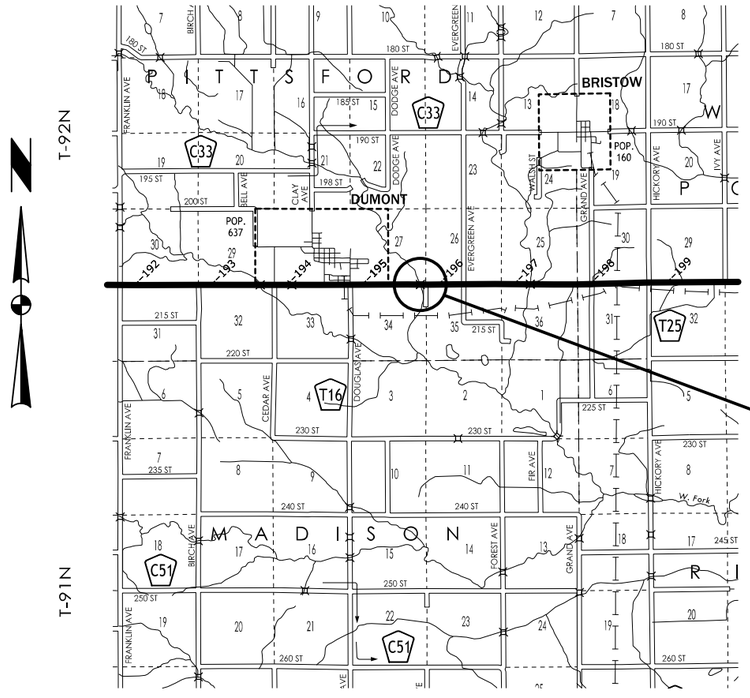
LETTING DATE 11-20-2018

BRIDGE REPLACEMENT - PPCB

BRF-003-5(77)--38-12

BUTLER Co.

INDEX OF SHEETS	
No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet and Location Map Sheet
B Sheets	**Typical Cross Sections and Details**
B.1 - 3	Typical Cross Sections and Details
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2	IA 3
E Sheets	**Side Road Plan and Profile Sheets**
* E.1	Elm Avenue
F Sheets	**Dike Plan and Profile Sheets**
* F.1	Dike
G Sheets	**Survey Sheets**
G.1	Reference Ties and Bench Marks
G.2	Horizontal Control Tab. & Super for all Alignments
J Sheets	**Traffic Control and Staging Sheets**
J.1	Traffic Control Plan and Staging Notes
V Sheets	**Bridge and Culvert Situation Plans**
* V.1 - 3	Bridge and Culvert Situation Plans
W Sheets	**Mainline Cross Sections**
W.1 - 15	IA 3
X Sheets	**Side Road and Dike Cross Sections**
X.100 - 102	Elm Avenue
X.200 - 212	Dike
	* Color Plan Sheets



PROJECT LOCATION
Design # 118
FHWA # 016500
Bridge Maint. # 1295.7S003

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

BUTLER COUNTY

BRIDGE REPLACEMENT - PPCB

West Fork Cedar River 0.8 mi E of Co Rd T16

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 45
PROJECT IDENTIFICATION NUMBER	
14-12-003-010	
PROJECT NUMBER	
BRF-003-5(77)--38-12	
R.O.W. PROJECT NUMBER	
NHSN-003-5(78)--2R-12	

DESIGN DATA RURAL		
2019 AADT	2000	V.P.D.
2039 AADT	2100	V.P.D.
20-- DHV	--	V.P.H.
TRUCKS	19	%
Total Design ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Paul W. Flattery	Primary Signature Block

PRELIMINARY PLANS

Subject to change by final design.

Revised D5 PLAN
Date: 11-16-17

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER A.1

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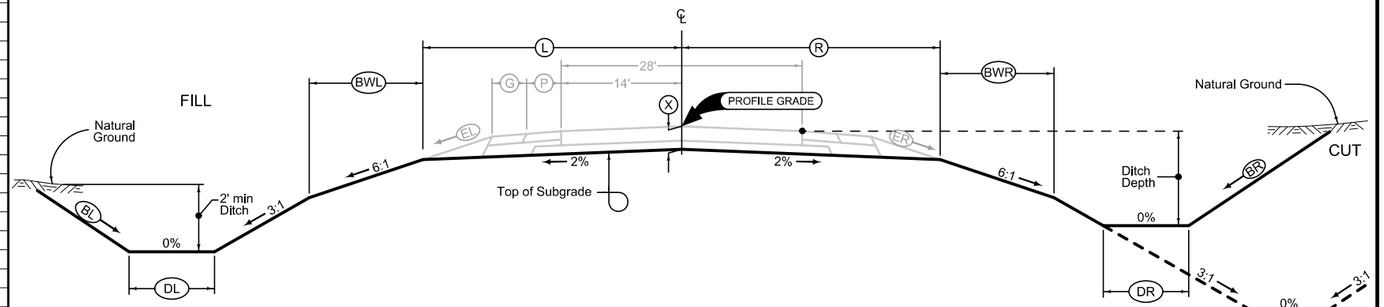
LOCATION			DIMENSIONS								
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BL) Slope	(BR) Slope	(BWL) Feet	(BWR) Feet	(DL) Feet	(DR) Feet
IA 3	199+25.00	201+00.00	33.13	33.12	21.5	0	0	0	0	0	0
IA 3	201+00.00	203+50.00	33.13	33.12	21.5	3	0	0	0	5	0
IA 3	203+50.00	203+80.00	33.13	33.12	21.5	3	3	0	0	5	5
IA 3	203+80.00	203+87.77	33.13-32.02	33.12	21.5	3-2.75	3	0	0	5	5
IA 3	203+87.77	204+00.99	32.02+30.57	33.12-35.37	21.5	2.75-2.35	3	0	0	5	5
IA 3	204+00.99	204+15.22	30.57-32.33	35.37-37.79	21.5	2.35-2.05	3	0	0	5	5
IA 3	204+15.22	204+20.00	32.33-33.04	37.79	21.5	2.05-2	3	0	0	5	5
IA 3	204+20.00	204+28.45	33.04-37.79	37.79	21.5	2	3	0	0	5	5
IA 3	204+28.45	204+45.28	37.79	37.79-37.61	21.5	2	3	0	0	5	5
IA 3	204+45.28	204+58.49	37.79-37.61	37.61-37.15	21.5	2	3	0	0	5	5
IA 3	204+58.49	204+86.51	37.61-36.64	37.15-36.21	21.5	2	3	0	0	5	5
IA 3	204+86.51	204+99.68	36.64-36.22	36.21	21.5	0	3	0	0	0	5
IA 3	204+99.68	205+13.16	36.22-36.21	36.21	21.5	0	3	0	0	0	5
IA 3	205+13.16	205+13.60	36.21-36.23	36.21	21.5	0	3	0	0	0	5
IA 3	205+13.60	205+17.11	36.23-36.39	36.21	21.5	0	3	0	0	0	5
IA 3	205+17.11	205+25.00	36.39-37.21	36.21-36.72	21.5	0	3	0	0	0	5
IA 3	205+25.00	205+37.11	37.21-33.96	36.72-38.00	21.5	0	3	0	0	0	5
IA 3	205+37.11	205+38.60	33.96-33.78	38.00-38.06	21.5	0	3	0	0	0	5
IA 3	205+38.60	205+50.00	33.78	38.06-38.38	21.5	0	3	0	0	0	5
	Bridge										
IA 3	210+75.00	212+13.68	33.12	33.12	21.5	3	3	Varies	Varies	10	10
IA 3	212+13.68	212+30.00	33.12	33.12	21.5	3	3	Varies	8.88	10	10
IA 3	212+30.00	214+50.00	33.12	33.12	21.5	3	3	8.88	8.88	10	10
IA 3	214+50.00	215+00.00	33.12	33.12	21.5	3	3	8.88	8.88	10-5	10
IA 3	215+00.00	215+50.00	33.12	33.12	21.5	3	3	8.88	8.88	5	10
IA 3	215+50.00	216+00.00	33.12	33.12	21.5	3	3	8.88	8.88	5	10-5
IA 3	216+00.00	216+10.00	33.12	33.12	21.5	3	3	8.88	8.88	5	5
IA 3	216+10.00	216+75.00	33.12	33.12	21.5	3	3	8.88-3.75	8.88	5	5
IA 3	216+75.00	217+00.00	33.12	33.12	21.5	3	3	3.75+2.26	8.88	5-4.5	5
IA 3	217+00.00	217+75.00	33.12-31.35	33.12	21.5	3	3	2.26-1.03	8.88-8.49	4.5-3	5-3

G_2_Grade_BR_M
MODIFIED



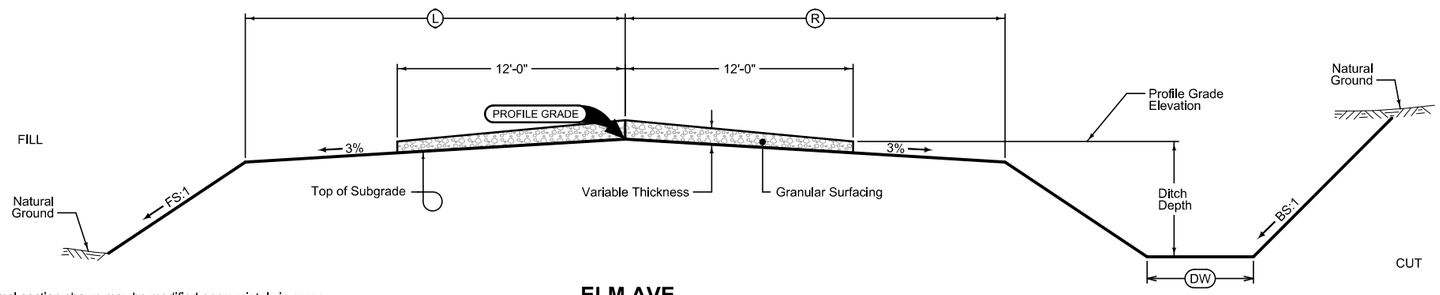
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

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

IA 3
2 LANE GRADING
(Barnroof Section)

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	FS	BS	(DW) Feet
Elm Avenue	1210+00.00	1212+41.50	15	15	3	3	10

G_2_GradeGran
04-17-12



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

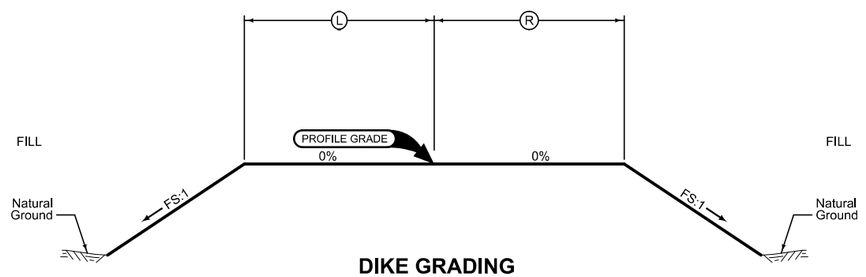
See plan & profile sheets and cross sections for additional details of ditches and backslopes.

Place Granular Surfacing as follows:
Grading design application rate is 2220 tons per mile.
Paving design application rate is 445 tons per mile.

ELM AVE
GRADING AND GRANULAR SURFACING

LOCATION			DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	FS
Dike	94+75.00	111+51.00	5	5	3

G_2_GradeGran_M
MODIFIED



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, and existing dike removal.

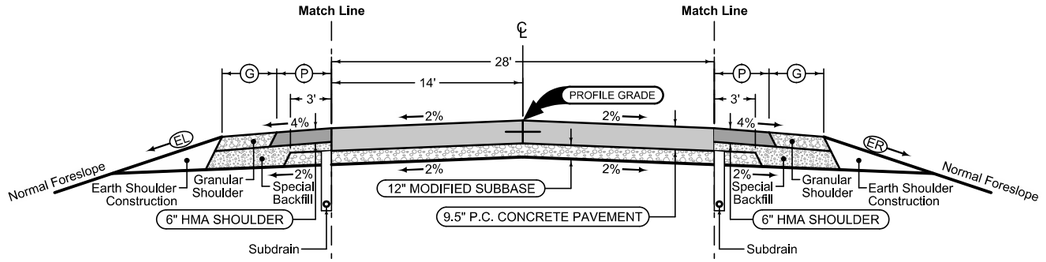
DIKE GRADING

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER B.1

Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

STATION TO STATION		(P) Feet	(G) Feet	2_C_M Modified (EL) Slope
199+25.00	203+80.00	4.0	4.0	6
203+80.00	204+20.00	4.0	4.0	6-4
204+20.00	205+13.60	4.0	4.0	4
205+13.60	205+38.60	4.0	4.0	4-3
205+38.60	205+50.00	4.0	4.0	3
Bridge				
211+26.89	217+75.00	4.0	4.0	6



Mainline Jointing:
Transverse joints: CD at 20' spacing
Longitudinal joint: L-2

STATION TO STATION		2P_ 10-19-10
201+00.00	204+87.11	
Bridge		
211+26.89	217+75.00	

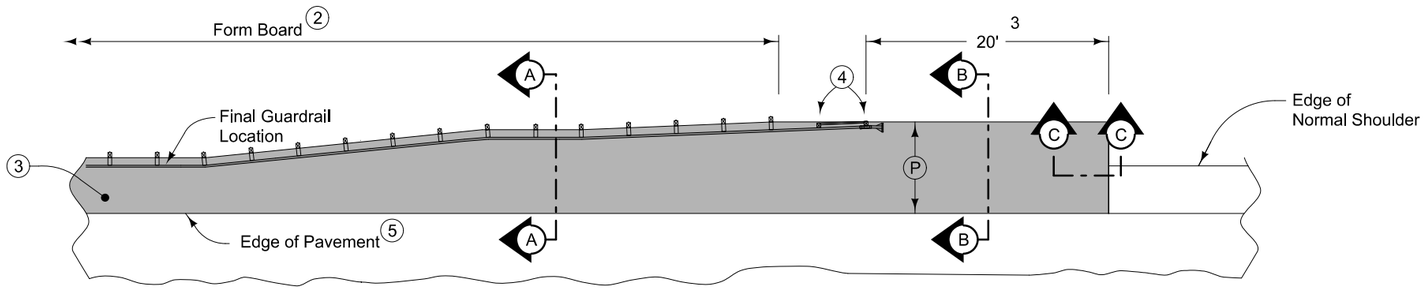
Combination Shoulder

Shoulder Jointing:
Longitudinal joint: B

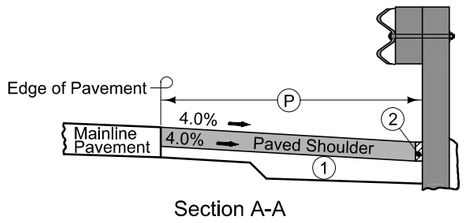
STATION TO STATION		(P) Feet	(G) Feet	2_C_M Modified (ER) Feet
199+25.00	205+25.00	4.0	4.0	6
205+25.00	205+50.00	4.0	4.0	6-3
Bridge				
211+26.89	217+75.00	4.0	4.0	4.3

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

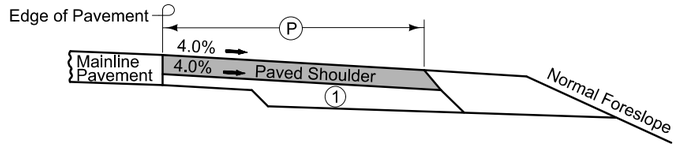
IA 3



PLAN VIEW

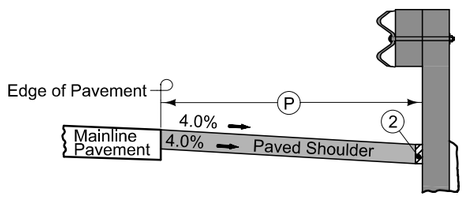


Section A-A

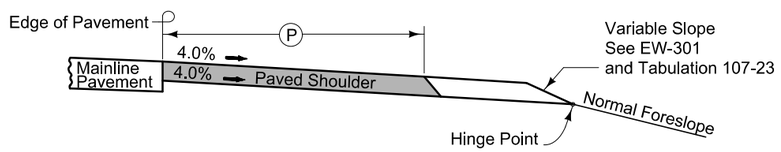


Section B-B

NEW CONSTRUCTION



Section A-A



Section B-B

EXISTING SHOULDER

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.

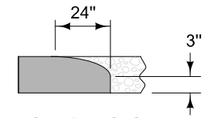
(1) For subgrade treatment, refer to other details in the plan.

(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

- PI Tangent Point
- SCR Section Corner
- PCP Photo Control Point
- BM Bench Mark
- CP Control Point
- ROW Right of Way Mark
- FENO FENO Monument
- PLG Location of General Photo
- TPD Telephone Pedestal
- PPA Power Pole Co. 1
- FW Wire Fence
- SI Sign
- PIP Pipe Culvert
- OUT Tile Outlet
- TIL Tile Line
- LIN Miscellaneous Line
- TOP Top of Bridge Pier
- CUL Culvert
- PR Electic Riser Pole
- EHW Extreme High Water
- EP Edge of Paved Roads (ML or SR)
- SH Paved Shoulder
- ENU Edge Unpaved Entrance & Parking
- ENT Centerline BL of Entrance
- SNP Unpaved Shoulder
- D Centerline Draw or Stream (Down)
- GU Gutter In Front of Curb
- CU Back of Curb
- EG Edge of Gravel Road
- ENP Edge Paved Entrance & Park Lot
- DIK Centerline of Dike or Dam
- DU Centerline Draw or Stream (Up)
- FO1D Fiber Optic Co. 1 - Quality D
- SOP Size of Pipe or Culvert
- PRO Profile Shot
- BD Bridge Deck
- BCL Bridge Centerline
- BL Topo Breakline

UTILITY LEGEND

Sub-Surface Utility Mapping Quality Level is in accordance with CI/ASCE 38-02 Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data.

Remark Abbreviations
QLA Quality Level A Highest guideline quality level
QLD Quality Level D Lowest guideline quality level

- TPD Dumont Telephone Company
- PPA MidAmerican Energy
- PR MidAmerican Energy
- FO1D Dumont Telephone Company - Quality D

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 / Survey Line
- Station / 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.	ENGLISH	DESIGN TEAM	Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER	BRF-003-5(77)--38-12	SHEET NUMBER	D.1

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PITTSFORD TWP.
T-92N R-18W
SEC. 27

PITTSFORD TWP.
T-92N R-18W
SEC. 26

PITTSFORD TWP.
T-92N R-18W
SEC. 34

PITTSFORD TWP.
T-92N R-18W
SEC. 35

STA. 199+25.00
BEGIN CONSTRUCTION

STA. 217+75.00
END CONSTRUCTION

DIKE

REMOVE

WEST FORK CEDAR RIVER

REMOVE
30" X 55'
C.M.P.
Sta. 205+26.3, 69.8' LT
Install 30" x 85' UNCL. PIPE
Skew = 4.28°
F.L. = Lt. 962.37
Rt. 962.35

POT Sta. 212+63.50 (ML003)
= PI Sta. 1212+63.50 (SRELM)

PI Sta 215+92.47

18" X 35'
C.M.P.

