

**BUENA VISTA CO.**  
**BRIDGE-REPLACEMENT-CCS**  
**BRF-003-2(65)--38-11**

LETTING DATE  
 12-19-2017



**Highway Division**

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM  
**BUENA VISTA COUNTY**  
 BRIDGE REPLACEMENT-CCS

North Raccoon River 2.5 miles E of US 71

SCALES: As Noted

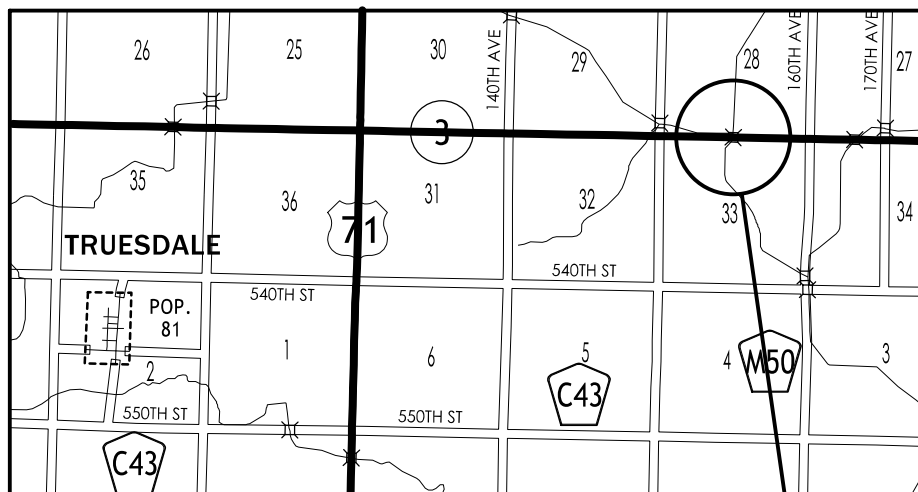
Refer to the Proposal Form for list of applicable specifications.  
 Value Engineering Saves. Refer to Article 1105.14 of the Specifications.



REVISIONS

TOTAL
PROJECT IDENTIFICATION NUMBER
13-11-003-020
PROJECT NUMBER
BRF-003-2(65)--38-11
R.O.W. PROJECT NUMBER
NHSN-003-2(66)--2R-11

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>
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* D.2	Ia. 3
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G.2 - 3	Horizontal Control Tab. & Alignment Coordinates
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
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<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 10	Mainline Cross Sections
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**Project Location**  
 M.P.=84.10  
 F.H.W.A. #016220



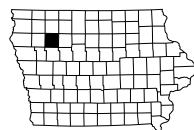
DESIGN DATA RURAL			
2018	AADT	1800	V.P.D.
2038	AADT	2400	V.P.D.
20--	DHV	--	V.P.H.
	TRUCKS	33	%
	Total Design ESALs	--	

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

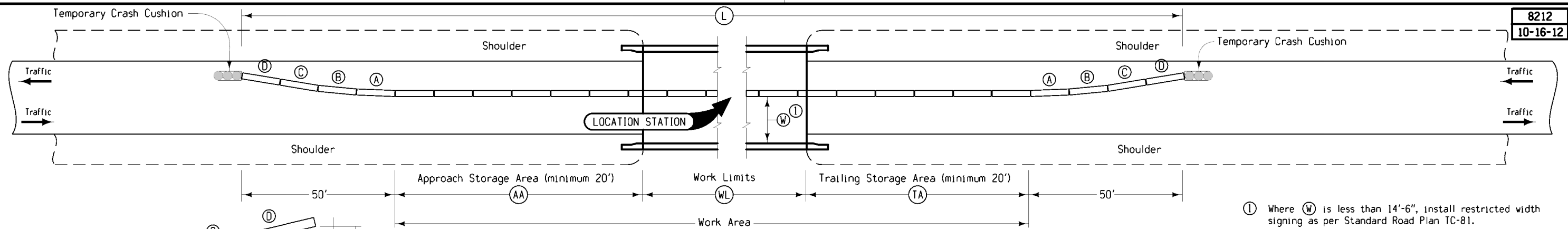
PRELIMINARY PLANS

Subject to change by final design.

D5 REVISION - Date: 01-27-2016





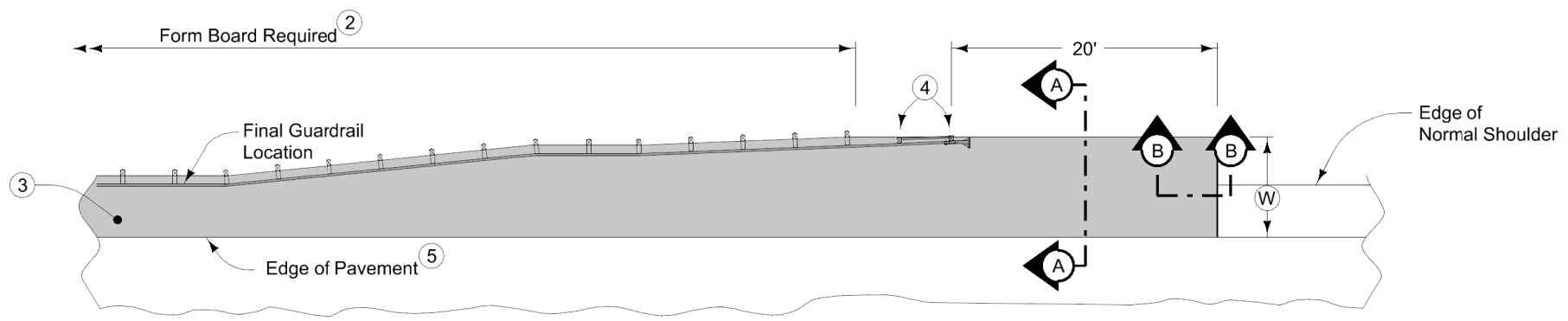


① Where (W) is less than 14'-6", install restricted width signing as per Standard Road Plan TC-81.

**BARRIER OFFSETS FOR FLARE SECTIONS**

Station	Side	(AA)	(WL)	(TA)	(L)	Anchored	(W) ①	Remarks
		Feet	Feet	Feet	Feet	X	Ft-Inches	
131+10.82	Rt	20.00	523.00	20.00	663.00		14-8	Stage 1
131+10.82	Lt	20.00	422.50	20.00	562.50		12-0	Stage 2

**TEMPORARY CONCRETE BARRIER LAYOUT for Two-Way Traffic**

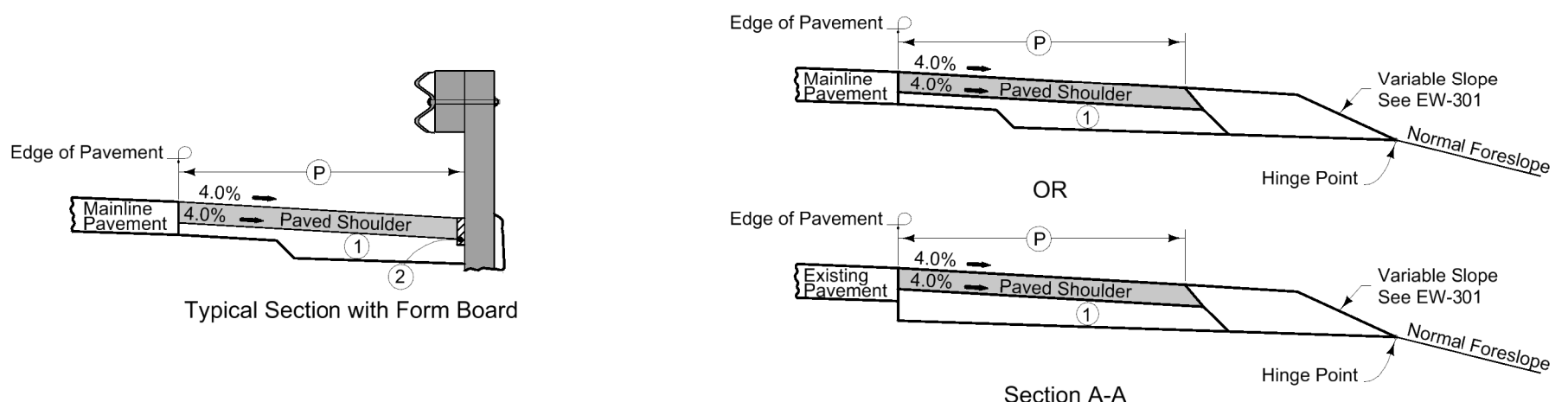


8" HMA Paved Shoulder at guardrail. 7" PCC may be substituted with the following jointing layout:

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.

See Tab 100-24 or 100-25 for pavement quantities.  
See Tab 112-9 for shoulder quantities.


**IA 3 PAVED SHOULDER AT GUARDRAIL**

### SURVEY SYMBOLS

-  TPD Telephone Pedestal
-  FW Wire Fence
-  TDC Tree Deciduous
-  OUT Tile Outlet
-  TIL Tile Line
-  TLNL Tree Line Left
-  TOP Top of Bridge Pier
-  TLNR Tree Line Right
-  COS Square Bridge Pier Column
-  MM Mile Marker Post
-  DU Centerline Draw or Stream (Up)
-  D Centerline Draw or Stream (Down)
-  SP Stream Profile
-  GDL Guard Rail Steel














### UTILITY LEGEND

This is a POINT 25 Project and is subject to the provisions of IAC 761-114.25.







