

RCB CULVERT REPLACEMENT - SINGLE BOX
 BRFN-069-7(42)--39-99
 01-18-2023

WRIGHT COUNTY - DESIGN NO. 123

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	
UNINCORPORATED PLACE	



Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM

WRIGHT COUNTY

RCB CULVERT REPLACEMENT - SINGLE BOX

U.S. 69 OVER DRAINAGE DITCH 5

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD CULVERT PLANS

STANDARD	ISSUED	REVISED
RCB G2-20	07-20	
RCB G3-20	07-20	
RCB I2-10-20	07-20	
PWH 0-1-20	07-20	
PWH 0-2-20	07-20	
PWH 0-3-20	07-20	
PWH 0-4-20	07-20	
PWH 0-7-20	07-20	
PRCB G1-20	12-20	
PRCB G2-20	12-20	
PRCB I2-20	12-20	
PES 1-20-T1	12-20	
PES 2-20-T1	12-20	
PES 1-20-T3	12-20	
PES 2-20-T3	12-20	
PES 9-20-T3	12	
PEP 12-20	12	

H Sheets

TOTAL SHEETS	21
PROJECT NUMBER	BRFN-069-7(42)--39-99
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	STPN-069-7(43)--2J-99
	18-99-069-010

INDEX OF SHEETS

NO.	DESCRIPTION
I	TITLE SHEET
2-3	DESIGN NO. 123
B.1	TYPICAL SECTION AND DETAILS
C.1-C.2	TABULATIONS
D.1-D.2	U.S. 69 PLAN AND PROFILE
G.1-G.3	SURVEY INFORMATION
J.1-J.2	TRAFFIC CONTROL
W.1-W.8	CROSS SECTION

REVISIONS



1-800-292-8989
 www.iowaonecall.com



REVISIONS TO THIS DESIGN PLAN AND/OR PROJECT SPECIFICATIONS SHOULD BE SUBMITTED BY _____

STANDARD ROAD PLANS

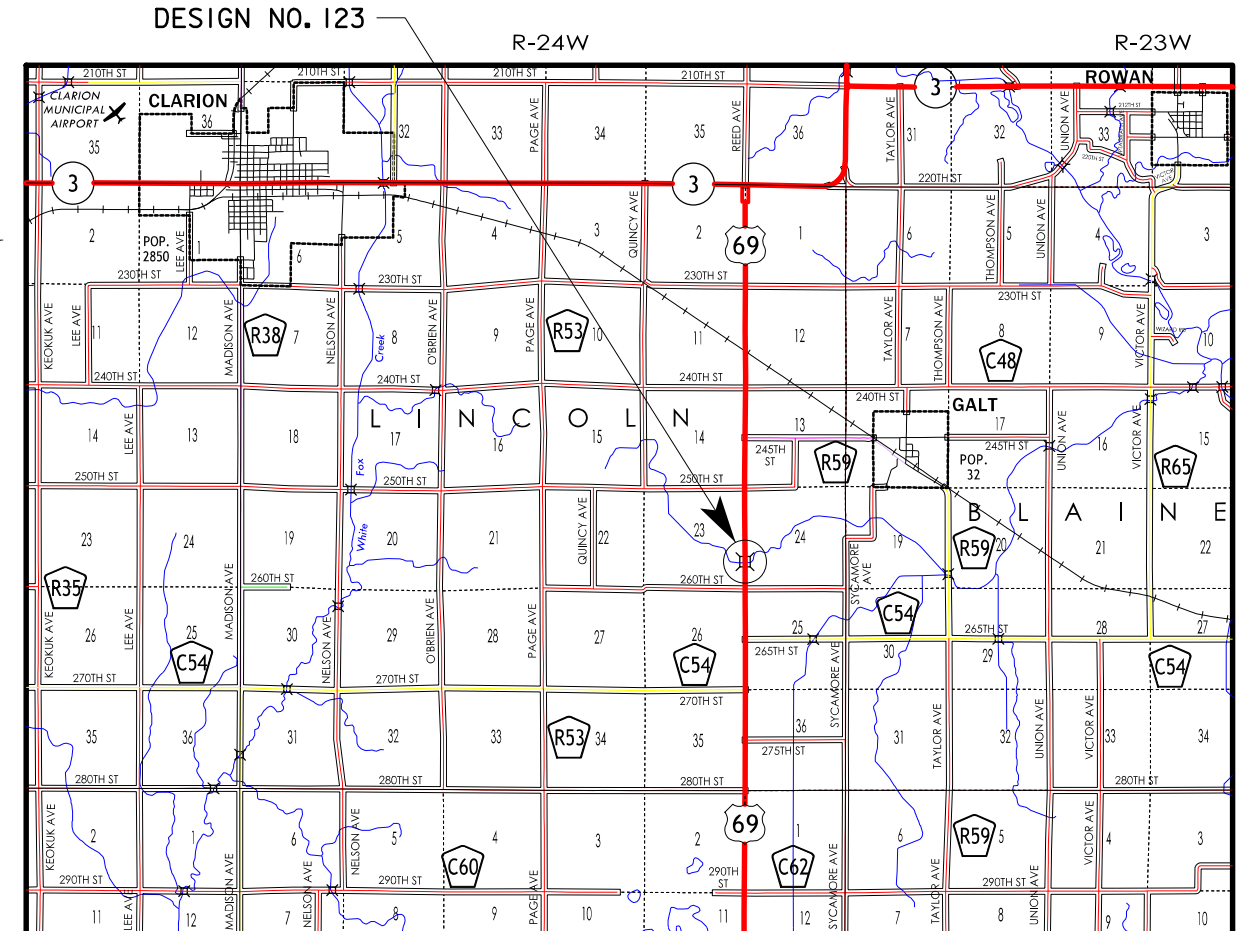
STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER

DESIGN DATA RURAL

2023 AADT	1900	V.P.D.
2043 AADT	2000	V.P.D.
2043 DHV	210	V.P.H.
TRUCKS	17	%
Total Design ESALs	--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	CHRISTOPHER J. CRISWELL	STRUCTURAL DESIGN
2	STEVEN A. KLOCKE	HYDRAULIC DESIGN
B.1	CINDY A. SPENCER	ROADWAY DESIGN
CULVERT STANDARDS	JAMES S. NELSON	STRUCTURAL DESIGN
P/C CULVERT STANDARDS	NORMAN L. MCDONALD	STRUCTURAL DESIGN



LOCATION MAP



PROJECT DIRECTORY NAME: 9906901018

STRUCTURAL 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.

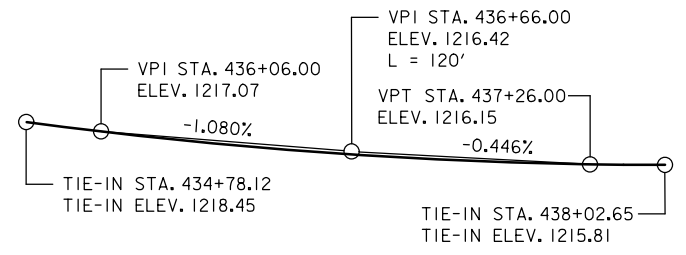
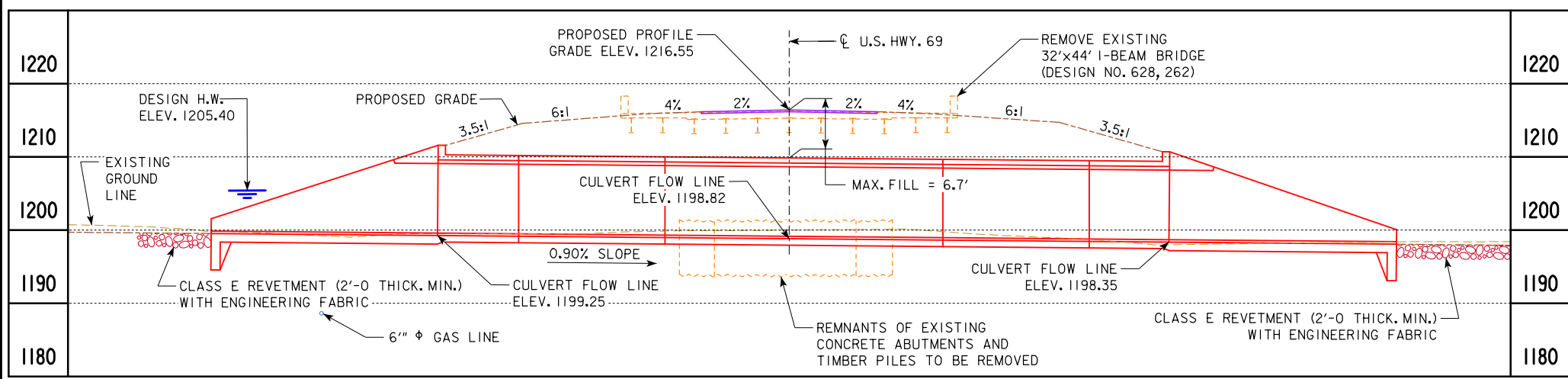
Christopher J. Criswell
 P14447

Signature: _____ Date: _____
 Printed or Typed Name: Christopher J. Criswell

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: SHEETS ? THRU ? OF ?

CONTROL POINT 1: NORTHING 8653401.753 EASTING 14821887.920
 ELEVATION 1224.354 DESCRIPTION: BM DRILL HOLE IN BALL ROW RAIL
 135 FT EAST OF US HWY 69 AND 33 FT NORTH OF 260TH ST



PROPOSED PROFILE GRADE ON U.S. HWY. 69

HYDRAULIC DATA

DRAINAGE AREA = 4.7 SQ. MI.
 STREAM SLOPE = 26.4 FT./MI.