UAC

REMOVE
15" X 36'
C.M.P.

REMOVE
24" X 63'
C.M.P.

REMOVE

REMOVE
24" X 49'
C.M.P. W/
FLOOD GATE

REMOVE

REMOVE
36" X 51'
C.M.P. W/
FLOOD GATE
Sta. 205+63.5, 69.0' RT
Install 30" x 71' UNCL. PIPE
Skew = 7.46°
F.L. = Lt. 963.69
Rt. 963.37

+00.00 Prop.
Type "C" Ent. Rt.
XX" Uncl. Pipe

+48.00 Prop.
Type "C" Ent. Rt.
XX" Uncl. Pipe

REMOVE
STA 208+73.50 (SUR003)/(ML003)
345' X 28' MULTIPLE SPAN
CONCRETE AND I-BEAM BRIDGE
DA=298 SQ MI.
Sta. 208+07.00
Proposed 498'-0" x 44'-0"
Prestressed Pretensioned
Concrete Beam Bridge
Design No. 118

ELM AVE.

0 100
FEET

Tie In
Sta. 199+25.00
Elv. 970.97

VPI +50.000
Elv 971.16
Len 200.00 ft
K = 160

+0.150%
+1.400%

+00 Lt.
962.75

-0.10% Lt. Ditch Grade

+50 Rt.
963.87

+50 Rt.
963.67
-0.10% RDG

+00 Lt.
962.35

-0.60% RDG

+05 Rt.
962.74

0.00% Lt. Ditch Grade

+65 Rt.
962.74
0.0% RDG

+88 Lt.
962.35

VPI +50.000
Elv 982.36
Len 500.00 ft
K = 192

+1.400%
-1.200%

+04 Lt.
962.98
0.0% LDG

+40 Lt.
962.98

0.0% RDG

+50 Rt.
962.95

+75 Rt.
962.95

+0.10% Lt. Ditch Grade
+0.10% RDG

+50 Lt.
963.39

+0.30% RDG

+25 Rt.
963.20

VPI +50.000
Elv 973.96
Len 400.00 ft
K = 140

-1.200%
+1.650%

+10 Lt.
969.51

+10.2% LDG
+6.50% RDG
+2.20% LDG
+2.40% RDG

+10 Rt.
963.75

+00 Rt.
969.60

+75 Lt.
975.34

+75 Rt.
973.80

Tie In
Sta. 217+75.00
Elv. 977.67

Sta. 200+00.00
Prop. Type "C" Ent. Rt.
-4%
-9.5%
963.85

Sta. 217+48.00
Prop. Type "C" Ent. Rt.
-4%
-0.5%
973.2

U.A.C.
Ditch Grade
Bridge
Ditch Grade

970.97 971.01 971.06 971.16 971.30 971.47 971.68 971.94 972.23 972.56 972.91 973.26 973.61 973.96 974.31 974.66 975.01 975.36 975.71 976.06 976.41 976.76 977.11 977.46 977.81 978.16 978.51 978.86 979.19 979.49 979.76 980.00 980.20 980.37 980.51 980.62 980.69 980.73 980.74 980.72 980.66 980.57 980.45 980.30 980.11 979.89 979.64 979.36 979.06 978.76 978.46 978.16 977.86 977.56 977.26 976.96 976.66 976.36 976.08 975.85 975.66 975.51 975.41 975.36 975.35 975.38 975.46 975.58 975.75 975.96 976.22 976.52 976.87 977.26 977.67

195 200 205 210 215 220 225

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER D.2

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PITTSFORD TWP.
T-92N R-18W
SEC. 34

PITTSFORD TWP.
T-92N R-18W
SEC. 35

PITTSFORD TWP.
T-92N R-18W
SEC. 27

PITTSFORD TWP.
T-92N R-18W
SEC. 26

ELM AVE.

POT Sta 1209+63.15

1210

PI Sta 1210+13.43

PI Sta 1211+13.35

STA. 1210+00.00
BEGIN CONSTRUCTION

STA. 1212+41.50
END CONSTRUCTION

PI Sta. 1212+63.50 (SRELM)
= POT Sta. 212+63.50.00 (ML003)

90°

FO

SIGN

3

0 FEET 50

ELM AVE.

Tie In
Sta. 1210+00.00
Elv. 971.36

Tie In
Sta. 1212+41.50
Elv. 976.80

+0.600%

+3.000%

VPI +75.000
Elv 971.80
K = 42
Len 100.00 ft

No Ditch

No Ditch

971.36 971.51 971.73 972.11 972.63 973.30 974.05 974.80 975.55 976.30

1210 1211 1212

990 985 980 975 970 965 960 955

Lt

Rt

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER E.1

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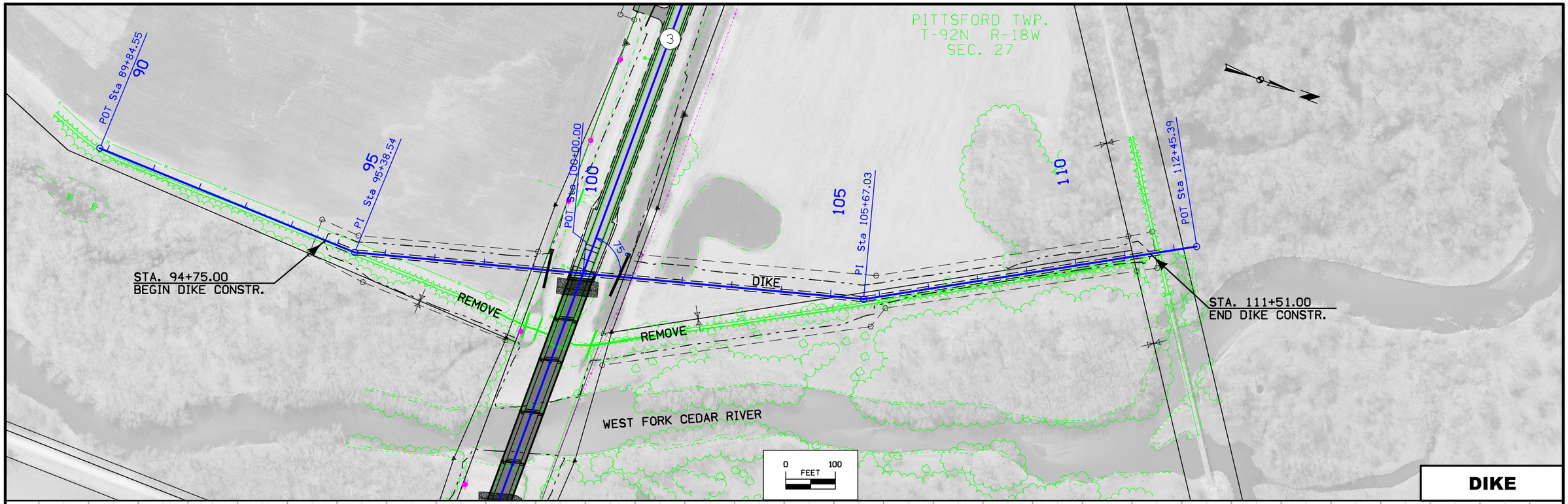

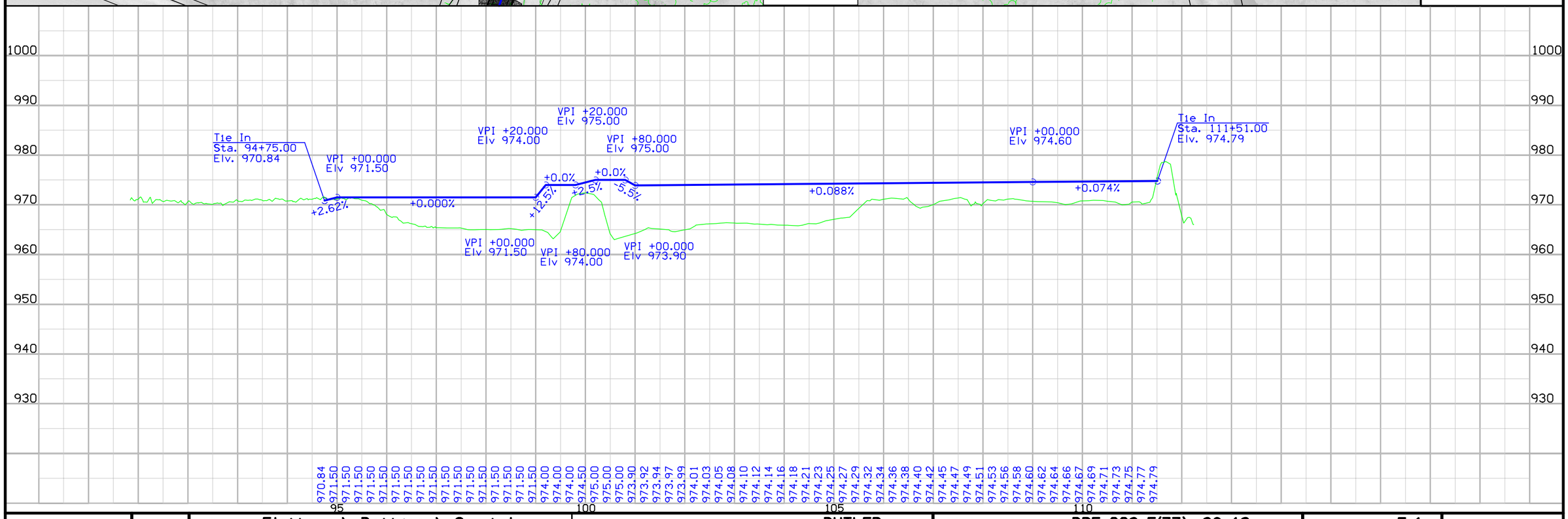

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER F.1

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Survey Information

Butler County
BRF-003-5(77)--38-12
West Fork Cedar River 0.8 mi E of Co Rd T16
PIN 14-12-003-010
Sap-0821

General Information

Measurement units for this survey are US survey feet. This survey is for proposed Bridge reconstruction on Butler County Hwy 3 over West Fork Cedar River 0.8 miles East of County Road T16. This project is a Partial DTM with Photo control

Vertical Control

Vertical datum for this survey is NAVD88 (Computed using Geoid12A). GRS80 Ellipsoidal Height was computed at project Pt. 12001 by doing 6 hour static observations. The project control is relative to nearby Iowa RTN Base Stations.

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

Butler County GPS Network mark designated 0113 has a published Elev. Of 971.14
Survey Elev. = 971.14

NGS 2nd. order class 0 mark designated N 29 has a published Elev. Of 1027.78
Survey Elev. = 1027.92

Horizontal Control

The project coordinate system for this survey is Iowa RCS Zone 5 (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 a six hour static observation. Additional control points were placed throughout the project using a GNSS Base-Rover setup relative to point 12001.

Name	Northing (USft)	Grid Easting (USft)	Elevation (USft)
12001	8935284.619	15313570.272	978.795
N29	8944648.63	15322189.734	1027.922
113	8930113.158	15307568.111	971.144

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. FN-502. Survey stationing was equated to the plan PI at STA 215+92.47 and run back and ahead without equation throughout the survey.

Survey stationing relates to as built plan stationing as follows:

PI Sta. 160+08.92 Project No. FN-502.
Survey PI Sta. 160+09.44

PI Sta 186+23.25 Project No. FN-502.
Survey PI STA 186+24.15

PI STA 215+92.47 Project No. FN-502
Survey PI STA 215+92.47

PI STA 238+90.50 Project No. FN-502
Survey PI STA 238+92.41

PI STA 317+95.50 Project No. FN-502
Survey PI STA 317+93.05

VERTICAL CONTROL

Point	North	East	Elevation	Feature	Description
113	8930113.1580	15307568.1100	971.1440	CP	BUTLER COUNTY GPS NETWORK MARK DESIGNATED 0113
12001	8935284.6190	15313570.2700	978.7950	FENO	SET FENO TYPE MONUMENT
N29	8944648.6300	15322189.7300	1027.9220	CP	NGS 2ND. ORDER CLASS 0 MARK DESIGNATED N 29

BRISTOW

17 16 185 ST 15 C33 14 13 18

190 ST

N29

POP. 160

20 21 22 DODGE AVE 23 WALSH ST 24 GRAND AVE 19

BELL AVE

CLAY AVE

198 ST

DUMONT

POP. 637

29 27 26 EVERGREEN AVE 25 30

12001

32 33 34 35 215 ST 36 31

220 ST

113

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER G.2

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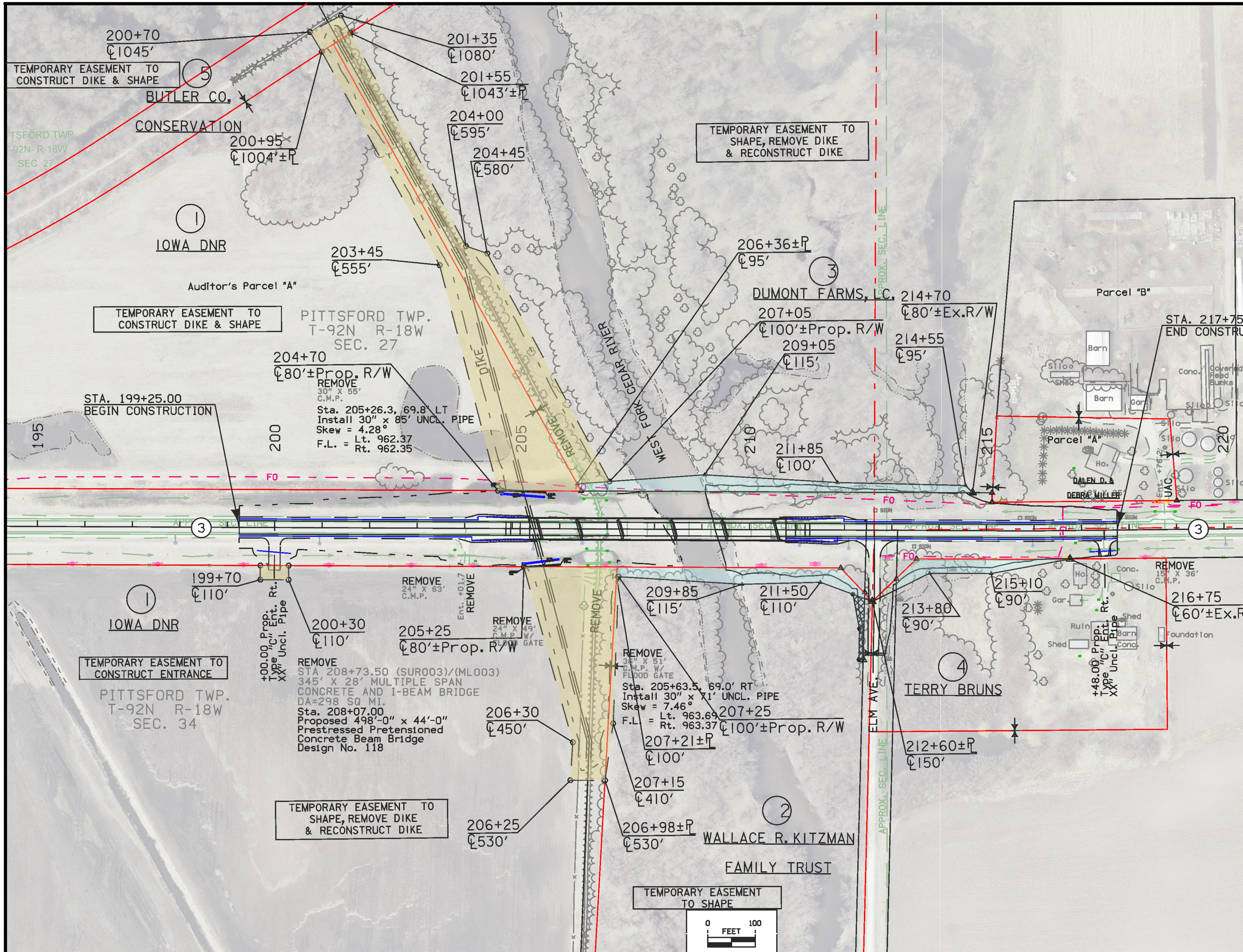
NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.


200+70
℄1045'
201+35
℄1080'
201+55
℄1043'±℞
TEMPORARY EASEMENT TO CONSTRUCT DIKE & SHAPE
5
BUTLER CO.
CONSERVATION
200+95
℄1004'±℞
204+00
℄595'
204+45
℄580'
TEMPORARY EASEMENT TO SHAPE, REMOVE DIKE & RECONSTRUCT DIKE
1
IOWA DNR
203+45
℄555'
206+36±℞
℄95'
3
DUMONT FARMS, L.C.
214+70
℄80'±Ex.R/W
Parcel "B"
Auditor's Parcel "A"
TEMPORARY EASEMENT TO CONSTRUCT DIKE & SHAPE
PITTSFORD TWP. T-92N R-18W SEC. 27
207+05
℄100'±Prop. R/W
209+05
℄115'
214+55
℄95'
STA. 217+75.00
END CONSTRUCTION
PITTSFORD TWP. T-92N R-18W SEC. 26
204+70
℄80'±Prop. R/W
REMOVE 30" X 55' C.M.P.
Sta. 205+26.3, 69.8' LT
Install 30" x 85' UNCL. PIPE
Skew = 4.28°
F.L. = Lt. 962.37 Rt. 962.35
STA. 199+25.00
BEGIN CONSTRUCTION
DIKE
REMOVE
WEST FORK CEDAR RIVER
Barn
Silo
Shed
Conc.
Covered Feed Bunks
Gar
Parcel "A"
Ho.
DALEN D. & DEBRA MILLER
211+85
℄100'
195
200
205
210
215
220
225
3
DUMONT FARMS, L.C.
FO
199+70
℄110'
1
IOWA DNR
+00.00 Prop. Type "C" Ent. Rt. XX" Uncl. Pipe
200+30
℄110'
REMOVE 24" X 63' C.M.P.
Ent. +01.7 REMOVE
REMOVE 24" X 49' C.M.P. W/ FLOOD GATE
205+25
℄80'±Prop. R/W
209+85
℄115'
211+50
℄110'
213+80
℄90'
215+10
℄90'
REMOVE 15" X 36' C.M.P.
216+75
℄60'±Ex.R/W
TEMPORARY EASEMENT TO CONSTRUCT ENTRANCE
PITTSFORD TWP. T-92N R-18W SEC. 34
REMOVE
STA 208+73.50 (SUR003)/(ML003)
345' X 28' MULTIPLE SPAN CONCRETE AND I-BEAM BRIDGE
DA=298 SQ MI.
Sta. 208+07.00
Proposed 498'-0" x 44'-0" Prestressed Pretensioned Concrete Beam Bridge
Design No. 118
REMOVE 36" X 51' C.M.P. W/ FLOOD GATE
Sta. 205+63.5, 69.0' RT
Install 30" x 71' UNCL. PIPE
Skew = 7.46°
F.L. = Lt. 963.69 Rt. 963.37
207+25
℄100'±Prop. R/W
4
TERRY BRUNS
ELM AVE.
+48.00 Prop. Type "C" Ent. Rt. XX" Uncl. Pipe
Foundation
PITTSFORD TWP. T-92N R-18W SEC. 35
206+30
℄450'
207+21±℞
℄100'
212+60±℞
℄150'
207+15
℄410'
TEMPORARY EASEMENT TO SHAPE, REMOVE DIKE & RECONSTRUCT DIKE
206+25
℄530'
206+98±℞
℄530'
2
WALLACE R. KITZMAN FAMILY TRUST
TEMPORARY EASEMENT TO SHAPE
APPROX. SEC. LINE
0 100 FEET
N

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: LARSON /GROAT
ROW #: NHSN-003-5(78)2R-12
Plan Date: 11-21-17
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER H.1

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2

WALLACE R. KITZMAN

FAMILY TRUST

1211+28±Prop. R/W
℄45'

1210+55
℄30'

1209+90
℄30'

1210

PITTSFORD TWP.
T-92N R-18W
SEC. 34

PITTSFORD TWP.
T-92N R-18W
SEC. 35

PITTSFORD TWP.
T-92N R-18W
SEC. 27

PITTSFORD TWP.
T-92N R-18W
SEC. 26

ELM AVE.