 FO - Century Link













Century Link  
 Carroll Wheaton Manager  
 7404 N 78th Street  
 Omaha, NE, 68122  
 402-572-5887  
 Carroll.Wheaton@centurylink.com









### 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

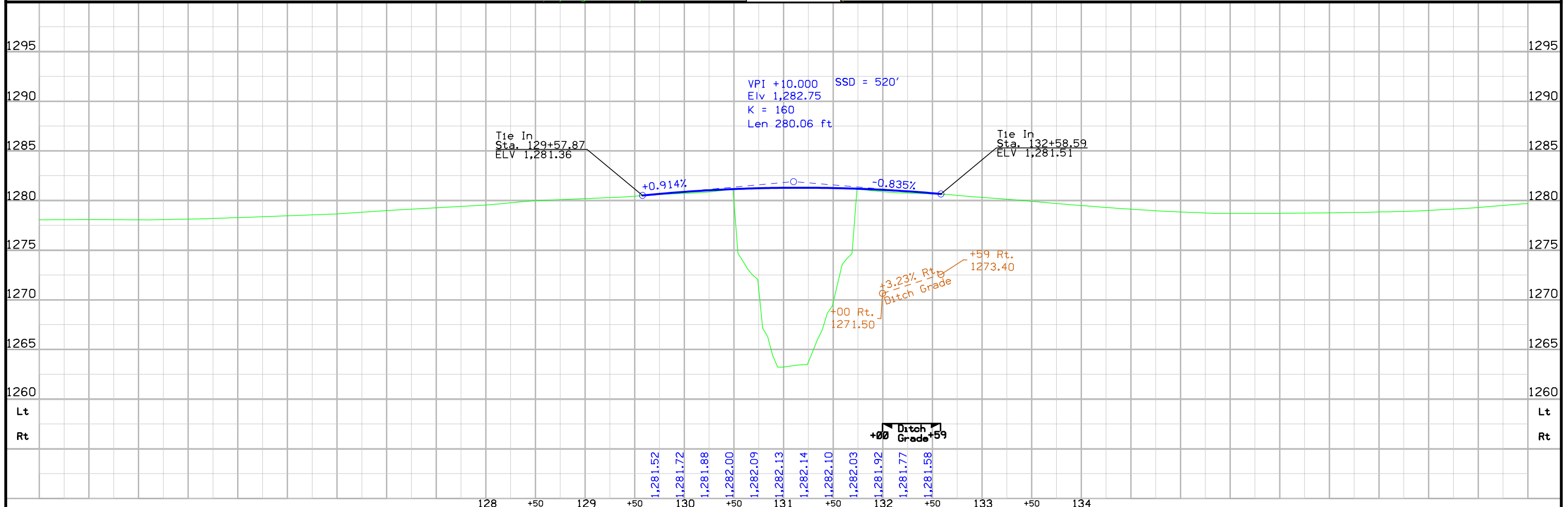
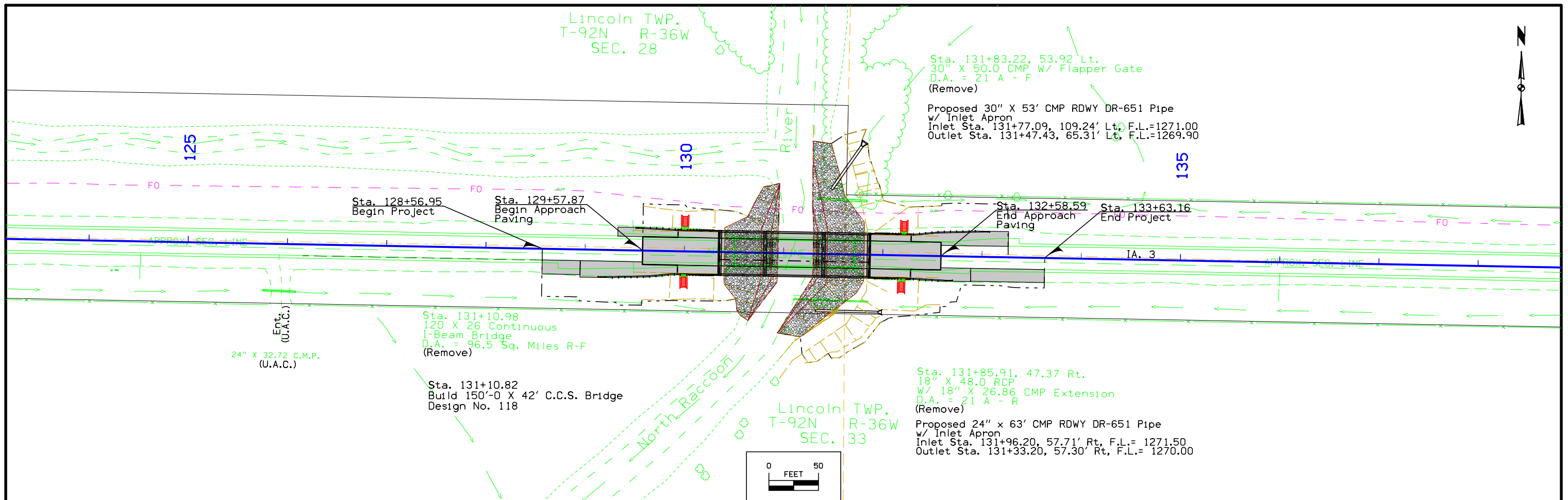
LINEWORK		Design Color No.	
Green	(2)		Existing Ground Line Profile
Blue	(1)		Proposed Profile and Annotation
Magenta	(5)		Existing Utilities
Blue, Light	(230)		Proposed Ditch Grades, Left
Black	(0)		Proposed Ditch Grades, Median
Rust	(14)		Proposed Ditch Grades, Right

-  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)



## Survey Information

### General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge replacement. Project datum and control information is provided by Design Survey Office. This project is a Full DTM. Pavement was resurveyed after resurfacing and widening in Oct. 2013

### Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid 12). GRS80 Ellipsoidal Height was computed at project Pt. 1 and Pt. 2 by averaging a minimum of five observations with appropriate time spans between from nearby Iowa RTN reference stations. The vertical accuracy estimate of these observations was less than 0.03 ft. at 95% confidence level.

Additional benchmarks were placed throughout the project using a GNSS Base-Rover setup and averaging observations from both Pt. 1 and Pt. 2. A minimum of three observations from each base were taken with appropriate time spans between. The vertical accuracy estimate of these observations was less than 0.02 ft. at 95% confidence level.

This survey observed 3 NGS Control Monuments with published NAVD88 height to compare with observed survey height:

NGS 2nd. order Class 0 mark designated V 22 has a published height of 1236.07  
Iowa RTN NAVD88 height computed using Geoid 12 = 1236.187  
The relative network error of the height observations was less than 0.03 ft.  
at 95% confidence level. V 22 is located 15 miles southeast of project.

NGS 2nd. order Class 0 mark designated B 24 Reset has a published Elev. Of 1442.04  
Iowa RTN NAVD88 height computed using Geoid 12 = 1442.10  
The relative network error of the height observations was less than 0.02 ft.  
at 95% confidence level. Mark B 24 is located 14.5 miles southwest of project.

NGS 3rd. order mark designated Q 22 Reset has a published Elev. Of 1297.4  
Iowa RTN NAVD88 height computed using Geoid 12 = 1299.659  
The relative network error of the height observations was less than 0.03 ft.  
at 95% confidence level. Mark Q 22 Reset is located 8 miles east of project.

This survey observed 2 As-Built plan bench marks to compare to local ground control:

BM 501 Plans Project No. F 939(4) Elev. 1281.73  
Survey Elev. = 1282.137

BM 502 Plans Project No. F 939(4) Elev. 1281.73  
Survey Elev. = 1282.098

### Horizontal Control

The project coordinate system is modified Iowa State Plane North Zone (U.S. Survey Feet) scaled around Pt. 2 at 3739997.981 N, 4493657.820 E, 1282.876 (H)eight. IaRTN datum is NAD83(2011CORS) (Epoch 2010.00). Coordinates at project Pt. 1 and 2 were determined by averaging a minimum of five IaRTN RTK observations with 1 hour or greater time span between each observation. The horizontal accuracy estimate of these 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 and averaging observations from both Pt. 1 and Pt. 2. A minimum of three observations from each base were taken with appropriate time spans between. The vertical accuracy estimate of these observations was less than 0.02 ft. at 95% confidence level.

1/Combined Scale Factor of project (State plane grid modified to ground) = 1.000110502259 should be used for GPS\GNSS project configuration.

A scale of 1 should be used with project control for total station stakeout.

### Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. F 939(4). Survey stationing was equated to the plan at ¼ section corner Sta. 78+69.0, 0.7 Rt. and run ahead without equation throughout the survey. Alignment based off of station offsets of two found section corners.

Survey stationing relates to as built plan stationing as follows:

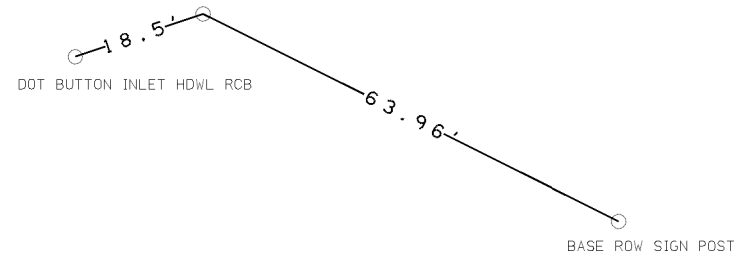
¼ Section Corner Sta. 78+69.0, 0.7 Rt. As-built Plans Project No. F 939(4).  
Survey ¼ Section Corner Sta. 78+69.01, 0.7 Rt

¼ Section Corner Sta. 184+40.5, 8.3 Rt. As-built Plans Project No. F 939(4).  
Survey ¼ Section Corner Sta. 184+41.23, 8.3 Rt.