Q₅₀ (DESIGN) = 433 CFS
 H.W. ELEVATION = 1205.40
 OUTFLOW VELOCITY = 7.29 FT/S

Q₁₀₀ = 514 CFS
 H.W. ELEVATION = 1205.78
 OUTFLOW VELOCITY = 7.99 FT/S

TRAFFIC ESTIMATE LOCATION

2023 AADT	1900	V.P.D.	U.S. 69 OVER DRAINAGE DITCH 5
2043 AADT	2000	V.P.D.	T-91N R-24W
2043 DHV	210	V.P.H.	SECTION 23/24
TRUCKS	17	%	LINCOLN TOWNSHIP
			WRIGHT COUNTY
			LATITUDE 42.677397°
			LONGITUDE -93.636918°

UTILITY LEGEND

--FO--	FIBER OPTIC LINE	- AUREON
--T--	TELEPHONE	- WINDSTREAM
--E--	OVERHEAD ELECTRIC	- MIDAMERICAN ENERGY
--G-HP--	GAS LINE	- DOOLEYS NATURAL GAS
●	POWER POLE	
⊠	POWER POLE	

UTILITIES SHOWN ON THIS SHEET ARE FOR INFORMATION ONLY, SEE ROAD DESIGN SHEETS FOR FINAL UTILITY INFORMATION.

HYDRAULIC DESIGN

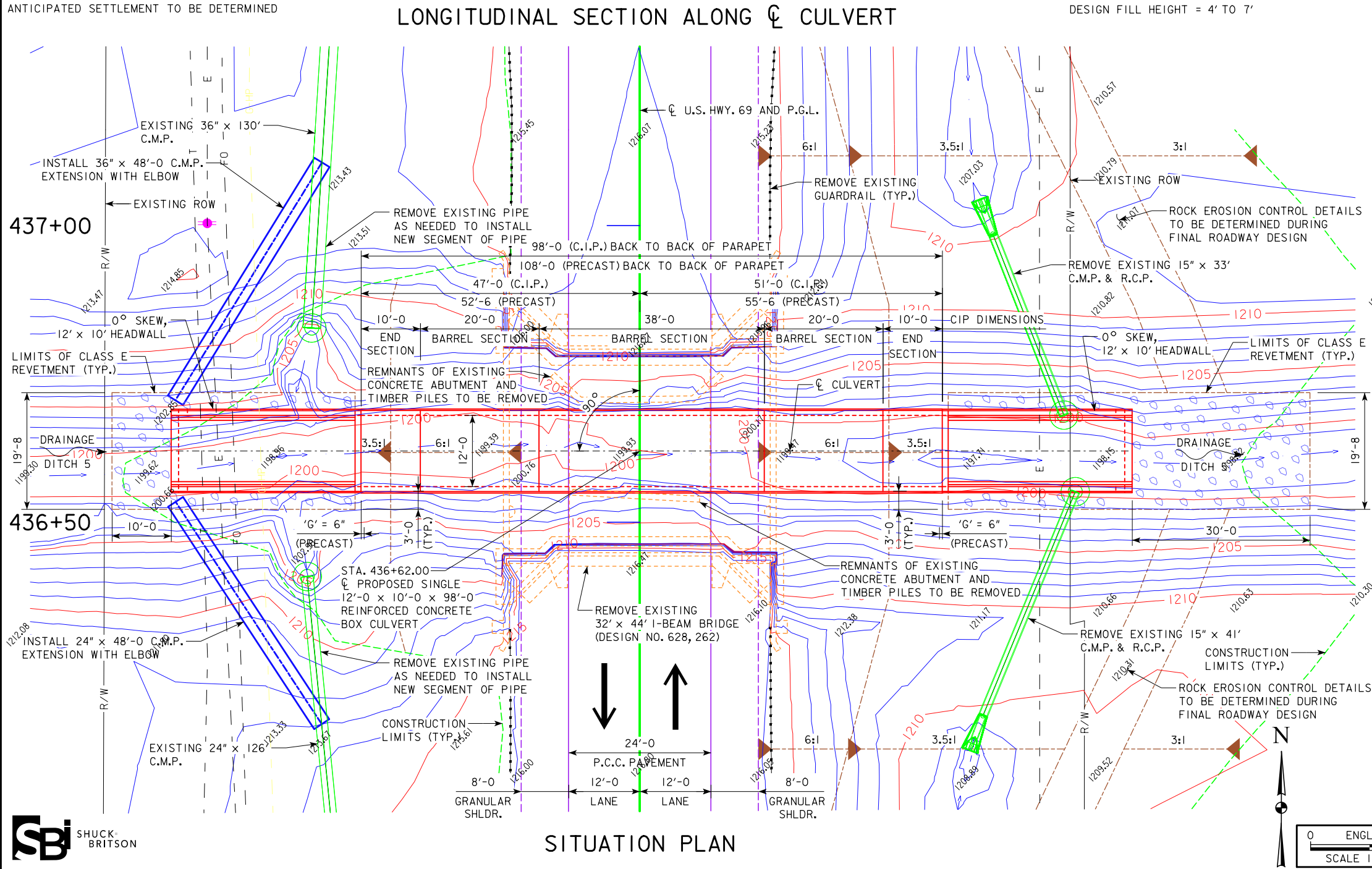
I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Steve Klocke 1-7-2021
 Signature Date
 Printed or Typed Name **Steven A. Klocke**

My license renewal date is December 31, 2021

Pages or sheets covered by this seal: 2 & 3 (HYDRAULIC DATA, CHANNEL GRADING AND REVETMENT)

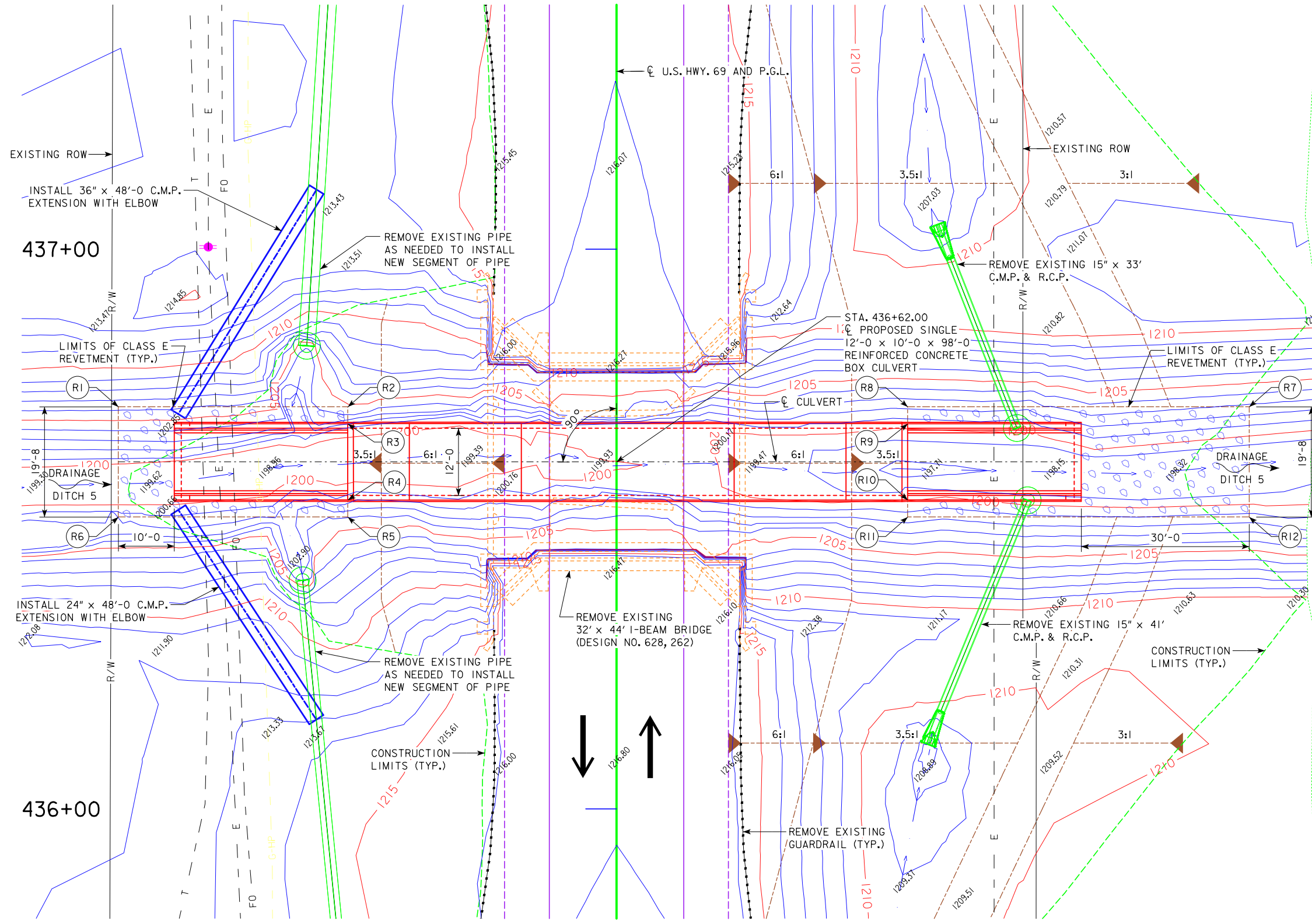
PRELIMINARY
 DESIGN FOR 0° SKEW
SINGLE 12'-0 x 10'-0 x 98'-0 REINFORCED CONCRETE BOX CULVERT
 SITUATION PLAN
 STA. 436+62.00 (U.S. 69) JANUARY, 2021
WRIGHT COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. 1 OF 2 FILE NO. 31713 DESIGN NO. 123



GENERAL NOTE:
THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 32' x 44' STEEL I-BEAM BRIDGE, WRIGHT DESIGN NO. 628, FHWA NO. 54260, MAINTENANCE NO. 9962.IS069.