APPROX. SEC. LINE

WEST FORK CEDA

APPROX. SEC. LINE

FO

SIGN

4

TERRY BRUNS

0 50
FEET

Shed

Ruin

Gar.

Ho.

Parcel "A"

Right of Way Design Information
THIS SHEET INCLUDED
FOR INFORMATION ONLY
ROW Team: LARSON /GROAT
ROW #: NHSN-003-5(78)--2R-12
Plan Date: 08-16-17
Color Legend:
Property Lines
Temporary Easement
Permanent Acquisition

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER HE.1

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

Traffic will be maintained via an off-site detour. Proposed Detour: IA 3 / County Road T-16 north / County Road C-33 east / County Road T-24 south / IA 3. Out of distance travel is 4.2 miles.

The contractor will be responsible for maintaining access to property owners on Elm Avenue at all times during construction.

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
			None Provided									

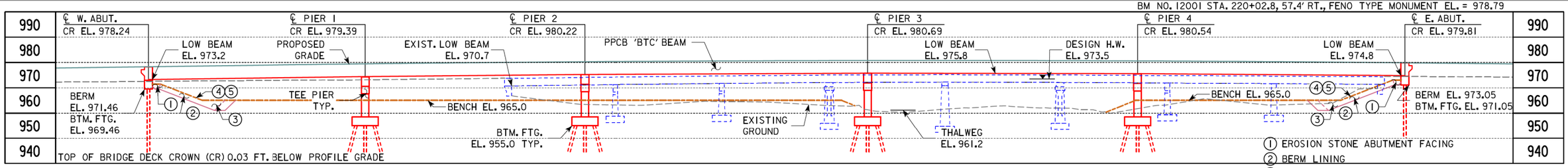
111-01
04-17-12

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.

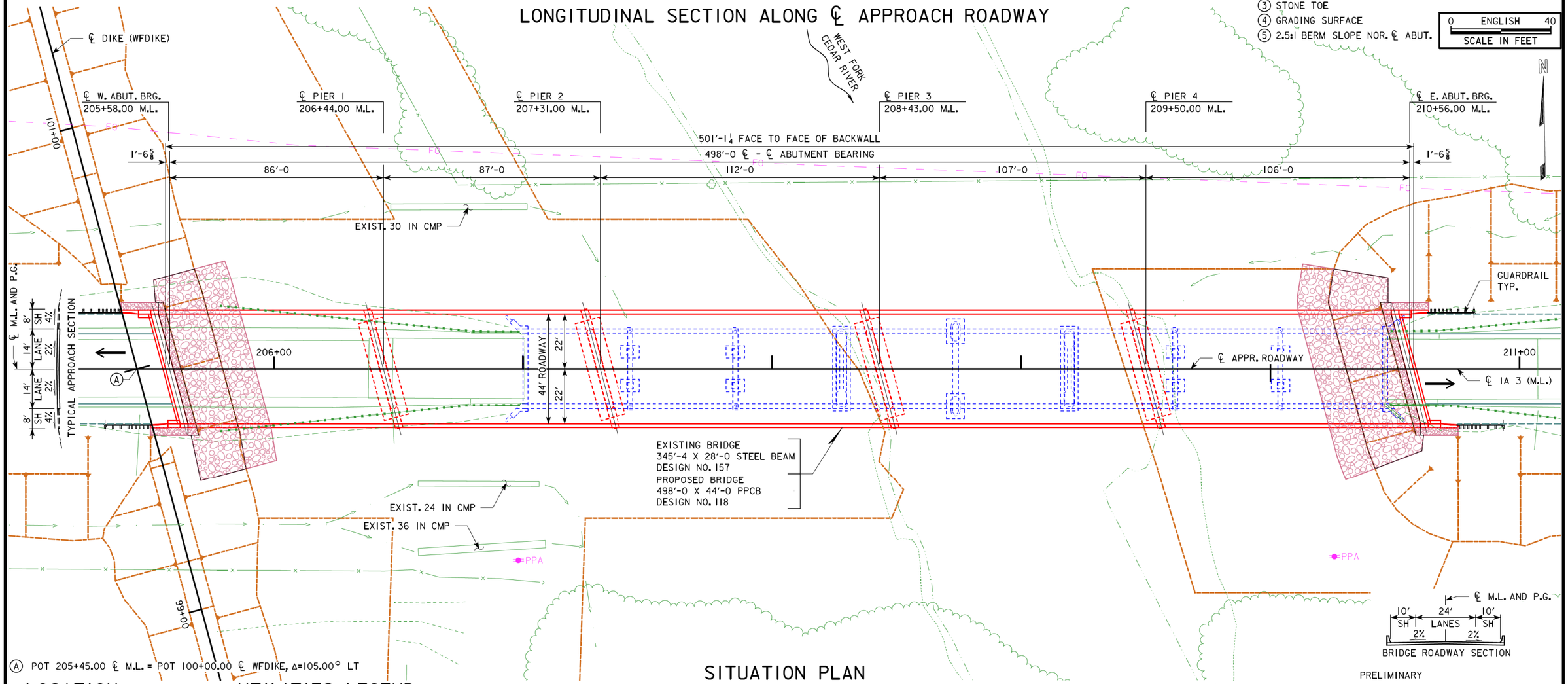
Project	Type of Work
None Provided	

BM NO. 12001 STA. 220+02.8, 57.4' RT., FENO TYPE MONUMENT EL. = 978.79



LONGITUDINAL SECTION ALONG ℄ APPROACH ROADWAY

0 ENGLISH 40
SCALE IN FEET



Ⓐ POT 205+45.00 ℄ M.L. = POT 100+00.00 ℄ WFDIKE, Δ=105.00° LT

SITUATION PLAN

PRELIMINARY

LOCATION

IA 3 OVER WEST FORK CEDAR RIVER
T 92 N R 18 W
SECTION 34
PITTSFORD TOWNSHIP
BUTLER COUNTY
BRIDGE MAINT. NO. 1295.7S003
FHWA NO. [0165001]
STA. 208+07.00 ℄ M.L.
LATITUDE 42.744880°
LONGITUDE -92.948446°

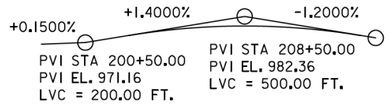
UTILITIES LEGEND

FO - BURIED FIBER OPTIC DUMONT TEL. COMPANY
PPA - POLE ELECTRIC MID-AMERICAN ENERGY

TRAFFIC ESTIMATE

2019 AADT 2,000 V.P.D.
2039 AADT 2,100 V.P.D.
2039 DHV -- V.P.H.
TRUCKS 19%
TOTAL DESIGN ESALs --

PRELIMINARY
PRIOR BI COMPLETION



PROPOSED GRADE ON IA 3

DESIGN FOR 15° SKEW (R.A.)

498'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

86', 106' END SPANS BTC BEAMS 87', 112', 107' INT. SPANS

SITUATION PLAN

STATION: 208+07.00 IA 3 NOV. 2018

BUTLER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 31394 DESIGN NO. 118

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER V.1

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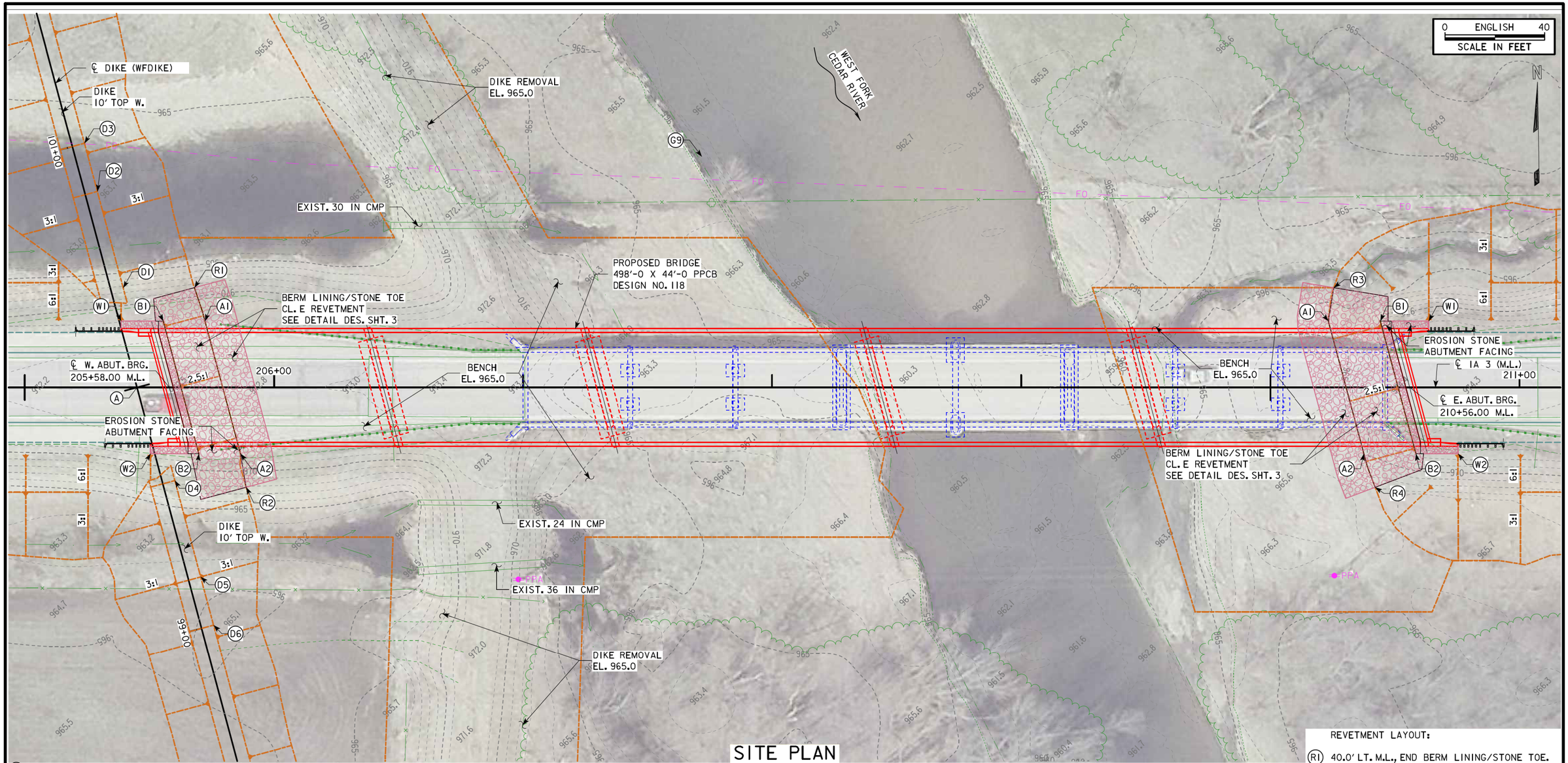

SITE PLAN

(A) POT 205+45.00 ℄ M.L. = POT 100+00.00 ℄ WFDIKE, Δ=105.00° LT

GRADING CONTROL:

(D1) 100+40.0 WFDIKE, 5.0' RT., TOP/EDGE DIKE, EL. 975.0 = 205+39.5 M.L., 39.9' LT.

(D2) 100+80.0 WFDIKE, 5.0' RT., TOP/EDGE DIKE, EL. 975.0 = 205+29.1 M.L., 78.6' LT.

(D3) 101+00.0 WFDIKE, 5.0' RT., TOP/EDGE DIKE, EL. 973.9 = 205+24.0 M.L., 97.9' LT.

(D4) 99+60.0 WFDIKE, 5.0' RT., TOP/EDGE DIKE, EL. 974.0 = 205+60.2 M.L., 37.3' RT.

(D5) 99+20.0 WFDIKE, 5.0' RT., TOP/EDGE DIKE, EL. 974.0 = 205+70.5 M.L., 76.0' RT.

(D6) 99+00.0 WFDIKE, 5.0' RT., TOP/EDGE DIKE, EL. 971.5 = 205+75.7 M.L., 95.3' RT.

REVETMENT LAYOUT:

(R1) 40.0' LT. M.L., END BERM LINING/STONE TOE.

(R2) 40.0' RT. M.L., END BERM LINING/STONE TOE.

(R3) 40.0' LT. M.L., END BERM LINING/STONE TOE.

(R4) 40.0' RT. M.L., END BERM LINING/STONE TOE.

BERM SLOPE LOCATION TABLE

	W. ABUTMENT			E. ABUTMENT		
	STATION	OFFSET	ELEV	STATION	OFFSET	ELEV
A1	205+72.26	26.58' LT	965.00	210+23.38	26.58' LT	965.00
A2	205+86.50	26.58' RT	965.00	210+37.62	26.58' RT	965.00
B1	205+55.54	26.58' LT	971.46	210+44.22	26.58' LT	973.05
B2	205+69.78	26.58' RT	971.46	210+58.46	26.58' RT	973.05
W1	205+38.61	26.58' LT	977.41	210+63.61	26.58' LT	979.17
W2	205+50.39	26.58' RT	977.57	210+75.39	26.58' RT	979.05

BERM SLOPE ELEVATIONS REFLECT GRADING SURFACE

PRELIMINARY
PRIOR BI COMPLETION

PRELIMINARY

DESIGN FOR 15° SKEW (R.A.)

498'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

86', 106' END SPANS BTC BEAMS 87', 112', 107' INT. SPANS

SITUATION PLAN - SITE

STATION: 208+07.00 IA 3 NOV. 2018

BUTLER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 31394 DESIGN NO. 118

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER V.2

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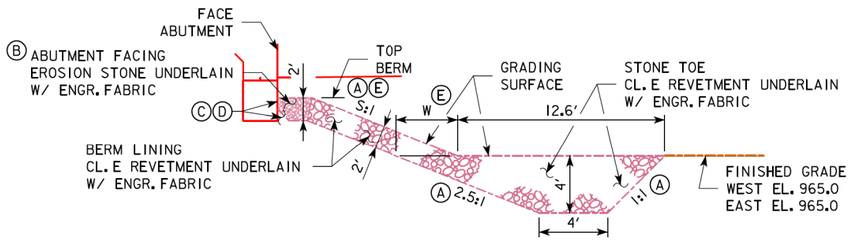


SECTION THROUGH STONE TOE AND BERM LINING

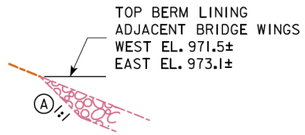
(A) SLOPE NOR. ℄ ABUT. / GRADING CONTROL LINE (PT. A1-A2).

(B) EXTEND FACING OUT TO LIMITS OF WING ARMORING.

(C) 1' X 1' SOIL WEDGE AT FACE ABUTMENT.

(D) CARRY ENGR. FABRIC UP SOIL WEDGE AND FACE ABUTMENT.

(E) BERM/DIKE SLOPE S:1 S=2.5:1 W=5.4'
S=3:1 W=6.3'
S=3.5:1 W=7.2'



BERM LINING ADJ. WINGS

ESTIMATED BERM ARMORING QUANTITIES

REVETMENT TYPE - LOCATION	REVETMENT CL. E (TON)	EROSION STONE (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
BERM LINING\STONE TOE - WEST	381.2	19.6	321.6	250.4
BERM LINING\STONE TOE - EAST	407.1	19.6	344.1	266.6
TOTALS	788.3	39.2	655.7	517.0

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.
REVETMENT AND EROSION STONE ESTIMATED AT 1.6 TON/CY

HYDRAULIC DATA

DRAINAGE AREA = 303.5 SQ. MI.
STREAM SLOPE = 2.27 FT./MI.
AVG. LOW WATER STAGE = EL. 962.7

Q_{50} = 14,000 CFS (14,000 CFS)
STAGE = EL. 973.5
REGULATORY LOW BEAM = EL. 975.8
BACKWATER = 0.23 FT./0.83 FT.
AVG. BRIDGE VELOCITY = 3.2 FPS

Q_{100} = 15,969 CFS (16,300 CFS)
STAGE = EL. 973.9
OPERATIONAL LOW BEAM = 973.2
BACKWATER = 0.42 FT./1.06 FT.
AVG. BRIDGE VELOCITY = 3.5 FPS

Q_{200} = 18,351 CFS (20,200 CFS)
STAGE = EL. 974.3
BACKWATER = 0.56 FT./ -
AVG. BRIDGE VELOCITY = 3.9 FPS
CALCULATED DESIGN SCOUR = EL. 952.0

Q_{500} = 19,365 CFS (22,200 CFS)
STAGE = EL. 974.5
AVG. BRIDGE VELOCITY = 4.1 FPS
CALCULATED CHECK SCOUR = EL. 951.6

ROADWAY OVERTOP= 14,000 CFS
UPSTREAM DIKE LOW EL. 973.9
ROADWAY OVERTOP EL. 970.5
STA. 194+00

DISCHARGE IN PARANS. REPRESENTS TOTAL STREAMFLOW.
BACKWATER REFERENCES CHANGE FROM EXISTING/PRE-DEVELOPMENT CONDITION NEAR FIRST HIGH-DAMAGE POTENTIAL DEVELOPMENT UPSTREAM OF PROJECT SITE (RESIDENCE N.E. OF BRIDGE).

