LETTING DATE
12-21-2021

KOSSUTH Co.

BRIDGE REPLACEMENT - PPCB

BRFN-169-8(61)--39-55

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

KOSSUTH COUNTY

BRIDGE REPLACEMENT - PPCB

Black Cat Creek 4.2 mi N of US 18

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

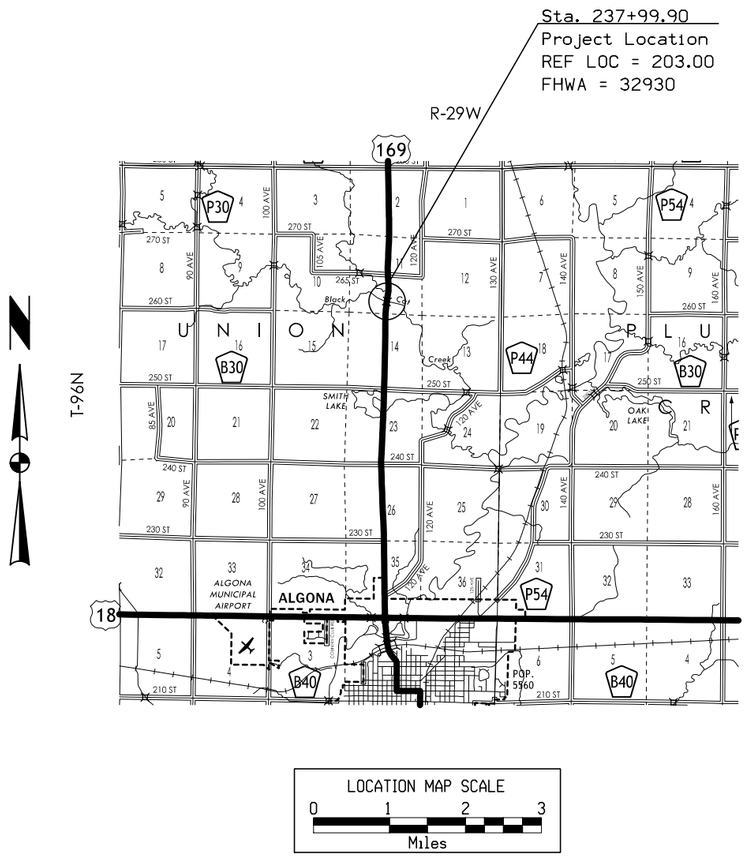
Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

REVISIONS

	TOTAL
	22
PROJECT IDENTIFICATION NUMBER	
17-55-169-010	
PROJECT NUMBER	
BRFN-169-8(61)--39-55	
R.O.W. PROJECT NUMBER	
NHSN-169-8(62)--2R-55	

INDEX OF SHEETS



P9 PLAN – Date: 08/20/2020
D4 PLAN – Date: 08/24/2021

DESIGN DATA RURAL

20	AADT	_____ V.P.D.
20	AADT	_____ V.P.D.
20	DHV	_____ V.P.H.
TRUCKS		_____ %
Total Design ESALs		_____

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1		Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN – Date: 5/27/2020

FILE NO. 31889	ENGLISH	DESIGN TEAM Jia \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER A.1

12:14:54 PM 6/11/2020 bkrug pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5516901017\Design\CADD_Files\Sheet_Files\55169061_A01.sht

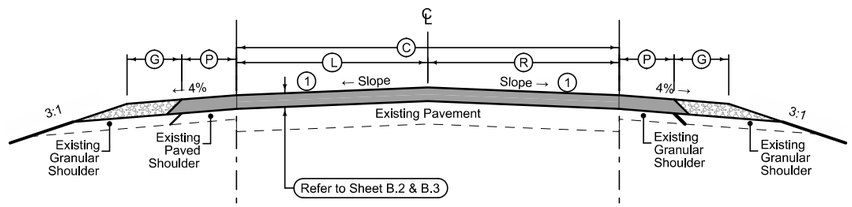
HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

3R_Shldr_Paved_ 04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
235+39.57	235+61.84	4	4
240+62.99	241+30.00	4	4

Match LIne

Match LIne



3R_Overlay_ 04-19-11				
STATION TO STATION		(C) Feet	(L) Feet	(R) Feet
235+39.57	236+33.98	24	12	12
239+65.82	241+30.00	24	12	12

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

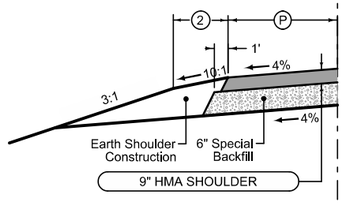
3R_Shldr_Paved_ 04-19-11			
STATION TO STATION		(P) Feet	(G) Feet
240+38.00	241+30.00	4	4

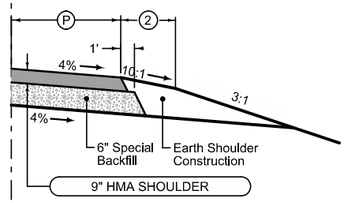
(1) Match Existing

Paved Shoulder at Guardrail

Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION		(P) Feet
235+61.84	236+33.98	11.8-10.8
239+65.82	240+62.99	10.3-9.2





Paved Shoulder at Guardrail

Longitudinal joint: B

2_P_Guard_ 04-21-20		
STATION TO STATION		(P) Feet
235+36.80	236+33.98	9.2-10.5
239+65.82	240+38.00	10.5-11.3

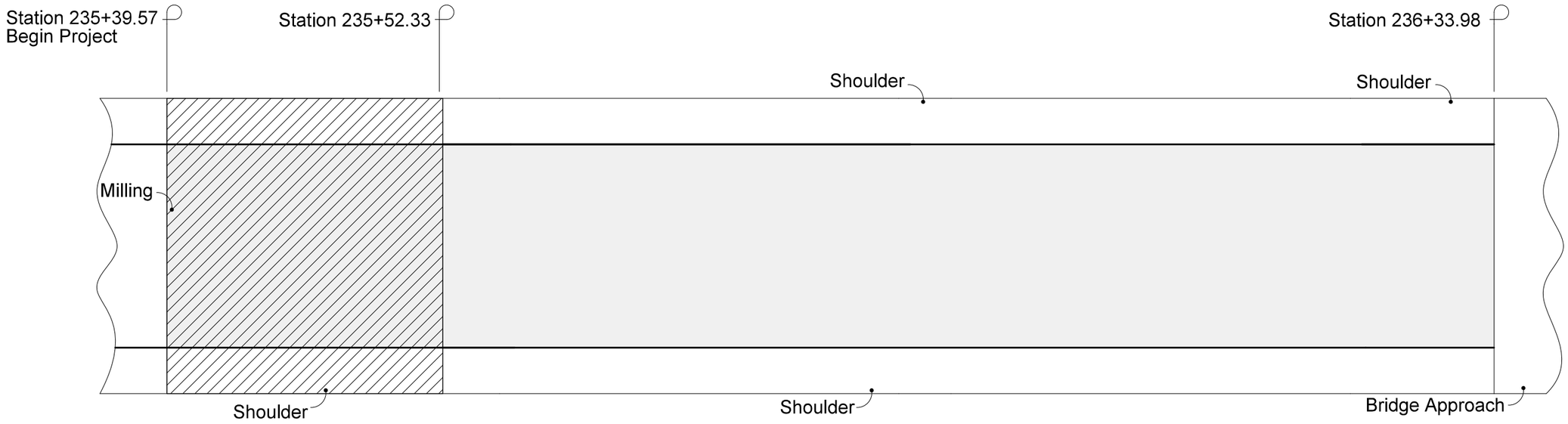
(2) Refer to Standard Road Plan EW-301 for additional information.

See Tab 100-24 or 100-25 for pavement quantities.

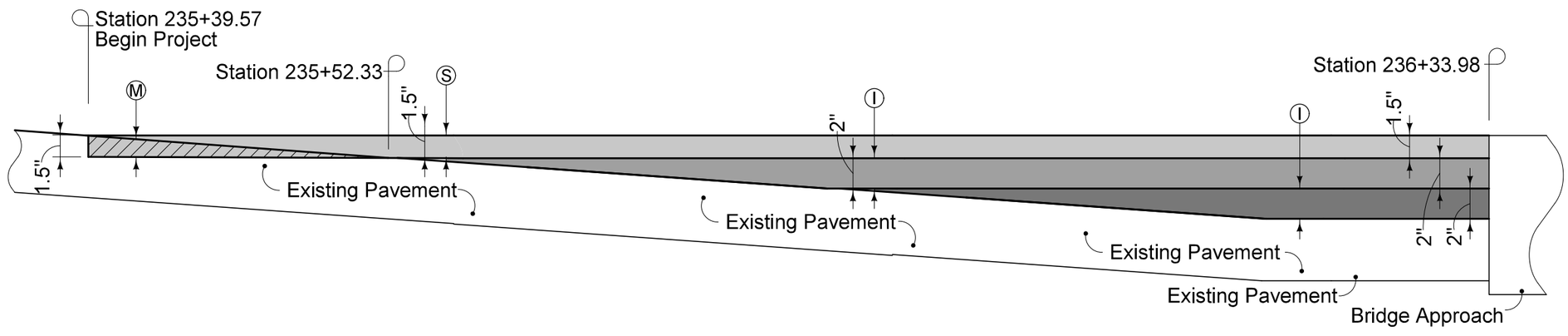
See Tab 112-9 for shoulder quantities.