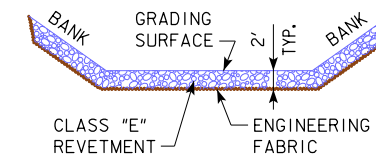
DESIGN NOTES:
ROCK EROSION CONTROL DETAILS TO BE DETERMINED DURING FINAL ROADWAY DESIGN.
A PRECAST OPTION IS TO BE DEVELOPED BY THE FINAL DESIGNER.

CONTROL POINT 1: NORTHING 8653401.753 EASTING 14821887.920
ELEVATION 1224.354 DESCRIPTION: BM DRILL HOLE IN BALL ROW RAIL
135 FT EAST OF US HWY 69 AND 33 FT NORTH OF 260TH ST



TYPICAL CHANNEL PROTECTION			
ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS			
LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	49	70	31
OUTLET	96	123	60
TOTALS	145	193	91

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS. REVETMENT ESTIMATED AT 1.6 TONS/CY.



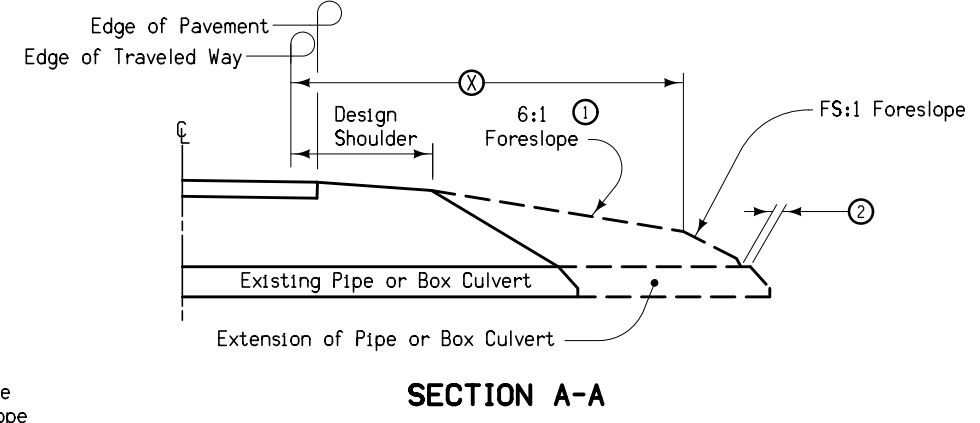
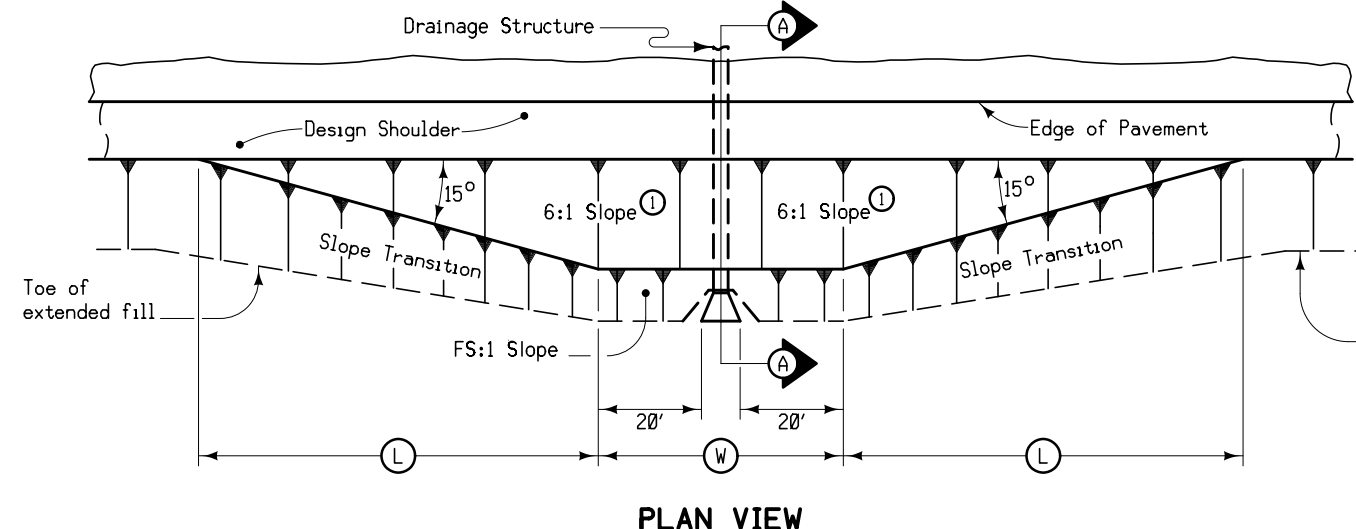
CLASS E REVETMENT INLET AND OUTLET SPLASH BASIN

REVETMENT LAYOUT:

- (R1) HWY. 69 436+71.83, 89.00' LT.
- (R2) HWY. 69 436+71.83, 48.00' LT.
- (R3) HWY. 69 436+68.81, 48.00' LT.
- (R4) HWY. 69 436+55.19, 48.00' LT.
- (R5) HWY. 69 436+52.17, 48.00' LT.
- (R6) HWY. 69 436+52.17, 89.00' LT.
- (R7) HWY. 69 436+71.83, 113.00' RT.
- (R8) HWY. 69 436+71.83, 52.00' RT.
- (R9) HWY. 69 436+68.83, 52.00' RT.
- (R10) HWY. 69 436+55.17, 52.00' RT.
- (R11) HWY. 69 436+52.17, 52.00' RT.
- (R12) HWY. 69 436+52.17, 113.00' RT.

PRELIMINARY
DESIGN FOR 0° SKEW
SINGLE 12'-0 x 10'-0 x 98'-0 REINFORCED CONCRETE BOX CULVERT
SITUATION PLAN - SITE
STA. 436+62.00 (U.S. 69) JANUARY, 2021
WRIGHT COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 2 FILE NO. 31713 DESIGN NO. 123



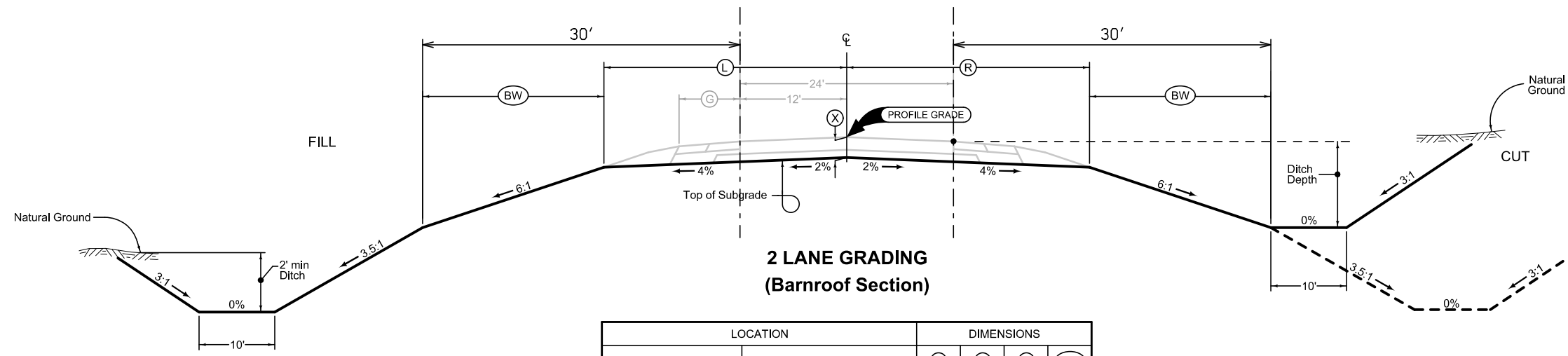


STRUCTURE LOCATION		(W)	(L)	(X)	(FS)
STATION	SIDE	Feet	Feet	Feet	
436+62.00	Both	49.3	82.1	30	3.5

Notes:
 At locations where an extended or newly constructed drainage structure extends beyond the normal foreslope cover, flatten the foreslope as indicated so as to cover the structure. Minimum earth cover is 6".

(1) Slope may be flatter than 6:1.
 (2) 6" Minimum for pipe installations or to top of headwall on R.C.B.
 (W) = Pipe or R.C.B. opening width plus 20 feet each side.

BARNROOF FORESLOPE AT DRAINAGE STRUCTURE



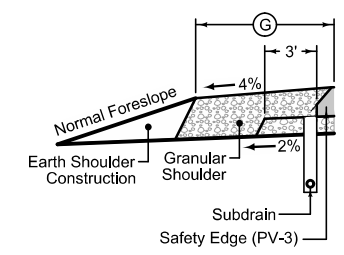
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profile sheets and cross sections for additional details of ditches and backslopes.