PRELIMINARY
PRIOR BI COMPLETION

PRELIMINARY

DESIGN FOR 15° SKEW (R.A.)

498'-0 X 44'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

86', 106' END SPANS BTC BEAMS 87', 112', 107' INT. SPANS

SITUATION PLAN - MISCELLANEOUS

STATION: 208+07.00 IA 3 NOV. 2018

BUTLER COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 31394 DESIGN NO. 118

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER V.3

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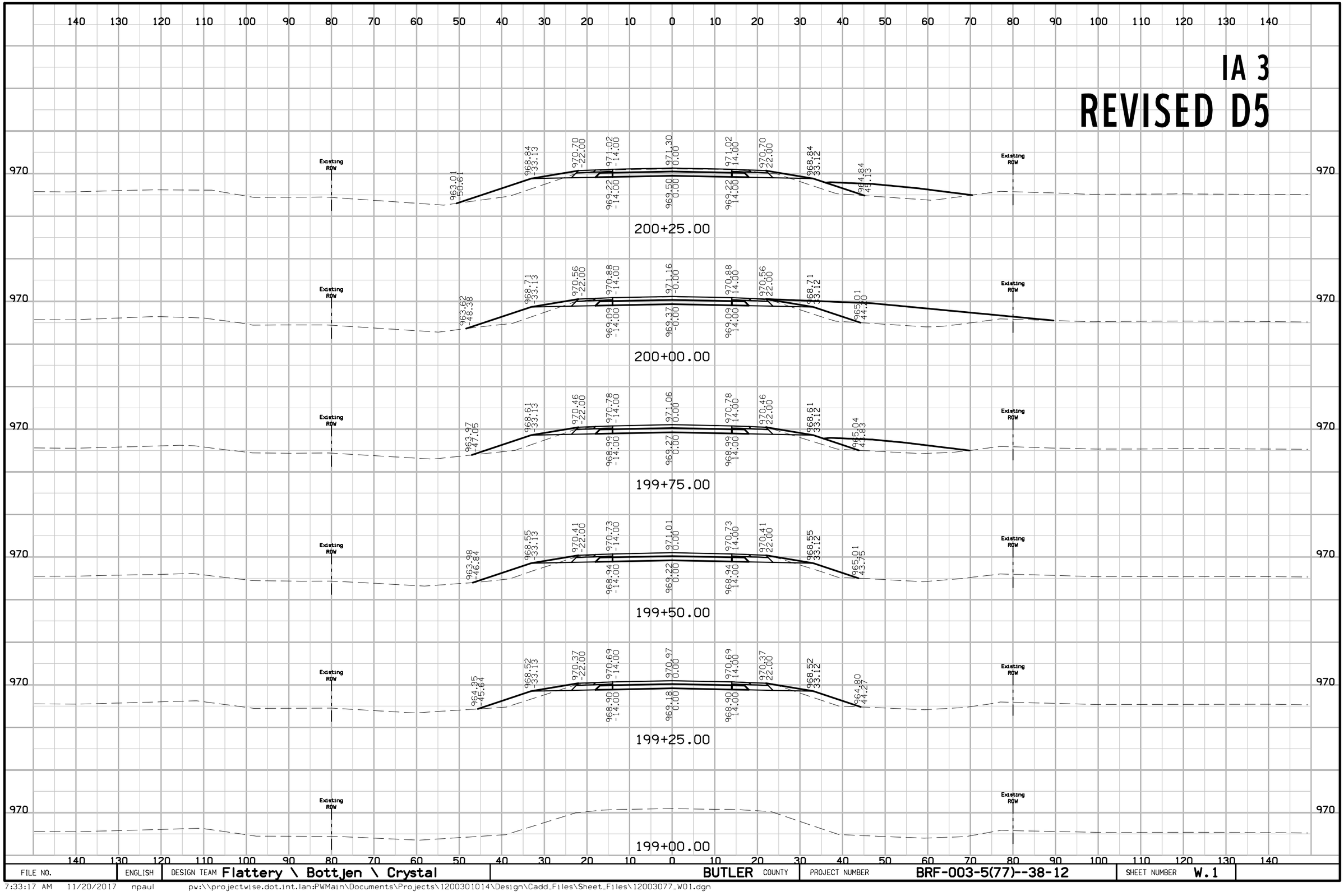
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.1

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IA 3
REVISED D5

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

980
970

Existing ROW

963.13 -61.46
962.67 -56.46
970.45 -33.13
972.31 -22.00
972.63 14.00
970.84 -14.00
972.91 0.00
971.12 0.00
972.63 14.00
970.84 -14.00
972.31 22.00
970.45 33.12
964.33 51.51

201+75.00

963.11 -60.34
962.70 -55.34
970.10 -33.13
971.96 -22.00
972.28 14.00
970.49 -14.00
972.56 -0.00
970.77 -0.00
972.28 14.00
970.49 14.00
971.96 22.00
970.10 33.12
964.38 50.29

201+50.00

963.20 -59.27
962.72 -54.27
969.77 -33.13
971.63 -22.00
971.95 14.00
970.16 -14.00
972.23 -0.00
970.44 -0.00
971.95 14.00
970.16 14.00
971.63 22.00
969.77 33.12
964.38 49.29

201+25.00

963.07 -58.22
962.75 -53.32
969.48 -33.13
971.34 -22.00
971.66 14.00
969.86 -14.00
971.94 -0.00
970.14 -0.00
971.66 14.00
969.86 14.00
971.34 22.00
969.48 33.12
964.46 48.20

201+00.00

963.34 -56.81
969.23 -33.13
971.08 -22.00
971.40 14.00
969.61 -14.00
971.68 0.00
969.89 0.00
971.40 14.00
969.61 14.00
971.08 22.00
969.23 33.12
964.58 47.08

200+75.00

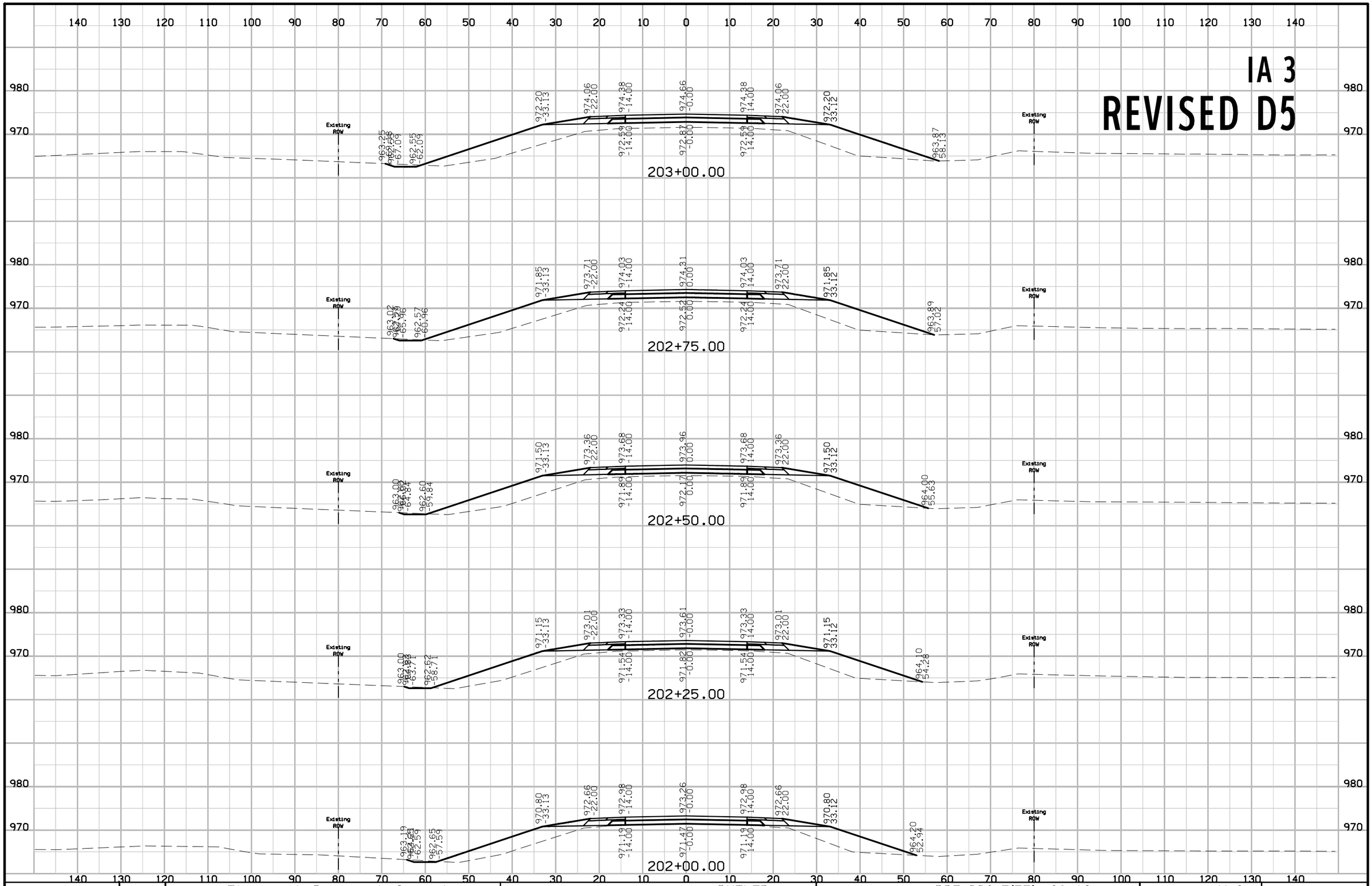
963.16 -56.71
969.02 -33.13
970.87 -22.00
971.19 14.00
969.40 -14.00
971.47 0.00
969.68 0.00
971.19 14.00
969.40 14.00
970.87 22.00
969.02 33.12
964.72 46.00

200+50.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.2

7:33:19 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

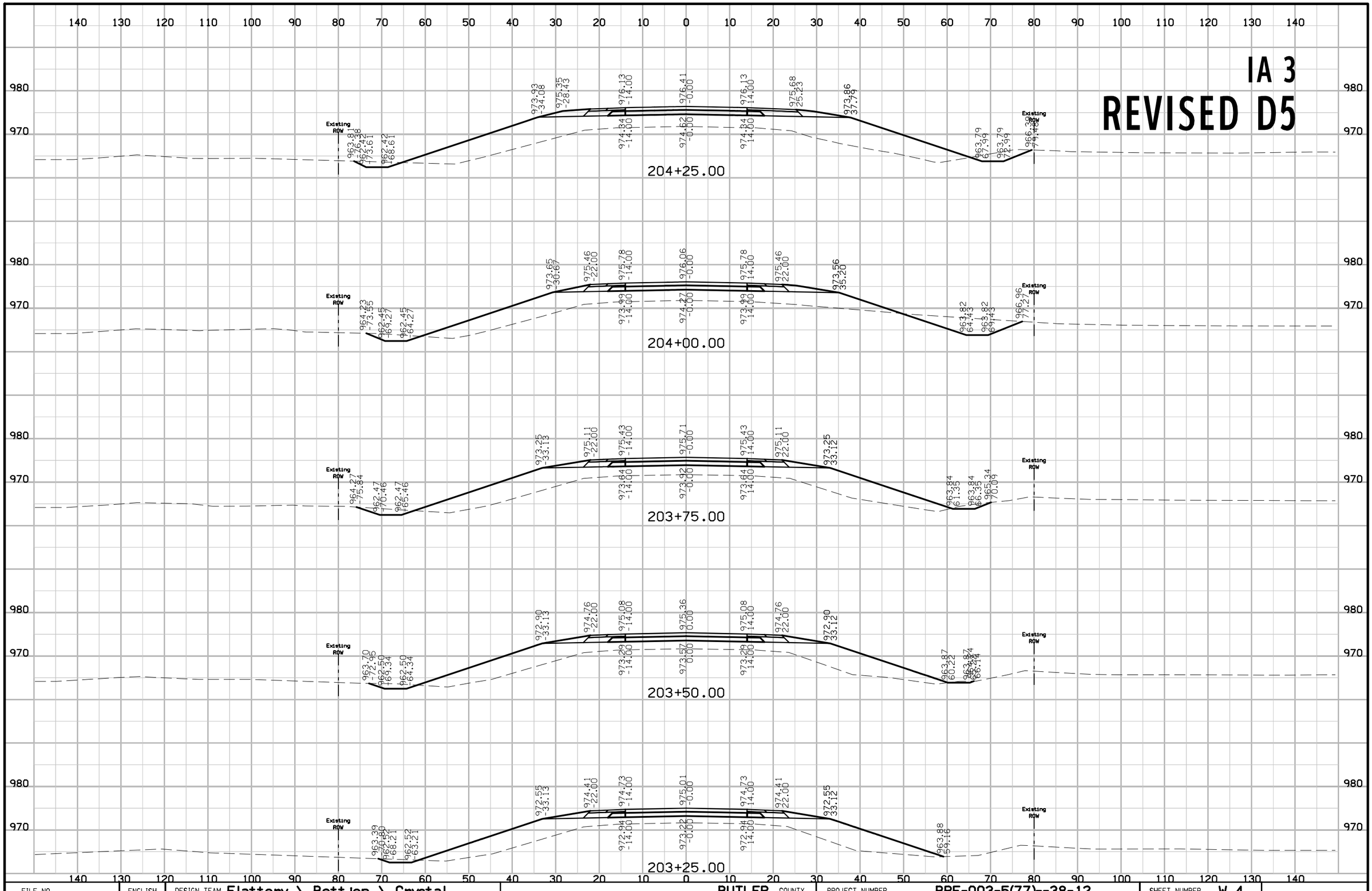
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.3

7:33:20 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

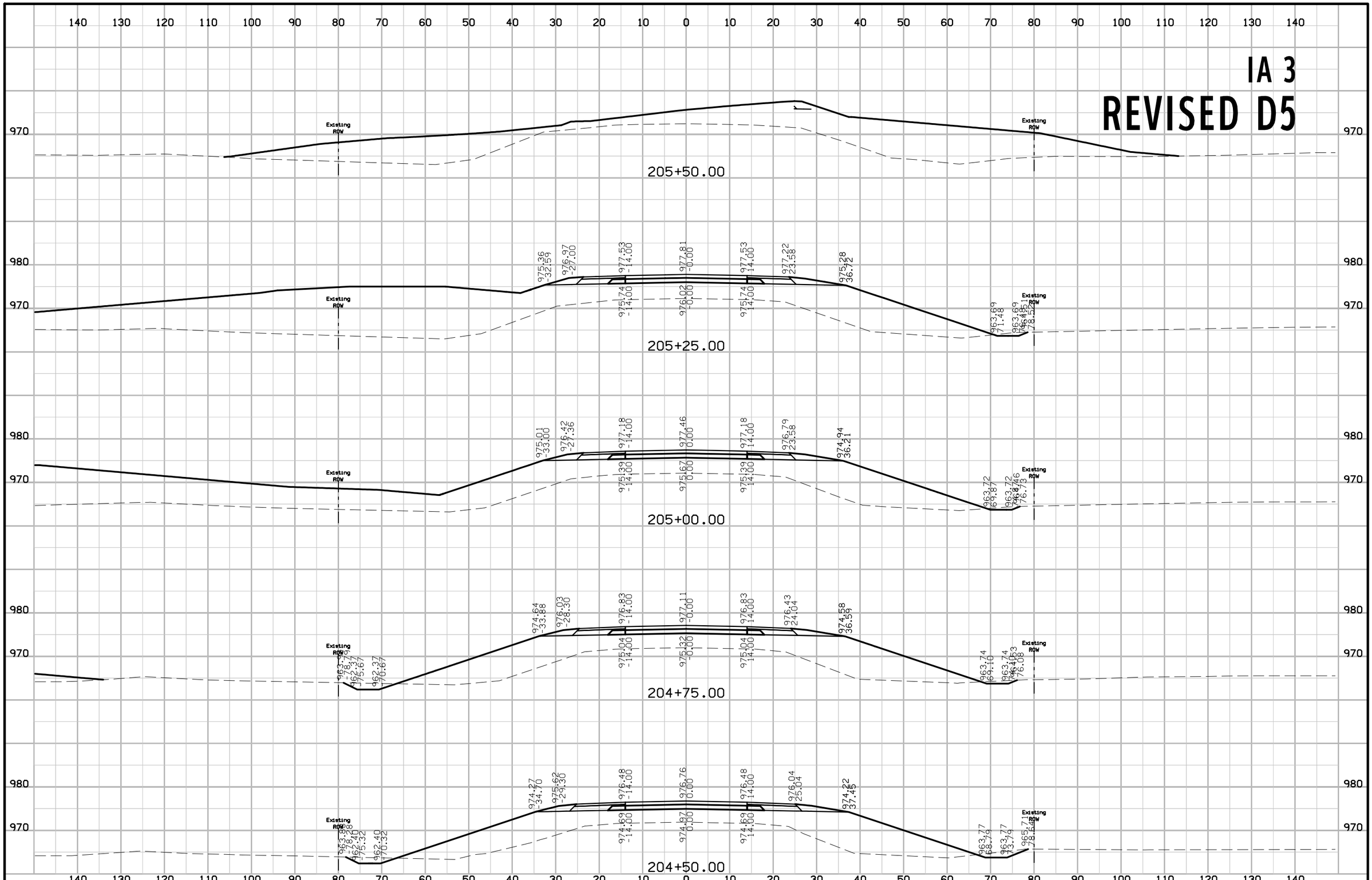
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.4

7:33:22 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.5

7:33:24 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

IA 3
REVISED D5

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

970

Existing ROW — 965.00 -75.95 — 962.35 -68.00 -65.00 — 965.00 -57.05 — 965.00 55.81 — 962.77 62.50 65.50 — 965.00 72.19 — Existing ROW

207+00.00

980 970

Existing ROW — 965.00 -75.95 — 962.35 -68.00 -65.00 — 965.00 -57.05 — 965.00 56.26 — 962.92 62.50 65.50 — 965.00 71.74 — Existing ROW

206+75.00

970

Existing ROW — 965.00 -75.95 — 962.35 -68.00 -65.00 — 965.00 -57.05 — 965.00 56.71 — 963.07 62.50 65.50 — 963.45 75.03 — Existing ROW

206+50.00

970

Existing ROW — 963.27 962.35 -68.00 -65.00 — 965.00 -57.05 — 965.00 57.16 — 963.22 62.50 66.18 — Existing ROW

206+25.00

970

Existing ROW — 963.10 962.35 -68.00 -65.00 — 965.00 -57.05 — 965.00 57.61 — 963.37 62.50 — Existing ROW

