LETTING DATE

POWESHIEK Co. PCC PAVEMENT - GRADE AND NEW IM-080-5(357)182--13-79

Anticipated January 2020 letting date for grading project.

INDEX OF SHEETS

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

POWESHIEK COUNTY

PCC PAVEMENT - GRADE AND NEW

1.1 Mile West of IA 146 to 1.1 Miles East of IA 146

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 221

PROJECT IDENTIFICATION NUMBER
04-79-080-010
PROJECT NUMBER
IM-080-5(357)182--13-79
R.O.W. PROJECT NUMBER

MILEAGE SUMMARY

105-1
09-27-94

Div.	Location	Lin. Ft.	Miles
1	I-80 East Bound		
	Sta. 54+00.00 to Sta. 106+35.22	5235.22	0.99
	Sta. 109+03.05 to Sta. 123+04.24	1401.19	0.27
	Sta. 125+56.25 to Sta. 156+92.93	3136.68	0.59
	I-80 West Bound		
	Sta. 58+10.74 to Sta. 106+36.37	4825.63	0.91
	Sta. 108+98.71 to Sta. 123+16.04	1417.33	0.27
	Sta. 125+67.32 to Sta. 161+00.00	3532.68	0.67
	Ramp A		
	Sta. 1506+93.60 to Sta. 1522+25.00	1531.40	0.29
	Ramp B		
	Sta. 2595+25.00 to Sta. 2601+31.99	606.99	0.11
	Ramp C		
	Sta. 3595+58.92 to Sta. 3608+12.23	1253.31	0.24
	Ramp D		
	Sta. 4508+49.25 to Sta. 4519+41.08	1091.83	0.21
	Total	24032.26	4.55

Living snow fence and landscaping along ROW line to be ignored. Replacement of living snow fence or any landscaping to be done after completion of project by Iowa DOT.

DOT to provide update on anticipated photogrammetry completion.

DOT requests updated TS&L's prior to D3, if possible.

Culvert hydrologic / hydraulic information will be to D-sheets for D3 submittal.

For Project Location Map refer to Sheet A.2

DESIGN DATA RURAL

2014	AADT	27,800	V.P.D.
2045	AADT	55,200	V.P.D.
2045	DHV	3,974	V.P.H.
TRUCKS		34	%
Total Design ESALs		--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	Nathan Carhoff	Primary Signature Block
V.1	Jerome Hatlewick	Structural

FIELD EXAM PLANS

Subject to change by final design.

D2 PLAN – Date: Sept. 11, 2018

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER A.1

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R-16W

R-15W

T-80N

T-79N

GRINNELL

POP. 9218

MALCOM

POP. 287

GRANT

MALCOM

PLEASANT

WASHINGTON

OAK GROVE

EWART

IOWA INTERSTATE R.R. LTD.

GRINNELL REGIONAL AIRPORT

Little Bear Creek

North Fork English River

DIAGONAL RD

OLD 6 RD

BEGIN PROJECT
Sta. 48+34.68

END PROJECT
Sta. 164+98.96

N

LOCATION MAP NOT TO SCALE

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER A.2

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Legend

X,XXX 2045 AM Peak Hour Volumes

(X,XXX) 2045 PM Peak Hour Volumes

XX,XXX 2045 AADT

X Number of Lanes

Level of Service

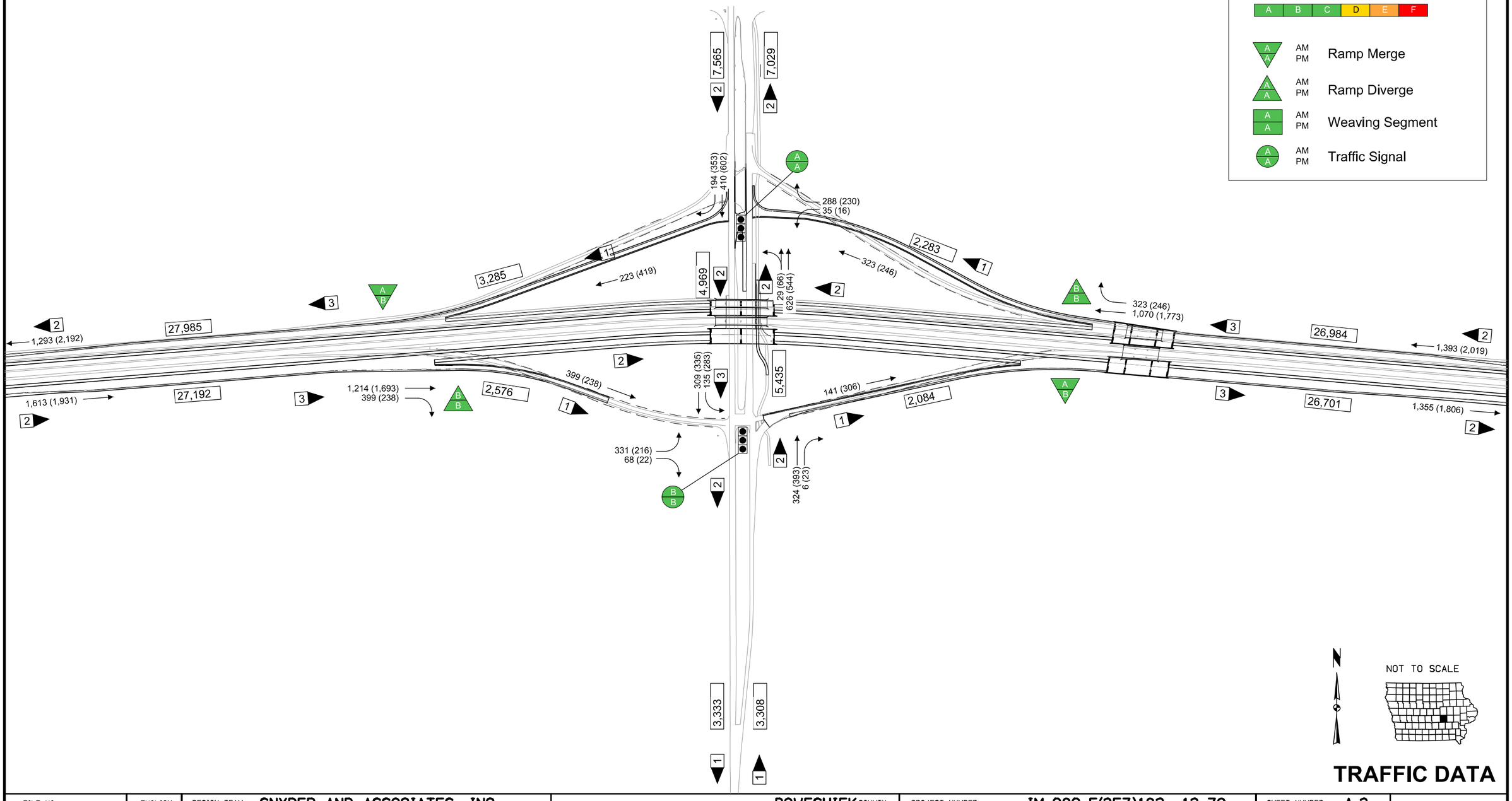
A | B | C | D | E | F

AM / PM Ramp Merge

AM / PM Ramp Diverge

AM / PM Weaving Segment

AM / PM Traffic Signal



TRAFFIC DATA

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER A.3

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FILE NO. | ENGLISH | DESIGN TEAM SNYDER AND ASSOCIATES, INC. | POWESHIEK COUNTY | PROJECT NUMBER IM-080-5(357)182--13-79 | SHEET NUMBER A.4

Interstate 80 Design Cttiteria

Roadway	**Interstate 80**		
PIN Number	04-79-080-010	**Submittal Date**	04/11/18
Project Number	IM-NHS-080-5(242)182--03-79		**Approval Date**
District	District 1	**Assistant District Engineer**	Tony Gustafson
County	Poweshiek	or	
Route	Interstate 80	**Office Director**	
Location	Milepost 181 to Milepost 186		
Work Type	Grade and Pave New		
Segment Manager			
Designer	Snyder & Associates, Inc.		

Design Manual Section 1C-1
Last Updated: 05-26-17

Rural Interstates (Rural Freeways)

Design Element		Preferred	Acceptable	Project Values
Design speed (mph)		75	70	75
Maximum superelevation rate (%) (Refer to Section 2A-2)		6	8	6%
Design lane width (ft)		12	12	12
Full depth paved width (ft)	Outside lane	14', 12' if using full depth paved shoulders	12	12
	Inside lane(s)	12	12	12
Auxiliary-lane width (ft)		12	12	NA
Pavement cross-slope (on tangent sections)	Through lanes	2%, However, when adjacent lanes slope in the same direction, increase slope by 0.5% per lane up to 3%	1.5% minimum, 3% maximum	2%
	Auxiliary lanes	3%	3% maximum	NA
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)	Interstates	4%	6% max, but not less than the cross slope of the adjacent lane	4%
	Freeways	4%	6% max, but not less than the cross slope of the adjacent lane	NA
Curb type (Refer to Section 3C-2)	Interstates	4-inch sloped	4-inch sloped	NA
	Freeways	4-inch sloped	4-inch sloped	NA
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	4:1 for Interstates, 3:1 for Freeways*	10:1 for 4' then 6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3.5:1
	Curbed roadways	2%	4:1 for Interstates, 3:1 for Freeways*	NA
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	3:1
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	5' x 10'
	Median ditch depth (ft)	4	2	4'
Median width (ft) (Refer to Section 3E-1)	Interstates	82	36	82'
	Freeways	64	50	NA
Bridge width—new***	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	54'
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	54'
Bridge width—existing***	Bridge length ≤ 200 ft	design lane widths + no less than 10' right and 3.5' left	design lane widths + 10' right shoulder and 3.5' left shoulder	NA
	Bridge length > 200 ft	design lane widths + no less than 3.5' right and left	design lane widths + 3.5' right and left of the design lane widths	NA
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	16.5'
	Over non-primary	16.5 at interchange locations, 15 ft at all other locations	14	16.5'
	Over railroad	23.3	23.3	23.3'
	Sign trusses and pedestrian crossings	17.5	17	17.5'
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	HL-93
Level of Service	Freeway segments	B	B	B
	Auxiliary facilities	B	B**	B

*Design Exception not required for Freeways
**LOS C may be acceptable in spot locations with FHWA approval
***FHWA notification via email is required if acceptable criteria is not met on the Interstate or NHS systems (No formal design exception required)

Directional Design Hourly Volume (DDHV) for Trucks = 250 +

Design Manual Section 1C-1
Last Updated: 05-26-17

Effective Shoulder Width and Type for Interstates (Freeways)

	Preferred (values shown in feet)		Acceptable (values shown in feet)		Project Values
Auxiliary Lanes	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	
	6	6	6	6	NA

4-Lane Sections

Design Year Traffic	Outside		Median Side		Outside		Median Side		Project Values
	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	
Less than or equal to 250 DDHV	10	10	6	6	10	10	4	4	NA
Greater than 250 DDHV	12	12	6	6	12	12	4	4	12'

Sections with 6 or more lanes

Design Year Traffic	Outside		Median Side		Outside		Median Side		Project Values
	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	
Less than or equal to 250 DDHV	10	10	10	10	10	10	10	10	NA
Greater than 250 DDHV	12	12	12	12	12	12	12	12	12'

Curbs should be located beyond the outer edge of the paved shoulder

Roadway Design Speed (mph) = 75

Design Manual Section 1C-1
Last Updated: 05-26-17

Design Criteria for High Speed Roadways

Design Element			Preferred Criteria Design Speed, mph						Acceptable Criteria Design Speed, mph						Project Values
			50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)			425	495	570	645	730	820	425	495	570	645	730	820	820
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e_{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	2500
		e_{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	NA
Minimum vertical curve length (ft) (Refer to Section 2B-1)			150	165	180	195	210	225	150	165	180	195	210	225	225
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	312
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	206
		roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	NA
Minimum gradient (%)	(Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.5%
Maximum gradient (%) (Refer to Section 2B-1)		Urban roadways	4		3				7	6	5	--	--	--	NA
		Rural roadways							5	5	4	4	4	4	NA
		Interstates							5	5	4	4	4	4	4%
Clear zone			See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						34 Feet

FILE NO.	
ENGLISH	
DESIGN TEAM	SNYDER AND ASSOCIATES, INC.
COUNTY	POWESHIEK
PROJECT NUMBER	IM-080-5(357)182--13-79
SHEET NUMBER	A.5

Interchange Ramp Design Ctiteria

Roadway	**Interstate 80**			
PIN Number	04-79-080-010		**Submittal Date**	04/11/18
Project Number	IM-NHS-080-5(242)182--03-79			**Approval Date**
District	District 1	**Assistant District Engineer**	Tony Gustafson	
County	POWESHIEK		**or**	
Route	Interstate 80	**Office Director**		
Location	Grinnell Interchange			
Work Type	Grade and Pave New			
Segment Manager				
Designer	Snyder & Associates, Inc.			

Design Manual Section 1C-1
Last Updated: 05-26-17

Ramps

Design Element		Preferred Values	Acceptable Values	Project Values
Design speed (mph)		See Design Speed for Ramps Table Below	See Design Speed for Ramps Table Below	60, 40
Design lane width (ft)				
Turn-lane width (ft)	Interstate ramps	12	12	12'
	Non-Interstate ramps	12	10	NA
Pavement cross-slope (on tangent sections)		2%	1.5% minimum, 2% maximum	2%
Shoulder cross-slope (on tangent sections)		4	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	4:1 for interstates*, 3:1 for other roadways	10:1 for 4' then 6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3.5:1
	Curbed roadways	2%	not steeper than 3:1	NA
Bridge width—new**		design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	NA
Bridge width—existing**		design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	NA
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	NA
	over non-primary	16.5 at interchange locations, 15 at all other locations	14	NA
	over railroad	23.3	23.3	NA
	sign truss and pedestrian bridges	17.5	17	17.5'
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	NA

*Design Exception required for ramps on the Interstate system only
**FHWA notification via email is required if acceptable cirteria is not met on the Interstate or NHS systems (No formal design exception required)

Design Manual Section 1C-1
Last Updated: 05-26-17

Effective Shoulder Width and Type for Ramps

Design Element		Ramp Type: Preferred							Ramp Type: Acceptable							Project Values
		Diagonal		Loop	Semi-Directional		Directional		Diagonal		Loop	Semi-Directional		Directional		
		one lane	two lane		one lane	two lane	one lane	two lane	Radius*> 500 feet* one lane	Radius*> 500 feet* two lane		Radius > 500 feet* one lane	Radius > 500 feet* two lane	Radius > 500 feet one lane	Radius > 500 feet two lane	
Full depth paved width (ft)		16	24	18	16	24	16	24	14	22	17	14	22	14	22	16'
Design lane width (ft)		16	12	18	16	12	16	12	14	11	17	14	11	14	11	16'
Paved shoulder width (ft) (in the direction of travel)**	Left	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4'
	Right	6	6	6	6	6	8	8	6	6	6	6	6	8	8	6'
***Granular shoulder width (ft) (in the direction of travel)	Left	4	-	-	-	-	-	-	4	-	-	-	-	-	-	NA
	Right	6	-	-	-	-	-	-	6	-	-	-	-	-	-	NA
Curb type	Interstate	4-inch sloped							4-inch sloped							NA
	Non-Interstate	4-inch sloped							6-inch sloped							NA

*For radii less than 500 feet, refer to design widths of pavement for turning roadways in A Policy on Geometric Design of Highways and Streets
**Left and right shoulders widths may be reversed if needed to provide additional sight distance
***Non-Interstate interchanges only

Ramp Design Speed (mph) = 60, 40

Design Manual Section 1C-1
Last Updated: 05-26-17

Design Criteria for Ramps Based Upon Design Speed

Design Element			Preferred Criteria: Design Speed, mph 25	30	35	40	45	50	55	60	Acceptable Criteria: Design Speed, mph 25	30	35	40	45	50	55	60	Project Values
Stopping sight distance (ft) (Refer to Section 6D-1)			155	200	250	305	360	425	495	570	155	200	250	305	360	425	495	570	570', 305'
Minimum horizontal curve radius (ft) and superelevation rate (Refer to Sections 2A-2 and 2A-3)	Method 2 superelevation and side friction distribution	e = 4% max	See Table 10 in Section 2A-3					--	--	--	--								533
	Method 5 superelevation and side friction distribution	e_{max} = 6%	144	231	340	485	643	833	1060	1330	144	231	340	485	643	833	1060	1330	1330', 485'
		e_{max} = 8%	--	--	--	--	--	--	--	--	134	214	314	444	587	758	960	1200	NA
Minimum vertical curve length (ft) (Refer to Section 2B-1)			75	90	105	120	135	150	165	180	75	90	105	120	135	150	165	180	180', 120'
Minimum Rate of Vertical Curvature (Refer to Section 2B-1)	crest vertical curves		12	19	29	44	61	84	114	151	12	19	29	44	61	84	114	151	151', 44'
	sag vertical curves	roadways without fixed source lighting	26	37	49	64	79	96	115	136	26	37	49	64	79	96	115	136	136', 64'
		roadways with fixed-source lighting	26	37	49	64	79	96	115	136	14	20	27	35	44	54	66	78	136', 64'
Minimum gradient (%)	(Refer to Section 2B-1)		0.5								0.3% with a curb, 0.0% without a curb								0.5%
Maximum gradient (%) on ramps	(Refer to Sections 2B-1)	Upgrades	4								8	7	6	6	5	5	5	5	4%
		Downgrades									Equal to the maximum upgrade gradient. In special cases, may be 2% greater but in no case greater than 8%								4%
Clear zone			See "Preferred Clear Zone" table in Section 8A-2								See "Acceptable Clear Zone" table in Section 8A-2								32 Feet

Ramp Design Speed (mph) = 60, 40

Design Manual Section 1C-1
Last Updated: 05-26-17

Design Speed for Ramps

Design Element	Ramp Type: Preferred All curves near free flow terminals	Diagonal Curves near at-grade terminals	Loop	Semi-Directional	Directional	Acceptable All curves near free flow terminals	Diagonal Curves near at-grade terminals	Loop	Semi-Directional	Directional	Project Values
Design speed (mph)	60	40	30	50	60	50	35	25	40	40	60
Maximum superelevation rate (Refer to Section 2A-2 for details)	6%	4%	6%			8%					6%

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Roadway	**Iowa 146**			
PIN Number	04-79-080-010		**Submittal Date**	04/11/18
Project Number	IM-NHS-080-5(242)182--03-79			**Approval Date**
District	District 1	**Assistant District Engineer**	Tony Gustafson	
County	Poweshiek		o	
Route	IA 146	**Office Director**		
Location	Grinnell Interchange			
Work Type				
Segment Manager				
Designer	Snyder & Associates, Inc.			

Design Manual Section 1C-1
Last Updated: 05-26-17

Rural Expressways (Rural Arterials)

Design Element		Preferred	Acceptable Criteria	Project Values
Design speed (mph)		70	50	60
Maximum superelevation rate (Refer to Section 2A-2)		6%	8%	6%
Design lane width (ft)		12	12	12
Full depth paved width (ft)	Outside lane	14', 12' if using full depth paved shoulders	12	14'
	Inside lane(s)	12	12	12'
Right turn lane or an auxiliary lane (ft)		12	10	12'
Left turn lane (ft)		12	10	12'
Pavement cross-slope (on tangent sections)	Through lanes	2%, However, when adjacent lanes slope in the same direction, increase slope by 0.5% per lane up to 3%	1.5% minimum, 3% maximum	2%
	Auxiliary and turn lanes	3%	3% maximum	NA
	Crown break at centerline	4%	4% maximum	4%
Shoulder cross-slope (on tangent sections)		4%	Shoulder cross-slope cannot be less than the adjacent lane, 6% max for paved or granular shoulders, 8% max for earth shoulders	4%
Curb type (Refer to Section 3C-2)	Design speed = 50 or 55 mph	6-inch sloped	6-inch standard	NA
	Design speed ≥ 60 mph	4-inch sloped	6-inch sloped	NA
Foreslope (For fill areas greater than 40 ft, contact the Soils Design Section for assistance)	Adjacent to shoulder	10:1 for 4' then 6:1	3:1	10:1 for 4' then 6:1
	Beyond standard ditch depth and design clear zone	3.5:1	3:1	3.5:1
	Curbed roadways	2%	not steeper than 3:1	NA
Backslope (For cut areas greater than 25 feet, contact the Soils Design Section for assistance with backslope benches.)		3:1	2.5:1	3:1
Transverse Slopes	w/ drainage structures	8:1	6:1	8:1
	w/o drainage structures	10:1	6:1	10:1
Ditches (Refer to Section 3G-1)	Outside ditch (depth x width) (ft)	5 x 10	--	5' x 10'
	Median ditch depth (ft)	4	2	2'
Median width (ft) (Refer to Section 3E-1)		64	50	50'
Bridge width—new*	Bridge length ≤ 200 ft	design lane widths + effective shoulder widths	design lane widths + effective shoulder widths	NA
	Bridge length > 200 ft	design lane widths + effective shoulder widths	design lane width + 4' right and left of the design lane widths	NA
Bridge width—existing*		design lane widths + no less than 2 ft left and right	design lane widths + 2 ft left and right of the design lane widths	NA
Vertical clearance (ft) (above lanes, shoulders and 25 feet left and right of the center of railroad tracks)	Over primary	16.5	16	NA
	Over non-primary	16.5 at interchange locations, 15 at all other locations	14	NA
	Over railroad	23.3	23.3	NA
	Sign trusses and pedestrian crossings	17.5	17	17.5'
Structural Capacity		Contact Office of Bridges and Structures	Contact Office of Bridges and Structures	NA
Level of Service		B	B	B

*FHWA notification via email is required if acceptable criteria is not met on the NHS system (No formal design exception required)

Design year ADT = 6000+

Design Manual Section 1C-1
Last Updated: 05-26-17

Effective Shoulder Width and Type for Multilane Arterials

Preferred (Values shown in feet)					Acceptable (Values shown in feet)					Project Values
	Rural Roadways		Urban Roadways			Rural Roadways		Urban Roadways		
Auxiliary lanes or turn lanes with shoulders	6		6		Auxiliary lanes or turn lanes with shoulders	6		0		6'
Turn lanes with curbs	6		See Section 3C-2			6		0		6'
Expressways	Outside		Median Side		Expressways	Outside		Median Side		
	Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width		Effective Shoulder Width	Paved Width	Effective Shoulder Width	Paved Width	
Routes where bicycles are to be accommodated	10	10	6	6	Routes where bicycles are to be accommodated	8	4	4	4	10'
On roadways approaching urban areas (due to increased bike traffic)	10	10	6	6						
On all curves with a superelevation rate of 7.0% or greater	10	10	6	6	On all other Expressways (Multilane Arterials)	8	2*	4	4	
On roadways with design year ADT > 6500 vpd	10	6	6	6						
On all other Expressways (Multilane Arterials)	10	4	6	4						

*Requires safety edge-See Section 3C-6
Curbs should be located beyond the outer edge of the effective shoulder width in rural areas
Refer to Section 3C-2 for curb offsets in urban areas

Roadway Design Speed (mph) = 60

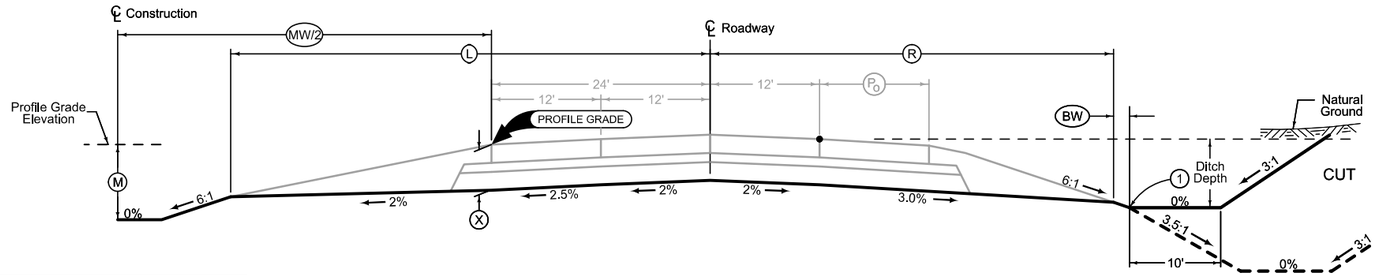
Design Manual Section 1C-1
Last Updated: 05-26-17

Design Criteria for High Speed Roadways

Design Element			Preferred Criteria Design Speed, mph						Acceptable Criteria Design Speed, mph						Project Values
			50	55	60	65	70	75	50	55	60	65	70	75	
Stopping sight distance (ft) (Refer to Section 6D-1)			425	495	570	645	730	820	425	495	570	645	730	820	570
Minimum horizontal curve radius (ft) (Refer to Sections 2A-2 and 2A-3)	Method 5 superelevation and side friction distribution	e_{max} = 6%	833	1060	1330	1660	2040	2500	833	1060	1330	1660	2040	2500	1330
		e_{max} = 8%	--	--	--	--	--	--	758	960	1200	1480	1810	2210	NA
Minimum vertical curve length (ft) (Refer to Section 2B-1)			150	165	180	195	210	225	150	165	180	195	210	225	180
Minimum rate of vertical curvature (K) (Refer to Section 2B-1)	crest vertical curves		84	114	151	193	247	312	84	114	151	193	247	312	151
	sag vertical curves	roadways without fixed-source lighting	96	115	136	157	181	206	96	115	136	157	181	206	136
		roadways with fixed-source lighting	96	115	136	157	181	206	54	66	78	91	106	121	136
Minimum gradient (%)	(Refer to Section 2B-1)		0.5						0.3% with a curb, 0.0% without a curb						0.5%
Maximum gradient (%)	(Refer to Section 2B-1)	Urban roadways	4		3				7	6	6	--	--	--	NA
		Rural roadways							5	5	4	4	4	4	4%
		Interstates							5	5	4	4	4	4	NA
Clear zone			See "Preferred Clear Zone" table in Section 8A-2						See "Acceptable Clear Zone" table in Section 8A-2						32 Feet

Iowa 146 Design Ctiteria

G_6_Grade_Depressed
Modified



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

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

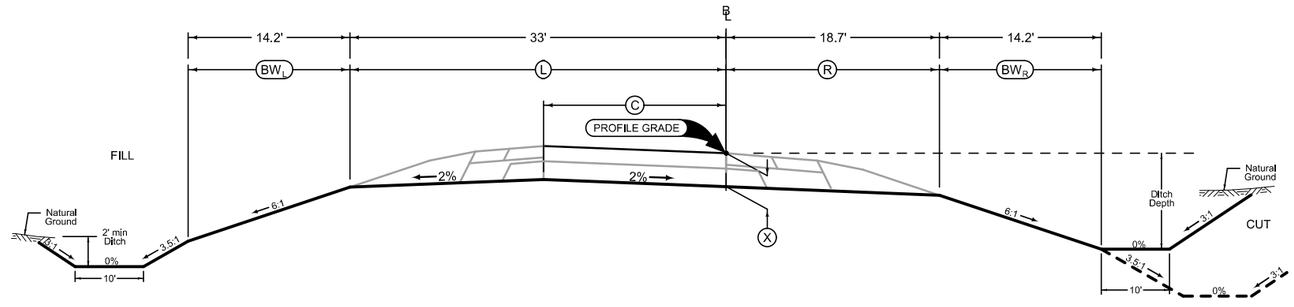
(1) Refer to project plan and cross sections for specific location of foreslope change.

LOCATION			DIMENSIONS					
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(MW) Feet	(M) Feet
INTERSTATE 80 EB	54+00.00	161+00.00	52.6	44.2	30	1.8	82	4
INTERSTATE 80 WB	58+10.83	67+33.54	52.6	44.2	30	1.8	VAR	4
INTERSTATE 80 WB	67+33.54	147+96.31	52.6	44.2	30	1.8	82	4
INTERSTATE 80 WB	147+96.31	156+92.48	52.6	44.2	30	1.8	VAR	4

6 LANE GRADING
(Depressed Median)

G_1R_Grade
04-15-14

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet
IA HWY. 146	A	1507+42.60	1522+25.00	34.3	19.5	16	22	_	_
IA HWY. 146	B	2595+25.00	2601+31.99	34.3	19.5	16	22	_	_
IA HWY. 146	C	3595+58.92	3607+61.50	34.3	19.5	16	22	_	_
IA HWY. 146	D	4508+49.25	4518+41.08	34.3	19.5	16	22	_	_



Section view is In direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

RAMP GRADING
IOWA 146 INTERCHANGE

MAINLINE
INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER B.1

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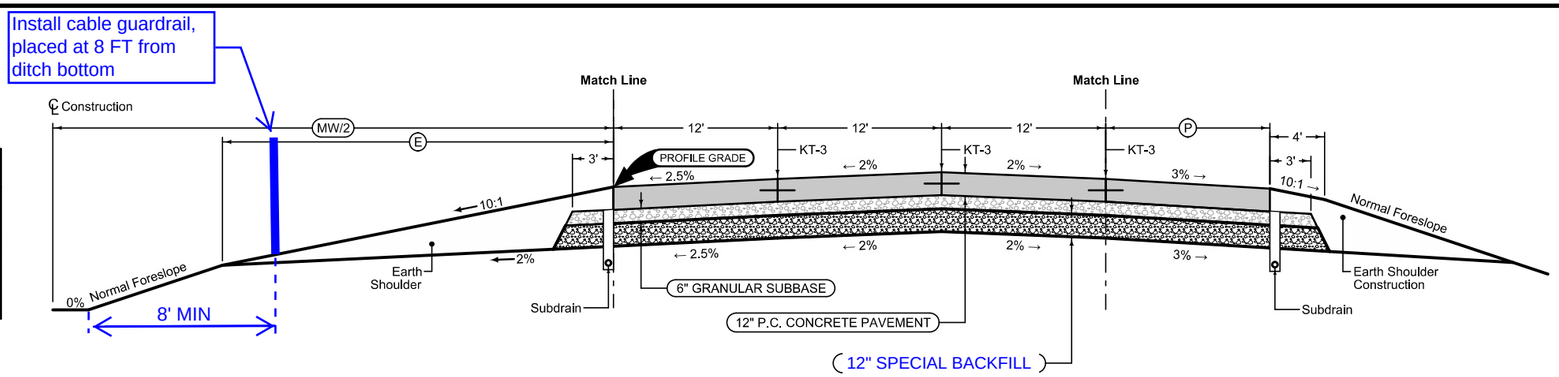
Earth Shoulder

2_E_
10-18-11

Direction of Travel	STATION TO STATION		(E) Feet
EB	68+59.56	145+85.89	28.6
WB	58+10.74	156+92.93	28.6



Section shown in the direction of traffic.

Mainline Jointing:
Transverse joints: CD at 20' spacing

6DP_Dprs_
Modified

Direction of Travel	BEGIN STATION	END STATION	(MW) Feet
EB	54+00.00	161+00.00	82
WB	58+10.83	67+33.54	VAR
WB	67+33.54	147+96.31	82
WB	147+96.31	156+92.48	VAR

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

6D_Dprs_P_FullPCC_
Modified

Direction of Travel	BEGIN STATION	END STATION	(P) Feet
EB	54+00.00	79+49.94	12
EB	95+25.00	106+35.04	12
EB	109+03.72	119+40.13	12
EB	134+50.06	161+00.00	12
WB	58+10.74	79+49.94	12
WB	95+60.15	106+36.55	12
WB	108+98.06	122+25.00	12
WB	137+95.12	156+92.93	12

MAINLINE
INTERSTATE 80

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_
10-16-18

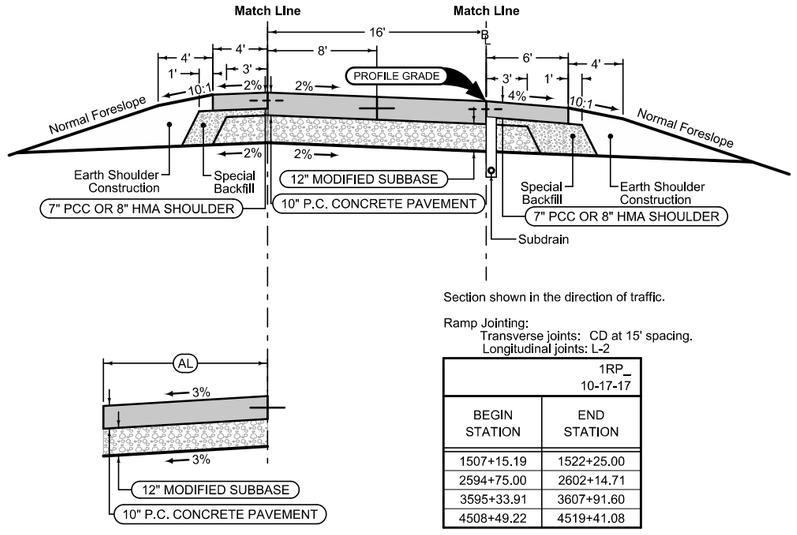
BEGIN STATION	END STATION
1507+15.19	1522+25.00
2594+75.00	2602+14.71
3595+33.91	3607+91.60
4508+49.22	4519+41.08

Auxiliary Lane

Longitudinal joint: L or KT
Transverse joint: Match Mainline

4_AuxLane_PCC_
10-18-16

Direction of Travel	BEGIN STATION	END STATION	(AL) Feet
WB	1507+50.21	1508+16.85	8
WB	1508+16.85	1509+38.24	0-8



Section shown in the direction of traffic.

Ramp Jointing:
Transverse joints: CD at 15' spacing.
Longitudinal joints: L-2

1RP_
10-17-17

BEGIN STATION	END STATION
1507+15.19	1522+25.00
2594+75.00	2602+14.71
3595+33.91	3607+91.60
4508+49.22	4519+41.08

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_
10-16-18

BEGIN STATION	END STATION
1507+15.19	1522+25.00
2594+75.00	2602+14.71
3595+33.91	3607+91.60
4508+49.22	4519+41.08

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

See Tab 112-9 for shoulder quantities.

INTERCHANGE RAMPS
IOWA 146

SURVEY SYMBOLS

- LC Lot Corner
- BRG Bridge
- PPA Power Pole Co. 1
- SI Sign
- OUT Tile Outlet
- MH Utility Access (Manhole)
- TLNR Tree Line Right
- LUM Luminaire
- MIS Miscellaneous
- PIP Pipe Culvert
- SL Speed Limit Sign
- GDL Guard Rail (Rail and Cable)
- STA Storm Sewer Line Co. 1
- INB Storm Sewer Beehive Intake
- STP Stump
- TPD Telephone Pedestal
- TDC Tree Deciduous
- FW Wire Fence
- MM Mile Marker Post
- SHR Shrub
- GP Guard Post (Less Than 4 Posts)
- TEV Evergeen Tree
- EB Electrical Box
- TLNL Tree Line Left
- PLG Location of General Photo
- PR Electic Riser Pole
- COR Round Bridge Pier Column
- LIN Miscellaneous Line
- S Soil Sampling Site (Wetlands)
- COS Square Bridge Pier Column
- CON Concrete or A/C Slab
- ENP Edge Paved Entrance & Park Lot
- SNP Unpaved Shoulder
- EP Edge of Paved Roads (ML or SR)
- DU Centerline Draw or Stream (Up)
- SH Paved Shoulder
- GU Gutter In Front of Curb
- CU Back of Curb
- ENT Centerline BL of Entrance
- ENU Edge Unpaved Entrance & Parking
- EG Edge of Gravel Road
- D Centerline Draw or Stream (Down)
- GHB Underground High Pres Gas Co 2
- ELA Underground Electric Line Co. 1
- GLA Underground Gas Line Co. 1
- FOA Underground Fiber Optic Co. 1
- FOB Underground Fiber Optic Co. 2
- TLA Underground Telephone Line Co. 1
- SOP Size of Pipe or Culvert
- BLS Bridge Low Steel
- PRO Profile Shot
- BD Bridge Deck

UTILITY LEGEND

WOODBURY COUNTY RURAL ELECTRIC
Contact Name : Noel Plummer
Contact Phone: 7128733125
Contact Email:

NORTHERN NATURAL GAS COMPANY
Contact Name : Tim Parks
Contact Phone: 4025302166
Contact Email: Tim.Parks@nngco.com

LONG LINES (formerly NORTHWEST
Contact Name : Russell Black
Contact Phone: 7129435566
Contact Email: Rblack@pionet.net

MIDAMERICAN ENERGY COMPANY
Contact Name : Barb Parks
Contact Phone: 7122334866
Contact Email: BTParks@midamerican.com

LONG LINES (formerly NORTHWEST
Contact Name : Russell Black
Contact Phone: 7129435566
Contact Email: Rblack@pionet.net

IOWA DEPARTMENT OF TRANSPORTATION
Contact Name : Jon Allen
Contact Phone: 7124283300
Contact Email:

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.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER
		SNYDER AND ASSOCIATES, INC.		POWESHIEK	IM-080-5(357)182--13-79	D.1

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GRANT TWP.
T-80N R-16W
SEC. 31

Sect. No. 31

Sect. No. 32

Existing ROW

W.B. Interstate 80

E.B. Interstate 80

PC Sta 47+66.89

PT Sta 60+50.34

PT Sta 54+09.15

STA. 48+34.68
Begin Project

Existing culvert and roadbed to be removed. Grade ditch through existing roadbed to provide drainage

Curve Data
Δ = 5° 42' 01.73" (LT)
T = 642.25
L = 1,283.45
R = 12,900.00
E = 15.98

0 100
FEET

VPI +00.000
Elv 1,007.55
Len 1,100.00 ft
K = 344
SSD = 862'
DS = 75 MPH

Existing Ground at Westbound PGL

Proposed Profile Grade

Sta 54+00.00
Begin Mainline Profile
Elev. = 979.55

Existing Ground at Eastbound PGL

+00 974.85

+11 977.95

+12 966.91

+09 980.69

+71 992.90

+48 990.59

+28 998.70

+62 1000.87

+27 996.91

-0.400%

+2.800%

+2.80% LT DG

-1.00% LT DG

+7.00% RT DG

+2.64% RT Ditch Grade

+2.96 LT Ditch Grade

-3.00% RT DG

+2.90% RT Ditch Grade

+0.50% LT Ditch Grade

-0.39% LT Ditch Grade

-0.20% RT Ditch Grade

Lt Med Rt

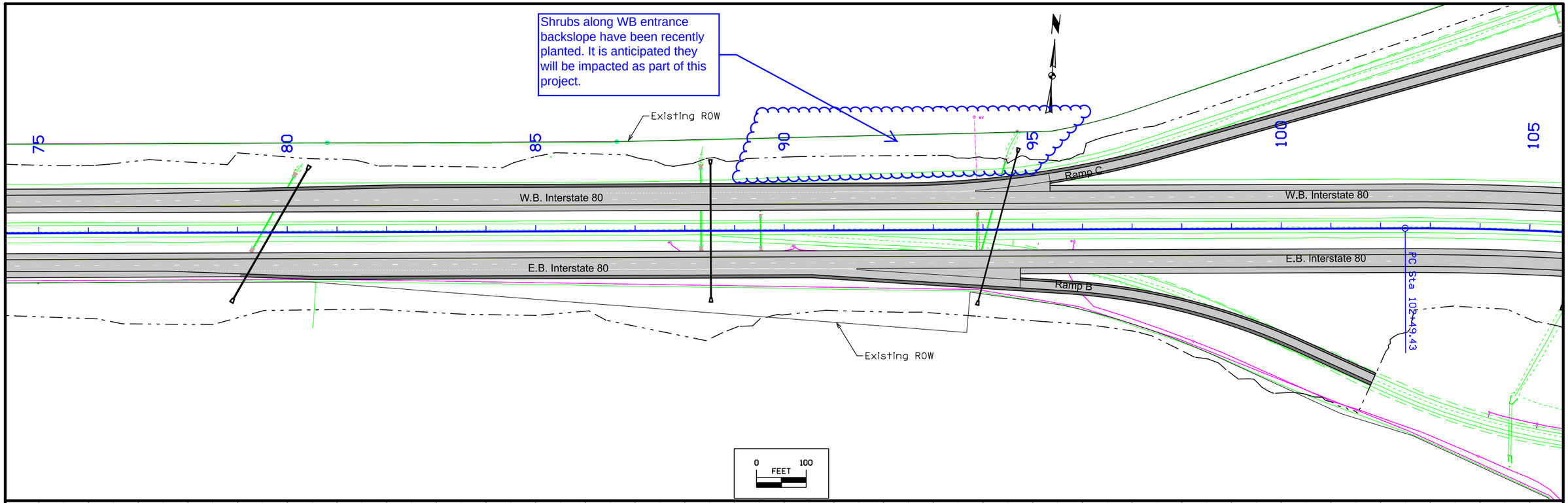
Ditch Grade

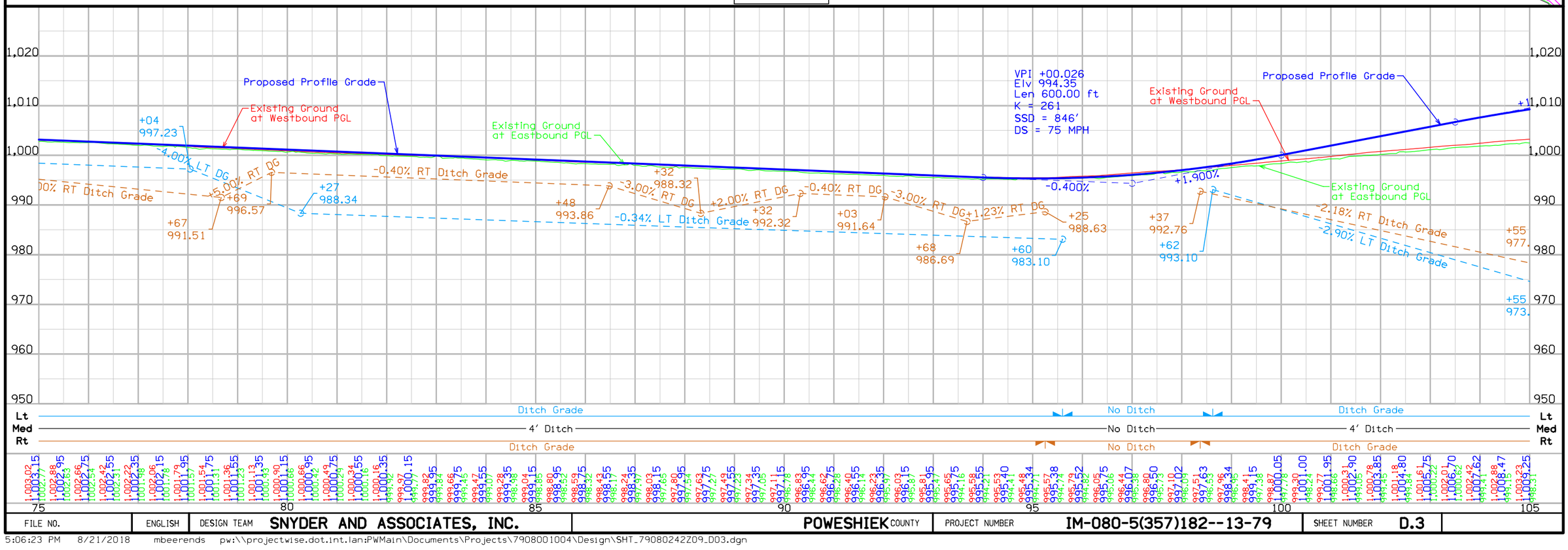
4' Ditch

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	D.2

5:06:05 PM 8/21/2018 mbeerends pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_D02.dgn

Shrubs along WB entrance backslope have been recently planted. It is anticipated they will be impacted as part of this project.





FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	D.3

5:06:23 PM 8/21/2018 mbeerends pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_D03.dgn

Existing diagonal culvert is in conflict with pier for proposed WB I-80 bridge over IA 146. Design team will investigate the re-routing drainage under IA 146 south of the EB I-80 bridge, then north under east end spans. WB bridge end span may be shortened due to profile change.

Design team prefers to replace two existing culverts with ditches. UPRR engineering review has been very sensitive to grading within their right-of-way. It was mentioned that they tend to only agree to replacing drainage with the same type of drainage as was existing. They also tend to prefer closed drainage over open drainage. However in this case there is currently standing water at the existing ballast toe so it may be a possibility of getting approval for replacing the culverts with ditches. Design team will provide photos and drainage option exhibits for Iowa DOT staff to coordinate with UPRR.

Development of superelevation places the location of 0% cross slope at station 113+68.55, which is located within a +0.30% profile grade. Design team will investigate profile adjustments to eliminate areas of poor drainage.

Discussion took place on the possibility of re-routing drainage to the culvert under I-80 bridge end spans, adjacent to IA 146. This would add approximately 40 acres of drainage area and may require up-sizing the culvert, complicating construction. This area drains to a different location and changing drainage patterns can be problematic. Design team will investigate, however it is anticipated a cross-road culvert in this area will remain.

The access road utilized by the farmer at this location is illegal. It will not be replaced. Design team suggests ditching or a fence may deter use of UPRR right-of-way for agricultural access.

Due to superelevated curve, WB IA 146 bridge has excess vertical clearance. Separate profiles for EB and WB will be provided in this area.

