LETTING DATE
Feb. 15, 2028

Bridge Replacement
BRF-030-1(211)--38-43

HARRISON COUNTY

Index of Sheets

No.	Description
A Sheets	Title Sheets
A.1	Title Sheet
A.2	Location Map Sheet
B Sheets	Typical Cross Sections and Details
B.1 - B.2	Typical Cross Setions and Details
D Sheets	Mainline Plan and Profile Sheets
D.1	Plan & Profile Legend & Symbol Information Sheeet
D.2	US 30 Plan & Profile
G Sheets	Survey Sheets
G.1	Survey Information
G.2	Control Point Vicinity Map
G.3	Horizontal and Vertical Projection Control Coordinate Listing
J Sheets	Traffic Control and Staging Sheets
J.1	Traffic Control Plan
J.2	511 Travel Restrictions
J.3	Staging Notes
J.4	Coordinated Operations
J.5	Bridge Staging Sheets
J.6	US 30 Staging
J.7	Modified TC-217
V Sheets	Bridge Situation Plan
V.1 - V.2	Bridge Situation Plan
W Sheets	Mainline Cross Sections
W.1 - W.13	US 30 Cross Sections

IOWA DOT

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM
HARRISON COUNTY
Bridge Replacement

On US 30 over Youngs Ditch
0.8 mi. E of SR K-45

Refer to the Plan Sheets for list of applicable specifications.

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

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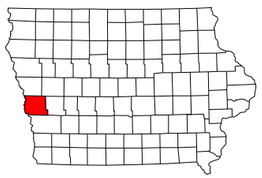
811 Know what's below. Call before you dig.

Revisions

	TOTAL
	31
PROJECT IDENTIFICATION NUMBER	
24-43-030-040	
PROJECT NUMBER	
BRF-030-1(211)--38-43	
R.O.W. PROJECT NUMBER	
-	
PROJECT DIRECTORY NUMBER	
4303004024	

Preliminary
Not For Construction

Revisions to this Design Plan and/or Project Specifications should be submitted by _____



Standard Road Plans

Standard Road Plans are listed on Sheet Number C.X

Design Data Rural

2029 AADT	4,900	V.P.D.
2049 AADT	5,400	V.P.D.
2049 DHV	560	V.P.H.
TRUCKS	24	%
Total Design ESALs		

Index of Seals

Sheet No.	Name	Type
A.1	Edward S. Gapatan	Structural & Roadway Design
V.1	Edward S. Gapatan	Hydraulic Design

Structural & Roadway Design

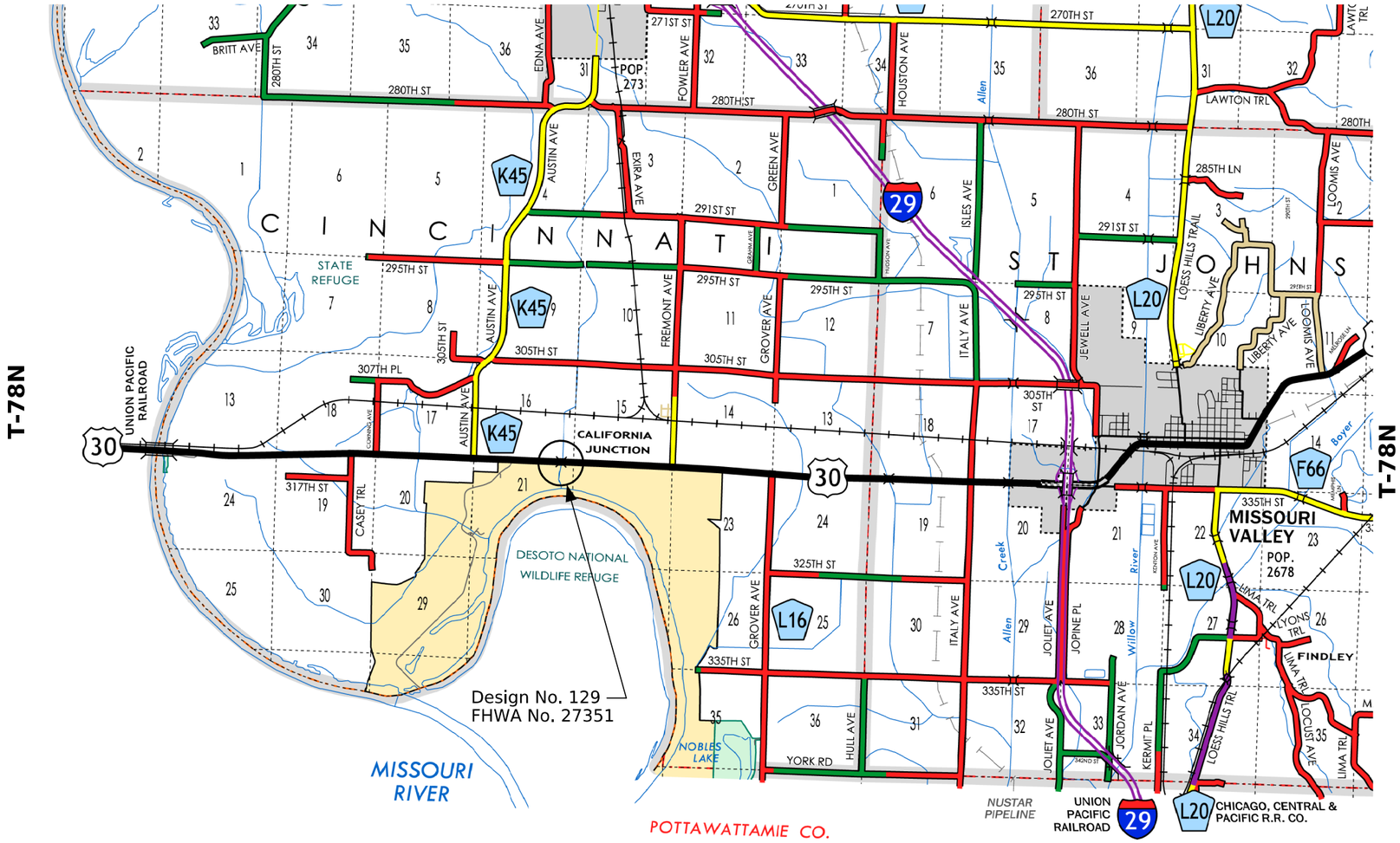
LICENSED PROFESSIONAL ENGINEER
Edward S. Gapatan
29269
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Preliminary Plans — 04-24-2026
Signature — Date
Edward S. Gapatan
Printed or Typed Name

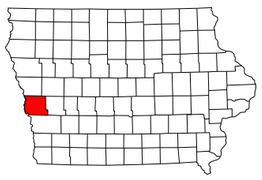
My license renewal date is December 31, 2027

Pages or sheets covered by this seal: All sheets



Harrison County Location Map

Not To Scale



LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD

- INTERSTATE HIGHWAY
- UNITED STATES HIGHWAY
- STATE HIGHWAY
- COUNTY HIGHWAY

- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE

- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES — ABBEY ROAD
- UNINCORPORATED PLACE — ELWOOD

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER A.2

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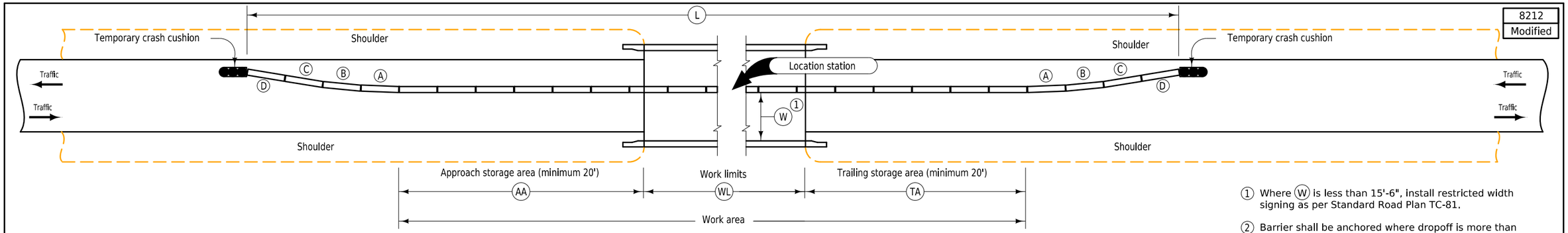
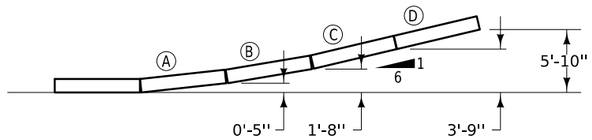
8212
Modified



1 Where W is less than 15'-6", install restricted width signing as per Standard Road Plan TC-81.

2 Barrier shall be anchored where dropoff is more than 3 inches. This is intended for both stages at each end of the bridge. Refer to Tab 108-33.



Barrier Offsets for Flare Sections

Station	Side	AA	WL	TA	L	2 Anchored	1 W	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
207+68.00	Lt.	25	337.5	25	487.5	X	13'-7½"	Stage 1
207+68.00	Rt.	25	337.5	25	487.5	X	13'-7½"	Stage 2

Temporary Concrete Barrier Layout
for Two-way Traffic

SS-1

1 Excavation, Class 13, Waste, 9 in., Paved Shoulder, 9 in.

2 Excavation, Class 13, Waste, 6 in. Special Backfill, 6 in.

3 Or, Match Existing Paved Shoulder Slope

4 Existing Granular Shoulder to Remain in Place

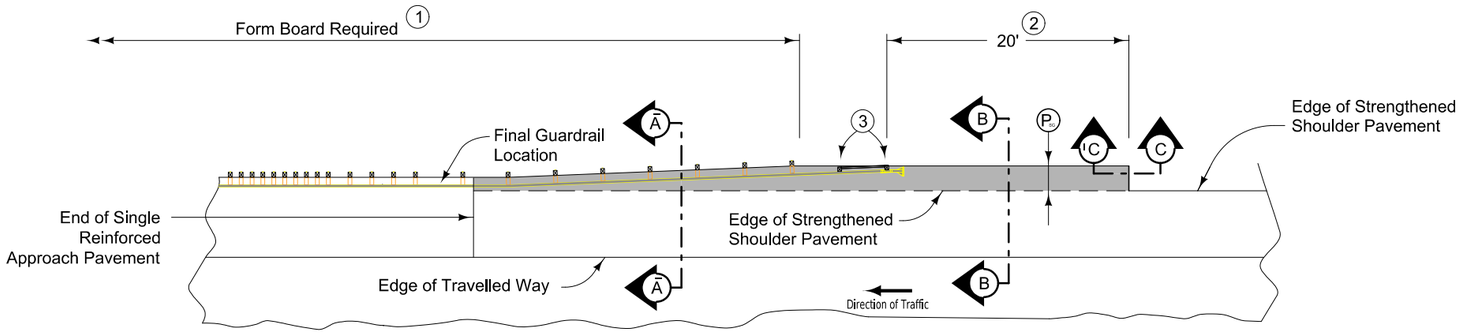
Refer to Tab. 112-9 for P width and Shoulder quantities

HMA Jointing
Longitudinal Joint: B

8" PCC Paved Shoulder may be substituted with no additional payment by matching mainline pavement joint spacing and placing additional transverse 'CD' joints in the shoulder at mid-panel of the mainline pavements. The paved shoulder shall be tied to the mainline paving with a 'KT-2' joint.

Strengthened HMA
Paved Shoulder
for Traffic Shifts

7158
MODIFIED



Plan View

9" HMA Paved Shoulder at guardrail. 8" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail.

Refer to Tabulation 112-9 for shoulder quantities.

(1) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown.

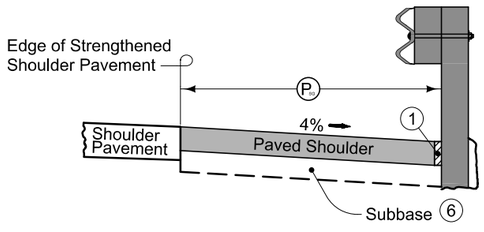
(2) Continue paved shoulder 20 feet beyond the center of the first post.

(3) Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

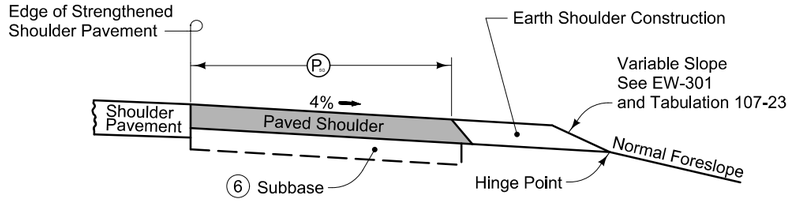
(4) 'BT' (per PV-101) joint for PCC shoulder.
'B' (per PV-101) joint for HMA shoulder.

(5) The Contractor has the option to pave the paved shoulder at guardrail and the full width strengthened paved shoulder as one operation.

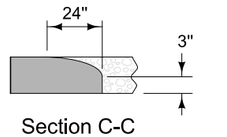
(6) 6" Special Backfill



Section A-A



Section B-B



Section C-C
Roll down at granular shoulder or earth.

