

**POCAHONTAS CO.**

**BRIDGE REPLACEMENT  
BRFN-003-3(49)--39-76**

LETTING DATE  
1-17-2018



**Highway Division**

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
**POCAHONTAS COUNTY**  
BRIDGE REPLACEMENT-OTHER

BRANCH 19, 0.3 MILES W OF IA 4

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL

PROJECT IDENTIFICATION NUMBER

13-76-003-010

PROJECT NUMBER

BRFN-003-3(49)--39-76

R.O.W. PROJECT NUMBER

NHSN-003-3(50)--2R-76

**INDEX OF SHEETS**

No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 2	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 3
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Horizontal Control Tab.
G.2 - 3	Reference Ties and Bench Marks
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>
V.1 - 2	Bridge and Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Legend
W.2 - 8	Mainline Cross Sections
	* Color Plan Sheets

D4 PLAN - Date: 9-20-2017

**DESIGN DATA RURAL**

2019 AADT	2,800	V.P.D.
2039 AADT	3,400	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	22	%
Total Design ESALs	--	

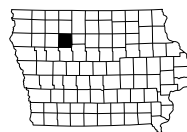
**INDEX OF SEALS**

SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

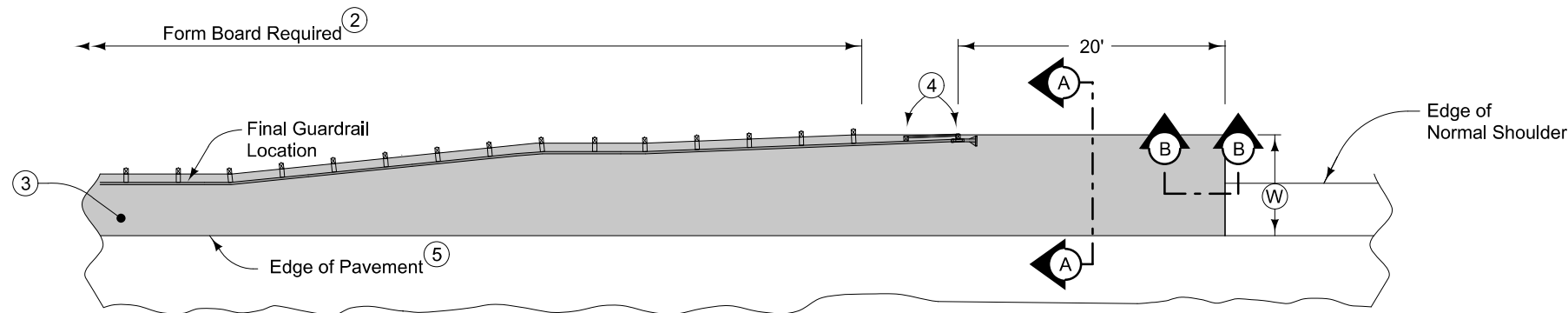
**PRELIMINARY PLANS**

Subject to change by final design.

D5 PLAN - Date: 2/19/2016





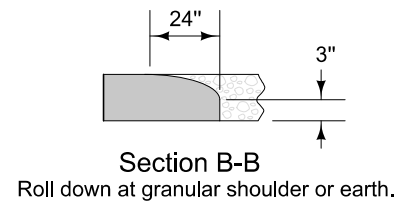
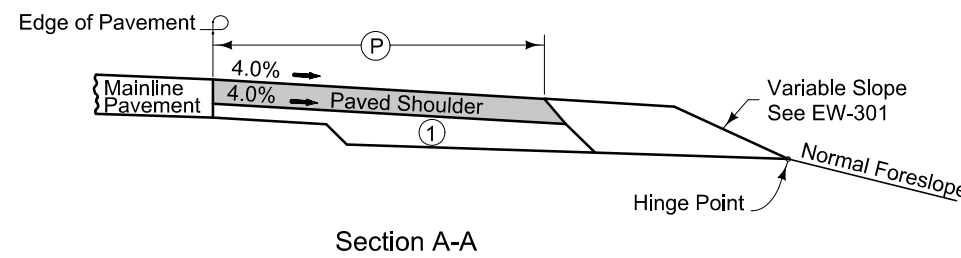
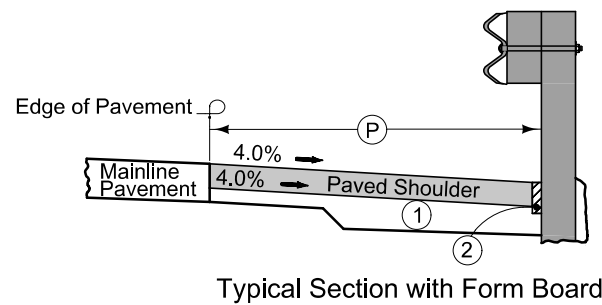


6" HMA Paved Shoulder at guardrail. 7" PCC may be substituted with the following jointing layout:

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 W/2 from edge of mainline pavement when W 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. Removal & reinstallation of guardrail will be allowed with no additional payment.

Refer to Shoulder tabulation (112-9) for quantities.



- ① 6" subgrade treatment.
- ② When guardrail posts are installed prior to construction of paved shoulder, nail 1" x 6" untreated form boards along the face of guardrail posts for the length shown. This board is to prevent shoulder material from contacting the sides of the posts and altering the function of the guardrail. Form board not required for final 2 posts.
- ③ Continue paved shoulder to existing paved shoulder or 20' beyond the end of guardrail.
- ④ Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement.
- ⑤ 'KT-1' joint for PCC shoulder.  
'B' joint for HMA shoulder.