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	D.4

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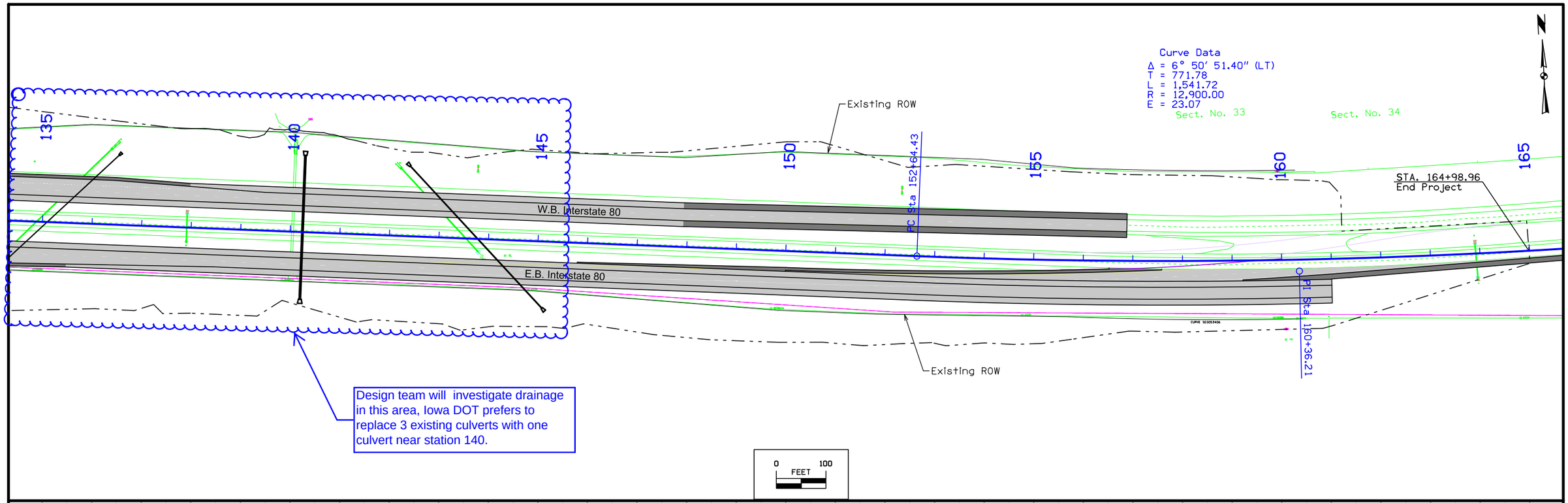
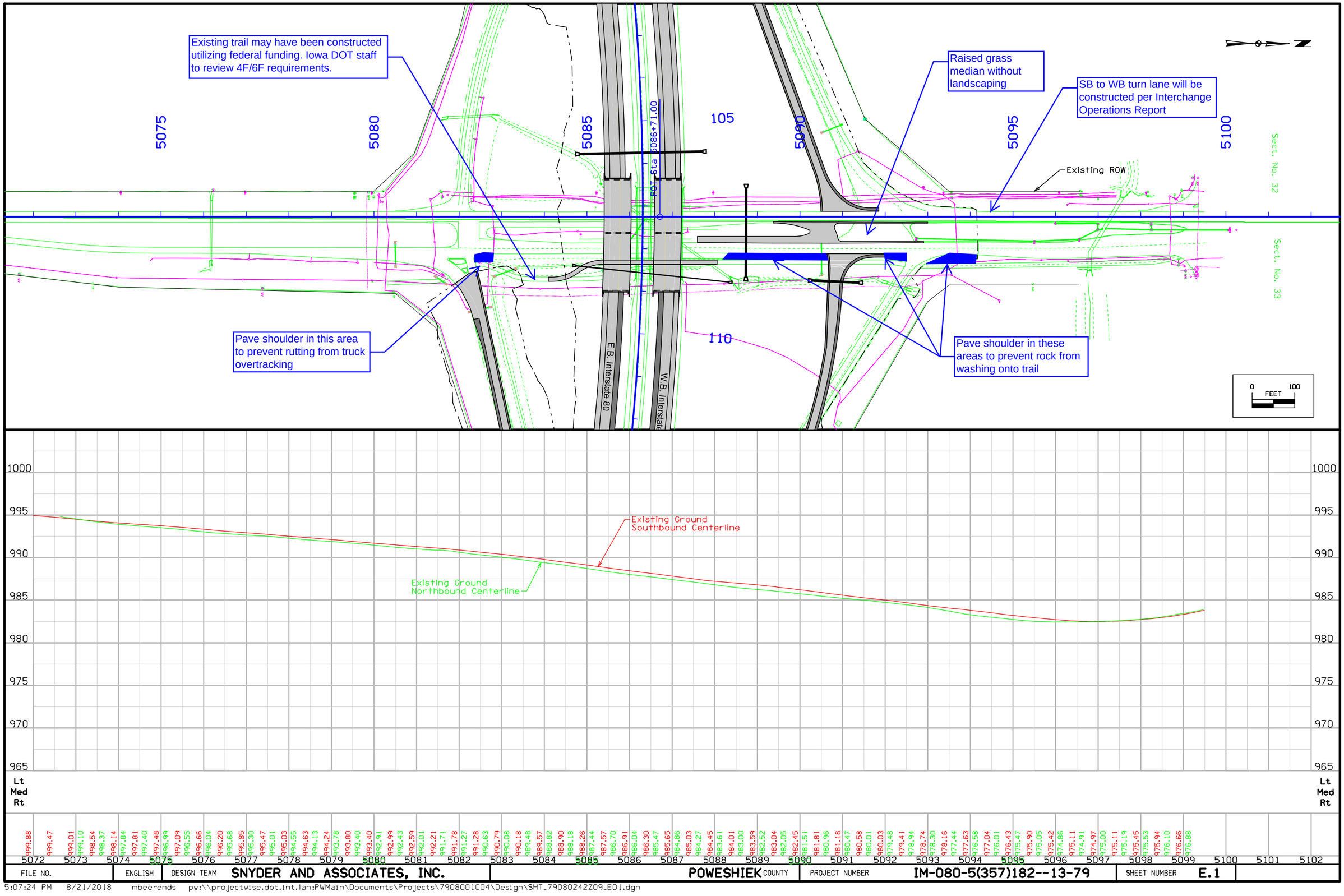


FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	D.5

5:07:03 PM 8/21/2018 mbeerends pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_D05.dgn



FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	E.1

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Survey Information

Poweshiek County
IM-NGS-080-5(242)182--03-79
Poweshiek County I-80 & IA 146 Intersection
PIN: 04-79-080-010
SAP: 0871

General Information

Measurement units for this survey are US survey feet. The Project includes replacement of dual ML I-80 bridges over Iowa 146, dual ML I-80 bridges over the single UPRR track east of IA 146, and reconstruction and widening of I-80 pavement to facilitate structure replacements from approximately MP 181 to 186. Project datum and control information matches survey performed previously for aerial photo control performed by the State.

Vertical Control

Vertical datum for this survey is relative to NAVD88.

This vertical control matches survey performed previously established by the State. CP1, CP2, CP3 and CP5001 through CP50005 were recovered and elevation verified with redundant 30-second observations utilizing the IaRTN.

No additional benchmarks were established for this survey.

Horizontal Control

Measurement units for this survey are US survey feet.

The project coordinate system is the Iowa Regional Coordinate System, Zone 9. This coordinate system matches survey performed previously survey established by the performed by the State. Horizontal datum is NAD83 (2011) for Epoch 2010.00. The projection parameters for Zone 9 of the IaRCS is defined below:

Transverse Mercator Projection
Origin Lat: 40°15' 00"N
Origin Central Meridian: 092°49' 00"W
Central Meridian Scale: 1.000027
False Northing: 7,200,000
False Easting: 19,500,000

CP1, CP2, CP3 and CP5001 through CP50005 were recovered and positions were verified with redundant 30-second observations utilizing the IaRTN.

Alignment Information

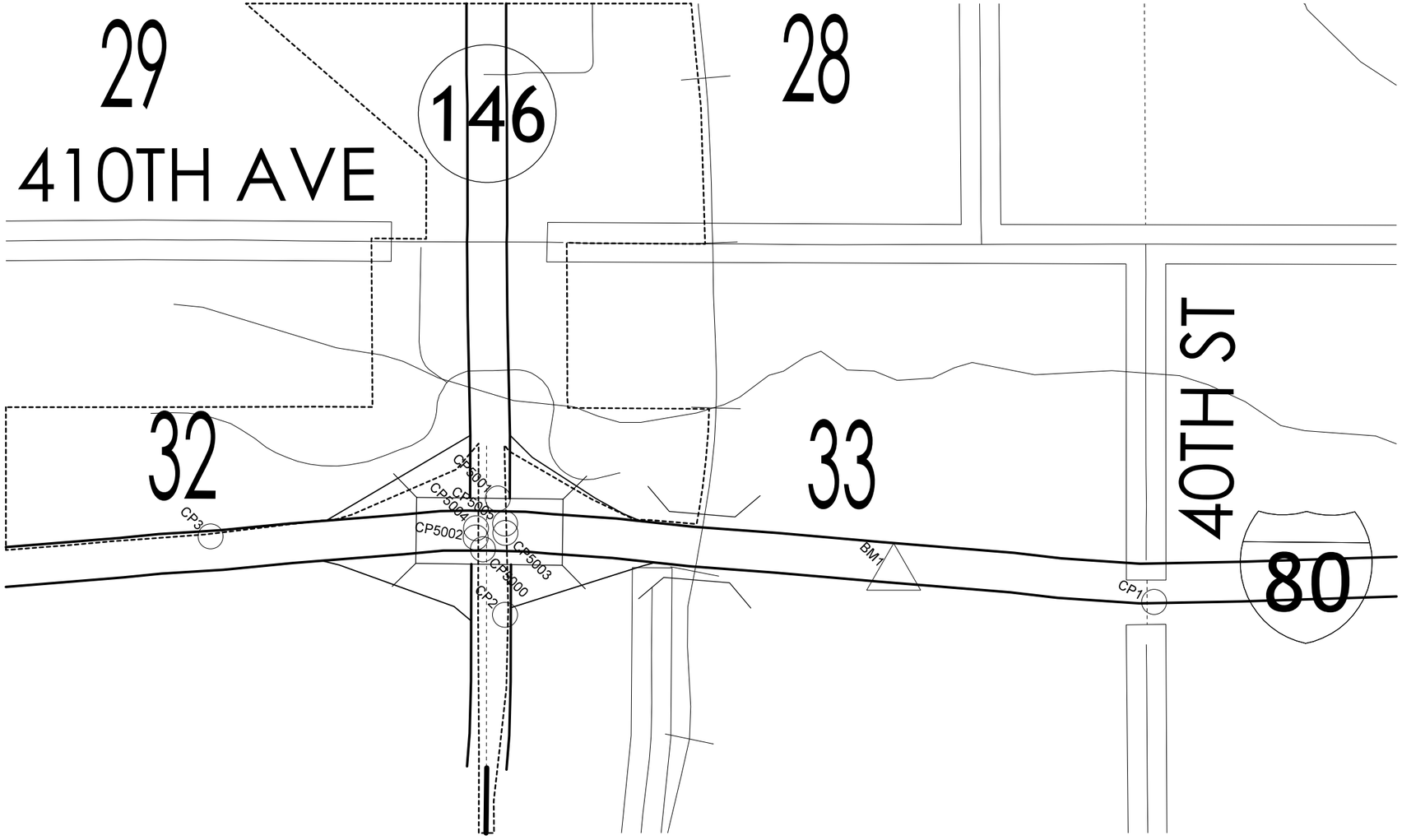
Alignments for both I-80 and Ia 146 were created by the State. However, the I-80 alignment was extended to the east and west using As-Built plans No. 80-5(20)183 and 80-5(31)188.

Geopak Alignment Chains created:
I80 Interstate 80 Centerline
RTE146 Ia 146 Centerline

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 2013.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 9

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

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER G.2	

5:08:01 PM 8/21/2018 mbeerends pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\PrelimSurvey\0871\SNYDER\SHT_79080010_G01.dgn

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2013.00

VERT. DATUM: NAVD88

Ia. Regional Coordinate System Zone 9

Point Name	Northing	Easting	Elevation	Feature Definition	Description
BM1	7726614.606	19527690.150	974.201	BM	BRASS MONUMENT
CP1	7726395.599	19529773.780	978.856	CP	CP FENO MONUNMENT W/ ALUM CAP
CP2	7726292.662	19524581.210	994.430	CP	CP FENO MONUNMENT W/ ALUM CAP
CP3	7726919.660	19522226.020	998.226	CP	CP FENO MONUNMENT W/ ALUM CAP
CP5000	7726816.920	19524404.890	986.390	CP	SET 5/8IN REBAR
CP5001	7727222.554	19524523.680	981.080	CP	SET 5/8IN REBAR
CP5002	7726911.697	19524346.720	1004.040	CP	SET 5/8IN REBAR
CP5003	7726947.372	19524584.130	1006.700	CP	SET 5/8IN REBAR
CP5004	7726985.382	19524349.060	1003.930	CP	SET 5/8IN REBAR
CP5005	7727022.376	19524582.070	1006.850	CP	SET 5/8IN REBAR

ALIGNMENT COORDINATES

Name	Location	Point on Tangent			Begin Spiral			Begin Curve			Simple Curve PI or Master PI of SCS			End Curve			End Spiral		
		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates		Station	Coordinates	
			Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)		Y (Northing)	X (Easting)
I-80																			
50		10+00.00	7726602.00	19514717.12															
I80_P_3								47+66.89	7726531.01	19518483.34	54+09.15	7726518.90	19519125.48	60+50.34	7726570.64	19519765.65			
I80_P_6								102+49.43	7726908.90	19523951.09	107+26.10	7726947.30	19524426.21	112+00.55	7726906.26	19524901.11			
I80_P_9								152+64.43	7726556.30	19528949.89	160+36.21	7726489.84	19529718.80	168+06.16	7726515.53	19530490.16			
51		193+70.76	7726600.89	19533053.34															
Ramp A																			
RPA1461		1506+28.43	7727391.50	19524425.07															
RPA146_3								1507+21.07	7727391.78	19524517.71	1510+79.59	7727392.89	19524876.22	1514+23.02	7727221.54	19525191.14			
RPA146_6								1516+95.47	7727091.33	19525430.46	1519+27.55	7726980.41	19525634.32	1521+55.00	7726945.09	19525863.69			
RPA1468		1526+44.87	7726870.54	19526347.85															
Ramp B																			
RPB1461		2590+55.13	7726723.97	19522767.71															
RPB146_3								2595+66.19	7726731.17	19523278.72	2598+09.94	7726734.60	19523522.45	2600+48.34	7726651.37	19523751.55			
RPB146_6								2602+42.47	7726585.09	19523934.01	2604+14.51	7726526.35	19524095.71	2605+84.84	7726508.51	19524266.83			
RPB1468		2607+46.74	7726491.71	19524427.85															
Ramp C																			
RPC1461		3582+25.00	7726834.53	19521926.07															
RPC146_3								3592+25.00	7726915.09	19522922.82	3594+98.19	7726937.10	19523195.13	3597+68.03	7727031.33	19523451.55			
RPC1465		3608+05.20	7727389.07	19524425.08															
Ramp D																			
RPD1461		4507+14.55	7726492.77	19524427.85															
RPD146_3								4516+54.60	7726690.09	19525346.96	4519+54.52	7726753.04	19525640.19	4522+50.00	7726727.21	19525938.99			
RPD1465		4532+50.00	7726641.10	19526935.28															
Iowa 146																			
RTE1461		5050+00.00	7723296.52	19524437.73															
RTE1463		5086+71.00	7726967.50	19524426.38															
RTE1464		5120+00.00	7730296.48	19524416.09															
U.P. RR																			
UPRR1		6117+00.00	7726104.83	19526004.74															
UPRR3		6118+72.35	7726274.37	19526035.67															
UPRR4		6127+24.14	7727112.33	19526188.55															

SPIRAL OR CIRCULAR CURVE DATA

Name	Location	ΔSCS	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R	E	
I-80																
I80_P_3											5° 42' 01.7"	642.254	1283.449	12900	15.978	
I80_P_6											9° 33' 38.3"	476.671	951.129	5700	19.896	
I80_P_9											6° 50' 51.4"	771.78	1541.722	12900	23.066	
Ramp A																
RPA146_3											28° 43' 39.7"	358.517	701.95	1400	45.176	
RPA146_6											19° 47' 47.3"	232.080	459.533	1330	20.097	
Ramp B																
RPB146_3											20° 46' 15.6"	243.753	482.155	1330	22.152	
RPB146_6											14° 00' 40.7"	172.039	342.361	1400	10.531	
Ramp C																
RPC146_3											15° 33' 23.5"	273.193	543.025	2000	18.572	
Ramp D																
RPD146_3											17° 03' 24.4"	299.915	595.394	2000	22.362	

SUPERELEVATION DATA

See PV-300 Series

Road Identification	Circular Curve or Spiral Curve Name	Radius	Superelevation Data			Standard Road Plan	Section A-A	Section B-B	Section C-C	Section D-D	Section E-E	Section F-F	Case A	Case B	Case C	Case S	Case T	Case U	Remarks
			e	L	x														
		FT	%	FT	FT														
I-80	I80_P	5700	3.8	240	158	PV-304	99+23.43	99+55.03	100+81.43	102+07.83	102+39.43	103+21.43	102+49.43			102+70.90			
							115+26.55	114+94.95	113+68.55	112+42.15	112+10.55	111+28.55	112+00.55			111+79.08			
IA-146 Ramp A	A-1	1400	2.0	49	49	PV-303			1507+21.07	1507+35.77									
									1514+23.02	1514+08.32									
IA-146 Ramp A	A-2	1330	6.0	186	62	PV-303			1516+95.47	1517+51.27						1516+89.27	1516+89.27		
									1521+55.00	1520+99.20						1521+61.20	1521+61.20		
IA-146 Ramp B	B-1	1330	6.0	186	62	PV-303			2595+66.19	2596+21.99						2595+59.99	2595+59.99		
									2600+48.34	2599+92.54						2600+54.54	2600+54.54		
IA-146 Ramp C	C-1	2000	5.4	168	62	PV-303			3592+25.00	3592+75.40						3592+31.84	3592+31.84		
									3597+68.03	3597+17.63						3597+61.19	3597+61.19		
IA-146 Ramp D	D-1	2000	5.4	168	62	PV-303			4516+54.60	4517+05.00						4516+61.44	4516+61.44		
									4522+50.00	4521+99.60						4522+43.16	4522+43.16		

108-23A
08-01-08

TRAFFIC CONTROL PLAN

In order to minimize vehicle traffic congestion, the contractor shall comply with the following restrictions, for the limits of construction.

Traffic on Interstate 80 will be maintained during construction.

Shoulder and/or lane closures (per Standard Road Plans TC-402, TC-417, TC-418, TC-420, & TC-451) will be necessary for interstate pavement, ramp pavement, and bridge construction.

Traffic on Ramps A, B, C, and D will be maintained except for short duration closures (per Standard Road Plan TC-417) to accommodate staged construction.

During ramp closures, interstate traffic will be detoured, see sheet J. ---.

Use Portable Dynamic Message Signs (PDMS) in conjunction with detour signage.

Beams to be set at night between 10:00 pm and 5:00 am. Traffic will be maintained head to head on 146 with flaggers using existing pavement.

108-26A
08-01-08

STAGING NOTES

Interstate 80 is a high volume roadway, construction activity in the area will disrupt traffic on Interstate 80 and Highway 146. Therefore, it is advisable to adopt a construction sequence that directs activities in an orderly manner and minimizes disruptions to traffic as much as practical.

It is recognized that as the various activities related to construction progress, certain situations may arise which will preclude adhering to the original construction sequence or which, in the opinion of the Contractor, should result in more efficient staging operations. Should the Contractor desire to deviate from the original plan, they shall submit a written alternate plan to the Resident Construction Engineer for approval.

General:
1. Refer to staging typical sections and details shown on other J sheets.
2. Coordinate traffic control with Iowa DOT and Poweshiek County projects listed in Tabulation 111-01 and other projects in the area.

HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES)
BRIDGE CONSTRUCTION / DEMOLITION
- Bridge beam installation and demolition shall occur during night time hours. Implement rolling road closures during beam installation and demolition per Standard Road Plan TC-451.
- Other bridge demolition and construction processes shall coincide with temporary lane closures on NB / SB Highway 146. Install traffic control on NB / SB Highway 146 to close inside and outside lanes to coincide with bridge demolition and construction which occurs over Highway 146 per Standard Road Plan TC-418. Do not impede NB / SB Highway 146 traffic using the exit and entrance ramps for I-80 during traffic shifts.

STAGE 1A - TEMPORARY MEDIAN PAVEMENT CONSTRUCTION
Interstate 80
- Work during this stage shall be performed during night time hours only.
- Install traffic control on WB / EB I-80 to close the inside lane per Standard Road Plan TC-418 (Lane Closure).
- Construct temporary median crossover pavement.
- Complete construction activities within this area prior to beginning stage 2 construction.

STAGE 1B - TEMPORARY GORE PAVEMENT CONSTRUCTION
Interstate 80
- Work during this stage shall be completed during night time hours only and performed after completion of Stage 1A.
- Relocate traffic control on EB I-80 and Ramps B and D to close the outside lane per Standard Road Plans TC-416 (Partial Lane Closure on Ramps), TC-418 (Lane Closure), and TC-420 (Lane Closure at Ramps).

STAGE 2A - PERMANENT EAST BOUND I-80 PAVEMENT, CROSSOVER, AND BRIDGE CONSTRUCTION.
Interstate 80
- Permanent crossover pavement shall be constructed during night time hours only.
- Maintain traffic control at all temporary median crossover pavement along WB / EB I-80.
- Relocate traffic control for Ramp B and D per Standard Road Plan TC-202 (Work Within 15 ft of Traveled Way). Ramp B and D shall maintain partial lane closure utilizing temporary gore pavement areas constructed during Stage 1B. Install traffic barrier rail after Ramp D along length of the bridge over railroad per Standard Road Plan TC-421.
- Install traffic control on EB I-80 to close outside lane per Standard Road Plan TC-418 (Lane Closure) for permanent crossover pavement construction during night time hours.
- Bridge removal, bridge beam setting, and decking operations over Highway 146 shall coincide with lane shifts detailed in HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES) detail on Sheet J.01.
- Coordinate bride removal, bridge beam setting, and decking operations over railroad tracks with owner.

Highway 146
- Install traffic control per HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES) detail on Sheet J.01.

STAGE 2B - RAMP B DEMOLITION AND CONSTRUCTION
Interstate 80
- All removal and rehabilitation operations within 15 ft of the roadway shall be performed during night time hours only.
- Maintain traffic barrier rail configuration at Ramp D from Stage 2A.
- Install traffic control on EB I-80 at west crossover to close access to Stage 2A construction.
- Install traffic control to close EB I-80 traffic access to Ramp B per Standard Road Plan TC-417.
- Relocate traffic control on EB I-80 to close outside lane per Standard Road Plan TC-418 during night time removal hours only. During hours outside of removal periods, relocate traffic control to TC-417 configuration.
- Install detour signage per detail on Sheet J.---
- Remove existing ramp and temporary gore area extension.
- Construct remaining Ramp B and mainline pavement.

STAGE 2C - RAMP D DEMOLITION AND CONSTRUCTION

108-26A
08-01-08

STAGING NOTES

Interstate 80
- All removal and rehabilitation operations within 15 ft of the roadway shall be performed during night time hours only.
- Install traffic control on EB I-80 prior to STA 45+00 to close outside lane per Standard Road Plan TC-418 (Lane Closure). Open traffic control from STA 45+00 to STA 48+00 to allow traffic exiting to Ramp B by using the outside lane. Resume traffic control past STA 48+00 to STA 60+00 on existing EB I-80 pavement.
- Install traffic control on Stage 2A crossover pavement to close inside lane per Standard Road Plan TC-418 (Lane Closure) from STA 52+00 to STA 90+00. Shift traffic onto Ramp B taper pavement.
- Relocate traffic control on EB I-80 to close the outside lane per Standard Road Plan TC-418 (Lane Closure) at Ramp D during night time removal hours only.
- Remove existing ramp and temporary gore area extension.
- Construct remaining ramp and mainline pavement.

Highway 146
- Close Ramp D. Install detour signage per detail on Sheet J. ---

STAGE 3A - PERMANENT WEST BOUND PAVEMENT AND BRIDGE RECONSTRUCTION
Interstate 80
- Remove traffic control at median crossover pavement constructed during Stage 1A and Stage 2B.
- Shift EB I-80 traffic to pavement constructed during Stage 2 substages using permanent crossover pavement.
- Shift WB I-80 traffic to old EB I-80 pavement using temporary median crossovers.
- Install traffic barrier rail at the west and east crossovers to separate WB / EB traffic.
- Install traffic barrier rail at Ramp A and C median crossover and temporary gore extension to protect traffic from construction areas.
- All removal and construction work shall be performed outside of a 15 ft distance from the edge of traveled way.
- Bridge removal, bridge beam setting, and decking operations over Highway 146 shall coincide with lane shifts detailed in HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES) detail on Sheet J.01.
- Coordinate bridge removal, bridge beam setting, and decking operations over railroad tracks with owner.

Highway 146
- Install traffic control per HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES) detail on Sheet J.01.

STAGE 3B - RAMP A DEMOLITION AND CONSTRUCTION
Interstate 80
- All removal and rehabilitiation operations within 15 ft of traveled way shall be performed during night time hours.
- Install traffic control to close WB I-80 traffic access to Ramp A per Standard Road Plan TC-417.
- Relocate traffic control on WB I-80 to close outside lane per Standard Road Plan TC-418 during night time removal hours only. During hours outside of removal periods, relocate traffic control to TC-417 configuration.
- Install detour signage per detail on Sheet J.---
- Remove existing ramp, temporary gore extension, and temporary median crossover pavement.
- Construct Ramp A and I-80 pavement.

Highway 146
- Install traffic control on NB 146 to close the outside lane per Standard Road Plan TC-418 (Lane Closure) at Ramp B construction area.
- Relocate / install traffic control on NB 146 / SB 146 respectively to close inside lanes following Ramp A construction adjacent to NB 146.
- Construct median improvements following Ramp A construction.

STAGE 3C - RAMP C RECONSTRUCTION
Interstate 80
- All removal and rehabilitation operations within 15 ft of traveled way shall be performed during night time hours.
- Install traffic control on WB I-80 prior to STA 170+00 to close outside lane per Standard Road Plan TC-418 (Lane Closure). Open traffic control from STA 170+00 to STA 167+00 to allow traffic to exit to Highway 146 using Ramp B by using the outside lane. Resume traffic control past STA 167+00 to STA 154+00 on existing WB I-80 pavement, temporary median crossover, and existing EB I-80 pavement being used for WB travel.
- Install traffic control on Stage 3A and 3B pavement to close inside lane per Standard Road Plan TC-418 (Lane Closure) from STA 165+00 to STA 122+00. Shift traffic onto Ramp A taper pavement.
- Relocate traffic control on EB I-80 to close the outside lane per Standard Road Plan TC-418 at Ramp D during night time removal operations.

Highway 146
- Close Ramp C. Install detour signage per detail on Sheet J.---
- Relocate traffic control on SB 146 to close the outside lane per Standard Road Plan TC-418 at Ramp C reconstruction area.

STAGE 4 - EXISTING EB I-80 REMOVAL
Interstate I-80
- All removal and rehabilitation operations within 15 ft of traveled way shall be performed during night time hours.
- Shift WB I-80 traffic to pavement constructed during Stage 3 substages.
- Relocate traffic control on EB / WB I-80 to close the inside lane per Standard Road Plan TC-418 at temporary median crossovers during night time removal and rehabilitation work within 15 ft of the traveled way.
- Remove remaining temporary median crossovers and old EB I-80 pavement. Rehabilitate median to an earthen median.
- Bridge removal over Highway 146 shall coincide with lane shits detailed in HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES) detail on Sheet J.01.
- Coordinate bridge removal operations over railroad tracks with owner.

Highway 146
- Install traffic control per HIGHWAY 146 - TRAFFIC SHIFTS (MULTIPLE STAGES) detail on Sheet J.01.

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 Subbase

Proposed Special Backfill

Temporary Barrier Rail

Proposed Granular Shoulder

Temporary Shoulder

Existing Shoulder Strengthening

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

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

Drum

Temporary Lane Separator

Tubular Marker

Channelizer Marker

Concrete Barrier Marker

Delineator

Temporary Barrier Rail

Pavement Removal

Work Zone

Crash Cushion

Traffic Signal

Flagger

Temporary Floodlighting

Traffic Sign

Type III Barricade

Type A Warning Light

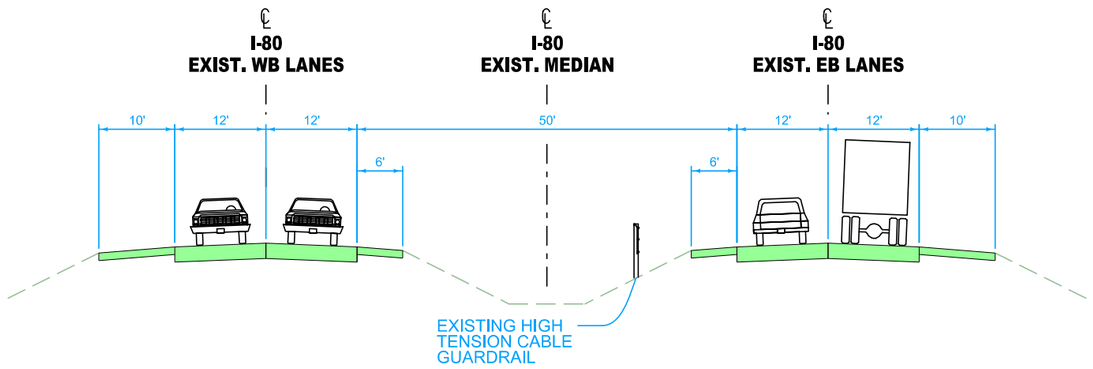
Direction of Traffic

Safety Closure

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

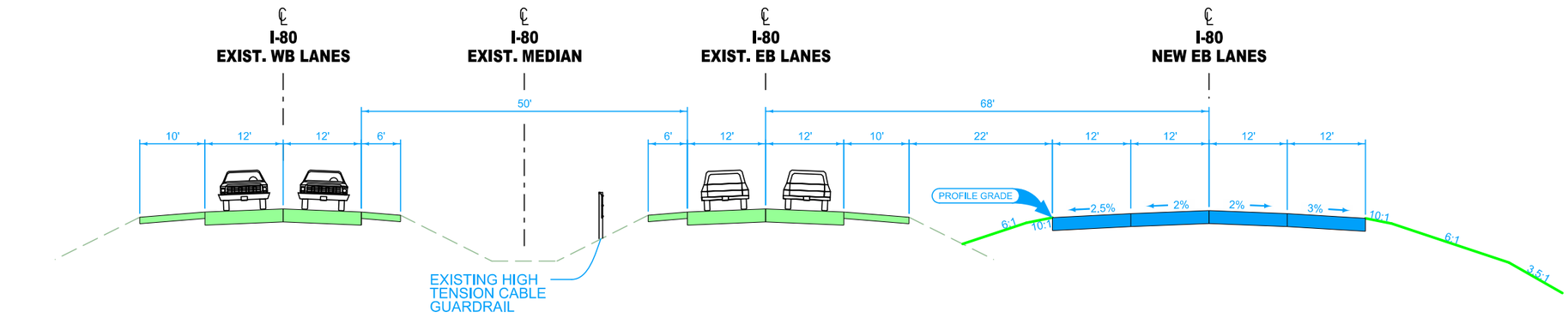
TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

TYPICAL 1
I-80



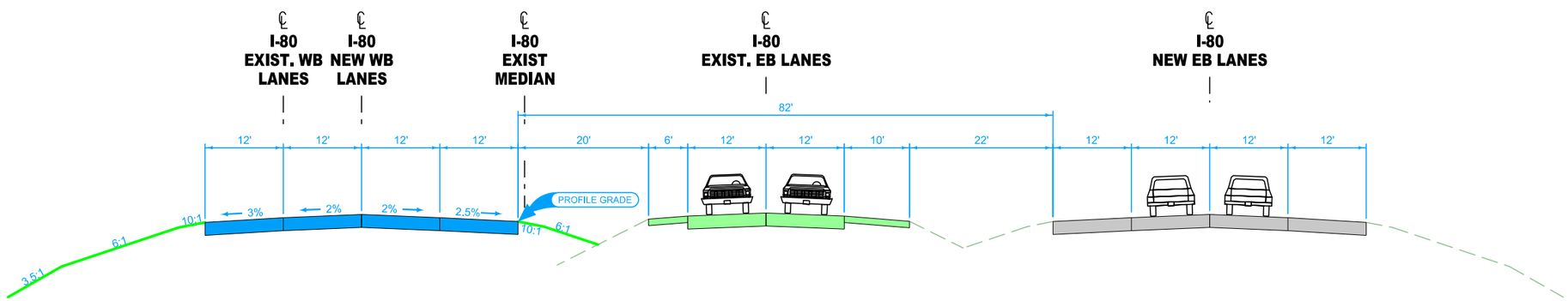
EXISTING TYPICAL SECTION
Shown Looking Eastbound

TYPICAL 2
I-80



STAGE 1 TYPICAL SECTION
Shown Looking Eastbound

TYPICAL 3
I-80



STAGE 2 TYPICAL SECTION
Shown Looking Eastbound

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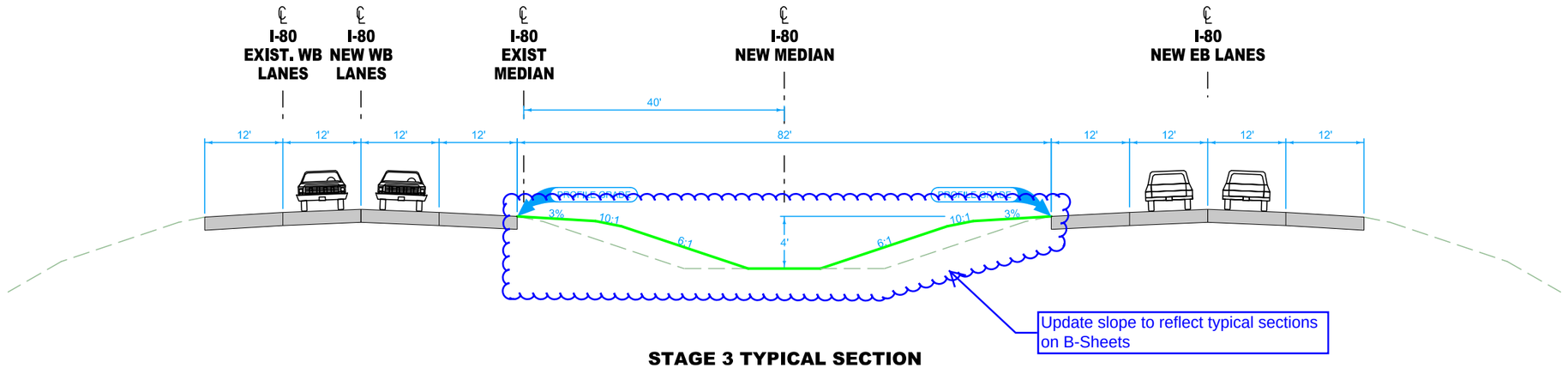
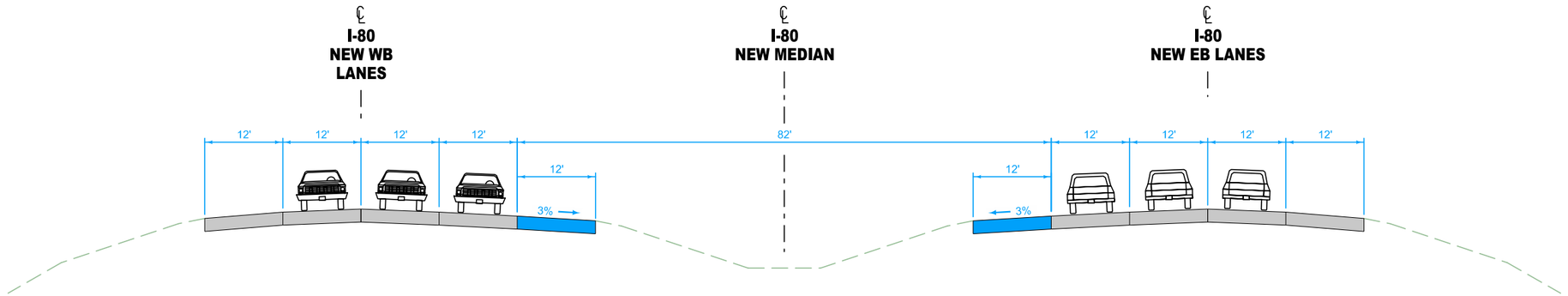
TYPICAL 4
I-80



STAGE 3 TYPICAL SECTION
Shown Looking Eastbound

TYPICAL 5
I-80



ULTIMATE TYPICAL SECTION
Shown Looking Eastbound

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER J.4

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DETOUR NOTES

Cover or remove any conflicting signs. (By others)

Add "Closed" to guide signs on I-80 as needed at the Grinnell interchange. (By others)

PDMS-Use Message #1 (7-10 days) prior to closure. Add message #2 during the closure.

Message #1. Exit 182 To Grinnell Closed Starting (Add Date)

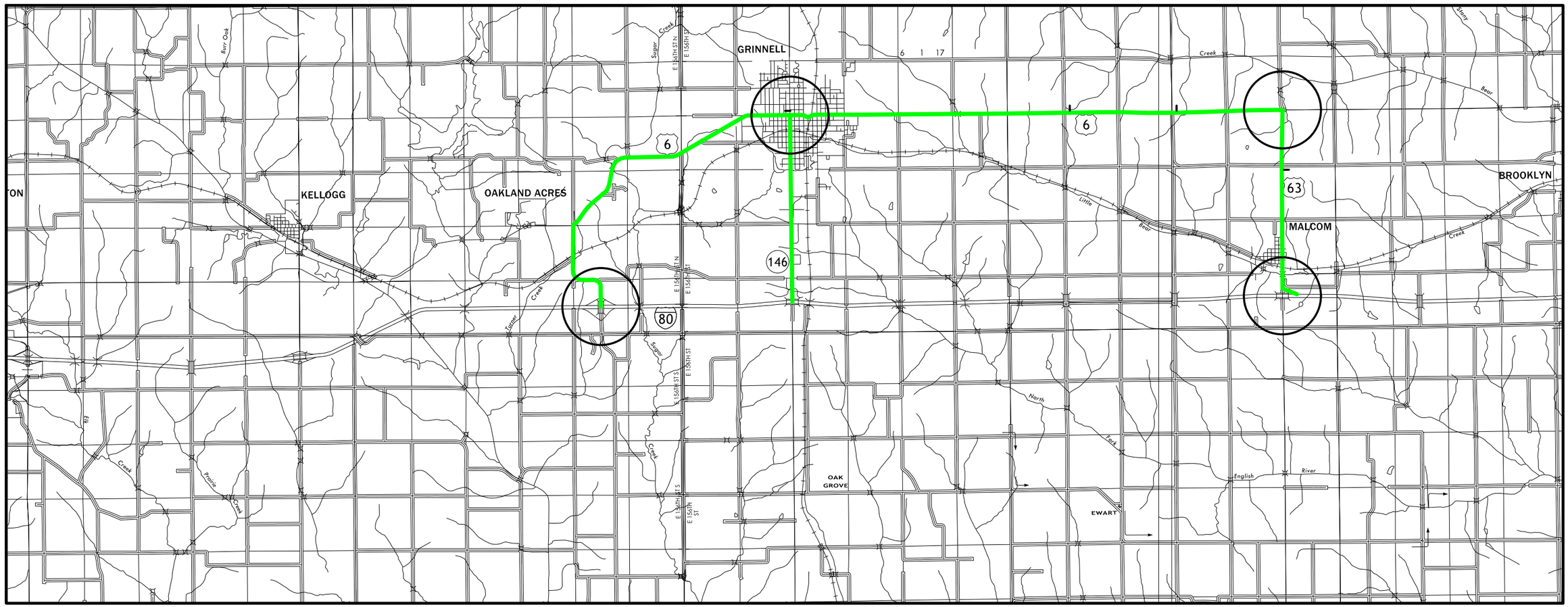
Message #2. Exit 182 To Grinnell Closed Used Exit 191

Detour Route:

The detour route for I-80 Westbound will begin at the off ramp of I-80 and US-63 and proceed northbound on US-63 to US-6, then proceed Westbound to IA-146.

The detour route for I-80 Eastbound will begin at the off ramp of I-80 and HWY T38 and proceed Northbound on HWY T38 N to US-6, then proceed Eastbound to IA-146.