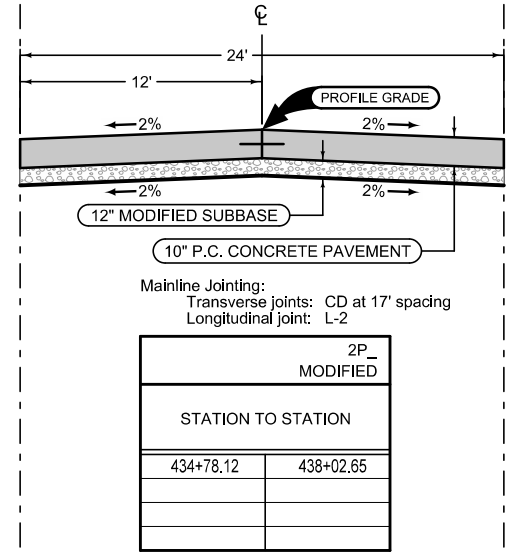
LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	(L) Feet	(R) Feet	(X) Inches	(BW) Feet
Highway 69	434+78.12 438+02.65				

Granular Shoulder with Safety Edge

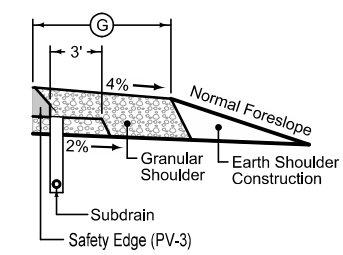
2_G_ 10-21-14		(G)
STATION TO STATION		Feet
434+78.12	438+02.65	8



Match Line



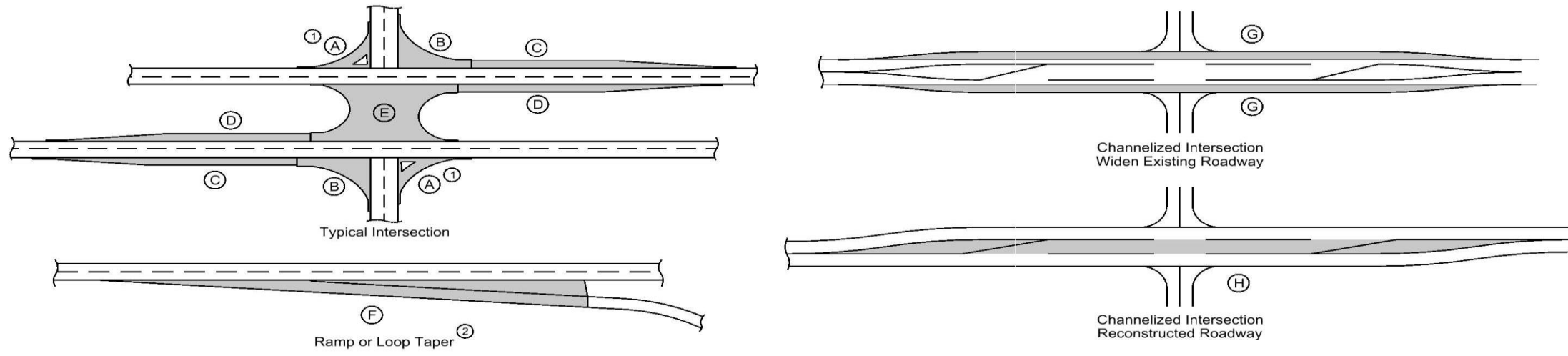
2P_ MODIFIED	
STATION TO STATION	
434+78.12	438+02.65



Granular Shoulder with Safety Edge

2_G_ 10-21-14		(G)
STATION TO STATION		Feet
434+78.12	438+02.65	8

PCC PAVEMENT



- ① Does not include raised island area or curb. Refer to tabulation 112-4 for quantities.
- ② Refer to PV-410, PV-411, PV-412, and PV-414.
- ③ Quantity includes Pavement Header.

Road Identification	Location		Mainline			Area ^③								Total Area By Pavement Thickness			Special Backfill	Modified Subbase	Granular Subbase	Remarks		
	Direction of Travel	Station to Station	Width	Length	Area	A ^①	B	C	D	E	F ^②	G	H	SY		TONS					CY	SY
			FT	FT	SY	SY	SY	SY	SY	SY	SY	SY	SY	10 IN	10% IN							
U.S. 69	BOTH	434+78.12 - 438+02.65	24.0	324.5	865.4										865.4							

SHOULDERS

- ① Lane(s) to which the shoulder is adjacent.
- ② Bid Item
- ③ Applies only for Paved Shoulders constructed on project with existing granular shoulders.
- ④ Does not include shrink.

Calculations assume a HMA unit weight (lbs/cf) of 0, a Special Backfill unit weight (lbs/cf) of 140, and a Granular Shoulder unit weight (lbs/cf) of 140.

Road Identification	Direction of Traffic	Location		Side	P Width	G Width	L Length	Class 13 Excavation	Hot Mix Asphalt	Binder	Paved Shoulder	Reinforced Paved Shoulder	Quantities						Remarks			
		Station to Station	Station to Station										Special Backfill		Modified Subbase	Granular Shoulder		Earth Shoulder Construction Alternates				
													HMA Alternate			CY ^②	PCC Alternate			STA ^②	HMA	PCC
													TON ^②	TON/STA			TON ^②	TON/STA			CY ^④	CY ^④
U.S. 69	NB	434+78.12 - 438+02.65	434+78.12 - 438+02.65	RT		8.0	324.5											150.842	46.480	3.2		
U.S. 69	SB	434+78.12 - 438+02.65	434+78.12 - 438+02.65	LT		8.0	324.5											150.842	46.480	3.2		

REMOVAL OF PAVEMENT

Refer to Tabulation 102-5

* Not a Bid Item

Begin Station	End Station	Side	Pavement Type	Area	Saw Cut*	Remarks
				SY	LF	
434+78.12	436+45.05	BOTH		447.1	24.0	
436+78.60	438+02.65	BOTH		337.1	24.0	

SECTION 404 PERMIT AND CONDITIONS

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide, Permit No. 14. A copy of this permit is available from the Iowa DOT website (<http://www.envpermits.iowadot.gov/>). The U.S. Army Corps of Engineers reserves the right to visit the site without prior notice.

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of unclassified pipe calculated is based on using Reinforced Concrete Pipe.

- ① Refer to MI-210
- ② Refer to EW-501.
- ③ Refer to EW-501 or EW-502.














*Predetermined for access point not constructed with this project.

Location		Type	Length of Opening ①			Pipe Culvert ③			Aprons		Driveway Surface Area		Driveway Surfacing Material	Remarks				
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1½" Dropped Curb	3" Dropped Curb	W	① PR	② SR	H	Size	Pipe Length	Lt.	Rt.		No.	HMA	PCC	TON
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF		LF	SY	SY	TON
436+07.00	LT	C				15.0				24.0	48.0				0			
437+17.00	LT	C				17.0				36.0	48.0			0				1 bend







SURVEY SYMBOLS













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.	
Yellow	(4)		Highlight for Critical Notes or Features
Red	(3)		Delineates Restricted Areas
Lavender	(9)		Temporary Pavement Shading
Gray, Light	(48)		Proposed Pavement Shading
Gray, Med	(80)		Proposed Granular Shading
Gray, Dark	(112)		Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)		Grading Shading
Tan	(8)		Proposed Sidewalk Shading
Blue, Light	(230)		Proposed Sidewalk Landing Shading
Pink	(11)		Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

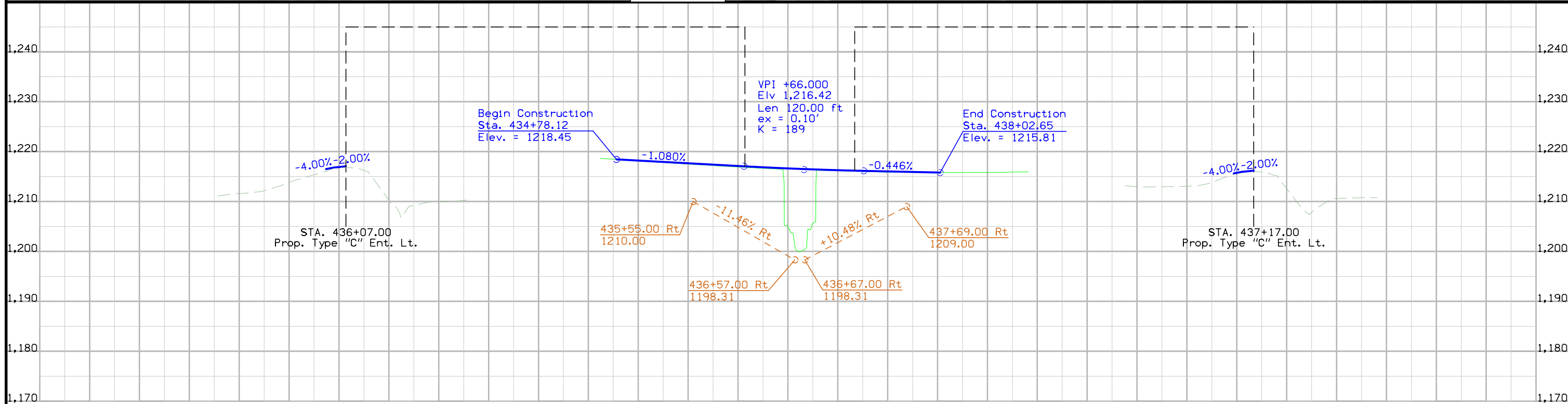
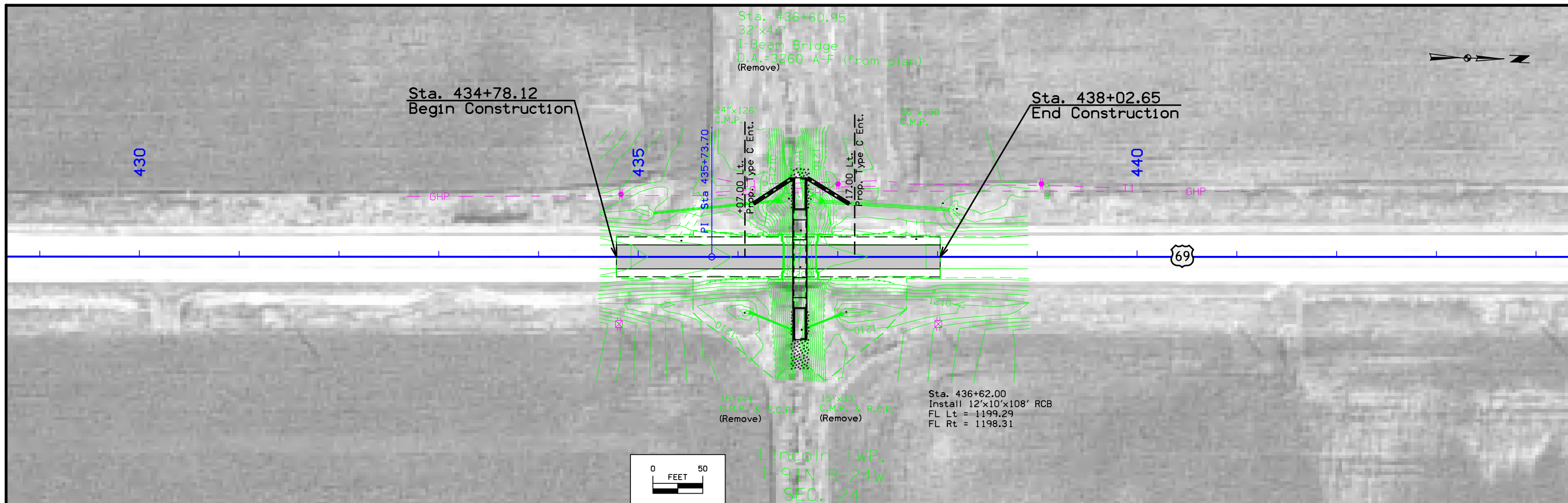
LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