PAVED SHOULDER AT GUARDRAIL

### SURVEY SYMBOLS

- GDL Guard Rail Steel
- SIGN SI Sign
- Tile TIL Tile Line
- OUT Tile Outlet
- RET Retaining Walls
- EB EB Electrical Box
- LUM Luminaire
- MM MM Mile Marker Post
- TDC Tree Deciduous
- TP TPD Telephone Pedestal
- WV WV Water Valve
- ▼ FHD Fire Hydrants
- \* TEV Evergreen Tree
- ⊕ LP L.P. Tank
- PR Electric Riser Pole
- ⊕ SHR Shrub
- E1 — EL1D Electric Line Co. 1 - Quality D
- St.S. — ST1D Storm Sewer Co. 1 - Quality D
- ⊕ IN Storm Sewer Intake
- D Centerline Draw or Stream (Down)
- ← DU Centerline Draw or Stream (Up)
- ⋄ RIP Rip-Rap
- F0 — FO1D Fiber Optic Co. 1 - Quality D
- G — GL1D Gas Line Co. 1 - Quality D

### UTILITY LEGEND

This is NOT a POINT 25 Project and is not subject to the provisions of IAC 761-115.25.

- F0 -  
CenturyLink  
Pat Cairns  
2103 E University Ave  
Des Moines, IA 50317  
515-263-7305  
Pat.Cairns@centuryLink.com
- G-HP -  
Black Hills Energy  
Brad Fleming  
1102 East First street  
Papillion, NE 68046-7641  
402-221-2714  
brad.fleming@blackhillscorp.com
- St.S. - City of Pocahontas
- E1 - City of Pocahontas

### 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

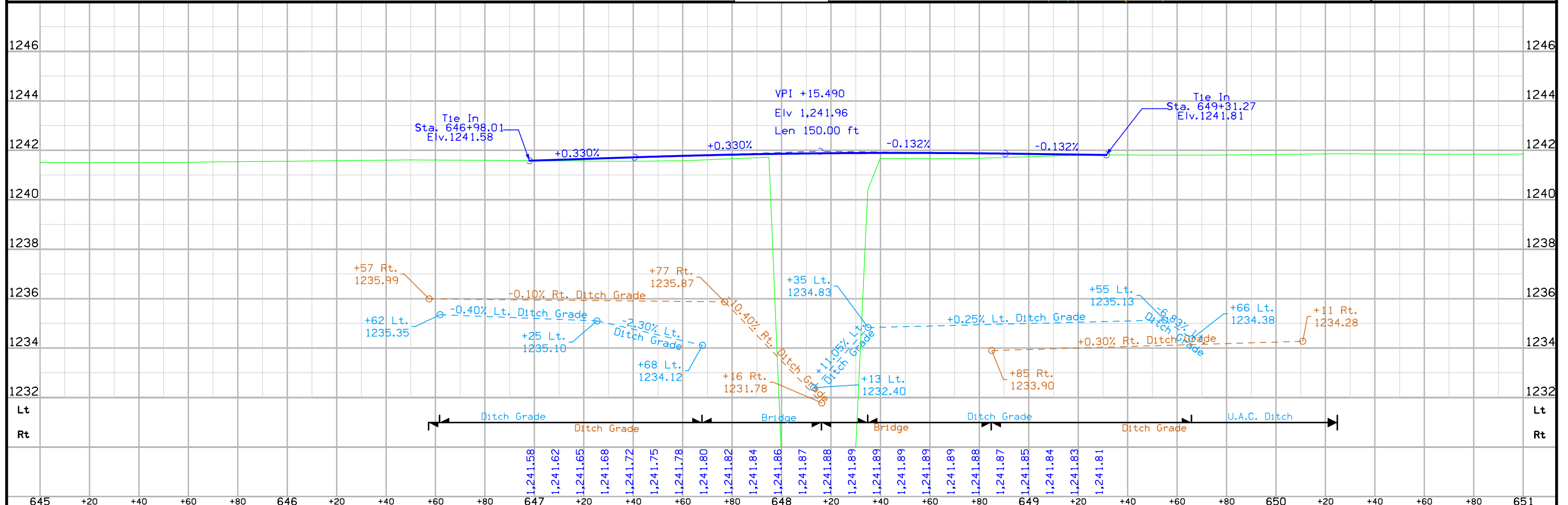
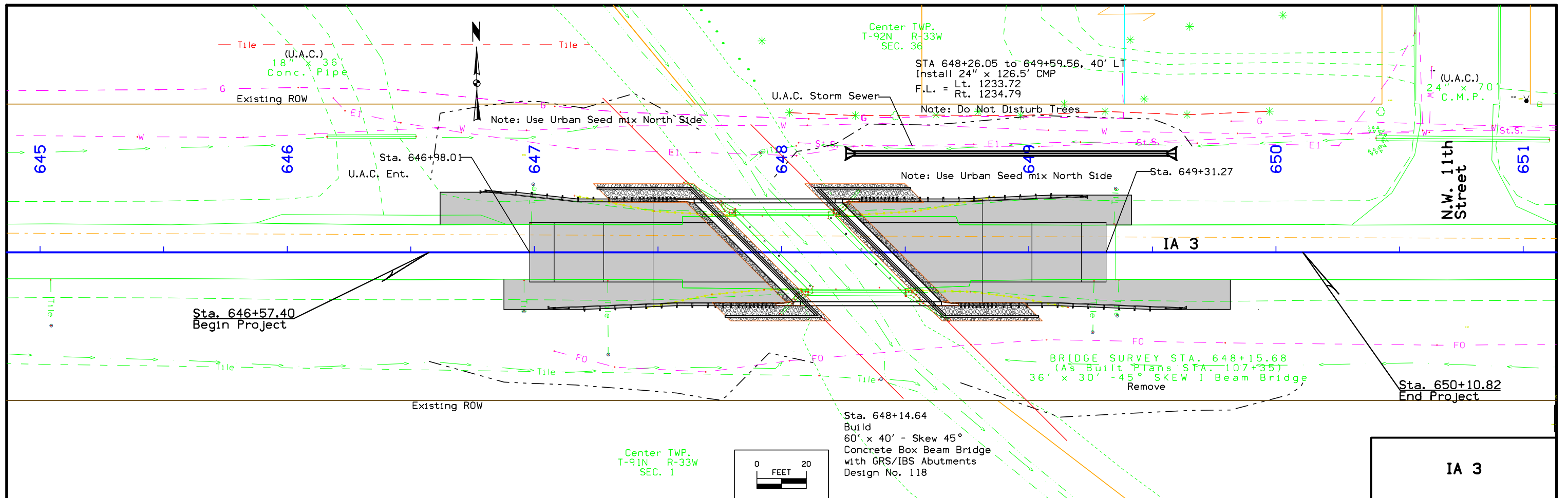
- Reference Point
- Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