DETOUR 1
All Ramps and US-146 Closure



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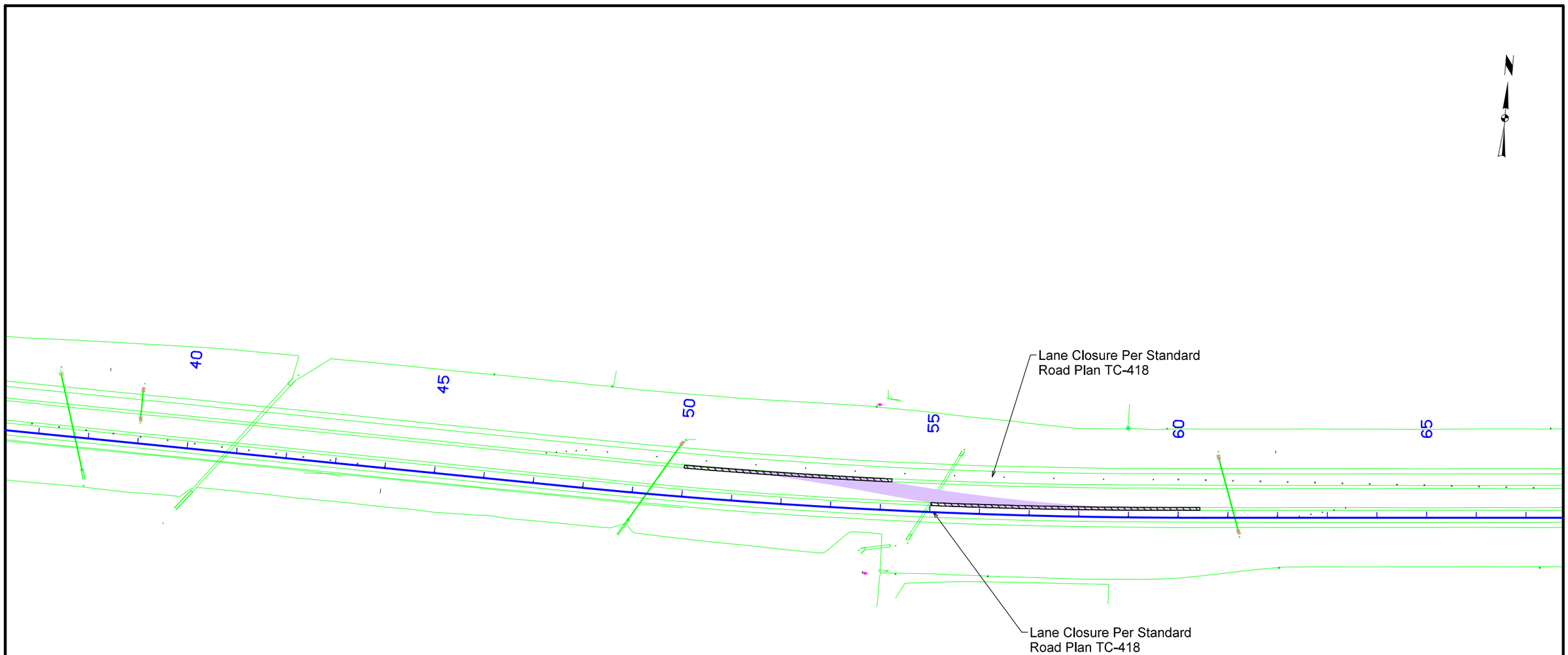

0 100
FEET

Staging Plan - Stage 1A
Temporary Median Crossover Pavement on Interstate 80

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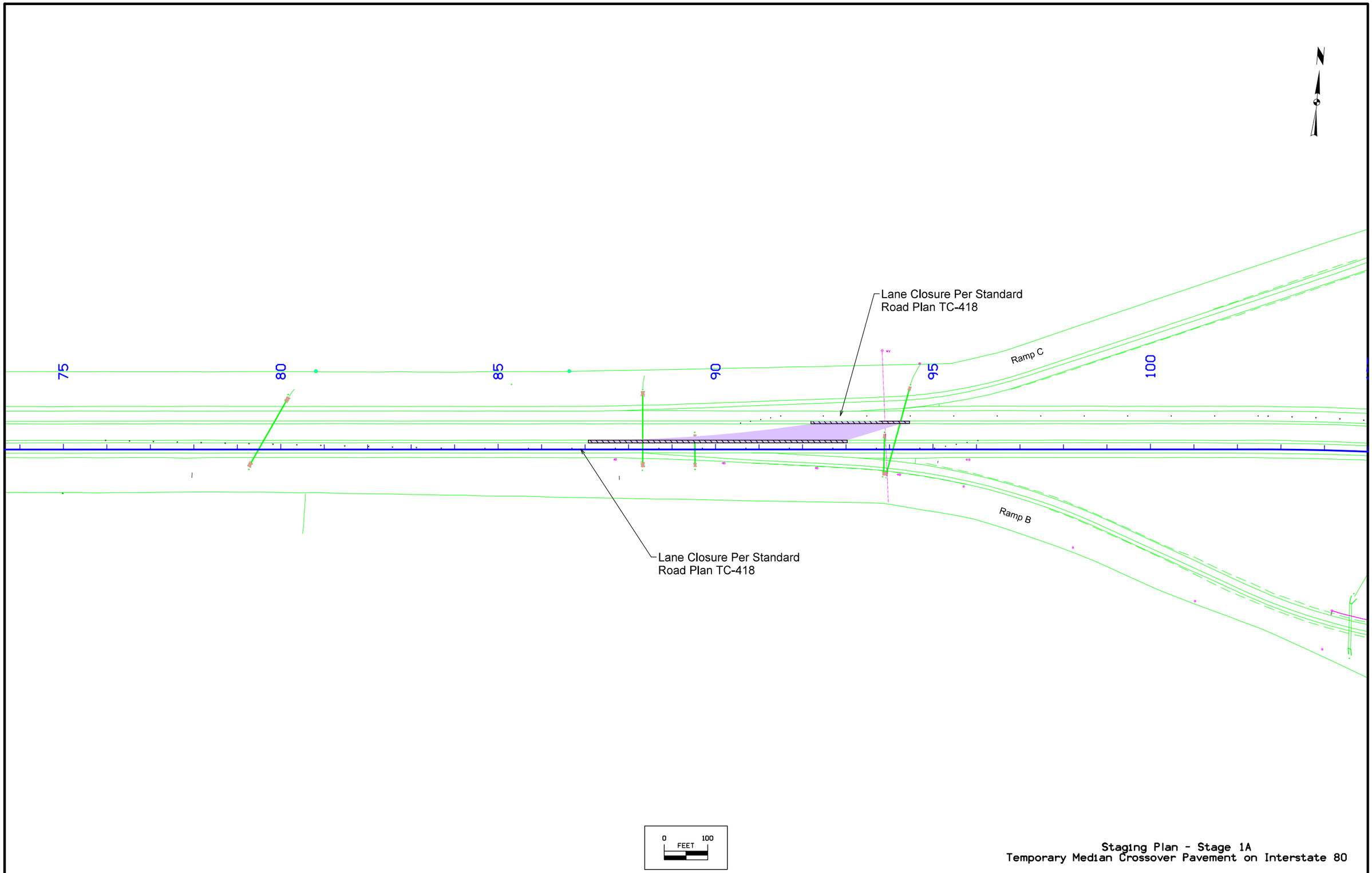

Staging Plan - Stage 1A
Temporary Median Crossover Pavement on Interstate 80

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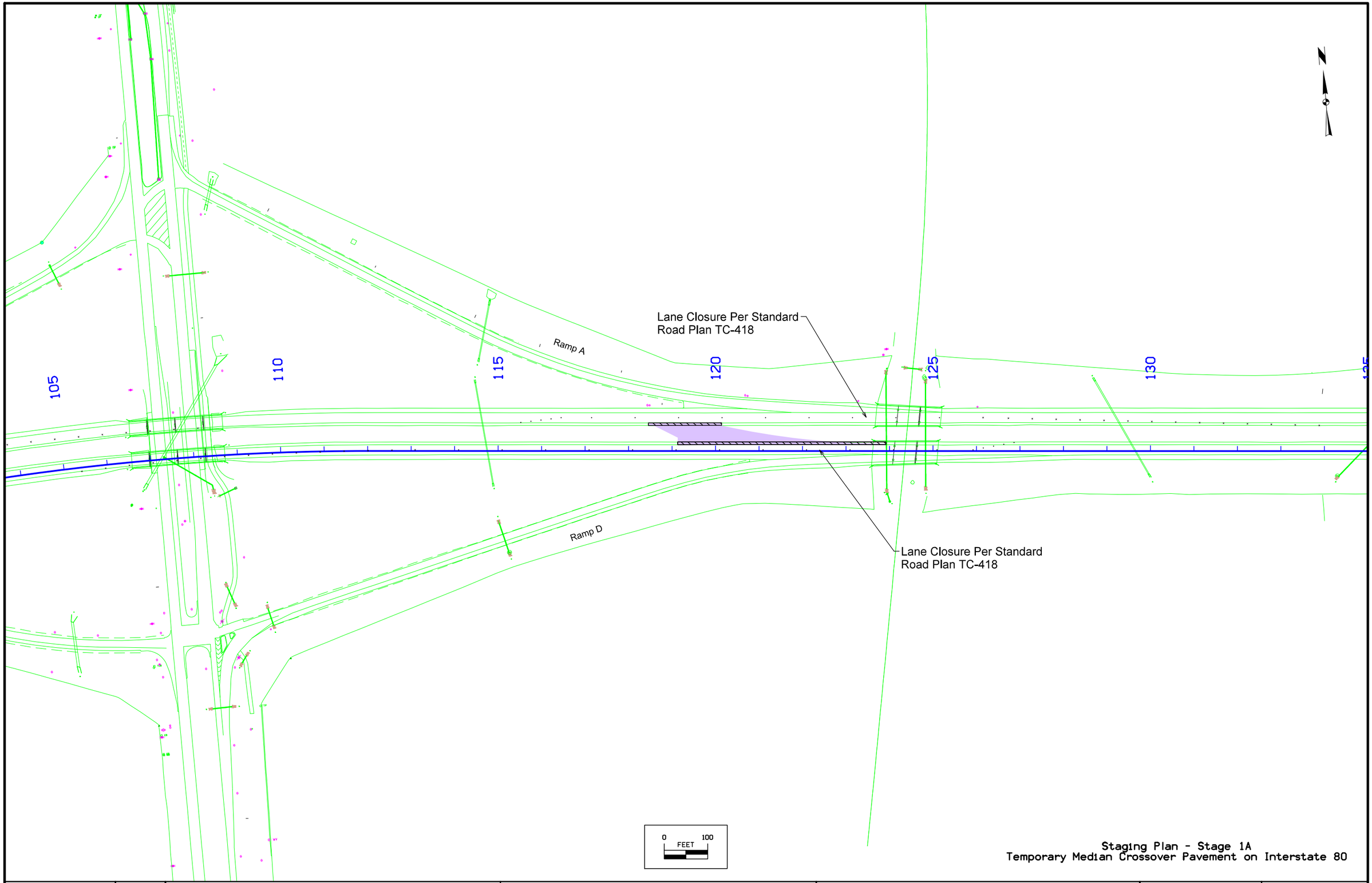

Staging Plan - Stage 1A
Temporary Median Crossover Pavement on Interstate 80

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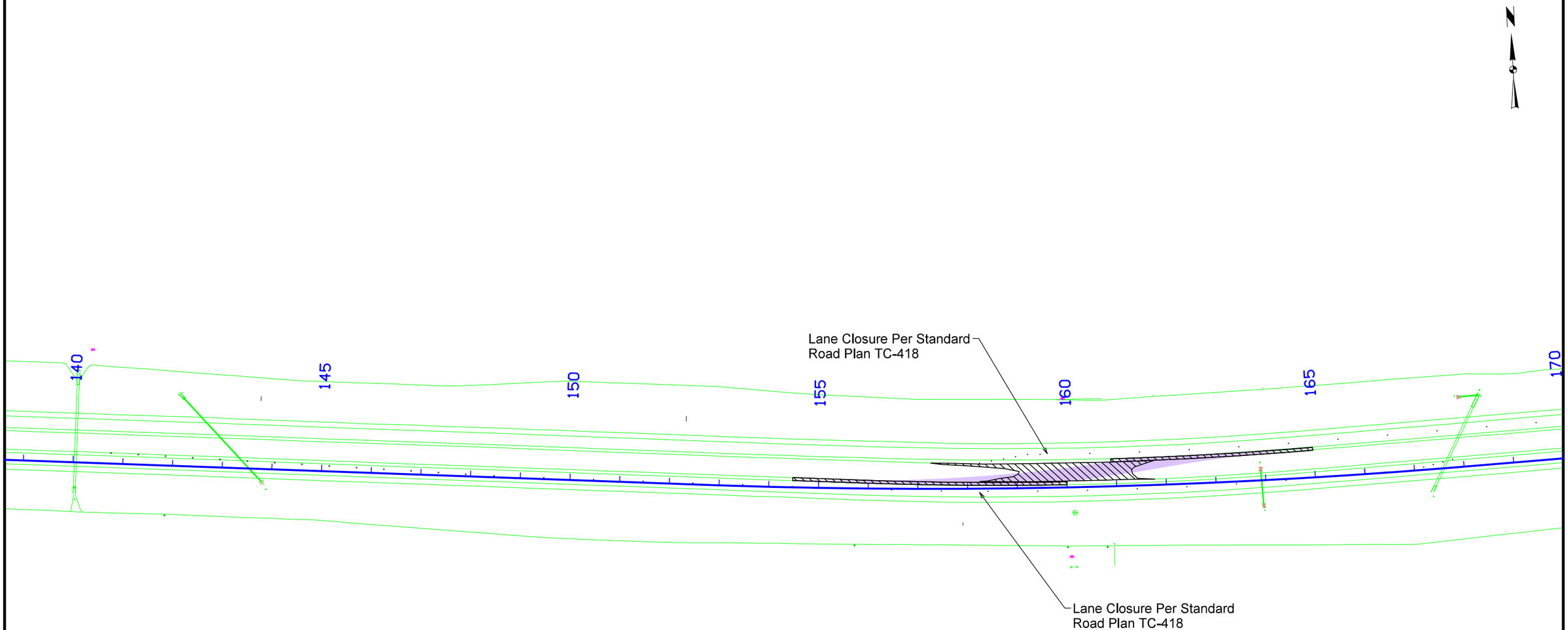

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FEET

Staging Plan - Stage 1A
Temporary Median Crossover Pavement on Interstate 80

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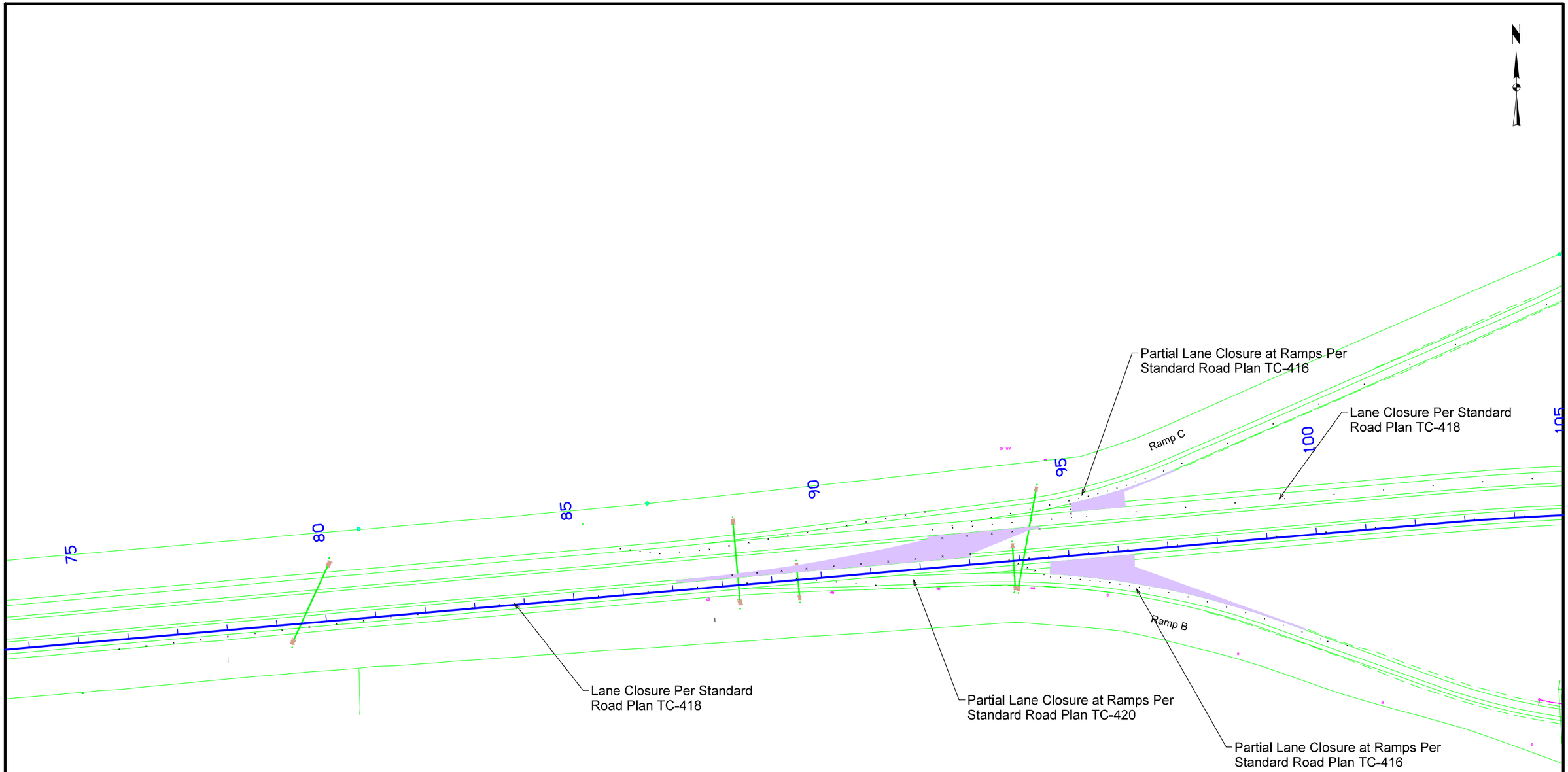

0 FEET 100

Staging Plan - Stage 1B
Temporary Gore Pavement Extension on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.10

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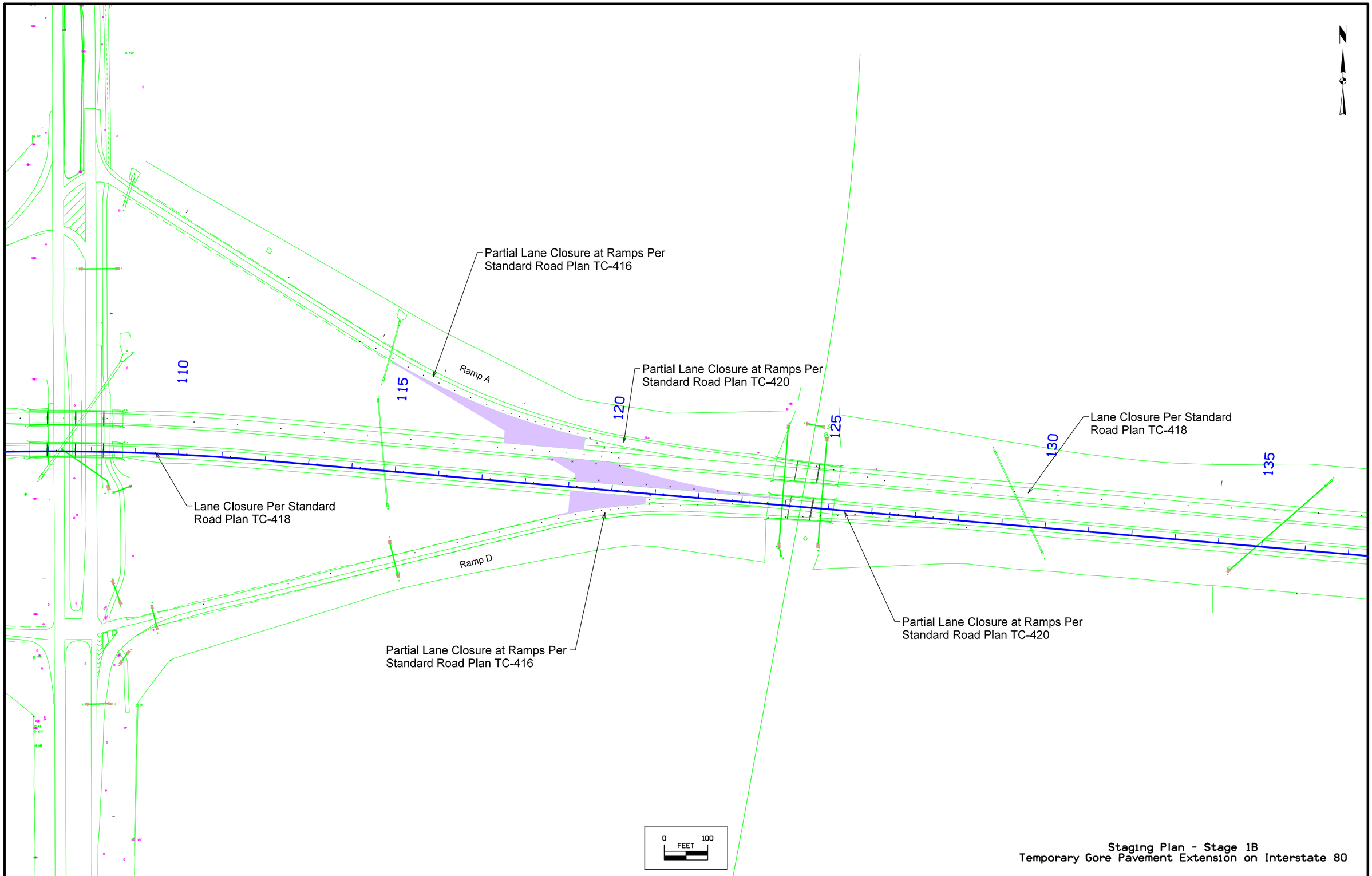

Staging Plan - Stage 1B
Temporary Gore Pavement Extension on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.11

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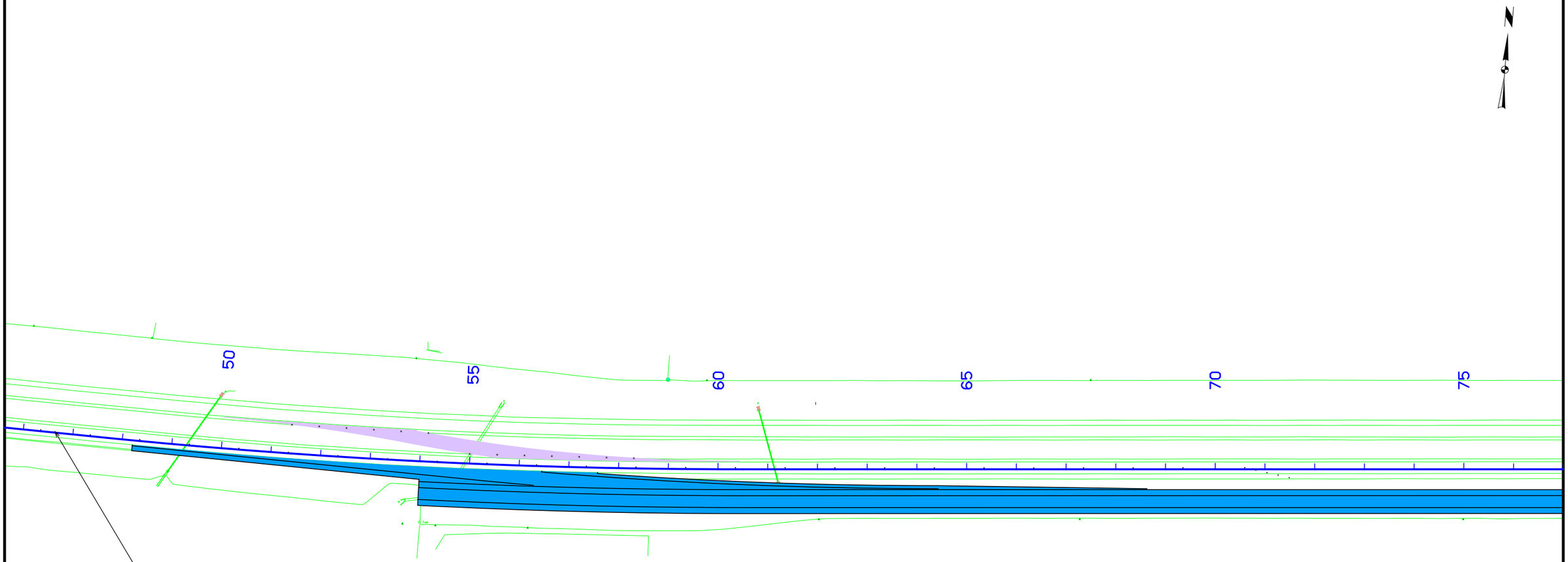

0 FEET 100

Staging Plan - Stage 2A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.12

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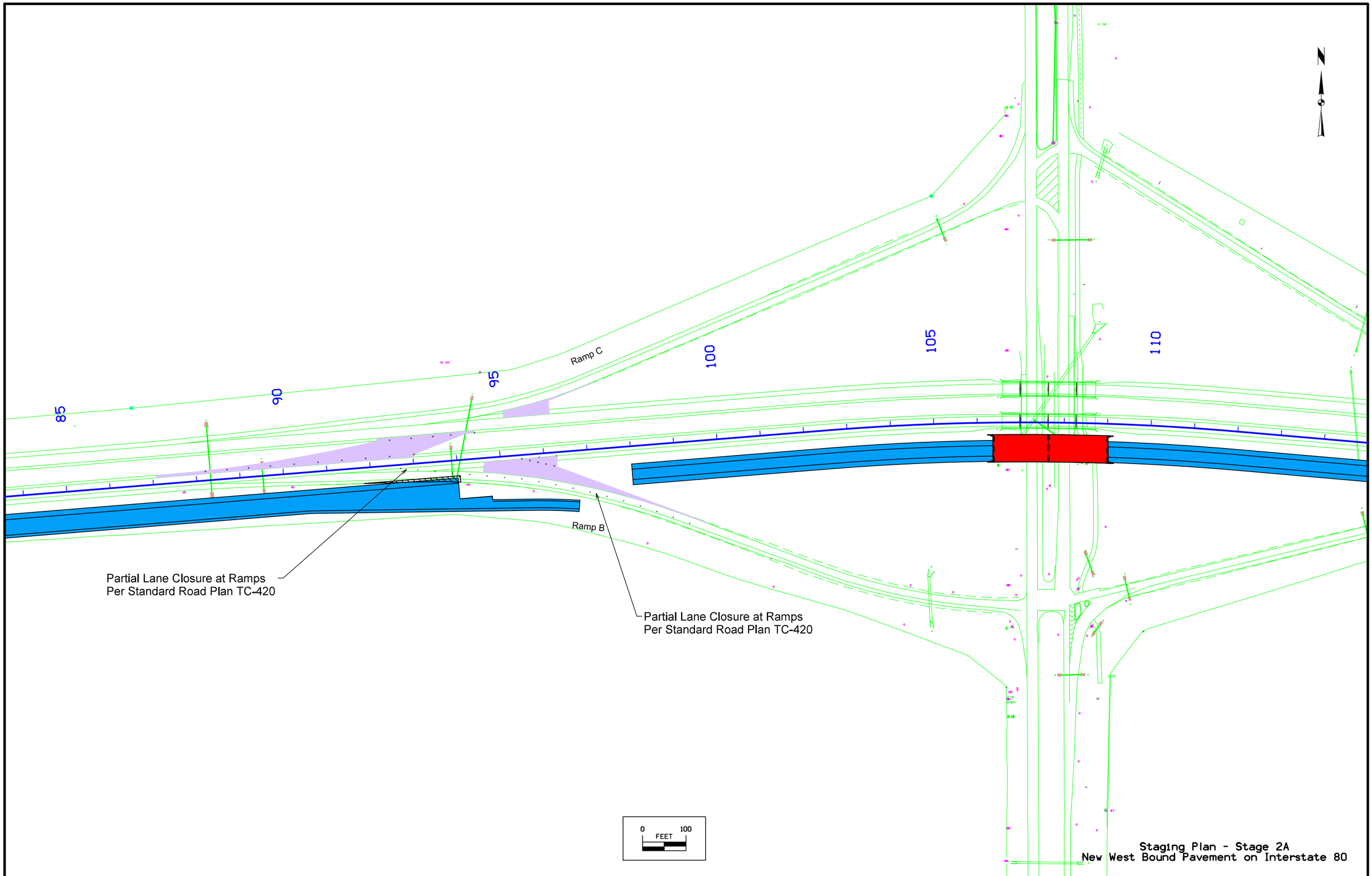

Staging Plan - Stage 2A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.13

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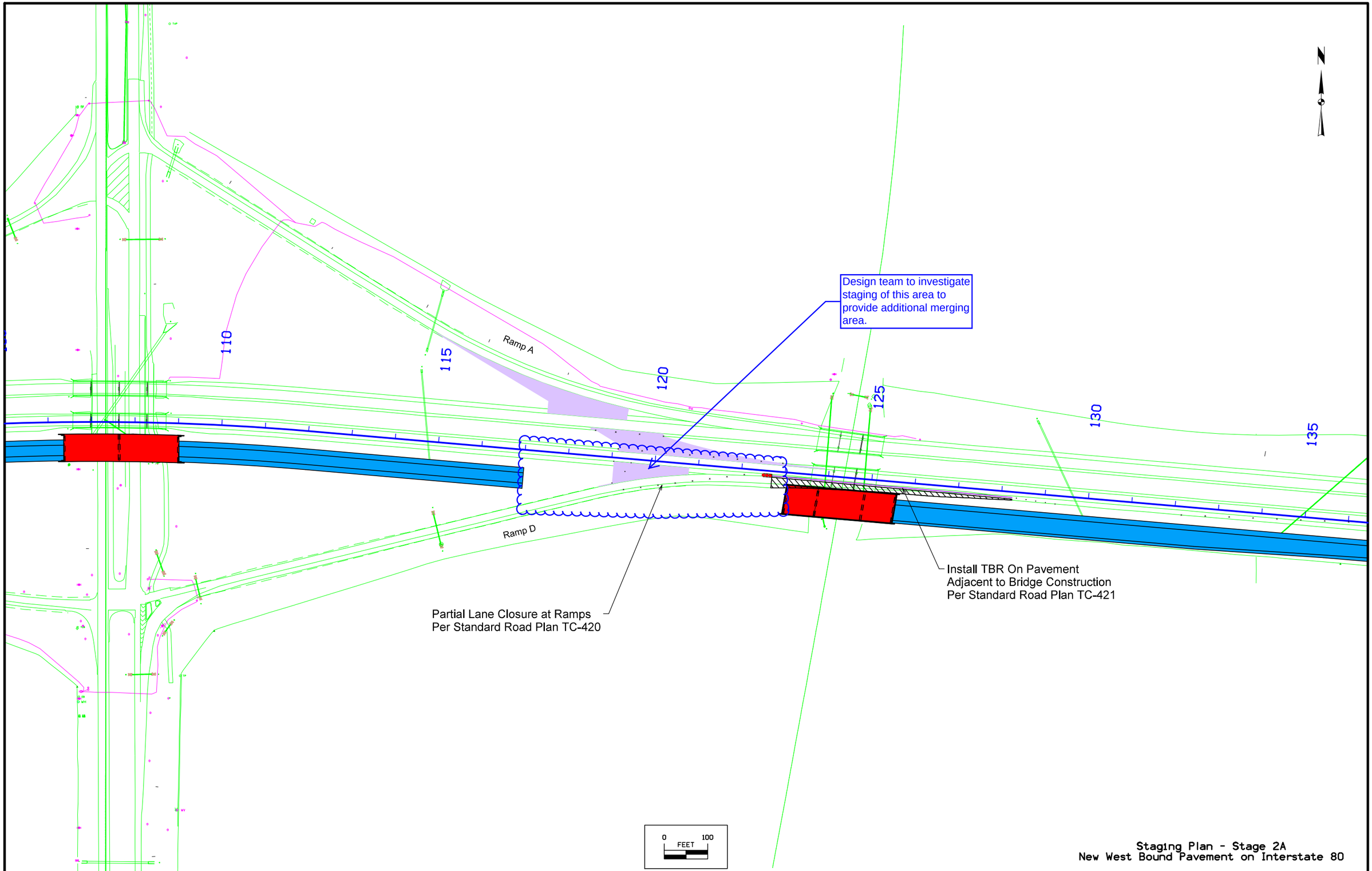

Staging Plan - Stage 2A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.14

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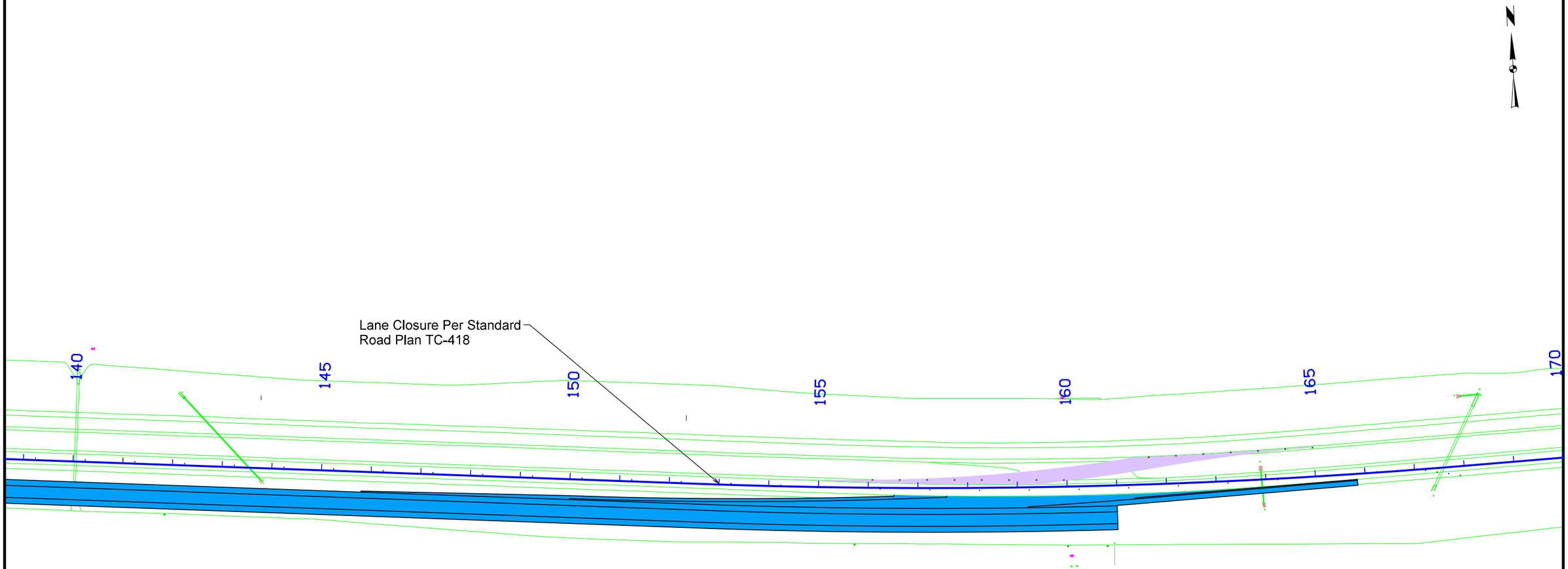

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FEET

Staging Plan - Stage 2A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.15

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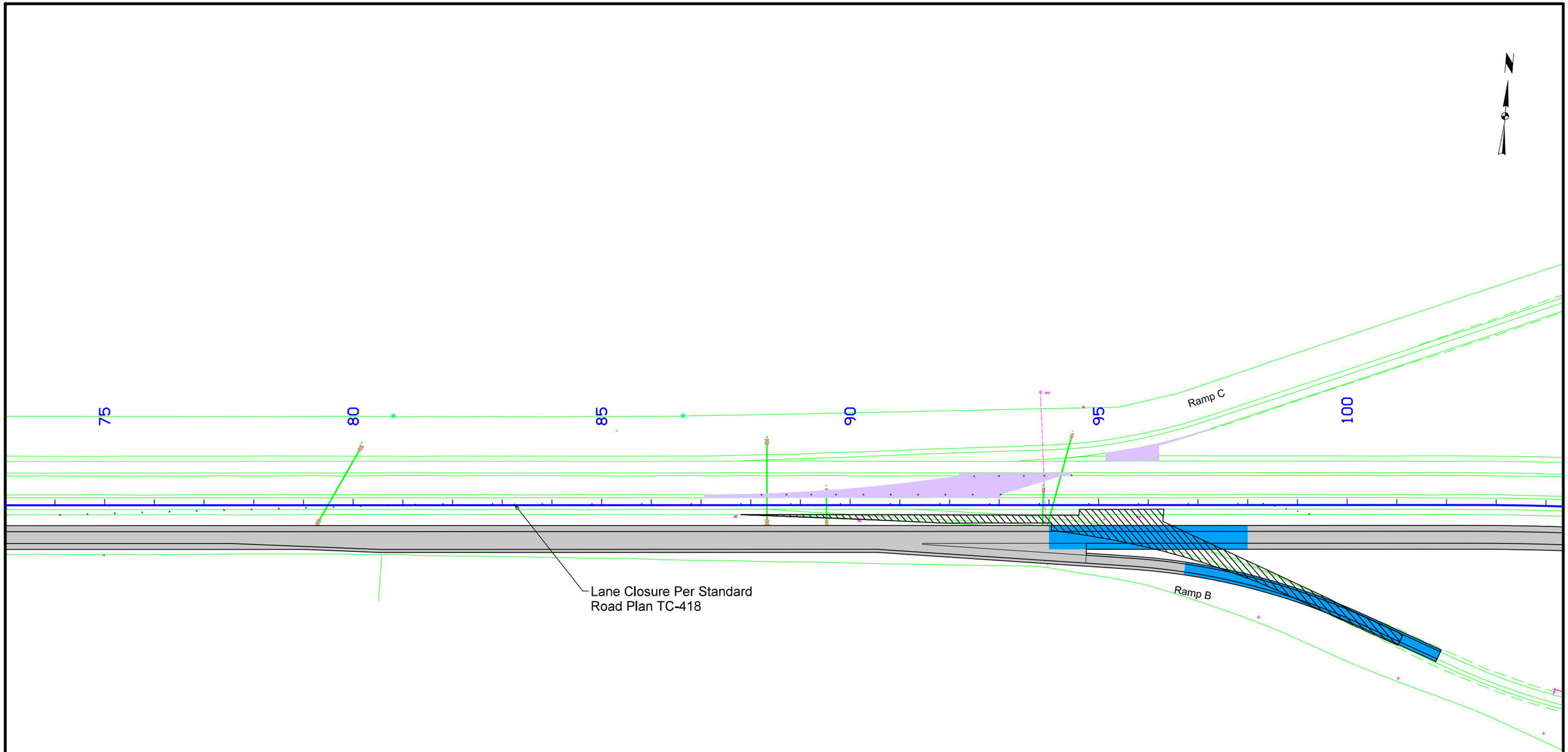

Staging Plan - Stage 2B
Ramp B Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.16

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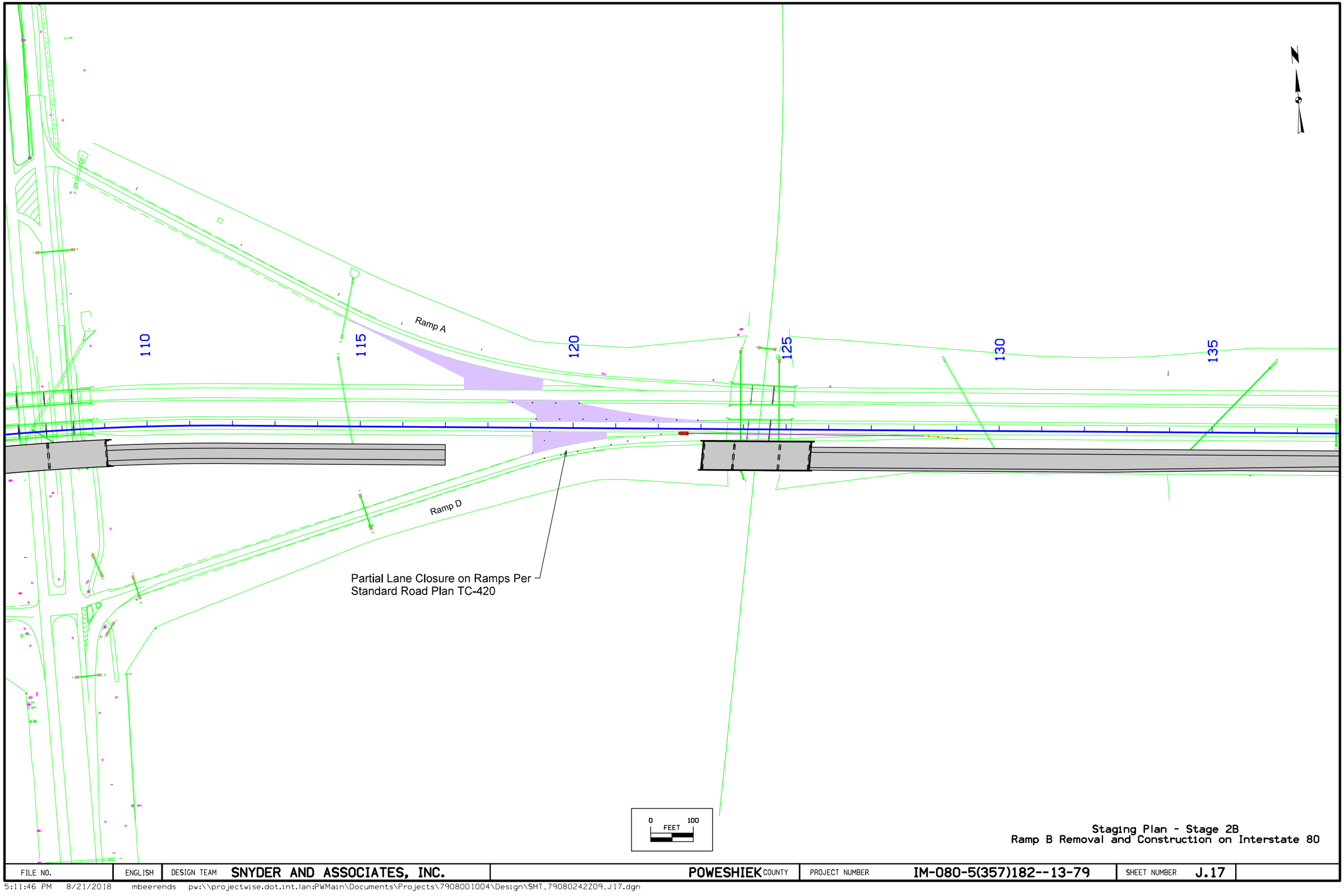

Staging Plan - Stage 2B
Ramp B Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.17

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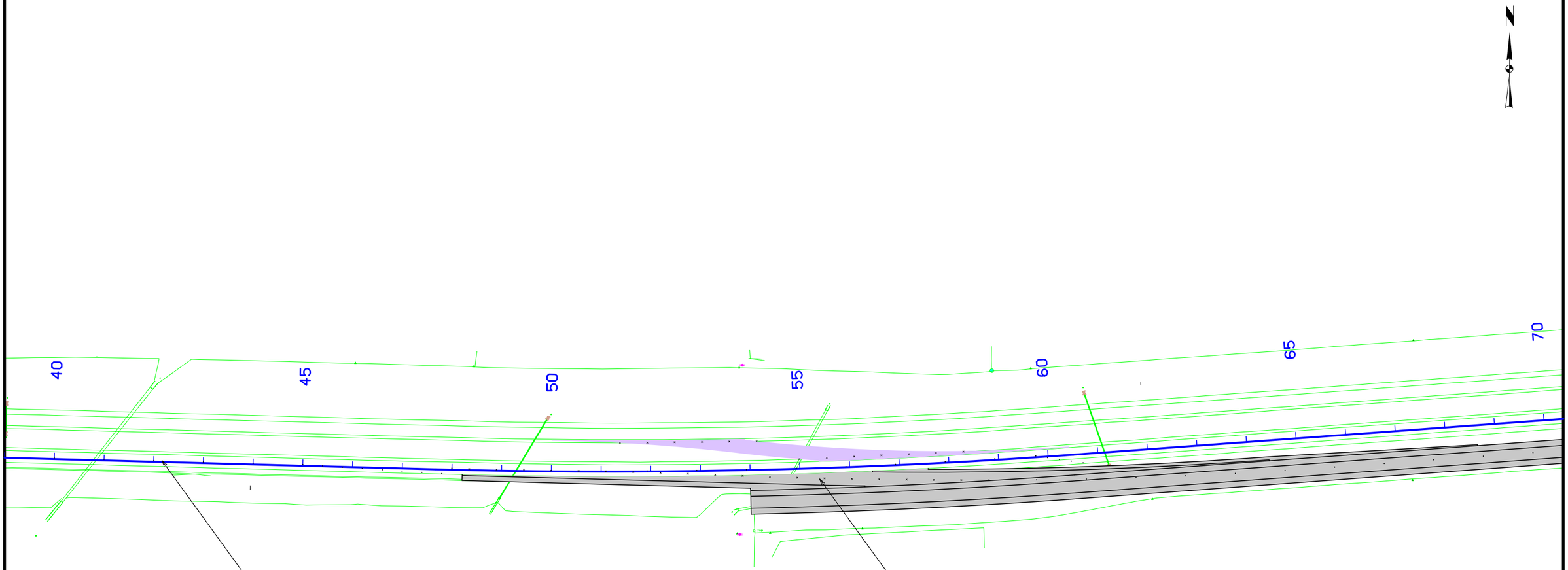

0 FEET 100

Staging Plan - Stage 2C
Ramp D Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.18

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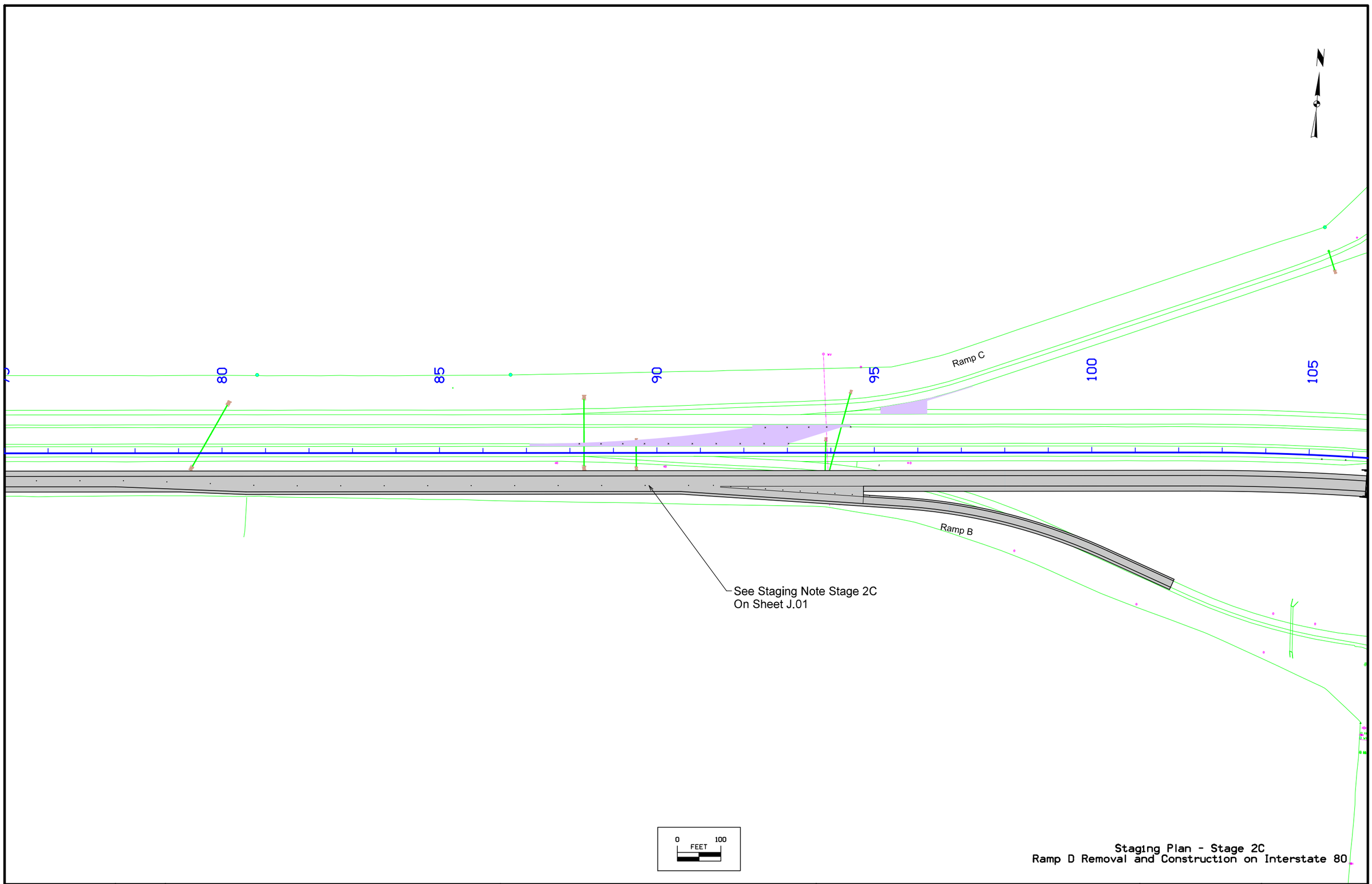

Staging Plan - Stage 2C
Ramp D Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.19