	Reference Point
	Station
	Survey Line
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	High Tension 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)



Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation	Station	Elevation
430		431		432		433		434		435	1,218.21
										436	1,217.94
										437	1,217.67
										438	1,217.40
										439	1,217.13
										440	1,216.87
										441	1,216.64
										442	1,216.45
										443	1,216.29
										444	1,216.16
											1,216.05
											1,215.93
											1,215.82

Survey Information

Wright County
BRFN-069-7(42)--39-99
Drainage Ditch 5 - 3.7 mi S of IA 3
Bridge-Unspecified
PIN 18-99-069-010
Sap-0656.3

General Information

Measurement units for this survey are US survey feet. This survey is for proposed U.S Hwy. 69 Bridge over Drainage Ditch No. 5 replacement. Project datum and control information is provided by Design Survey Office. This project is a Full DTM with Photo control. This survey request was for the U.S. Hwy. 69 corridor only.

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12b). GRS80 Ellipsoidal Height was computed at project Pts. L 28, 46, 47, CP1, CP2, & CP3 by conducting one concurrent six-hour static observation. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup relative to Pt. CP2 and Pt. CP1. Two observations with a minimum of four hours between were collected and used in a weighted average.

This survey observed 1 NGS Control Monument with published NAVD88 height to compare to local ground control:

NGS 2nd. order class 0 mark designated L 28 has a published Elev. Of 1160.36
Survey Elev. = 1160.31

This survey observed 2 local area county Control Monuments with published NAVD88 heights to compare to local ground control:

Wright County GPS Control mark 46 has a published Elev. of 1238.83
Survey Elev. = 1238.47

Wright County GPS Control mark 47 has a published Elev. of 1189.03
Survey Elev. = 1188.71

No As-Built Plan benchmarks could be located, however survey elevations obtained on the bridge seats have a close vertical difference relationship with the plan bridge seat elevations as follows:

As-built Plan F-267(10) Bridges Design No. 262

North abutment bridge seat plan elev. = 619.41
Survey elev. = 1213.34

South abutment bridge seat plan elev. = 619.66
Survey elev. = 1213.62

The average vertical difference is +593.945 to be applied to as built elevations.

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 4 (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) for Epoch 2010.00. Coordinates were determined by conducting one concurrent six-hour static observation at project points L 28, 46, 47, CP1, CP2, & CP3. Additional control points were placed throughout the project using a GNSS Base-Rover setup relative to Pt. CP2 and Pt. CP1. Two observations with a minimum of four hours between were collected and used in a weighted average.

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans Project No. FN-69-7(1)--21-99. Survey stationing was equated to the plan POT at bridge Sta. 436+62.1 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 422+51.0 As-built Plans Project No. FN-69-7(1)--21-99
Survey PI Sta. 422+52.15

PI Sta. 435+73.7 As-built Plans Project No. FN-69-7(1)--21-99
Survey PI Sta. 435+73.70

POT Sta. 436+62.1 As-built Plans Project No. FN-69-7(1)--21-99
Survey POT Sta. 436+62.10

PI Sta. 448+92.9 As-built Plans Project No. FN-69-7(1)--21-99
Survey PI Sta. 448+93.89

PI Sta. 475+32.8 As-built Plans Project No. FN-69-7(1)--21-99
Survey PI Sta. 475+35.71

CONTROL POINT VICINITY MAP

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



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 4

Coordinate listing from next sheet will be used with 1aRTN for monument recovery. No other reference ties are given.

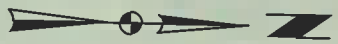
HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00

VERT. DATUM: NAVD88

1a. Regional Coordinate System Zone 4

Point Name	Northing	Easting	Elevation	Feature Code - Description
CP1	8653401.753	14821887.920	1224.354	BM DRILL HOLE IN BALL ROW RAIL 135 FT EAST OF US HWY 69 AND 33 FT NORTH OF 260TH ST
CP2	8656530.100	14821737.066	1221.349	BM SET FENO MON 0.4 MI SOUTH OF 250TH ST AND 35 FT EAST OF US HWY 69 AND 17 FT NORTH OF DRIVE ENT
CP3	8658709.613	14821567.129	1228.882	BM DRILL HOLE IN RBR IN CM 90 FT WEST OF US HWY 69 AND 65 FT NORTH OF 250TH ST



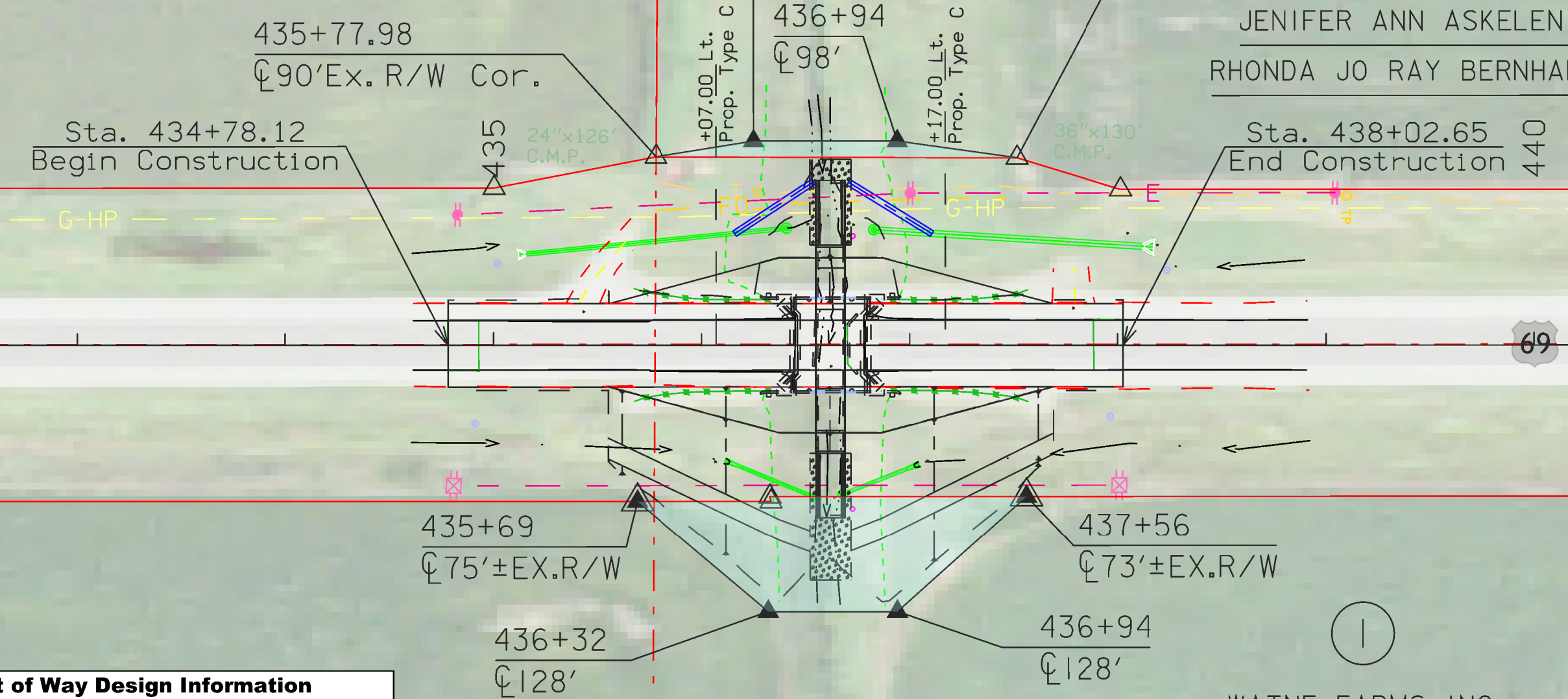
RONALD EDWIN SWANSON REV. TRUST &
 FLORINE MARY SWANSON REV. TRUST

Sta. 436+62.10
 32'x44'
 I-Beam Bridge
 D.A.=3260 A-F (from plan)
 (Remove)

2

KENNETH R. BERNHARDT, LE &
 MARK ROBERT BERNHARDT (REM.),
 JENIFER ANN ASKELEN (REM.) &
 RHONDA JO RAY BERNHARDT (REM.)

NE 1/4 SE 1/4
 SEC. 23



WATNE FARMS, INC.