206+00.00

970

Existing ROW — 963.42 962.35 -68.00 -65.00 — 965.00 -57.05 — Existing ROW

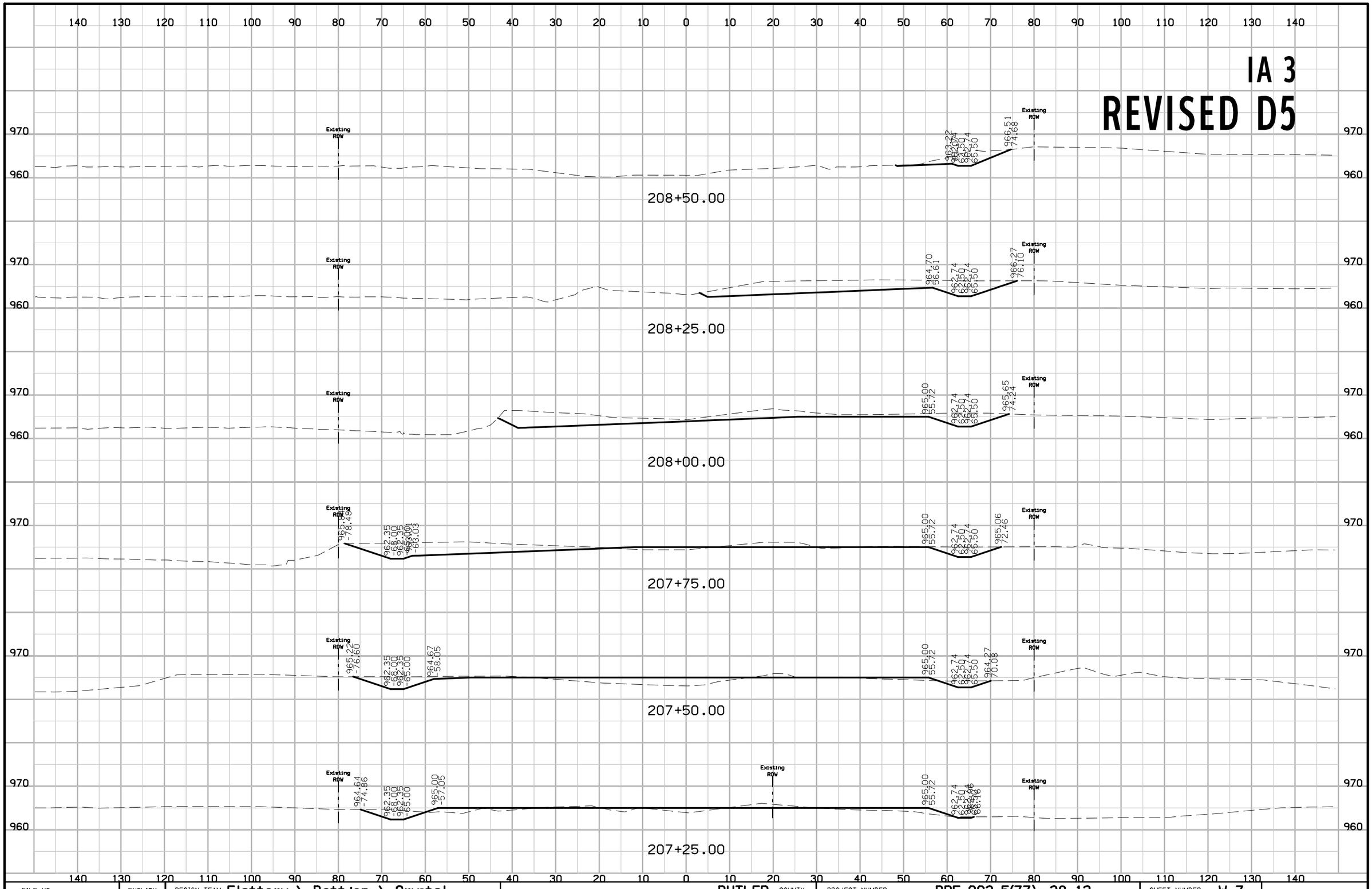
205+75.00

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.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.6

7:33:26 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

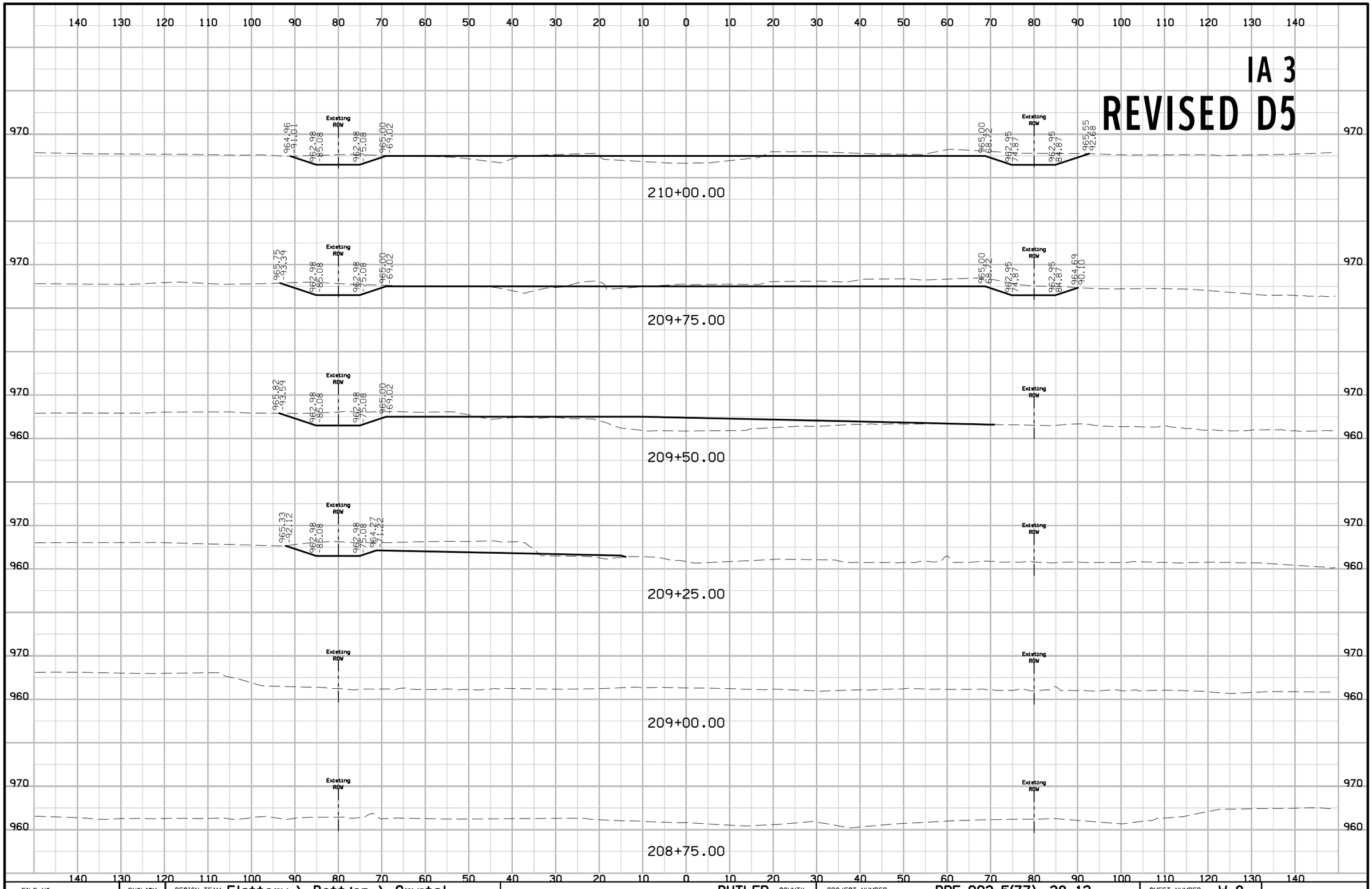
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.7

7:33:28 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.8

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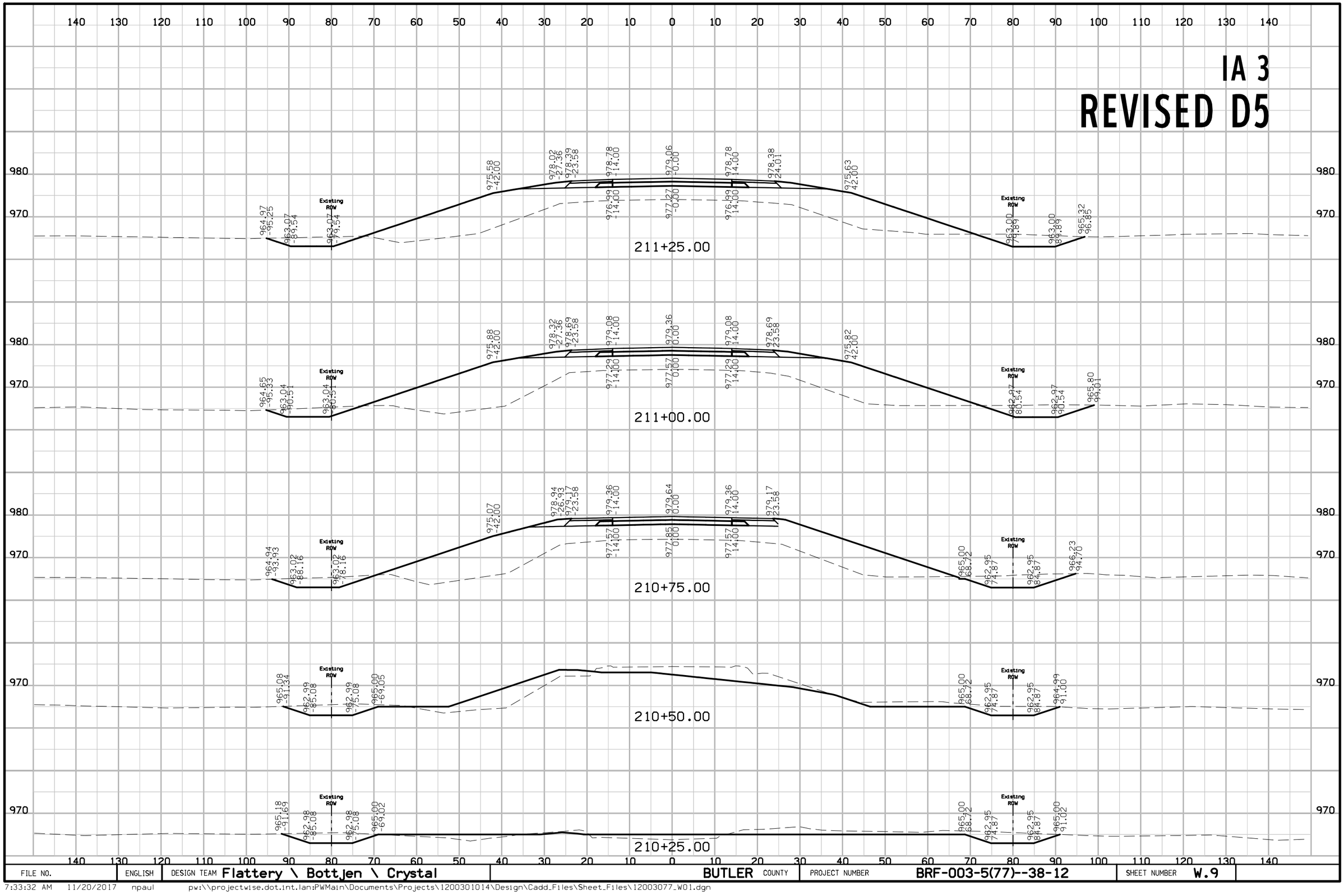
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.9

7:33:32 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

IA 3
REVISED D5

212+50.00

212+25.00

212+00.00

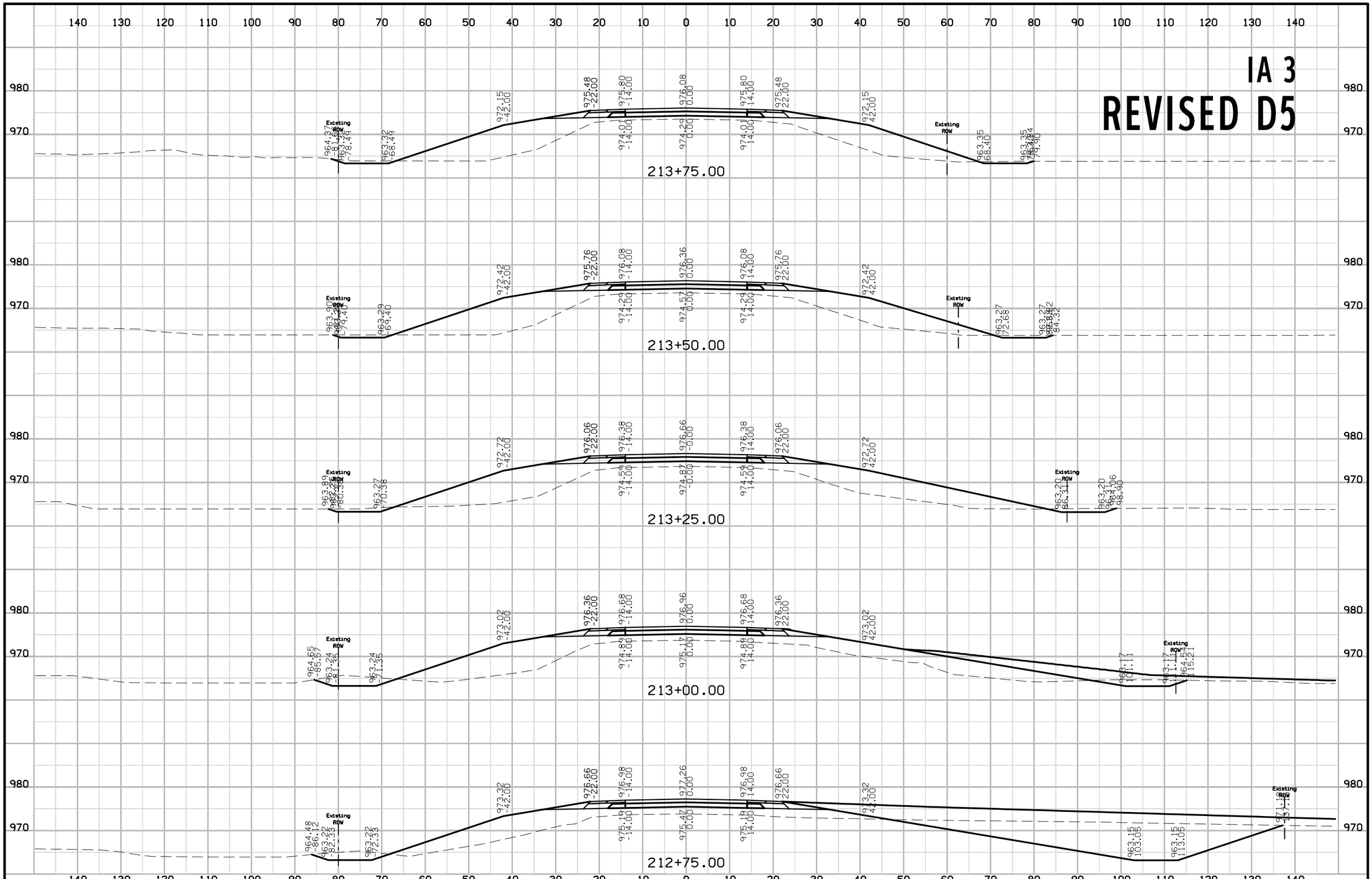
211+75.00

211+50.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.10

7:33:34 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

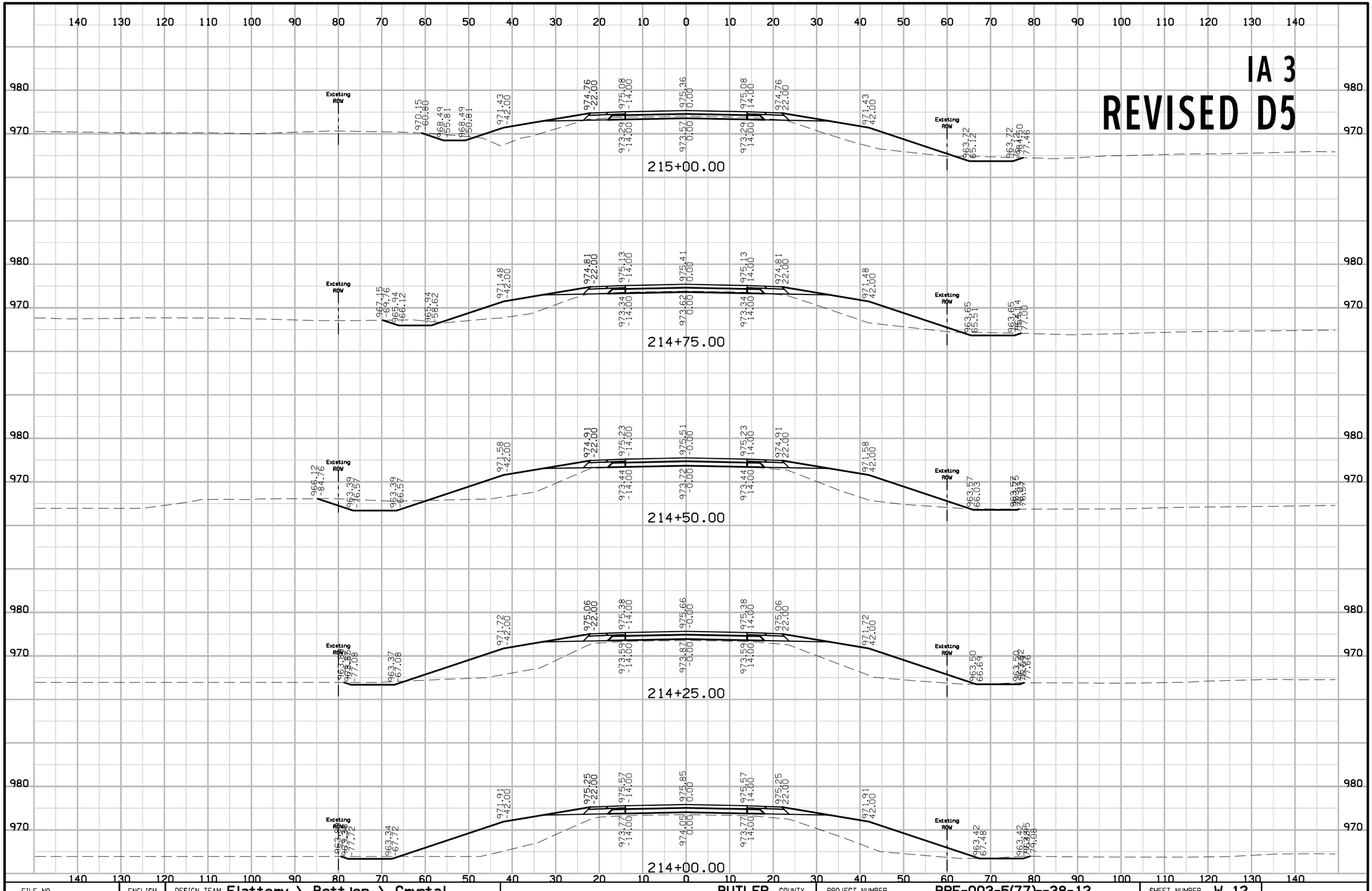
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.11