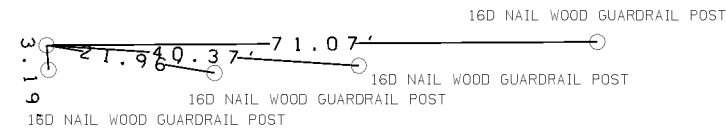
## VERTICAL CONTROL

Point	North	East	Elevation	Station	Offset	Feature	Description
1	3740031.083	4487911.755	1279.638	101+37.41	32.127	CP	1 SET FENO
2	3739997.981	4493657.820	1282.876	158+83.11	-40.313	CP	2 SET FENO
3	3739930.362	4496937.316	1287.326	Off Chain	Off Chain	CP	3 SET FENO
500	3740025.229	4487894.202	1279.871	101+19.96	38.303	BM	FOUND IDOT BM INLET HDWL RCB
501	3740030.094	4490816.442	1282.137	130+41.62	-20.233	BM	FOUND X NW WING
502	3739910.532	4495108.845	1282.098	173+35.50	20.471	BM	FOUND X SW WING WALL
503	3739851.346	4496252.012	1283.090	Off Chain	Off Chain	BM	CONC MONUMENT

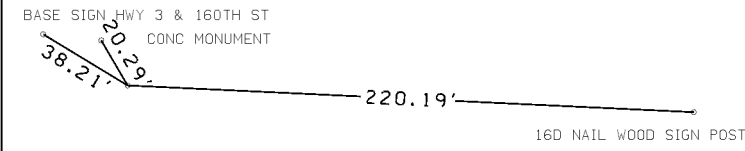
CP Sta. 101+37.41, 32.13 Rt.  
 CP 1 Set Feno Monument Stamped 11001  
 N=3740031.083, E=4487911.755, Z=1279.638



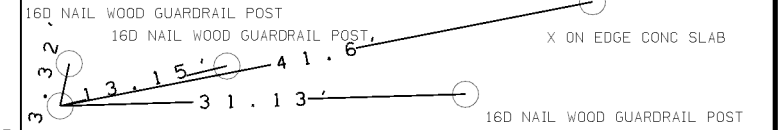
CP Sta. 131+83.68, 17.94 Lt.  
 CP 7 Set Iron Pin 6" Deep  
 N=3740025.191, E=4490958.430, Z=1281.429



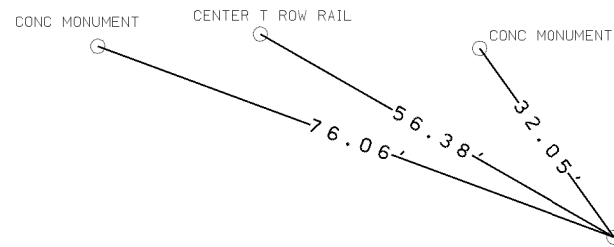
CP Sta. 158+83.11, 40.13 Lt.  
 CP 2 Set Feno Monument Stamped 11002  
 N=3739997.981, E=4493657.820, Z=1282.876



CP Sta. 173+94.99, 19.95 Rt.  
 CP 8 Set Iron Pin 6" Deep  
 N=3739909.958, E=4495168.341, Z=1282.102



CP Sta. Off Chain  
 CP 3 Set Feno Monument Stamped 11003  
 N=3739930.362, E=4496937.316, Z=1287.326







Buena Vista ROW: NHSN-003-2(66)--2R-11  
 North Raccoon River 2.5 miles E of US 71

PIN 13-11-003-020

PARCEL NO.	OWNER NAME	STATE		COUNTY		CITY		BORROW		EXCESS	FEE	T.E.	MITIGATION	OTHER	HOUSE	BUILDING(S)	A/C ONLY	TOTAL ACQ.
		FEE	EASE	FEE	EASE	FEE	EASE	FEE	T.E.									
1	Mary Proctor - Fee		0.04 AC															
2	Orlando Leimer - Fee		0.16 AC															
3	Jana Hauck - Fee		0.1 AC															
	Donna Curry - Fee																	
4D	Drainage District 34 Main - Fee																	
4 Parcels	"TOTALS	0 AC	0.3 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC	0 AC					
		0 SF		0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF	0 SF					

Sta. 131+10.98  
 120' X 26' Continuous  
 I-Beam Bridge  
 D.A. = 96.5 Sq. Miles R-F

④D  
 DRAINAGE DISTRICT  
 34 MAIN

③  
 DONNA CURRY,  
 JANA HAUCK,  
 & JAMES I. CURRY, JR. & JANICE K. CURRY

Lincoln TWP.  
 T-92N R-36W  
 SEC. 28

131+63±R/W Cor.  
 ±150'

131+95  
 ±150'

Sta. 131+83.22, 53.92 Lt.  
 30" X 50.0 CMP W/ Flapper Gate  
 D.A. = 21' A - F  
 (Remove)

Proposed 30" X 53' CMP RDWY DR-651 Pipe  
 w/ Inlet Apron  
 Inlet Sta. 131+77.09, 109.24' Lt, F.L.=1271.00  
 Outlet Sta. 131+47.43, 65.31' Lt, F.L.=1269.90

132+25  
 ±60'±Ex.R/W

135

Sta. 128+56.95  
 Begin Project

Sta. 129+57.87  
 Begin Approach  
 Paving

Sta. 132+58.59  
 End Approach  
 Paving

Sta. 133+63.16  
 End Project

FO

FO

FO

FO

APPROX. SEC. LINE

IA. 3

APPROX. SEC. LINE

Ent.  
 (U.A.C.)  
 24" X 32.72 C.M.P.  
 (U.A.C.)

Sta. 131+10.98  
 120' X 26' Continuous  
 I-Beam Bridge  
 D.A. = 96.5 Sq. Miles R-F  
 (Remove)

130+40  
 ±60'±Ex.R/W

130+85±R  
 ±105'(R)

132+65  
 ±60'±Ex.R/W

①  
 MARY PROCTOR

Sta. 131+10.82  
 Build 150'-0' X 42' C.C.S. Bridge  
 Design No. 118

131+00  
 ±120'

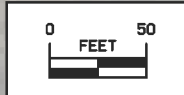
Lincoln TWP.  
 T-92N R-36W  
 SEC. 33

Sta. 131+85.91, 47.37 Rt.  
 18" X 48.0 RCP  
 W/ 18" X 26.86 CMP Extension  
 D.A. = 21' A - R  
 (Remove)

Proposed 24" x 63' CMP RDWY DR-651 Pipe  
 w/ Inlet Apron  
 Inlet Sta. 131+96.20, 57.71' Rt, F.L.= 1271.50  
 Outlet Sta. 131+33.20, 57.30' Rt, F.L.= 1270.00

②  
 ORLANDO & LOIS  
 LEIMER

④D  
 DRAINAGE DISTRICT  
 34 MAIN



Right of Way Design Information	
<b>THIS SHEET INCLUDED FOR INFORMATION ONLY</b>	
ROW Team: LARSON /GROAT	
ROW #: NHSN-003-2(66)--2R-11	
Plan Date: 02-16-16	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

108-23A  
08-01-08

**TRAFFIC CONTROL PLAN**

Traffic will be maintained on Ia. 3 at all times. Construction will be staged so as to maintain traffic.

108-26A  
08-01-08

**STAGING NOTES**

Stage I.  
Traffic:  
EB lane closure and shift all traffic to WB lane using Standard Road Plan TC-217.

Construction:  
Remove EB lane guardrail and the southern portion of the existing bridge after the third beam.  
Construct 14.37' of the southern most half of the new bridge and both bridge approaches.  
Construct EB shoulders and install guardrail on both ends of the bridge.

Stage II.  
Traffic:  
Switch traffic to EB lane using Standard Road Plan TC-217.

Construction:  
Remove remaining portion of existing bridge and existing guardrail.  
Construct new piers and remaining portion of new bridge and remaining portions of both bridge approaches.  
Construct WB shoulders and install guardrail.