NW 1/4 SW 1/4
 SEC. 24

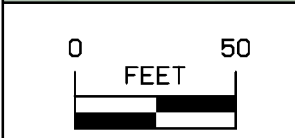
Lincoln TWP.
 T-91N R-24W
 SEC. 24

Right of Way Design Information

**THIS SHEET INCLUDED
 FOR INFORMATION ONLY**

ROW Team: Larson / Hughes
ROW #: STPN-069-7(43)--2J-99
Plan Date: 4-27-2021
Color Legend:

- Property Lines**
- Temporary Easement**
- Permanent Acquisition**

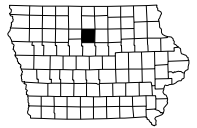
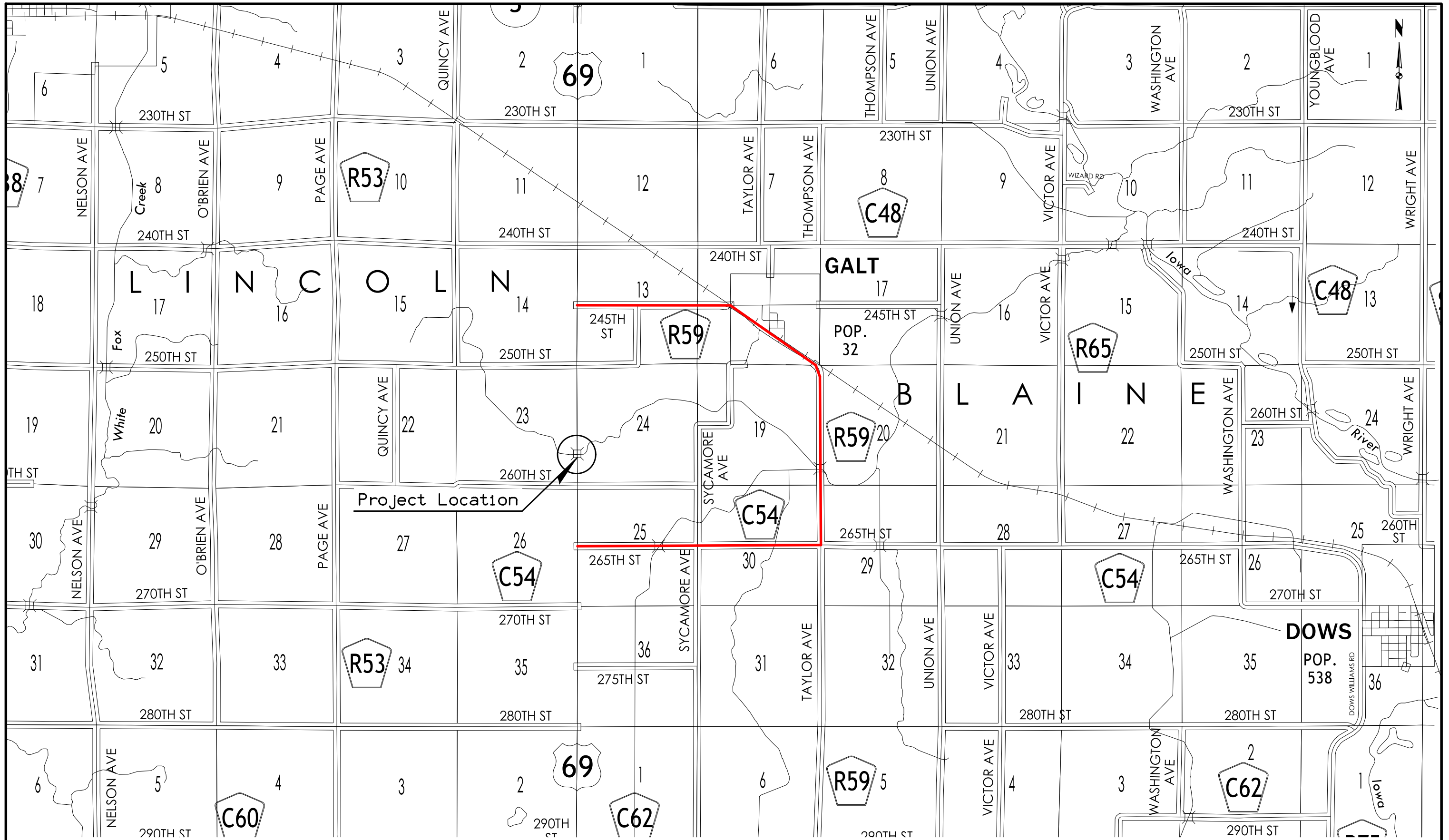


Sta. 436+62.00
 Install 12'x10'x108' RCB
 FL Lt = 1199.29
 FL Rt = 1198.31

DRAINAGE DITCH #5

TRAFFIC CONTROL PLAN

1. U.S. 69 will will be closed to traffic during construction. Through traffic will follow the detour shown on Sheet J.2. Detour signage will be provided by District 2.
2. Access to individual properties shall be maintained at all times. Staged construction may be necessary to maintain access to properties with accesses immediately adjacent to the existing bridge.



Not to Scale

- LEGEND**
-  Road Closure
 -  Detour Route

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

- - - - - - Existing Ground Line
- Proposed Template
- Proposed Topsoil Placement
- - - - - Additional Topsoil Removal
- Subgrade Treatment
- - - - - Granular Shoulder
- Pavement
- - - - - Existing Pipe\RCB
- Proposed Pipe\RCB
- Proposed Dike
- All Elements Associated with Proposed Entrances

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TOPSOIL ————— Topsoil (Class 10)
- Slope Dressing Only
- CL 10 ————— Class 10 Materials
- SEL LO ————— Select Loams And Clay-Loams
- SEL SA ————— Select Sand
- UNS A ————— Unsuitable Type A Disposal
- UNS B ————— Unsuitable Type B Disposal
- UNS C ————— Unsuitable Type C Disposal
- SHALE ————— Shale
- WASTE ————— Waste
- BRN LS ————— Broken and Weathered Rock
- ROCK ————— Solid Rock
- BLDGS ————— Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

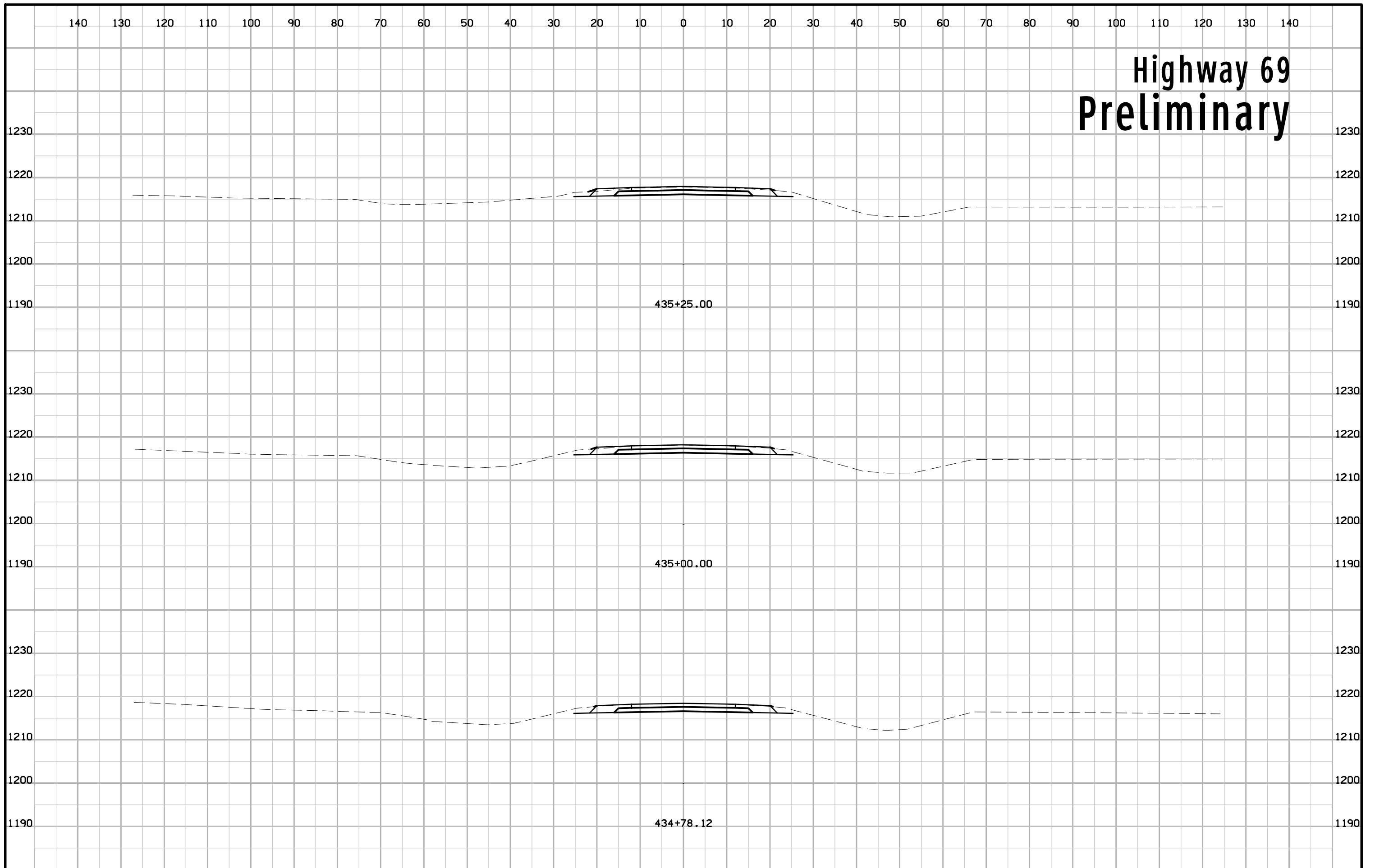
SYMBOL LEGEND OF CROSS SECTION SHEETS

- Existing ROW
|
Existing Right-of-Way Limit
- Proposed ROW
|
Proposed Right-of-Way Limit
- Temporary ROW
|
Temporary Right-of-Way Limit