7:33:35 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

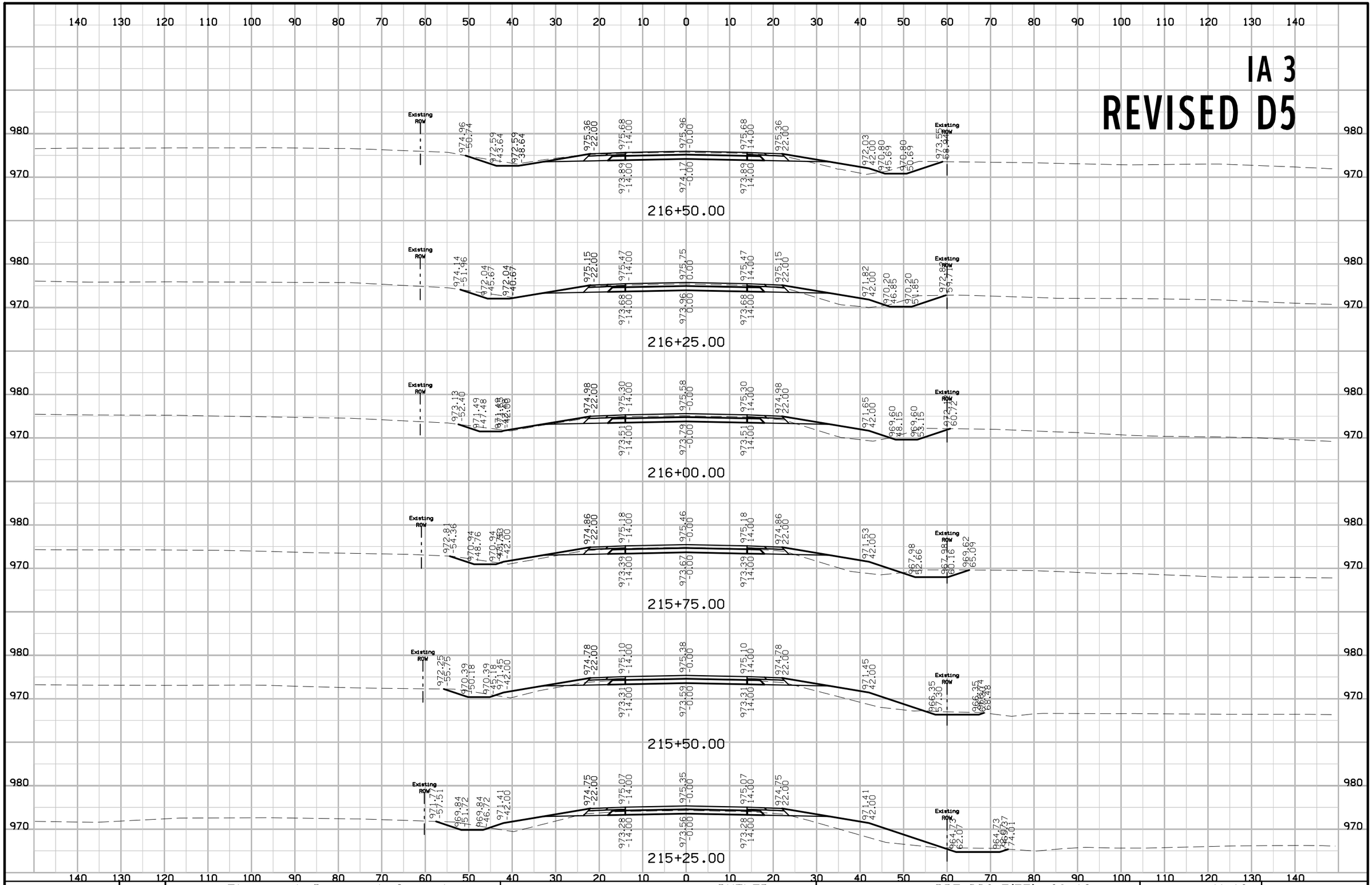
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.12

7:33:37 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

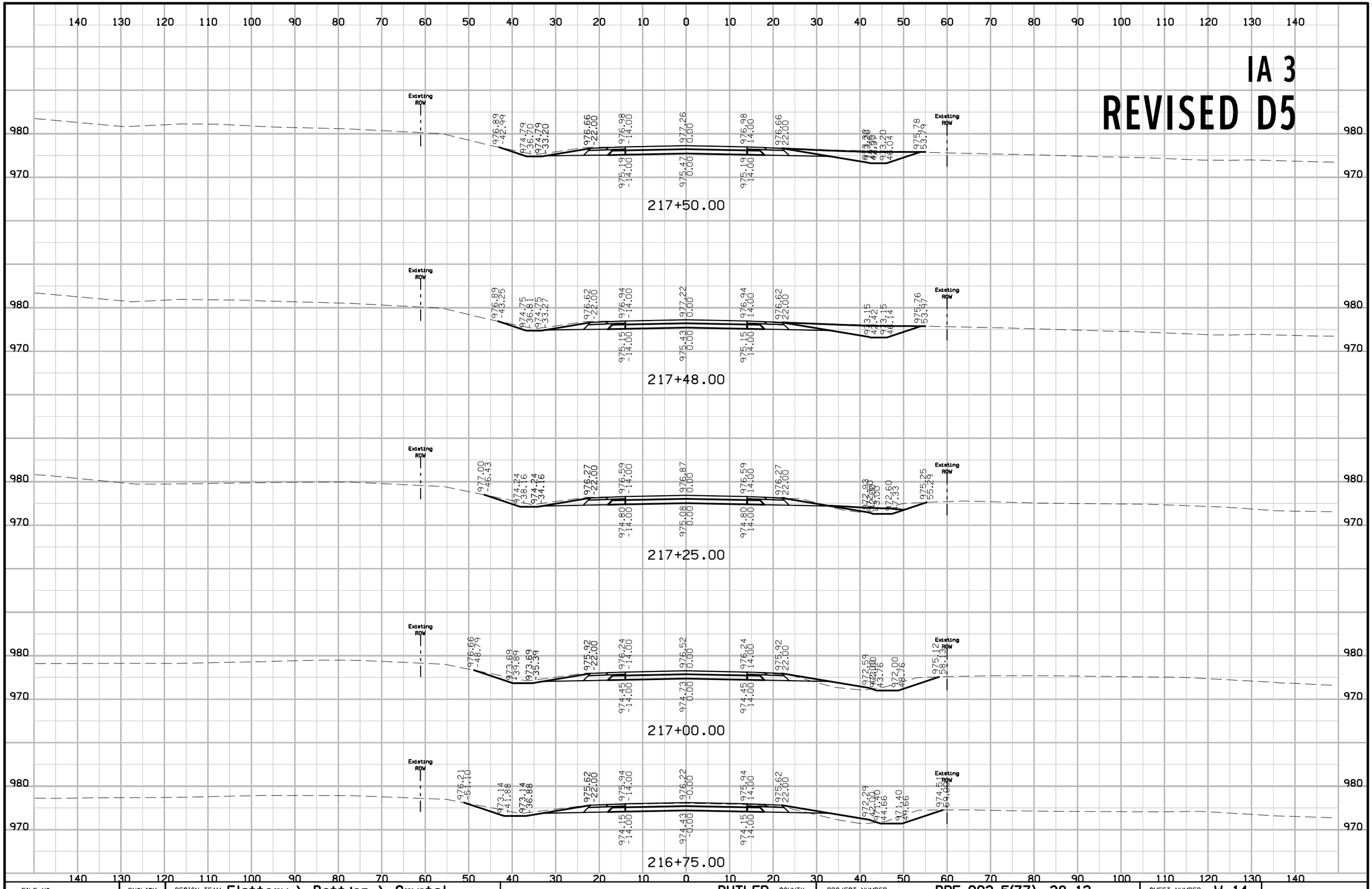
IA 3
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.13

7:33:39 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

IA 3
REVISED D5

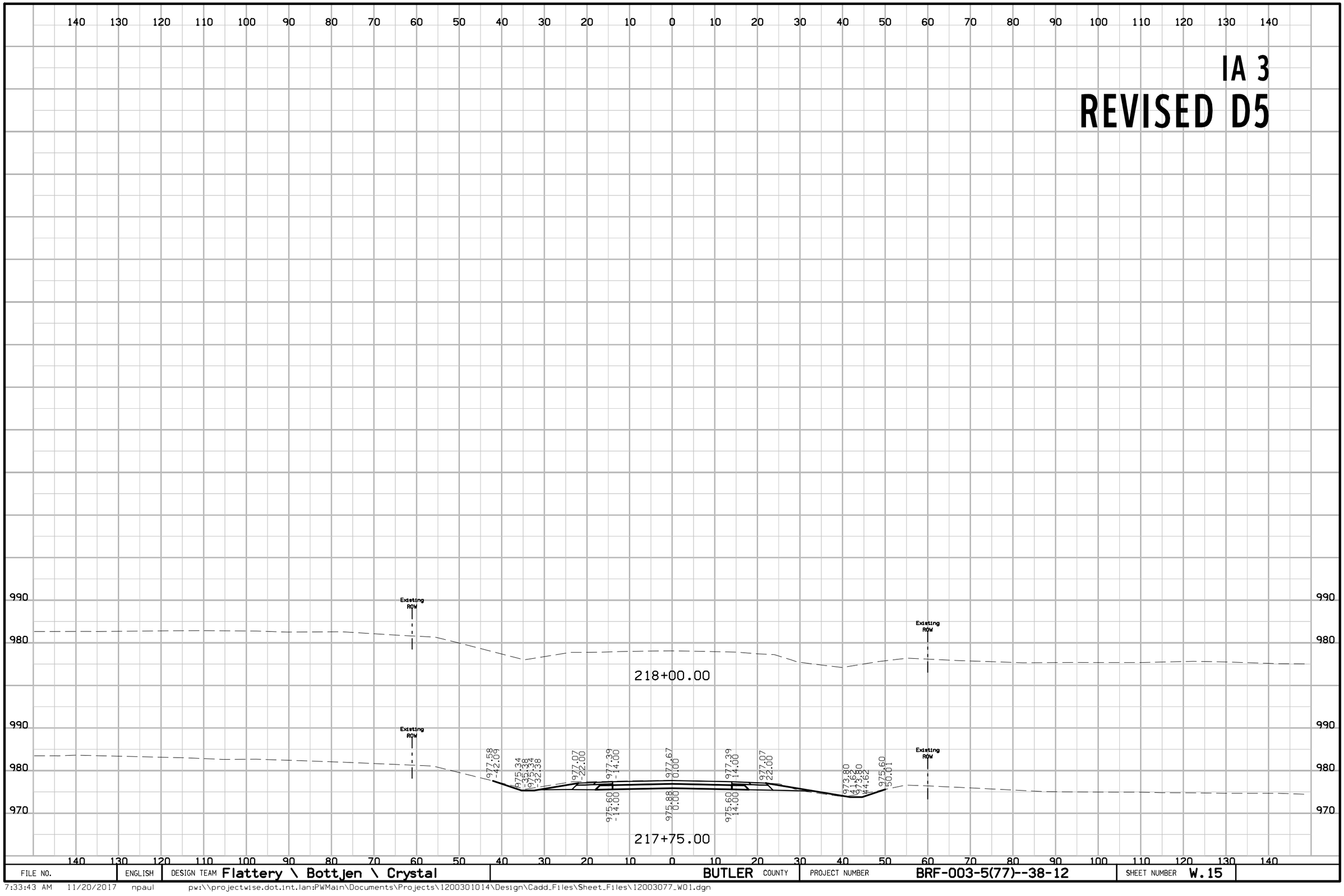


FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.14

7:33:41 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010\14\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

IA 3

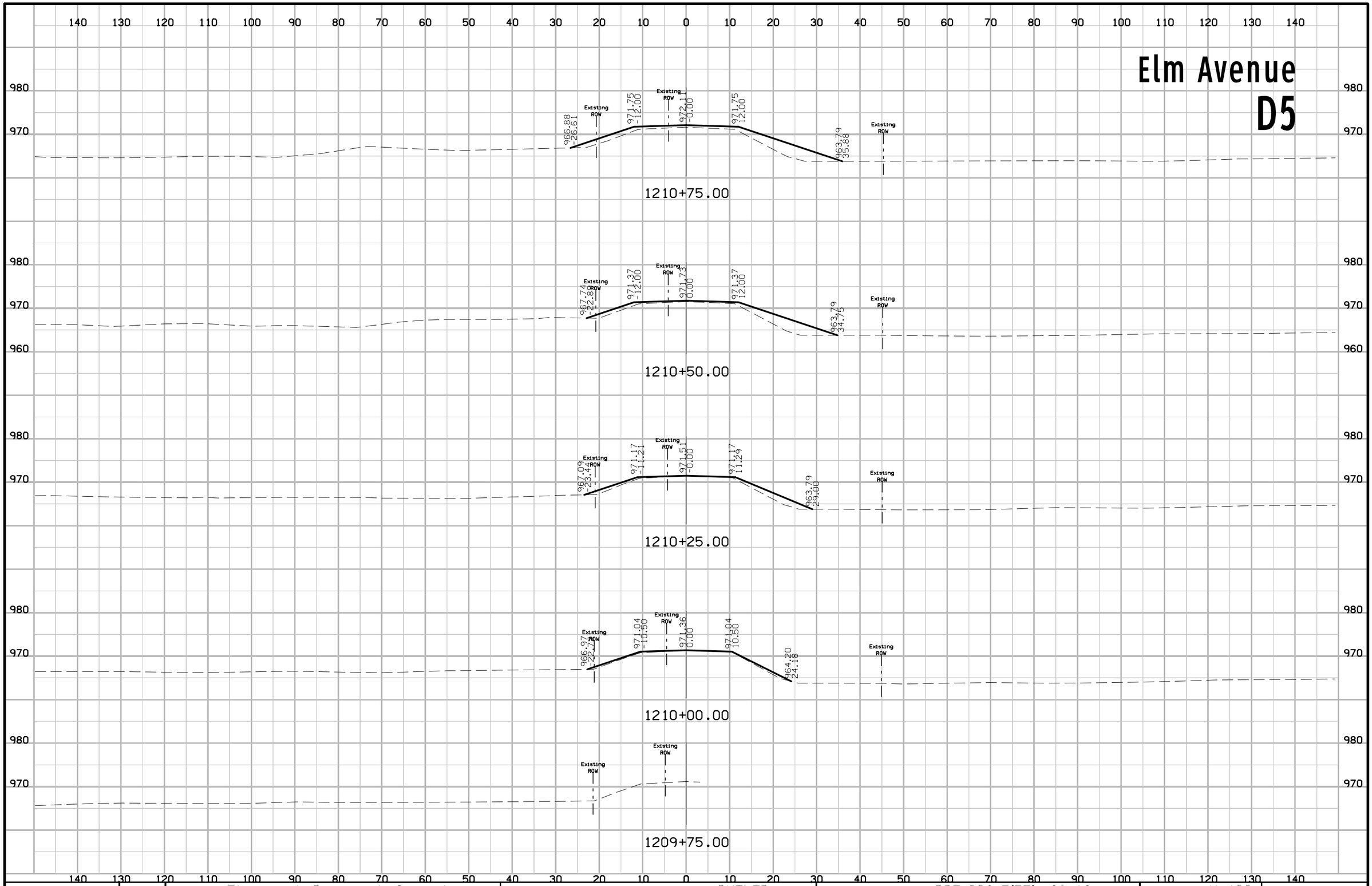
REVISED D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER W.15

7:33:43 AM 11/20/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010\14\Design\Cadd_Files\Sheet_Files\12003077_W01.dgn