U.S. 169 RESURFACING

FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER B.1	



PLAN VIEW



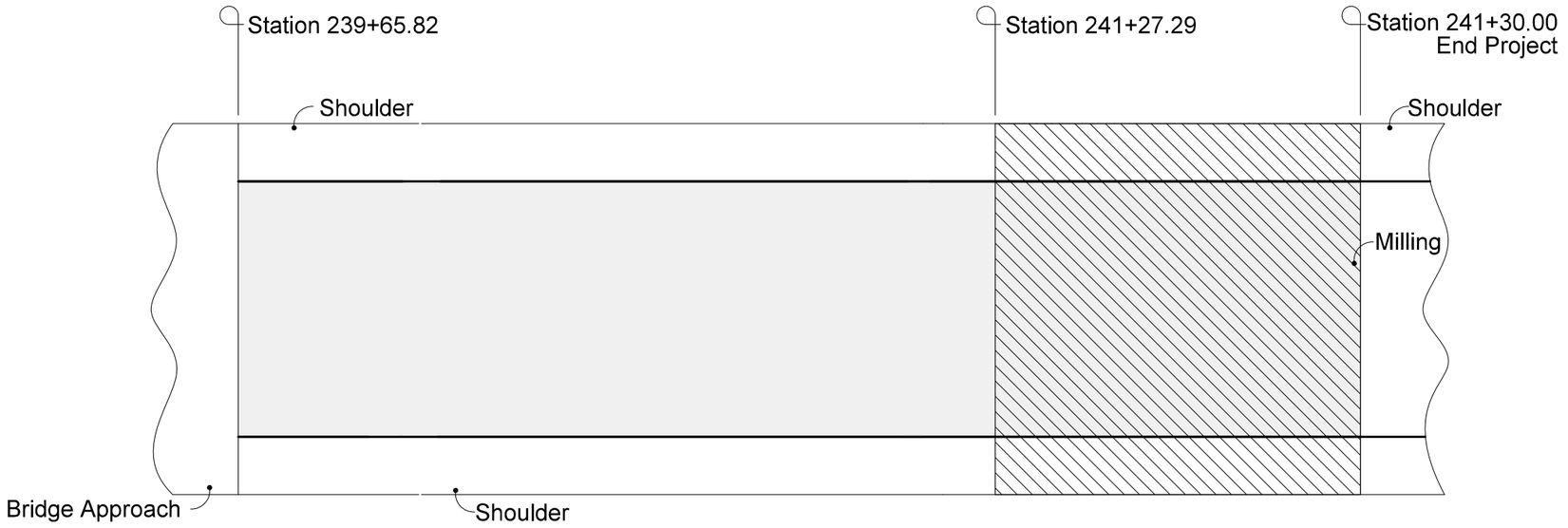
PROFILE VIEW

Ⓢ Surface Course
Ⓘ Intermediate Course
Ⓜ Milling

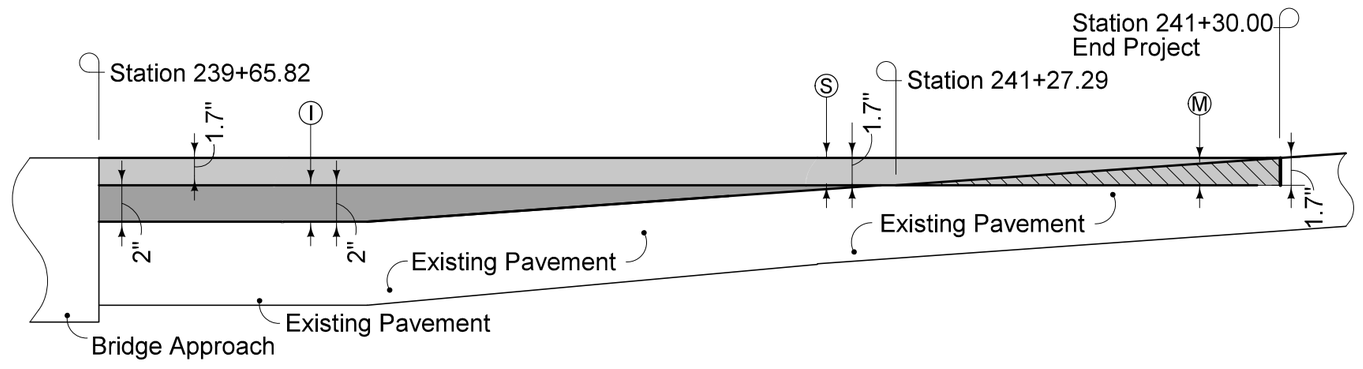
U.S. 169
MILLING & RESURFACING
(SOUTH END)

FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER B.2

11:39:20 AM 5/27/2020 bkrug pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5516901017\Design\CADD_Files\Sheet_Files\55169061_B01.sht



PLAN VIEW



PROFILE VIEW

Ⓢ Surface Course
Ⓘ Intermediate Course
Ⓜ Milling

U.S. 169
MILLING & RESURFACING
(NORTH END)

FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER B.3

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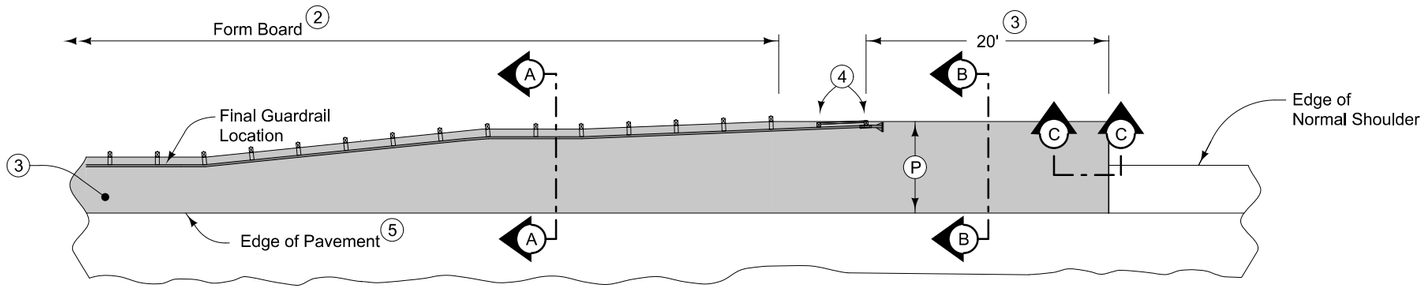
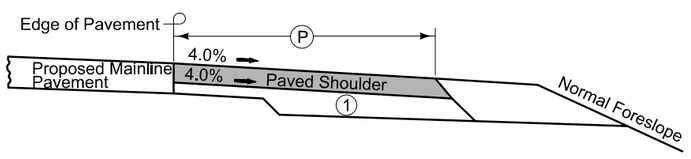


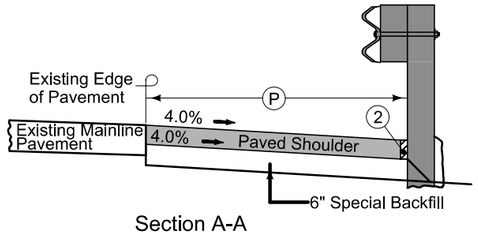
PLAN VIEW

Section A-A

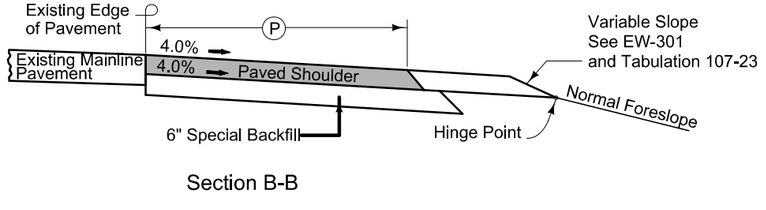


Section B-B

PAVED SHOULDER NEXT TO PROPOSED PAVEMENT



Section A-A



Section B-B

PAVED SHOULDER NEXT TO EXISTING PAVEMENT

7156
Modified

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. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

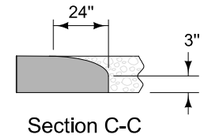
(1) For subgrade treatment, refer to other details in the plan.

(2) 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. Refer to note 4 for final 2 posts.

(3) Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.

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

(5) 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.



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

PAVED SHOULDER AT GUARDRAIL

SURVEY SYMBOLS

- FENO FENO Monument
- PCT Photo Control Target
- TW Top of Water
- PPA Power Pole Co. 1
- BM Bench Mark
- SNP Unpaved Shoulder
- FO — FO1D Fiber Optic Co. 1 - Quality D
- TP TPD Telephone Pedestal
- T1 — TL1D Telephone Line Co. 1 - Quality D
- SIGN SI Sign
- W — WL1D Water Line Co. 1 - Quality D
- WV WV Water Valve
- SCR Section Corner
- REF Reference Tie Point

UTILITY LEGEND

E1

Alliant Energy
Heather Dee
200 1st. St. SE
Cedar Rapids, IA 52401
REROw@alliantenergy.com
(319) 786-8196

FO2

Titonka-Burt Communications
Jim Mayland
247 Main St. N
Titonka, IA 50480
jim.mayland@tbctel.com
(515) 928-2120

FO

Windstream Communications (ILEC)
Terry Burke
641 West Street South
Grinnell, IA 50112
Terry.r.burke@windstream.com
(641) 787-2259

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
- C/A Access Control
- Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO. 31889	ENGLISH	DESIGN TEAM Jia \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER D.1

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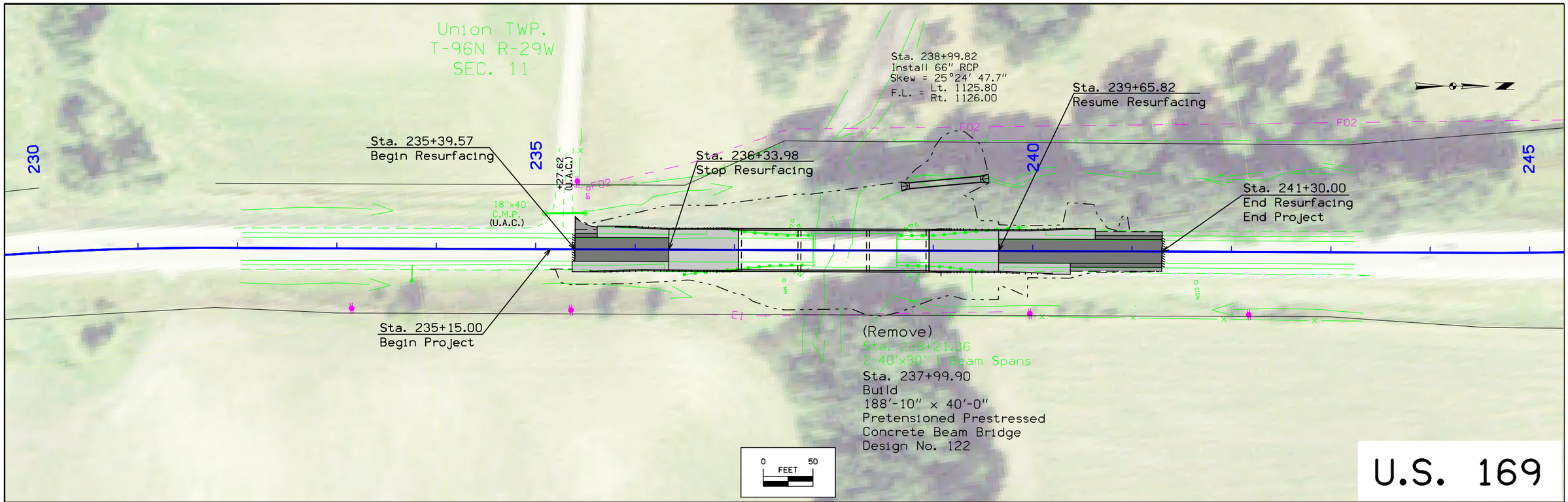