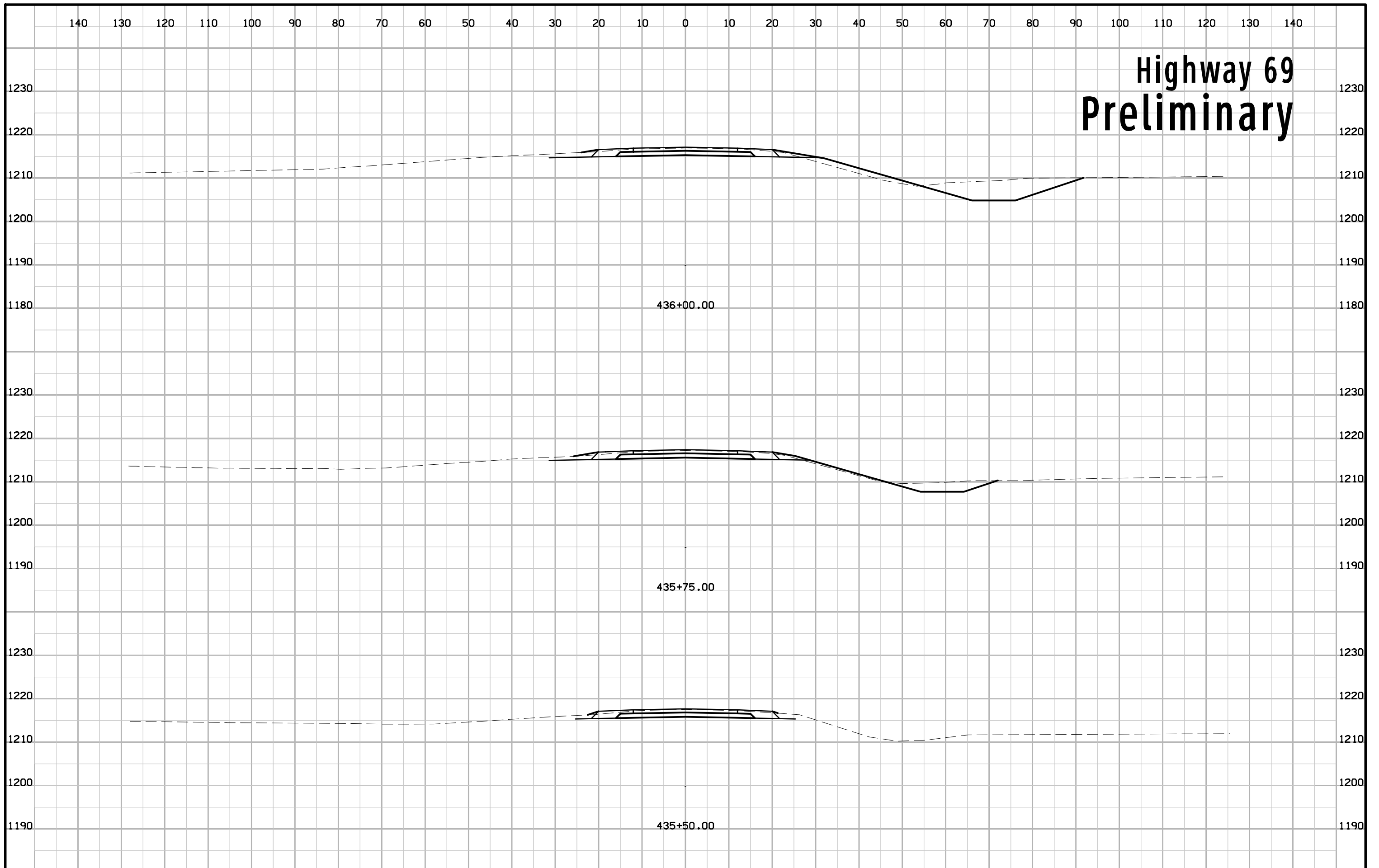
**CROSS SECTION
LEGEND AND SYMBOL
INFORMATION SHEET**

(COVERS SHEET SERIES W, X, Y, & Z)