Existing Shoulder (5)

Paved Shoulder at Guardrail
(Adjacent to full width paved shoulder)

SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- WH Water Hydrant (Rural)
- Septic Tank
- C Cistern
- LP L.P. Gas Tank (No Footing)
- UST 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

UTILITY LEGEND

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.		
Green	(2)		Existing Topographic Features and Labels
Blue	(1)		Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)		Existing Utilities
SHADING	**Design Color No.**		**Transparency**
Pink, Dark	(13)		Temporary Pavement Shading — 50%
Yellow	(4)		Proposed Pavement Shading — 50%
Orange	(6)		Proposed Granular Shading — 50%
Orange	(70)		Proposed Shoulder Granular Shading — 50%
Yellow	(68)		Proposed Shoulder Paved Full Depth Shading — 50%
Yellow	(132)		Proposed Shoulder Paved Partial Depth Shading — 50%
Brown, Light	(236)		Grading Shading — 50%
Orange, Light	(134)		Proposed Granular Entrance Shading — 50%
Yellow	(220)		Proposed Paved Entrance Shading — 50%
Tan	(8)		Proposed Sidewalk Shading — 50%
Blue, Light	(230)		Proposed Sidewalk Landing Shading — 50%
Pink	(11)		Proposed Sidewalk Ramp Shading — 50%
Red	(3)		Proposed Structure Shading — 50%
Red	(3)		Delineates Restricted Areas — 0%

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 Symbol
- Proposed Right-of-Way Line
- Existing Right of Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Easement (Temporary) Symbol
- Easement (Temporary) Line
- Easement
- C/A Access Control
- Property Line Symbol
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER D.1

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201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00

SE¼ SE¼
SEC. 16-78-45

SCEBOLD REVOCABLE TRUST, RICHARD E.
SCEBOLD REVOCABLE TRUST, JONETTA

Begin Shoulder Strengthening
Sta. 202+52.58

(U.A.C.)
Existing Field Entrance and
36" CMP Culvert

(Remove)
Existing Field Entrance and
36" CMP Culvert

End Approach Pavement
Sta. 209+33.42

(U.A.C.)
Existing Field Entrance
and CMP Culvert

Existing
R.O.W.

End Shoulder Strengthening
Sta. 212+83.42

US 30

Begin Approach Pavement
Sta. 206+02.58

Existing
R.O.W.

Pave Shoulders
Adjacent to Guardrail

Sta. 206+68.00 Construct
Build 150'-0" x 44'-0" Continuous
Concrete Slab Bridge,
0° Skew

Younges Ditch

(Remove)
Sta. 207+68.00
194'-0" x 28'-0" Continuous
Concrete Slab Bridge

Pave Shoulders
Adjacent to Guardrail

DESOTO NATIONAL
WILDLIFE REFUGE

NE¼ NE¼
SEC. 21-78-45

DESOTO NATIONAL
WILDLIFE REFUGE

N

0 50
FEET

1040 1030 1020 1010 1000 990 980 970 960 950

TIE IN
STA 206+02.583
EL 1009.787

PROFILE
GRADE

+0.216%

TIE IN
STA 209+33.417
EL 1010.503

LDG
STA 205+75.00
EL 999.28

-2.38%

-1.31%

-7.68%

LDG
STA 206+00.00
EL 998.68

LDG
STA 206+85.25
EL 997.57

EXISTING
GROUND

LDG
STA 207+57.37
EL 992.00

1009.874 1009.796 1009.786 1009.835 1009.791 1009.889 1009.795 1009.943 1009.998 1010.052 1010.106 1010.160 1010.214 1010.268 1010.323 1010.377 1010.413 1010.431 1010.407 1010.485 1010.458 1010.586 1010.649

201+00 202+00 203+00 204+00 205+00 206+00 207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER D.2

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SURVEY INDEX

County: Harrison
PIN: 24-43-030-040
Project Number: BRF-03-1(211)—38-43
Location: Harrison County Bridge – US 30 over Youngs Ditch, 0.8 mi E of SR K-45
Type of Work: Bridge Replacement
Project Directory: 4303004024

Survey Personnel

Jerett Still– Survey Party Chief
TJ Coyle – Assistant Survey Party Chief

Date(s) of Survey

Begin Date 12/05/2024
End Date 05/07/2025

General Information

This survey is for Harrison County Bridge – US 30 over Youngs Ditch, 0.8 mi E of SR K-45. This survey request was for the Iowa DOT. This project is a Full Field DTM survey. This project is a Partial Field DTM with Photo control.

Utility Information

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

Project Control

Nearby Iowa Real Time Network reference stations were utilized to obtain horizontal and vertical control on primary project control points. Three five-minute observations were taken with a minimum two-hour time span between and used in a weighted average to obtain final coordinate values. Vertical for control was determined by leveling from BM1. For additional details of the control survey, contact the Preliminary Survey department.

VERTICAL DATUM: NAVD88
GEOID MODEL: 2018

Vertical Control

Vertical control was established by verifying two NGS monuments. Vertical datum for this survey is relative to NAVD88. Geoid 2018 was used in processing. The height was computed at GNS 43 58 & GNS RV 111. Vertical control was checked with IARTN checks.
This survey observed GNS 43 58 & GNS RV 111:
GNS 43 58 – survey disk set in prefabricated concrete post imbedded in ground flush
Elevation = 1004.40
GNS RV 111 – standard monel metal rivet set in top of the south ball wall of east abutment
Elevation = 1036.88

Horizontal Control

The project coordinate system for this survey is Iowa RCS zone 06 (U.S. Survey Feet). This survey control is relative to IARTN reference stations IARTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011). Coordinates were determined conducting a 5-minute observation in the morning, afternoon, and evening. Coordinates were then averaged between the three to determine final coordinate.

Alignment Information

The horizontal alignment for Harrison Co. US 30 is a retrace of As-built Plans No. ERF-30(2). Survey stationing was equated to the plan PI at Sta. 207+68.00 and carried back and ahead with/without equation throughout the survey.

CONTROL POINT VICINITY MAP

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

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88 - GeoID Model: 2018

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
IA. Regional Coordinate System Zone 06
VERT. DATUM: NAVD88
GEOID MODEL: 2018

Point Name	Northing	Easting	Elevation	Code - Description
CP-103	7074107.153	16422638.4	1003.63	CP103 3/4" rebar, .8' deep, 120.05' E of BRG, Sta. 209+71.99, 119.86' Rt. of CL
CP-104	7074270.826	16422937.16	1004.78	CP104 3/4" rebar, .8' deep, 380.56' E of BRG, Sta. 212+68.65, 47.59' Lt. of CL
CP-105	7074276.929	16422072.75	1001.54	CP105 3/4" rebar, .8' deep, 260.30' W of BRG, Sta. 204+04.23, 42.72' Lt. of CL
CP-106	7074071.129	16422194.63	999.08	CP106 3/4" rebar, .8' deep, 134.04' W of BRG, Sta. 205+28.71, 161.52' Rt. of CL

108_23A
8/15/22

TRAFFIC CONTROL PLAN

Maintain traffic on US 30 at all times in accordance with Standard Road Plans listed on Tabulation 105-4 on Sheet C.X

For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices and the current Standard Specifications.

Refer to Tab. 108-26A for Staging Notes.

511 TRAVEL RESTRICTIONS

Line No.	Route	Direction	County	Location Description	Feature Crossed	Object Type	Maint. Bridge No. or Structure ID or FHWA No.	Type of Restriction	Existing Measurement	Construction Measurement	Construction Measurement as Signed	Projected As Built Measurement	Remarks
1.0	US 30	2-Lane	Harrison	0.8 mi E of SR K-45	Youngs Ditch	Barrier	4303.8S030	Horizontal	28'-0"	13'-6"	12'-6"	44'-0"	Staged Construction
2.0	US 30	2-Lane	Harrison	0.8 mi E of SR K-45	Youngs Ditch	Temporary Signal	4303.8S030	Vertical	N/A	15'-0"	14'-0"	N/A	Staged Construction

STAGING NOTES

Prior to Stage 1

Traffic: Maintain traffic in accordance with Standard Road Plan TC-213.

Construction: Construct strengthened HMA paved shoulder. Install temporary barrier rail.

Stage 1

Traffic: Maintain two-way traffic in the westbound lane using temporary traffic signals and temporary barrier rail. See Sheet J.5 - J.6 and Modified Standard Road Plan TC-217 on Sheet J.7 for details.

Construction: Remove the south half of the existing bridge and bridge approaches. Remove existing guardrail, construct guardrail grading, install new guardrail, construct pave shoulders at guardrail and shoulder strengthening on south side. Complete construction of south half of new bridge and other Stage 1 construction.

Stage 2

Traffic: Maintain two-way traffic in eastbound lane on new bridge using temporary traffic signals and temporary barrier rail. See Sheet J.5 - J.6 and Modified Standard Road Plan TC-217 on Sheet J.7 for details.

Construction: Remove the north half of the existing bridge and remaining bridge approaches. Remove former field entrance and 36" CMP culvert in the northwest quadrant. Remove and replace guardrail on the north side of the bridge and pave shoulders at guardrail. Complete construction of north half of new bridge, bridge approach replacements, and other Stage 2 construction.

Final

Traffic: Open both lanes to traffic.

Construction: Complete final pavement markings and rumble strips. Remove temporary barrier rail.

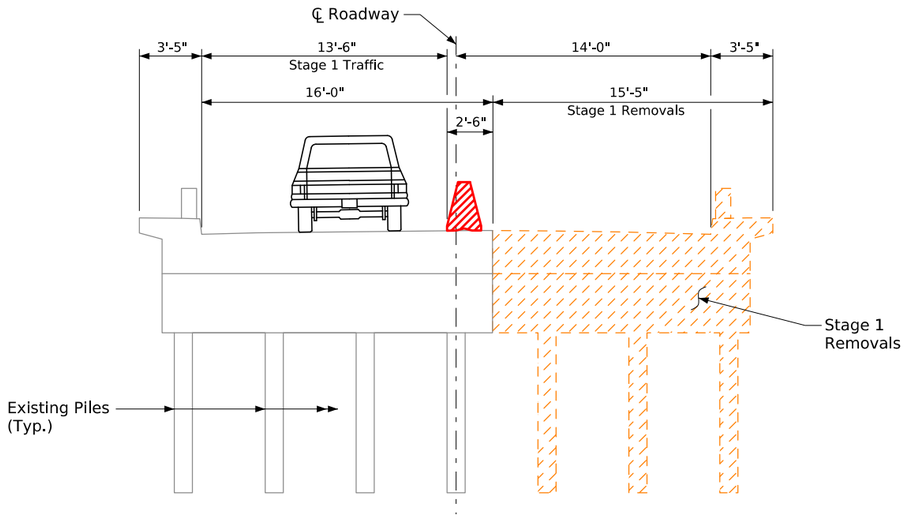
Complete pavement marking operations in accordance with Standard Road Plan TC-233.

Complete pavement rumble strip operations in accordance with Standard Road Plan TC-232.

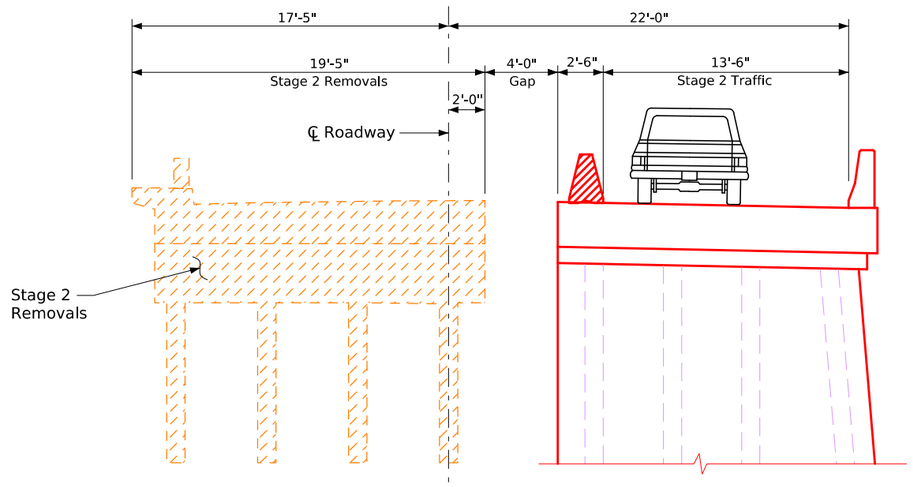
COORDINATED OPERATIONS

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.