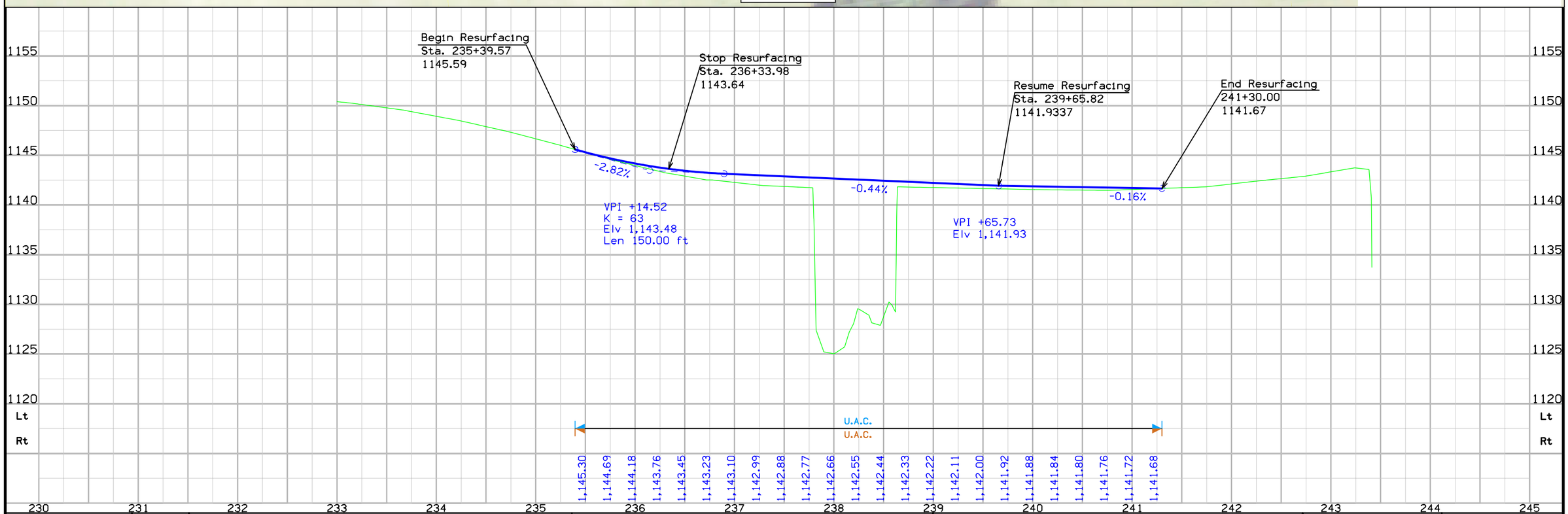

FILE NO. 31889	ENGLISH	DESIGN TEAM J1a\DeWolf\Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER D.2

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Kossuth County
BRFN-169-8(61)--39-55
Black Cat Creek 4.2 mi N of US 18
PIN 17-55-169-010
Sap-7861

Party Personnel

Jeffrey Duncan- Party Chief

Date(s) of Survey

Begin Date	07/15/2019
End Date	07/31/2019

General Information

Measurement units for this survey are US survey feet. This survey is for proposed bridge replacement along US Highway 169. Project datum and control information is provided by Design Survey Office. This project is a Full DTM with Photo control.

Vertical Control

The vertical datum is NAVD88. Vertical Control was established on 3 monuments designated as points K1, CP1, and 566. These monuments are expected to hold vertical reasonably well. Datum was transferred from Iowa RTN reference stations to the projects monuments by using concurrent 6-hour static measurements and post processing connecting vectors. Geoid 12 B was used in processing.

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

NGS 1st. order class 2 designated K1 has a published Elev. of 1152.30
Survey Elev. = 1152.287

This survey observed 1 Kossuth County Control Monument with published NAVD88 heights to compare to local ground control:

Kossuth County mark designated 566 has a published Elev. Of 1177.93
Survey Elev. = 1177.895

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 1 (U.S. Survey Feet). This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinate are relative to the National Reference Station network datum NAD83 (2011) for Epoch 2010.00. Coordinates were determined by using concurrent 6-hour static measurements and post processing connecting vectors. Additional control points were placed throughout the project using a GNSS Base-Rover setups.

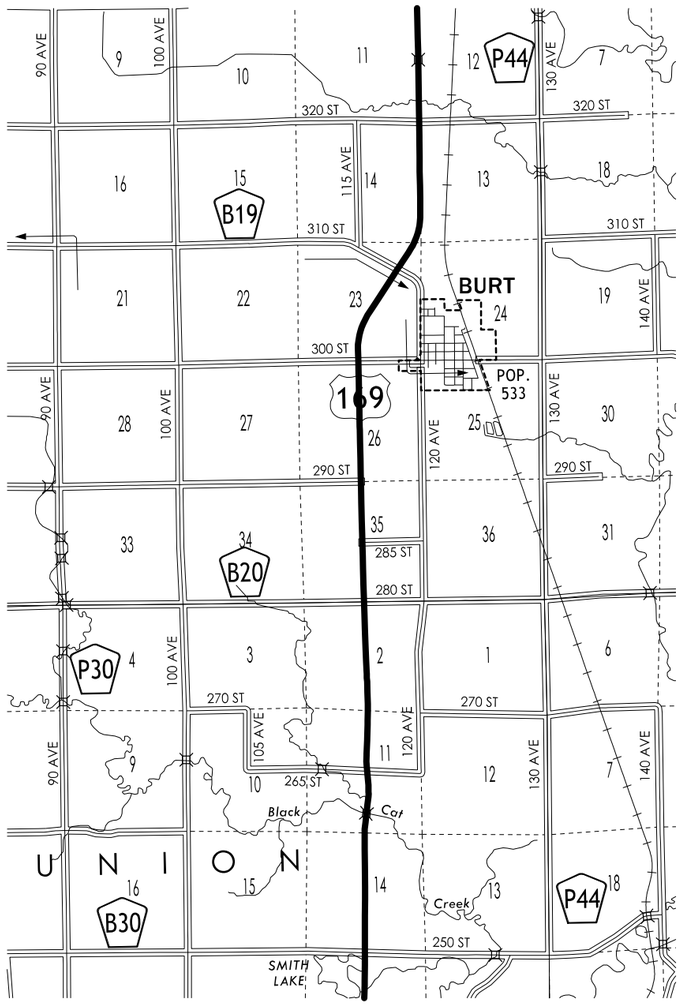
Alignment Information

The horizontal alignment for this survey is provided by District 2 ROW.

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

Ia. Regional Coordinate System Zone 1

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

VERT. DATUM: NAVD88

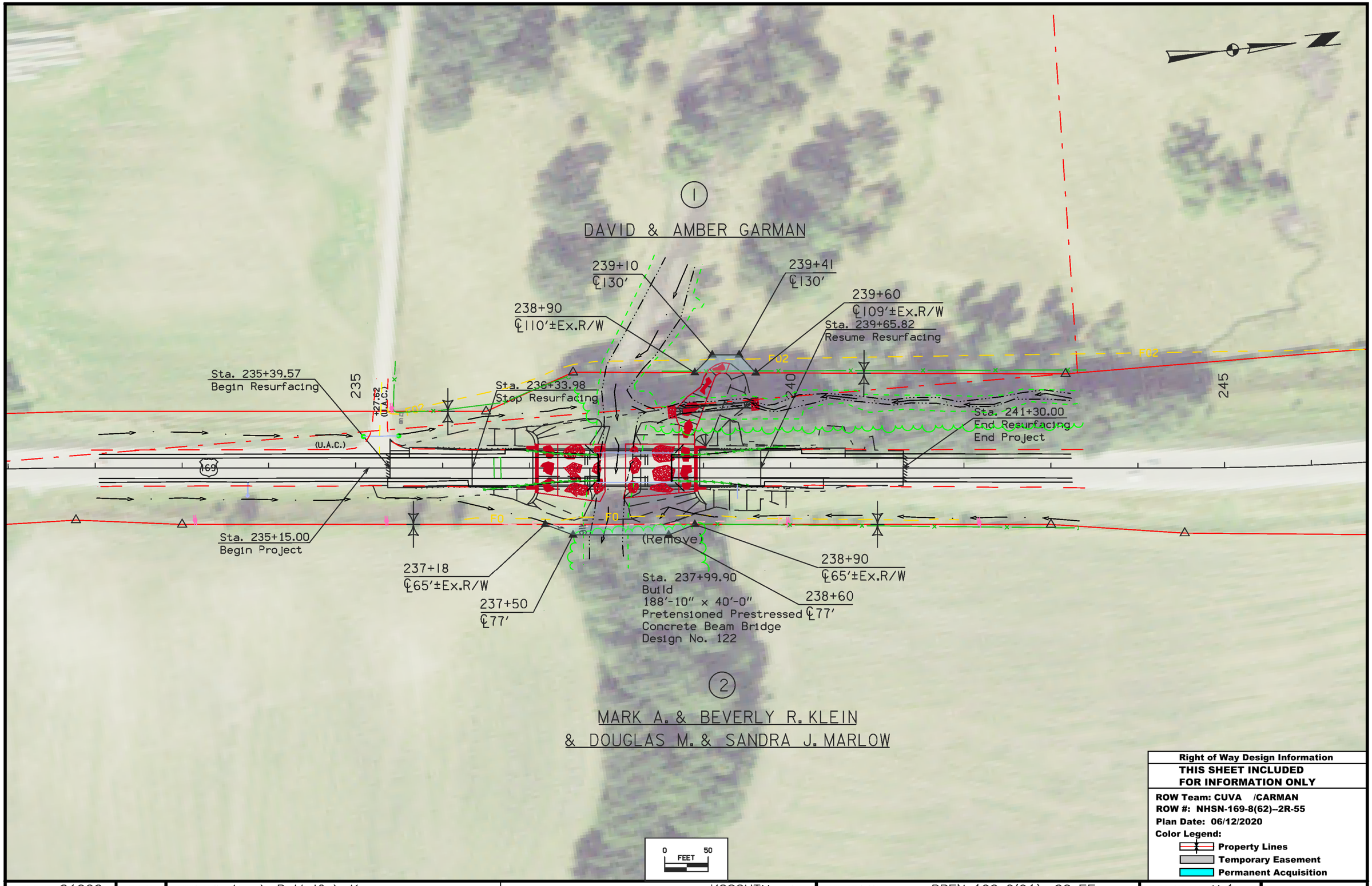
Ia. Regional Coordinate System Zone 1

Point Name	North Coordinate	East Coordinate	Elevation	Feature Code-Description
K1	9611326.819	11774180.98	1152.29	CP NGS MON 0.25 MILE EAST ON 320TH STREET 55 FEET NORTH OF 320 STREET 45.7 FEET WEST OF WEST RAILROAD RAIL 19 FEET NORTH OF FENCE CORNER POST 1.5 FEET SOUTH OF CARSONITE WITNESS POST
CP1	9582706.499	11770471.61	1163.87	CP CM SOUTHWEST QUADRANT AT THE INTERSECTION OF 265TH STREET AND US HIGHWAY 169 57 FEET WEST SOUTHWEST OF STOP SIGN 47 FEET SOUTH CENTERLINE 265TH ST 32 FEET NORTHEAST ROW RAIL 30 FEET EAST CENTERLINE FIELD ENTRANCE
566	9590306.029	11777724.89	1177.9	CP COUNTY GPS MON 200 FEET WEST OF THE INTERSECTION OF 280TH STREET AND 130TH AVE 33 FEET NORTH CENTERLINE 280TH AVE 13 FEET WEST POWER POLE

Kossuth	ROW: NHSN-169-8(62)--2R-55				PIN	17-55-169-010															
	Black Cat Creek 4.2 mi N of US 18																				
		STATE			COUNTY			CITY				TEMP EASE		BORROW							
PARCEL NO.	OWNER NAME	FEE	EASE		FEE	EASE		FEE	EASE		EXCESS			FEE	T.E.	MITIGATION	OTHER	HOUSE	BUILDING(S)	A/C ONLY	TOTAL ACQ.
1	David Garman - Fee	.02 AC																			
2	Douglas M. Marlow - Fee Mark A. Klein - Fee	.04 AC																			
2 Parcels	"TOTALS	0.06 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								

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

ACCESS CONTROL PREVIOUSLY ACQUIRED.



Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: CUVA /CARMAN
ROW #: NHSN-169-8(62)--2R-55
Plan Date: 06/12/2020
Color Legend:
- **Property Lines**
- **Temporary Easement**
- **Permanent Acquisition**

FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER H.1

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

U.S. 169 will be closed during construction. Through traffic shall be detoured (by others) to County Road B-30, P-30, and B-19.
Refer to Sheet J.2 for the proposed detour.

111-01
04-17-12

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.

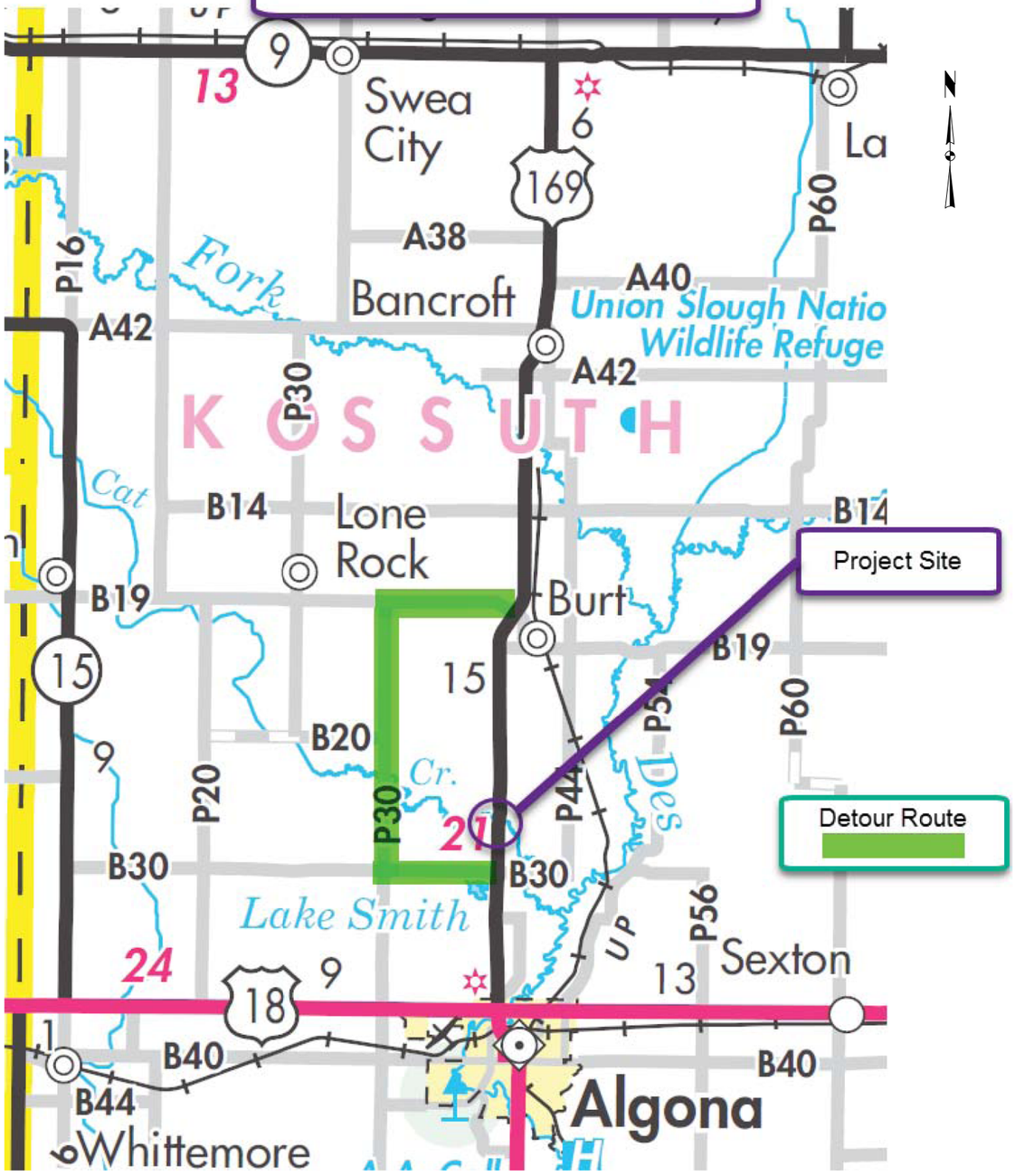
Project	Type of Work
None at the moment.	

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
			No travel restriction expected.									

Detour Route
Kossuth County
BRFN-169-8(61)--39-55
Black Cat Creek 4.2 Miles North of US 18



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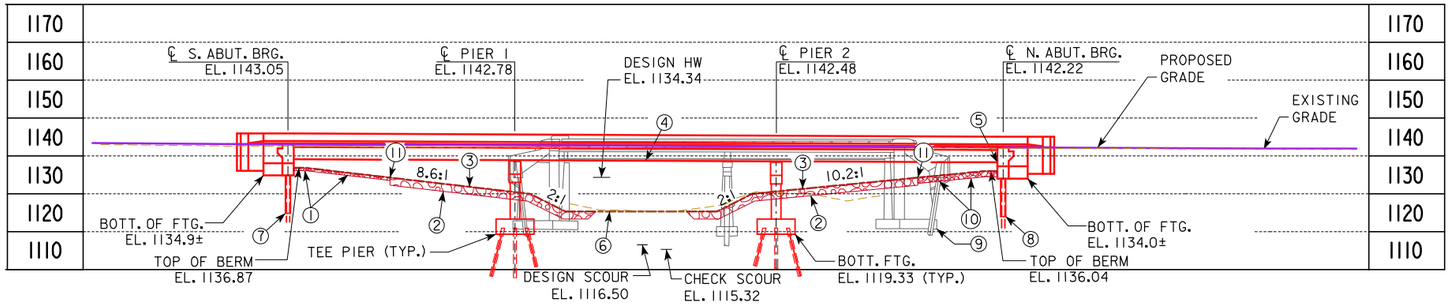
BENCH MARK NO. CPI N 9582706.50, E 1177047I.6I, CM SW QUAD AT THE INTERSECTION OF 265TH STREET AND US 169, 57' WEST SW OF STOP SIGN, 47' SOUTH CENTERLINE 265TH STREET, 32' NE ROW RAIL, 30' EAST CENTERLINE FIELD ENTRANCE, ELEV. 1163.87



LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY

① BERM PROTECTION
EROSION STONE (0-9 THICK. MIN.)
UNDERLAIN W/ ENGR. FABRIC

② BERM PROTECTION
CLASS E REVET. (2' THICK. MIN.)
UNDERLAIN W/ ENGR. FABRIC

③ GRADING SURFACE

④ REGULATORY LOW BEAM

⑤ OPERATIONAL LOW BEAM

⑥ STREAMBED EL. 1125.33

⑦ PRE BORE HOLES, 1'-4 DIA., BOTTOM EL. 1124.87

⑧ PRE BORE HOLES, 1'-4 DIA., BOTTOM EL. 1124.04

⑨ EXISTING BRIDGE
80' X 30' I BEAM
DES # 157
TO BE REMOVED

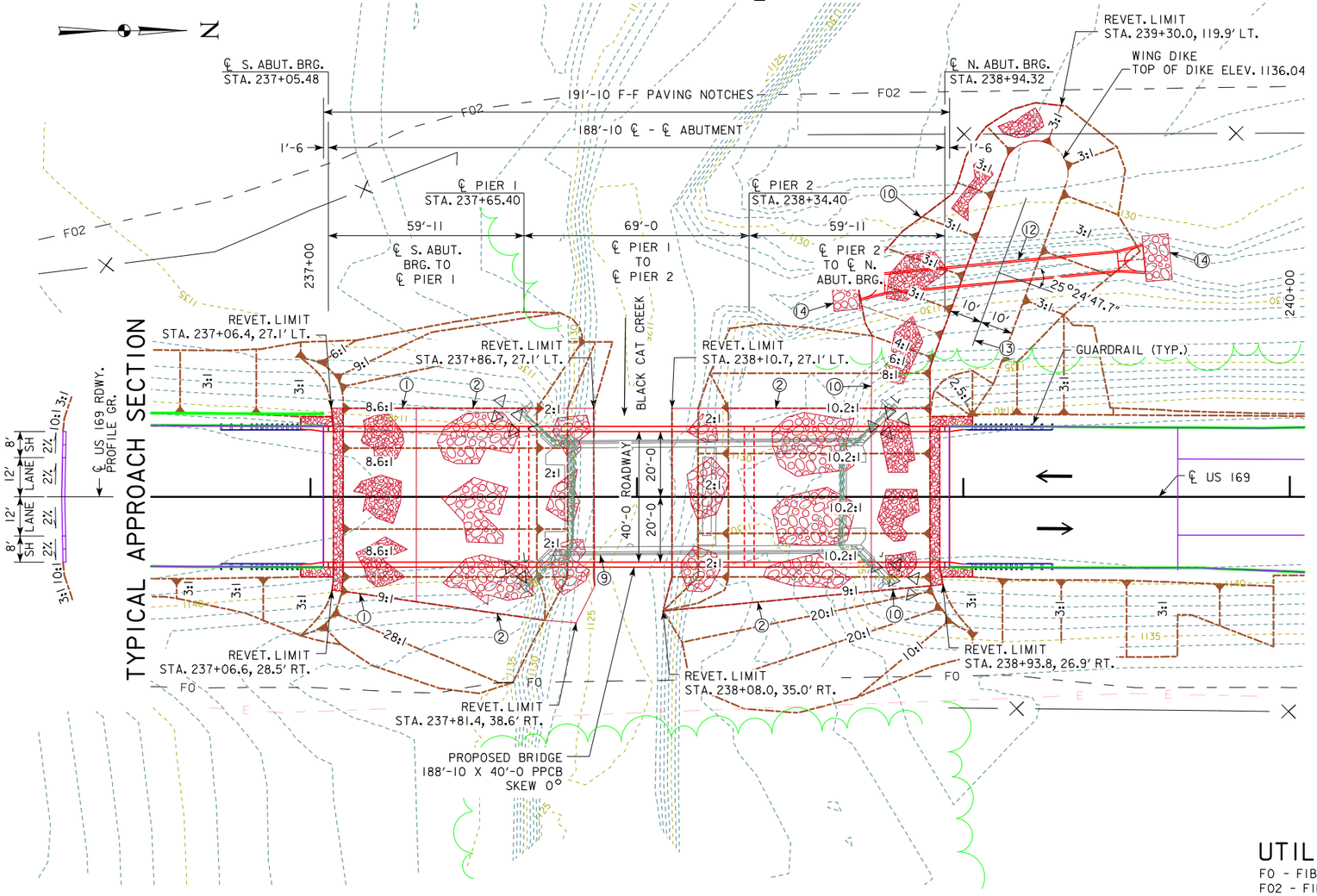
⑩ BERM PROTECTION
EROSION STONE (1-6 THICK. MIN.)
UNDERLAIN W/ ENGR. FABRIC

⑪ EXTEND CLASS E REVET.
TO ELEVATION 1134.34

⑫ 66 IN. RCP CULVERT; SEE ROAD SHEETS FOR TABULATION.
℄ OF PIPE AT ℄ OF WING DIKE = STA. 239+10.98, 68.68' LT.
FLOW LINE NOMINALLY BURIED 6 INCHES.