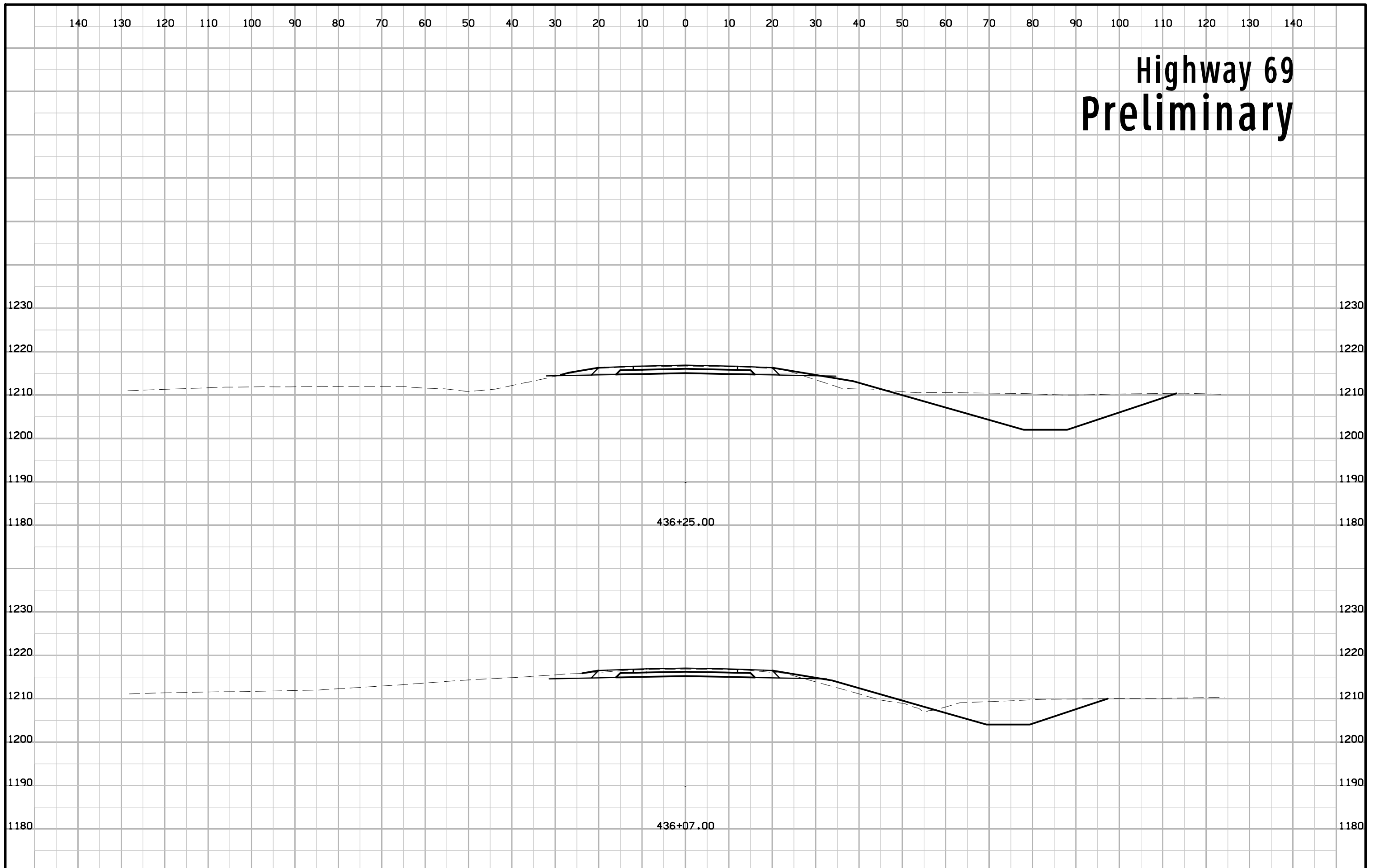
Highway 69 Preliminary



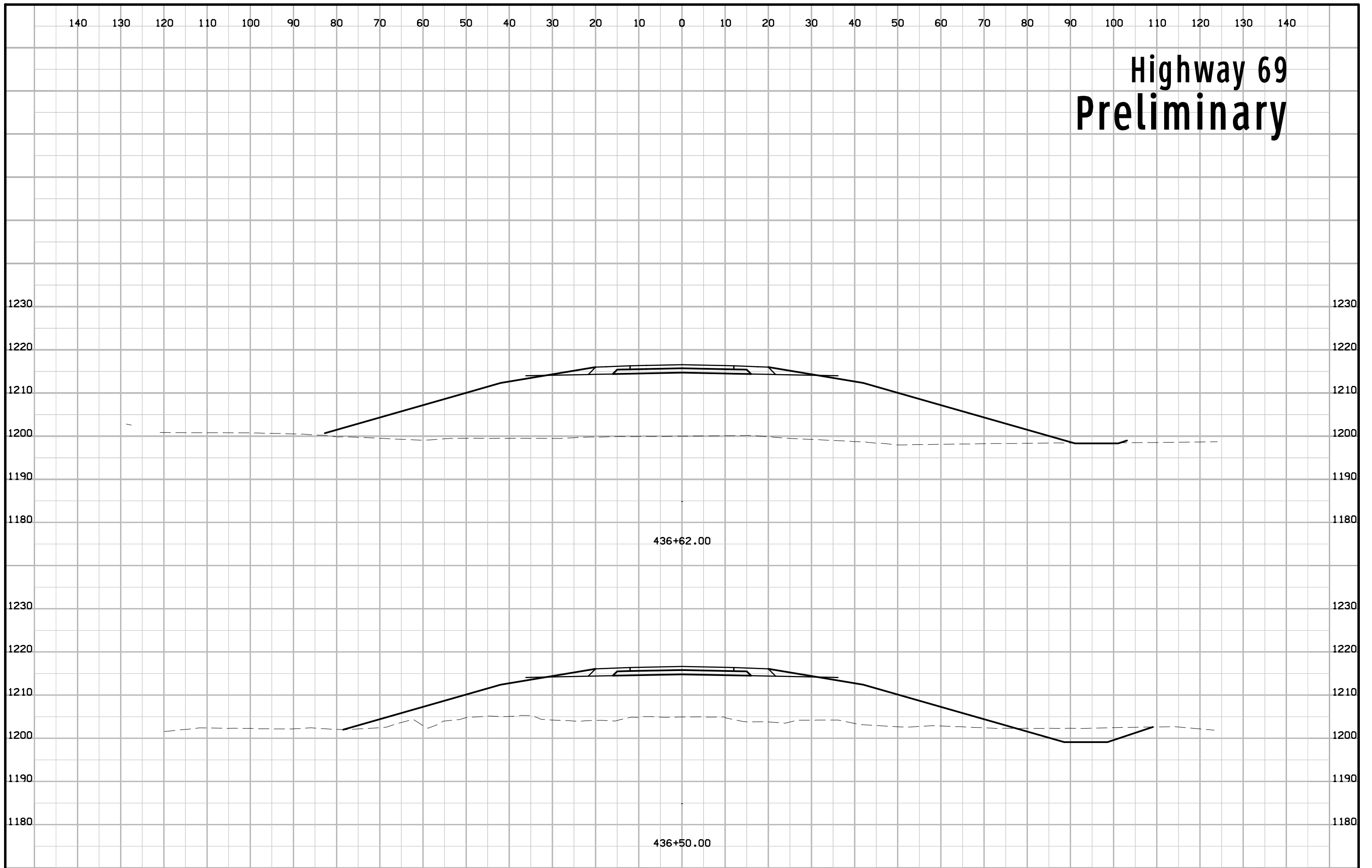
Highway 69 Preliminary



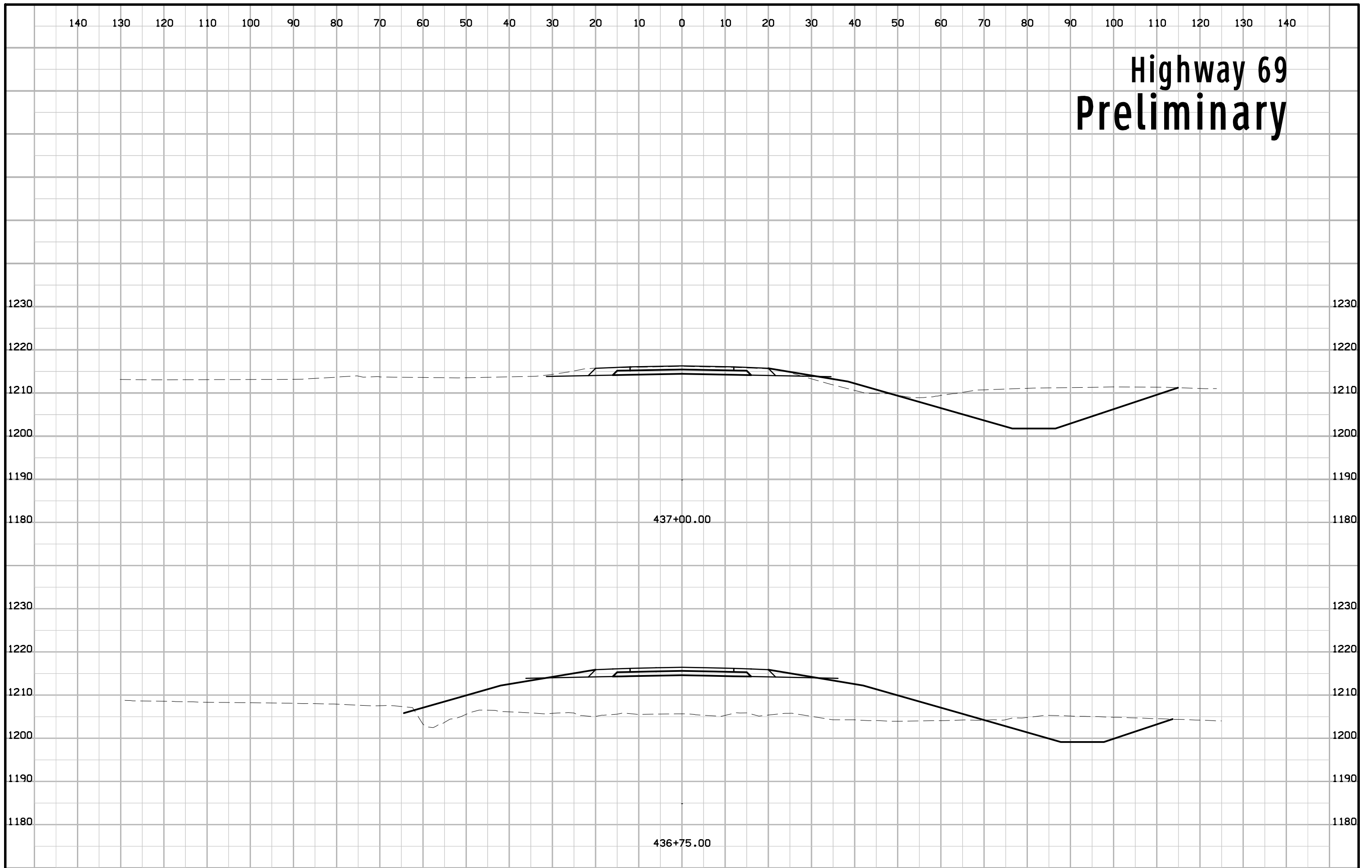
Highway 69 Preliminary



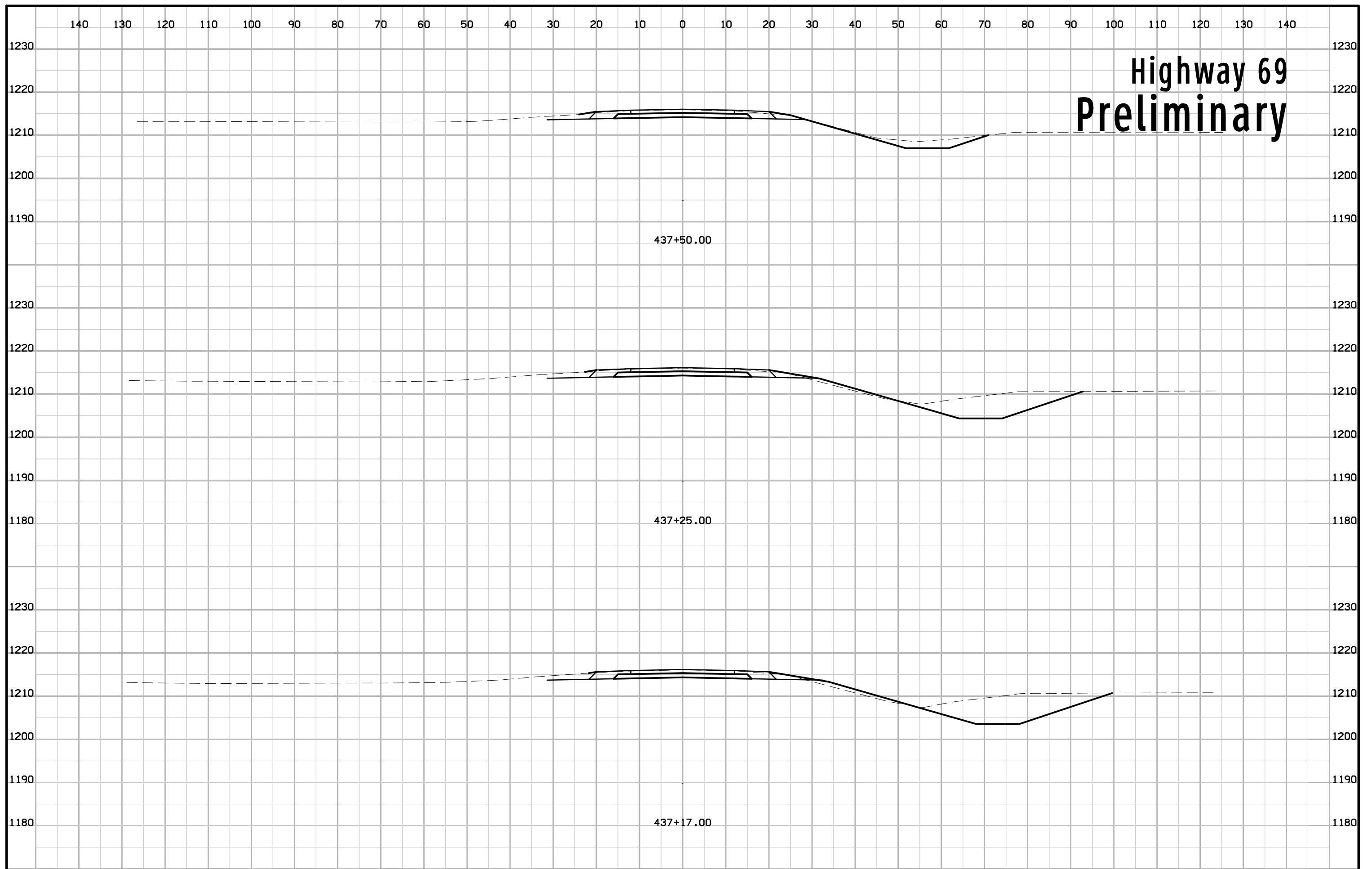
Highway 69 Preliminary



Highway 69 Preliminary



Highway 69 Preliminary



Highway 69 Preliminary