### 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)







## Survey Information

Pocahontas County  
BRFN-003-3(49)--39-76  
Over Tributary of Lizard Creek  
0.3 Miles W. of Ia. 4  
PIN 13-73-003-010  
Sap-0833

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction along Iowa Highway 3. Project datum and control information is provided by Design Survey Office. This project is a Full DTM with Photo control.

### Vertical Control

Project ellipsoidal height was established at Pt.1 by averaging a minimum of two Iowa RTN RTK observations with 4 hours or greater time span between each observation. NAVD88 height was computed at Pt. 1 using Geoid 12A. The relative network error of height observations was less than 0.02 ft. at 95% confidence level. Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup at Pt. 1. A minimum of three observations were collected with 1 hour or greater time span between each observation. The local error of these observations relative to Pt.1 was less than 0.02 ft. at 95% confidence level.

This survey also observed 1 As built plan height benchmark to compare with observed survey height: BM 57 is located inside the project limits.  
BM 57 plan height = 1241.13 (Plan datum is not specified)  
NAVD88 height computed using Geoid 12A = 1241.965  
The local error of the height observations relative to Pt. 1 was less than 0.02 ft. at 95% confidence level.

### Horizontal Control

The project coordinate system is Modified Iowa State Plane North Zone (U.S. Survey Feet) scaled around Pt. 1 at 3732233.704 N, 4601987.569 E, 1240.899 (H)eight. IaRTN datum is adjusted to NAD83 (2011) (Epoch 2010.00). Project coordinates were established at Pt. 1 by averaging a minimum of two Iowa RTN RTK observations with 4 hours or greater time span between each observation. The relative network error of observations was less than 0.01 ft. at 95% confidence level. Additional control points were placed throughout the project using a GNSS Base-Rover setup at Pt. 1. A minimum of three observations were collected with 1 hour or greater time span between each observation. The local error of these observations relative to Pt. 1 was less than 0.02ft. at 95% confidence level.

1/Combined Scale Factor of project (State plane grid modified to ground) =  
1.000108832316

The 1/Combined Scale Factor scaled at Pt. 1 will be used for GPS/GNSS stakeout and location survey in the Project Coordinate system. A scale factor of 1 will be used for total station stakeout and location survey in the Project Coordinate system.

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. FN-939 Survey stationing was equated to the plan PI at STA 667+12.00 and run back without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

POT Sta. 614+55.90 As-built Plans No. FN-939  
Survey POT Sta. 614+54.88

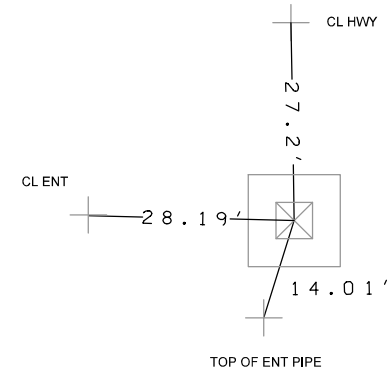
POT Sta. 640+80.70 As-built Plans No. FN-939  
Survey POT Sta. 640+80.39