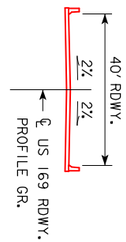
⑬ ℄ OF WING DIKE

⑭ CLASS E REVET. SPLASH PAD UNDERLAIN W/ ENGR. FABRIC



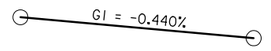
TYPICAL APPROACH SECTION

TYPICAL BRIDGE SECTION



SITUATION PLAN

NOTES:
TL-4 BRIDGE RAILING PROPOSED.
TOP OF BRIDGE DECK CROWN 0.03' BELOW PROFILE GRADE



VPT STA. = 236+89.52
VPT ELEV. = 1143.15
VPC STA. = 239+65.73
VPC ELEV. = 1141.93

PROPOSED PROFILE GRADE US 169

HYDRAULIC DATA

DRAINAGE AREA = 108 SQ. MI.
STREAM SLOPE = 4.2 FT./MI.
AVG. LOW WATER STAGE = 1128.0

Q_{50} = 3,957 CFS
STAGE = 1134.34
REGULATORY LOW BEAM = 1138.20
BACKWATER = 0.67 FT.
AVG. BRIDGE VELOCITY = 6.0 FPS

Q_{100} = 4,762 CFS
STAGE = 1134.67
OPERATIONAL LOW BEAM = 1137.79
BACKWATER = 0.95 FT.
AVG. BRIDGE VELOCITY = 6.7 FPS

Q_{200} = 5,200 CFS
STAGE = 1134.92
CALCULATED DESIGN SCOUR = 1116.50

Q_{500} = 6,300 CFS
STAGE = 1135.28
AVG. BRIDGE VELOCITY = 7.8 FPS
CALCULATED CHECK SCOUR = 1115.32

ROADWAY OVERTOP 1141.7
STA. 241+30.0

EXTREME HW STAGE = UNKNOWN
DATE = UNKNOWN

LOCATION

US 169 OVER BLACK CAT CREEK
T-96N R-29W
SECTION 11
UNION TOWNSHIP
KOSSUTH COUNTY
BRIDGE MAINT. NO. 5503.0SI69
FHWA NO. 32931
LATITUDE 43.143059°
LONGITUDE -94.236395°

TRAFFIC ESTIMATE

2022 AADT	2,700	V.P.D.
2042 AADT	2,800	V.P.D.
202_ DHV	_	V.P.H.
TRUCKS	14	%
TOTAL DESIGN ESALs	_	

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

UTILITIES LEGEND:

FO - FIBER OPTIC - WINDSTREAM
FO2 - FIBER OPTIC - TITONKA COMMUNICATIONS
E - ELECTRIC - ALLIANT ENERGY

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

DESIGN FOR 0° SKEW

188'-10 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

59'-11 END SPANS B BEAMS 69'-0 CENTER SPAN

SITUATION PLAN

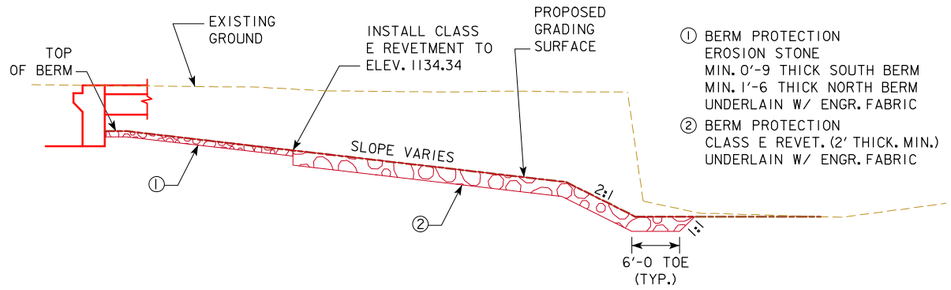
STATION 237+99.90 APRIL 2020

KOSSUTH COUNTY

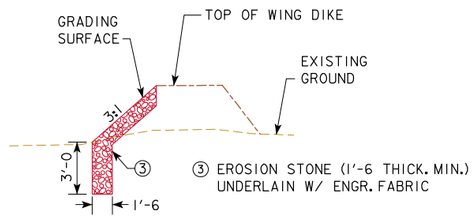
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 31889 DESIGN NO. 122

DESIGN TEAM	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER V.1



TYPICAL SECTION AT BRIDGE BERM AND STREAMBANK
NOT TO SCALE



TYPICAL SECTION AT
WING DIKE
NOT TO SCALE

BERM SLOPE LOCATION TABLE

	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	237+69.37	24.58' LT	1130.00	238+28.07	24.58' LT	1130.00
A2	237+69.37	0	1130.00	238+28.07	0	1130.00
A3	237+69.37	24.58' RT	1130.00	238+28.07	24.58' RT	1130.00
A4	237+78.72	24.58' LT	1125.33	238+18.72	24.58' LT	1125.33
A5	237+78.72	0	1125.33	238+18.72	0	1125.33
A6	237+78.72	24.58' RT	1125.33	238+18.72	24.58' RT	1125.33
B1	237+09.98	24.58' LT	1136.87	238+89.82	24.58' LT	1136.04
B2	237+09.98	0	1136.87	238+89.82	0	1136.04
B3	237+09.98	24.58' RT	1136.87	238+89.82	24.58' RT	1136.04
G1	236+96.98	42.57' LT	1136.87	238+28.53	51.57' LT	1129.30
G2	237+13.99	47.93' LT	1134.80	238+72.11	49.31' LT	1131.00
G3	237+76.37	56.38' LT	1131.80	238+76.66	76.13' LT	1127.75
G4	237+83.19	47.47' LT	1128.51	239+07.17	113.56' LT	1132.40
G5	236+96.98	42.56' RT	1136.87	239+31.42	119.73' LT	1131.80
G6	237+61.99	56.95' RT	1134.75	239+47.51	86.17' LT	1129.80
G7	237+71.71	37.86' RT	1129.95	238+99.82	38.00' LT	1136.04
G8				239+22.05	99.08' LT	1136.04
G9				239+02.82	41.38' RT	1136.04
G10				238+08.03	34.99' RT	1126.94
G11				238+13.89	44.58' RT	1132.20
G12				238+18.20	58.79' RT	1132.80
W1	236+96.98	24.58' LT	1142.53	239+02.82	24.58' LT	1141.65
W2	236+96.98	24.58' RT	1142.53	239+02.82	24.58' RT	1141.65

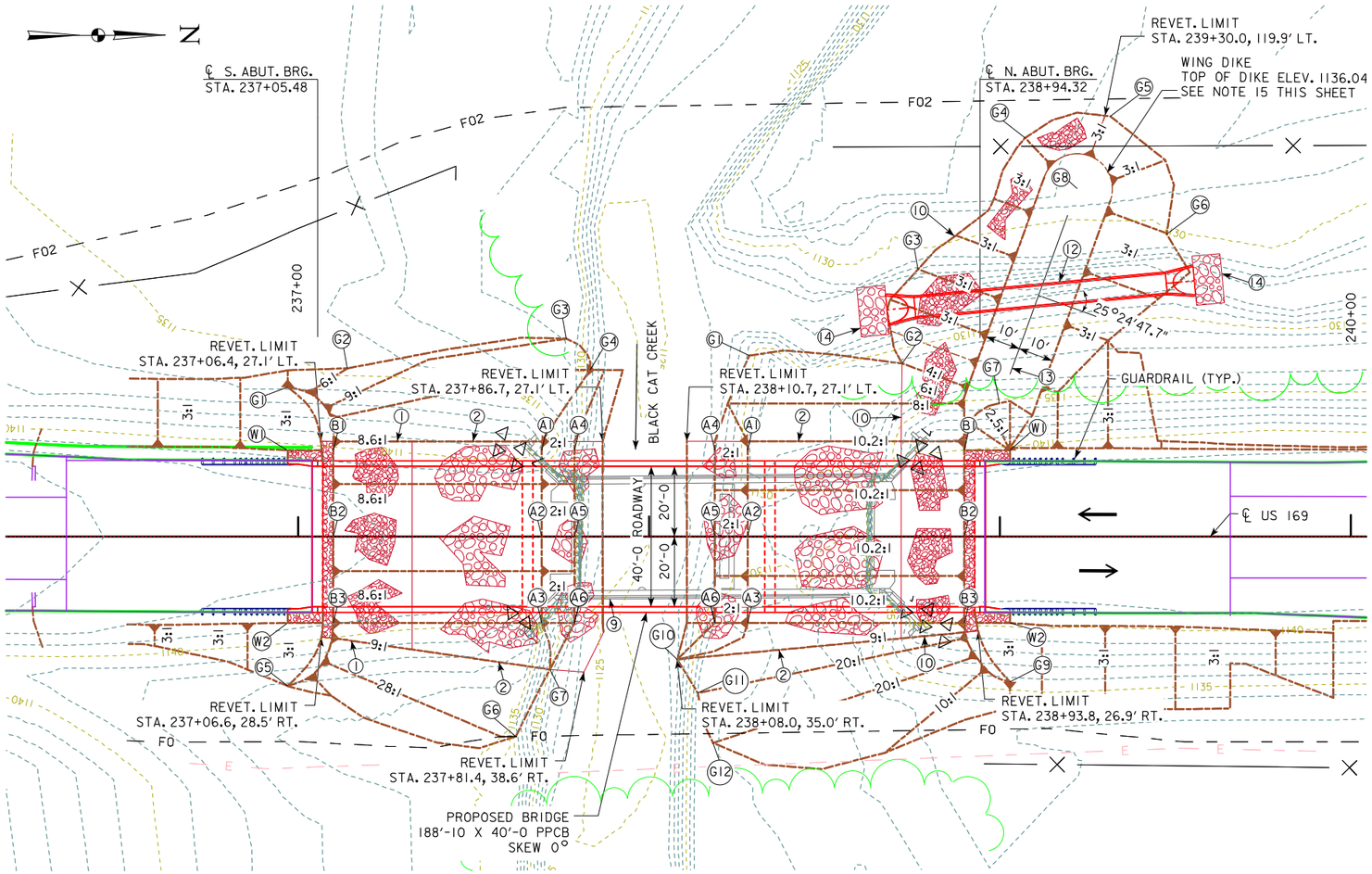
W - END WING / EROSION STONE
BERM SLOPE TABLE ELEVATIONS REFLECT GRADING SURFACE

GRADING CONTROL-SOUTH:

POINTS A4, A5, A6 ARE BANK GRADING CONTROL LINE

GRADING CONTROL-NORTH:

POINTS A4, A5, A6 ARE BANK GRADING CONTROL LINE



SITE PLAN

ESTIMATED ARMORING QUANTITIES

LOCATION	REVETMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING - SOUTH ABUTMENT	420	67	625	298
BERM AND WING DIKE LINING - NORTH ABUTMENT	434	286	503	466
66 IN. RCP APRON SOUTH SPLASH PAD	14		23	9
66 IN. RCP APRON NORTH SPLASH PAD	14		23	9
TOTALS	882	353	1,174	782

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

⑫ 66 IN. RCP CULVERT; SEE ROAD SHEETS FOR TABULATION.
℄ OF PIPE AT ℄ OF WING DIKE = STA. 239+10.98, 68.68' LT.
FLOW LINE NOMINALLY BURIED 6 INCHES.