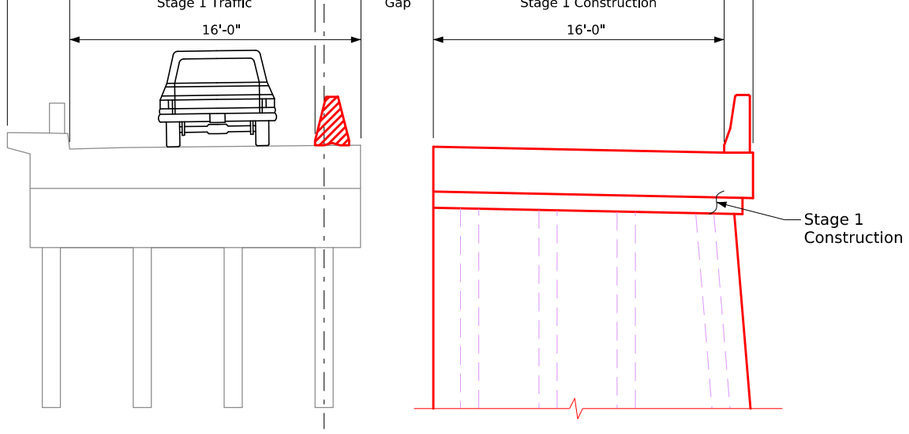
Project	Type of Work
NHSX-030-1--3H-43	U.S. 30 Missouri Valley Bypass



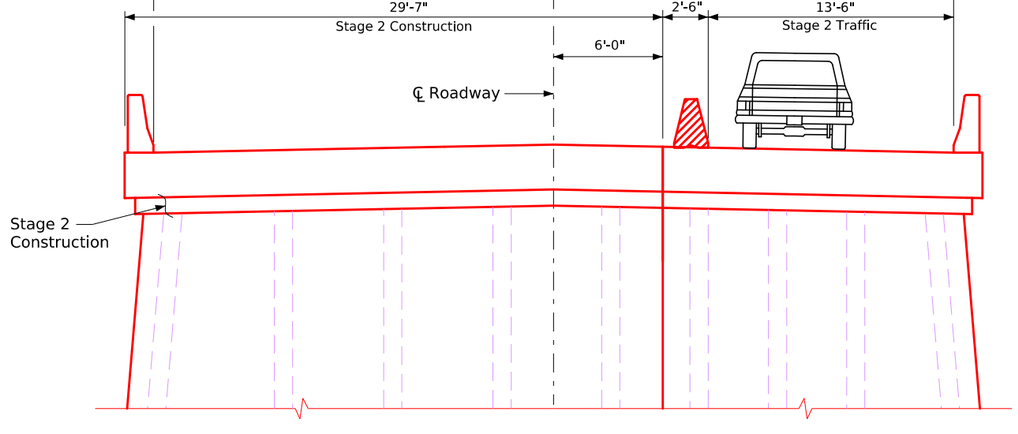
Stage 1 Removals



Stage 2 Removals



Stage 1 Construction



Stage 2 Construction

Bridge Staging Sheet

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER J.5

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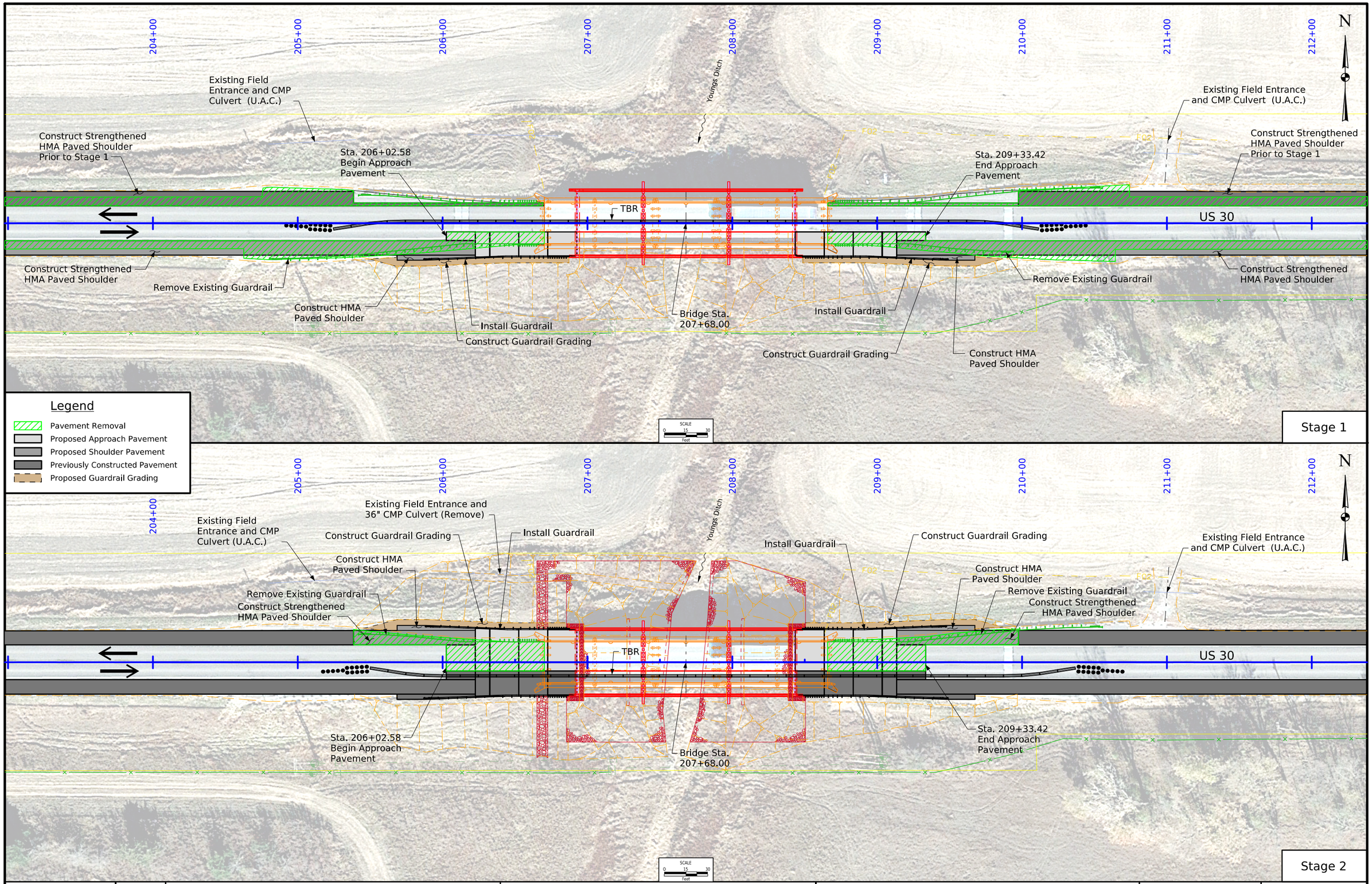

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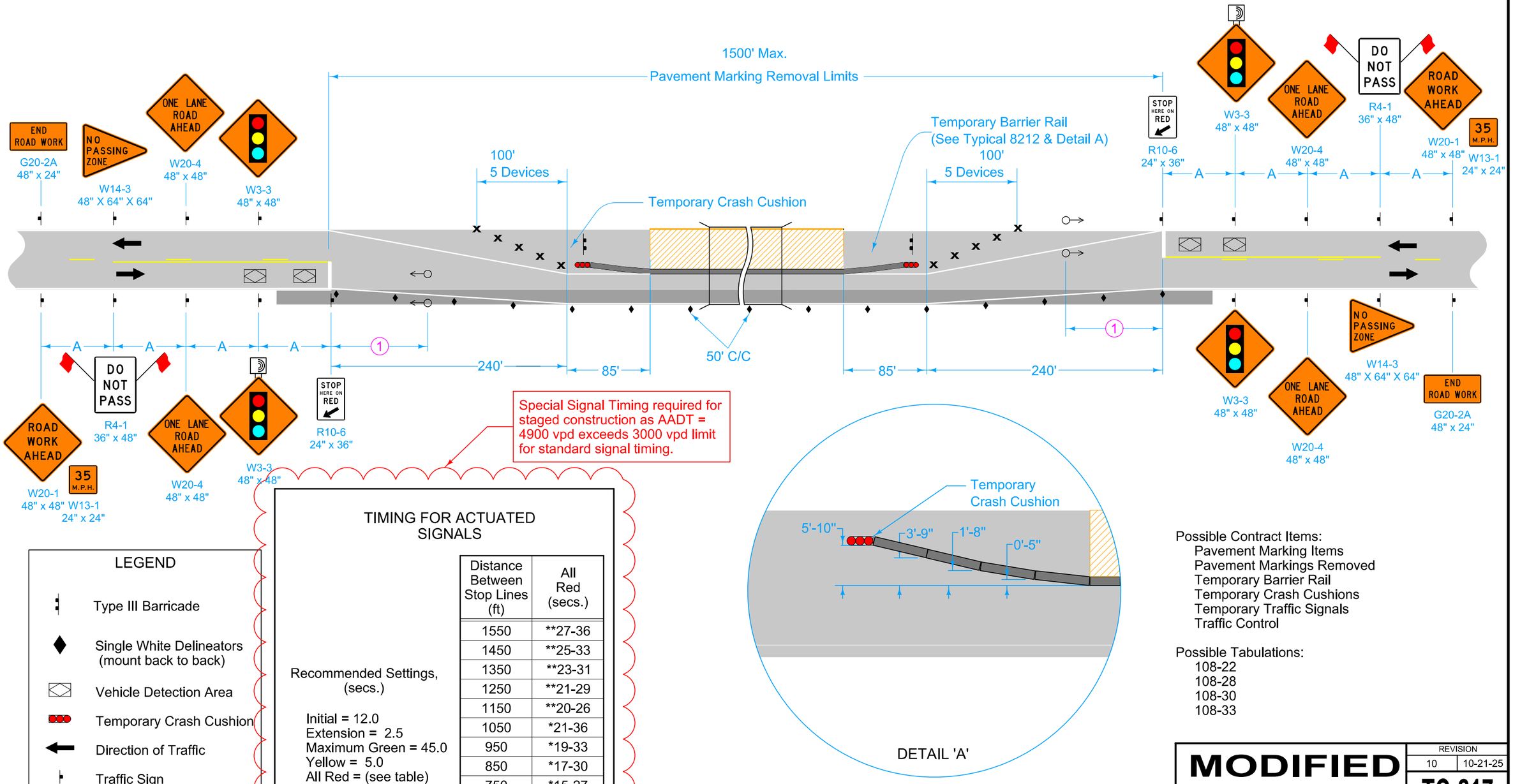


Special Signal Timing required for staged construction as AADT = 4900 vpd exceeds 3000 vpd limit for standard signal timing.

DETAIL 'A'

LEGEND

- Type III Barricade
- Single White Delineators (mount back to back)
- Vehicle Detection Area
- Temporary Crash Cushion
- Direction of Traffic
- Traffic Sign
- Drum
- Type 'B' High-Intensity Flashing Warning Light
- Work Area
- Temporary Traffic Signal

TIMING FOR ACTUATED SIGNALS

Recommended Settings, (secs.)

Initial = 12.0
Extension = 2.5
Maximum Green = 45.0
Yellow = 5.0
All Red = (see table)

Distance Between Stop Lines (ft)	All Red (secs.)
1550	**27-36
1450	**25-33
1350	**23-31
1250	**21-29
1150	**20-26
1050	*21-36
950	*19-33
850	*17-30
750	*15-27
650	*14-23
550	*12-20

* Range of values are based on operating speeds between 20 and 35 mph

** Range of values are basedon operating speeds between 30 and 40 mph

SPEED LIMIT (mph)*	A
35 or less	250'
40 - 45	350'
50 or greater	500'

* Speed Limit refers to regulatory speed limit before road work.

Place Concrete Barrier Markers at 10 ft C/C on bridge rail.

(1) Locate signal heads 70 to 100 feet beyond stop bar. Adjust location of signal heads as field conditions warrant.

Possible Contract Items:
- Pavement Marking Items
- Pavement Markings Removed
- Temporary Barrier Rail
- Temporary Crash Cushions
- Temporary Traffic Signals
- Traffic Control

Possible Tabulations:
- 108-22
- 108-28
- 108-30
- 108-33

MODIFIED

STANDARD ROAD PLAN

REVISION 10 10-21-25

TC-217

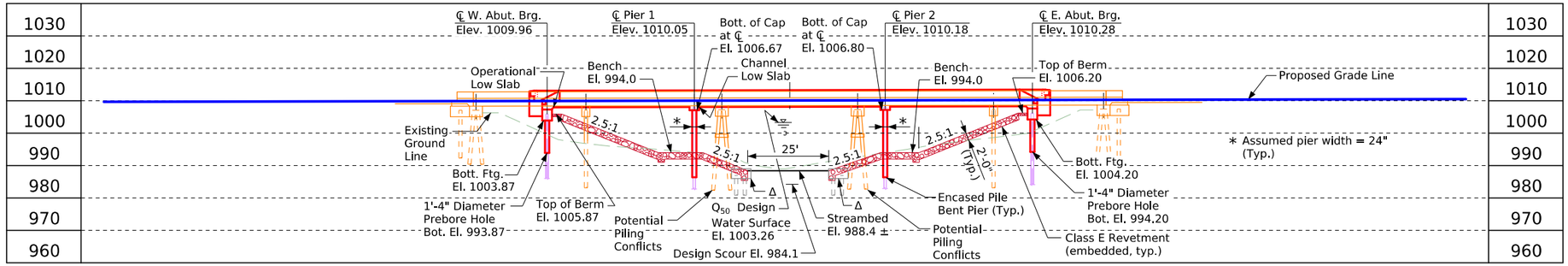
SHEET 1 of 1

MODIFICATIONS: Adjusted all red times.