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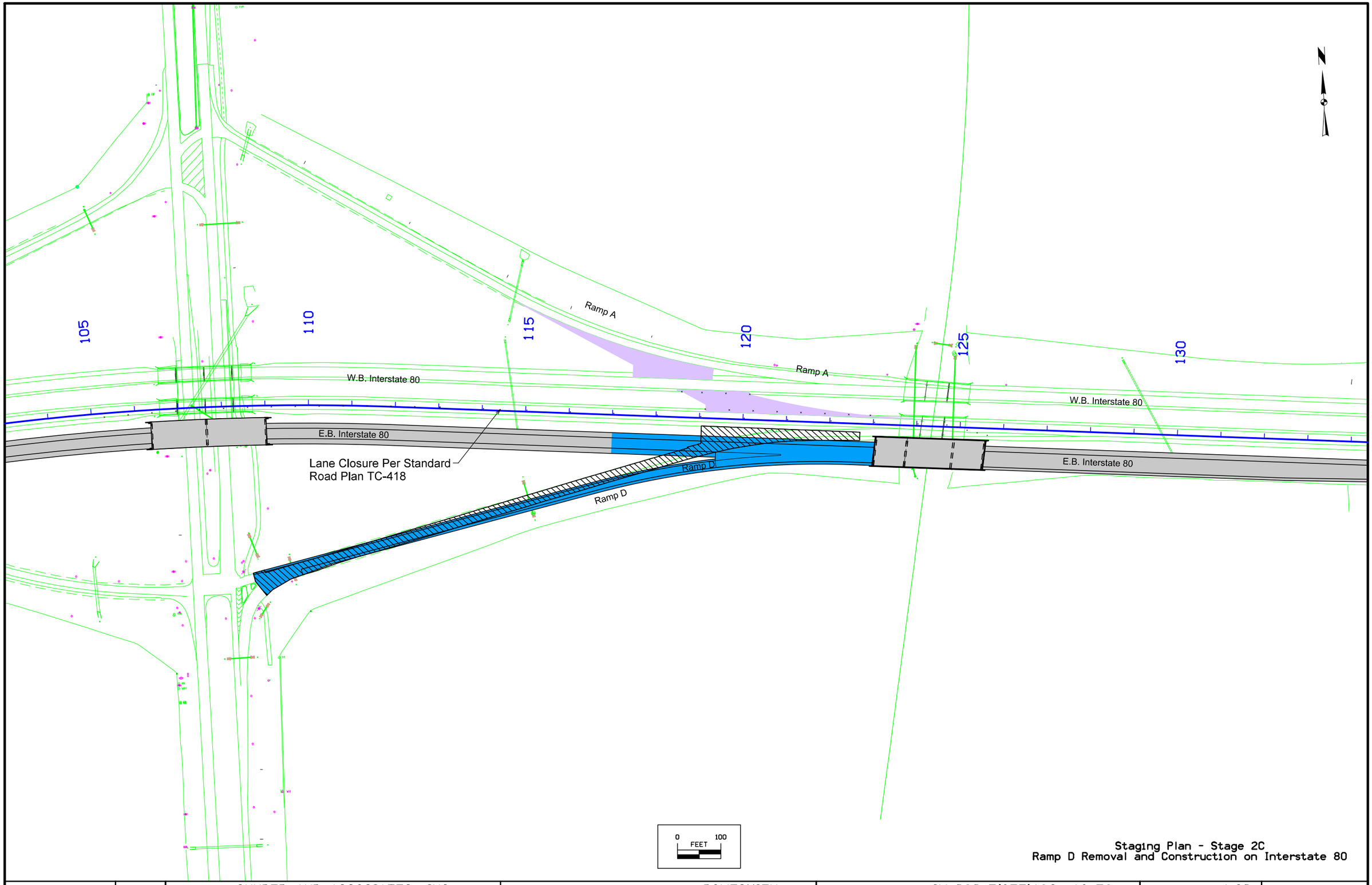

Staging Plan - Stage 2C
Ramp D Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.20

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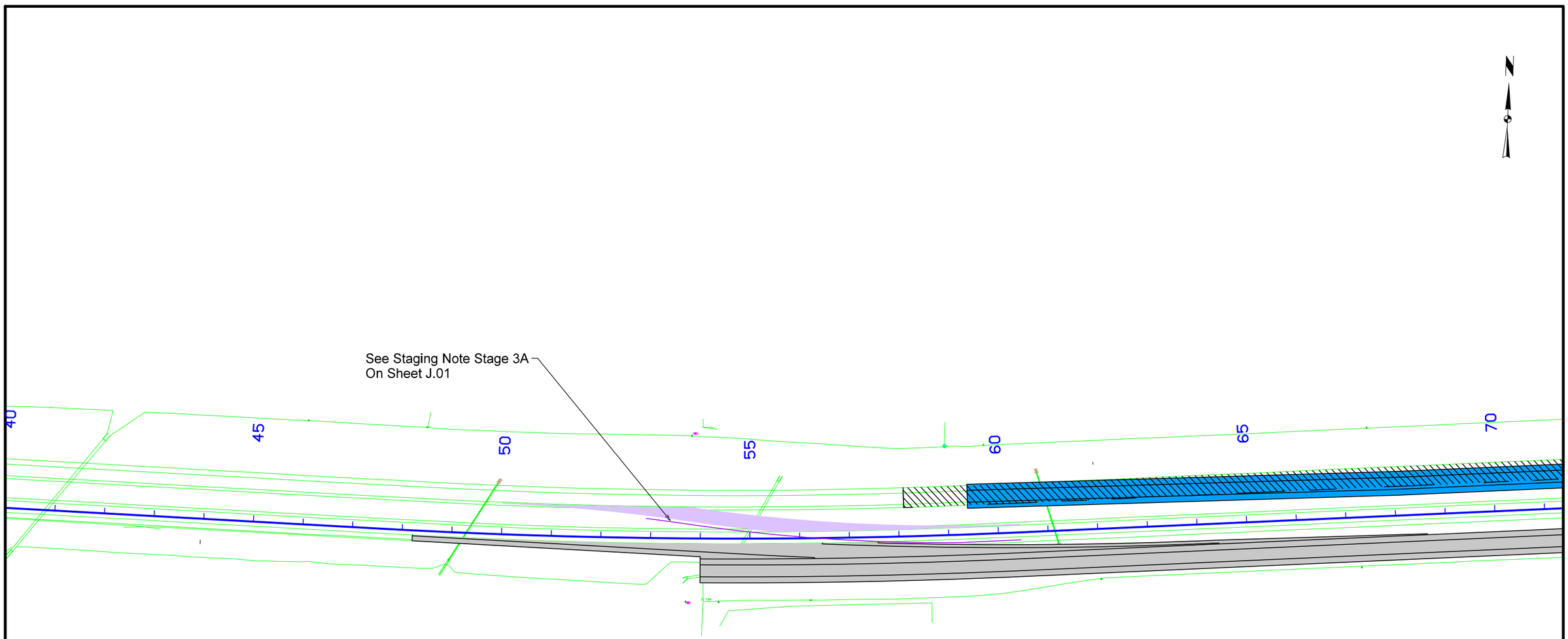

0 FEET 100

Staging Plan - Stage 3A
New East Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.21

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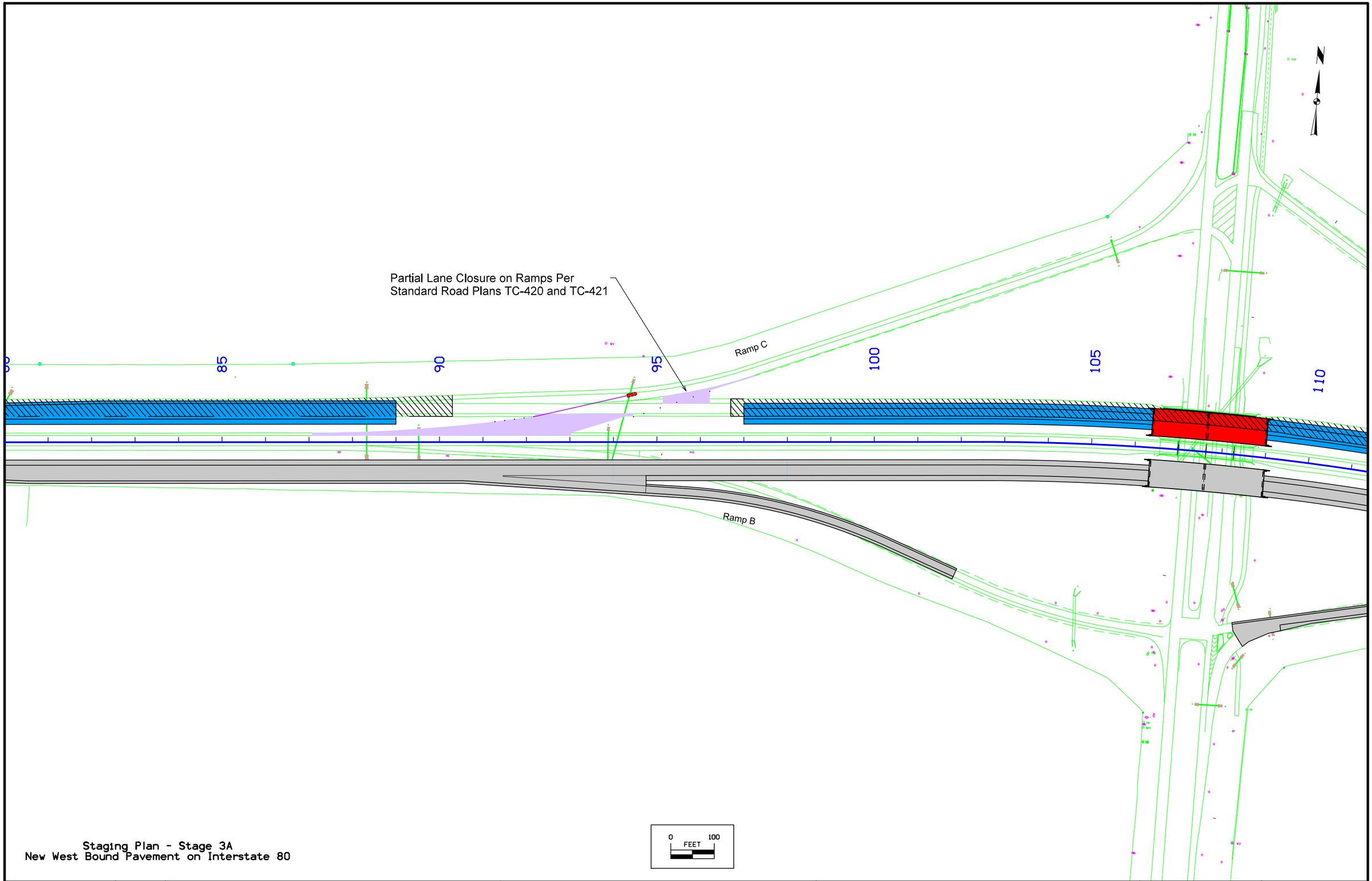

Staging Plan - Stage 3A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.22

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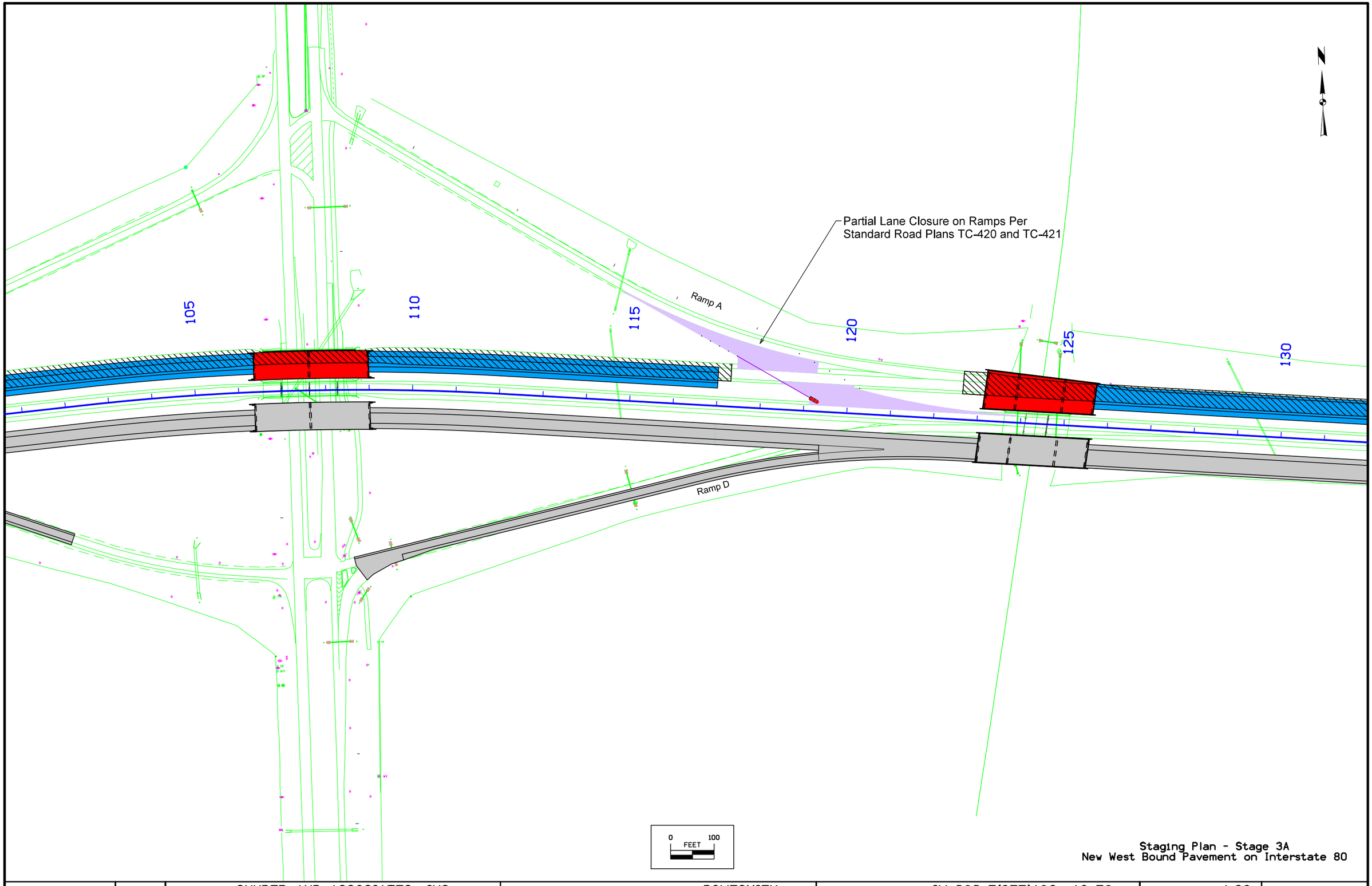

Staging Plan - Stage 3A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.23

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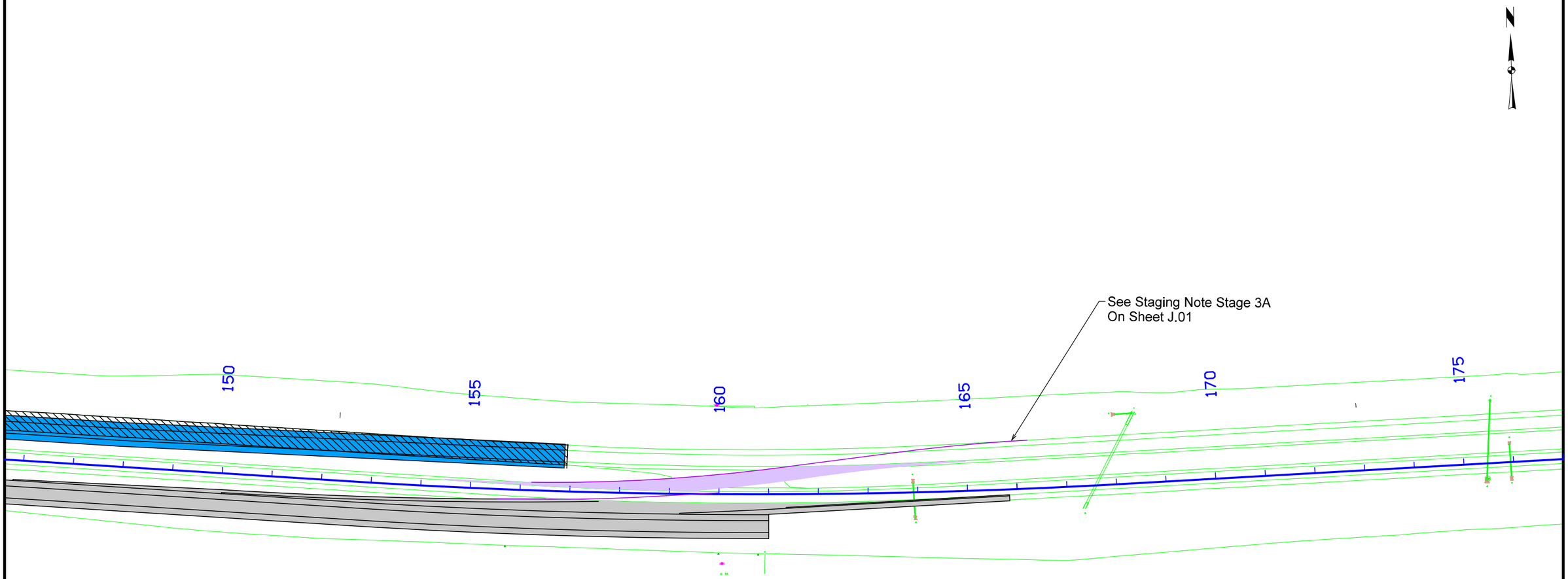

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FEET

Staging Plan - Stage 3A
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER J.24

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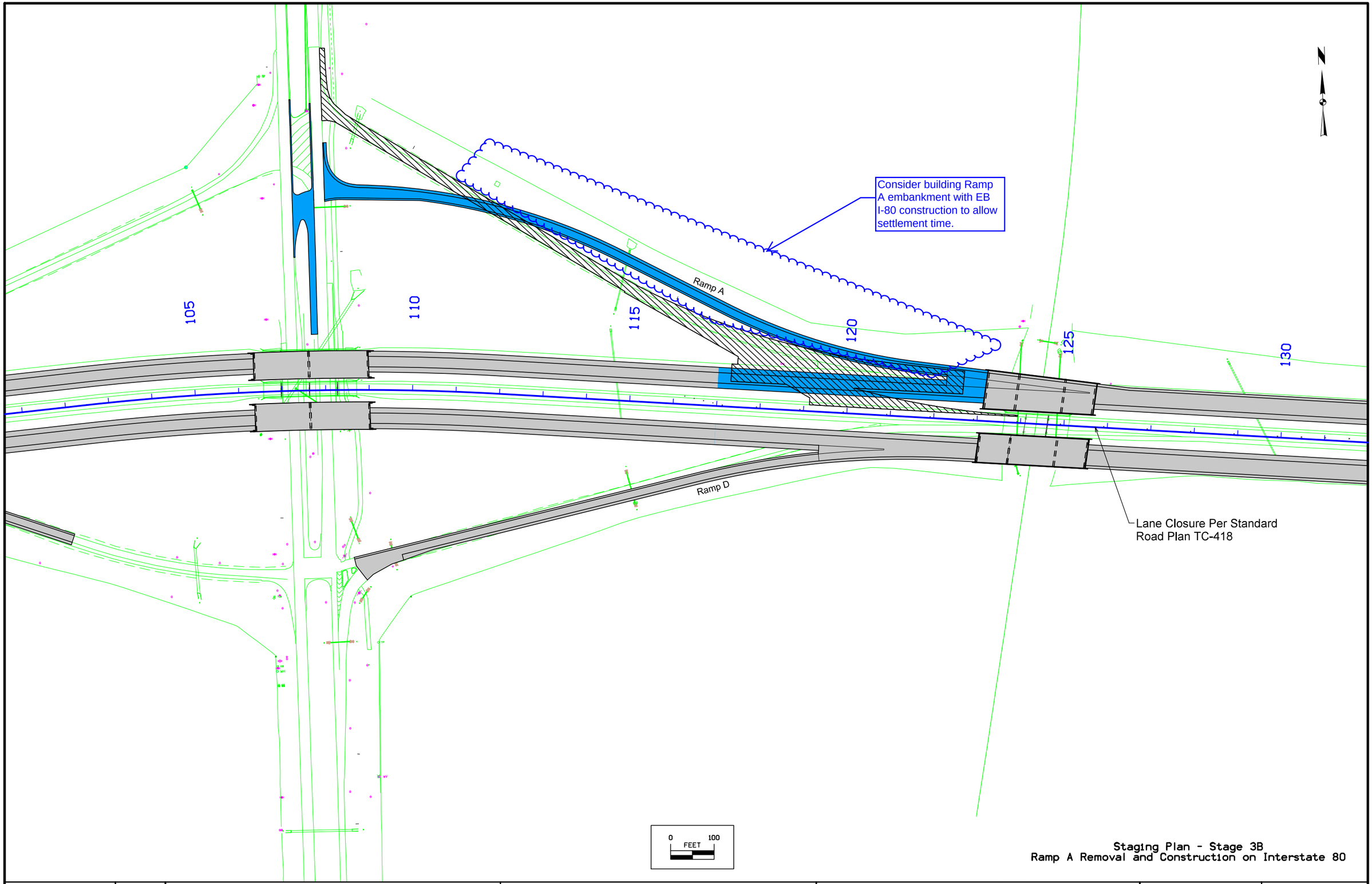

Staging Plan - Stage 3B
Ramp A Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.25

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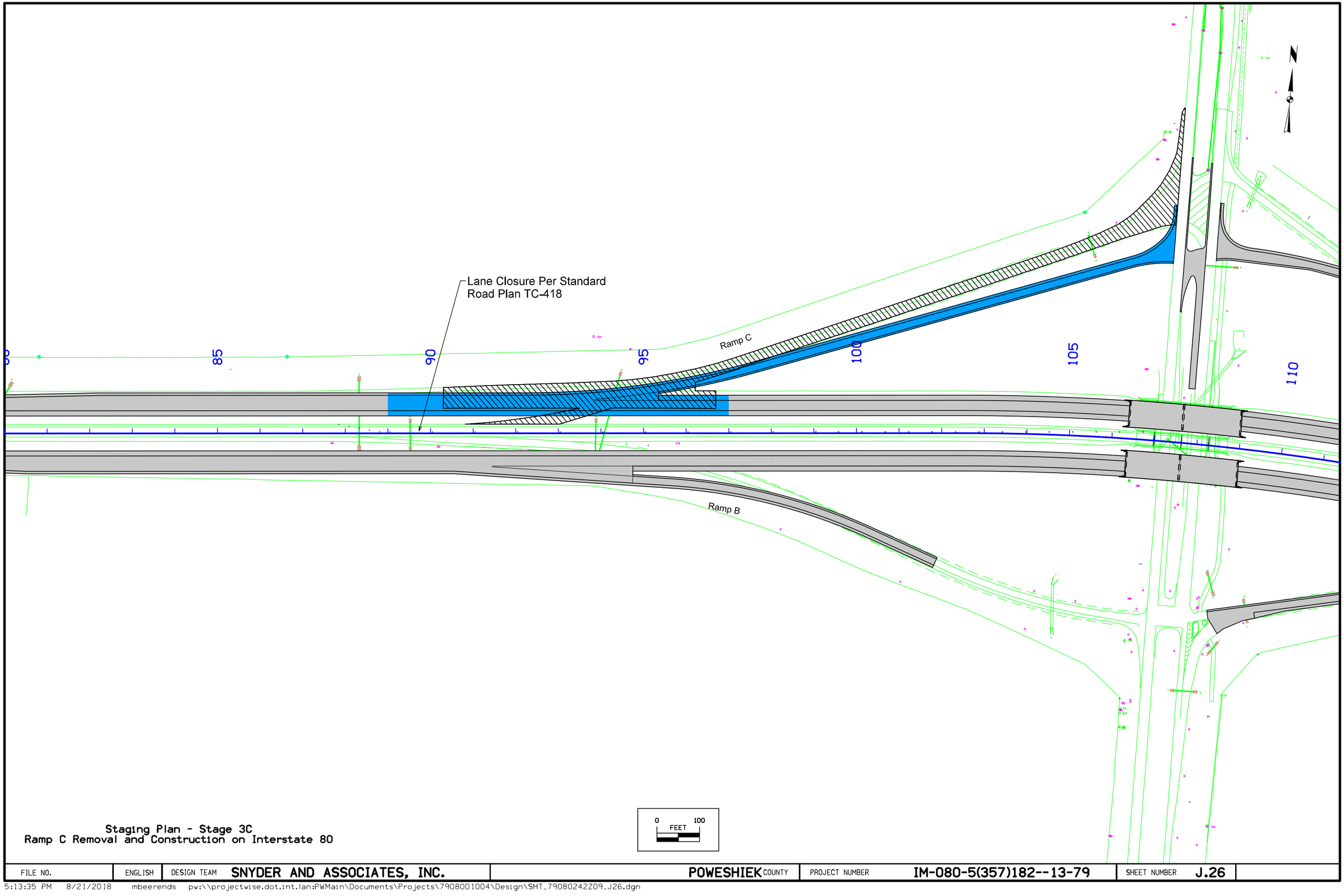

Staging Plan - Stage 3C
Ramp C Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.26

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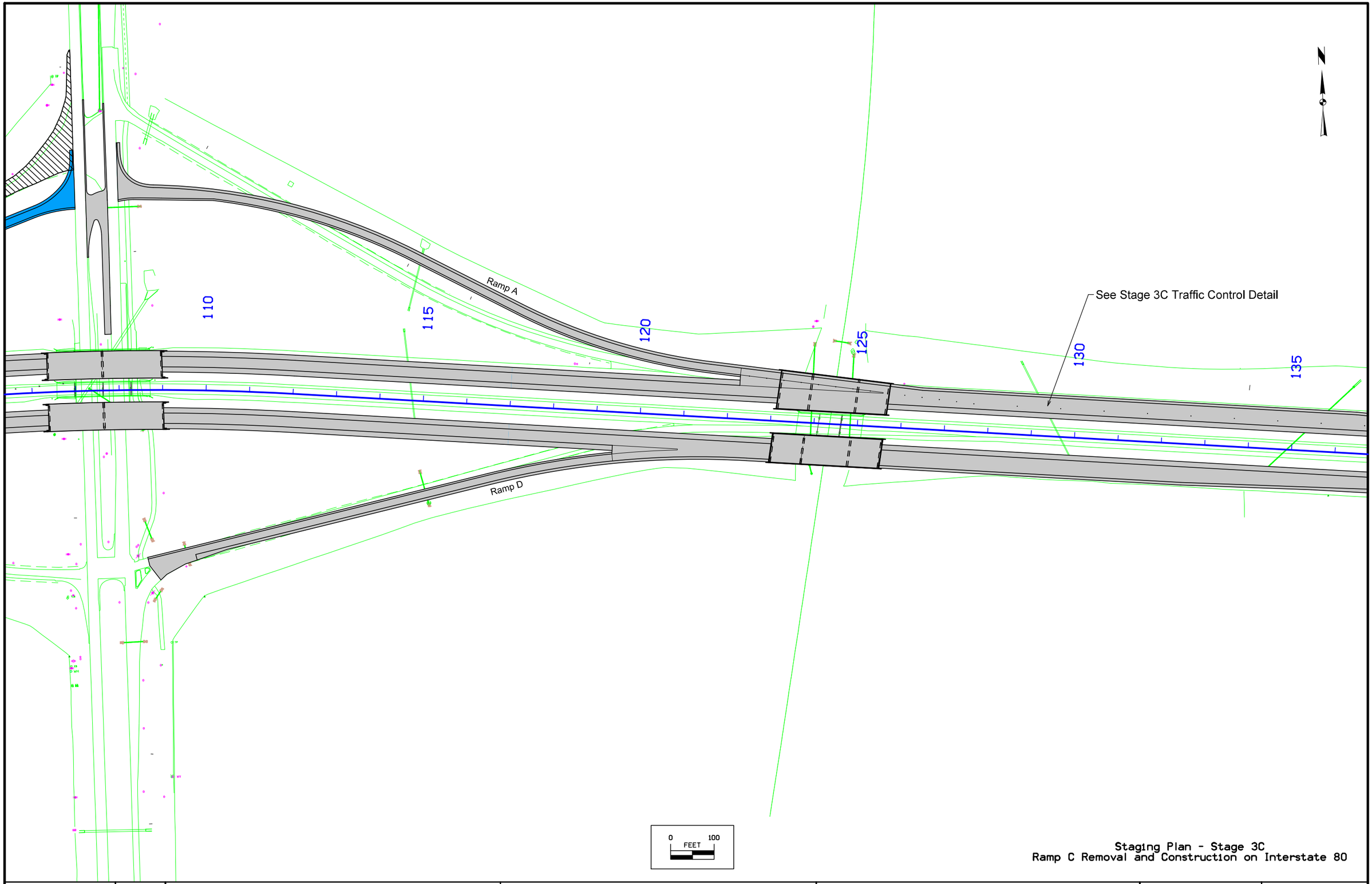

Staging Plan - Stage 3C
Ramp C Removal and Construction on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.27

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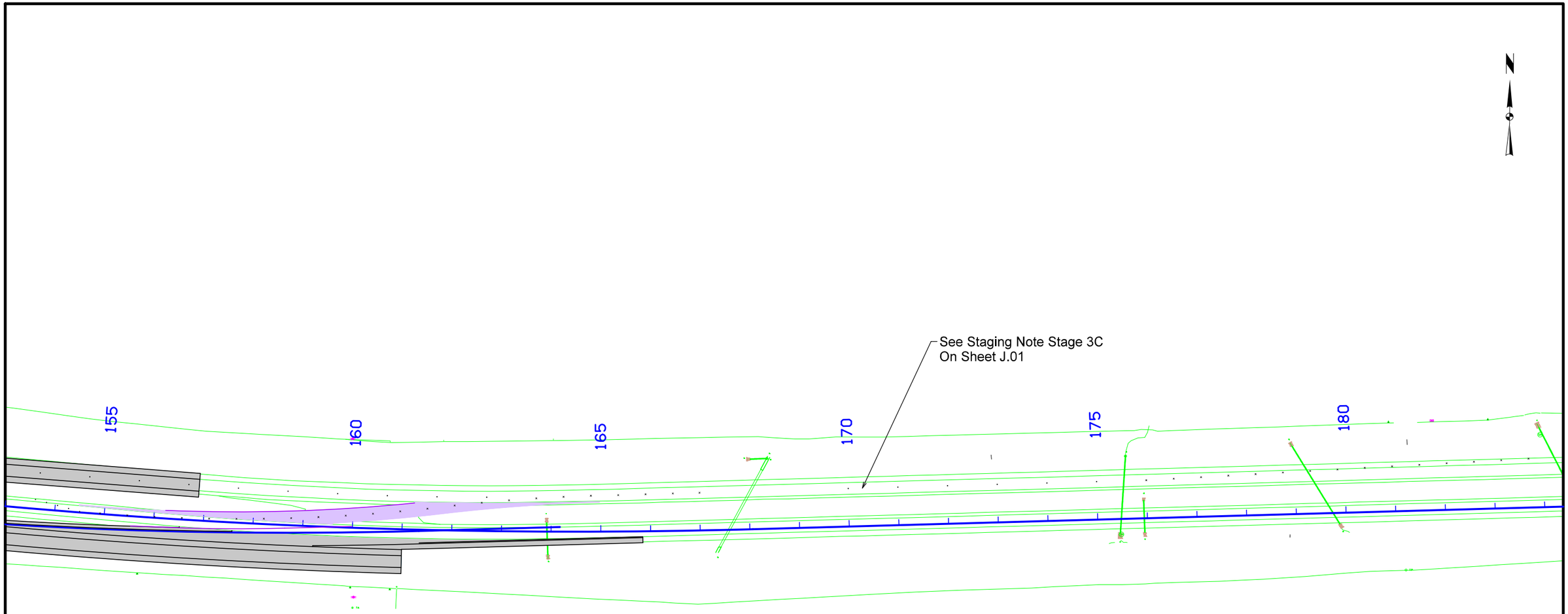

Staging Plan - Stage 3C
New West Bound Pavement on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.28

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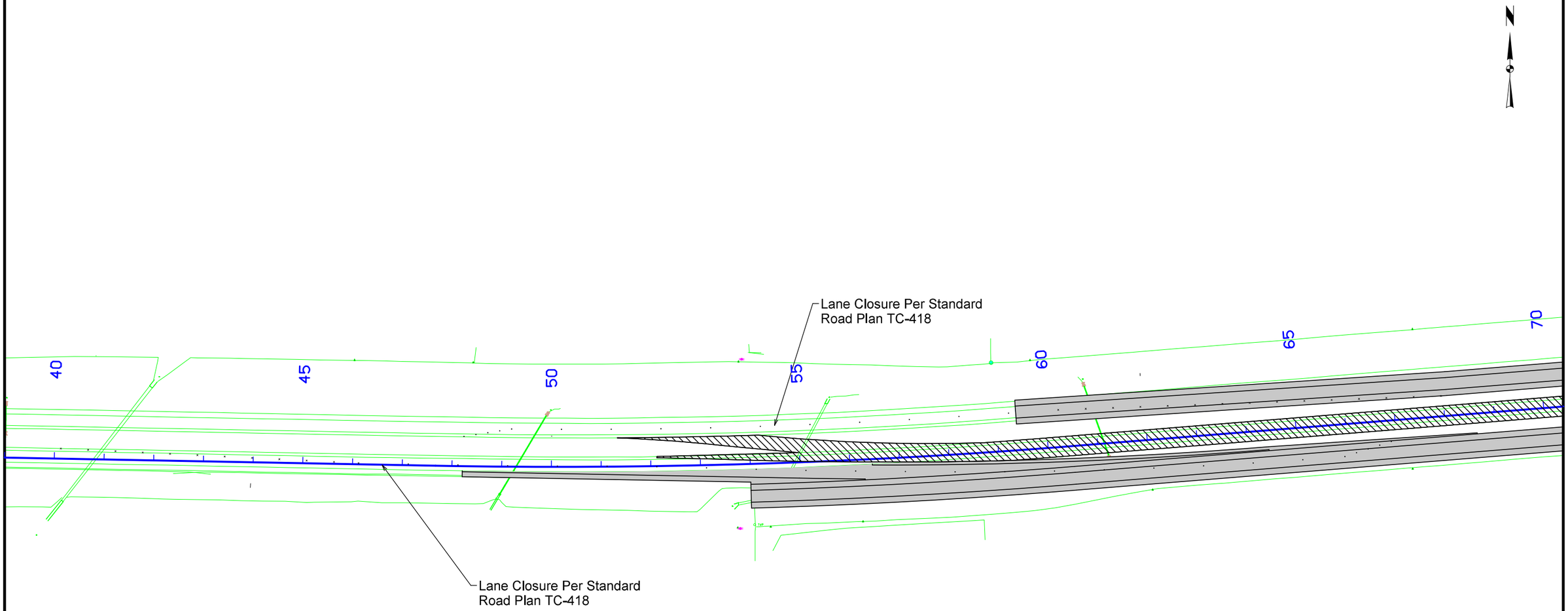

Staging Plan - Stage 4
Old East Bound Pavement Removal on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.29

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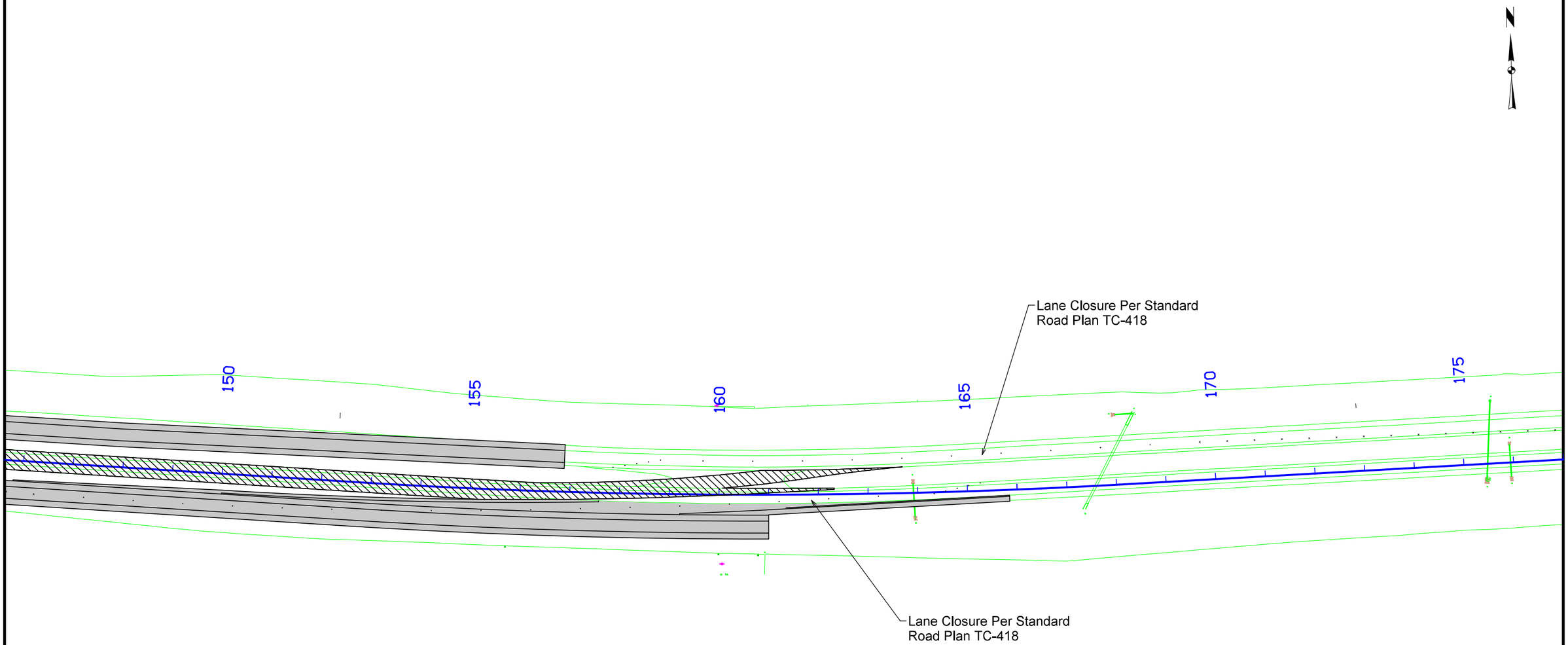

Staging Plan - Stage 4
Old East Bound Pavement Removal on Interstate 80

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	J.30

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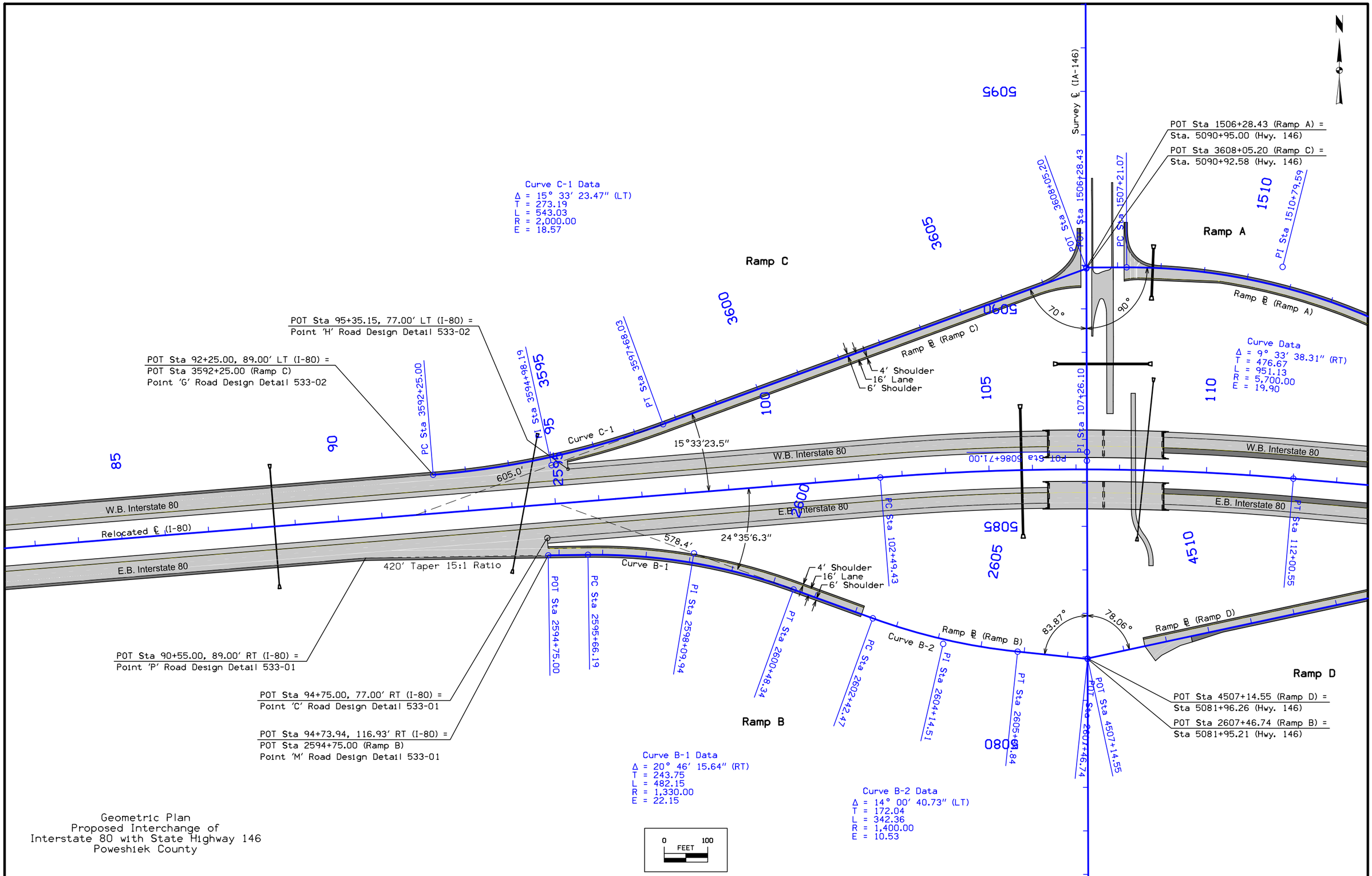

Geometric Plan
Proposed Interchange of
Interstate 80 with State Highway 146
Poweshiek County

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.1

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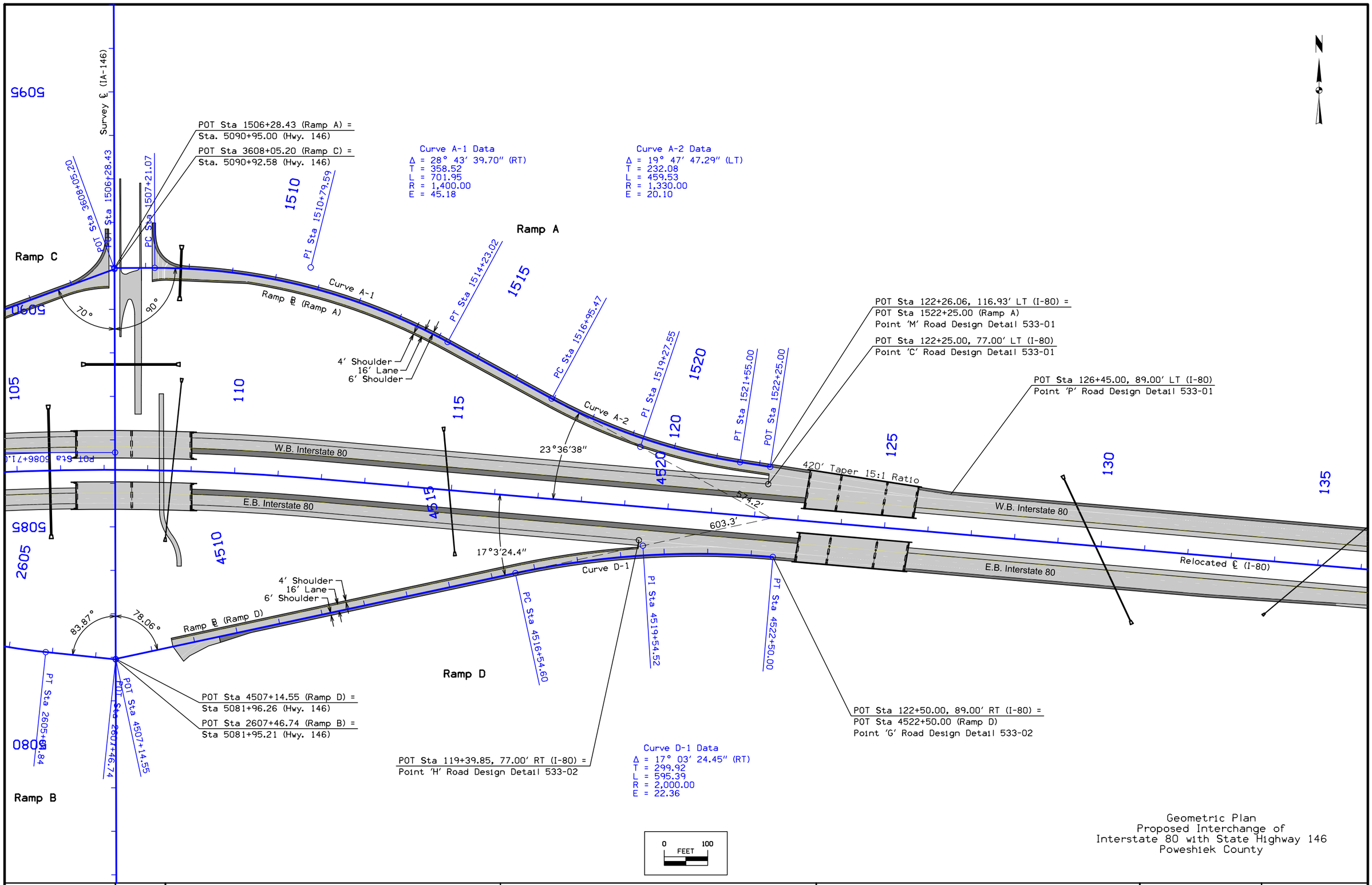

Geometric Plan
Proposed Interchange of
Interstate 80 with State Highway 146
Poweshiek County