⑬ ℄ OF WING DIKE

⑭ CLASS E REVET. SPLASH PAD UNDERLAIN W/ ENGR. FABRIC

⑮ REFER TO IDOT STANDARD ROAD PLAN EW-210 FOR DETAILS.
GRADING SHOWN FOR DIKE BASED ON 0° SKEWED BRIDGE DETAIL IN ROAD PLAN.
WING DIKE LOCATION STATION 238+99.82

0 ENGLISH 40
SCALE IN FEET

① BERM PROTECTION EROSION STONE (0-9 THICK. MIN.) UNDERLAIN W/ ENGR. FABRIC

② BERM PROTECTION CLASS E REVET. (2' THICK. MIN.) UNDERLAIN W/ ENGR. FABRIC

⑨ EXISTING BRIDGE 80' X 30' I BEAM DES # 157 TO BE REMOVED

⑩ BERM PROTECTION EROSION STONE (1-6 THICK. MIN.) UNDERLAIN W/ ENGR. FABRIC

PRELIMINARY

DESIGN FOR 0° SKEW

188'-10 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

59'-11 END SPANS B BEAMS 69'-0 CENTER SPAN

SITUATION PLAN - SITE

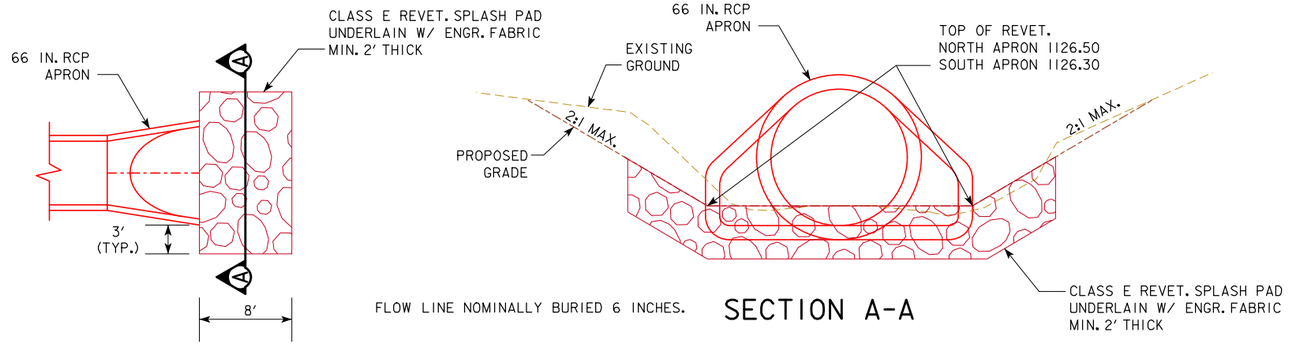
STATION 237+99.90 APRIL 2020

KOSSUTH COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 31889 DESIGN NO. 122

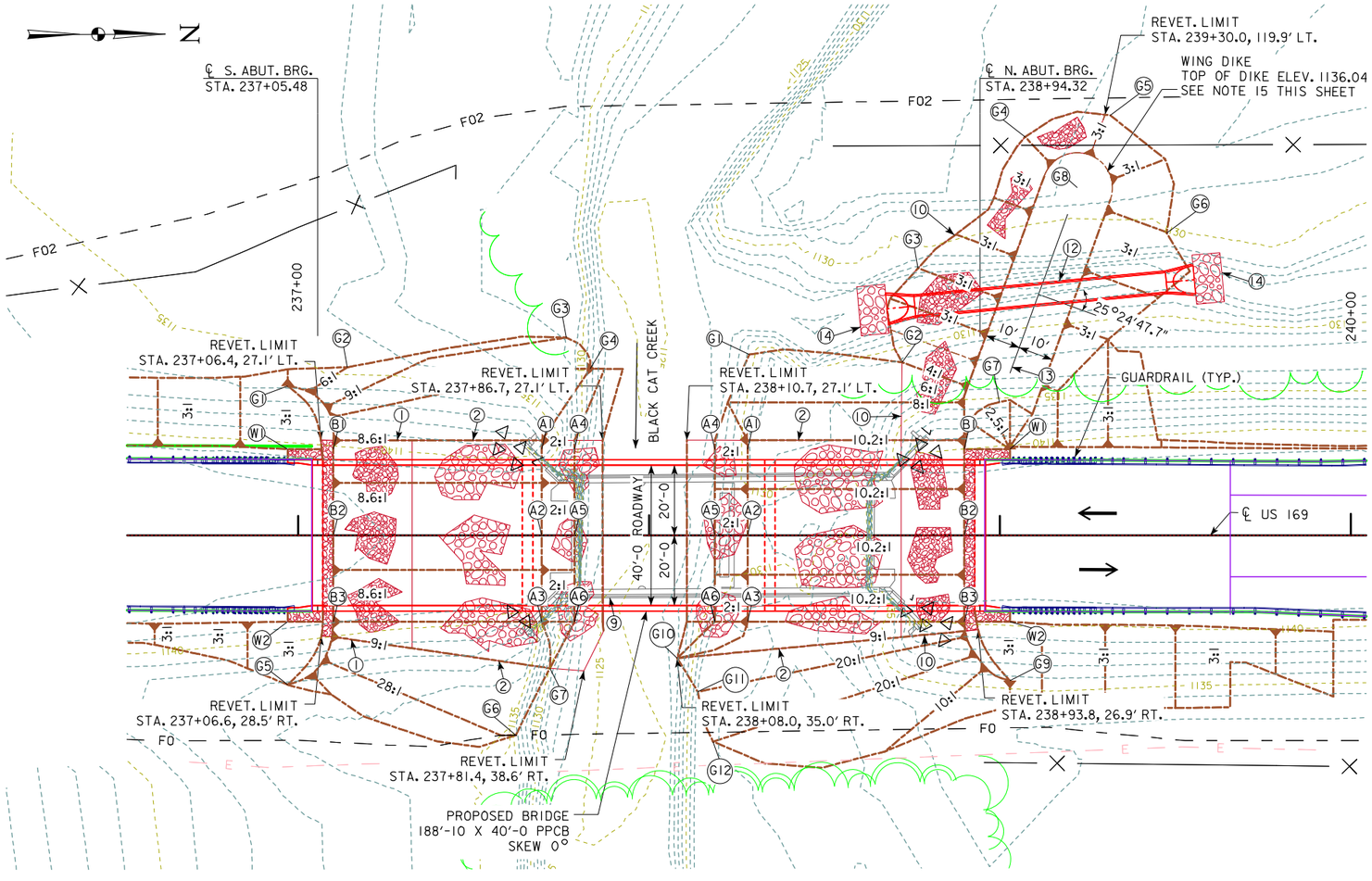
DESIGN TEAM | KOSSUTH COUNTY | PROJECT NUMBER BRFN-169-8(61)--39-55 | SHEET NUMBER V.2



FLOW LINE NOMINALLY BURIED 6 INCHES.

SECTION A-A

66 IN. RCP APRON WITH SPLASH PAD DETAILS NOT TO SCALE



DETAILS

⑫ 66 IN. RCP CULVERT; SEE ROAD SHEETS FOR TABULATION.
℄ OF PIPE AT ℄ OF WING DIKE = STA. 239+10.98, 68.68' LT.
FLOW LINE NOMINALLY BURIED 6 INCHES.

⑬ ℄ OF WING DIKE

⑭ CLASS E REVET. SPLASH PAD UNDERLAIN W/ ENGR. FABRIC

⑮ REFER TO IDOT STANDARD ROAD PLAN EW-210 FOR DETAILS.
GRADING SHOWN FOR DIKE BASED ON 0° SKEWED BRIDGE DETAIL IN ROAD PLAN.
WING DIKE LOCATION STATION 238+99.82

0 ENGLISH 40
SCALE IN FEET

Ⓘ BERM PROTECTION
EROSION STONE (0-9 THICK. MIN.)
UNDERLAIN W/ ENGR. FABRIC

② BERM PROTECTION
CLASS E REVET. (2' THICK. MIN.)
UNDERLAIN W/ ENGR. FABRIC

⑨ EXISTING BRIDGE
80' X 30' I BEAM
DES # 157
TO BE REMOVED

⑩ BERM PROTECTION
EROSION STONE (1-6 THICK. MIN.)
UNDERLAIN W/ ENGR. FABRIC

HYDRAULIC DESIGN

LICENSED PROFESSIONAL ENGINEER
David J. Mulholland
14746
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.