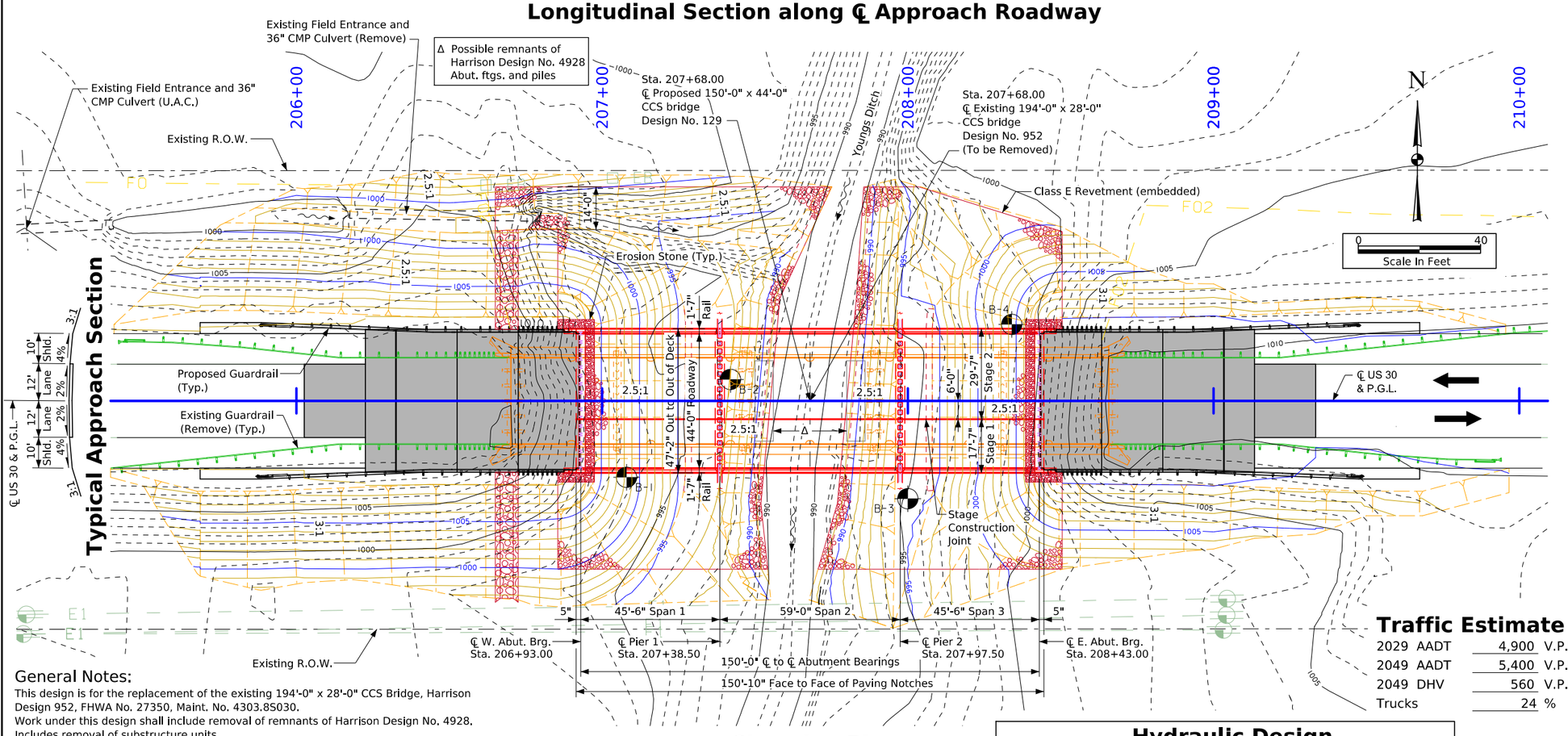
APPROVED BY DESIGN METHODS ENGINEER

LANE CLOSURE WITH SIGNALS AND TBR

Control Point: CP-105: 7074276.93, 16422072.75, 1001.54, CP 3/4" bar, 0.8' deep, 260.30' W of BRG, Sta. 204+04.23, 42.72' Lt. of ℄.



Longitudinal Section along ℄ Approach Roadway



Traffic Estimate

2029 AADT	4,900	V.P.D.
2049 AADT	5,400	V.P.D.
2049 DHV	560	V.P.H.
Trucks	24	%

General Notes:

This design is for the replacement of the existing 194'-0" x 28'-0" CCS Bridge, Harrison Design 952, FHWA No. 27350, Maint. No. 4303.8S030.
Work under this design shall include removal of remnants of Harrison Design No. 4928, Includes removal of substructure units.

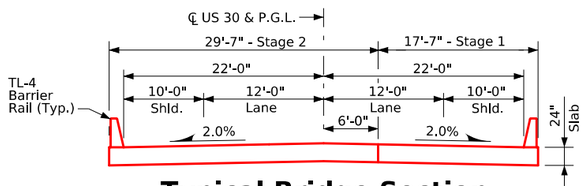
Design Notes:

There is potential for pile conflicts at Pier 1 and Pier 2 with the existing battered timber piles. Final design shall consider the need for temporary shoring to accommodate staging of bridge construction.
It is recommended to use fully encased pile bent piers.
It is recommended to retain the forms from Stage 1 for Stage 2 to limit deflection.
Density used for Class E quantity calculations is 1.5 T/cy.

Plan Notes:

Top of bridge deck at centerline roadway is 0.03' below the profile grade.
Class E Revetment Stone is embedded.

Situation Plan



Typical Bridge Section

Hydraulic Design

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Edward S. Gapatan 29269 — Licensed Professional Engineer — Iowa

Signature — 02-20-2026 Date

Edward S. Gapatan
Printed or Typed Name

My license renewal date is December 31, 2027

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

0.216%

VPI Sta. = 206+02.583
VPI Elev. = 1009.79

VPI Sta. = 209+33.417
VPI Elev. = 1010.50

Proposed Profile Grade US 30

Hydraulic Data

Drainage Area = 5.55 Sq. Mi.
Stream Slope (HGL) = 2.76 Ft./Mi.
Avg. Low Water Stage = 990.2

Operational Low Slab = 1007.57
Channel Low Slab = 1007.67

Q_{50} = 2,356 cfs
Stage = 1003.26
Operational Freeboard = 4.4 ft.
Avg. Bridge Velocity = 3.2 fps

Q_{100} = 2,805 cfs
Stage = 1003.28
Backwater = 0.26 ft.
Avg. Bridge Velocity = 3.6 fps

Q_{200} = 3,294 cfs
Stage = 1003.31
Avg. Bridge Velocity = 4.0 fps
Calculated Design Scour = 984.1

Q_{500} = 4,009 cfs
Stage = 1003.37
Channel Freeboard = 4.3 ft.
Avg. Bridge Velocity = 4.6 fps
Check Scour = 984.0

Site is located within Harrison County F.I.S. 19085CV000A, dated January 29, 2021
10-Yr Missouri River Stage = 1003.2

Utilities Note:

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

General Utility Symbols:

E1 - Electrical FO2 - Fiber Optic

Location

On US 30 over Youngs Ditch
Ditch #58
T-78N R-45W
Section 16 & 21
Cincinnati Township
Harrison County
FHWA No. 27351
Bridge Maint. No. 4303.8S030
Latitude 41.551202°
Longitude -96.016691°

Design For 0 degrees

150'-0" x 44'-0" Continuous Concrete Slab Bridge

45'-6" End Spans — 59'-0" Interior Span

Situation Plan

STA. 207+68.00 (US 30) — Turn-in Date: February 2026

Harrison County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 129 — Design Sheet No. 1 of 2 — FHWA No. 27351

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER V.1

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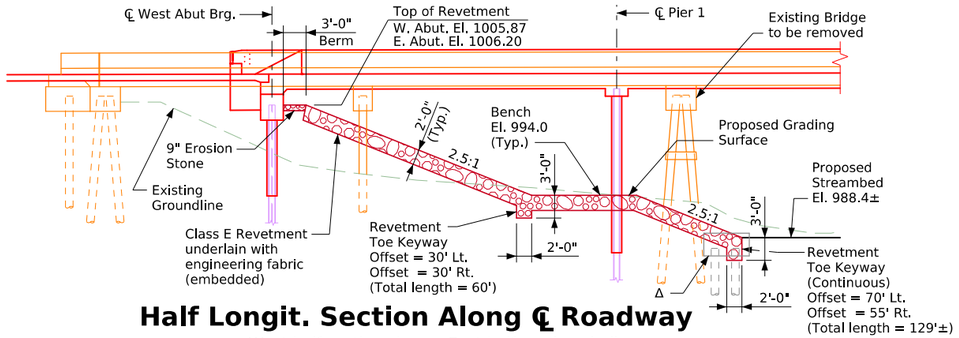
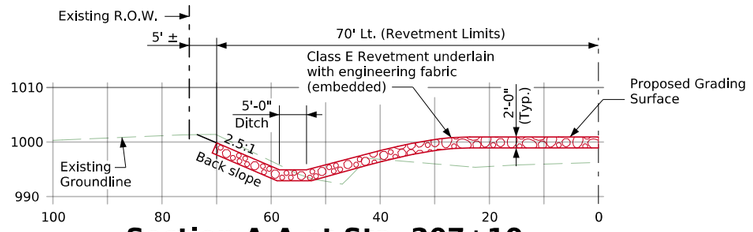


Half Longit. Section Along ℄ Roadway

West half section shown, East half section similar.



Section A-A at Sta. 207+10

Estimated Berm Armoring Quantities

Location	Revetment CL. E (Ton)	Erosion Stone (Ton)	Engineering Fabric (SY)	CL. 10 Excavation (CY)
West Abutment Berm	1050	7.1	1215	704
East Abutment Berm	999	7.1	1147	670
Totals	2049	14.2	2362	1374

Excavation quantity calculated from grading surface. Excavation quantity is for embedded revetment core out only, and does not include excavation to the grading surface. Excavation quantity to the grading surface is determined by Road Design and included in the Road Plans.
Wing armoring not included in the estimated quantities.

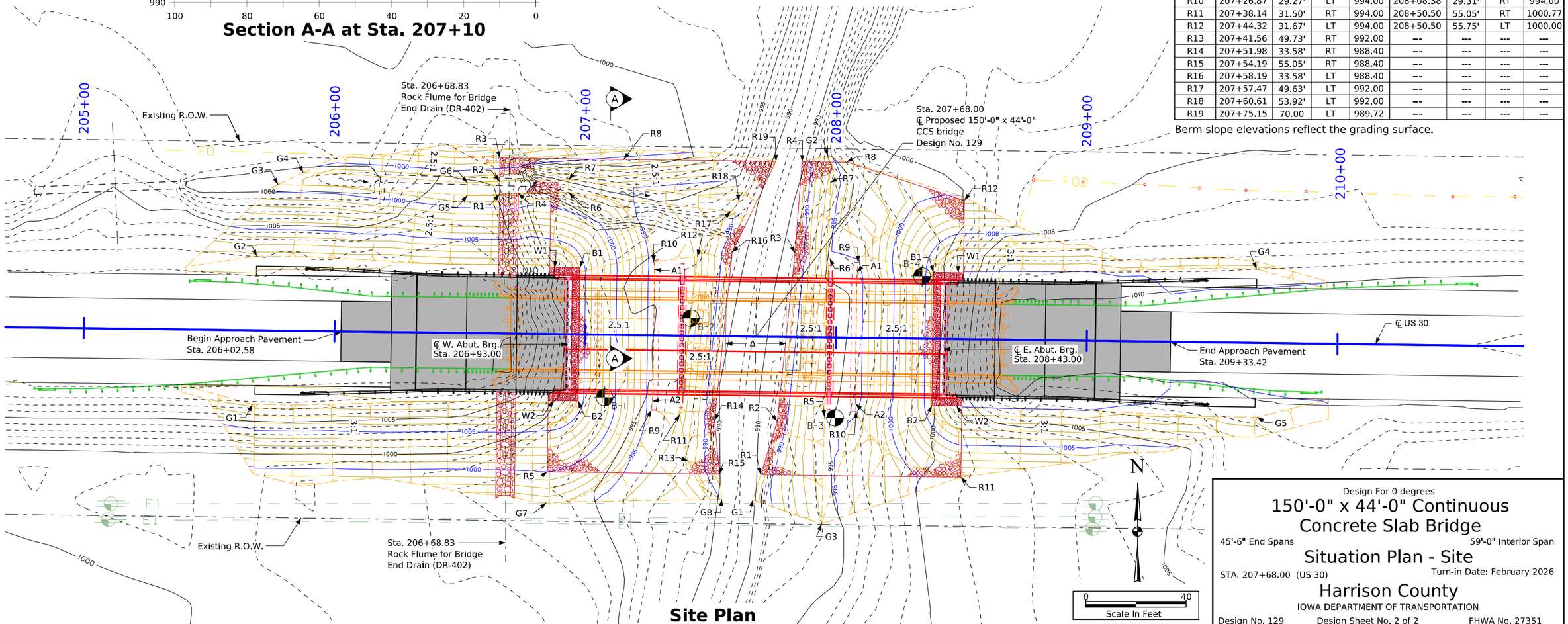
Δ Possible remnants of Harrison Design No. 4928 Abut. ftgs. and piles

Control Point: CP-105: 7074276.93, 16422072.75, 1001.54, CP 3/4" bar, 0.8' deep, 260.30' W of BRG, Sta. 204+04.23, 42.72' Lt. of ℄.

Berm Slope Location Table

Points	West Abutment				East Abutment			
	Station	Offset	Side	Elev.	Station	Offset	Side	Elev.
A1	207+27.25	26.57'	LT	994.00	208+08.00	26.57'	LT	994.00
A2	207+27.25	26.57'	RT	994.00	208+08.00	26.57'	RT	994.00
B1	206+97.50	26.57'	LT	1005.90	208+38.50	26.57'	LT	1006.22
B2	206+97.50	26.57'	RT	1005.90	208+38.50	26.57'	RT	1006.22
W1	206+87.50	26.57'	LT	1009.71	208+48.50	26.57'	LT	1010.06
W2	206+87.50	26.57'	RT	1009.71	208+48.50	26.57'	RT	1010.06
G1	205+68.54	29.60'	RT	1008.60	207+67.68	65.05'	RT	988.40
G2	205+68.54	29.73'	LT	1008.60	207+95.81	72.41'	LT	994.00
G3	205+76.66	58.25'	LT	999.30	207+95.21	74.37'	RT	994.00
G4	205+86.65	63.25'	LT	999.30	209+67.40	29.50'	LT	1010.54
G5	206+52.17	54.90'	LT	998.00	209+67.40	29.50'	RT	1010.54
G6	206+52.17	59.90'	LT	998.00	--	---	---	---
G7	206+85.25	67.37'	RT	996.26	--	---	---	---
G8	207+55.21	65.05'	RT	989.78	--	---	---	---
R1	206+65.08	55.60'	LT	997.80	207+70.63	55.05'	RT	988.40
R2	206+65.08	60.60'	LT	998.00	207+74.02	43.61'	RT	988.40
R3	206+65.00	70.00'	LT	998.40	207+83.19	33.58'	LT	988.40
R4	206+72.58	56.00'	LT	999.50	207+85.57	70.00	LT	989.72
R5	206+85.50	55.00'	RT	1000.00	207+95.78	31.04'	RT	994.00
R6	206+92.61	56.62'	LT	997.00	207+97.04	31.53'	LT	994.00
R7	206+92.61	61.62'	LT	997.00	207+96.96	61.86'	LT	994.00
R8	207+16.00	70.00'	LT	999.50	208+03.61	70.00'	LT	996.00
R9	207+26.80	27.79'	RT	994.00	208+08.38	29.76'	LT	994.00
R10	207+26.87	29.27'	LT	994.00	208+08.38	29.31'	RT	994.00
R11	207+38.14	31.50'	RT	994.00	208+50.50	55.05'	RT	1000.77
R12	207+44.32	31.67'	LT	994.00	208+50.50	55.75'	LT	1000.00
R13	207+41.56	49.73'	RT	992.00	--	---	---	---
R14	207+51.98	33.58'	RT	988.40	--	---	---	---
R15	207+54.19	55.05'	RT	988.40	--	---	---	---
R16	207+58.19	33.58'	LT	988.40	--	---	---	---
R17	207+57.47	49.63'	LT	992.00	--	---	---	---
R18	207+60.61	53.92'	LT	992.00	--	---	---	---
R19	207+75.15	70.00	LT	989.72	--	---	---	---

Berm slope elevations reflect the grading surface.