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
Ia. 3	WB & EB	Buena Vista	2.5 miles E of U.S. 71	Bridge	Barrier	FHWA No. 016220	Horizontal	N/A	12'-0"	11'-0"	N/A	

**CROSS SECTION VIEW COLOR LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**




















	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

**PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS**

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

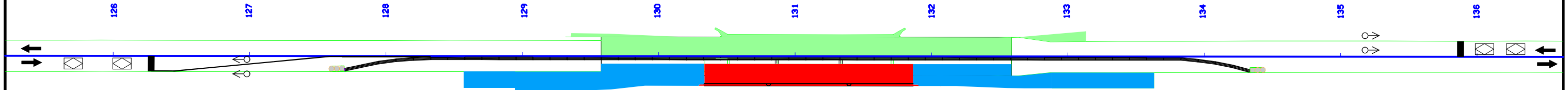
**PLAN VIEW PATTERN AND SYMBOL LEGEND  
OF TRAFFIC CONTROL AND STAGING SHEETS**

	Channelizing Device		Crash Cushion (Temp or Perm)
	Drum		Traffic Signal
	Temporary Lane Separator		Flagger
	Tubular Marker		Temporary Floodlighting
	Channelizer Marker		Traffic Sign
	Concrete Barrier Marker		Type III Barricade
	Delineator		Type A Warning Light
	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		

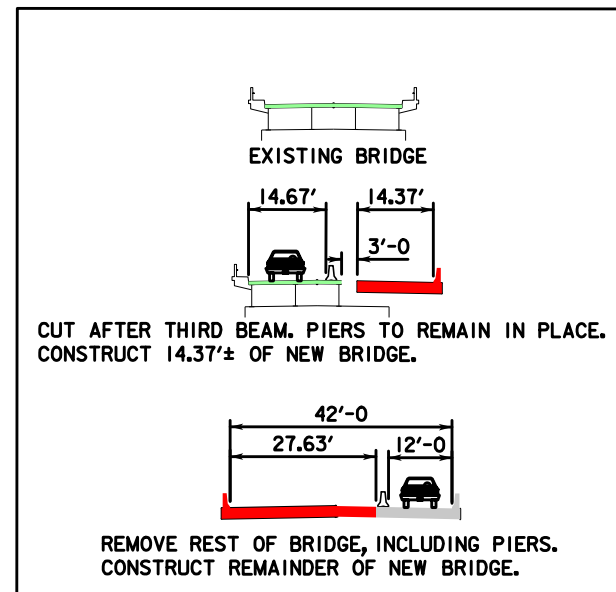
NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

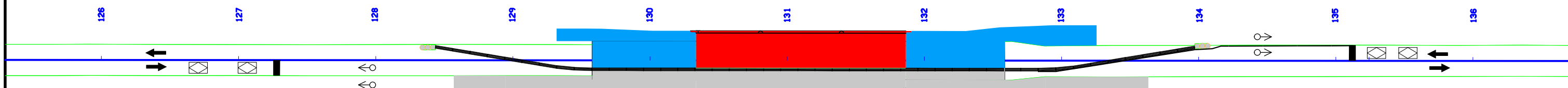
**TRAFFIC CONTROL  
AND  
STAGING  
LEGEND AND SYMBOL  
INFORMATION SHEET**

(COVERS SHEET SERIES J)

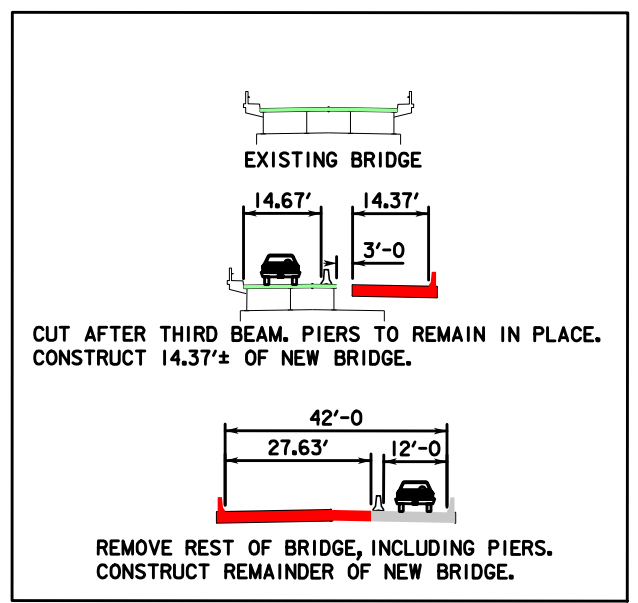


### STAGE I





### STAGE II





1290	CL W. ABUT. ELEV. 1281.91	CL PIER #1 ELEV. 1282.07	CL PIER #2 ELEV. 1282.09	CL E. ABUT. ELEV. 1281.96	1290
1280					1280
1270					1270
1260	BERM ELEV.=1277.85				1260
1250					1250
1240	DESIGN PIERS SO EXISTING PIERS ARE NOT IMPACTED IN FIRST STAGE.				1240

### TRAFFIC ESTIMATE

2018 AADT	1800	V.P.D.
2038 AADT	2400	V.P.D.
20?? DHV	-	V.P.H
TRUCKS	33 %	
TOTAL DESIGN ESAL's	-	

### UTILITIES LEGEND:

FO CENTURY LINK

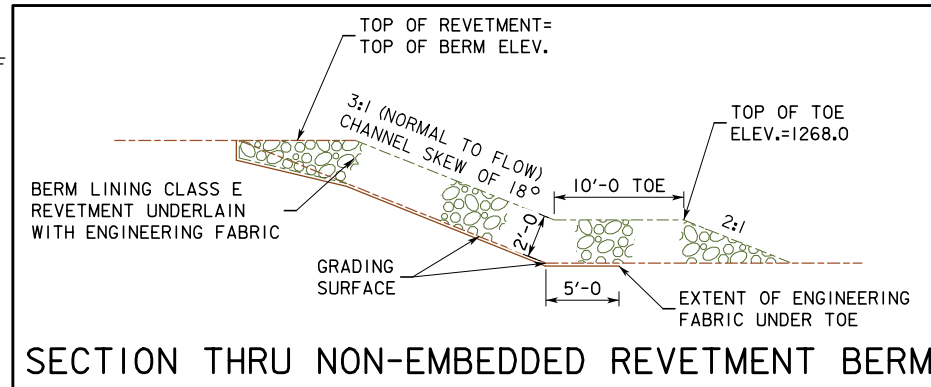
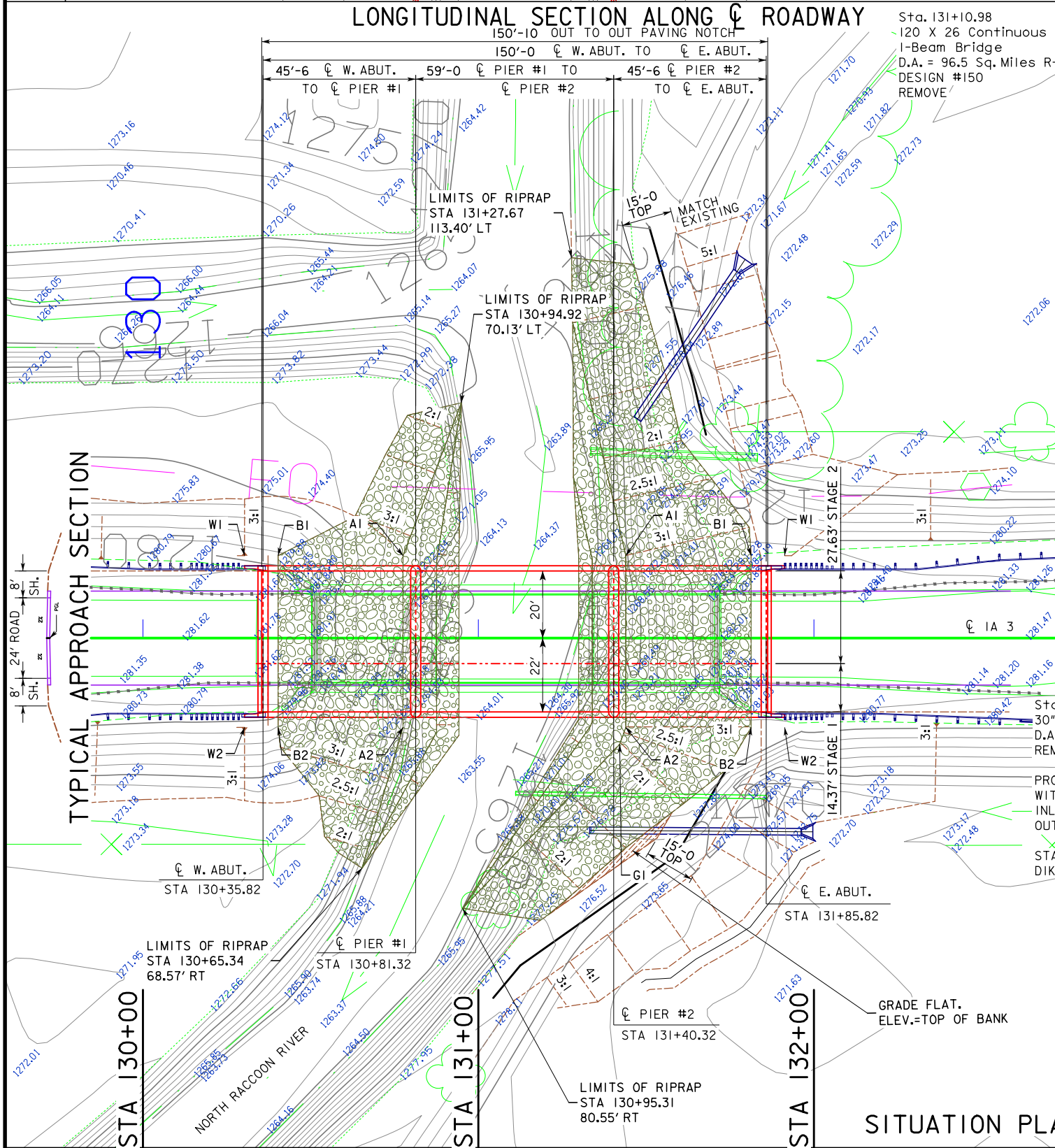
BENCH MARK NO. 501 - STA 130+41.62, 20.23' LT., FOUND 'X' NW WING - ELEV. 1282.14

0.914% -0.835%

PI STA 131+10.00 VC = 280.06'  
PI ELEV 1282.75

### PROPOSED PROFILE GRADE ON IA 3

PROFILE GRADE LINE (PGL) IS AT CL OF LANES.  
TOP OF BRIDGE DECK AT CL ROADWAY IS .03' BELOW THE PROFILE GRADE TO ACCOUNT FOR PARABOLIC CROWN.