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.2

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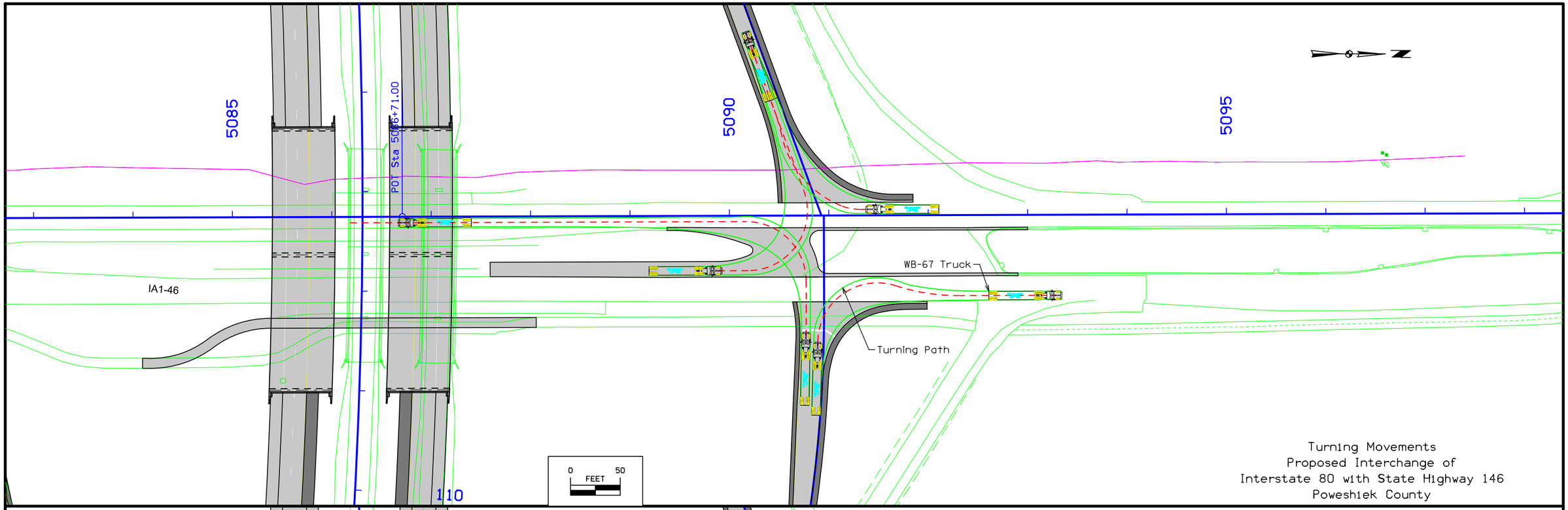
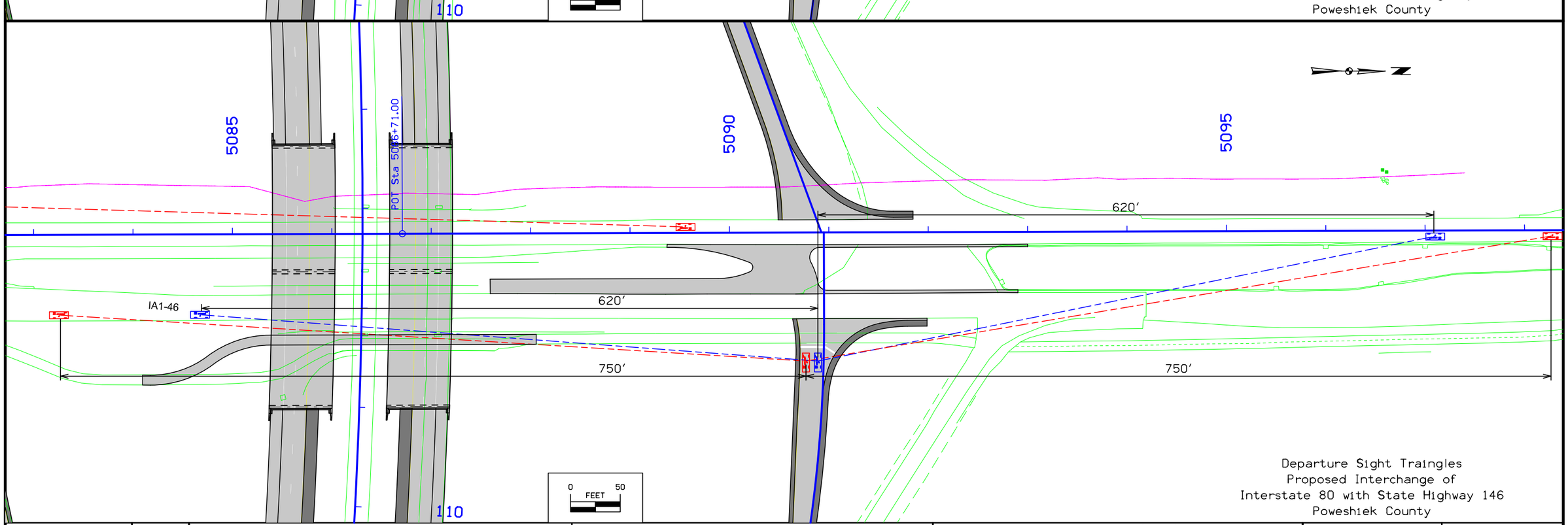


Turning Movements
Proposed Interchange of
Interstate 80 with State Highway 146
Poweshiek County



Departure Sight Traingles
Proposed Interchange of
Interstate 80 with State Highway 146
Poweshiek County

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.3

5:15:13 PM 8/21/2018 mbeerends pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_K03.dgn

POT Sta 1506+93.60 (Ramp A) =
Sta. 5089+94.31 (Hwy. 146)

Curve A-1 Data
Δ = 28° 43′ 39.70″ (RT)
T = 358.52
L = 701.95
R = 1,400.00
E = 45.18

Curve A-2 Data
Δ = 19° 47′ 47.29″ (LT)
T = 232.08
L = 459.53
R = 1,330.00
E = 20.10

Ramp A

Existing ROW

POT Sta 1522+25.00 (Ramp A)
POT Sta 122+26.06, 116.93′ LT (I-80) =
End Ramp A Construction

POT Sta 1526+44.87 (Ramp A) =
POT Sta 126+45.00, 89.00′ LT (I-80)

Sta 1507+15.19 (Ramp A)
Begin Ramp A Construction

POT Sta 1506+28.43
PC Sta 1507+21.07
PI Sta 1510+79.59
PT Sta 1514+23.02
PC Sta 1516+95.47
PI Sta 1519+27.55
PT Sta 1521+55.00
POT Sta 1522+25.00

Survey ℄ (IA-146)
Ramp ℄ (Ramp A)
Curve A-1
Curve A-2
90°
23°36′38″
574.2′
4′ Shoulder
16′ Lane
6′ Shoulder
420′ Taper 15:1 Ratio
W.B. Interstate 80
E.B. Interstate 80
Relocated ℄ (I-80)
5090
5085
105
110
115
120
125
130
135
1510
1515
1520

N

0 FEET 100

Ramp A

Sta 1507+15.19
Begin Ramp A Profile
Elev. = 980.23
Match Existing
980.23

Proposed Profile Grade
-1.500%
+3.600%
+3.600%
+0.324%
Existing Ground

VPI +00.000
Elv 977.46
K = 69
Len 350.00 ft
DS = 40 MPH

VPI +50.000
Elv 1,015.26
K = 153
Len 500.00 ft
SSD = 579′
DS = 60 MPH

Sta 1522+25.00
End Ramp A Profile
Elev. = 1016.15
1,016.15

1,030
1,020
1,010
1,000
990
980
970
960

Lt
Rt

980.83
980.47 979.75 976.01
979.37 972.59
979.35 975.84
979.69 978.80
980.40 981.46
981.47 983.84
982.90 986.18
984.66 987.67
986.46 988.27
988.26 986.56
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993.66 984.44
995.46 982.53
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1,016.07 1,012.54
1,013.13
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1,014.56
998.96
986.39
1,005.04
997.82
1,006.35

1504 1505 1506 1507 1508 1509 1510 1511 1512 1513 1514 1515 1516 1517 1518 1519 1520 1521 1522 1523 1524 1525 1526 1527 1528 1529

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.4

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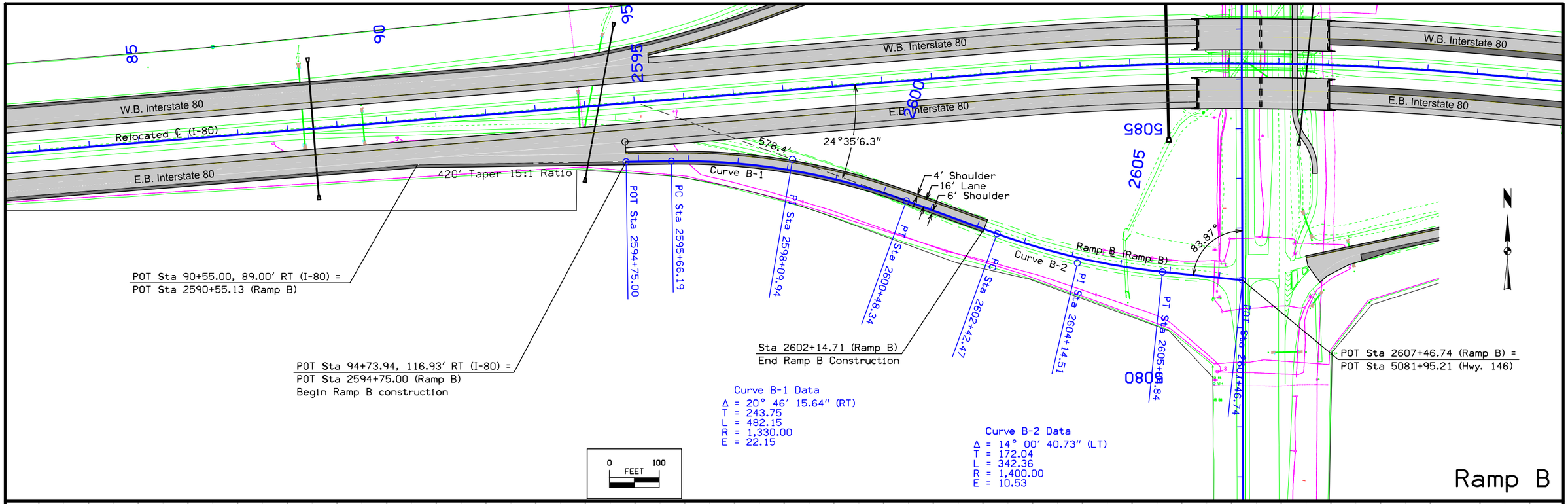

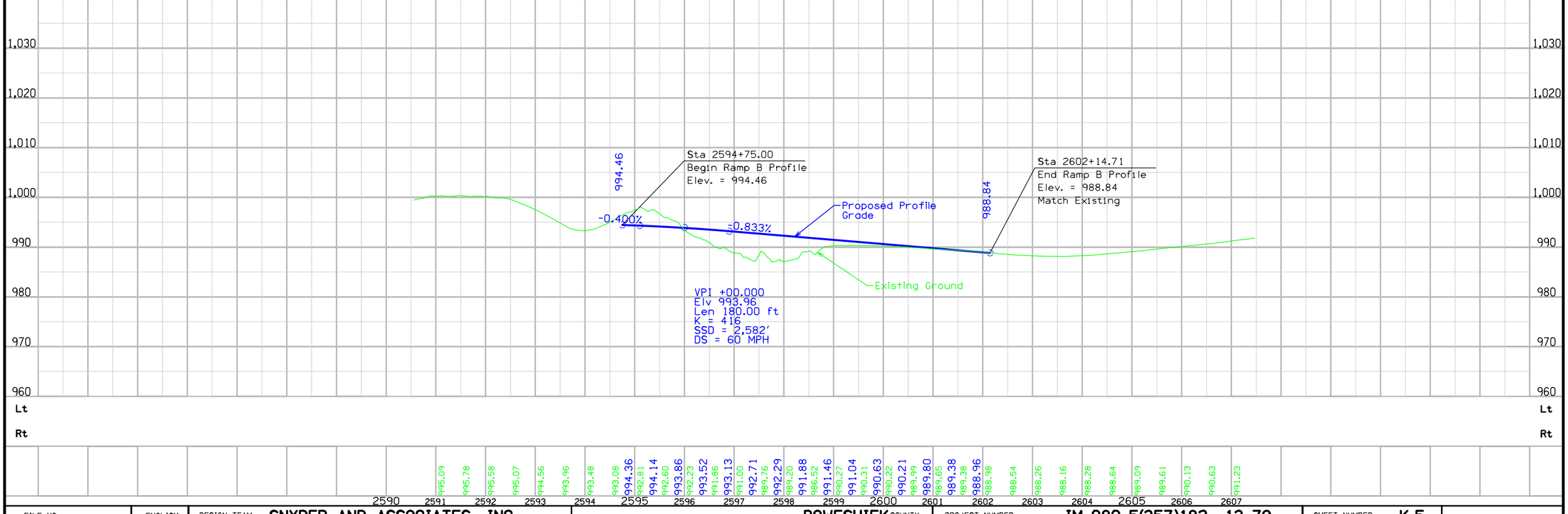

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.5

5:15:58 PM 8/21/2018 mbeerends pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_K05.dgn

Curve C-1 Data
Δ = 15° 33′ 23.47″ (LT)
T = 273.19
L = 543.03
R = 2,000.00
E = 18.57

POT Sta 3608+12.23 (Ramp C) =
Sta. 5089+96.31 (Hwy. 146)
POT Sta 3607+91.60 (Ramp C)
End Ramp C Construction

POT Sta 3595+33.91 (Ramp C)
POT Sta 95+32.68, 112.81 LT (I-80)
Begin Ramp C Construction

Existing ROW

Ramp C

PC Sta 3592+25.00
PI Sta 3594+86.19
PT Sta 3597+68.03
Curve C-1
605.0′

Ramp B (Ramp C)
4′ Shoulder
16′ Lane
6′ Shoulder

Survey ℄ (IA 146)
POT Sta 3608+96.20

W.B. Interstate 80
Relocated ℄ (I-80)
E.B. Interstate 80
W.B. Interstate 80
E.B. Interstate 80

0 100
FEET

Ramp C

994.00
Sta 3595+33.91
Begin Ramp C Profile
Elev. = 994.00

-0.430%
-0.430%
-1.500%
-1.500%
+1.500%

Proposed Profile Grade
Existing Ground

VPI +00.000
Elv 993.29
K = 168
Len 180.00 ft
SSD = 1,098′
DS = 60 MPH

VPI +50.000
Elv 979.04
K = 67
Len 200.00 ft
DS = 40 MPH

981.16
Sta 3607+91.60
End Ramp C Profile
Elev. = 981.16
Match Existing

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.6

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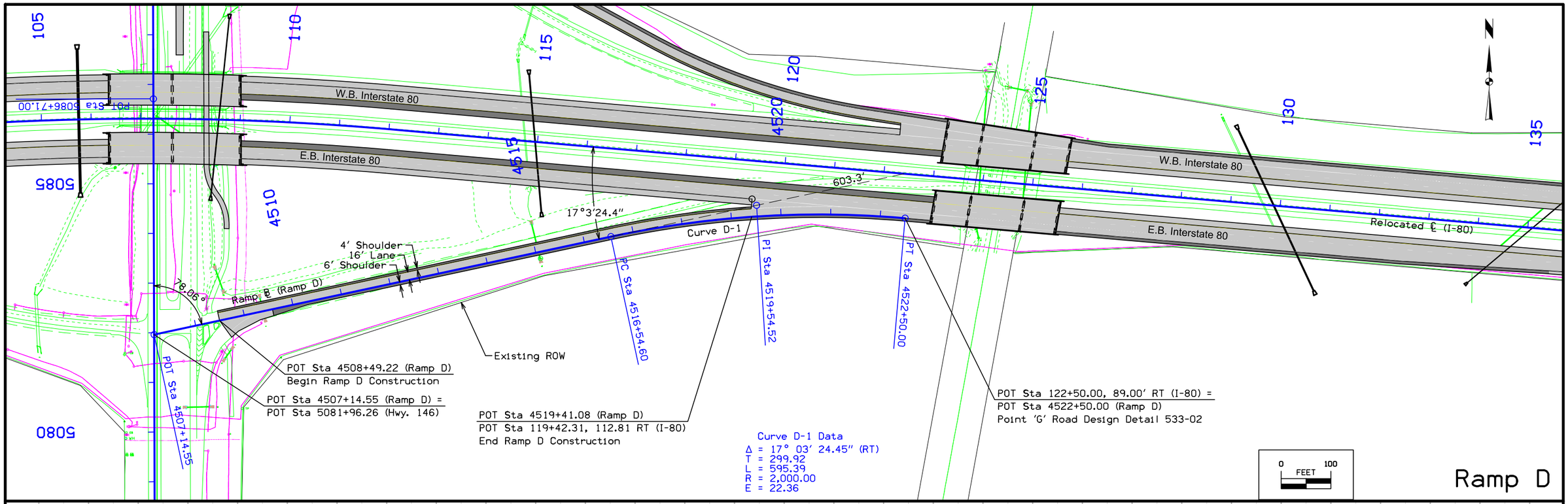

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	K.7

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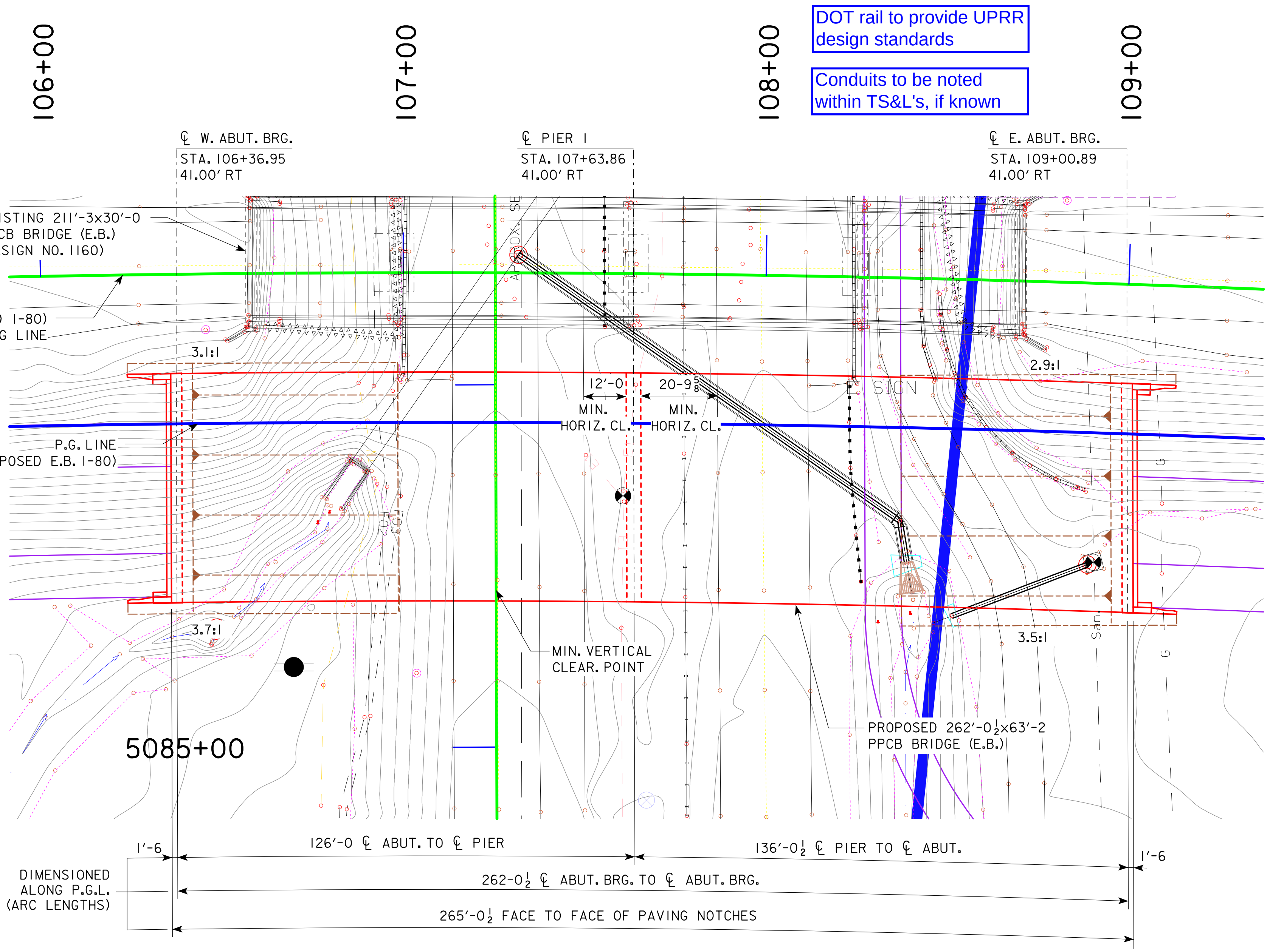
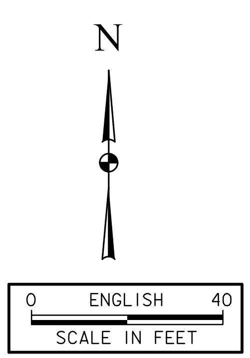
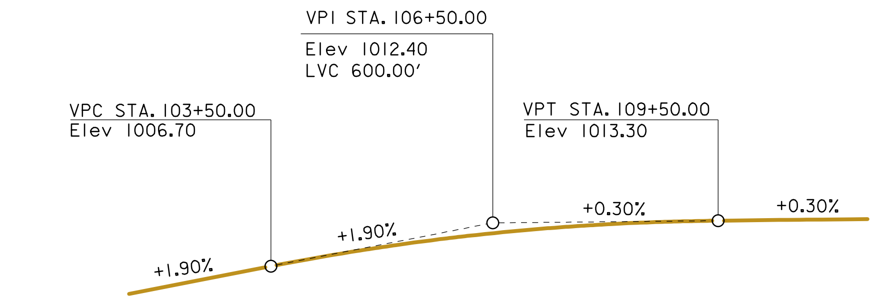
BENCH MARK NO. CP5001: ELEV. 981.080 N. 7727222.554 E. 19524523.680 SET 5/8 INCH REBAR.

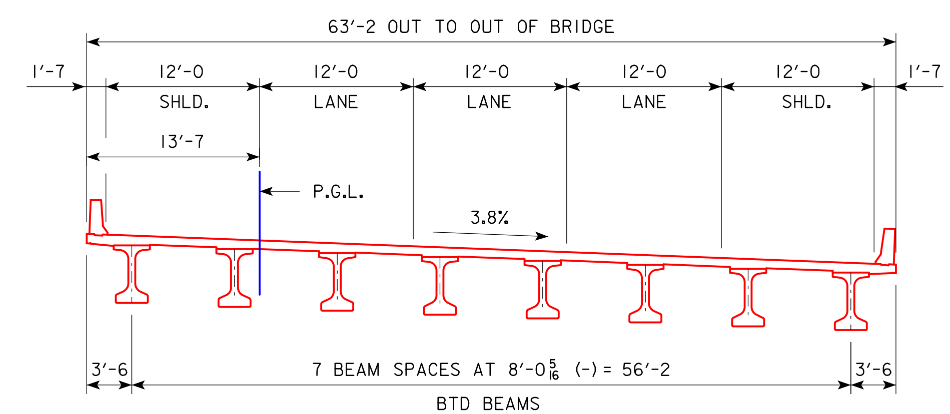


SITUATION PLAN





PROPOSED PROFILE GRADE I-80



PROPOSED BRIDGE CROSS SECTION

UTILITIES LEGEND:

EI - ELECTRIC - MID AMERICAN ENERGY
FO - FIBER OPTIC - CITY OF ANKENY FIBER
FO4 - FIBER OPTIC - CENTURYLINK
FO5 - FIBER OPTIC - IOWA DOT
FO6 - FIBER OPTIC - WINDSTREAM
San.2 - SANITARY SEWER - CITY OF ANKENY
✳ - UTILITY POLE
⊗ - MANHOLE
□ UB - UTILITY BOX

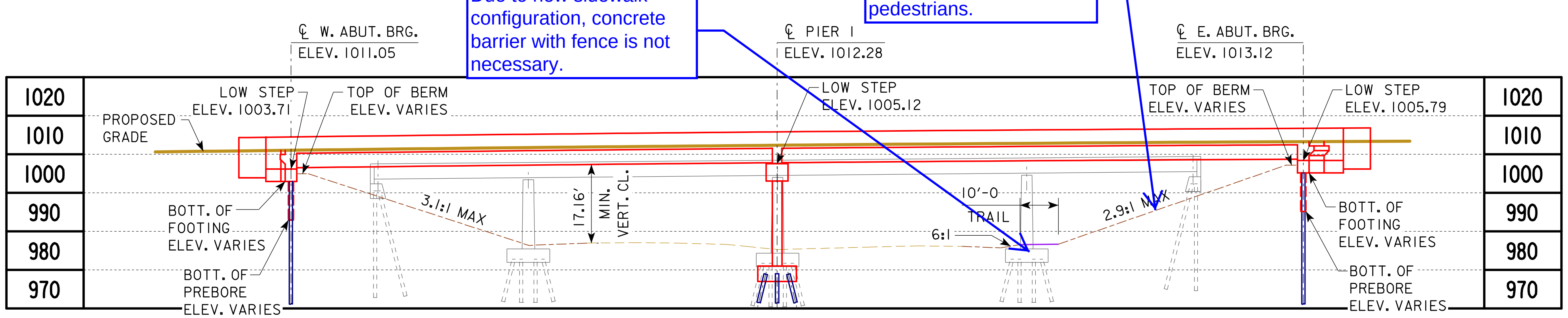
CURVE DATA

PI STA. 107+26.10
PC STA. 102+49.43
PT STA. 112+00.55
Δ = 9° 33' 38.31" (RT.)
T = 476.67
L = 951.13
R = 5,700.0
E 19.90

NOTES:
PIER TYPE - FRAME PIER
PIER TO BE DESIGNED FOR VEHICULAR COLLISION FORCE

Concrete slope protection preferred at this location due to presence of pedestrians.

Due to new sidewalk configuration, concrete barrier with fence is not necessary.



LONGITUDINAL SECTION ALONG ℄ PROFILE GRADE LINE

LOCATION

I-80 E.B. OVER IA 146
T-80N R-16W
SECTIONS 32/33
GRANT TOWNSHIP
POWESHIEK COUNTY
FHWA NO. 46050
BRIDGE MAINT. NO. 7982.6R080
LATITUDE 41.696028°
LONGITUDE -92.727083°

TRAFFIC ESTIMATE

2014 AADT	27,800	V.P.D.
2045 AADT	55,200	V.P.D.
2045 DHV	-	V.P.H.
TRUCKS	36	%
TOTAL DESIGN ESALs	-	

PRELIMINARY

DESIGN FOR VARIABLE SKEW

262'-0½ × 60'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SPANS 126'-0; 136'-0½ (BTD BEAM TYPE)

SITUATION PLAN - E.B.

STATION 107+67.78 W.B.; 107+68.89 E.B. AUGUST, 2018

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. ? DESIGN NO. ?

DESIGN TEAM SHUCK-BRITSON 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 S.B.I. NO. 117.1203.01G POWESHIEK COUNTY PROJECT NUMBER IM-NHS-080-5(242)182-03-79 SHEET NUMBER V.1

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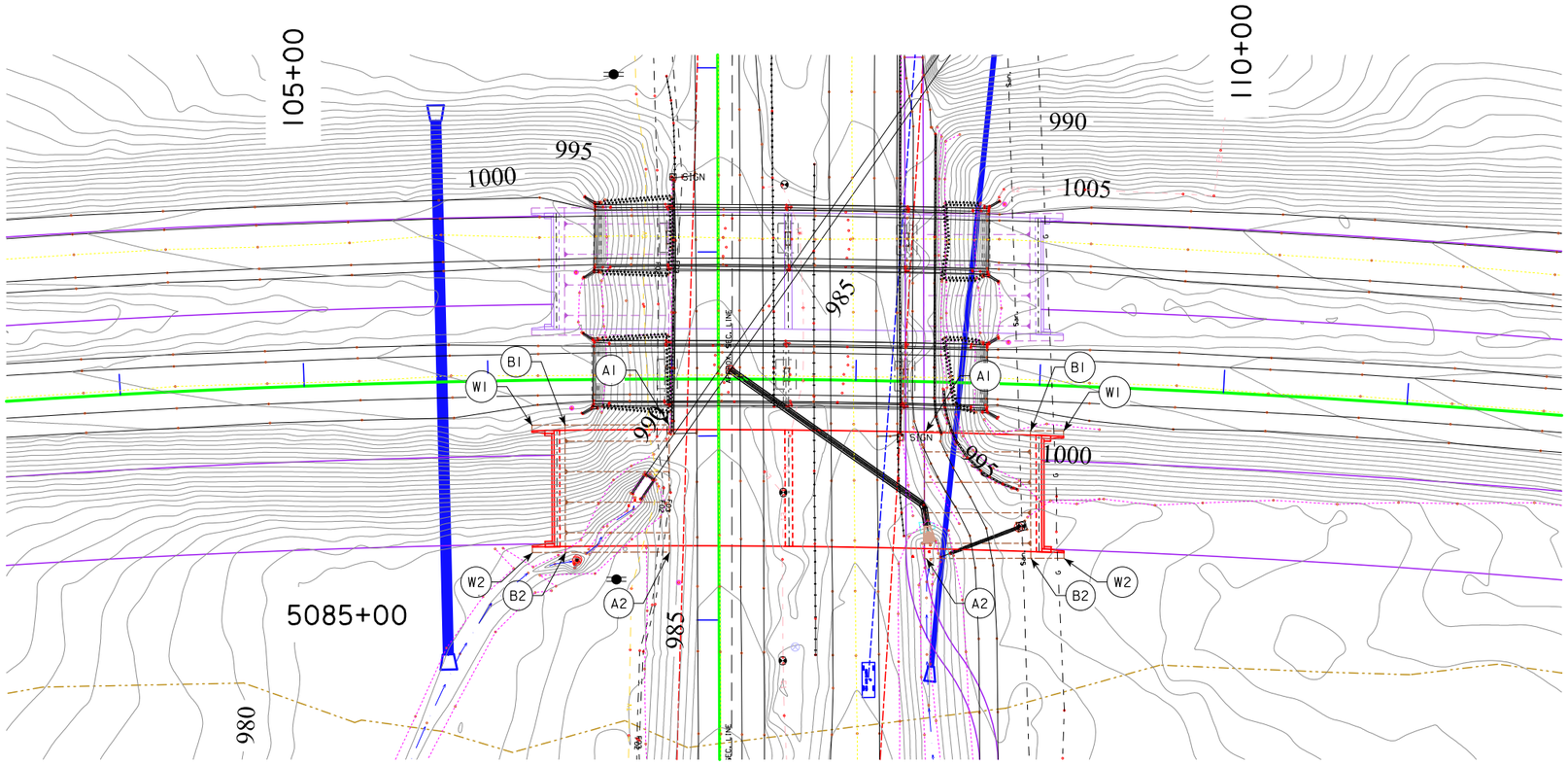


BENCH MARK NO.

BENCH MARK NO. CP5001: ELEV. 981.080 N. 7727222.554 E. 19524523.680 SET 5/8 INCH REBAR.

BERM SLOPE LOCATION TABLE

POINTS	WRST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	106+98.37	24.82	986.18	108+37.71	26.87	986.47
A2	106+98.46	93.99	986.33	108+39.52	96.06	987.32
B1	106+41.60	24.60	1004.60	108+95.76	25.09	1006.64
B2	106+40.99	93.77	1001.96	108+98.28	94.26	1004.20
W1	106+23.55	24.42	1011.21	109+13.84	24.42	1013.48
W2	106+22.71	93.58	1008.92	109+16.59	93.58	1011.21

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

SITE PLAN

NOTE: ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.

UTILITIES LEGEND:

E1 - ELECTRIC - MID AMERICAN ENERGY
FO - FIBER OPTIC - CITY OF ANKENY FIBER
FO4 - FIBER OPTIC - CENTURYLINK
FO5 - FIBER OPTIC - IOWA DOT
FO6 - FIBER OPTIC - WINDSTREAM
San.2 - SANITARY SEWER - CITY OF ANKENY
✷ - UTILITY POLE
● - MANHOLE
☐ UB - UTILITY BOX

NOTE:
FOR CONCRETE STONE SLOPE PROTECTION
SECTIONS AND ESTIMATED QUANTITIES
SEE STANDARD SHEET 1006A.

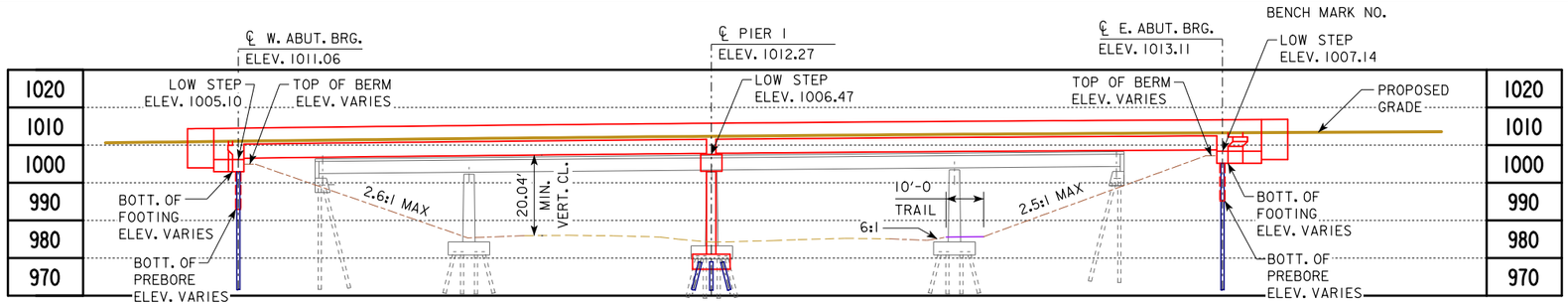
0 ENGLISH 80
SCALE IN FEET

PRELIMINARY

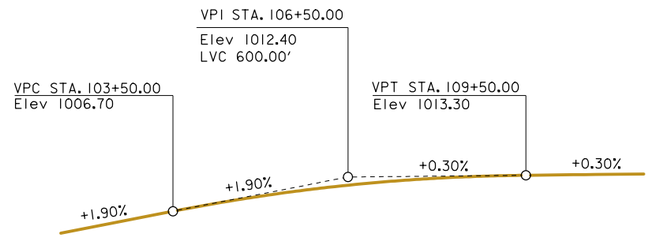
DESIGN FOR VARIABLE SKEW
262'-0½ x 60'-0 PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
SPANS 126'-0; 136'-0½ (BTD BEAM TYPE)
SITE PLAN - E. B.
STATION 107+67.78 W.B.; 107+68.89 E.B. AUGUST, 2018
POWESHIEK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. 2 OF 2 FILE NO. ? DESIGN NO. ?

DESIGN TEAM SHUCK-BRITSON INC 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 S.B.I. NO. 117.1203.01G | POWESHIEK COUNTY | PROJECT NUMBER IM-NHS-080-5(242)182-03-79 | SHEET NUMBER V.2

BENCH MARK NO. CP5001: ELEV. 981.080 N. 7727222.554 E. 19524523.680 SET 5/8 INCH REBAR.

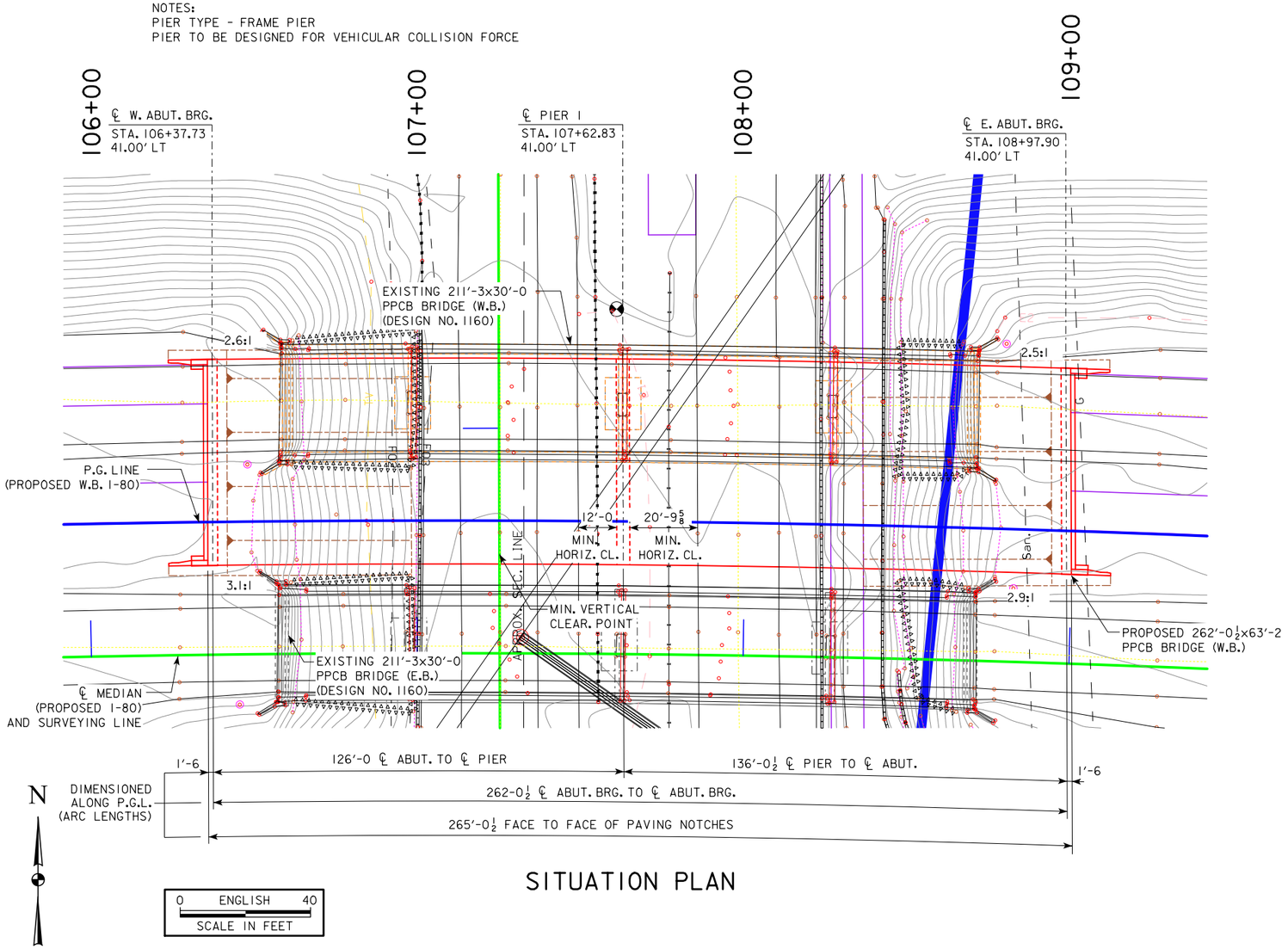


LONGITUDINAL SECTION ALONG ℄ PROFILE GRADE LINE

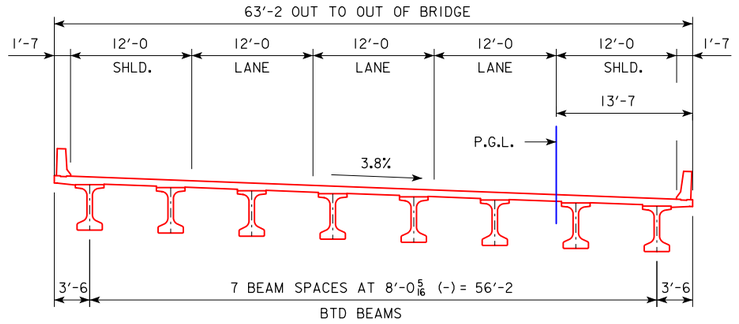


PROPOSED PROFILE GRADE I-80

NOTES:
PIER TYPE - FRAME PIER
PIER TO BE DESIGNED FOR VEHICULAR COLLISION FORCE



SITUATION PLAN



PROPOSED BRIDGE CROSS SECTION

UTILITIES LEGEND:

EI - ELECTRIC - MID AMERICAN ENERGY
FO - FIBER OPTIC - CITY OF ANKENY FIBER
FO4 - FIBER OPTIC - CENTURYLINK
FO5 - FIBER OPTIC - IOWA DOT
FO6 - FIBER OPTIC - WINDSTREAM
San.2 - SANITARY SEWER - CITY OF ANKENY
✹ - UTILITY POLE
⦿ - MANHOLE
□ UB - UTILITY BOX

CURVE DATA

PI STA. 107+26.10
PC STA. 102+49.43
PT STA. 112+00.55
Δ = 9° 33' 38.31" (RT.)
T = 476.67
L = 951.13
R = 5,700.0
E 19.90

LOCATION

I-80 W.B. OVER IA 146
T-80N R-16W
SECTIONS 32/33
GRANT TOWNSHIP
POWESHIEK COUNTY
FHWA NO. 46060
BRIDGE MAINT. NO. 7982.6L080
LATITUDE 41.696250°
LONGITUDE -92.727083°

TRAFFIC ESTIMATE

2014 AADT	27,800	V.P.D.
2045 AADT	55,200	V.P.D.
2045 DHV	-	V.P.H.
TRUCKS	36	%
TOTAL DESIGN ESALs	-	

PRELIMINARY

DESIGN FOR VARIABLE SKEW

262'-0 1/2 x 60'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SPANS 126'-0; 136'-0 1/2 (BTD BEAM TYPE)

SITUATION PLAN - W.B.

STATION 107+67.78 W.B.; 107+68.89 E.B. AUGUST, 2018

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. ? DESIGN NO. ?

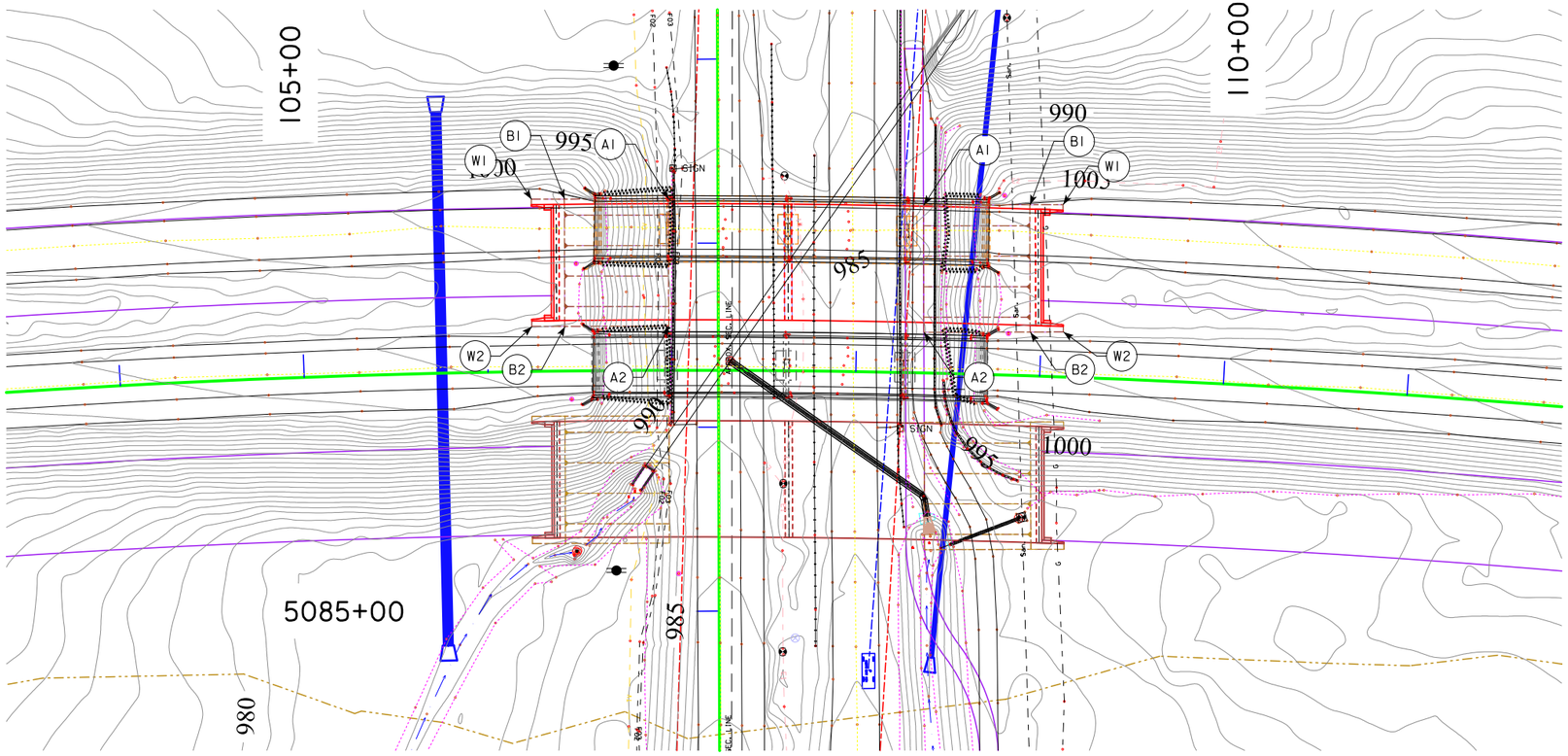
DESIGN TEAM SHUCK-BRITSON 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 | S.B.I. NO. 117.1203.01G | POWESHIEK COUNTY | PROJECT NUMBER IM-NHS-080-5(242)182-03-79 | SHEET NUMBER V.3

BENCH MARK NO. CP5001: ELEV. 981.080 N. 7727222.554 E. 19524523.680 SET 5/8 INCH REBAR.

BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	106+98.23	-93.19	984.51	108+34.73	-91.18	985.08
A2	106+98.31	-24.02	985.56	108+36.46	-21.99	985.86
B1	106+42.62	-93.40	1005.98	108+91.60	-92.92	1007.99
B2	106+42.03	-24.23	1003.85	108+94.02	-23.75	1005.95
W1	106+24.93	-93.58	1012.59	109+09.31	-93.58	1014.83
W2	106+24.13	-24.42	1010.30	109+11.94	-24.42	1012.56

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



SITE PLAN

NOTE: ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.