Site Plan

Design For 0 degrees

150'-0" x 44'-0" Continuous Concrete Slab Bridge

45'-6" End Spans — 59'-0" Interior Span

Situation Plan - Site

STA. 207+68.00 (US 30) — Turn-in Date: February 2026

Harrison County

IOWA DEPARTMENT OF TRANSPORTATION

Design No. 129 — Design Sheet No. 2 of 2 — FHWA No. 27351

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER V.2

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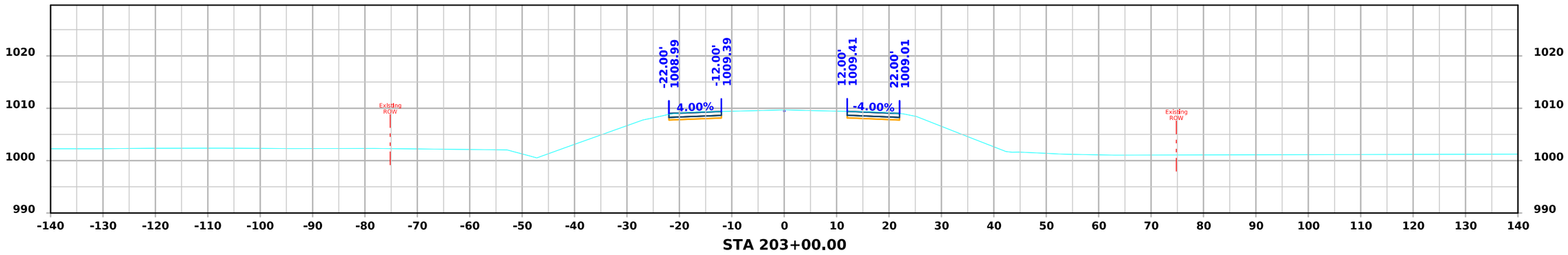
US 30 Preliminary



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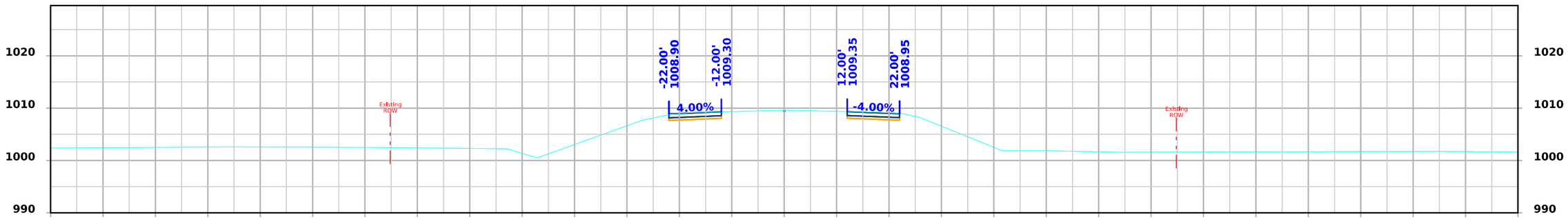

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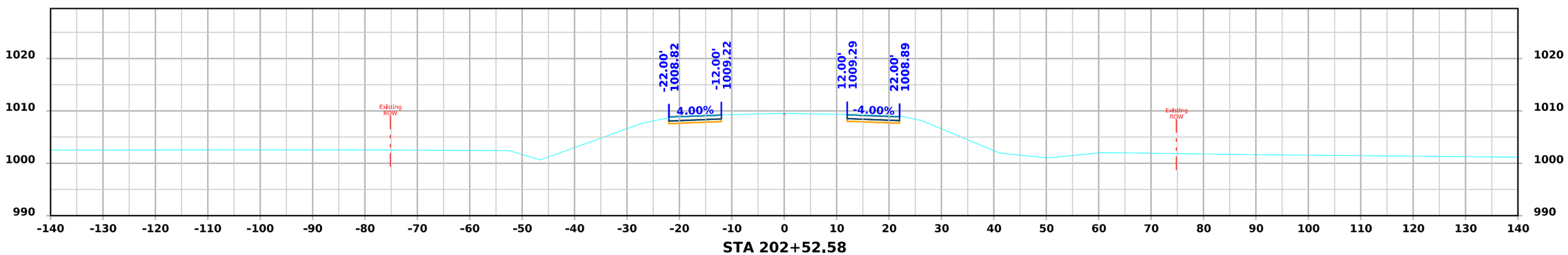

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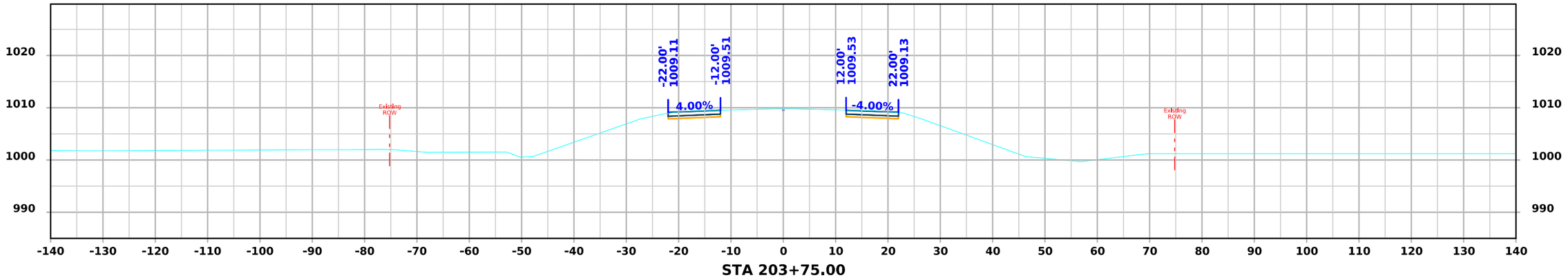
US 30 Preliminary



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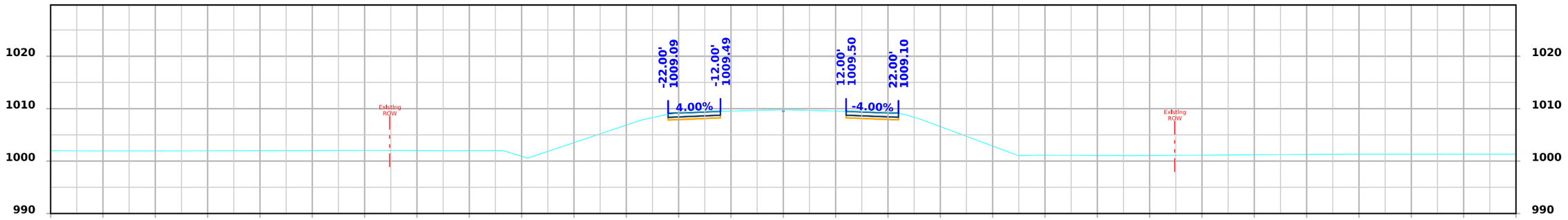

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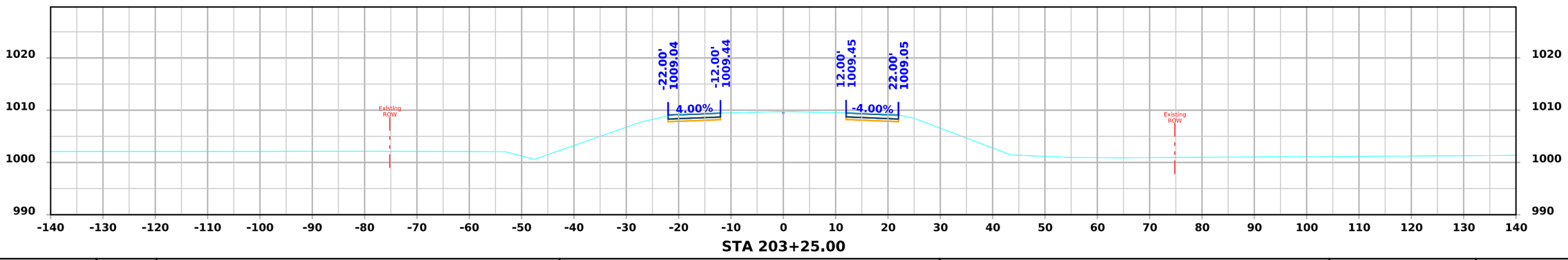

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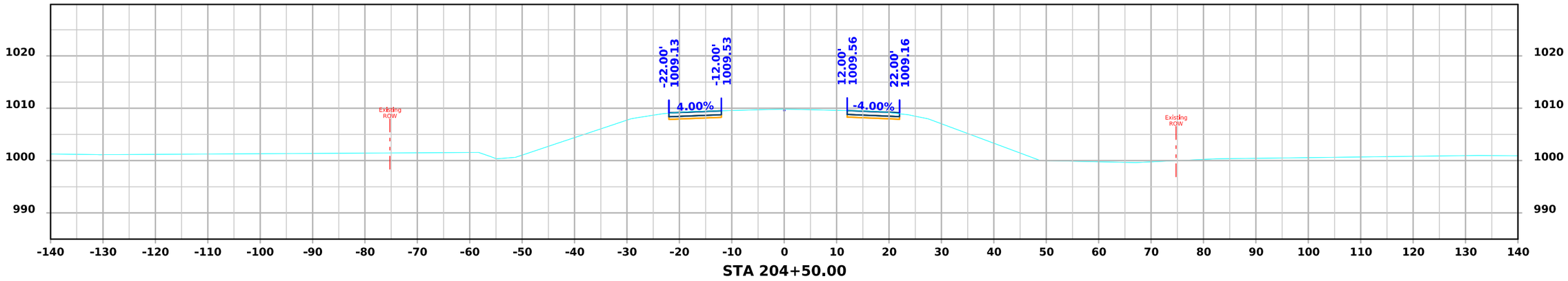

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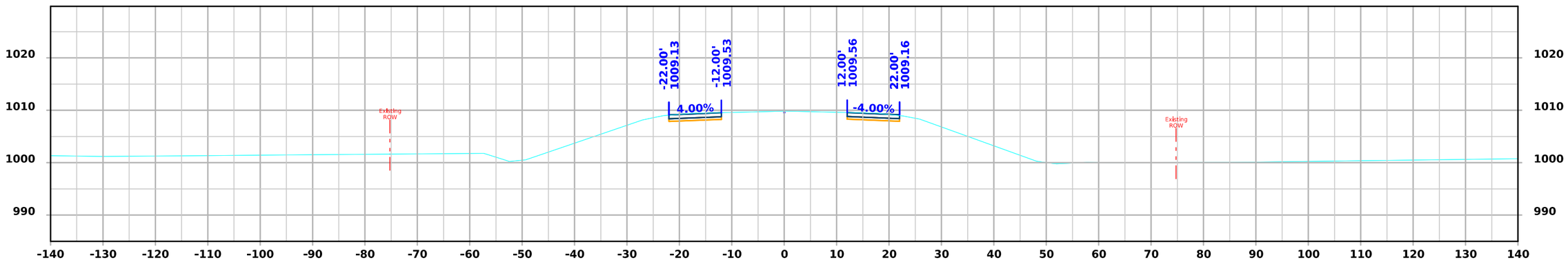

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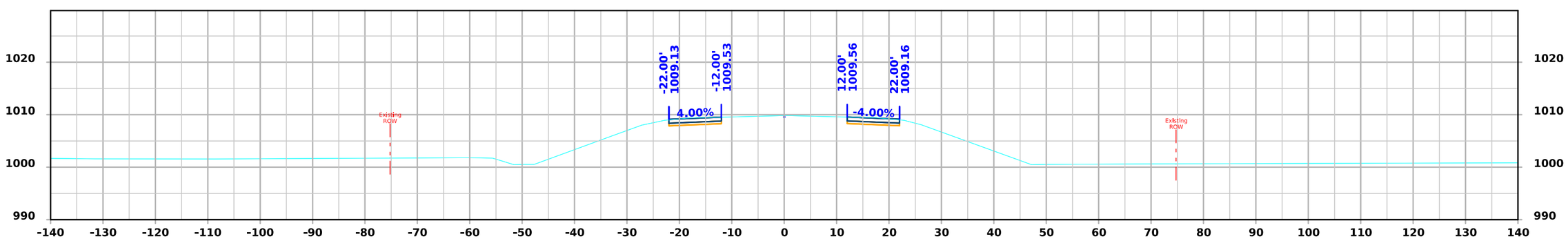