PI Sta. 667+12.00 As-built Plans No. FN-939  
Survey PI STA 667+12.00

## VERTICAL CONTROL

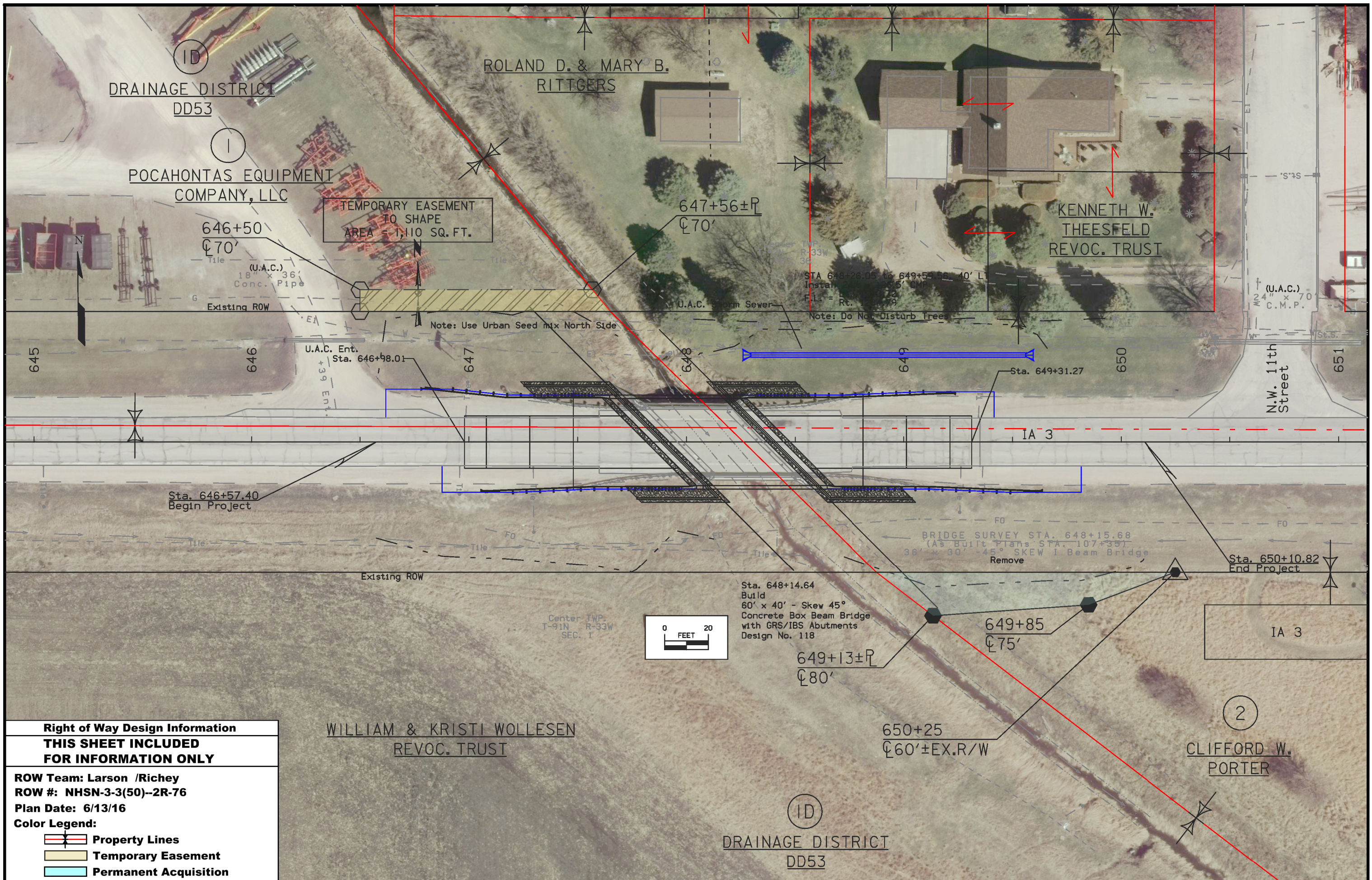
Point	North	East	Elevation	Station	Offset	Feature	Description
1	3732233.704	4601987.569	1240.899	641+41.74	26.829	FENO	CONTROL POINT
57	3732234.444	4602654.266	1241.965	648+08.38	17.998	BM	FD CUT SQUARE
500	3732235.745	4602655.982	1244.365	648+10.08	16.676	BM	FD CUT SQUARE

C.P. STA. 641+41.74, RT 26.83  
C.P. 1, SET FENO  
N=3732233.704, E=4601987.569









ID  
DRAINAGE DISTRICT  
DD53

I  
POCAHONTAS EQUIPMENT  
COMPANY, LLC

ROLAND D. & MARY B.  
RITTEGERS

TEMPORARY EASEMENT  
TO SHAPE  
AREA = 1,110 SQ. FT.

647+56±P  
C70'

KENNETH W.  
THEESFELD  
REVOC. TRUST

646+50  
C70'

(U.A.C.)  
18" x 36"  
Conc. Pipe  
Existing ROW

STA 648+26.05 to 649+55.50 40' L  
Install  
F.L. = Rt. 79  
Note: Do Not Disturb Trees

(U.A.C.)  
24" x 70"  
C.M.P.

Note: Use Urban Seed mix North Side

Note: Do Not Disturb Trees

U.A.C. Ent.  
Sta. 646+98.01  
+39 Ent.