Elm Avenue
D5

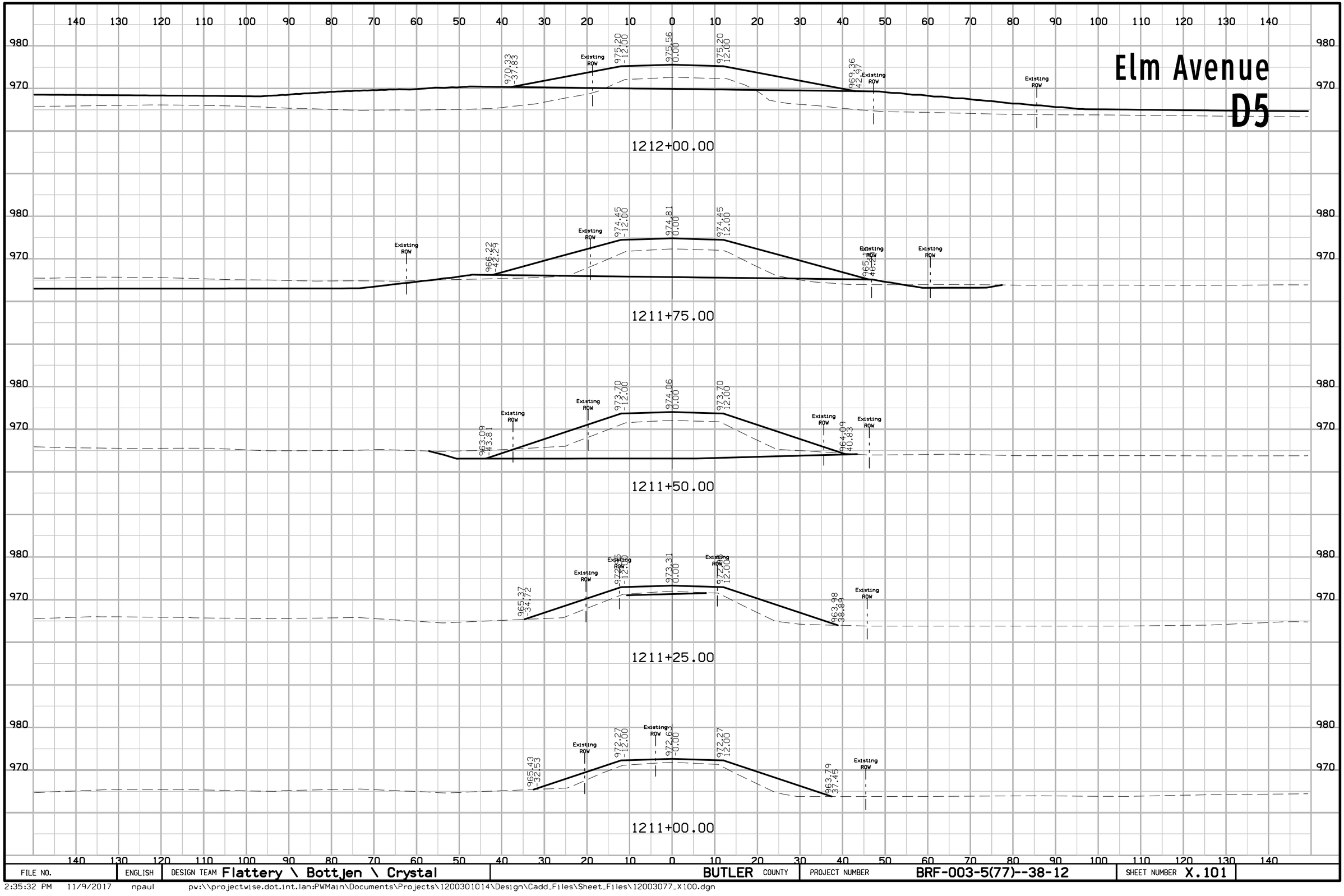


FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.100

2:35:30 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_X100.dgn

Elm Avenue

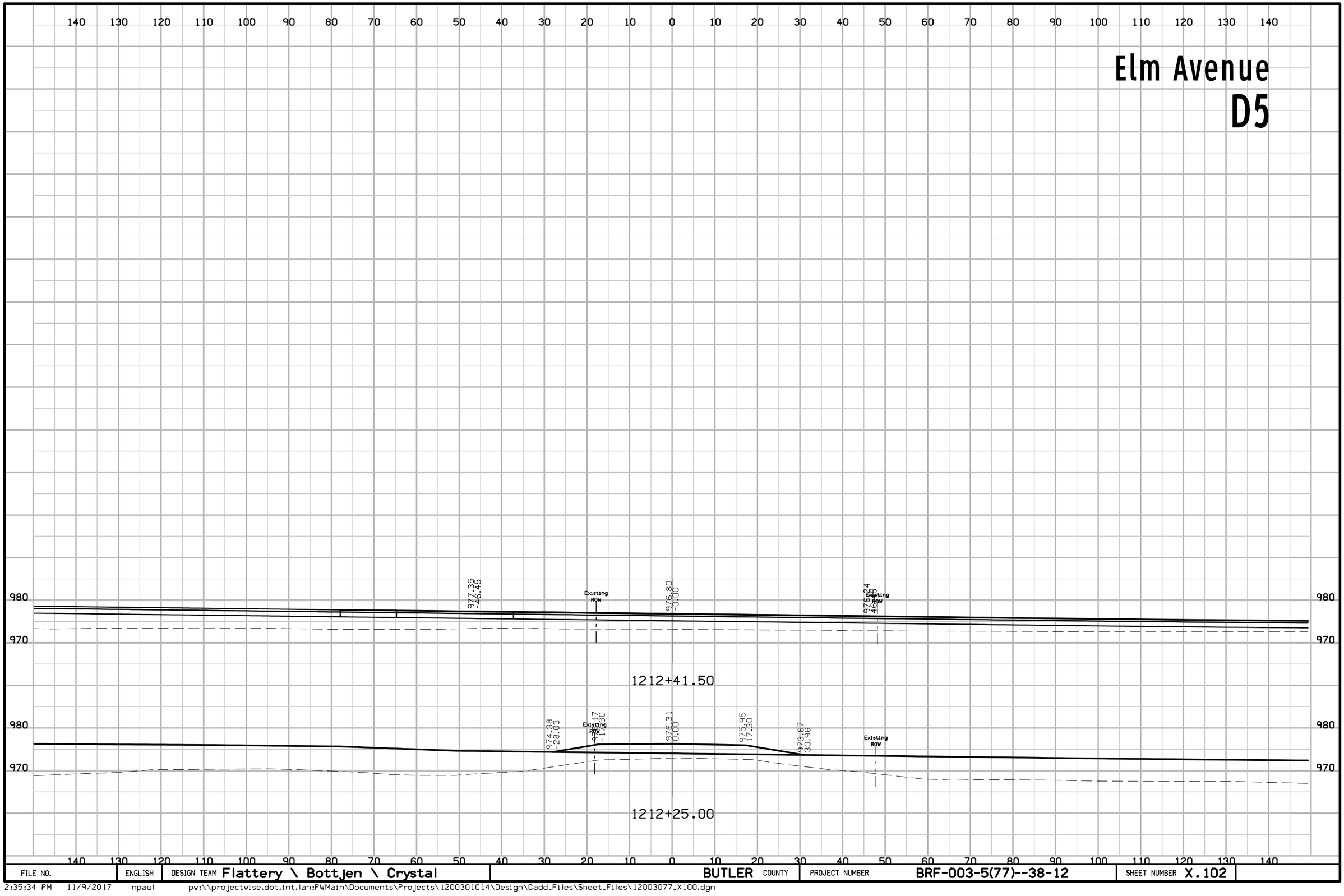
D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.101

2:35:32 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_X100.dgn

Elm Avenue
D5



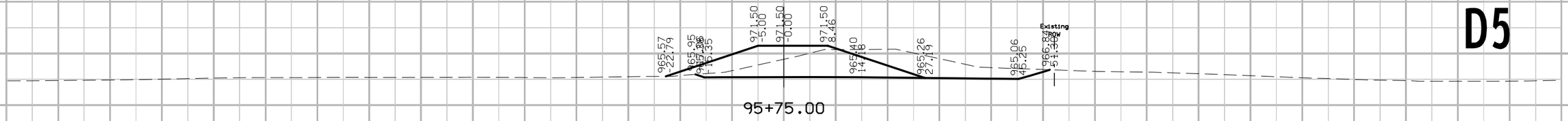
FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.102

2:35:34 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X100.dgn

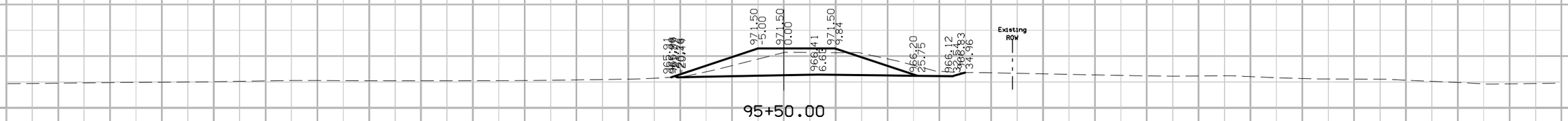
Dike
D5

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

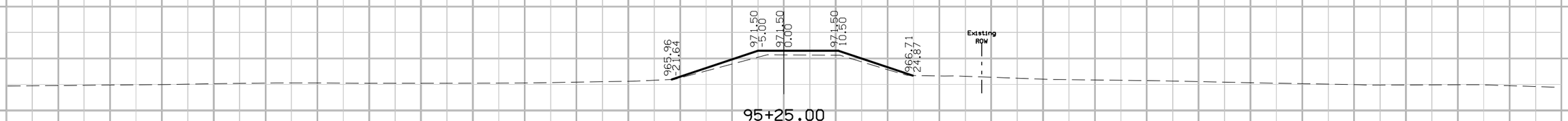
970



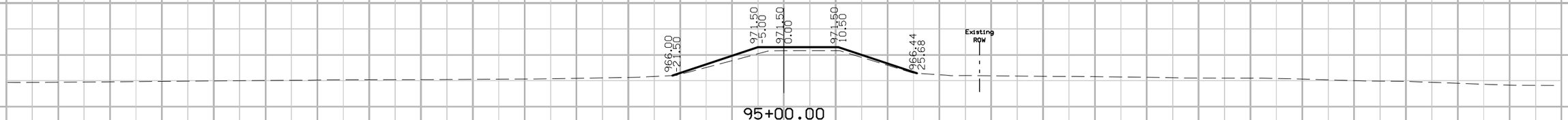
95+75.00



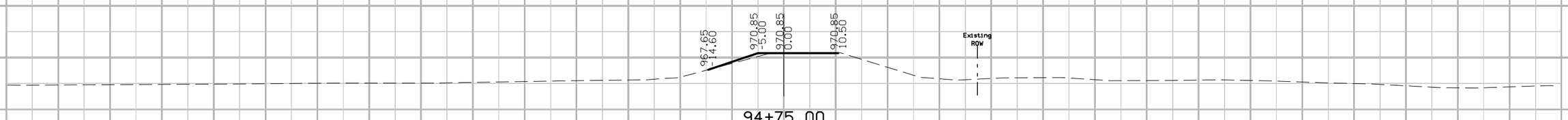
95+50.00



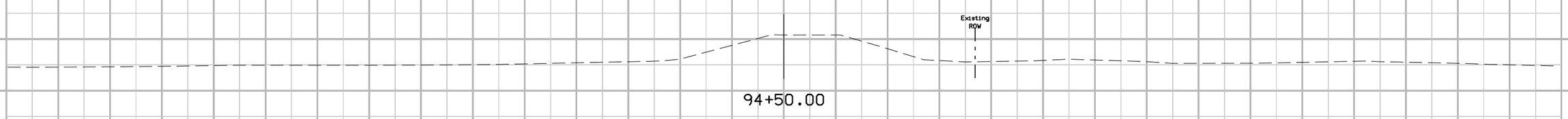
95+25.00



95+00.00



94+75.00



94+50.00

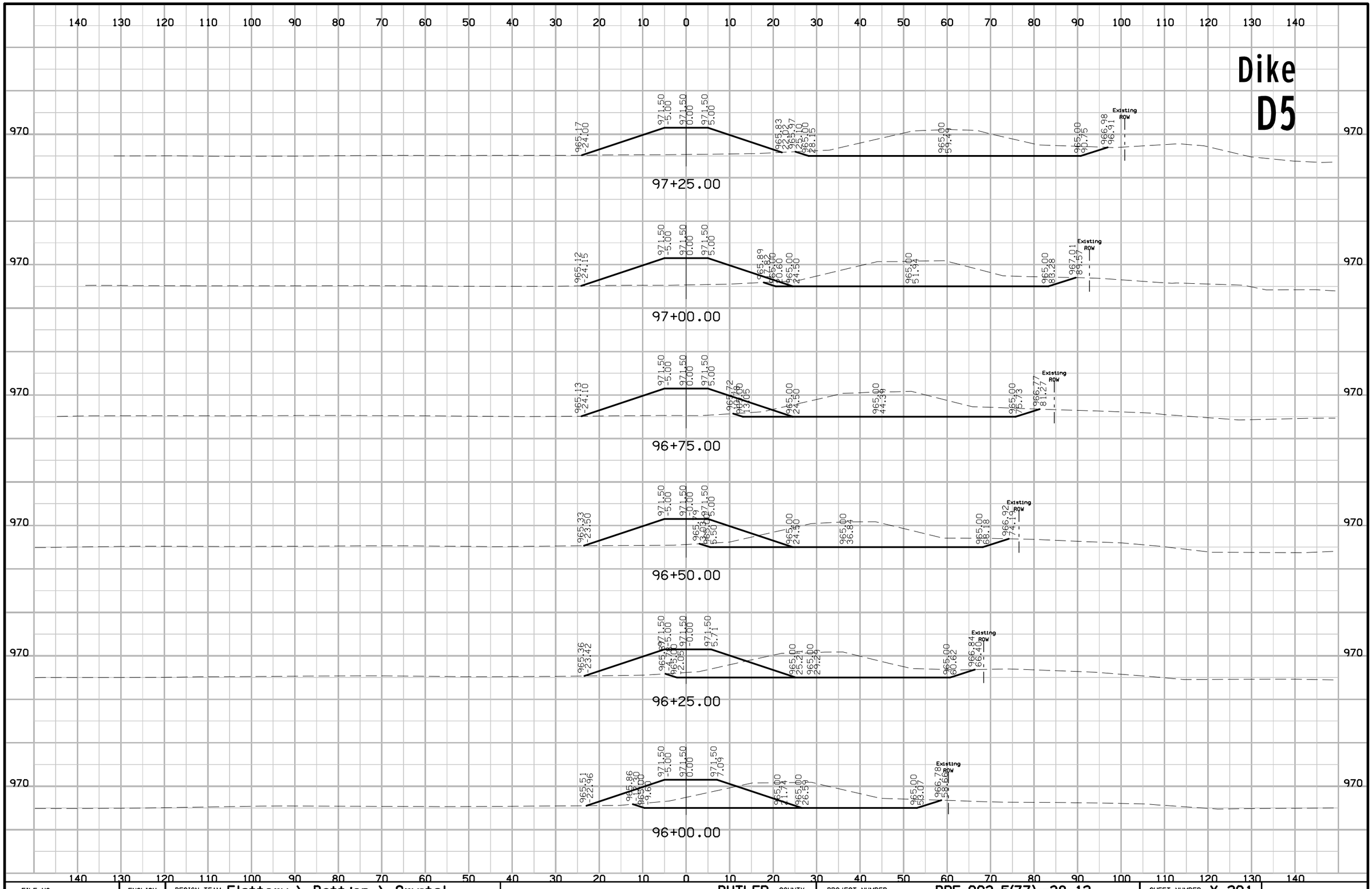
970

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.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.200

2:35:58 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

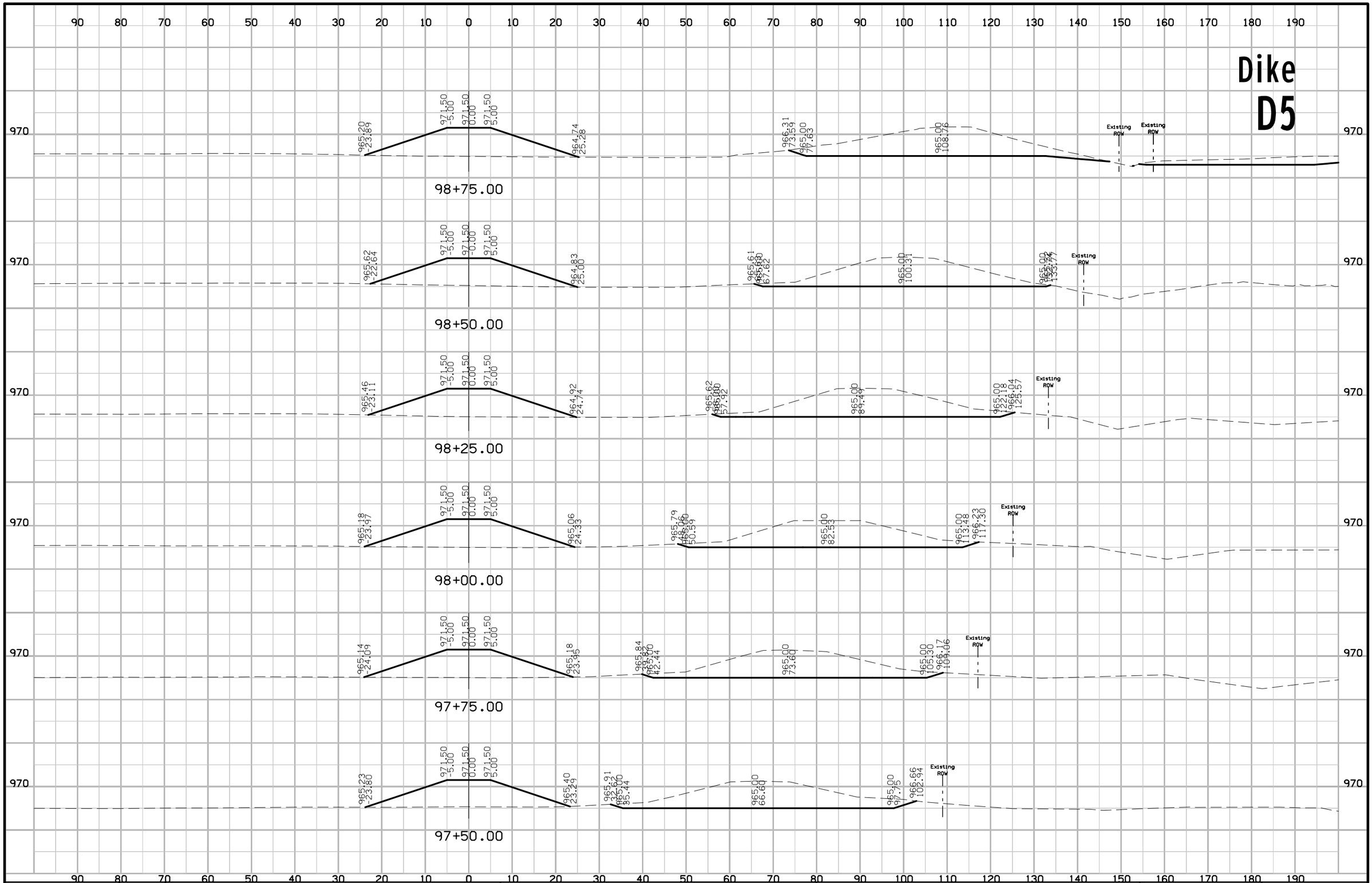
Dike
D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.201

2:36:00 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.202

2:36:02 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5

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

970

100+00.00

970

99+75.00

980

970

Existing ROW

969.65
-18.07

974.00
-5.00

974.00
0.00

974.00
5.00

965.00
27.50

99+50.00

980

970

Existing ROW

963.02
-37.94

974.00
-5.00

974.00
0.00

974.00
5.00

965.00
32.00

99+25.00

970

964.90
-24.79

971.50
-5.00

971.50
-0.00

971.50
5.00

965.03
24.42

Existing ROW

99+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.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.203

2:36:04 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5

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

980
970

964.75
-32.53
973.92
-5.00
973.92
0.00
973.92
5.00
965.28
30.41
Existing
ROW
965.83
965.00
98.05
965.00
118.51
965.00
965.00
150.39

101+25.00

980
970

Existing
ROW
962.40
-31.50
973.90
-5.00
973.90
0.00
973.90
5.00
964.73
32.51
Existing
ROW
965.59
965.00
104.51
965.00
125.23
965.00
965.00
157.88

101+00.00

980
970

966.44
-30.69
975.00
-5.00
975.00
-0.00
975.00
5.00
Existing
ROW
962.83
41.52
964.19
965.00
107.25
Existing
ROW
965.00
131.93
965.00
965.00
164.61

100+75.00

980
970

972.62
-12.14
975.00
-5.00
975.00
-0.00
975.00
5.00
965.00
31.79
Existing
ROW
965.00
965.00
170.49

