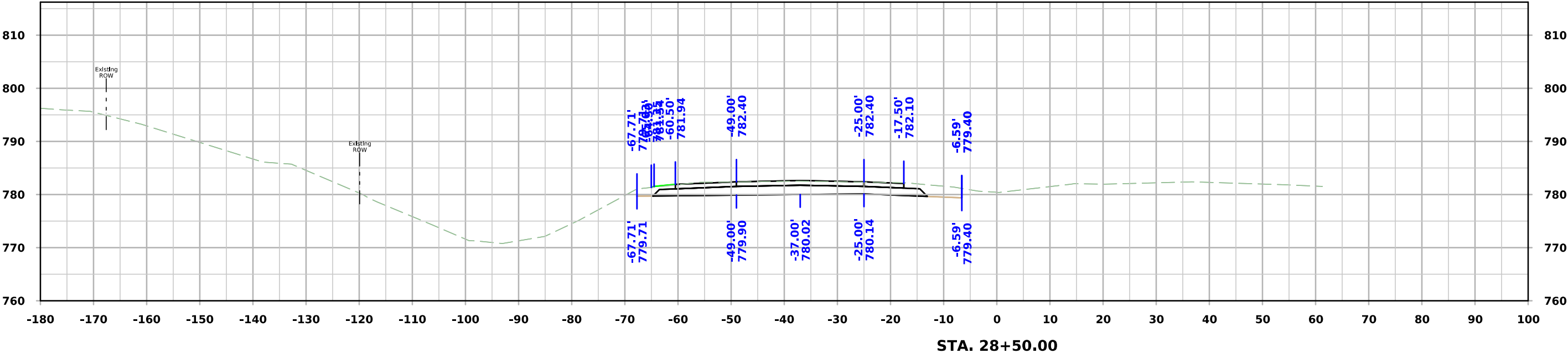
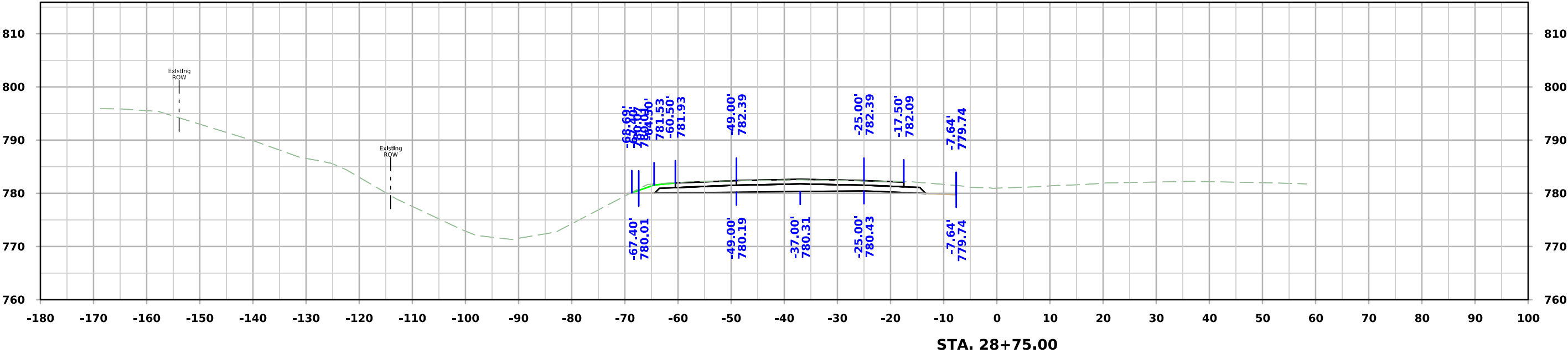
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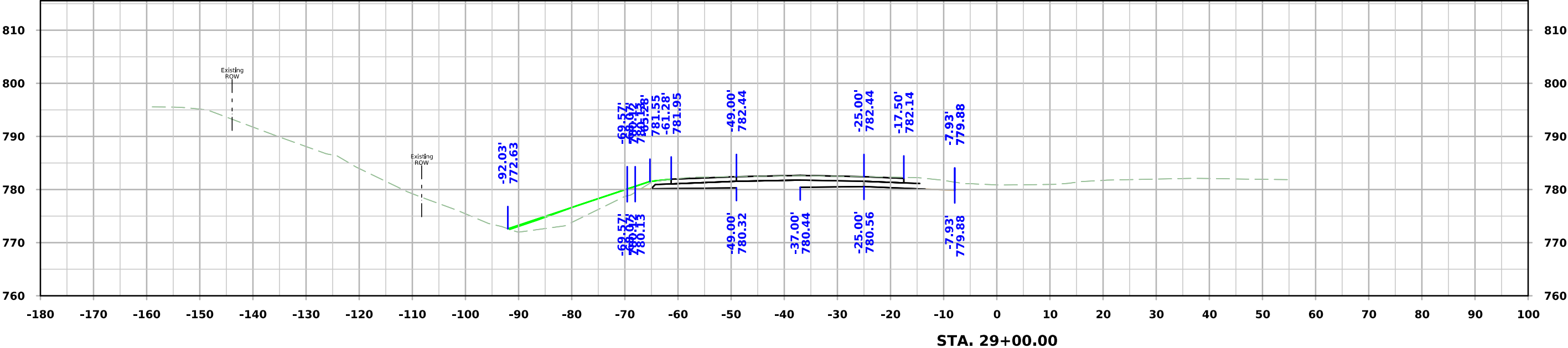