Sta. 649+31.27

Sta. 646+57.40  
Begin Project

Sta. 650+10.82  
End Project

BRIDGE SURVEY STA. 648+15.68  
(As Built Plans STA. 107+35)  
36' x 30' - 45° SKEW I Beam Bridge  
Remove

Sta. 648+14.64  
Build  
60' x 40' - Skew 45°  
Concrete Box Beam Bridge  
with GRS/IBS Abutments  
Design No. 118



Center TWP.  
T-91N R-33W  
SEC. 1

WILLIAM & KRISTI WOLLESEN  
REVOC. TRUST

649+85  
C75'

649+13±P  
C80'

650+25  
C60'±EX.R/W

2  
CLIFFORD W.  
PORTER

ID  
DRAINAGE DISTRICT  
DD53

**Right of Way Design Information**  
**THIS SHEET INCLUDED FOR INFORMATION ONLY**

ROW Team: Larson /Richey  
ROW #: NHSN-3-3(50)--2R-76  
Plan Date: 6/13/16  
Color Legend:

- Property Lines
- Temporary Easement
- Permanent Acquisition



**TRAFFIC CONTROL PLAN**

108-23A  
08-01-08

IA 3 to thru traffic during construction. Offsite Detour will be used.

**511 TRAVEL RESTRICTIONS**

108-25  
10-21-14

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
IA 3	Both	Pocahontas	Bridge over drainage Ditch on IA 3				Closed					

**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)**

- TS————— Topsoil (Class 10)
- SLOPE DRESSING — Slope Dressing Only
- CL 10————— Class 10 Materials
- SEL L0————— 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
- B&W LS————— Broken and Weathered Rock
- ROCK————— Solid Rock
- BLDRS————— 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**

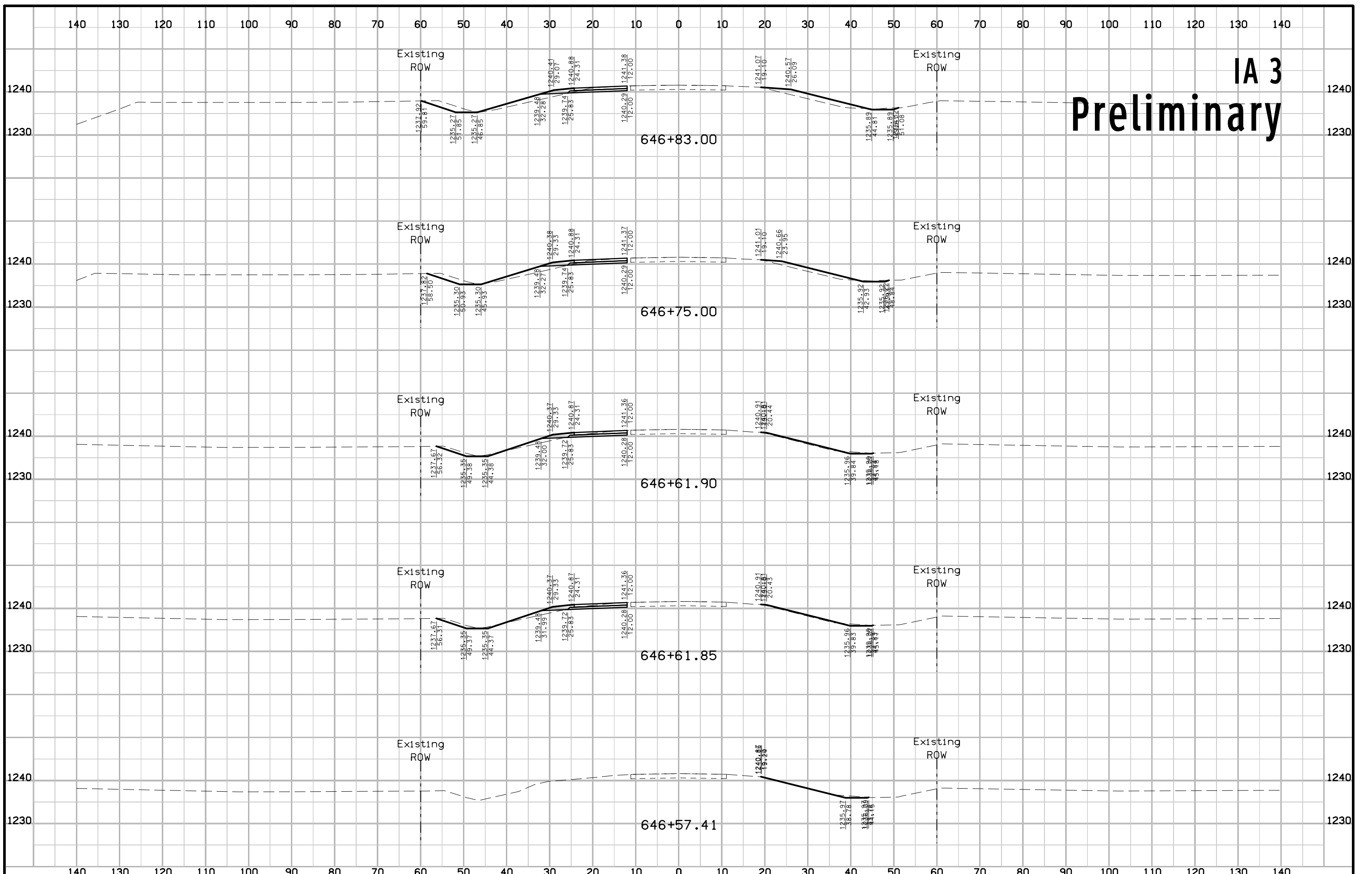
- Existing ROW  
|  
Existing Right-of-Way Limit
- Proposed ROW  
|  
Proposed Right-of-Way Limit
- Temporary ROW  
|  
Temporary Right-of-Way Limit