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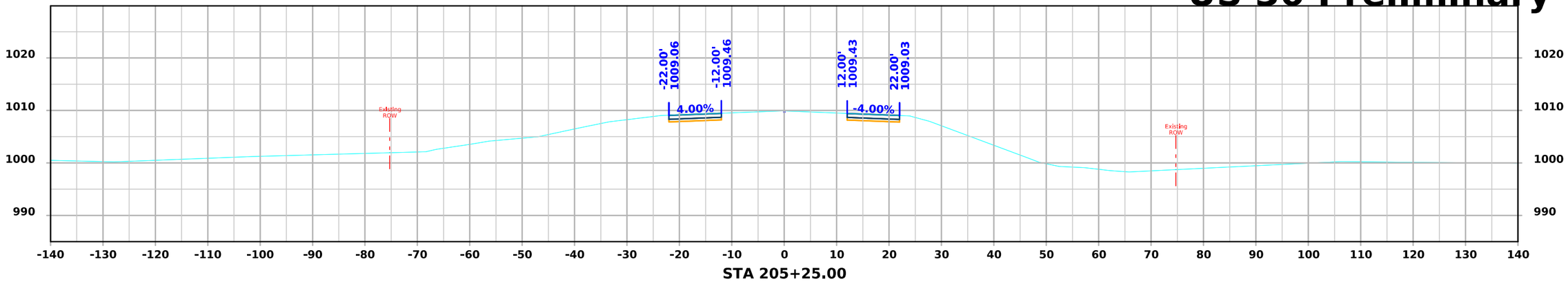
US 30 Preliminary



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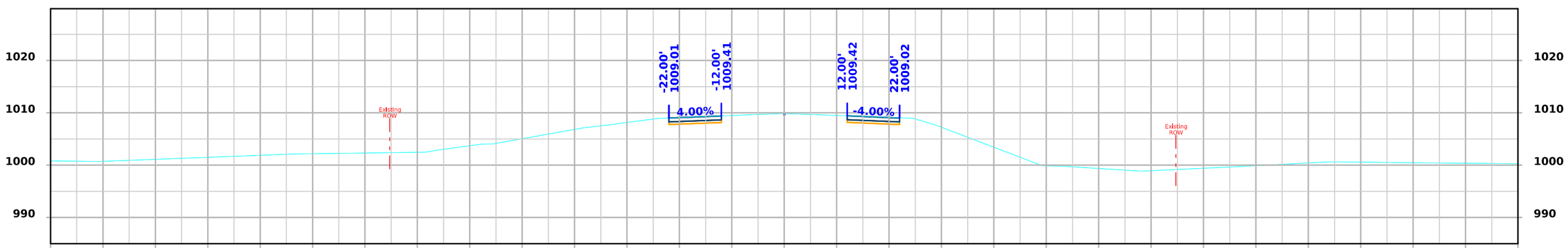

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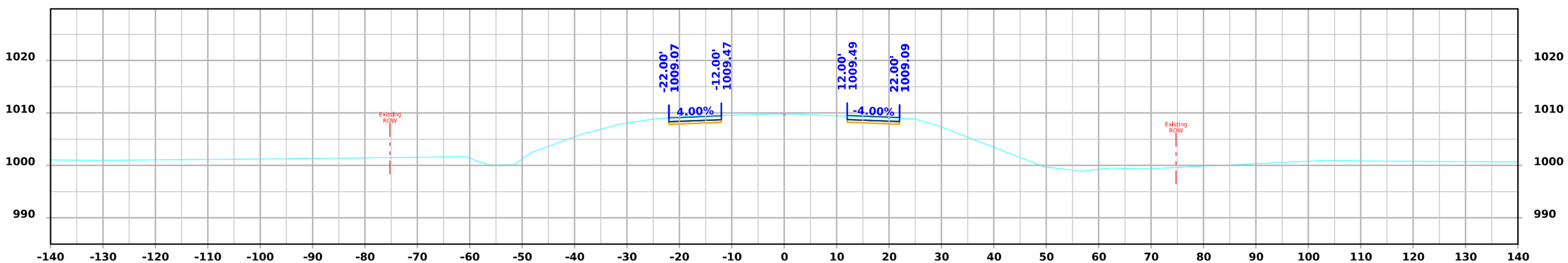

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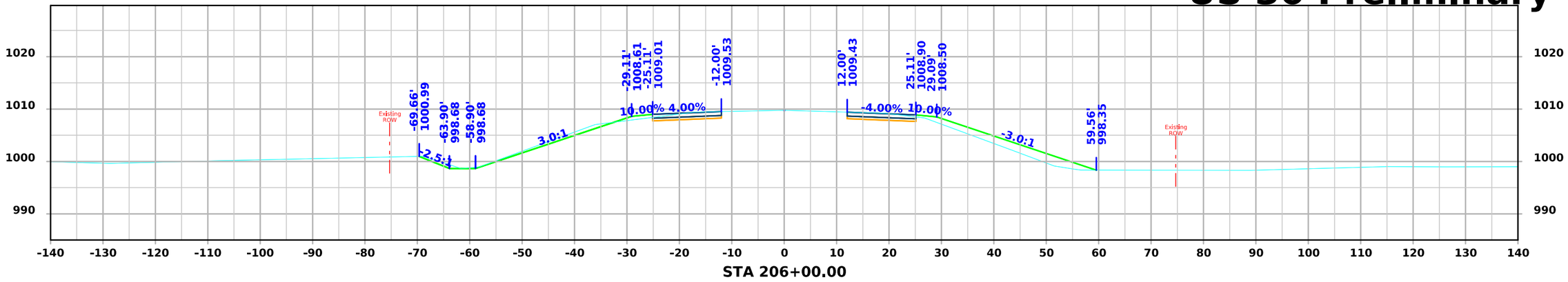
US 30 Preliminary



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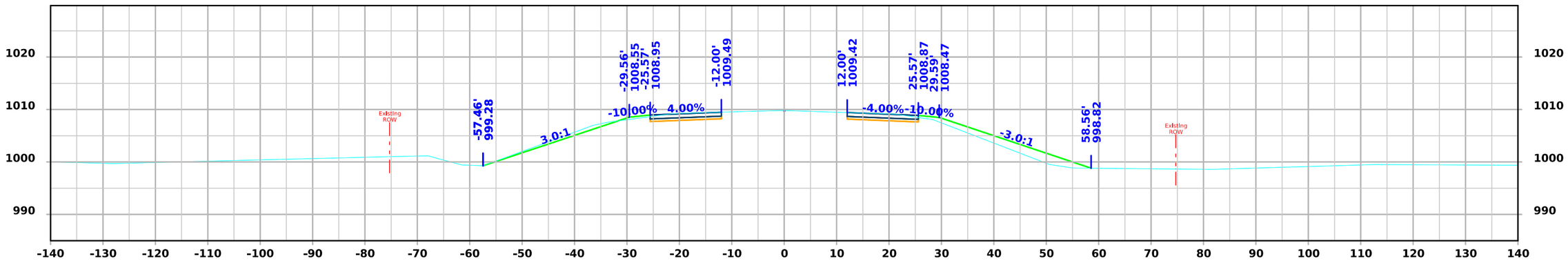

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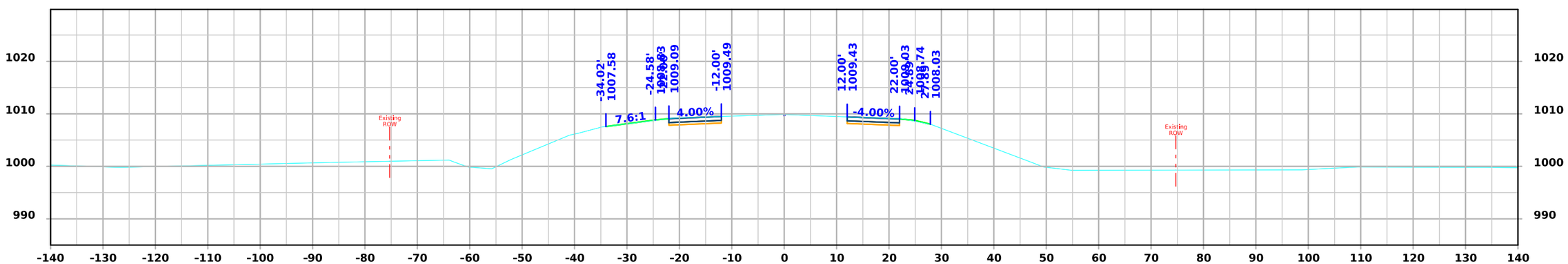

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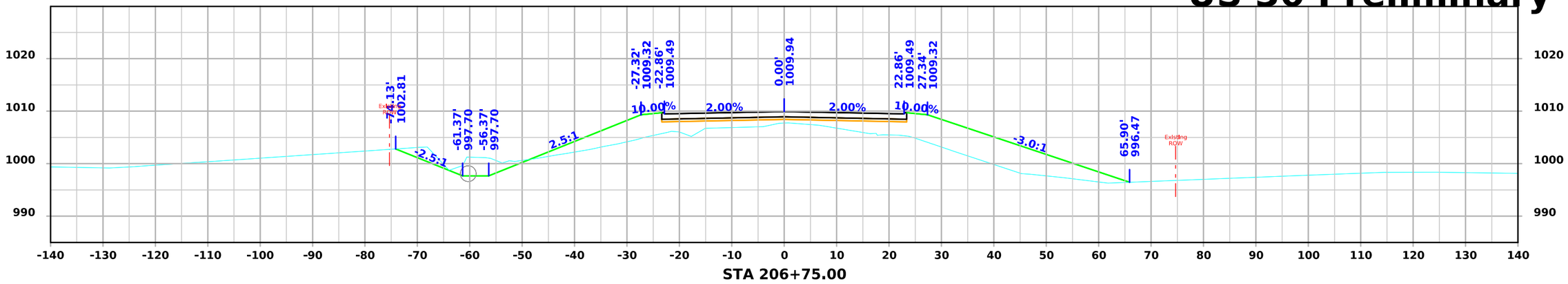
US 30 Preliminary



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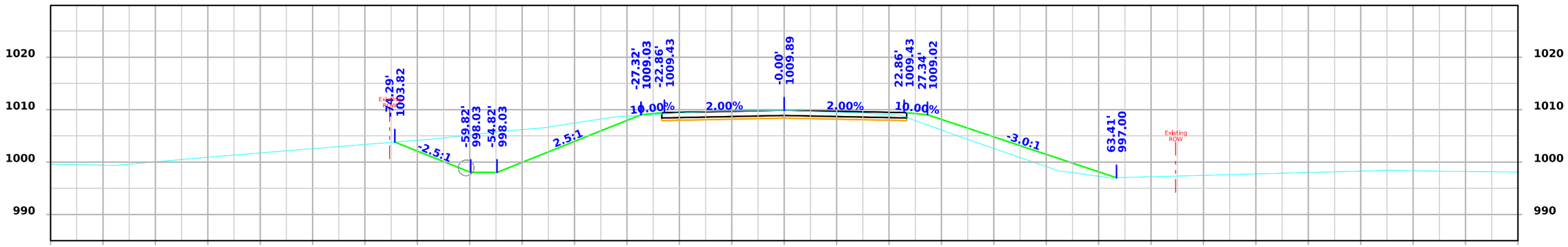

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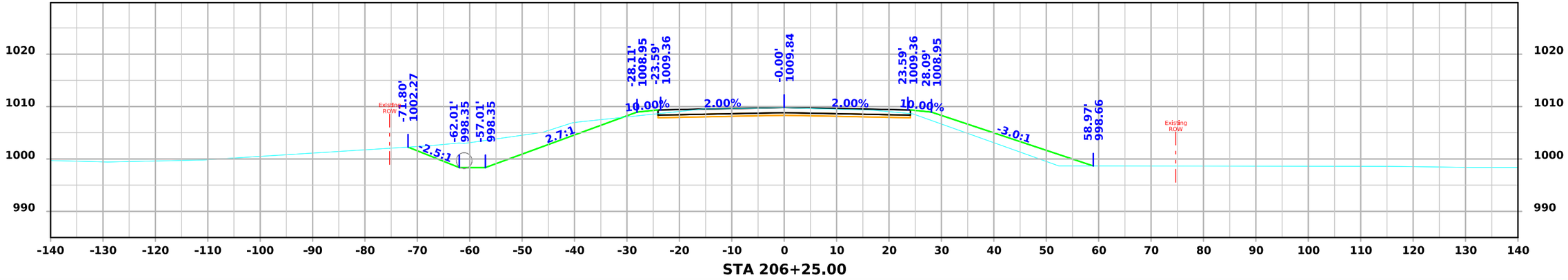

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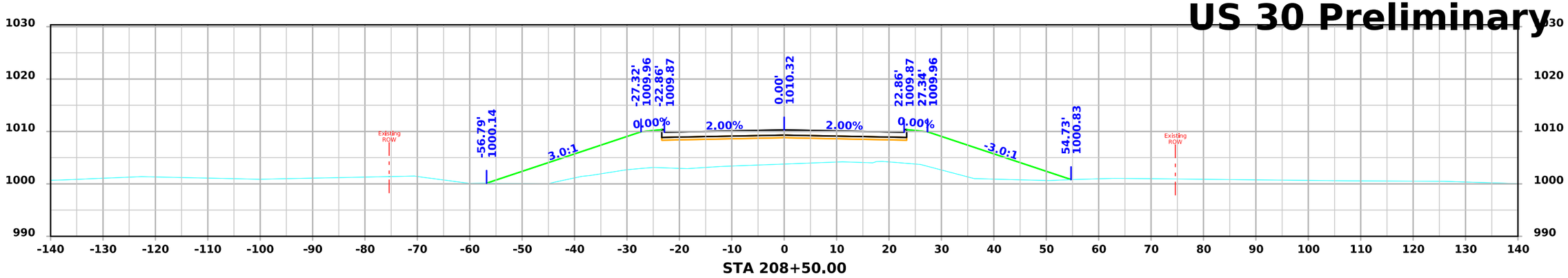
US 30 Preliminary