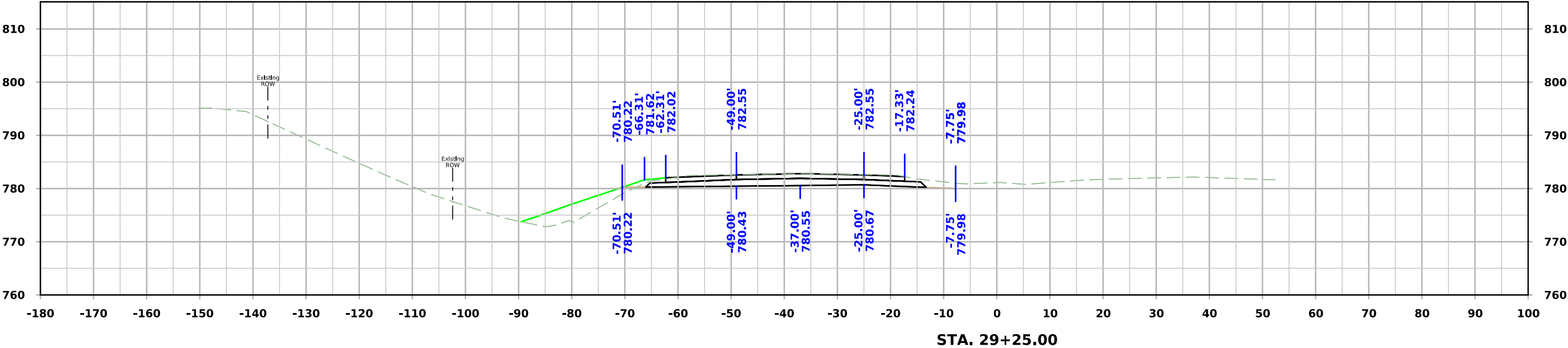
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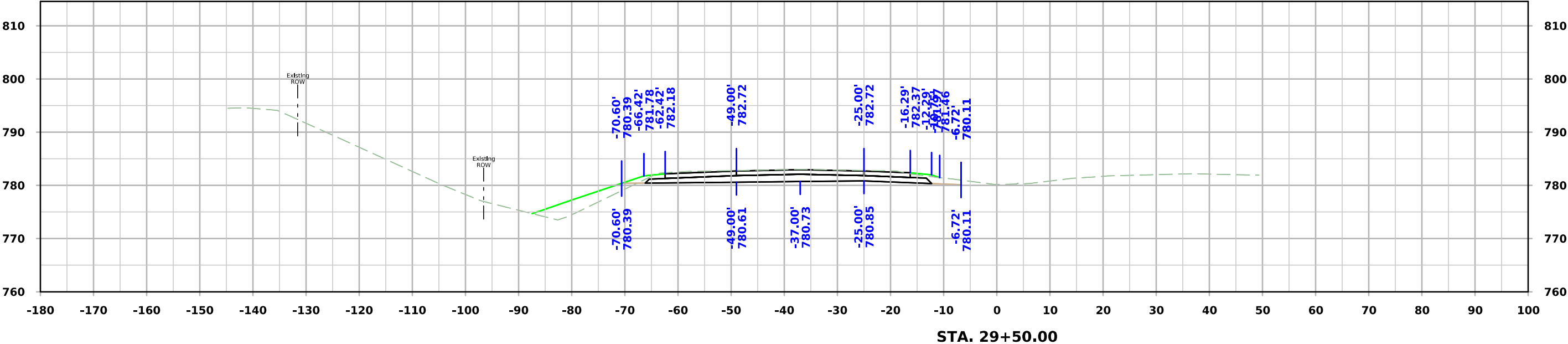
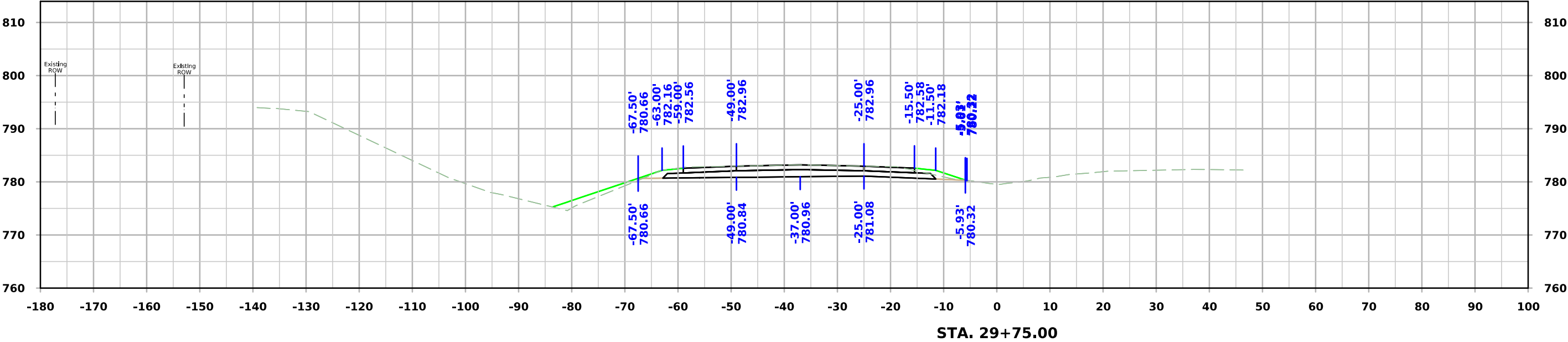