**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

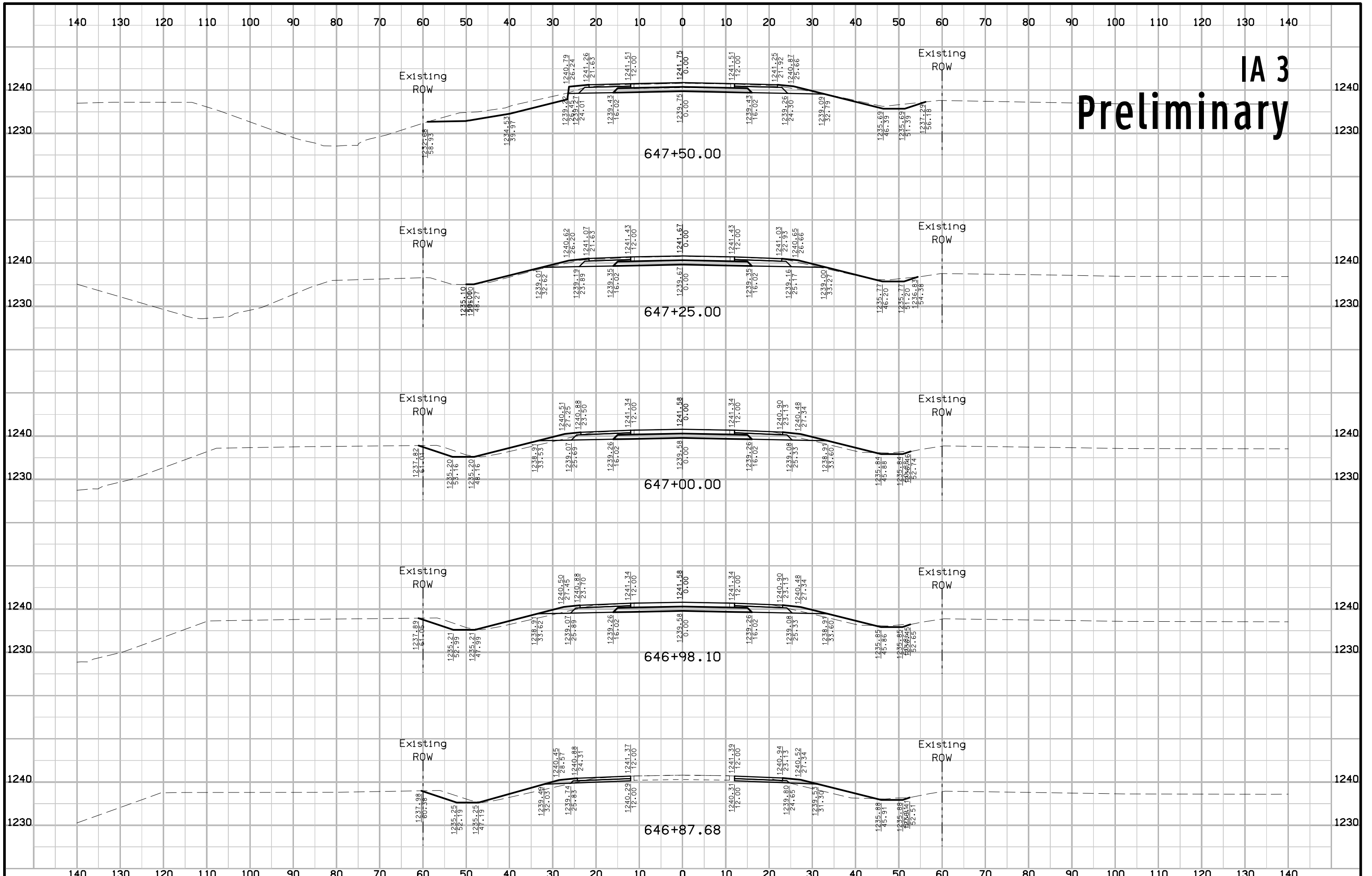
(COVERS SHEET SERIES W, X, Y, & Z)