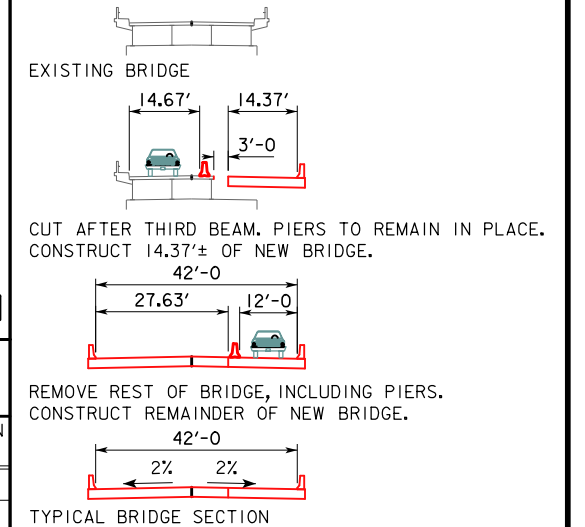
### ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
WEST BERM	625	550	375
EAST BERM	1000	900	600
TOTALS	1625	1450	975

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY. SEE ROAD SHEETS.

**GRADING CONTROL POINTS**  
THESE POINTS REPRESENT THE TOE OF BANK/STREAMBED FOR PROPOSED TURNING POINTS TO THE EXISTING CREEK. TOP OF BANK IS APPROXIMATED. TURNING POINTS ARE AT THE A1 AND A2 LOCATIONS SHOWN IN THE BERM SLOPE LOCATION TABLE. AN ADDITIONAL TURNING POINT IS AT G1 STA 131+42.10, 31.64 RT. THESE POINTS ARE TO BE CONSIDERED AS AIDS IN ESTIMATING QUANTITIES OR PREPARING CROSS SECTIONS. OFFSETS ARE FROM IA 3 CL.

### STAGING (FROM CONCEPT)



### HYDRAULIC DATA

DRAINAGE AREA= 108 MI<sup>2</sup>  
STREAM SLOPE= 5.8 FT./MI.  
AVG. LOW WATER STAGE= 1265.9

Q<sub>50</sub>= 3957 CFS  
NATURAL STAGE= 1276.51  
MAXIMUM BACKWATER= .50'  
AVG. BRIDGE VELOCITY= 5.84 FT/SEC

Q<sub>100</sub>= 4762 CFS  
NATURAL STAGE= 1276.98  
MAXIMUM BACKWATER= .71'

Q<sub>200</sub>= 5400 CFS  
STAGE = 1277.30  
CALCULATED DESIGN SCOUR= 1255.3

Q<sub>500</sub>= 6014 CFS  
NATURAL STAGE= 1277.57  
CALCULATED CHECK SCOUR= 1255.2



### LOCATION

IA 3 OVER NORTH RACCOON RIVER (MAIN OPEN DITCH OF DD#34)  
T-92N R-36W  
SECTION 28/33  
LINCOLN TOWNSHIP  
BUENA VISTA COUNTY  
FHWA NO. 16221  
BRIDGE MAINT. NO. 1184.IS003  
LATITUDE 42.748809° N  
LONGITUDE 95.102377° W PRELIMINARY

### BERM SLOPE LOCATION TABLE

	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	130+77.57	-24.58	1266.00	131+43.94	-24.58	1266.00
A2	130+77.57	26.58	1266.00	131+43.94	26.58	1266.00
B1	130+40.32	-24.58	1277.80	131+81.32	-24.58	1277.85
B2	130+40.32	26.58	1277.80	131+81.32	26.58	1277.85
W1	130+30.32	-24.58	1281.20	131+91.32	-24.58	1281.26
W2	130+30.32	26.58	1281.12	131+91.32	26.58	1281.18

ALL POINTS REFLECT GRADING SURFACE & ARE TAKEN FROM SURVEY CL

### 150'-0" X 42' CONTINUOUS CONCRETE SLAB BRIDGE

45'-6" END SPANS 59'-0" CENTER SPAN  
**SITUATION PLAN**  
STATION: 131+10.82 JAN. 2016  
**BUENA VISTA COUNTY**

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. OF FILE NO. 31295 DESIGN NO. 118

**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\R/CB
- Proposed Pipe\R/CB
- 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 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
- 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**

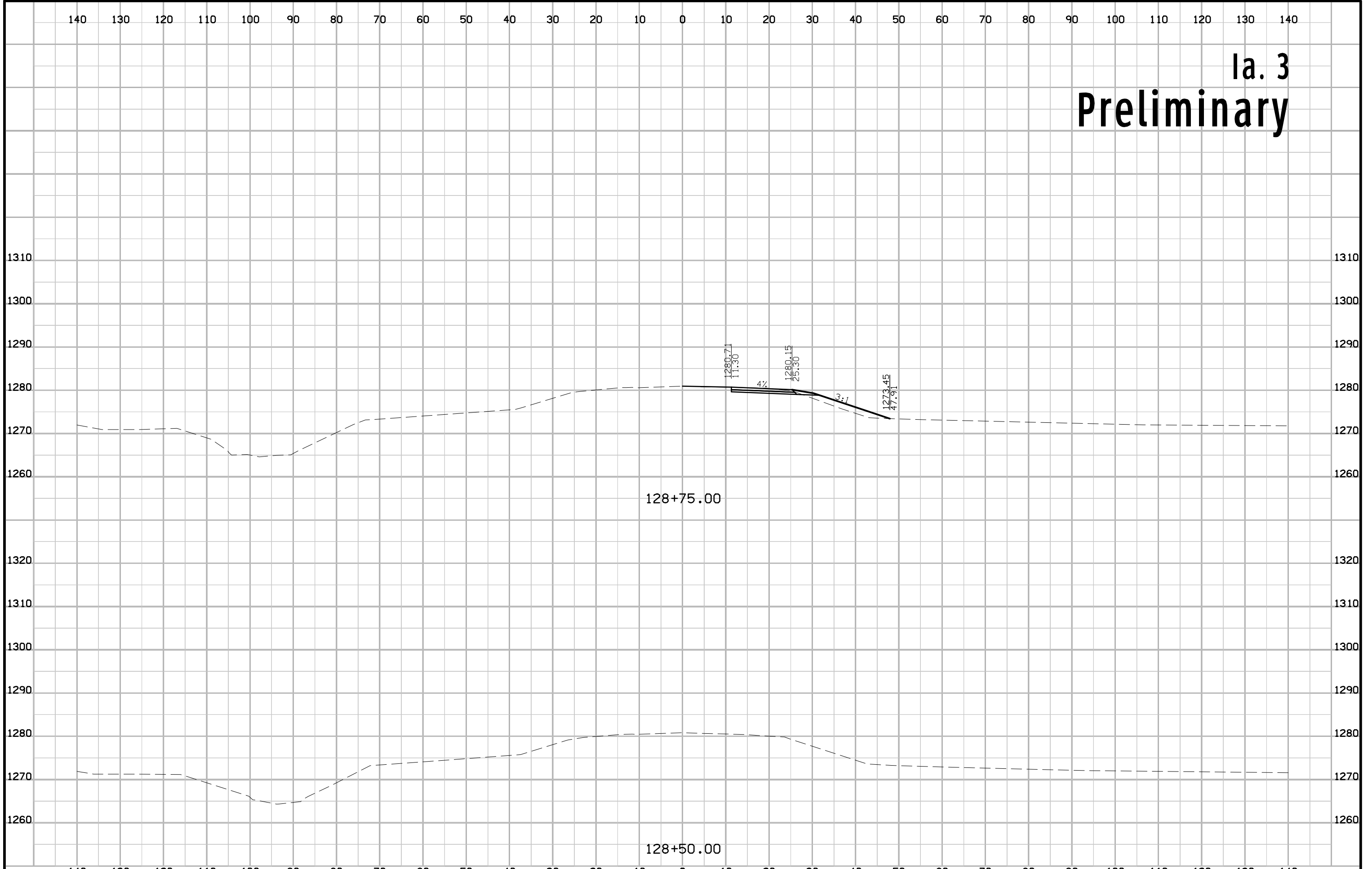
- Existing ROW  
|  
Existing Right-of-Way Limit
- Proposed ROW  
|  
Proposed Right-of-Way Limit
- Temporary ROW  
|  
Temporary Right-of-Way Limit