0 ENGLISH 80
SCALE IN FEET

UTILITIES LEGEND:

EI - ELECTRIC - MID AMERICAN ENERGY
FO - FIBER OPTIC - CITY OF ANKENY FIBER
FO4 - FIBER OPTIC - CENTURYLINK
FO5 - FIBER OPTIC - IOWA DOT
FO6 - FIBER OPTIC - WINDSTREAM
San.2 - SANITARY SEWER - CITY OF ANKENY
- UTILITY POLE
- MANHOLE
UB - UTILITY BOX

NOTE:
FOR CONCRETE STONE SLOPE PROTECTION SECTIONS AND ESTIMATED QUANTITIES SEE STANDARD SHEET 1006A.

PRELIMINARY

DESIGN FOR VARIABLE SKEW

262'-0½ x 60'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

SPANS 126'-0; 136'-0½ (BTD BEAM TYPE)

SITE PLAN - W. B.

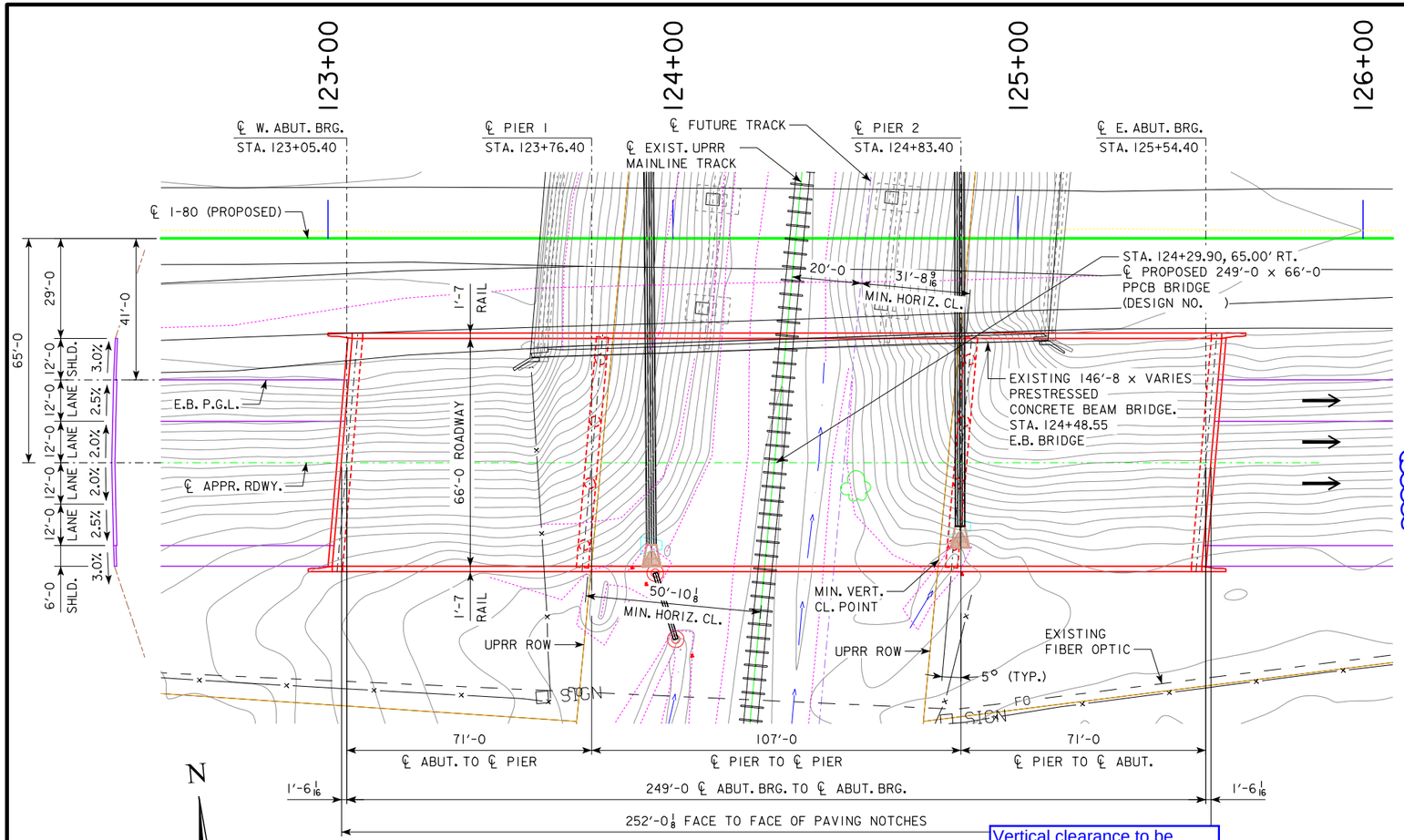
STATION 107+67.78 W.B.; 107+68.89 E.B. AUGUST, 2018

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

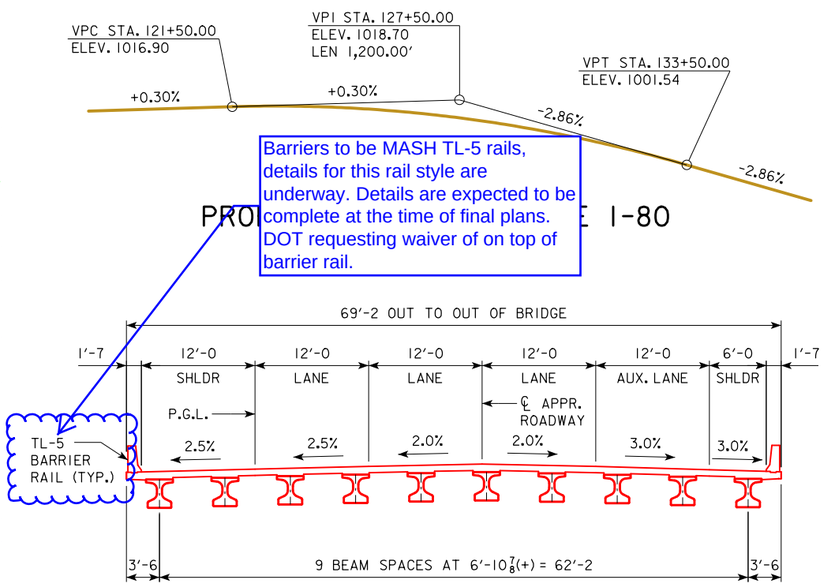
DESIGN SHEET NO. 2 OF 2 FILE NO. ? DESIGN NO. ?

BENCH MARK NO. BM1: ELEV. 974.20 N. 7726614.606 E. 19527690.150 BRASS MONUMENT.



SITUATION PLAN

ALL DIMENSIONS IN FEET UNLESS NOTED OTHERWISE



PROPOSED BRIDGE CROSS SECTION

BTB BEAMS

RAILROAD MILEPOST DATA

DOT CROSSING INVENTORY NUMBER: 193108R
UNION PACIFIC RAILROAD COMPANY MILEPOST: 0271.930
MILEPOST INCREASING TOWARD SOUTH

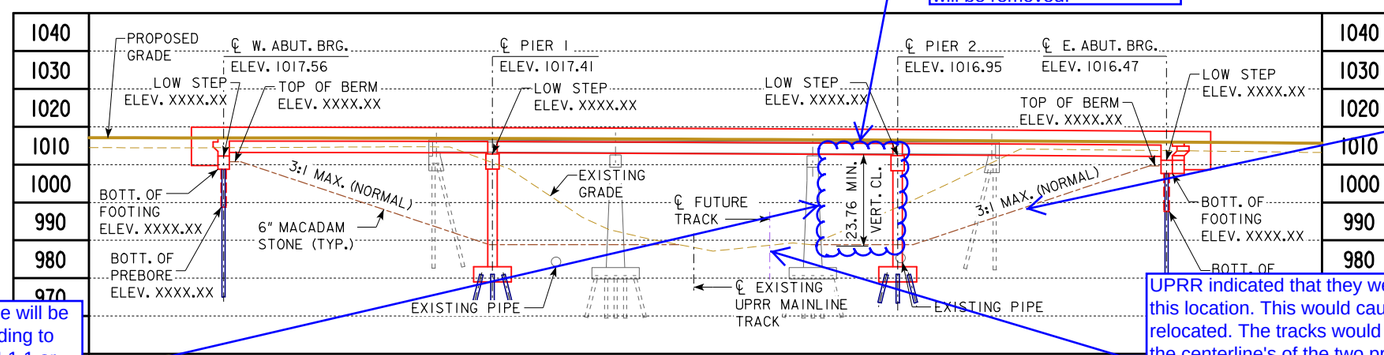
MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 124+77.01, OFFSET 93.08' RT.
OVERHEAD ELEVATION = 1016.66
DEPTH OF SUPERSTRUCTURE = 3.83'
UNDERPASS STATION = ?, OFFSET ??
UNDERPASS ELEVATION = 989.06
MINIMUM VERTICAL CLEARANCE = 23.76'

UTILITIES LEGEND:

SYMBOL - TYPE - COMPANY NAME
-OR-
NO KNOWN UTILITIES
-OR-
UTILITY SURVEY NOT CONDUCTED

Vertical clearance to be shown from top of rail and 9 ft horizontally from centerline of track. There is a sage at this location. Vertical clearance will be evaluated in the situation that the sag will be removed.



LONGITUDINAL SECTION ALONG ℄ E.B. APPROACH ROADWAY

TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.51' ABOVE THE PROFILE GRADE LINE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

Bridge berms to be reconfigured to meet current policy and FHWA standards. This results in shorter bridge end spans, pier locations will remain outside of ROW, and bridge berm slopes will remain at 3:1 due to fill height. Slopes could change based on geotechnical analysis.

Vertical clearance will be calculated according to BDM Section 3.4.1.1 or UPRR/BNSF Guidelines for Railroad Grade Separation Project, 2016.

UPRR indicated that they were contemplating a future track at this location. This would cause the existing track to be relocated. The tracks would be centered within RR ROW, thus the centerline's of the two proposed tracks would be 10' on either side of the UPRR ROW centerline. Design Team noted that existing track profile elevations are being used in the development of the bridge TSL's and vertical clearance checks.

LOCATION

I-80 E.B. OVER UPRR
T-80N R-16W
SECTION 33
GRANT TOWNSHIP
POWESHIEK COUNTY
FHWA NO. ?
BRIDGE MAINT. NO. ?
LATITUDE 41.695616°
LONGITUDE -92.721029°

TRAFFIC ESTIMATE

2014 AADT	26,500	V.P.D.
2045 AADT	53,700	V.P.D.
2045 DHV	-	V.P.H.
TRUCKS	37	%
TOTAL DESIGN ESALs	-	

PRELIMINARY

DESIGN FOR 5° SKEW (L.A.)

249'-0 x 66'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

71'-0 END SPANS (BTB BEAM TYPE) 107'-0 INTERIOR SPAN

SITUATION PLAN (E.B.)

STATION 124+29.90, 65.00' RT. MAY, 2018

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. ? DESIGN NO. ?

DESIGN TEAM SHUCK-BRITSON 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 S.B.I. NO. 117.1203.01G | POWESHIEK COUNTY | PROJECT NUMBER IM-NHS-080-5(242)182--03-79 | SHEET NUMBER V.5

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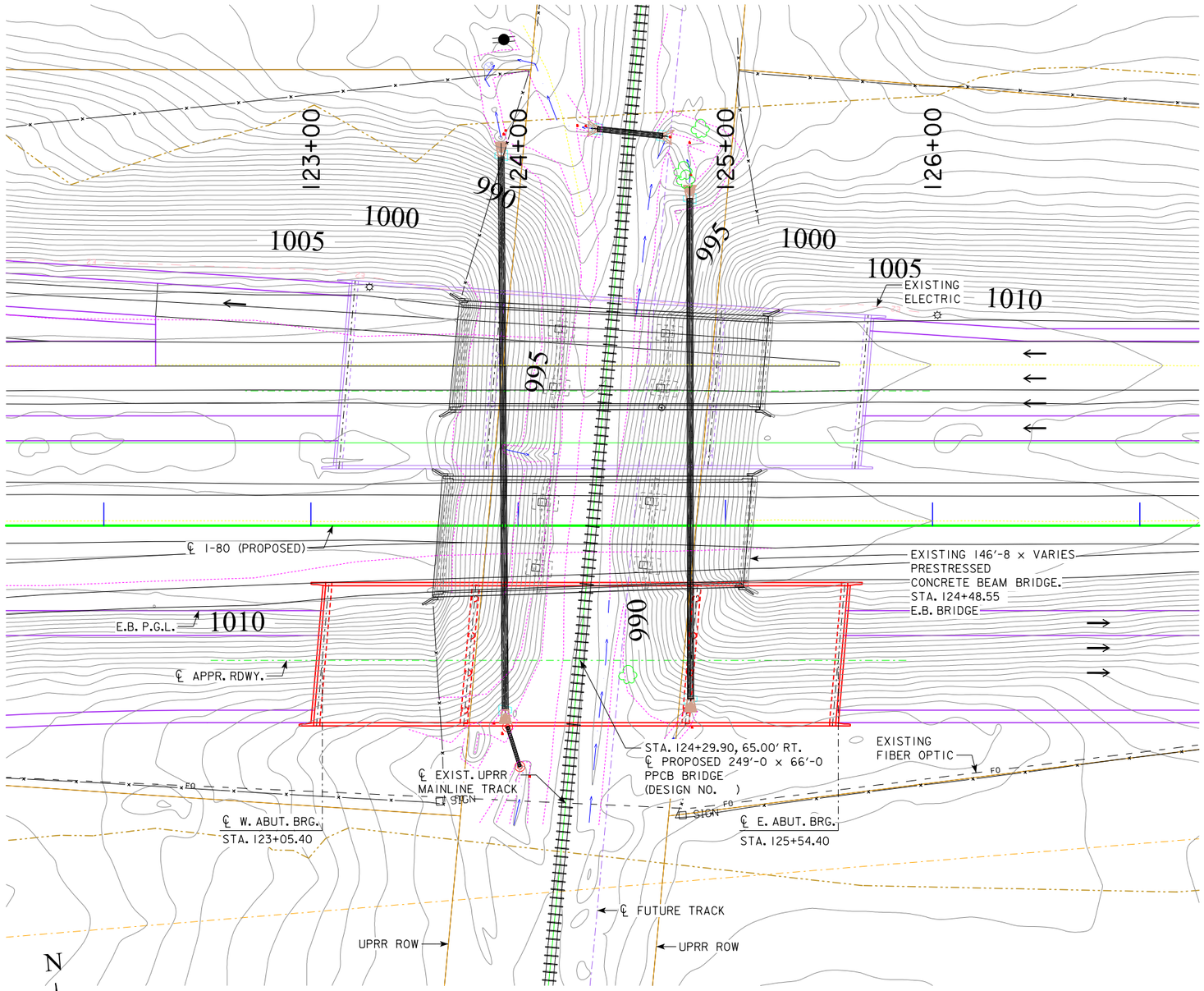
BENCH MARK NO. BM1: ELEV. 974.20 N. 7726614.606 E. 19527690.150 BRASS MONUMENT.

Two drainage options along the railroad have been discussed. Option 1 includes ditch drainage, while Option 2 includes culvert drainage. Design team prefers to provide ditch drainage. Typically the UPRR prefers closed drainage, but in this case there is already standing water at this location so it may be more likely that the UPRR would approve an open drainage situation.



SITE PLAN

ALL DIMENSIONS IN FEET UNLESS NOTED OTHERWISE

BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
A2	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
B1	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
B2	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
W1	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
W2	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

ESTIMATED QUANTITIES

DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	ABUT.	SQ. YDS.
MACADAM STONE SLOPE PROTECTION	ABUT.	SQ. YDS.
	TOTAL	SQ. YDS.

FOR DETAILS, SEE STANDARD SHEET 1006D.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
- EXCAVATING, SHAPING AND COMPACTING
- ENGINEERING FABRIC
- MACADAM STONE
- 4" x 6" TREATED TIMBER EDGING
- 1/2"Φ STEEL PINS (OR REBARS)
- POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE ABUTMENT FOOTING

UTILITIES LEGEND:

SYMBOL - TYPE - COMPANY NAME
-OR-
NO KNOWN UTILITIES
-OR-
UTILITY SURVEY NOT CONDUCTED

PRELIMINARY

DESIGN FOR 5° SKEW (L.A.)

249'-0 x 66'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

71'-0 END SPANS (BTB BEAM TYPE) 107'-0 INTERIOR SPAN

SITUATION PLAN - SITE (E.B.)

STATION 124+29.90, 65.00' RT. MAY, 2018

POWESHIEK COUNTY

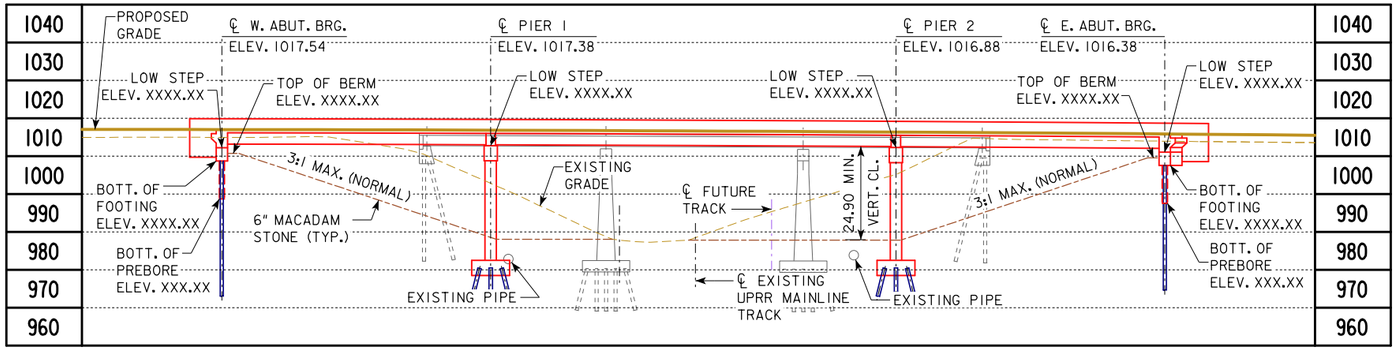
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. ? DESIGN NO. ?

DESIGN TEAM SHUCK-BRITSON INC. 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477

S.B.I. NO. 117.1203.01G | POWESHIEK COUNTY | PROJECT NUMBER IM-NHS-080-5(242)182--03-79 | SHEET NUMBER V.6

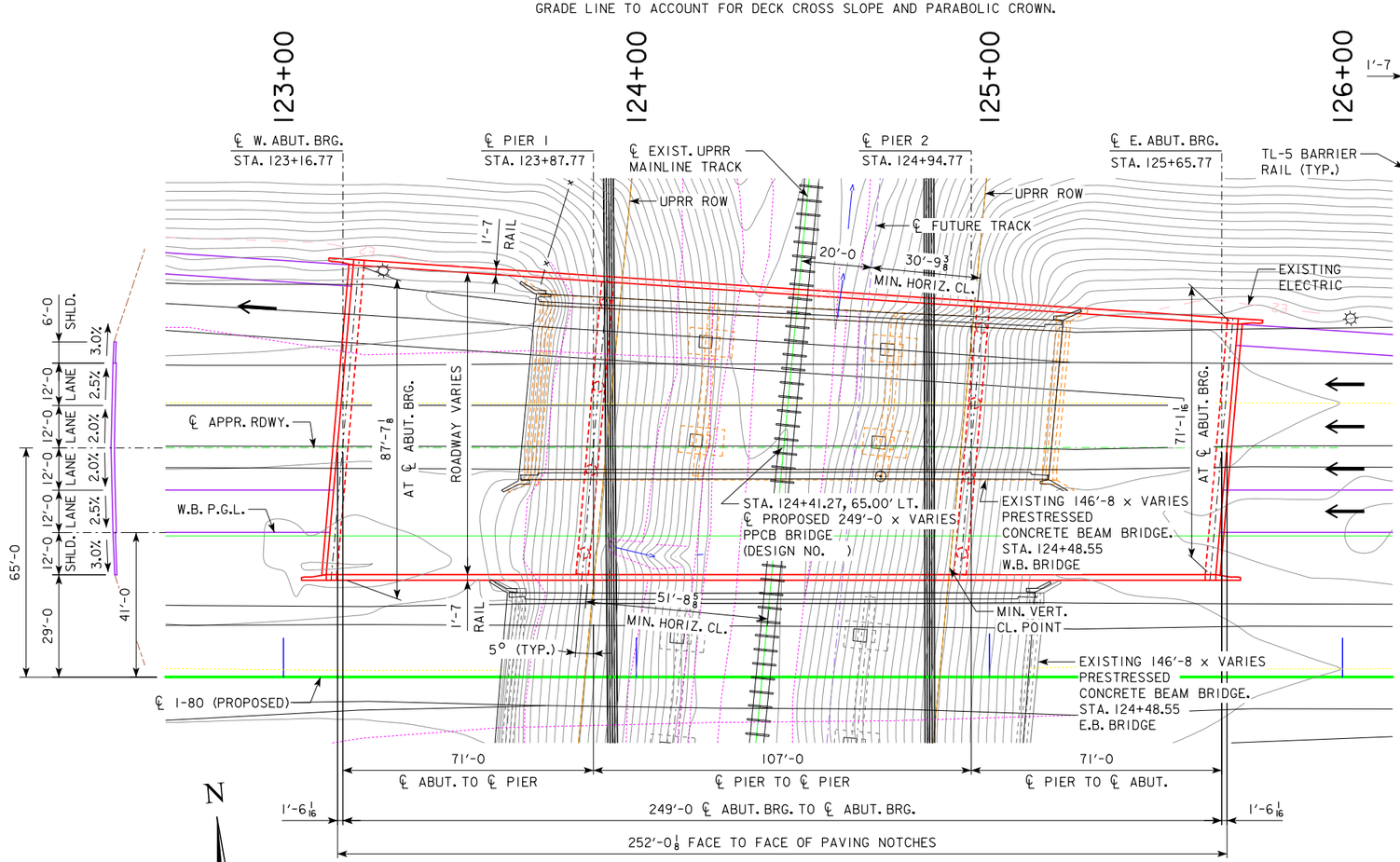
BENCH MARK NO. BM1: ELEV. 974.20 N. 7726614.606 E. 19527690.150 BRASS MONUMENT.



LONGITUDINAL SECTION ALONG ℄ W.B. APPROACH ROADWAY

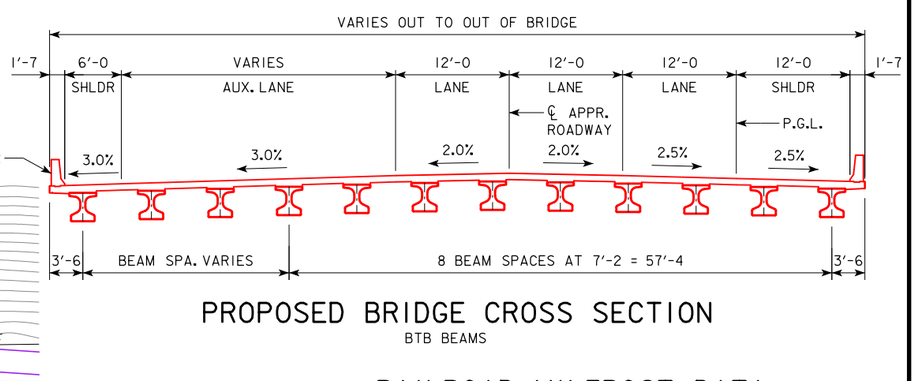
TOP OF BRIDGE DECK AT CENTERLINE ROADWAY IS 0.51′ ABOVE THE PROFILE GRADE LINE TO ACCOUNT FOR DECK CROSS SLOPE AND PARABOLIC CROWN.

PROPOSED PROFILE GRADE I-80



SITUATION PLAN

ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED



PROPOSED BRIDGE CROSS SECTION

BTB BEAMS

RAILROAD MILEPOST DATA

DOT CROSSING INVENTORY NUMBER: 193108R
UNION PACIFIC RAILROAD COMPANY MILEPOST: 0271.930
MILEPOST INCREASING TOWARD SOUTH

UTILITIES LEGEND:

SYMBOL - TYPE - COMPANY NAME
-OR-
NO KNOWN UTILITIES
-OR-
UTILITY SURVEY NOT CONDUCTED

LOCATION

I-80 W.B. OVER UPRR
T-80N R-16W
SECTION 33
GRANT TOWNSHIP
POWESHIEK COUNTY
FHWA NO. ?
BRIDGE MAINT. NO. ?
LATITUDE 41.695968°
LONGITUDE -92.720946°

TRAFFIC ESTIMATE

2014 AADT	26,500	V.P.D.
2045 AADT	53,700	V.P.D.
2045 DHV	-	V.P.H.
TRUCKS	37	%
TOTAL DESIGN ESALs	-	

PRELIMINARY

MINIMUM VERTICAL CLEARANCE

OVERHEAD STATION = 124+88.73, OFFSET 30.92′ LT.
OVERHEAD ELEVATION = 1016.66
DEPTH OF SUPERSTRUCTURE = 3.83′
UNDERPASS STATION = ?, OFFSET ??
UNDERPASS ELEVATION = 987.92
MINIMUM VERTICAL CLEARANCE = 24.90′

DESIGN FOR 5° SKEW (L.A.)

249′-0 x VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

71′-0 END SPANS (BTB BEAM TYPE) 107′-0 INTERIOR SPAN

SITUATION PLAN (W.B.)

STATION 124+41.27, 65.00′ LT. MAY, 2018

POWESHIEK COUNTY

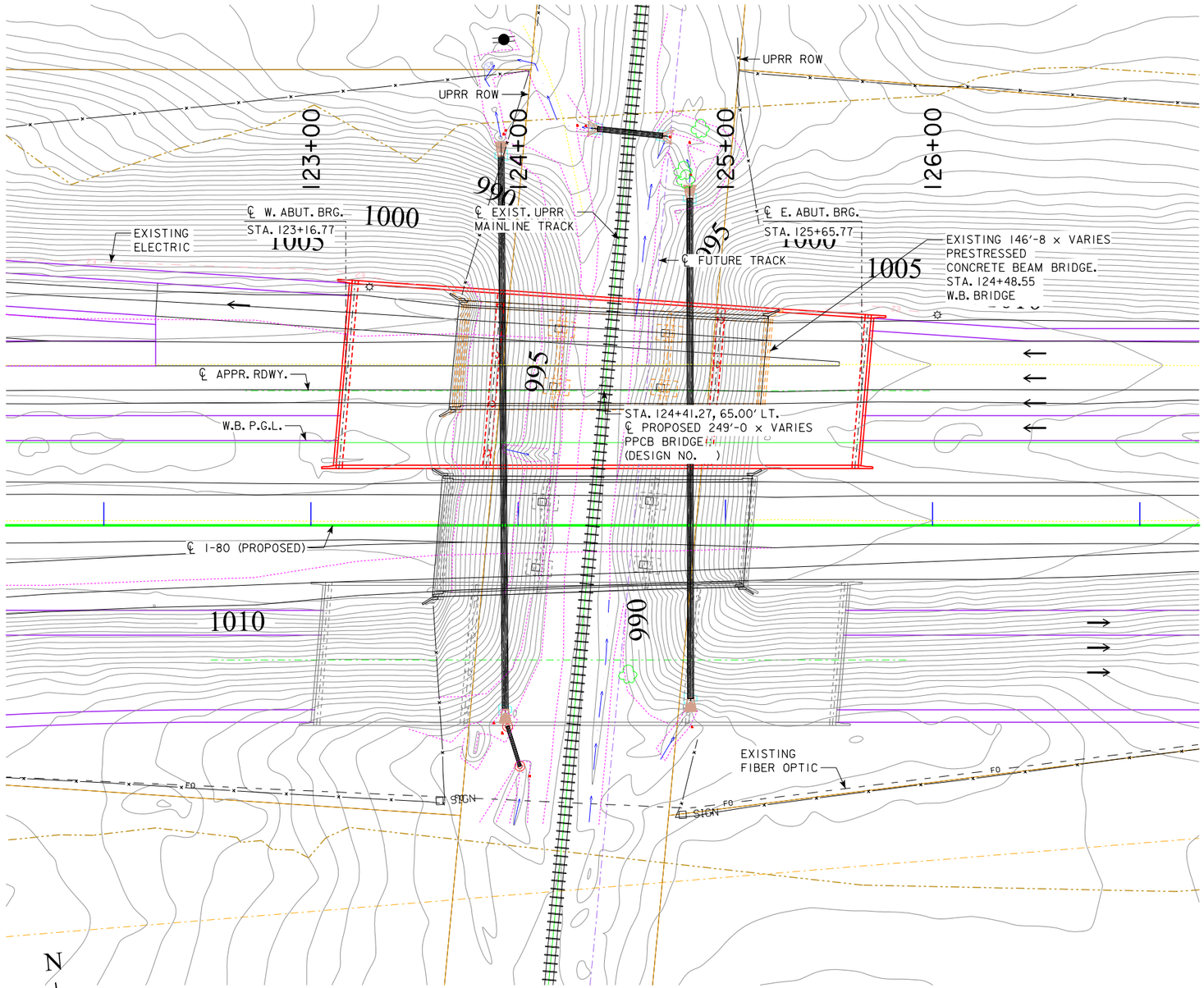
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. ? DESIGN NO. ?

DESIGN TEAM SHUCK-BRITSON 400 EAST COURT AVE. SUITE 140 DES MOINES, IOWA 50309 515-243-4477 S.B.I. NO. 117.1203.01G | POWESHIEK COUNTY | PROJECT NUMBER IM-NHS-080-5(242)182--03-79 | SHEET NUMBER V.7

8/21/2018 3:47:19 PM jkane pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\BRPrelim\Snyder\CADD\Jeff\Jeff_STR_79080242_Shuck-Britson_Z09.dgn TSL_79_jXXXX_03 11x17_pdf.pltcfg

BENCH MARK NO. BM1: ELEV. 974.20 N. 7726614.606 E. 19527690.150 BRASS MONUMENT.



SITE PLAN

ALL DIMENSIONS IN FEET UNLESS NOTED OTHERWISE

BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
A2	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
B1	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
B2	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
W1	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX
W2	XXXX+XX.XX	XX.XX' XX	XXX.XX	XXXX+XX.XX	XX.XX' XX	XXX.XX

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

ESTIMATED QUANTITIES

DESCRIPTION	LOCATION	QUANTITY
MACADAM STONE SLOPE PROTECTION	ABUT.	SQ. YDS.
MACADAM STONE SLOPE PROTECTION	ABUT.	SQ. YDS.
	TOTAL	SQ. YDS.

FOR DETAILS, SEE STANDARD SHEET 1006D.

ITEMS TO BE INCLUDED IN "MACADAM STONE SLOPE PROTECTION":
- EXCAVATING, SHAPING AND COMPACTING
- ENGINEERING FABRIC
- MACADAM STONE
- 4" × 6" TREATED TIMBER EDGING
- ½"Φ STEEL PINS (OR REBARS)
- POROUS BACKFILL OR GRANULAR SUBBASE BACKFILL AT FRONT FACE ABUTMENT FOOTING

UTILITIES LEGEND:

SYMBOL - TYPE - COMPANY NAME
-OR-
NO KNOWN UTILITIES
-OR-
UTILITY SURVEY NOT CONDUCTED

PRELIMINARY

DESIGN FOR 5° SKEW (L.A.)

249'-0 × VARIES PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

71'-0 END SPANS (BTB BEAM TYPE) 107'-0 INTERIOR SPAN

SITUATION PLAN - SITE (W.B.)

STATION 124+41.27, 65.00' LT. MAY, 2018

POWESHIEK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. ? DESIGN NO. ?

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- Topsoil (Class 10)
- Slope Dressing Only
- Class 10 Materials
- Select Loams And Clay-Loams
- Select Sand
- Unsuitable Type A Disposal
- Unsuitable Type B Disposal
- Unsuitable Type C Disposal
- Shale
- Waste
- Broken and Weathered Rock
- Solid Rock
- 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)

FILE NO.	ENGLISH	DESIGN TEAM	SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER	IM-080-5(357)182--13-79	SHEET NUMBER	W.1

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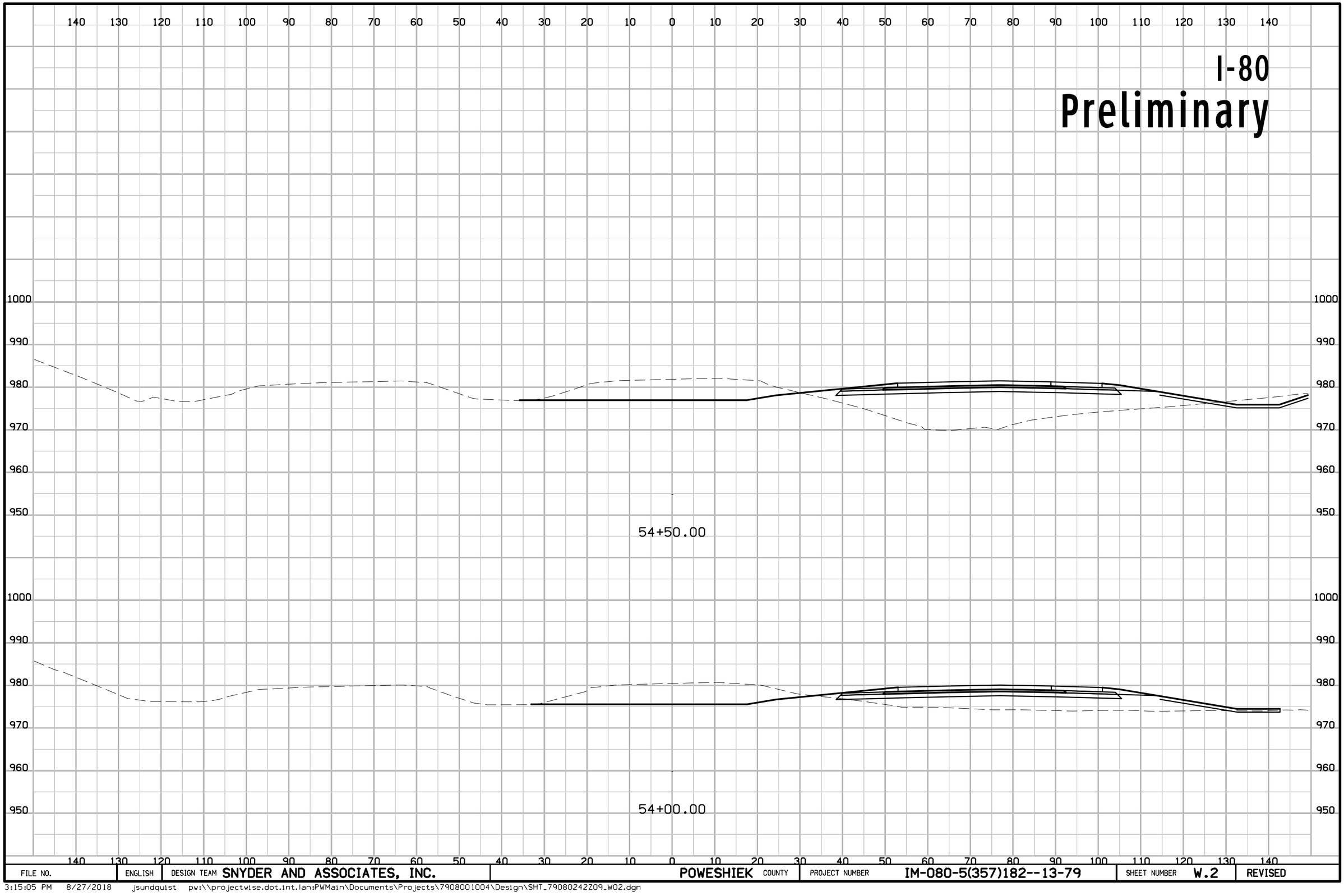
I-80

Preliminary



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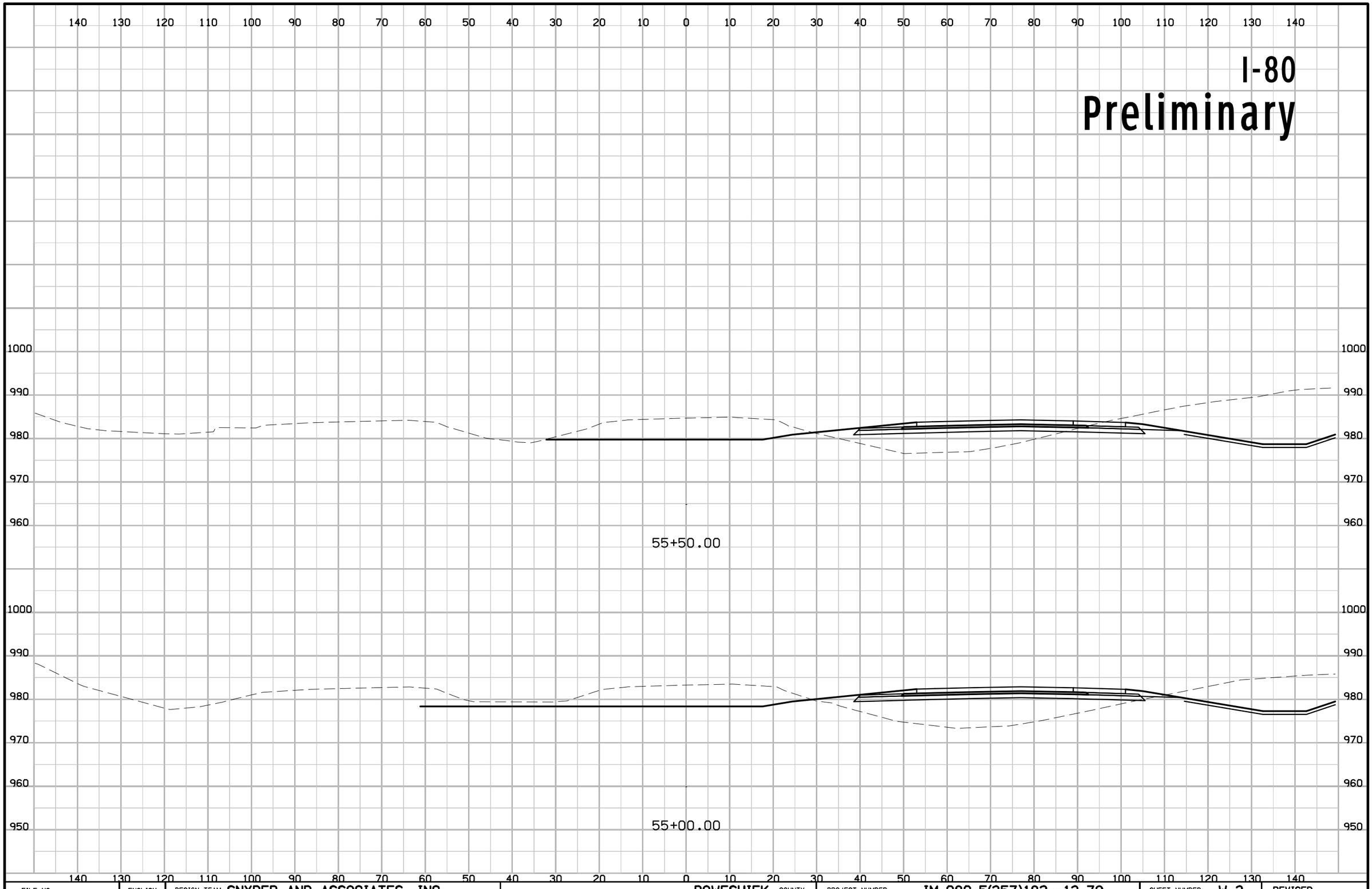

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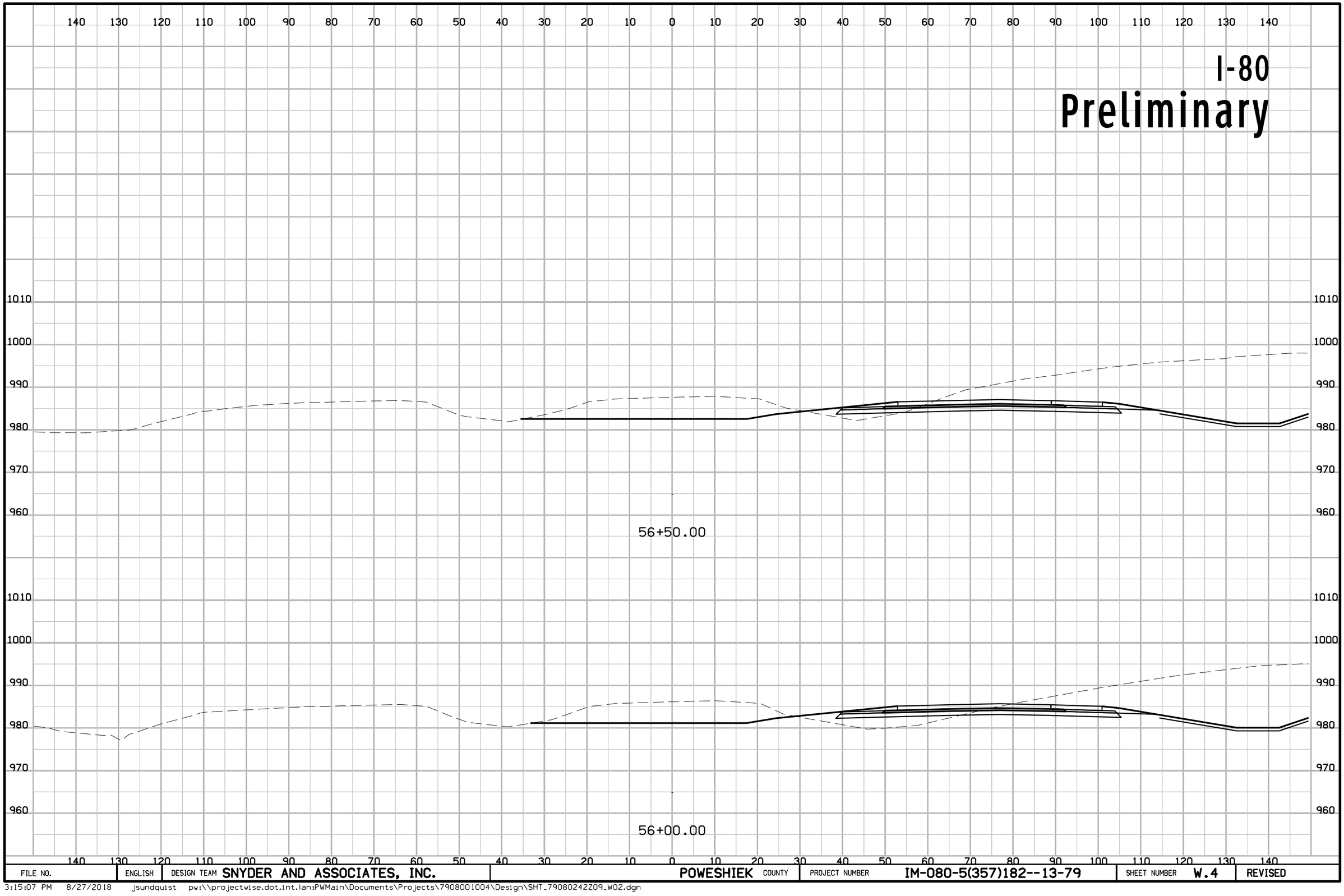

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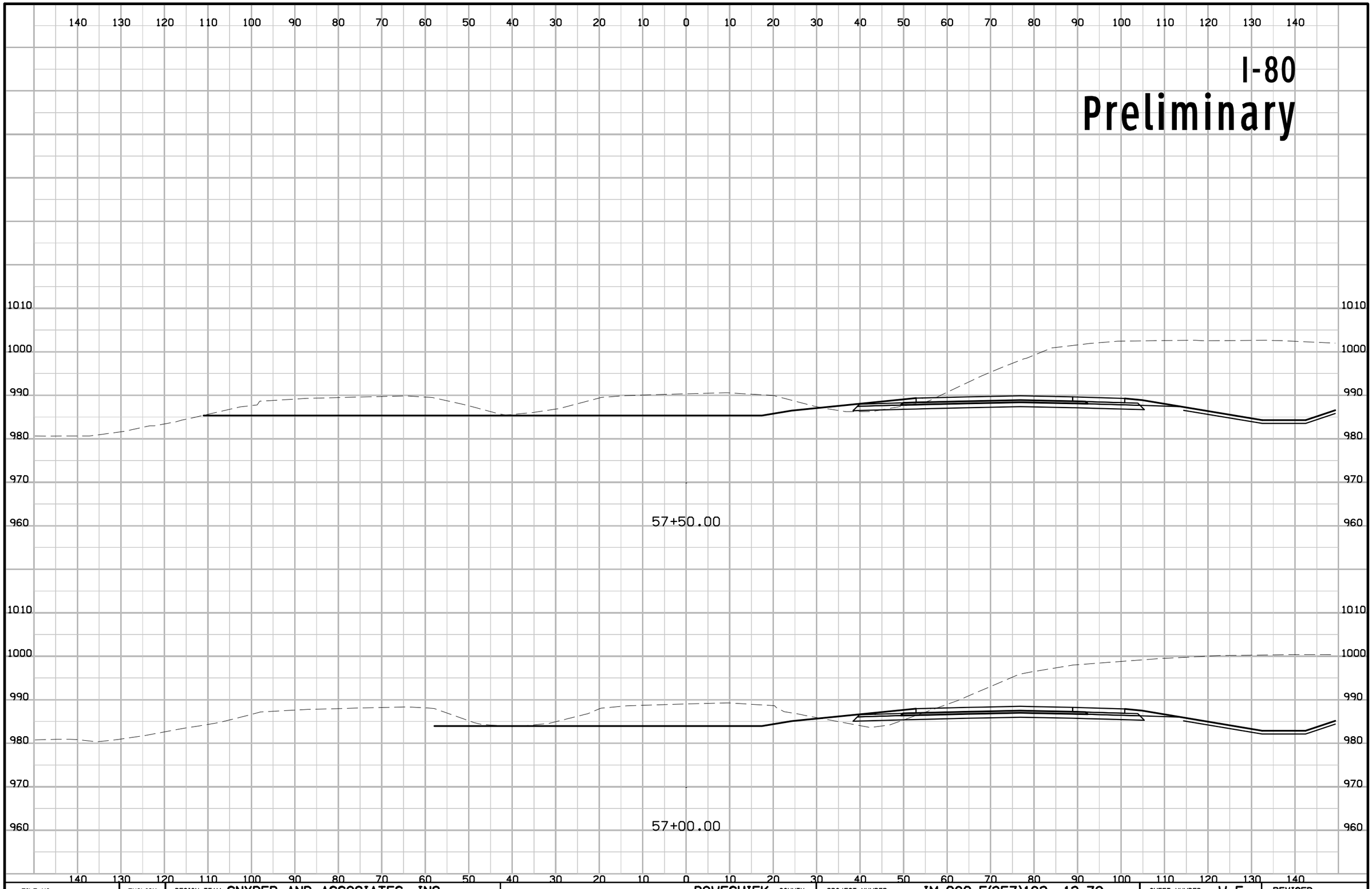
Preliminary