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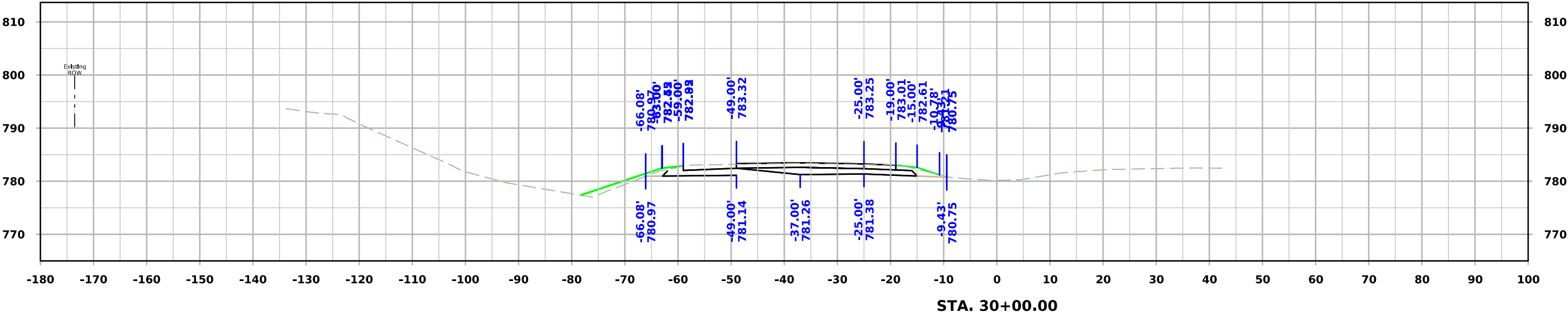
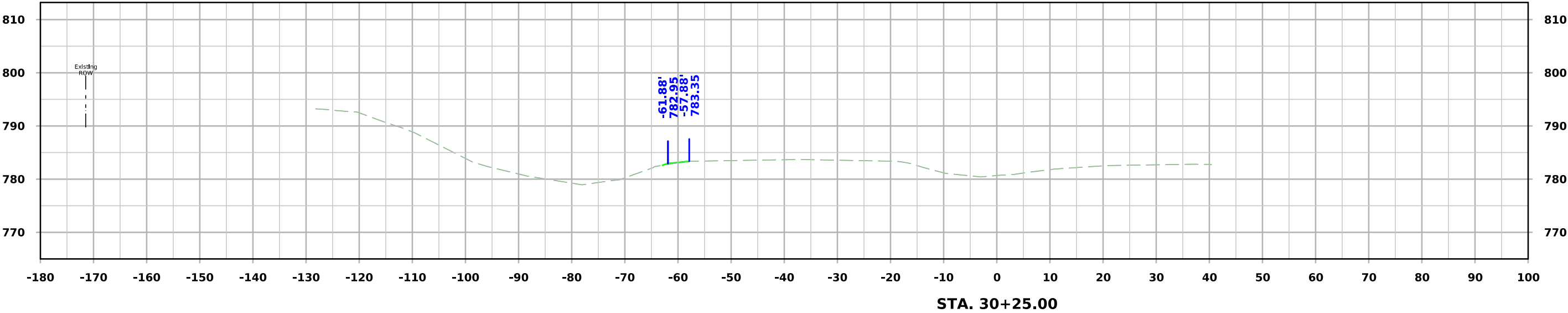
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