David J. Mulholland 4/20/20
Signature Date

David J. Mulholland
Printed or Typed Name

My license renewal date is December 31, 2020

Pages or sheets covered by this seal: V.1-V.3

PRELIMINARY

DESIGN FOR 0° SKEW

188'-10 X 40'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

59'-11 END SPANS B BEAMS 69'-0 CENTER SPAN

DETAILS

STATION 237+99.90 APRIL 2020

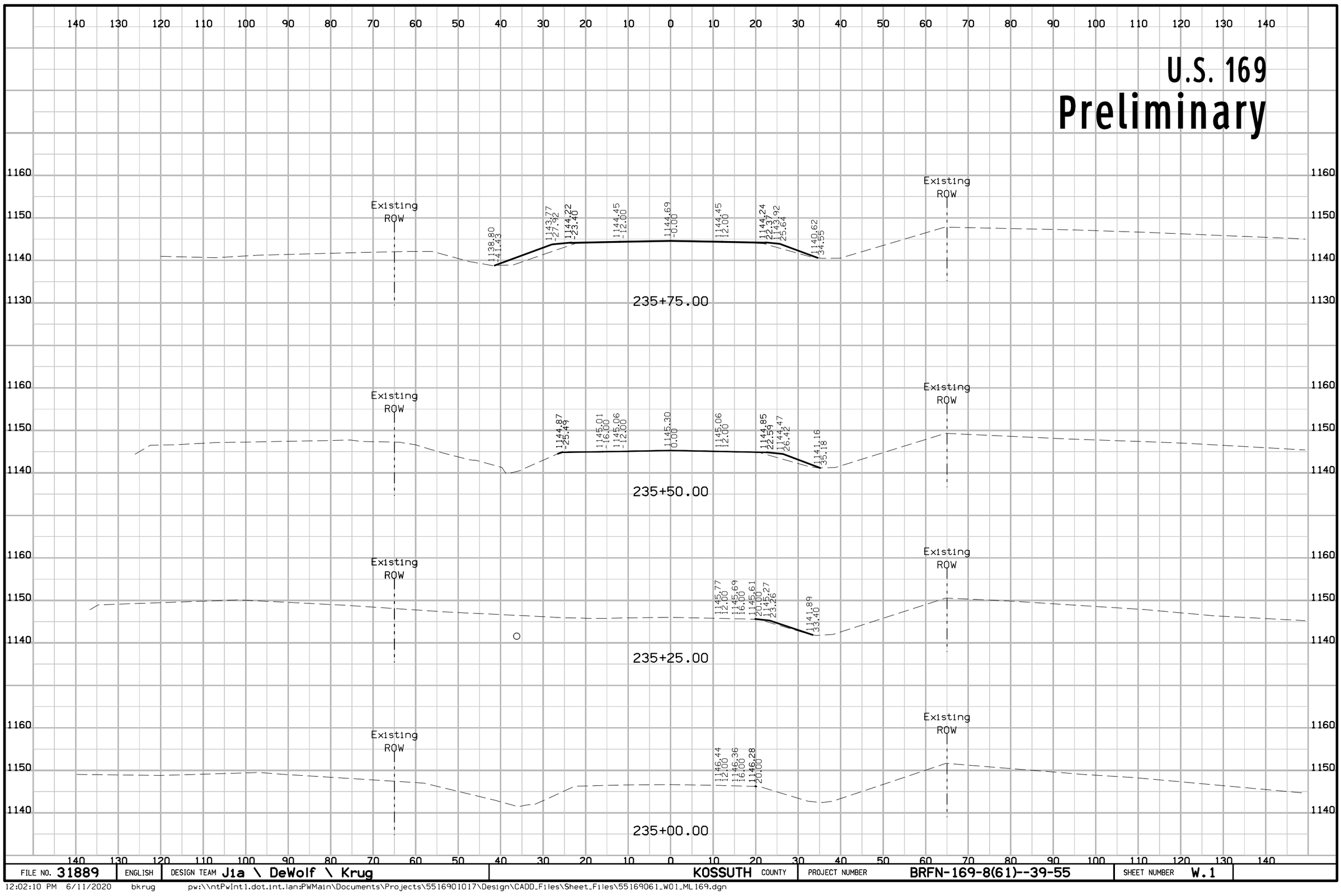
KOSSUTH COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 31889 DESIGN NO. 122

DESIGN TEAM | KOSSUTH COUNTY | PROJECT NUMBER BRFN-169-8(61)--39-55 | SHEET NUMBER V.3

U.S. 169
Preliminary



FILE NO. 31889	ENGLISH	DESIGN TEAM Jia \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER W.1

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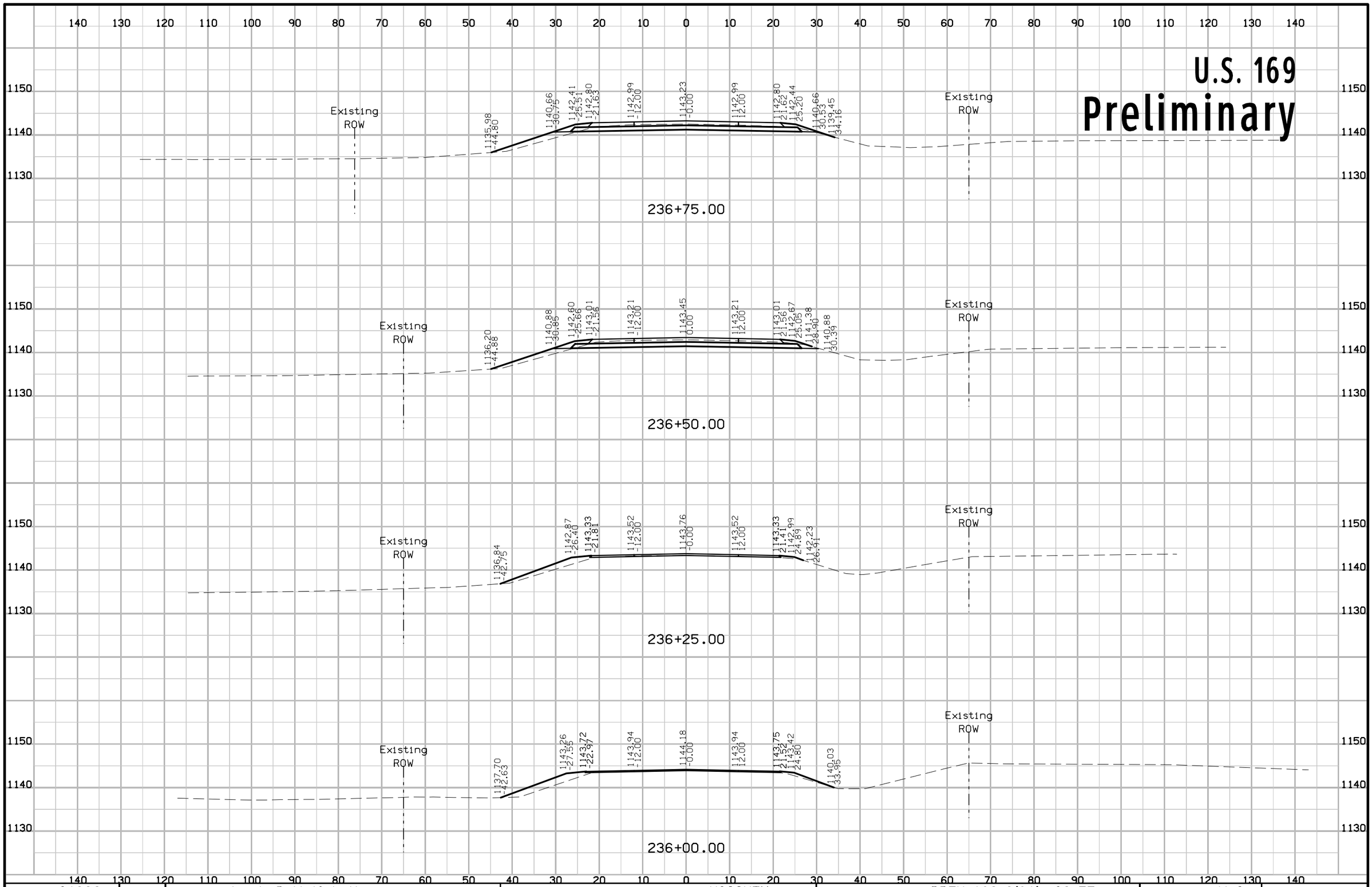
U.S. 169
Preliminary



FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER W.2

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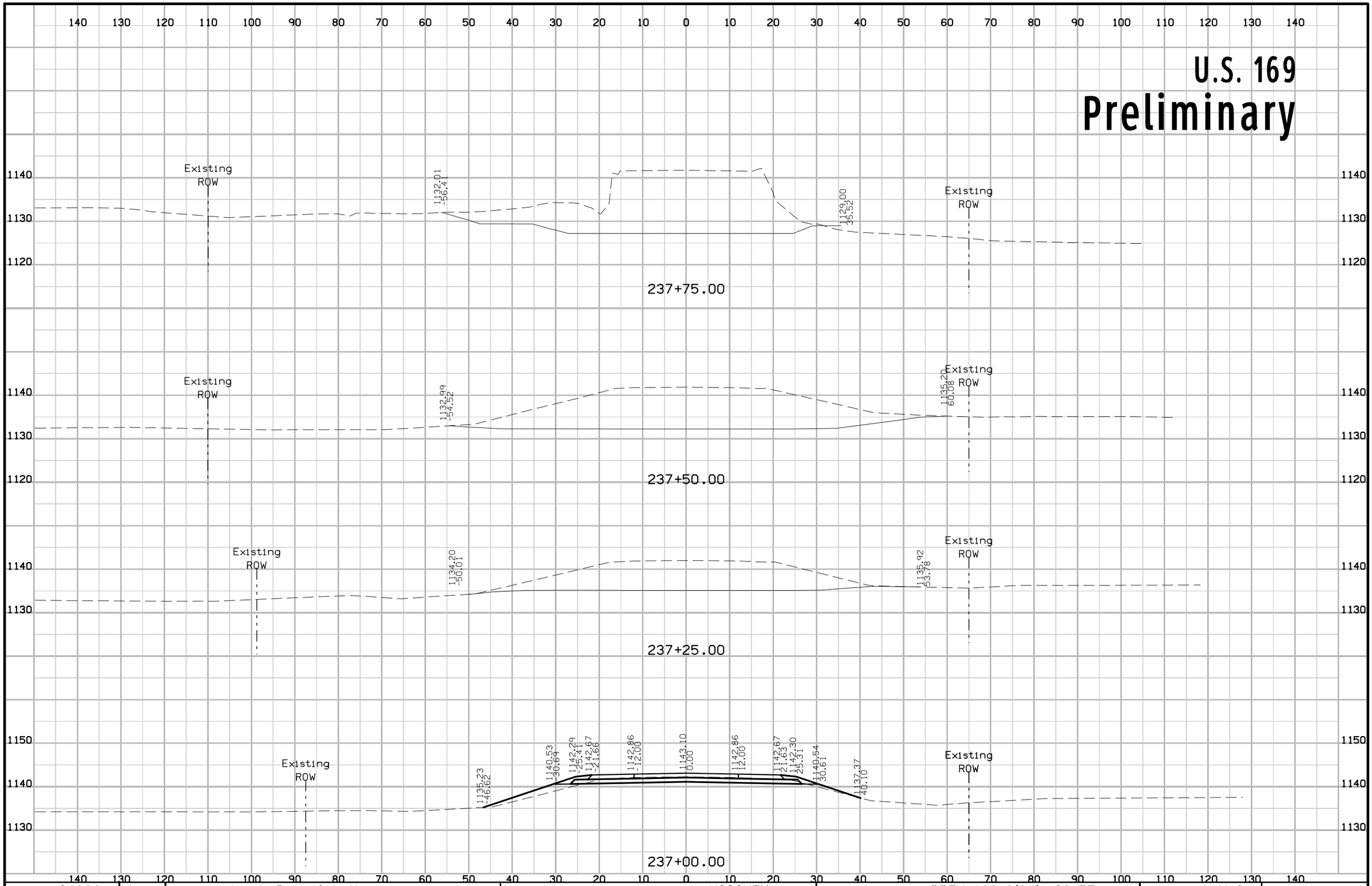
U.S. 169
Preliminary



FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER W.3

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U.S. 169
Preliminary

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

1140
1130

Existing ROW

1126.67
-74.29

1132.84
58.37

Existing ROW

238+75.00

1140
1130
1120

Existing ROW

1126.95
-52.05

1135.47
66.01

Existing ROW

238+50.00

1140
1130
1120

Existing ROW

1128.33
-43.67

1131.82
61.66

Existing ROW

238+25.00

1130
1120

Existing ROW

Existing ROW

238+00.00

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER W.4

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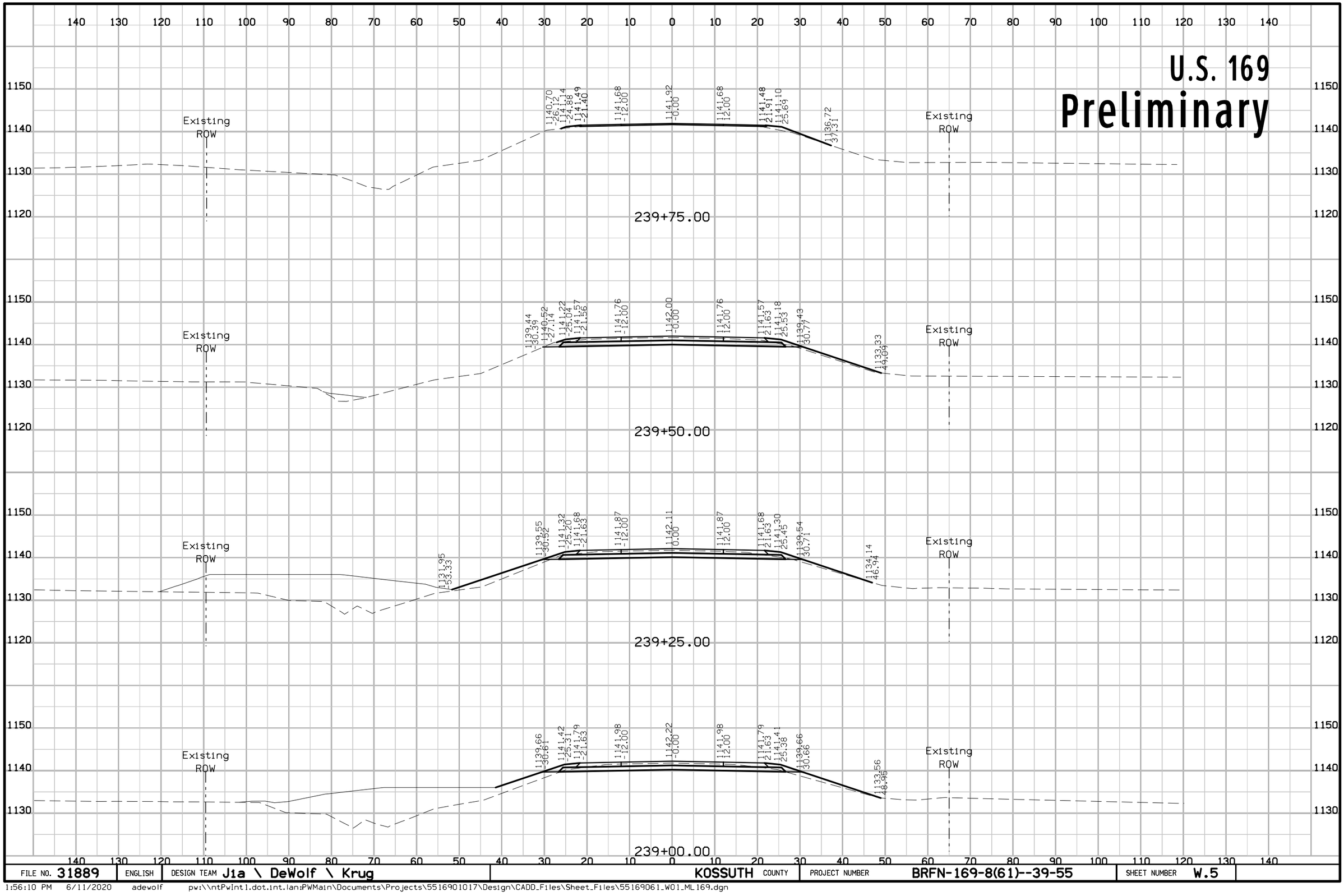
U.S. 169
Preliminary



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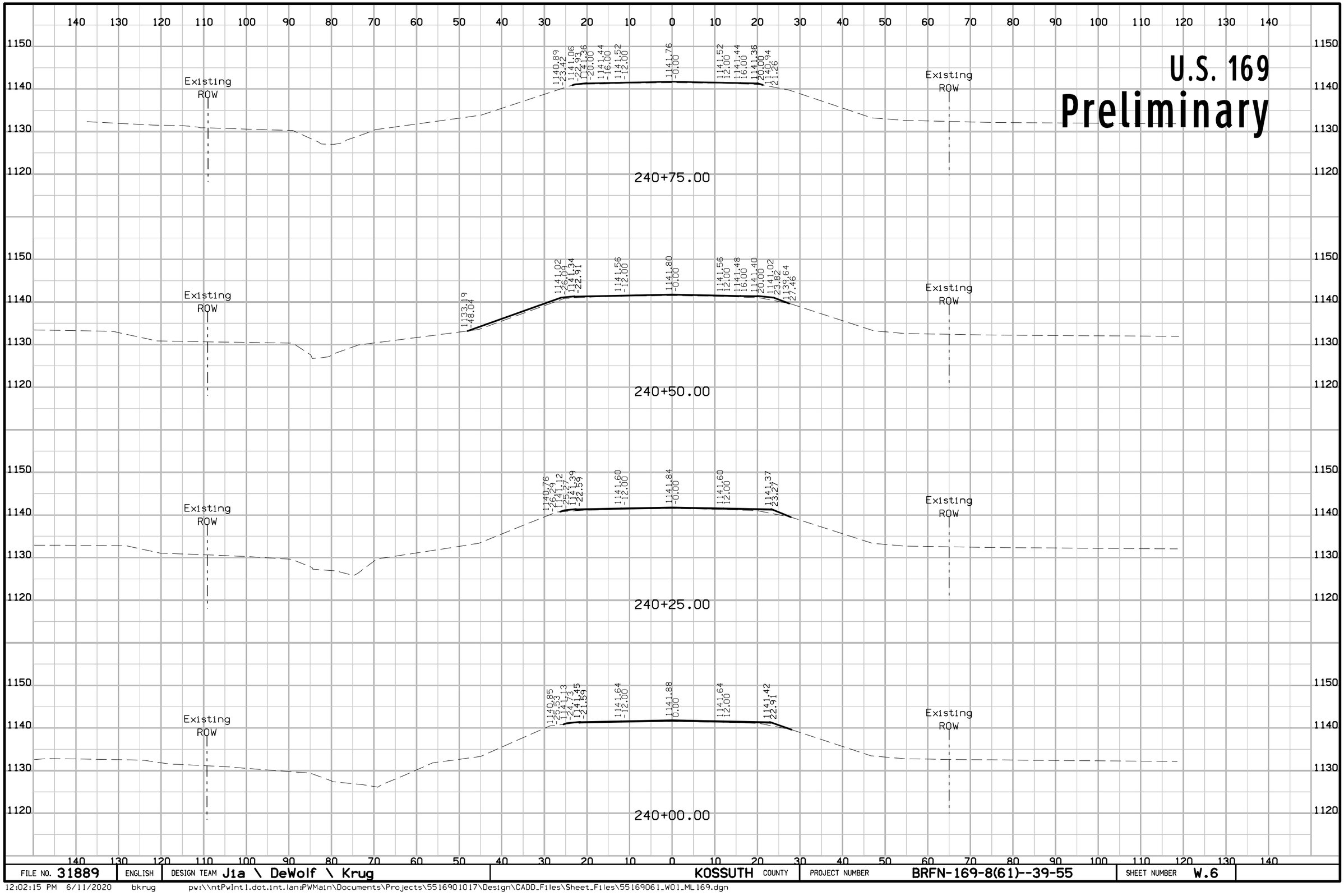
U.S. 169
Preliminary



FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER W.6

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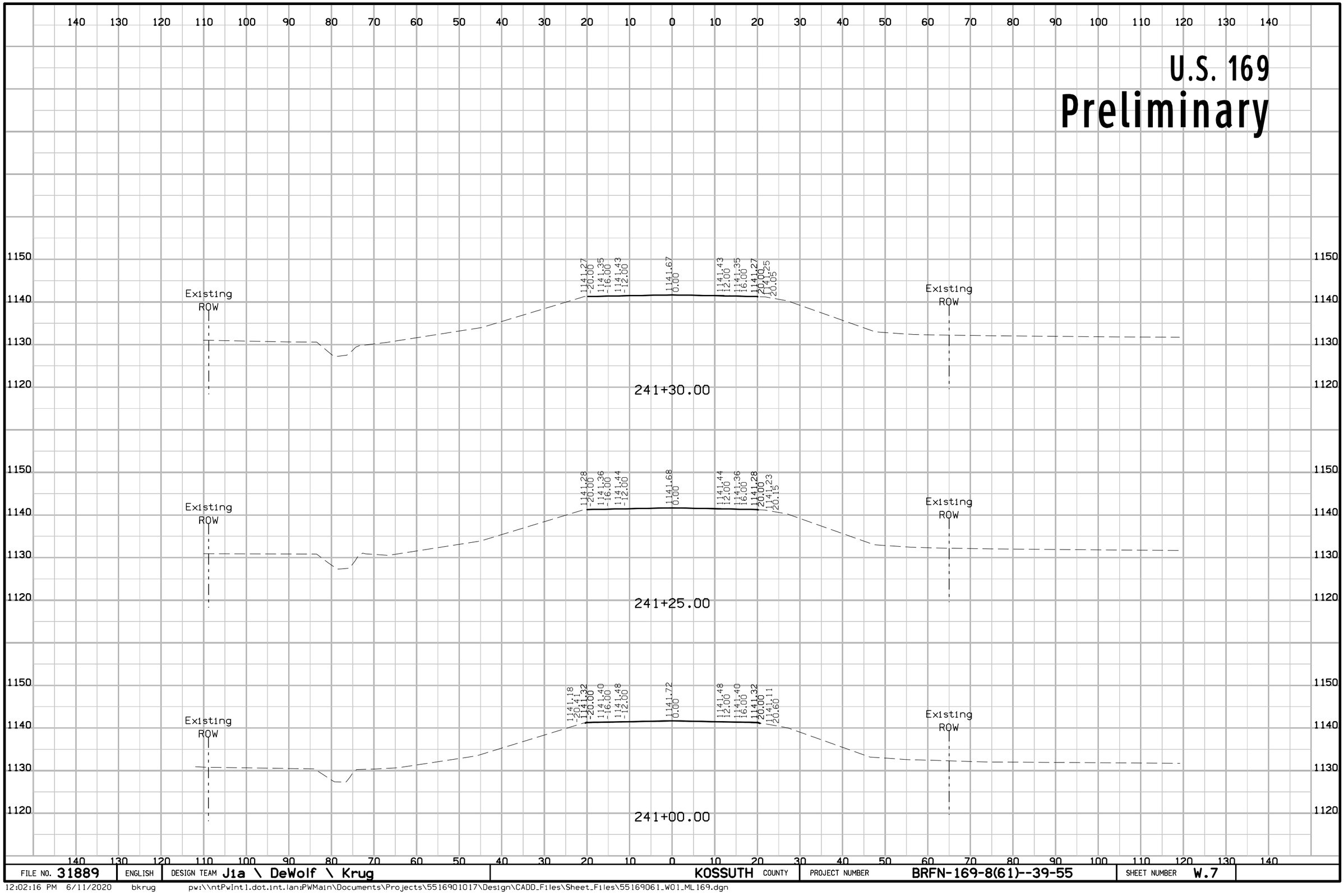
U.S. 169
Preliminary



FILE NO. 31889	ENGLISH	DESIGN TEAM J1a \ DeWolf \ Krug	KOSSUTH COUNTY	PROJECT NUMBER BRFN-169-8(61)--39-55	SHEET NUMBER W.7

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