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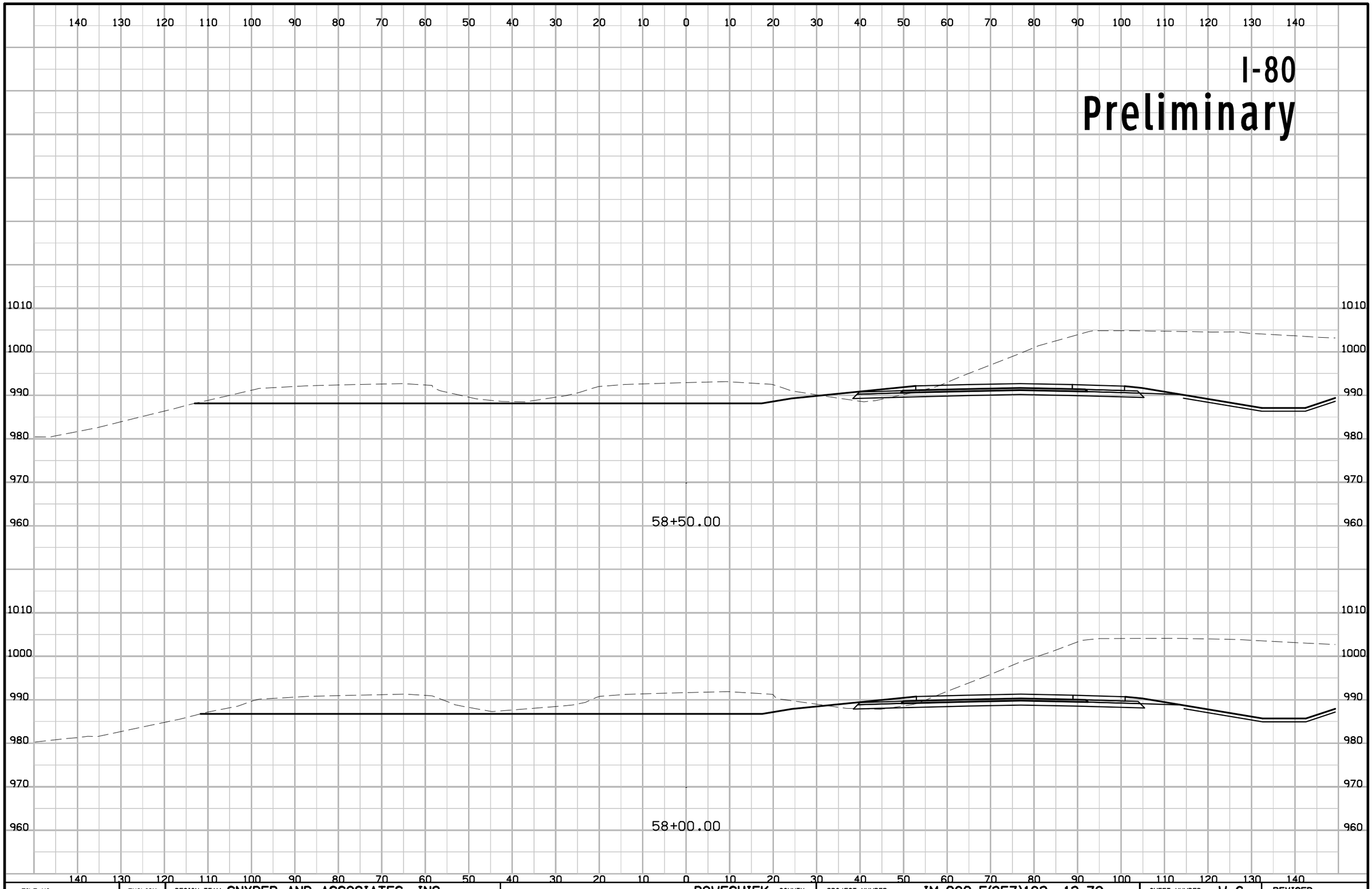
Preliminary



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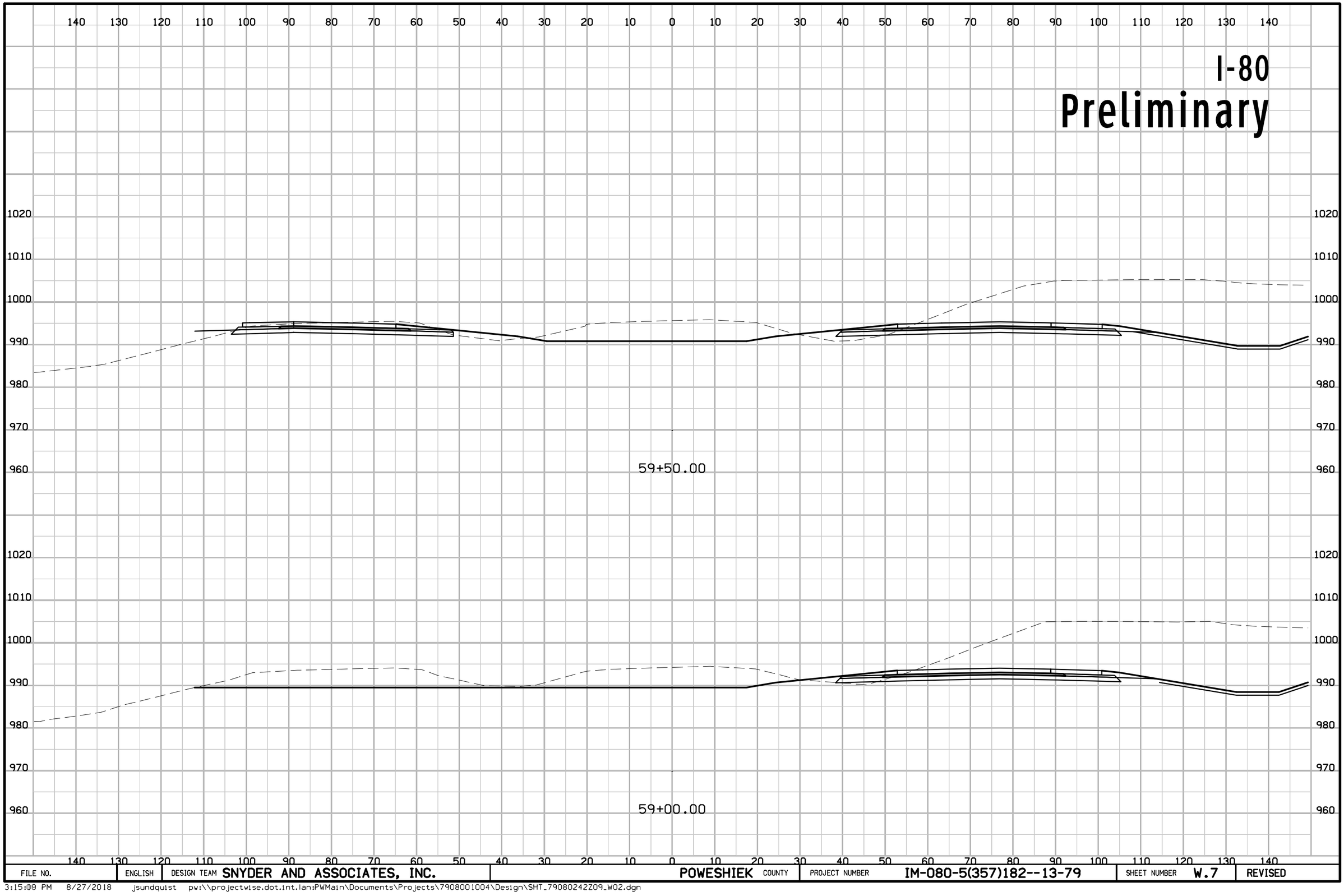
Preliminary



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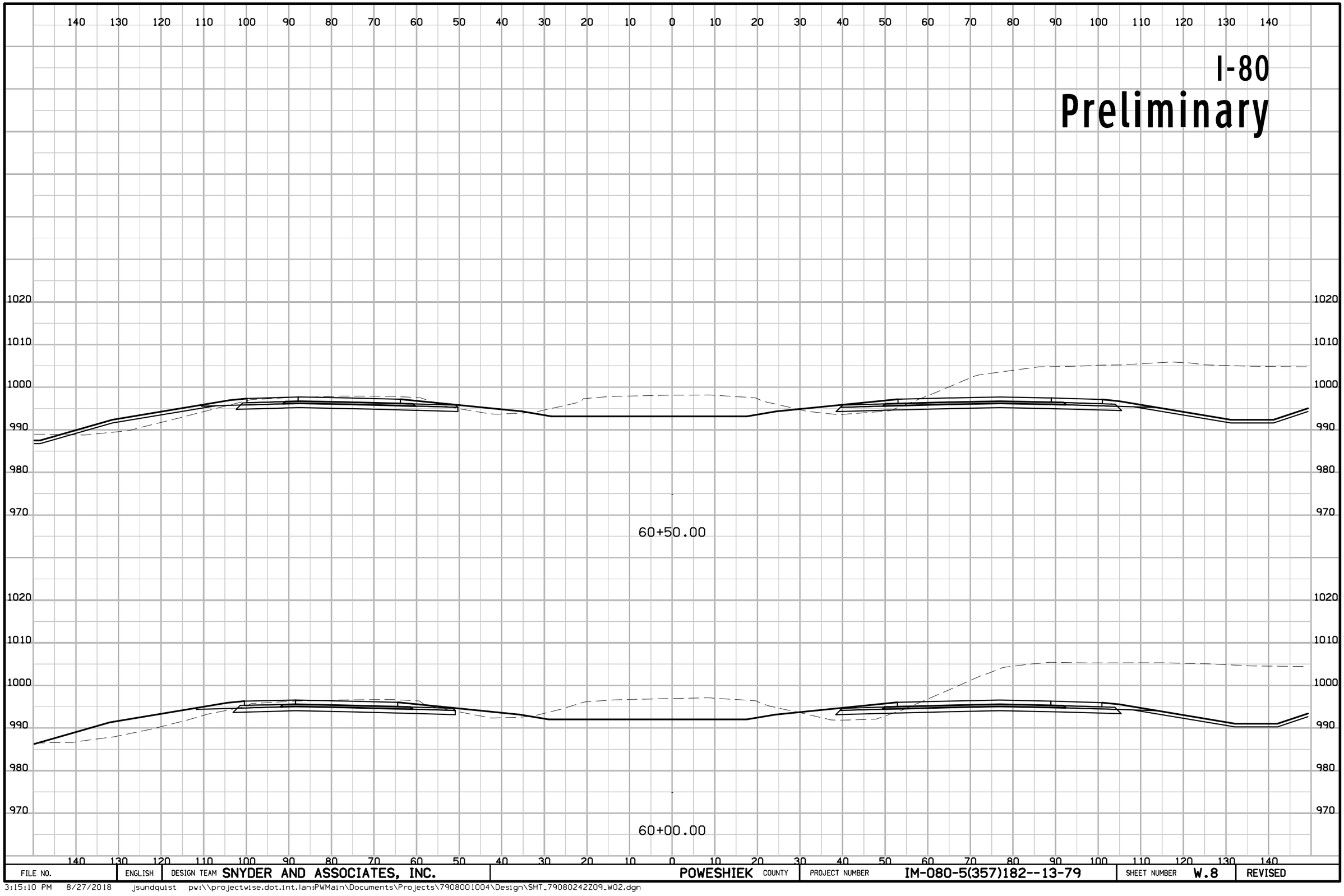
Preliminary



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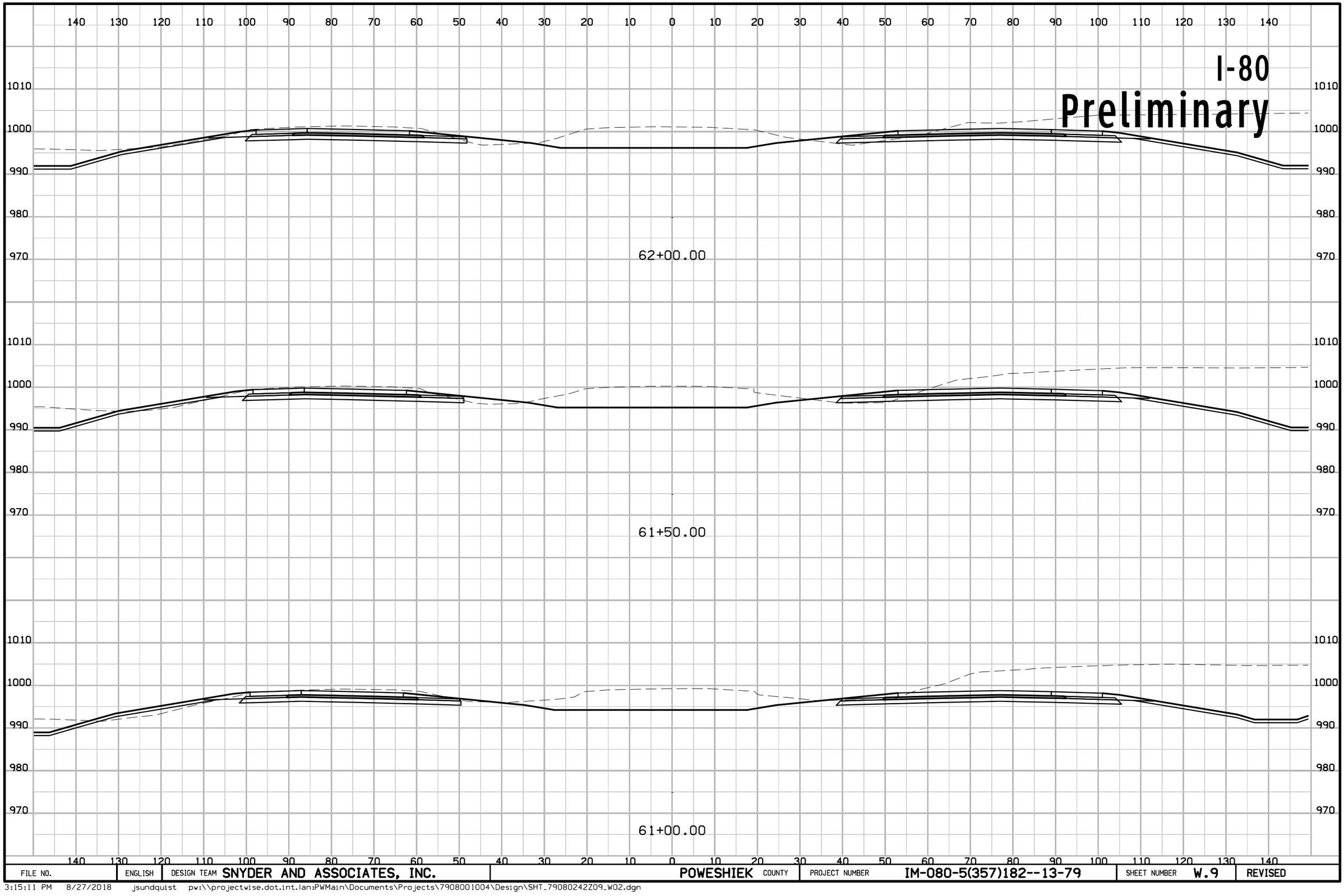
Preliminary



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Preliminary

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63+00.00

62+50.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.10	REVISED

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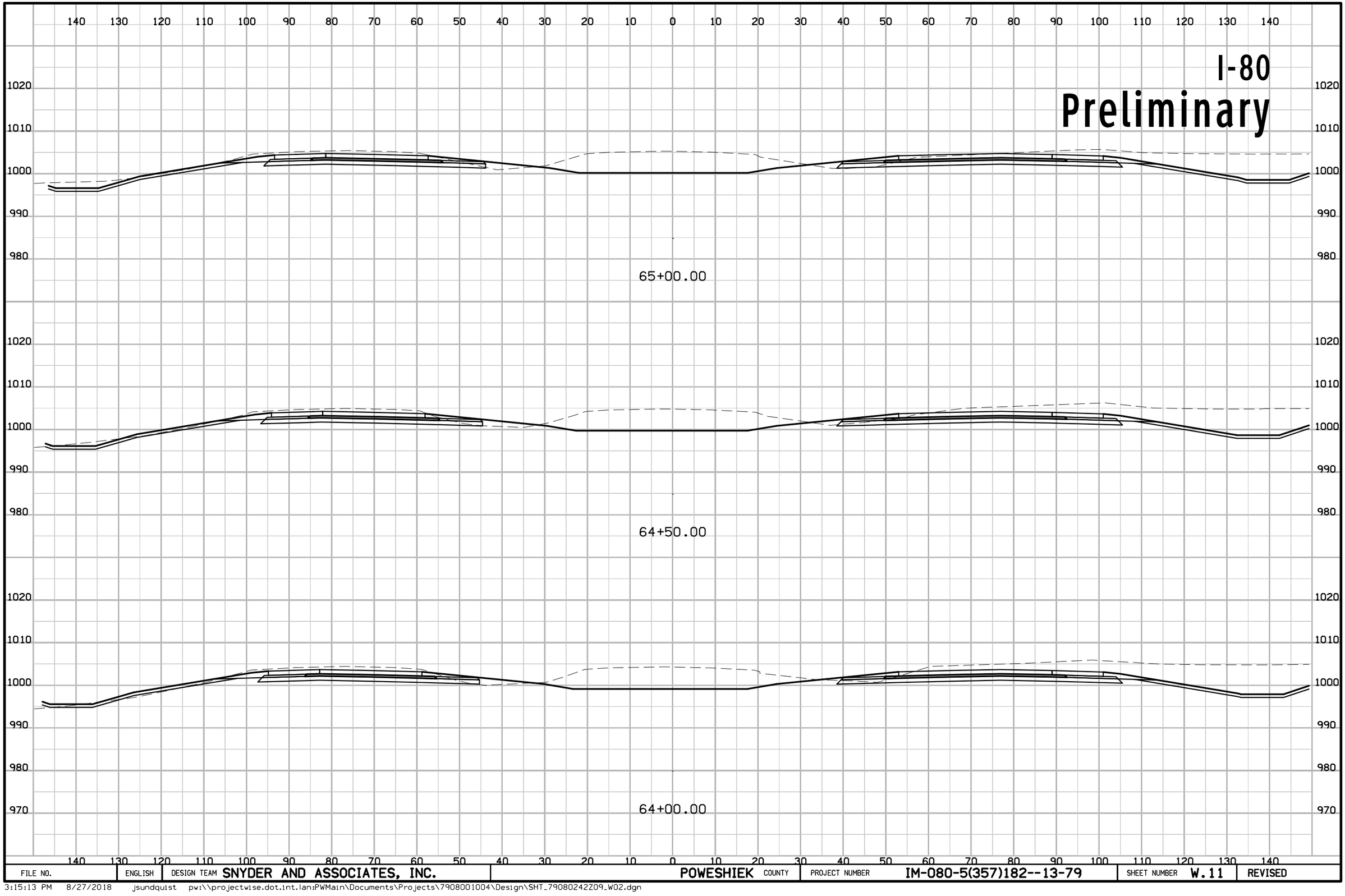
Preliminary



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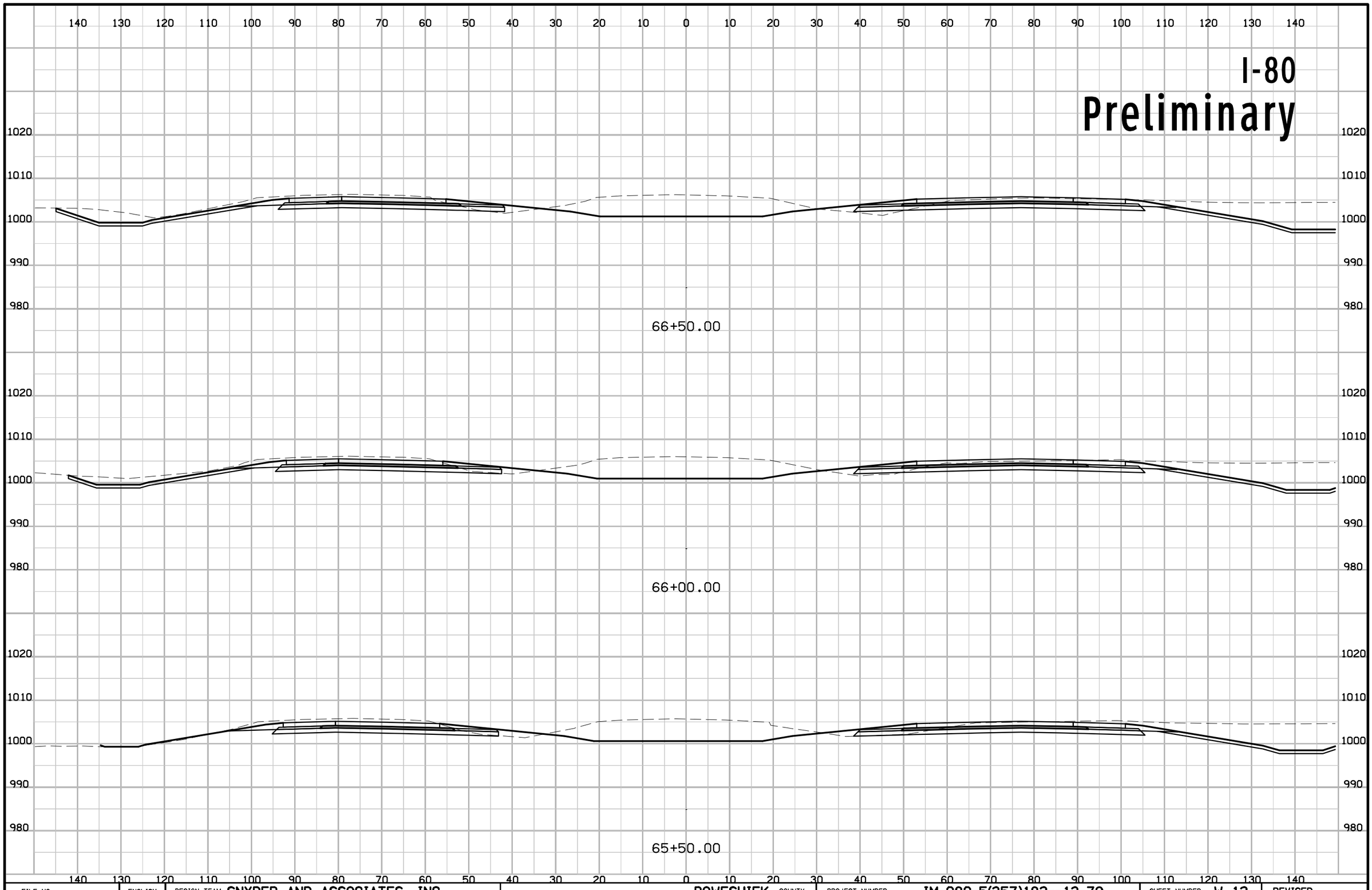
Preliminary



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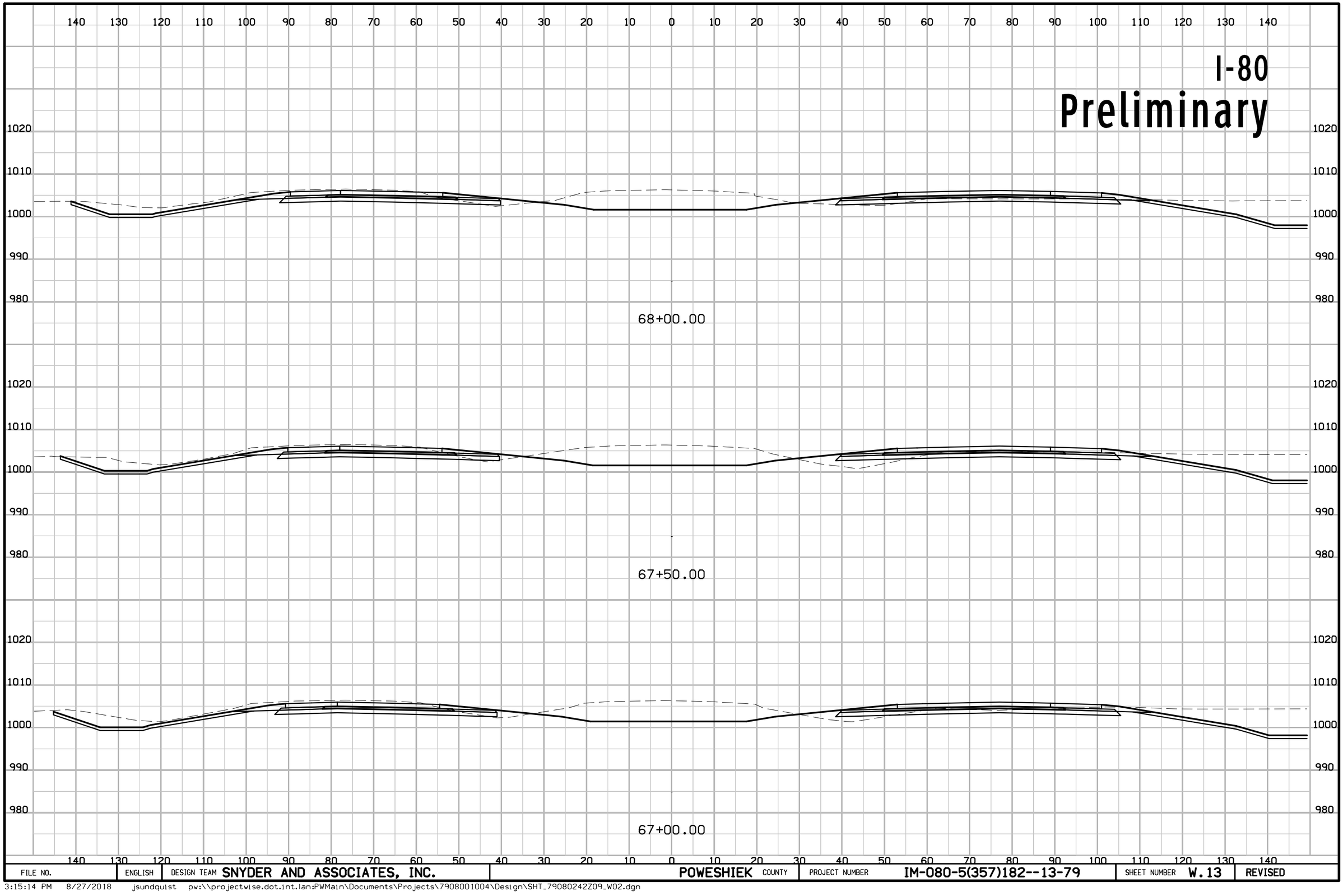
Preliminary



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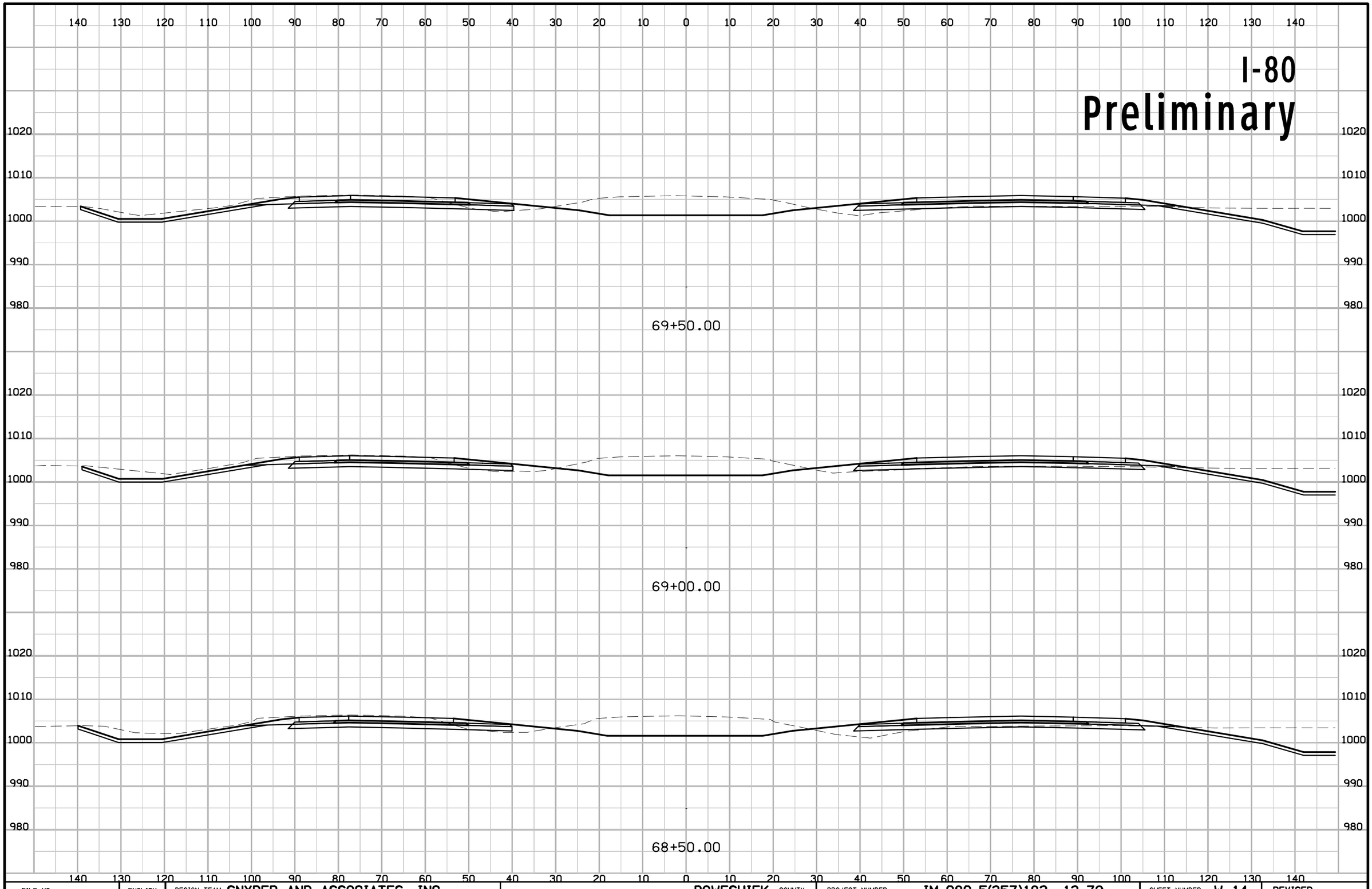
Preliminary



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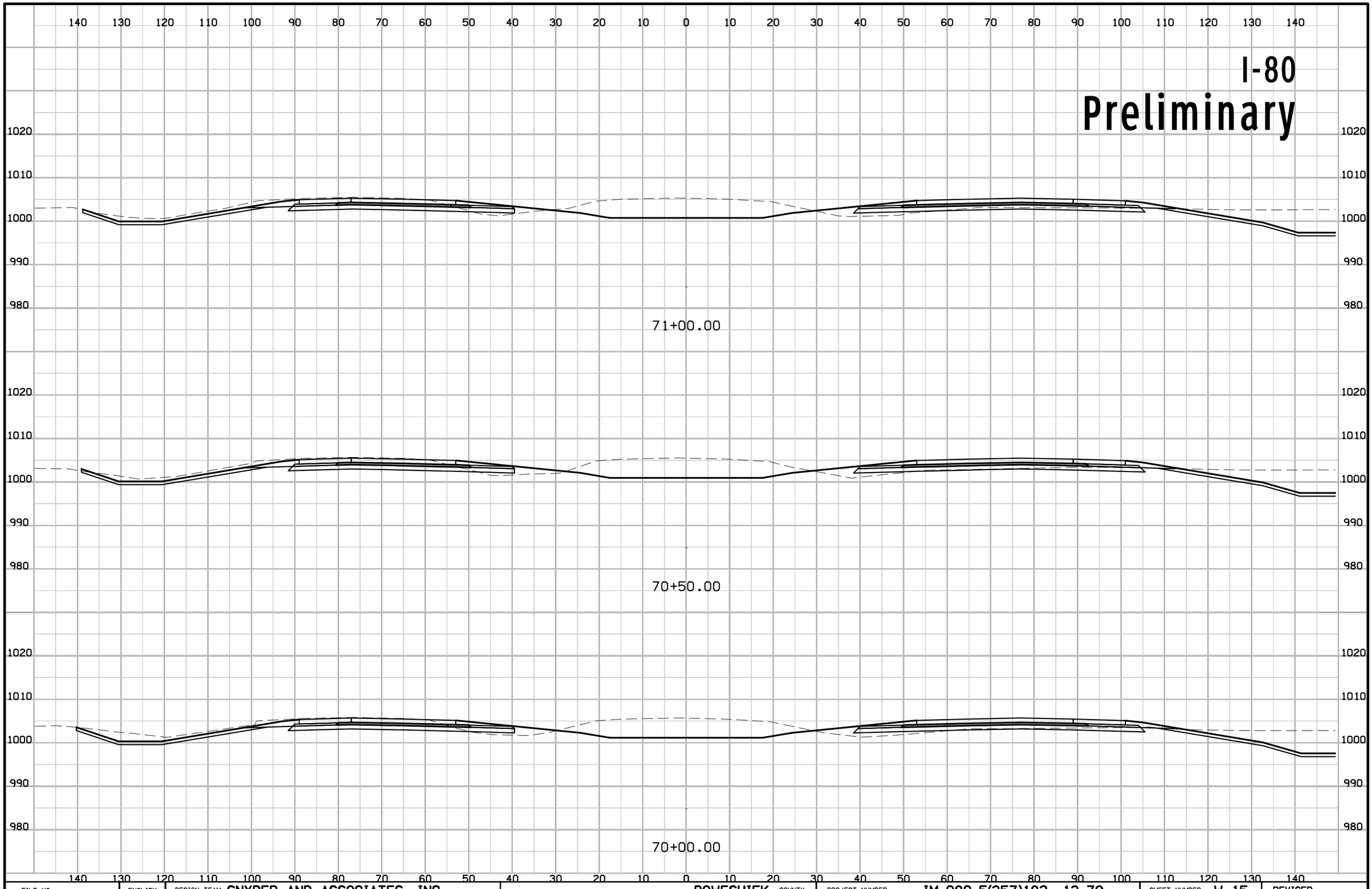
Preliminary



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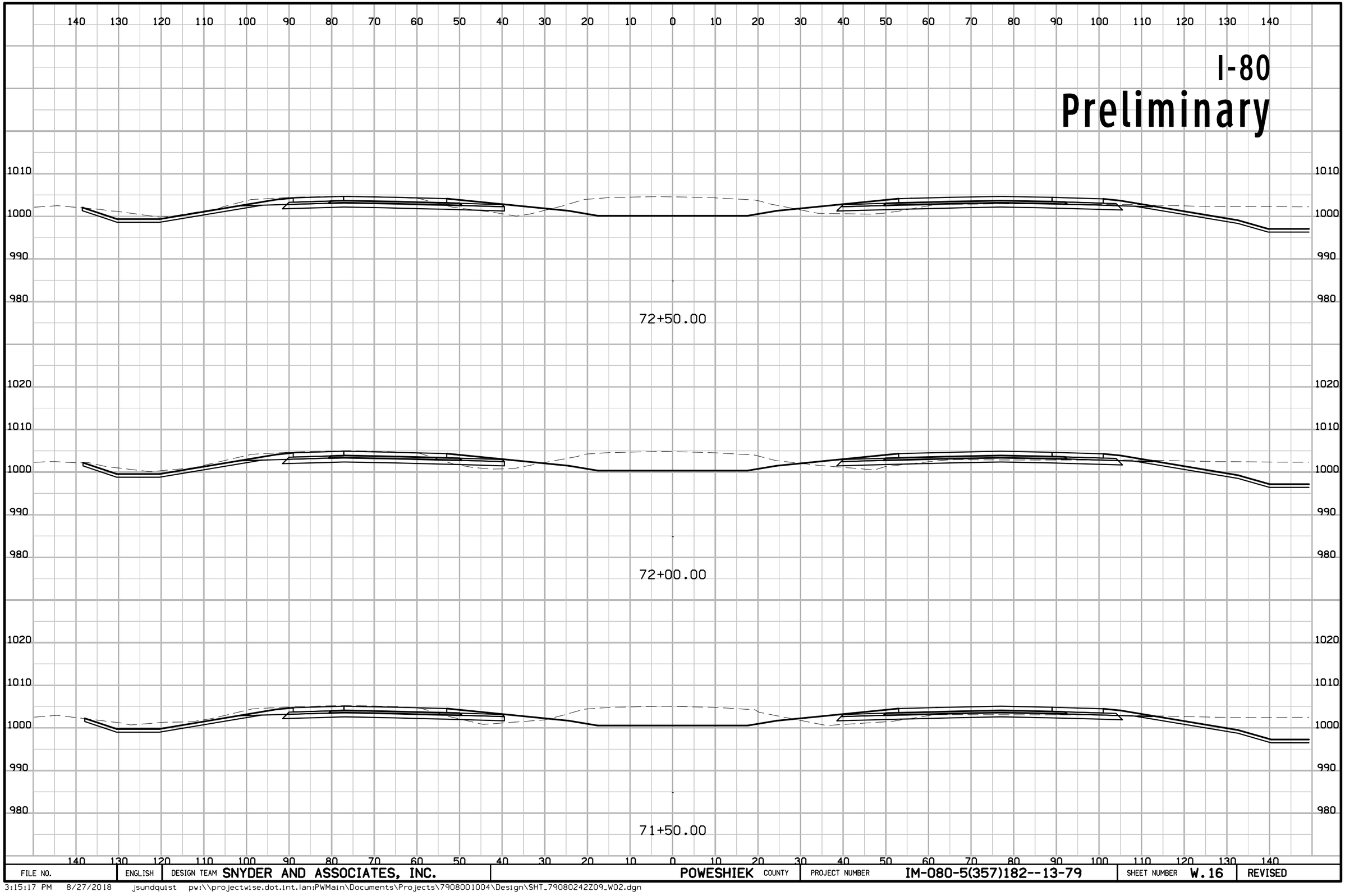
Preliminary



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Preliminary

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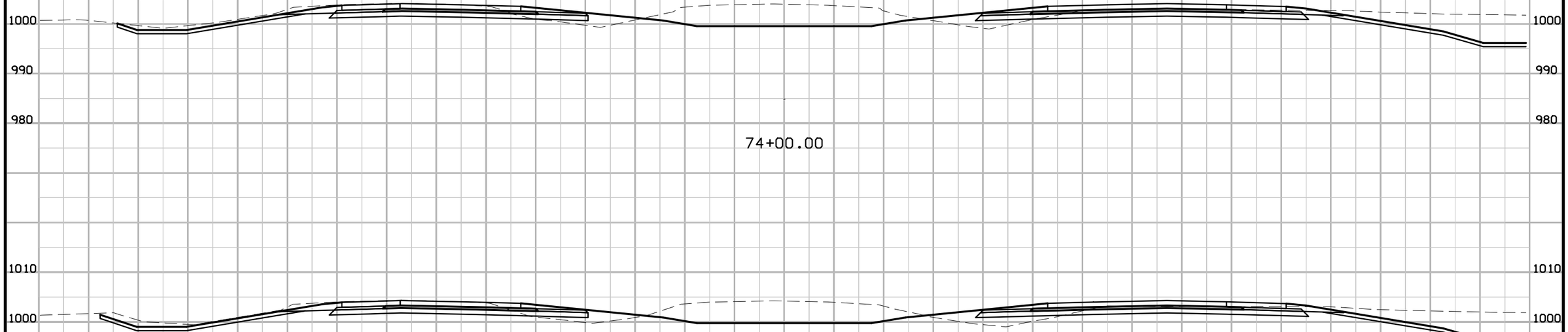

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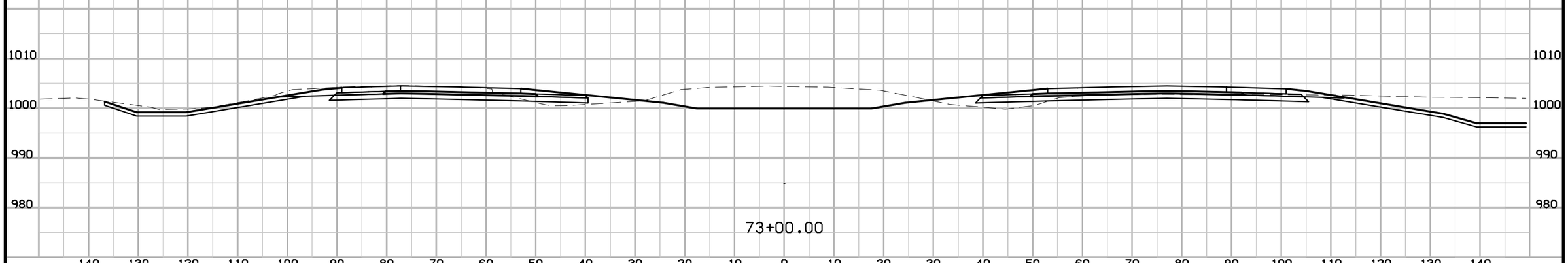

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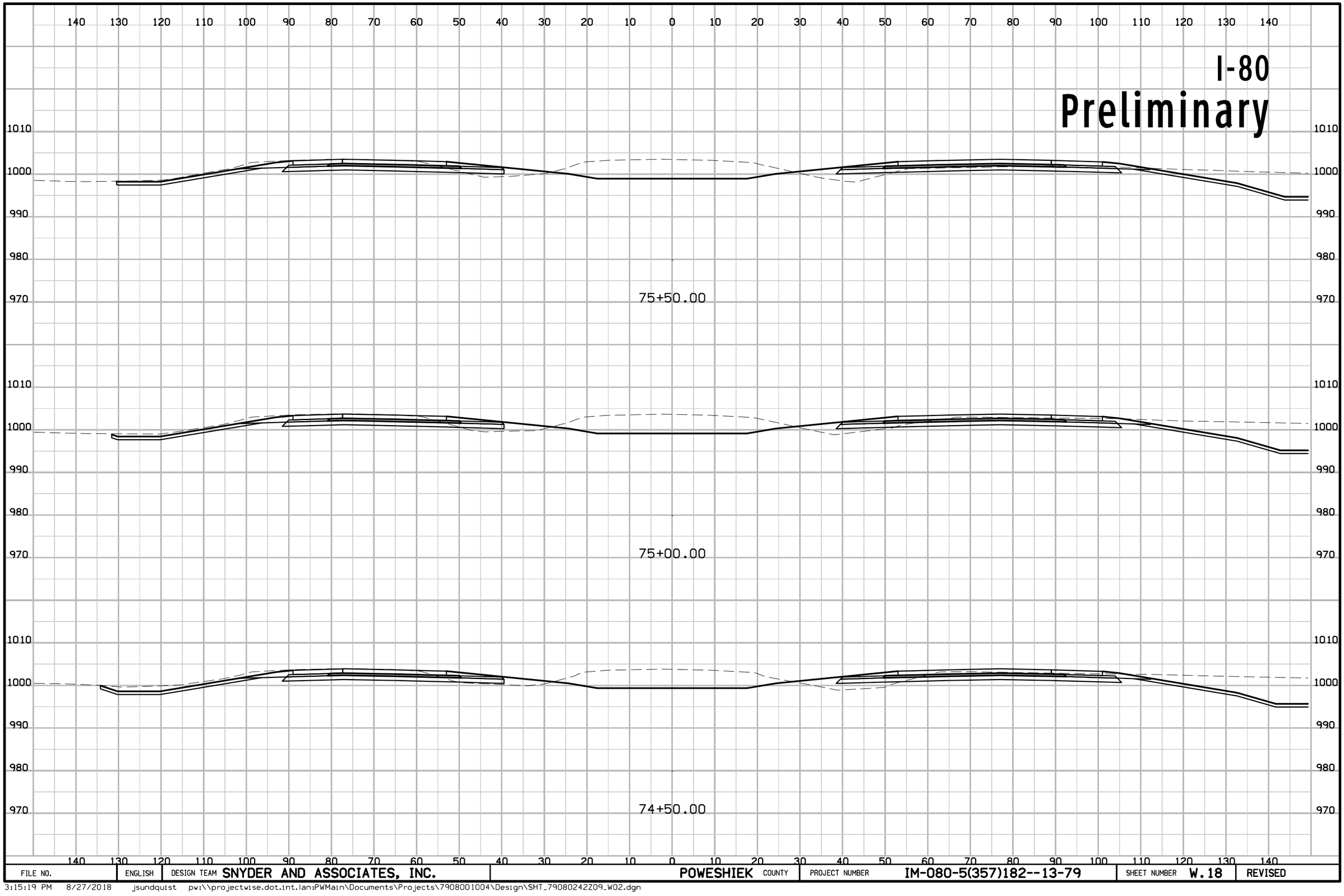
Preliminary