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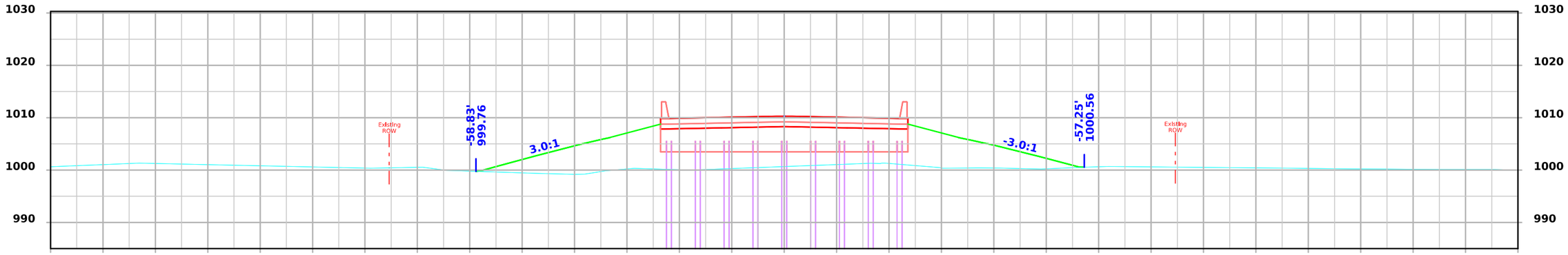

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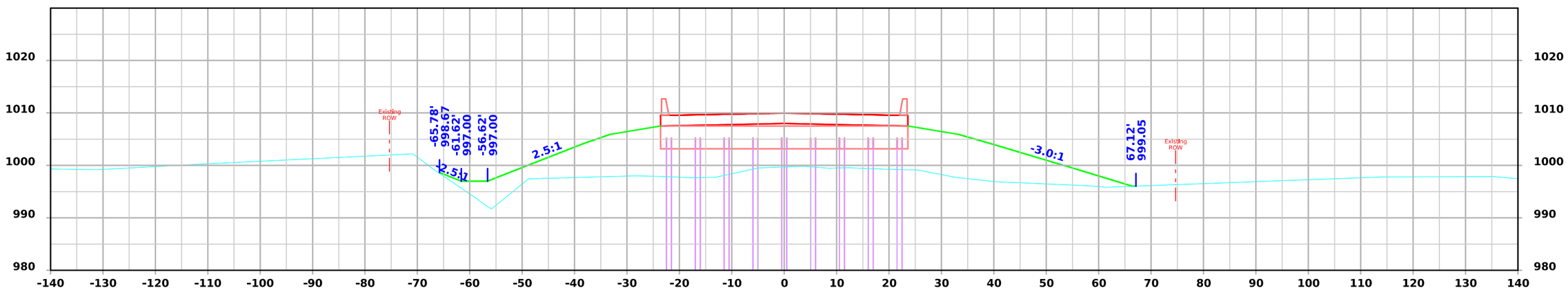

STA 206+92.58

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.7

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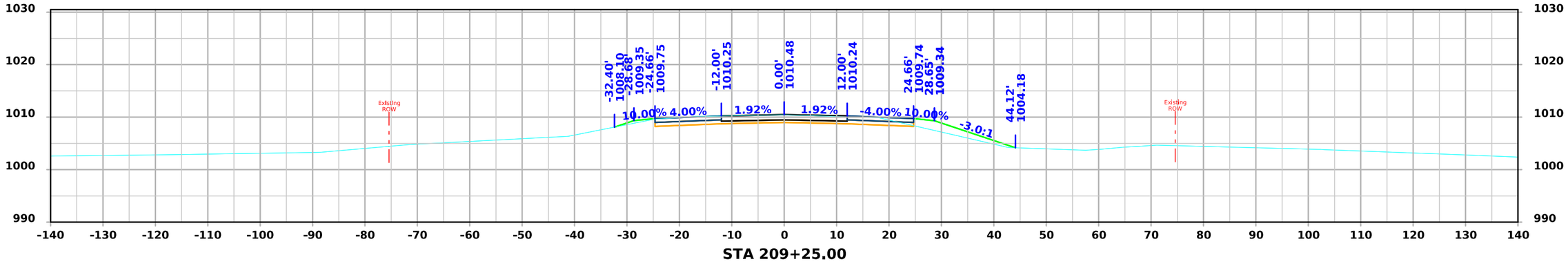
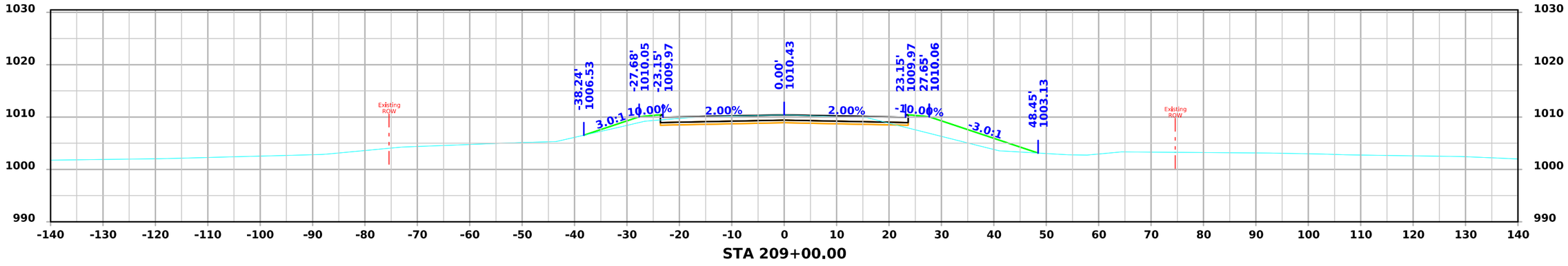
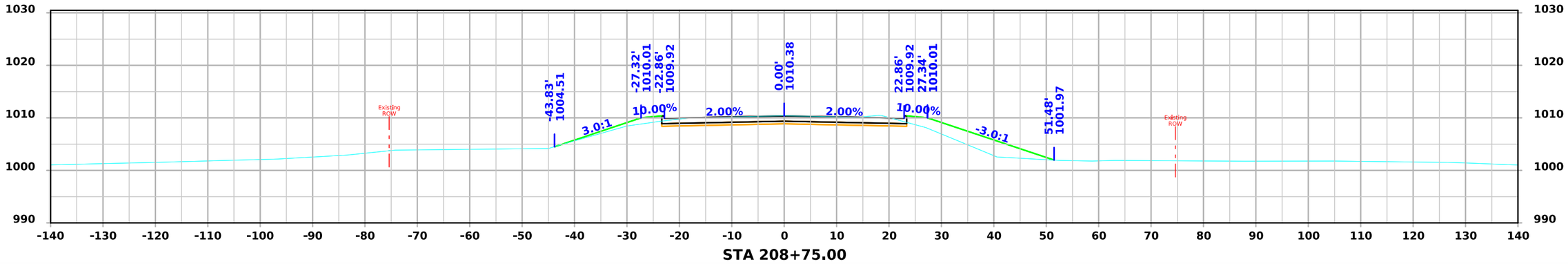
US 30 Preliminary







FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.8

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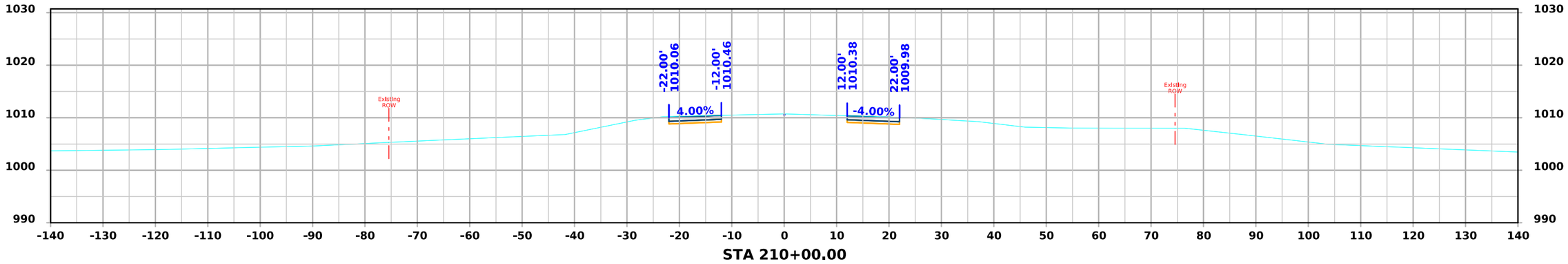
US 30 Preliminary



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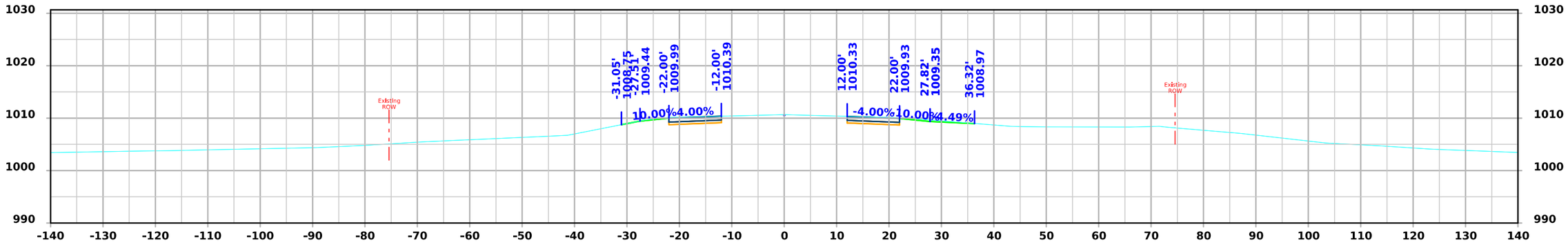

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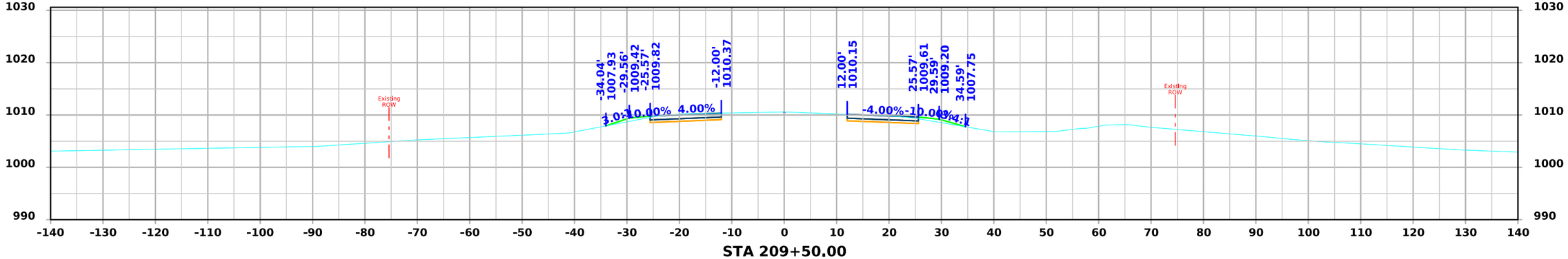

STA 209+50.00

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.9	

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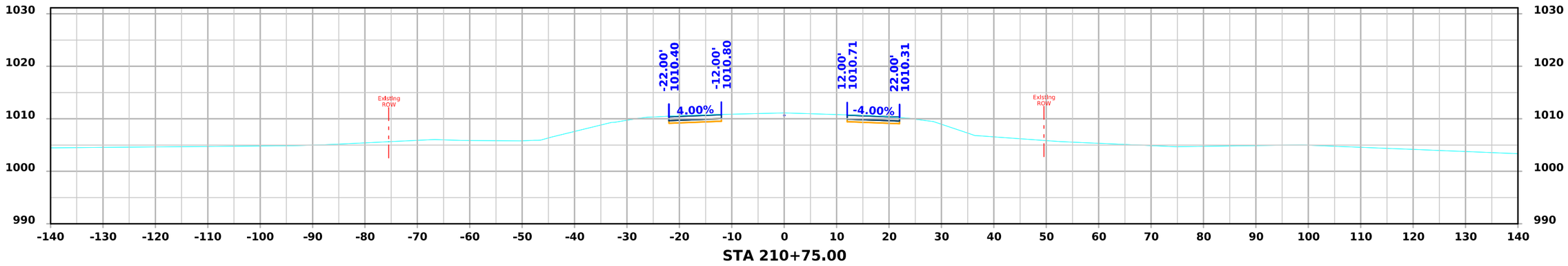
US 30 Preliminary



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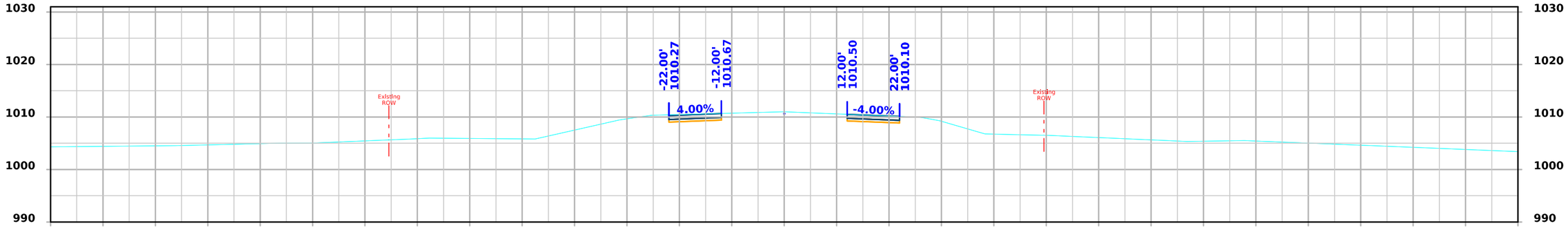