100+50.00

970

970

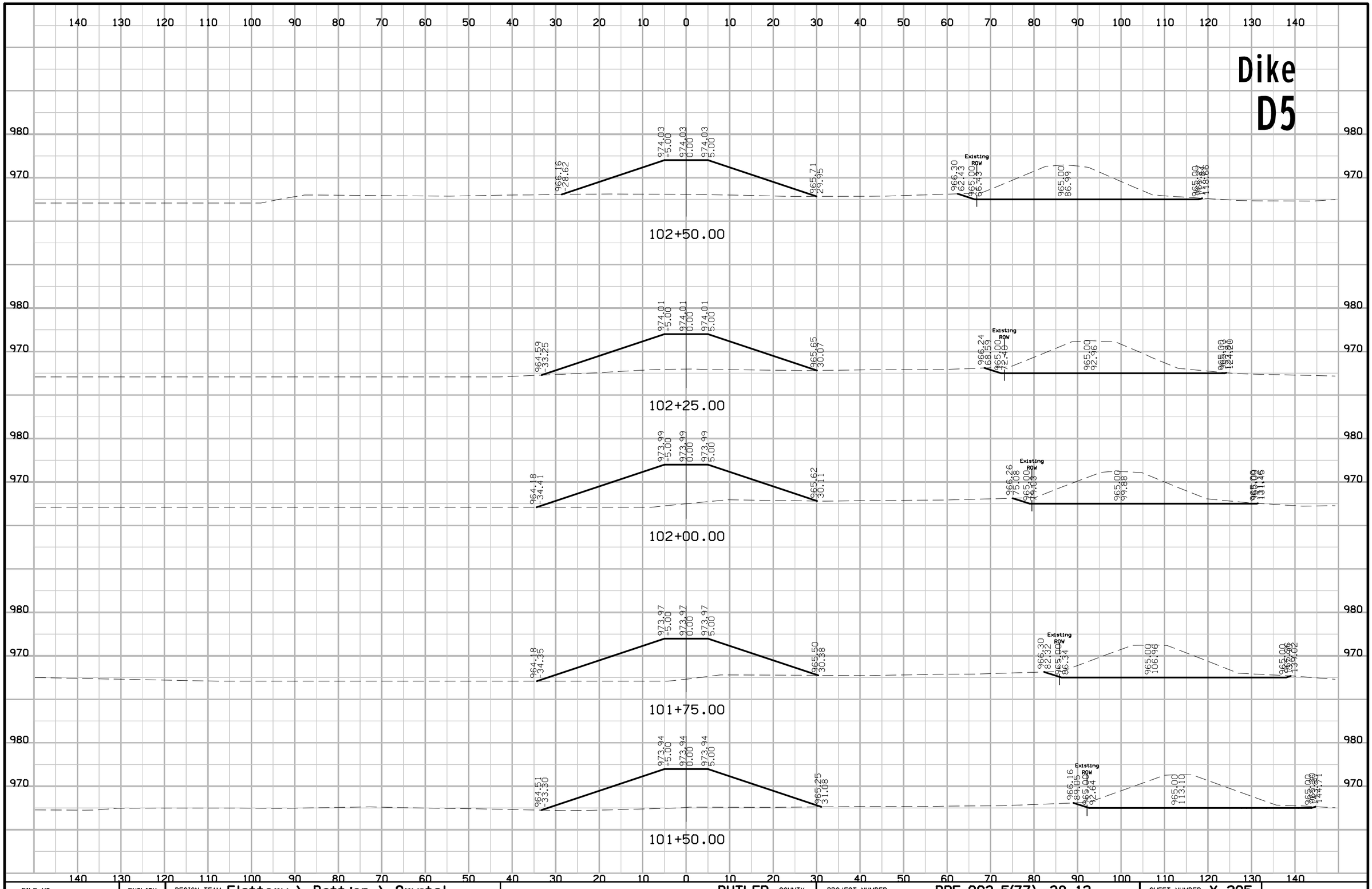
100+25.00

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.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.204

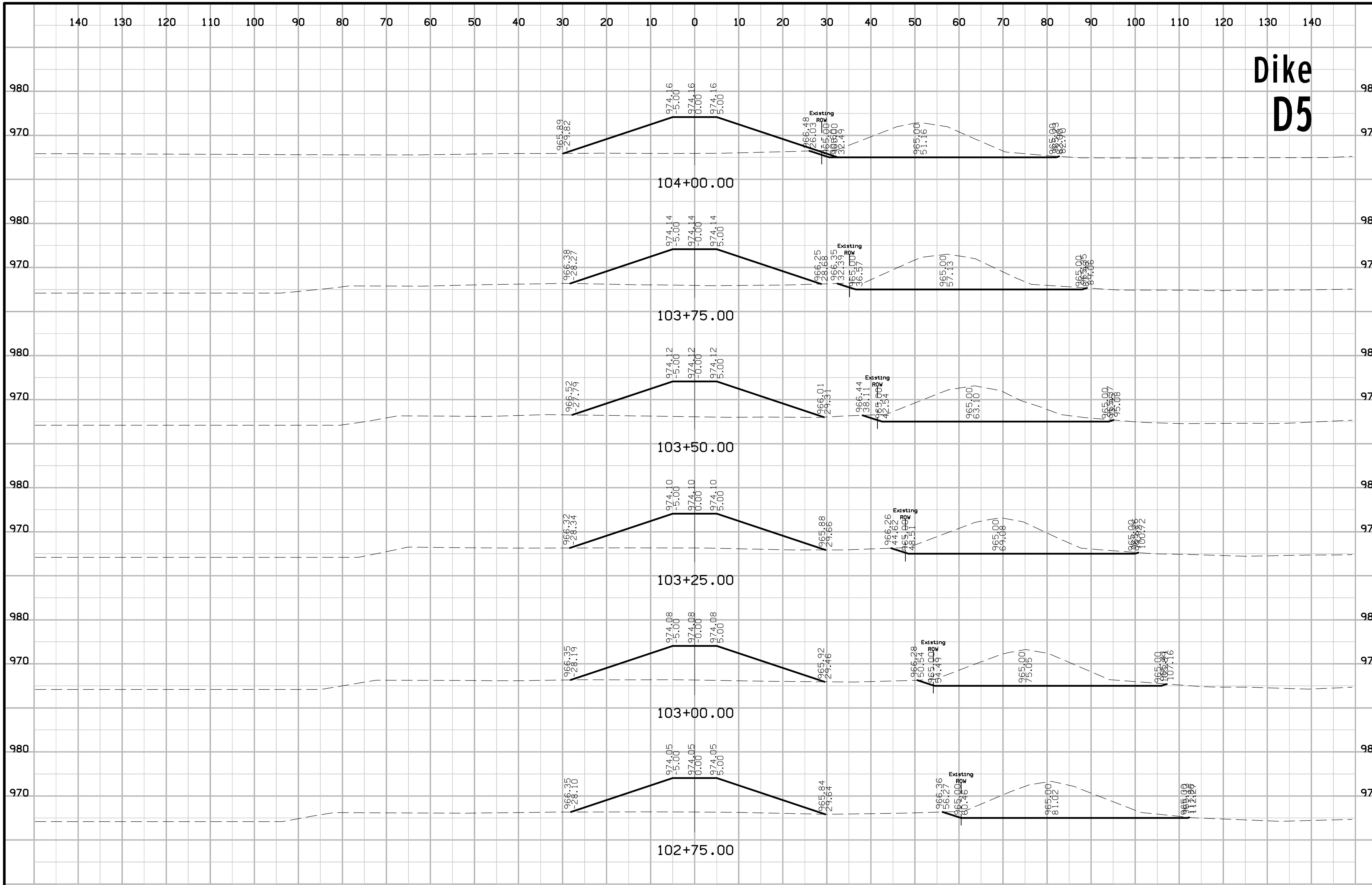
2:36:07 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.205

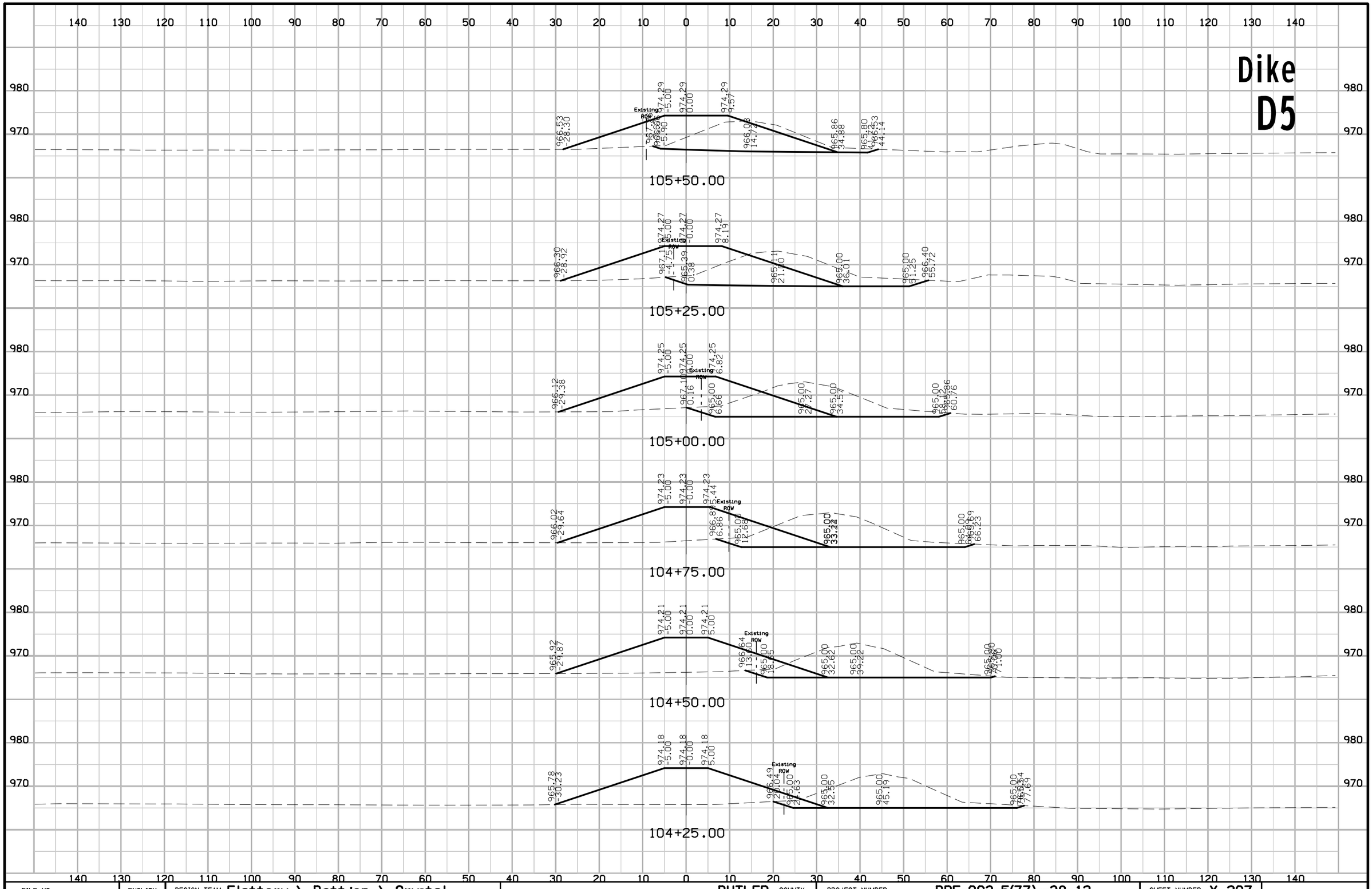
2:36:09 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal		BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.206

2:36:11 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5



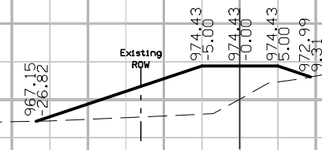
FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.207

2:36:13 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

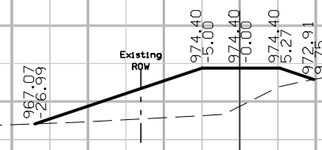
Dike
D5

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

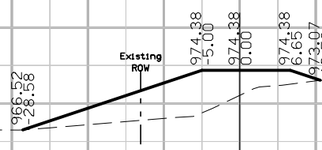
980
970



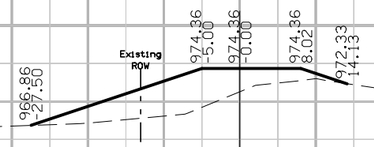
107+00.00



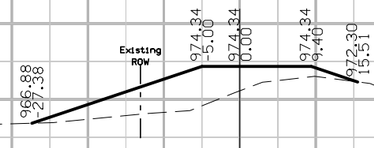
106+75.00



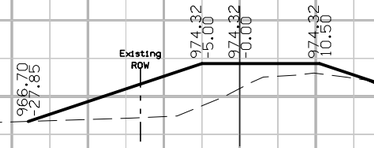
106+50.00



106+25.00



106+00.00



105+75.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.208

2:36:15 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5

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

980 970

Existing ROW

967.93 -24.88 | 974.56 -5.00 | 974.56 0.00 | 974.56 5.00 | 973.21 9.04

108+50.00

967.33 -26.61 | 974.53 -5.00 | 974.53 0.00 | 974.53 5.00 | 973.21 8.98

108+25.00

967.58 -25.79 | 974.51 -5.00 | 974.51 0.00 | 974.51 5.00 | 973.15 9.08

108+00.00

967.59 -25.70 | 974.49 -5.00 | 974.49 0.00 | 974.49 5.00 | 973.18 8.96

107+75.00

967.33 -26.41 | 974.47 -5.00 | 974.47 0.00 | 974.47 5.00 | 973.13 9.01

107+50.00

967.19 -26.77 | 974.45 -5.00 | 974.45 0.00 | 974.45 5.00 | 973.12 8.97

107+25.00

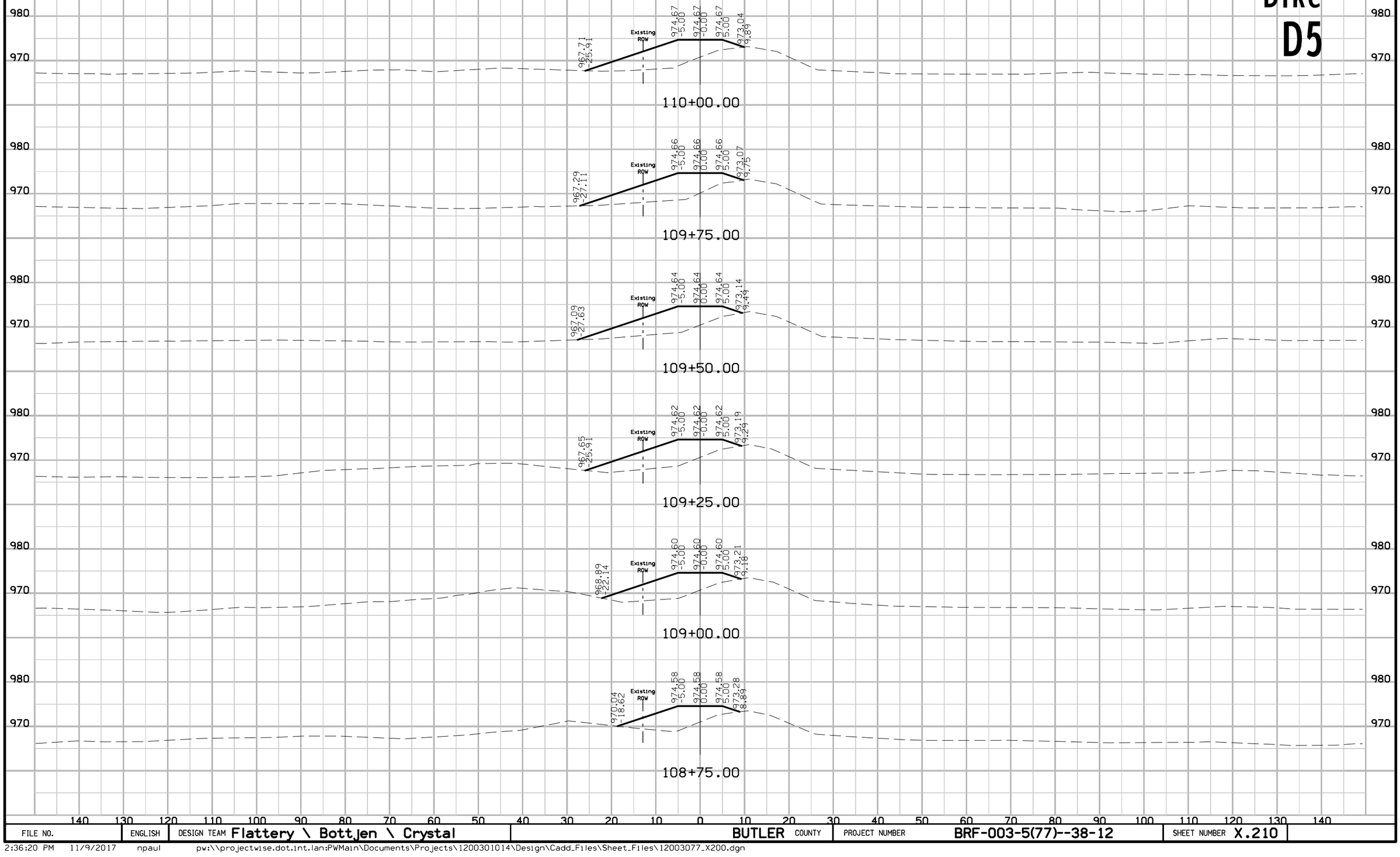
FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.209

2:36:17 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5

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

980 970



FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.210

2:36:20 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

Dike
D5

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

980
970

111+50.00

966.86
-28.71
974.77
-5.00
974.77
0.00
974.77
5.00
972.08
13.06

111+25.00

967.75
-25.98
Existing ROW
974.75
-5.00
974.75
-0.00
974.75
5.00
972.84
10.71

111+00.00

968.37
-24.08
Existing ROW
974.73
-5.00
974.73
-0.00
974.73
5.00
973.03
10.08

110+75.00

968.06
-24.95
Existing ROW
974.71
-5.00
974.71
0.00
974.71
5.00
973.07
9.93

110+50.00

968.22
-24.41
Existing ROW
974.69
-5.00
974.69
0.00
974.69
5.00
973.06
9.91

110+25.00

FILE NO.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.211

2:36:22 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\12003010l4\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn

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

Dike
D5

970

970

111+75.00

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.	ENGLISH	DESIGN TEAM Flattery \ Bottjen \ Crystal	BUTLER COUNTY	PROJECT NUMBER BRF-003-5(77)--38-12	SHEET NUMBER X.212

2:36:24 PM 11/9/2017 npaul pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\1200301014\Design\Cadd_Files\Sheet_Files\12003077_X200.dgn