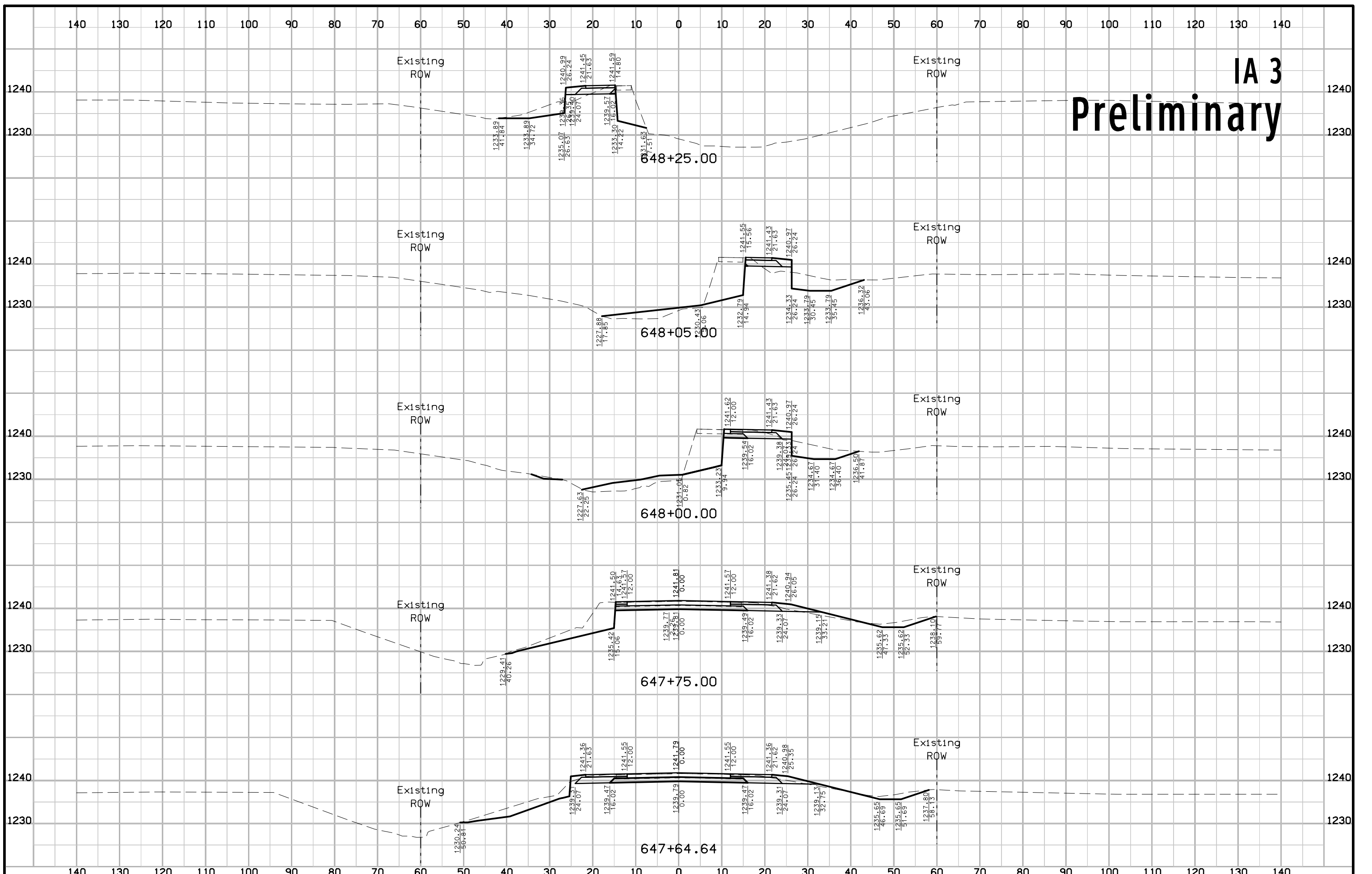
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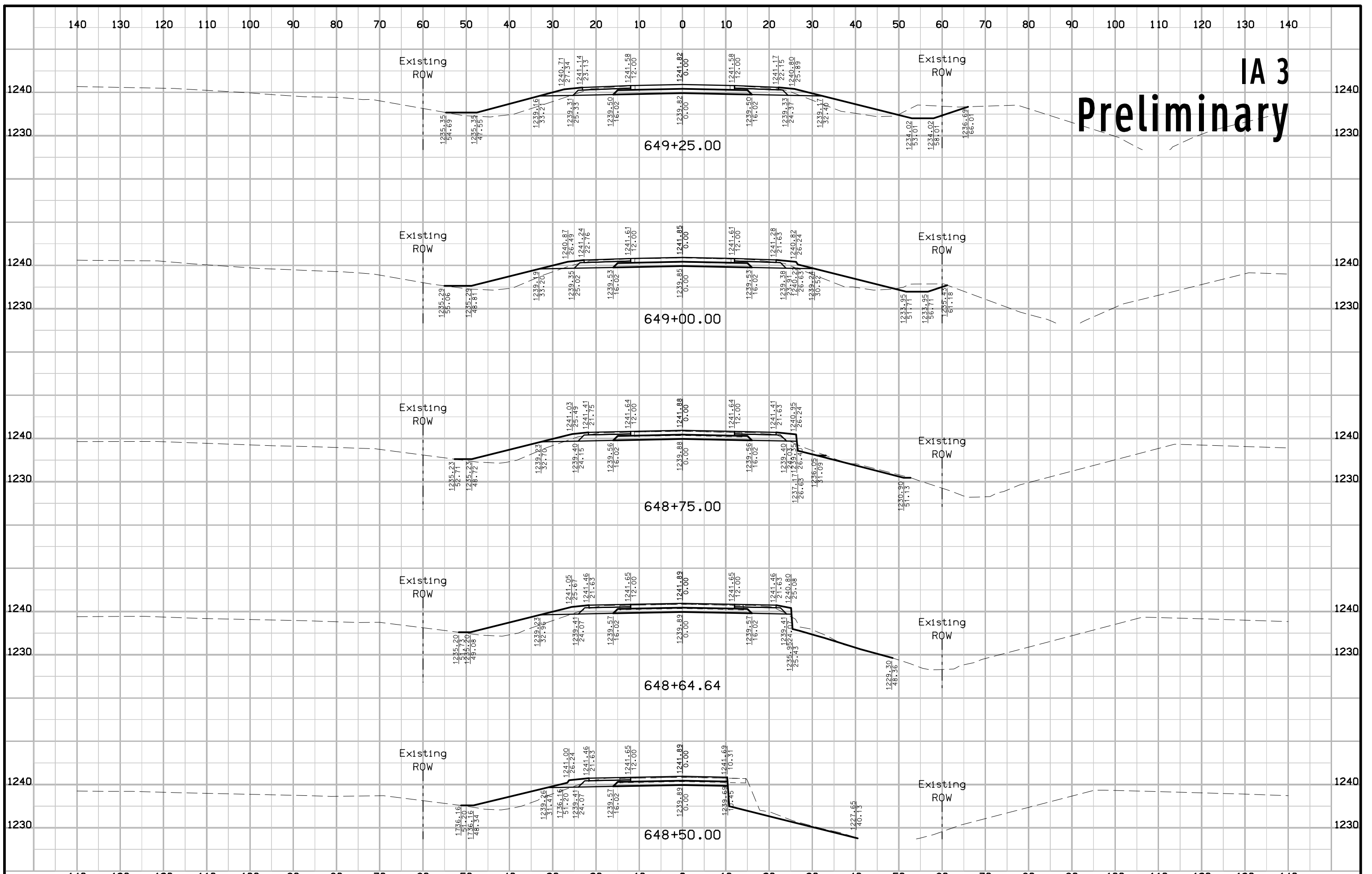