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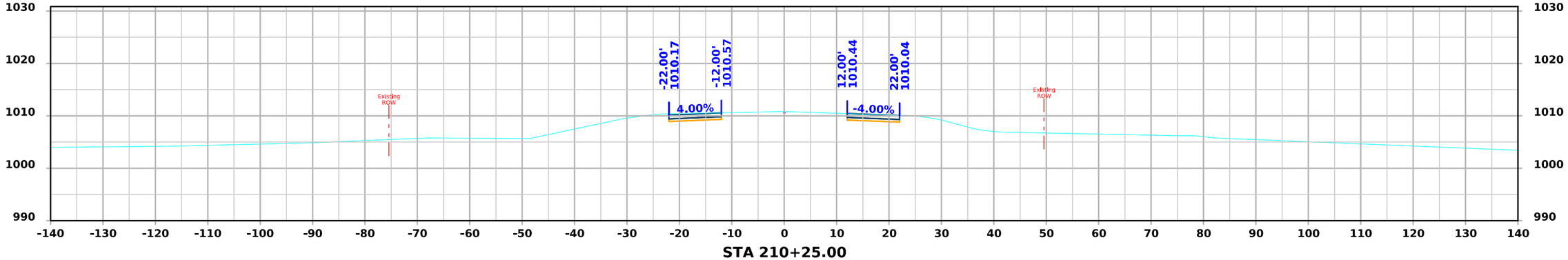

STA 210+25.00

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.10

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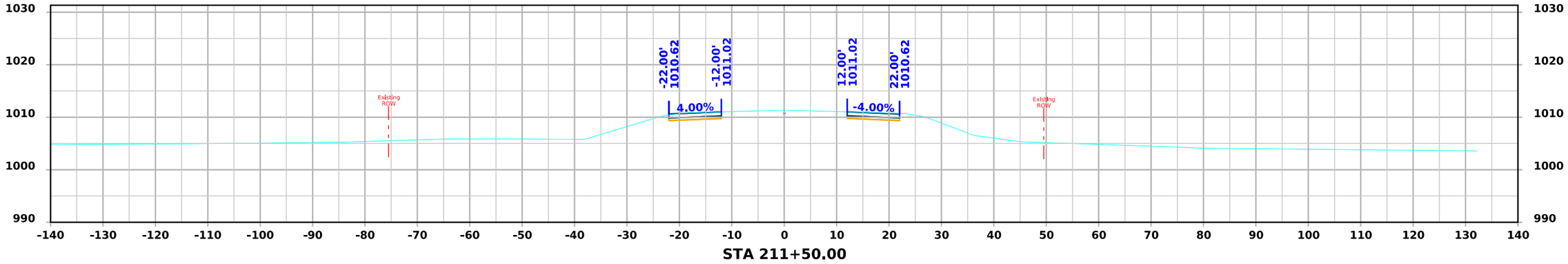
US 30 Preliminary



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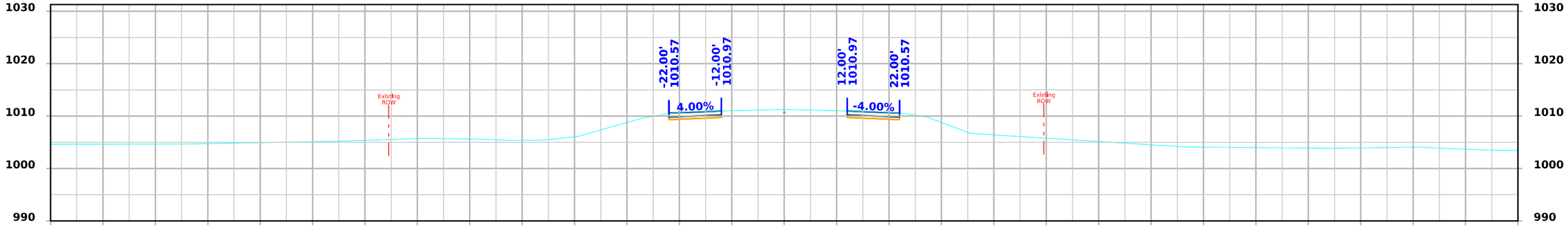

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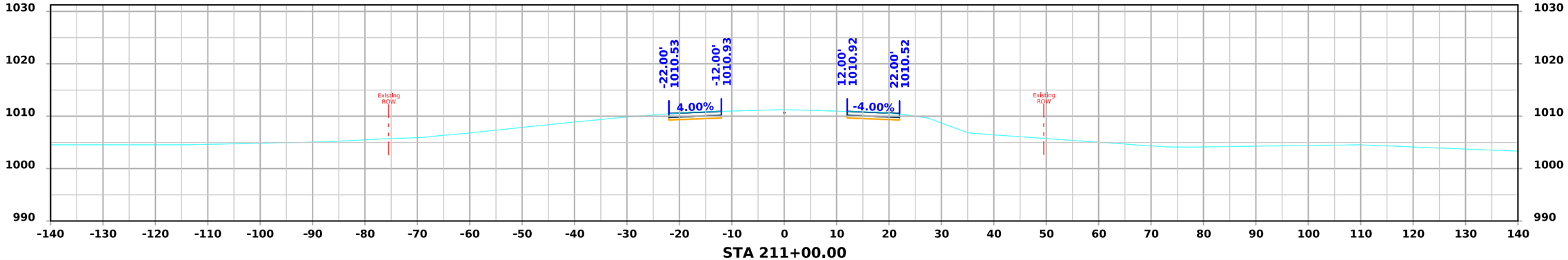

STA 211+00.00

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.11

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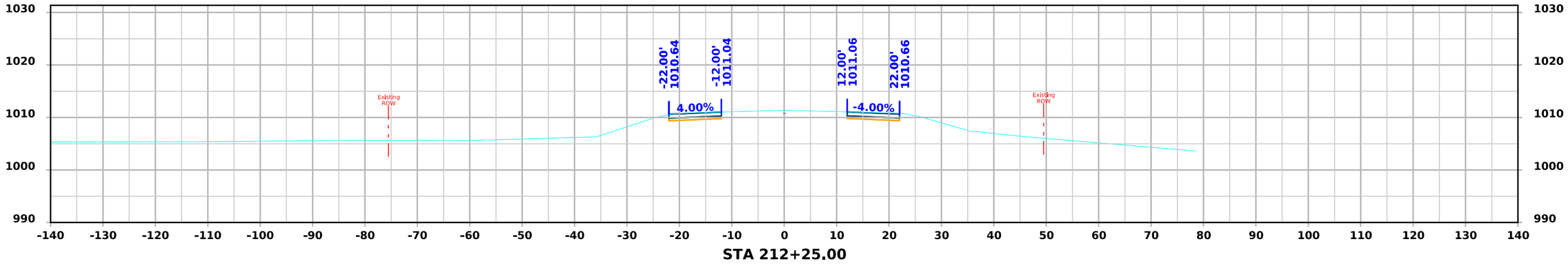
US 30 Preliminary



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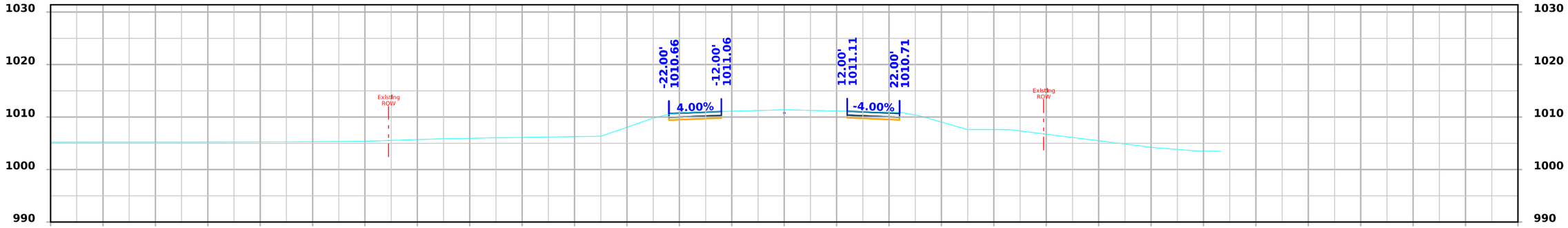

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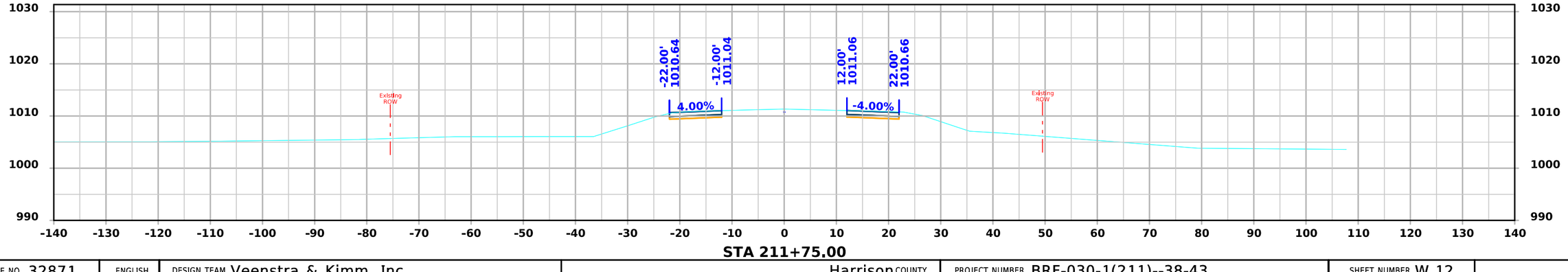

STA 211+75.00

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.12

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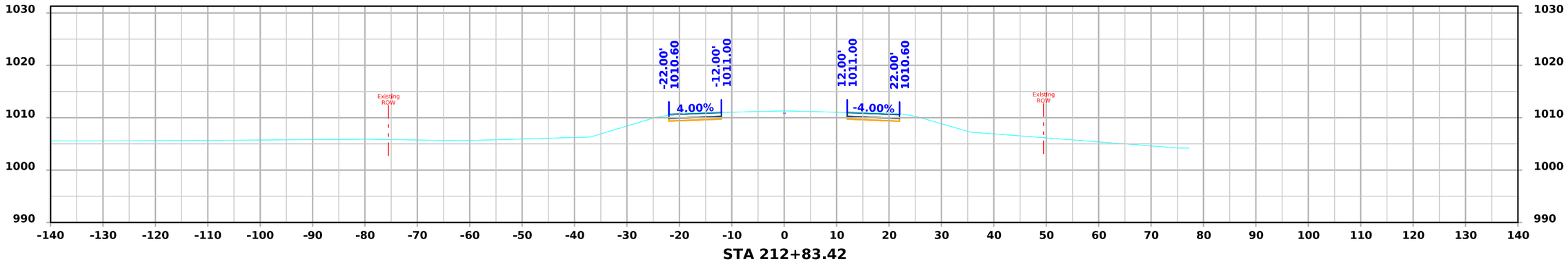
US 30 Preliminary



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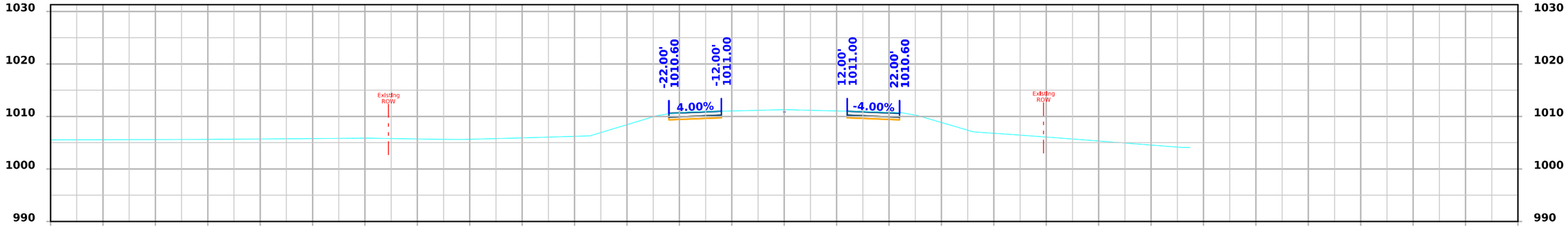
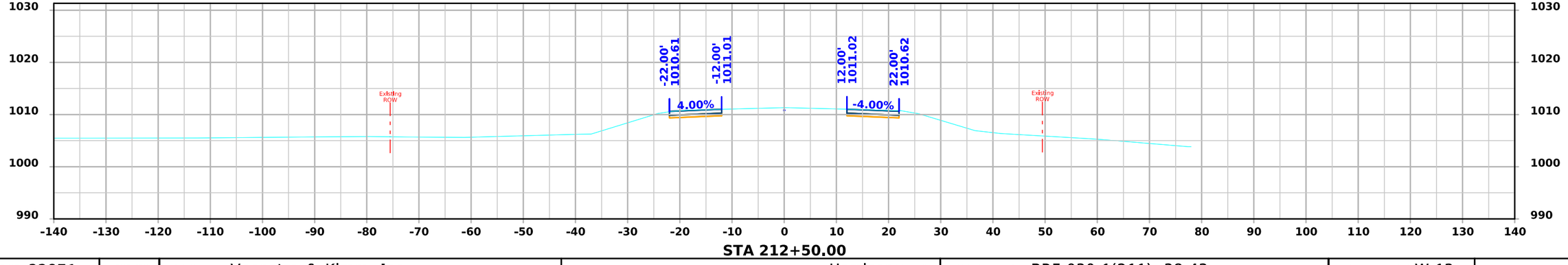


STA 212+75.00



STA 212+50.00

FILE NO. 32871	ENGLISH	DESIGN TEAM Veenstra & Kimm, Inc.	Harrison COUNTY	PROJECT NUMBER BRF-030-1(211)--38-43	SHEET NUMBER W.13

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