**CROSS SECTION  
LEGEND AND SYMBOL  
INFORMATION SHEET**

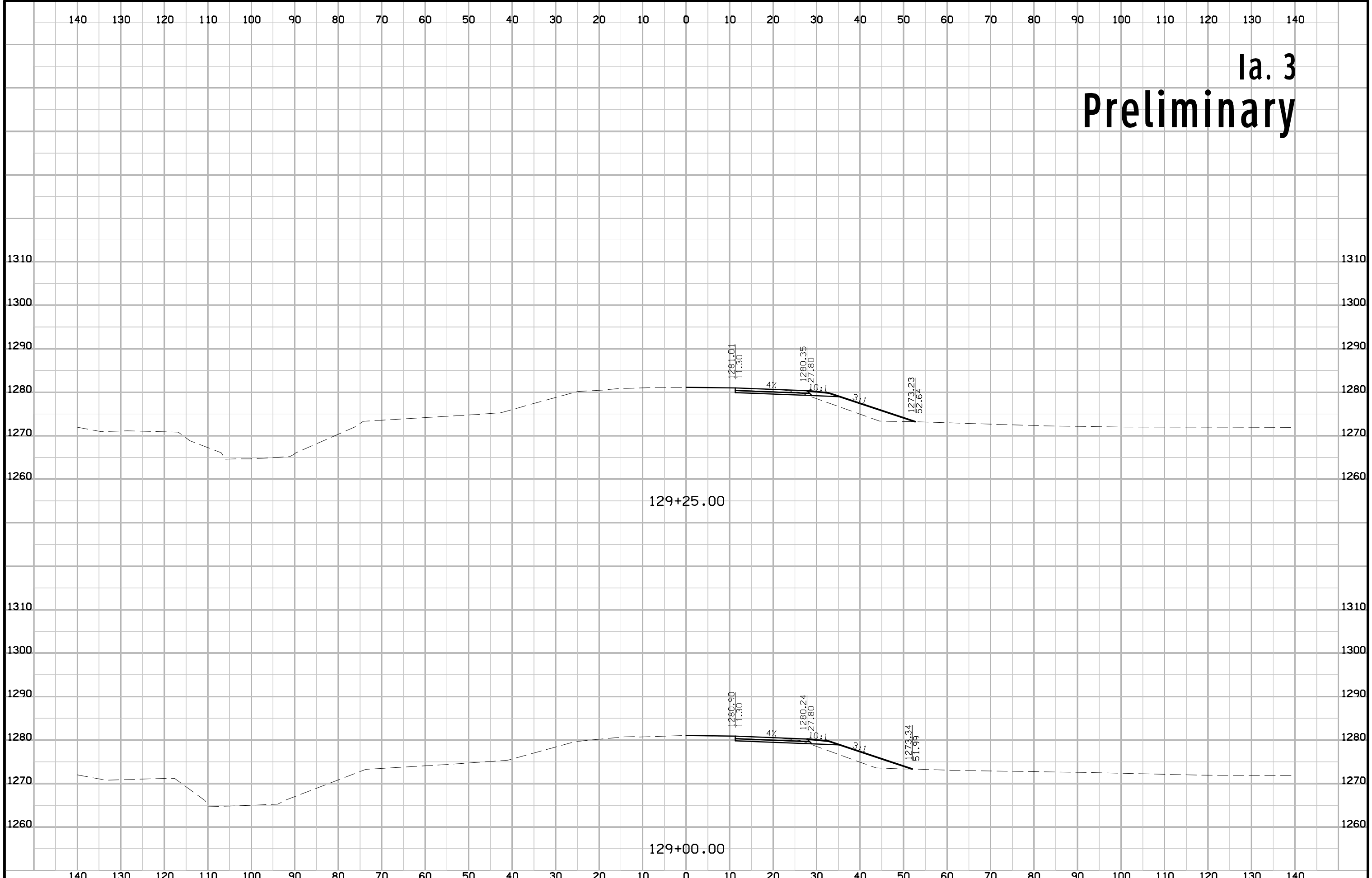
(COVERS SHEET SERIES W, X, Y, & Z)