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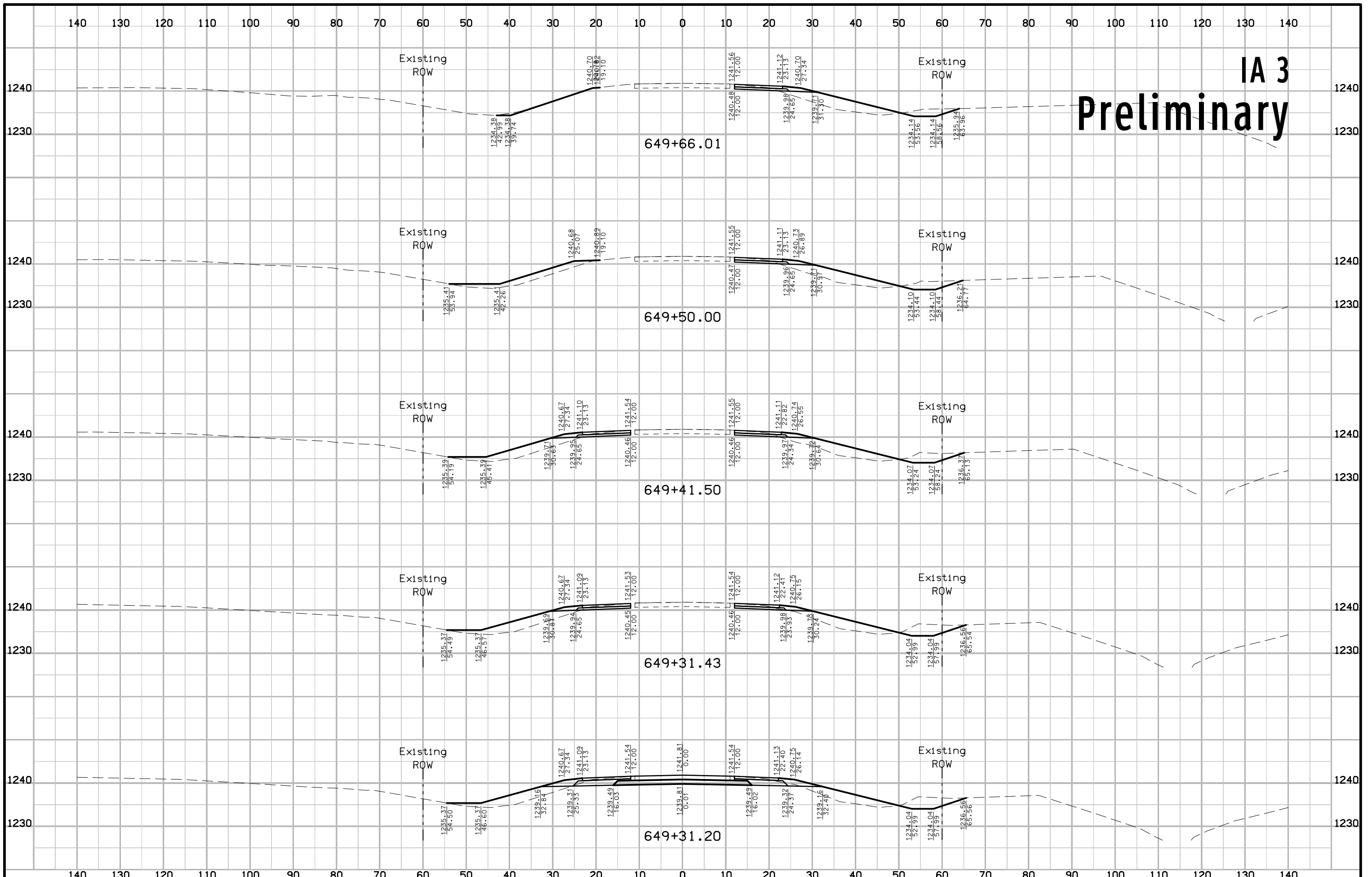


# IA 3 Preliminary



# IA 3 Preliminary





IA 3  
Preliminary