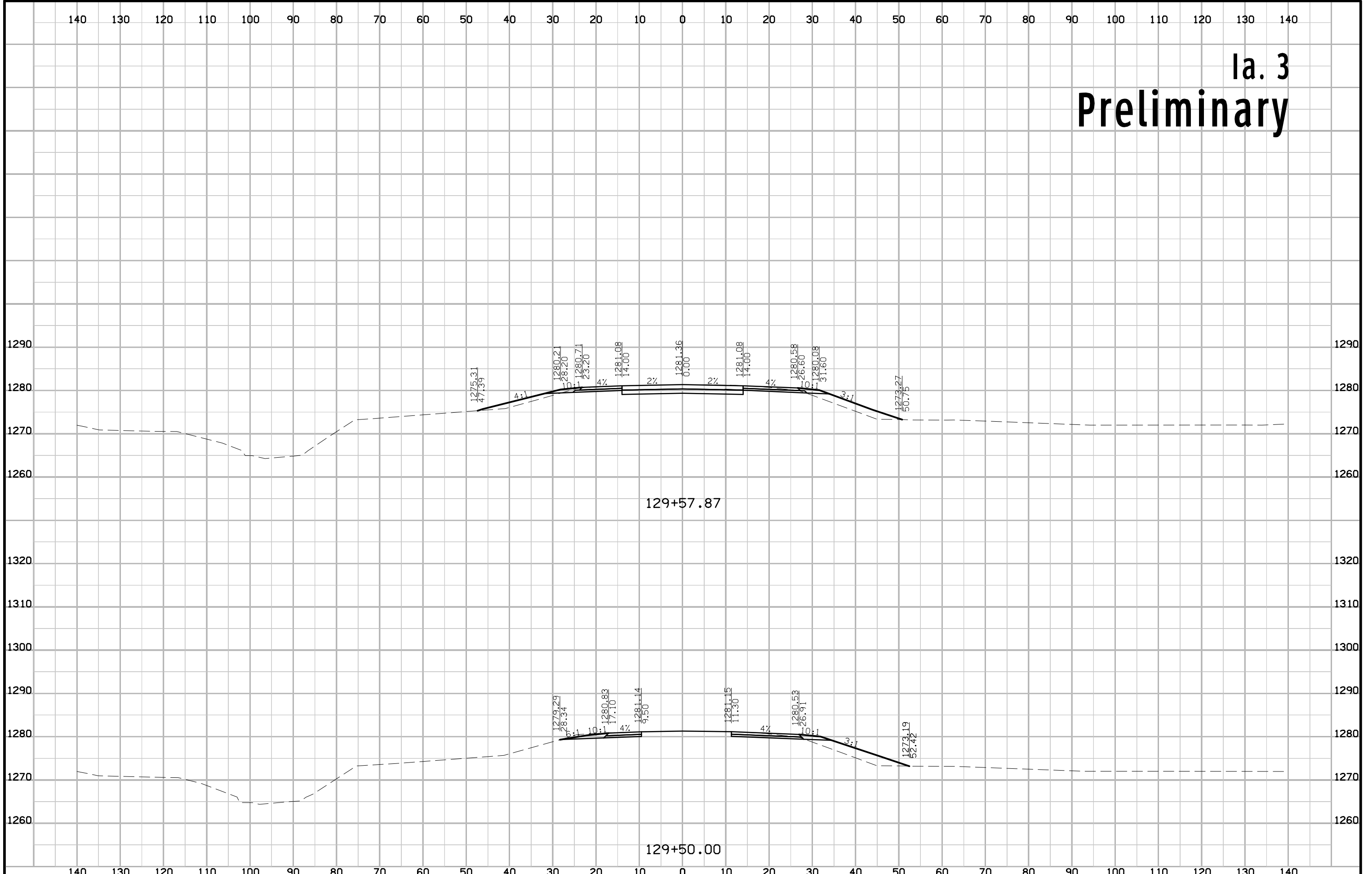
# Ia. 3 Preliminary



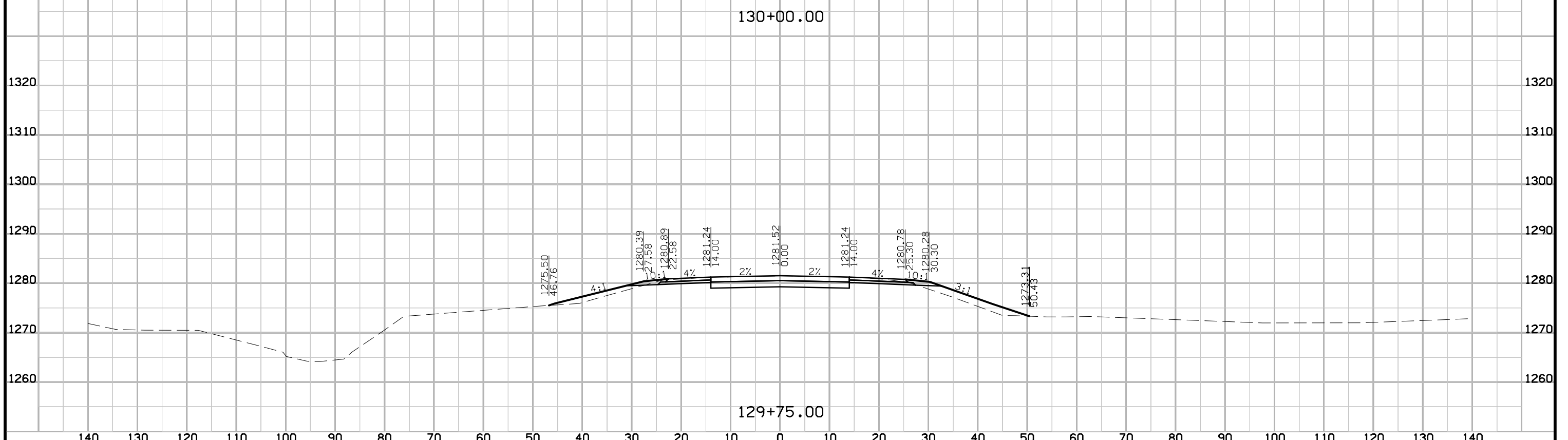
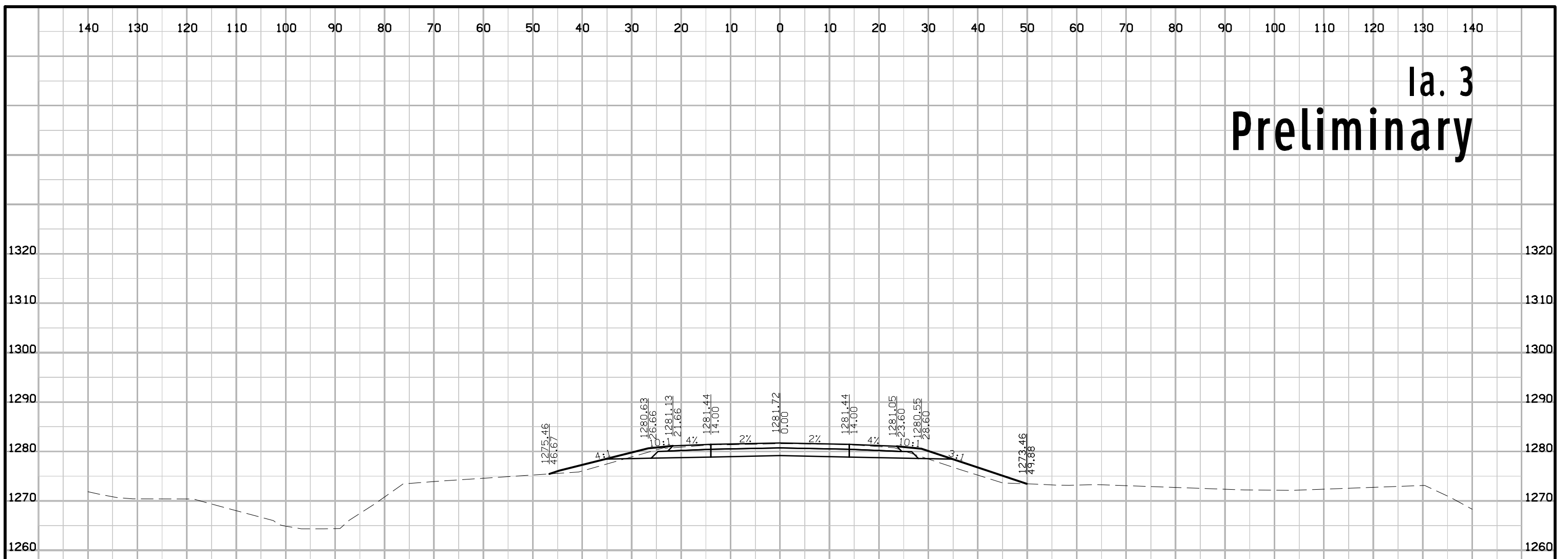
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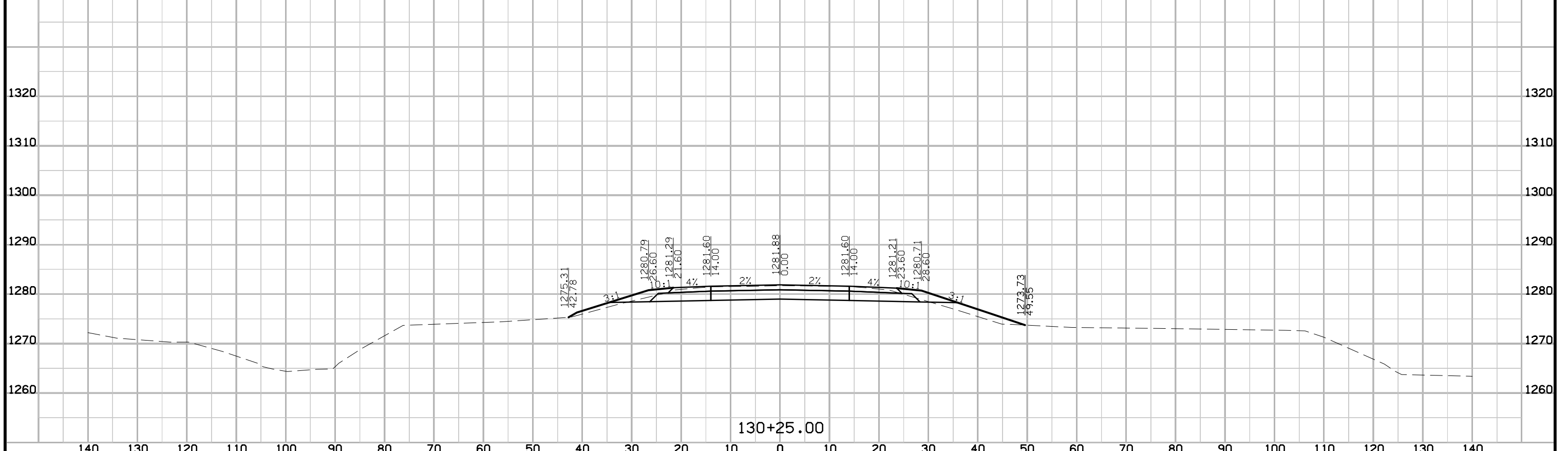
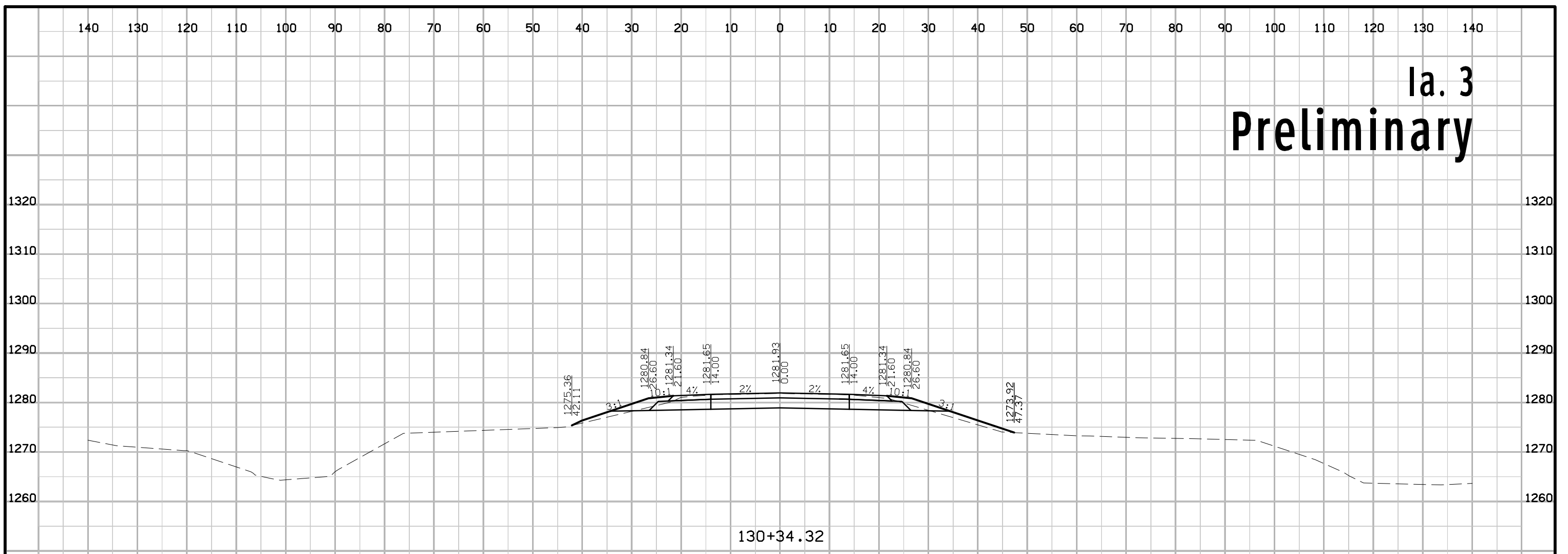
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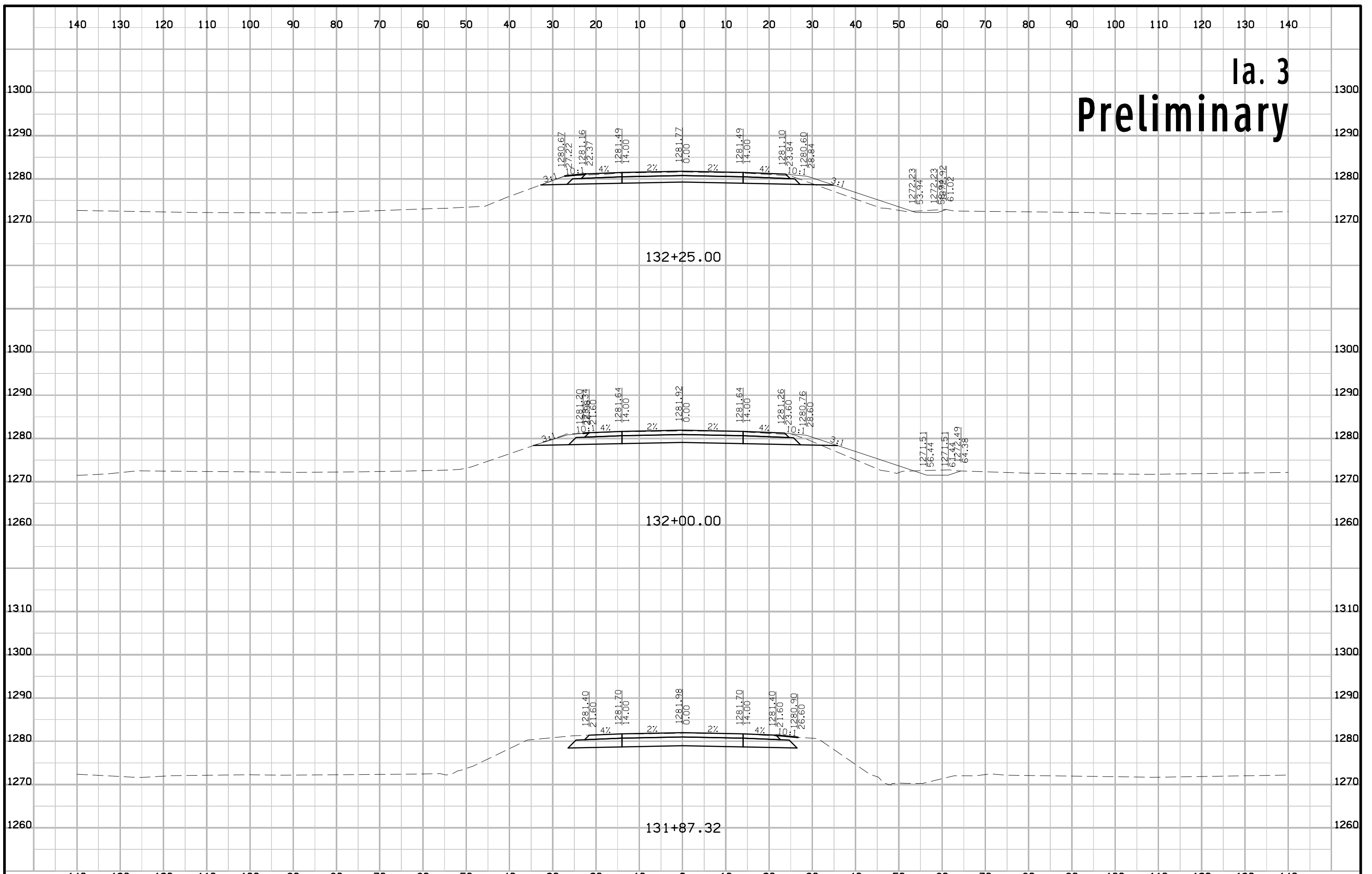
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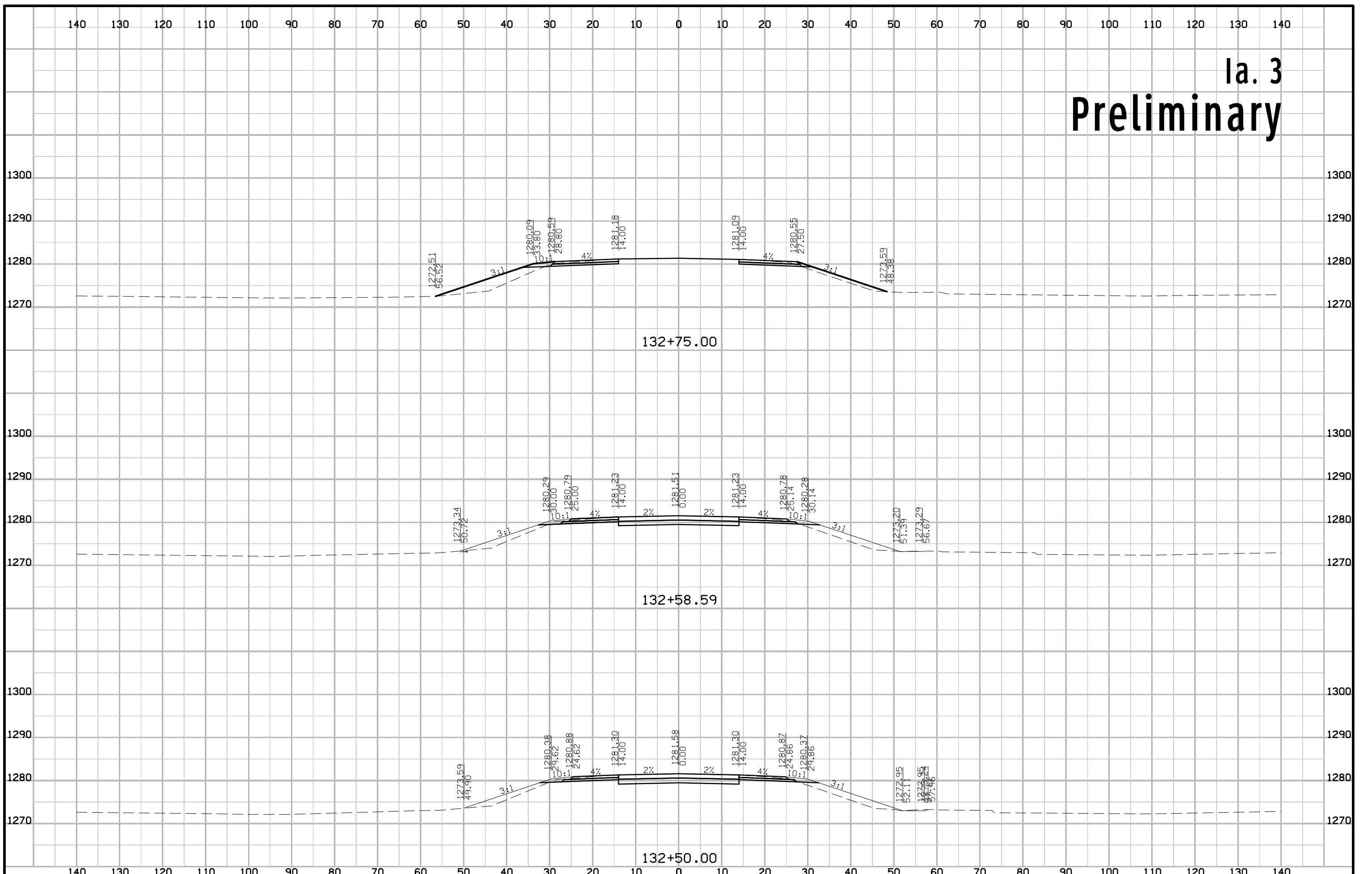
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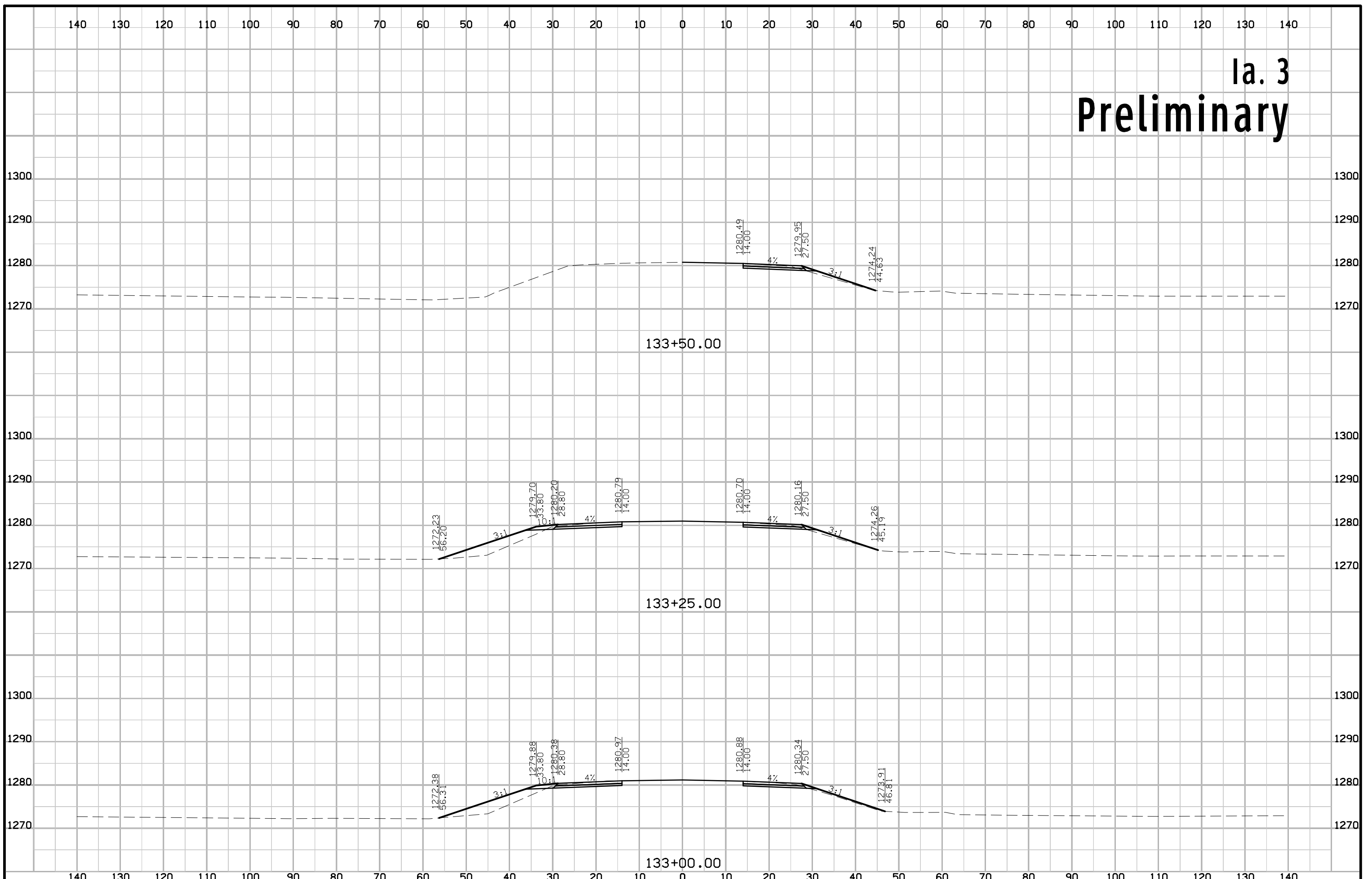
# Ia. 3 Preliminary



# Ia. 3 Preliminary



# Ia. 3 Preliminary





# Ia. 3 Preliminary