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Preliminary

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FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.19	REVISED

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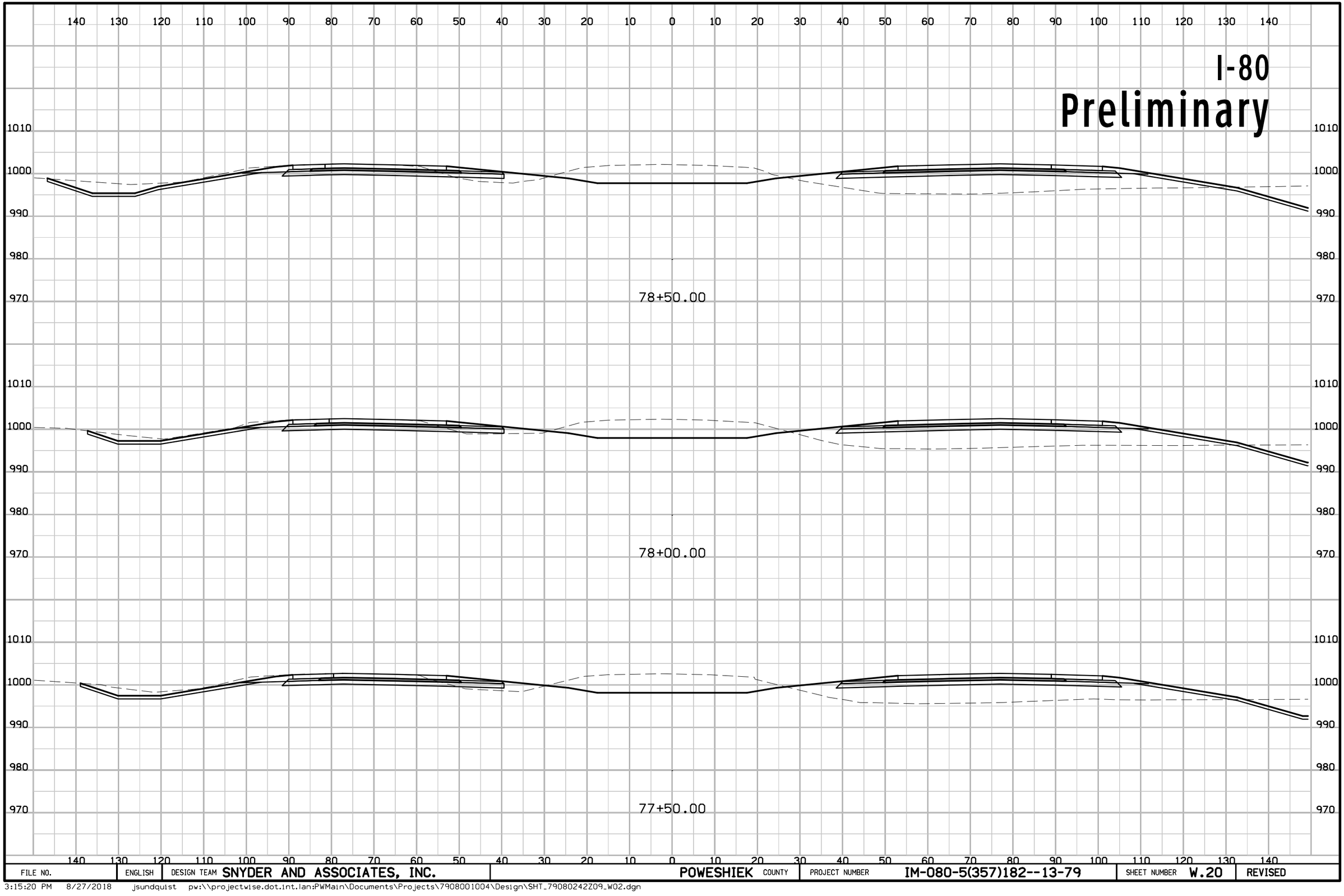

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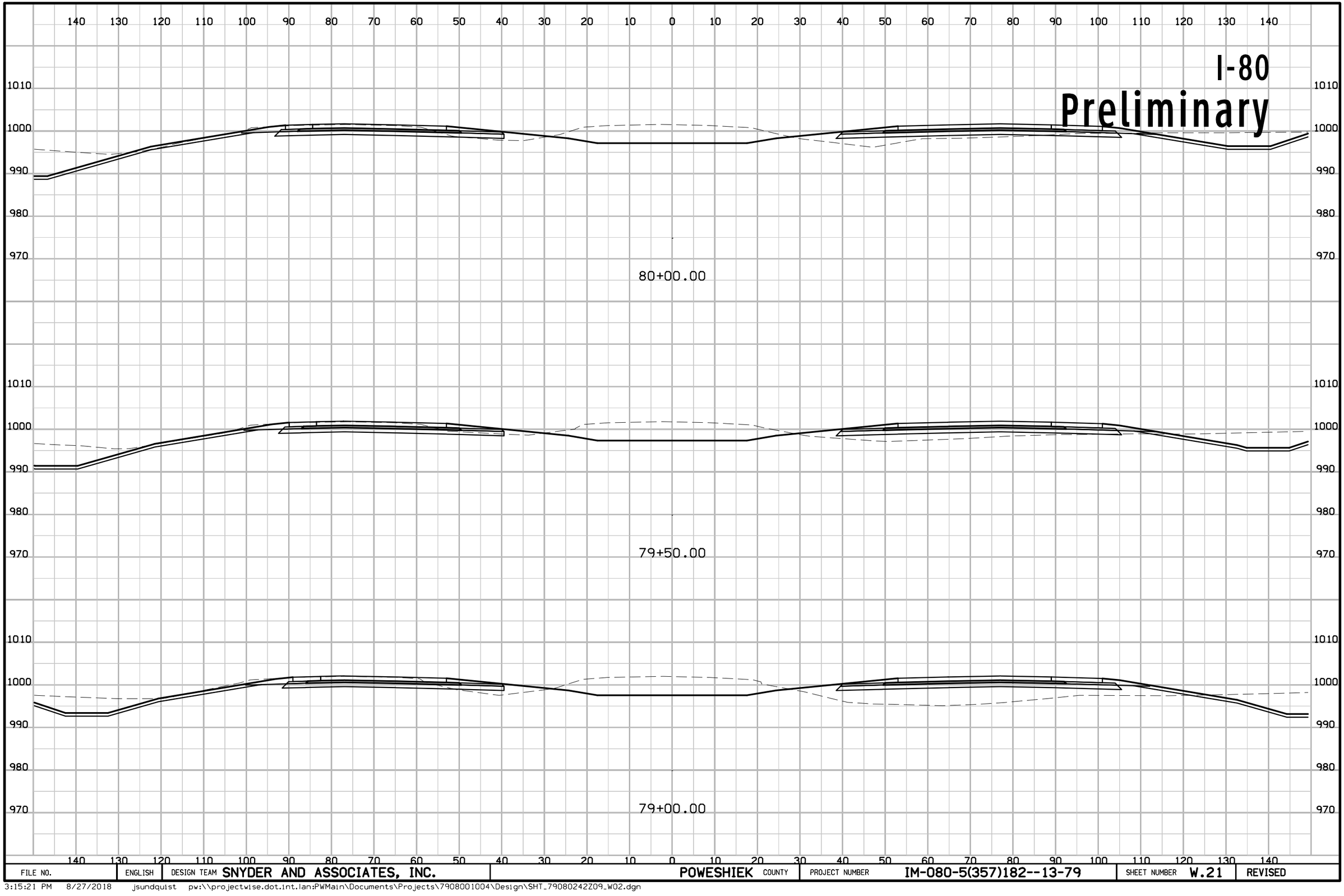

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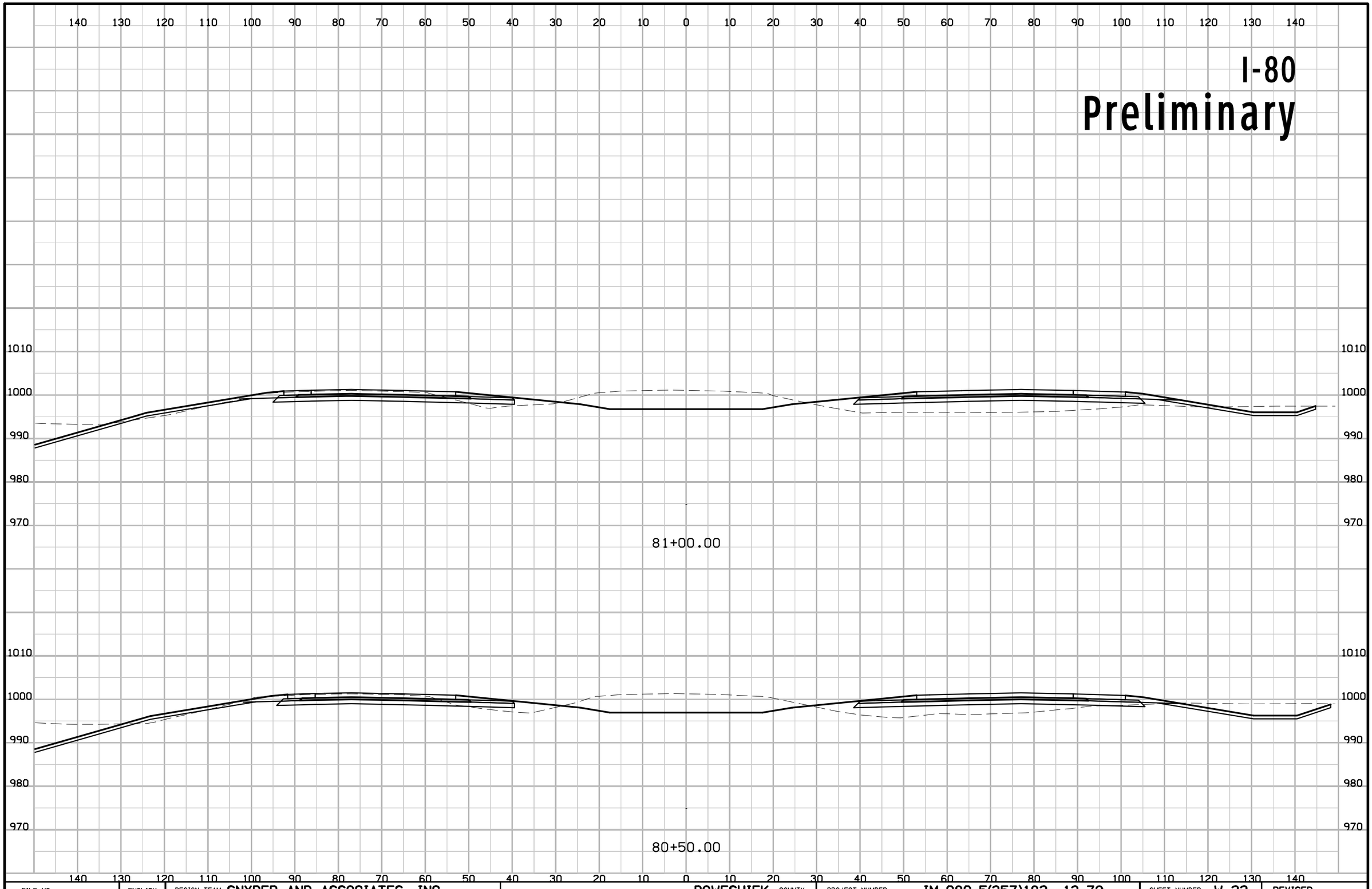

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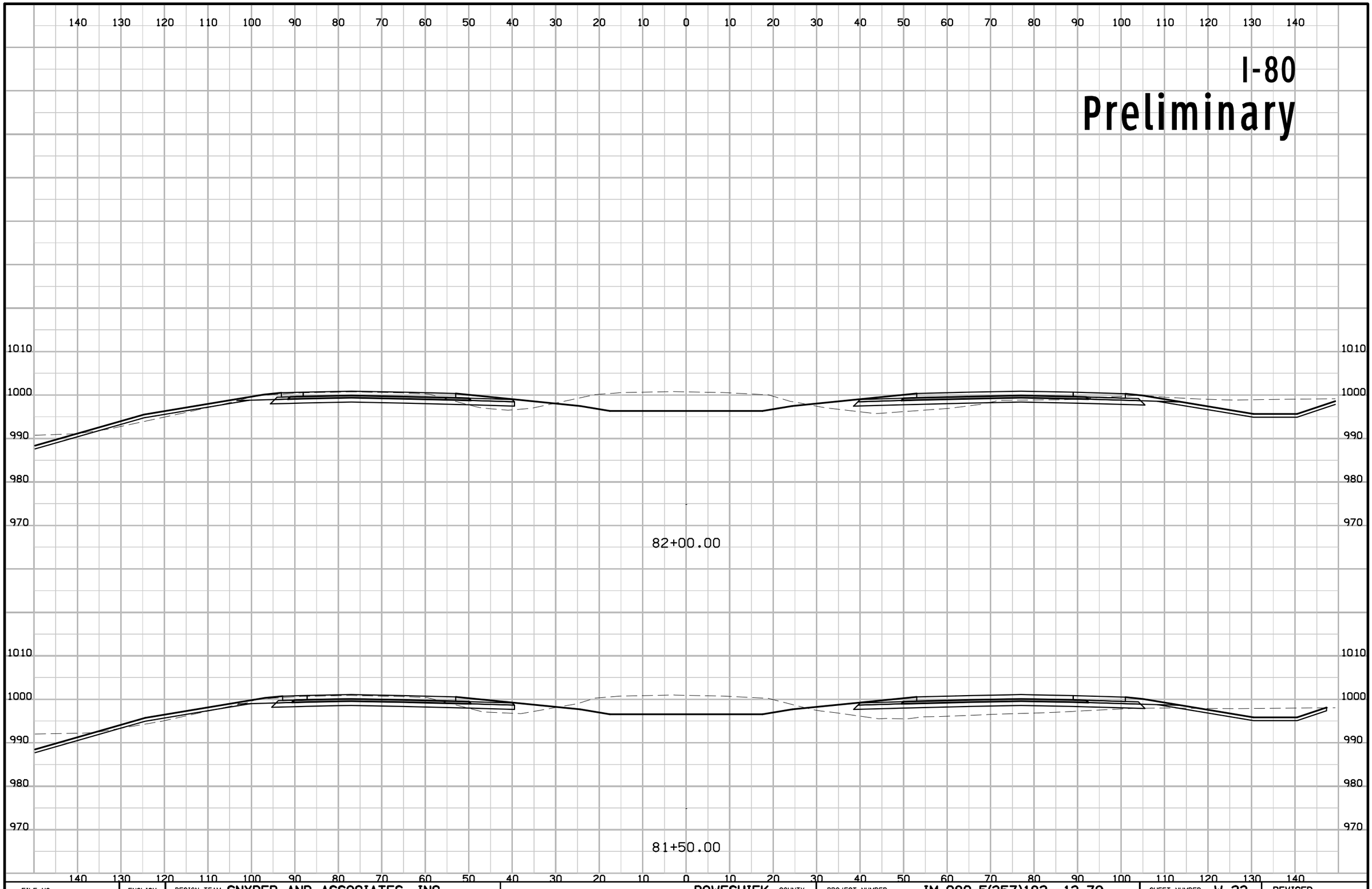
Preliminary



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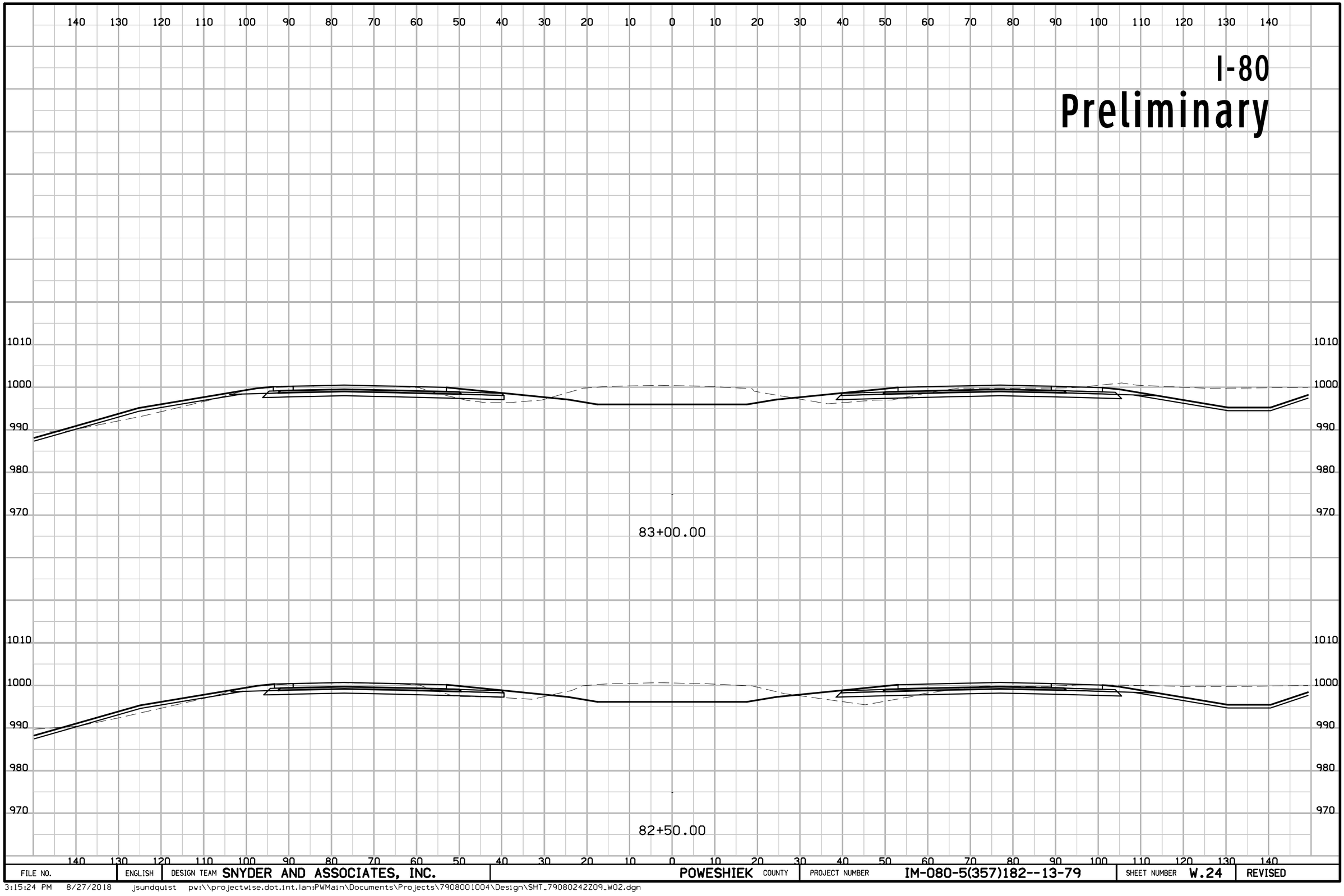
Preliminary



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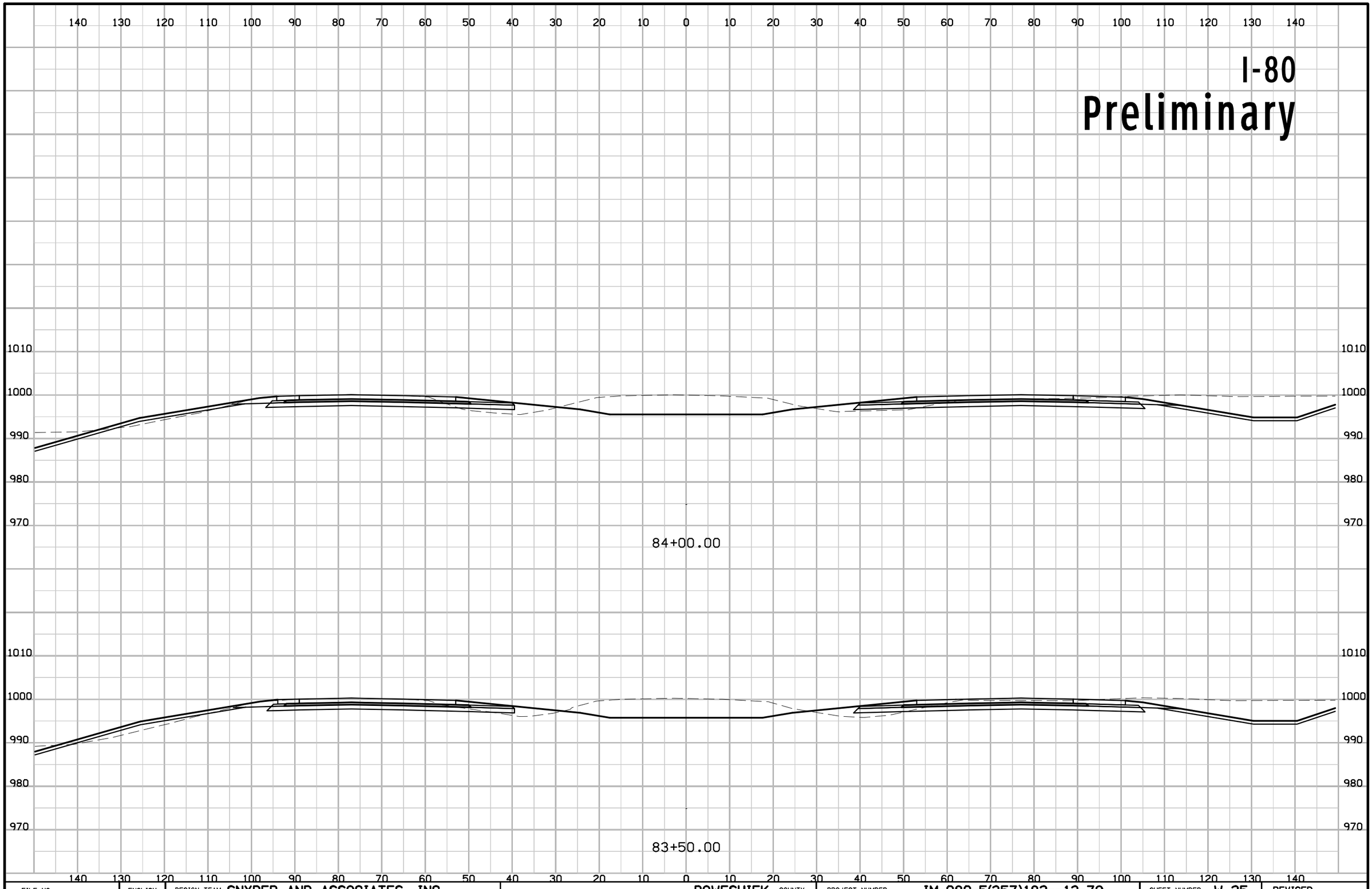
Preliminary



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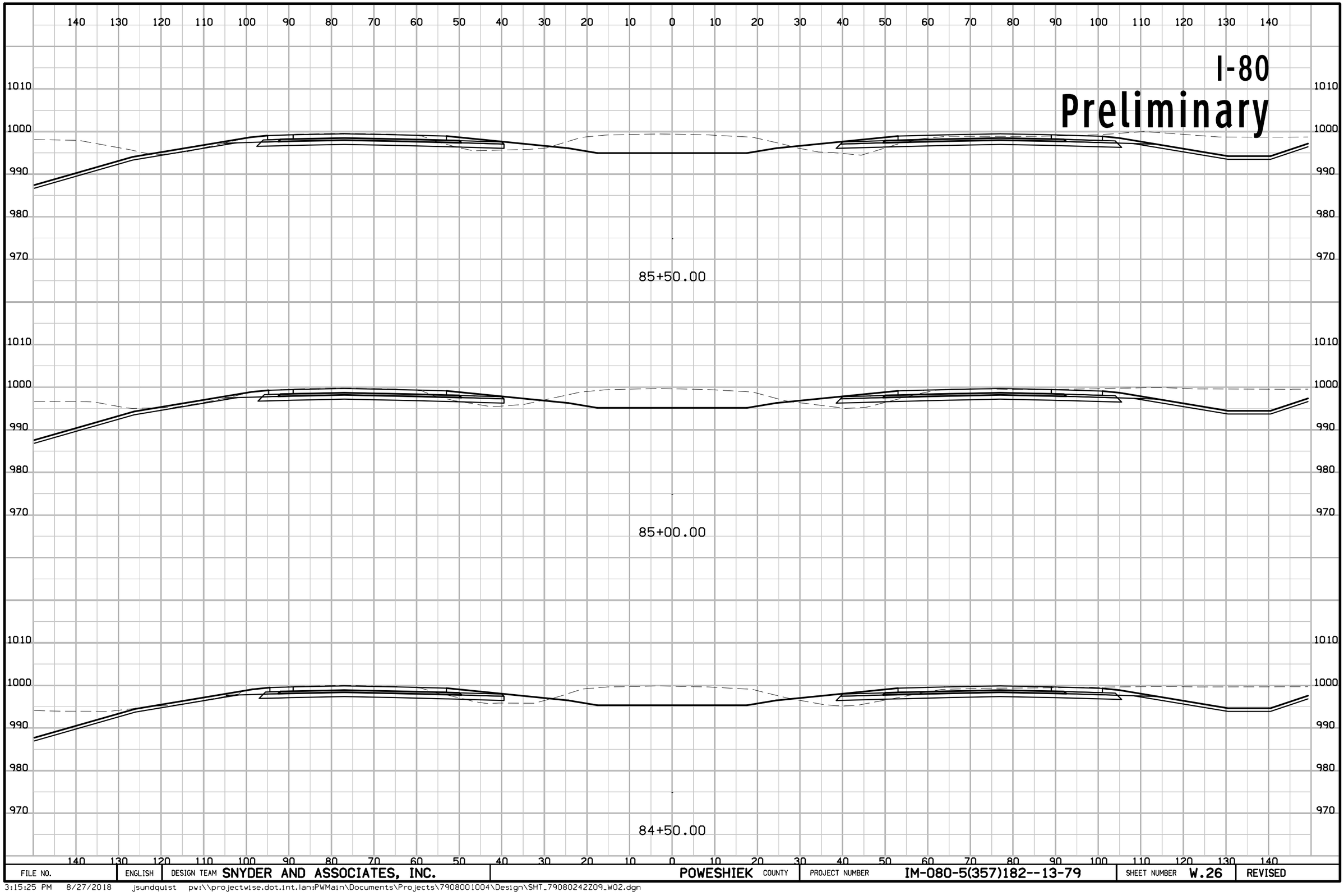
Preliminary



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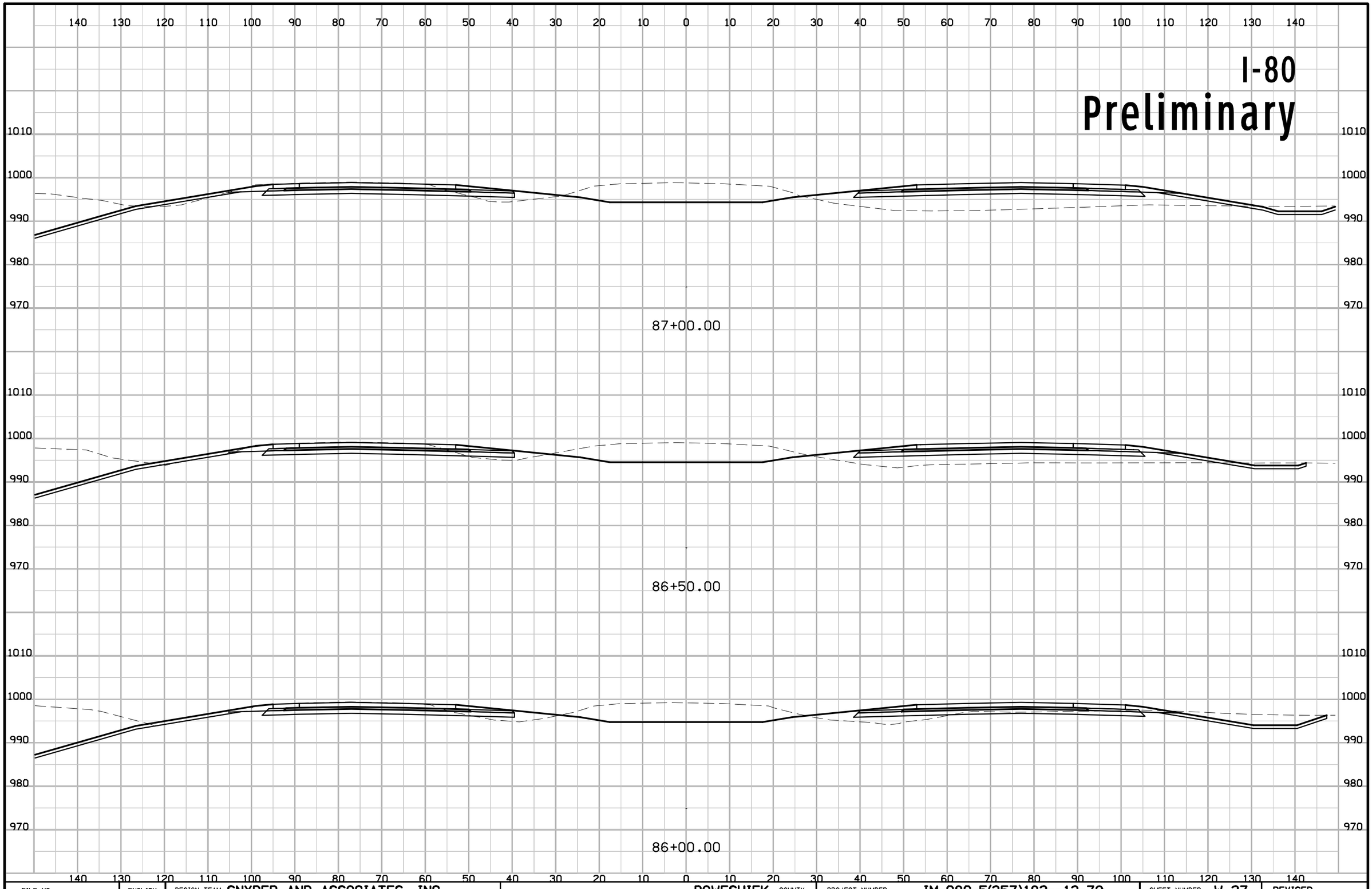
I-80

Preliminary

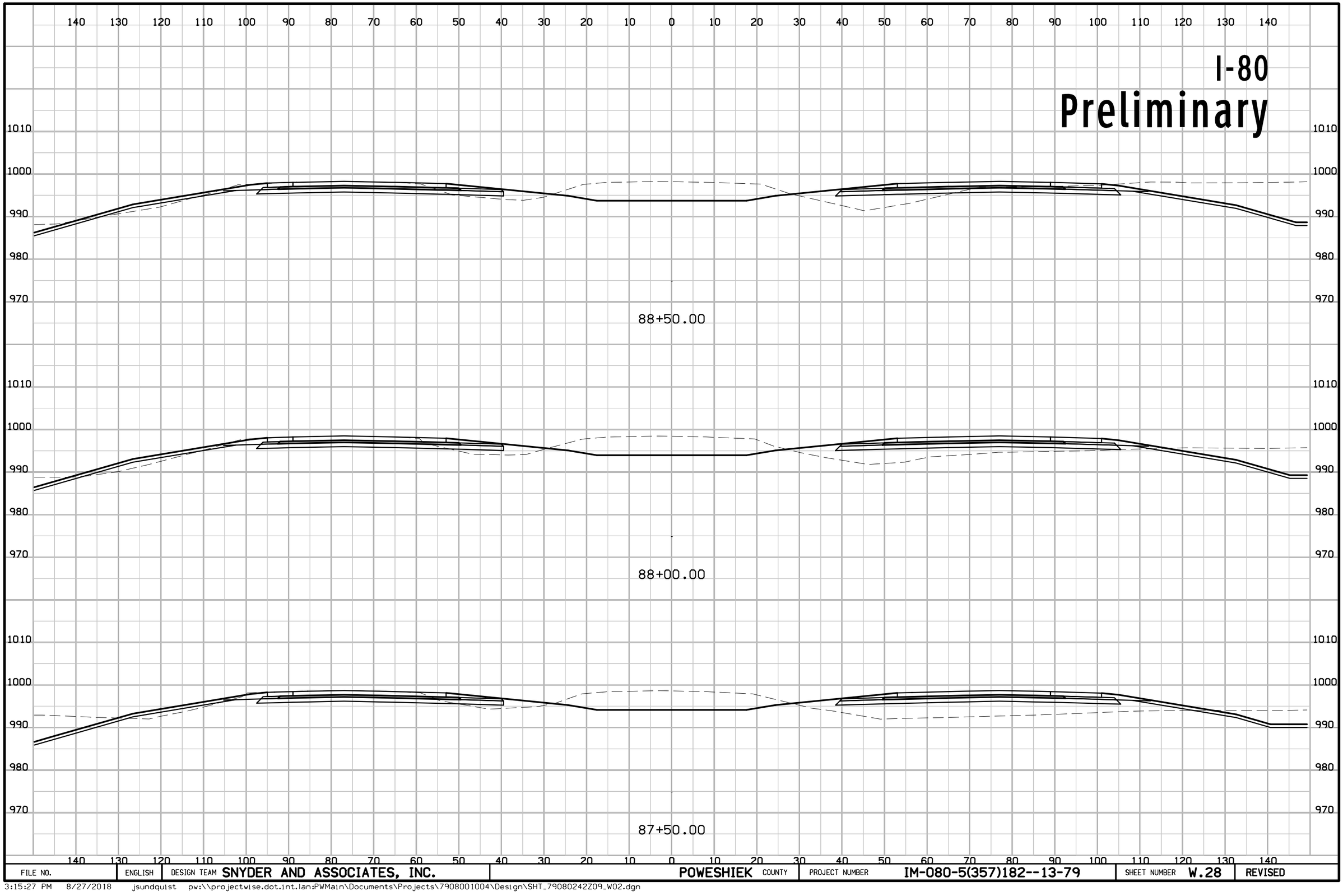


FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.27	REVISED

3:15:26 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.28	REVISED

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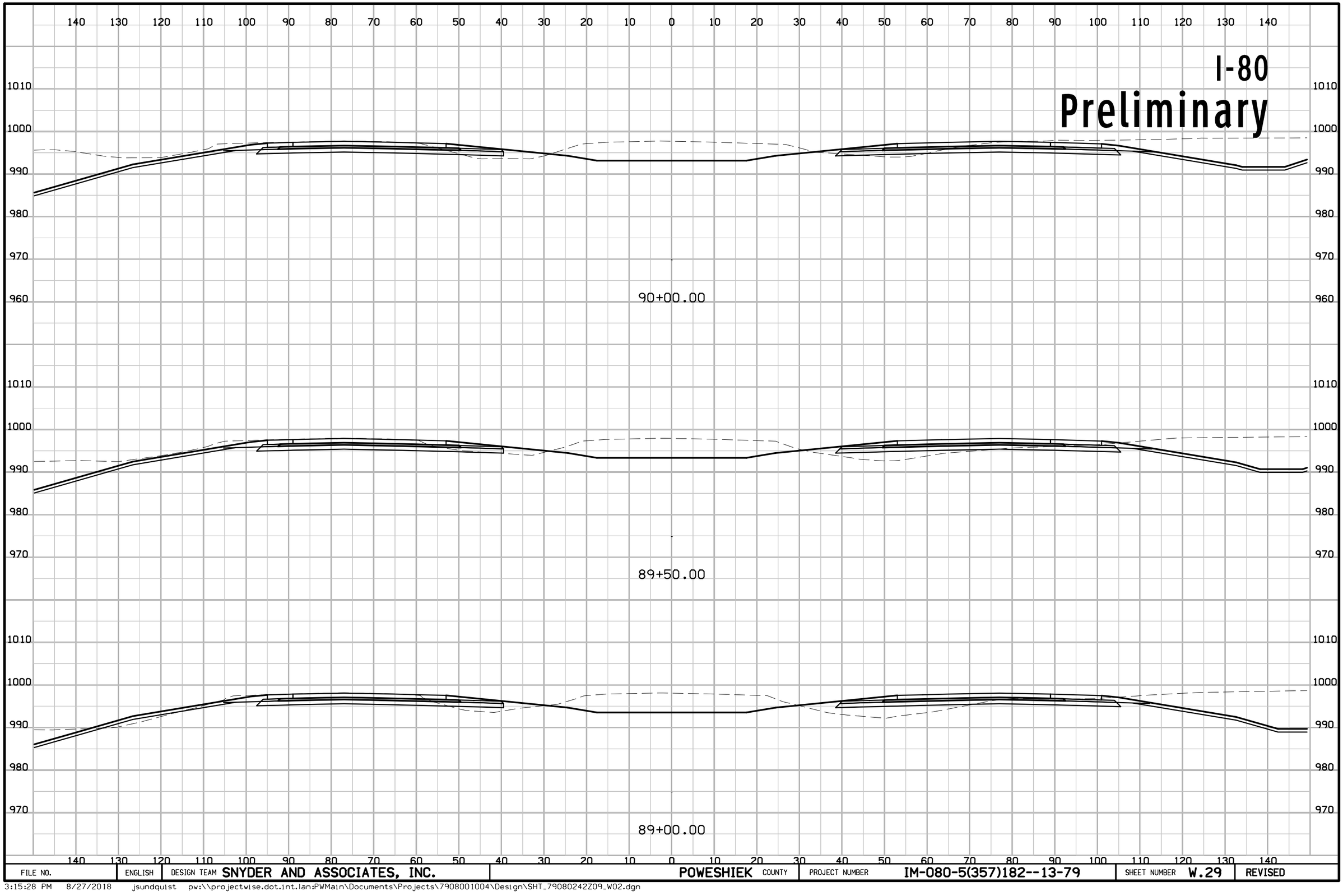
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.29	REVISED

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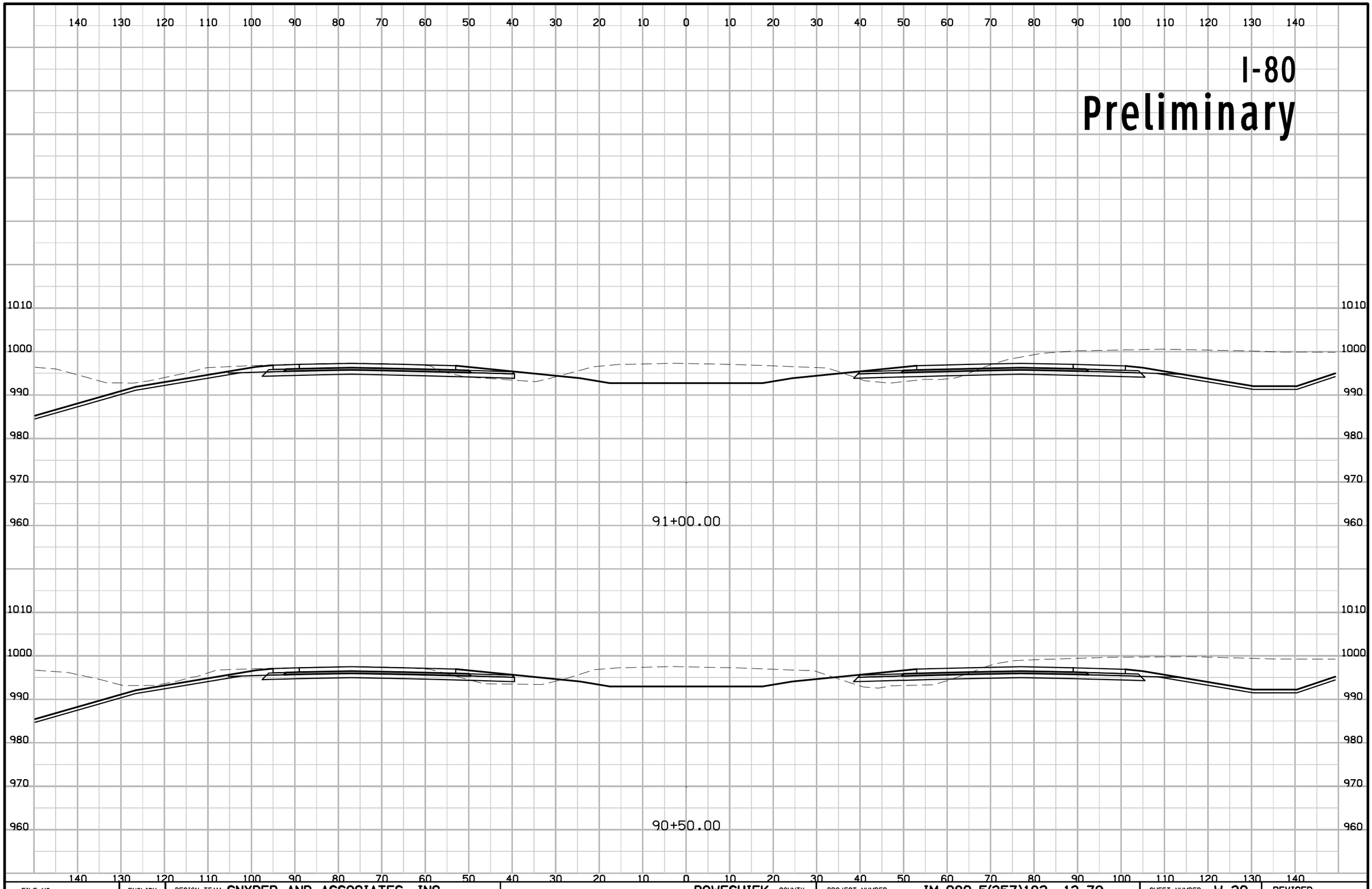
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.30	REVISED

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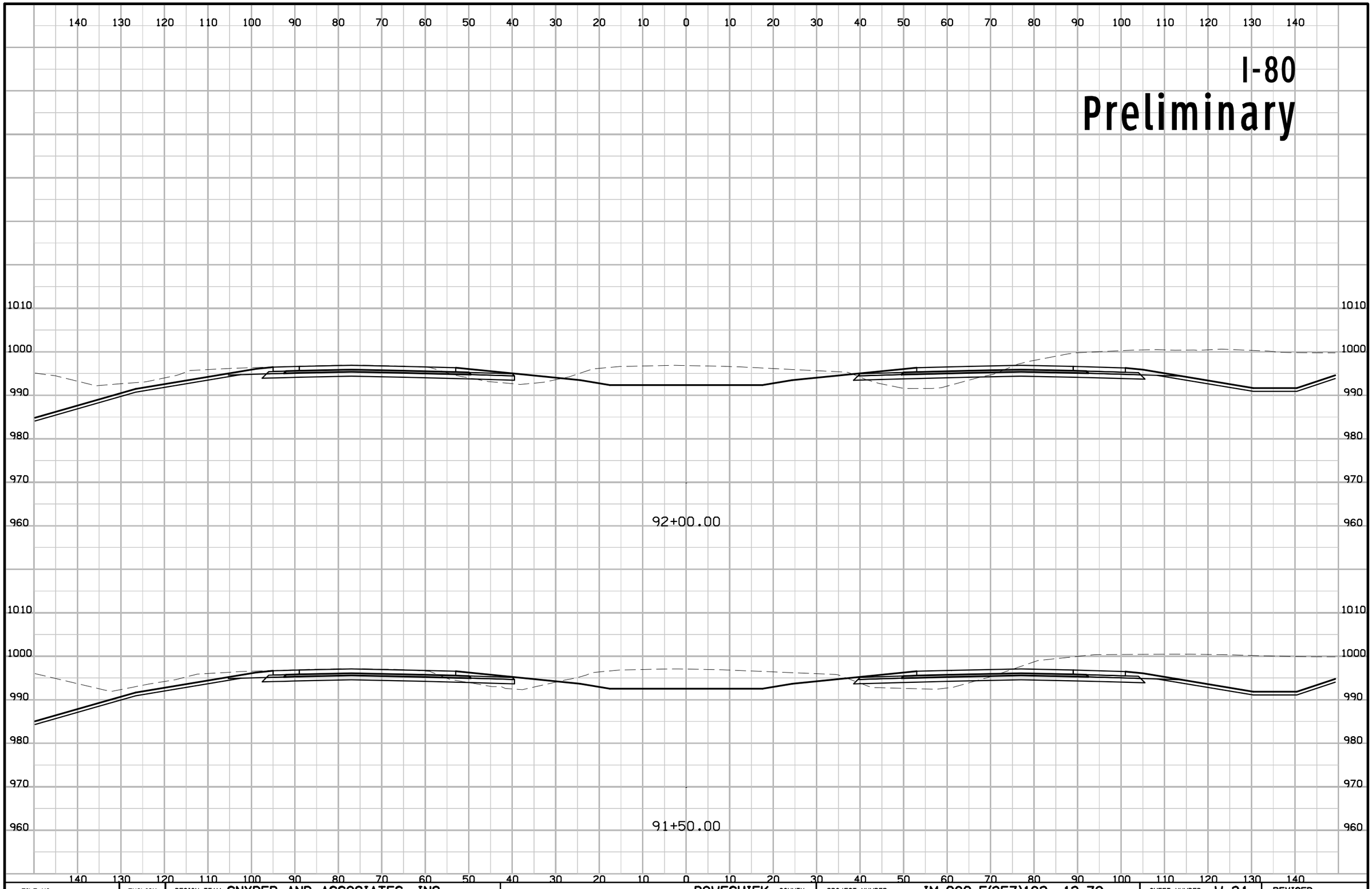
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.31	REVISED

3:15:30 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

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

1010
1000
990
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960

93+00.00

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FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.32	REVISED

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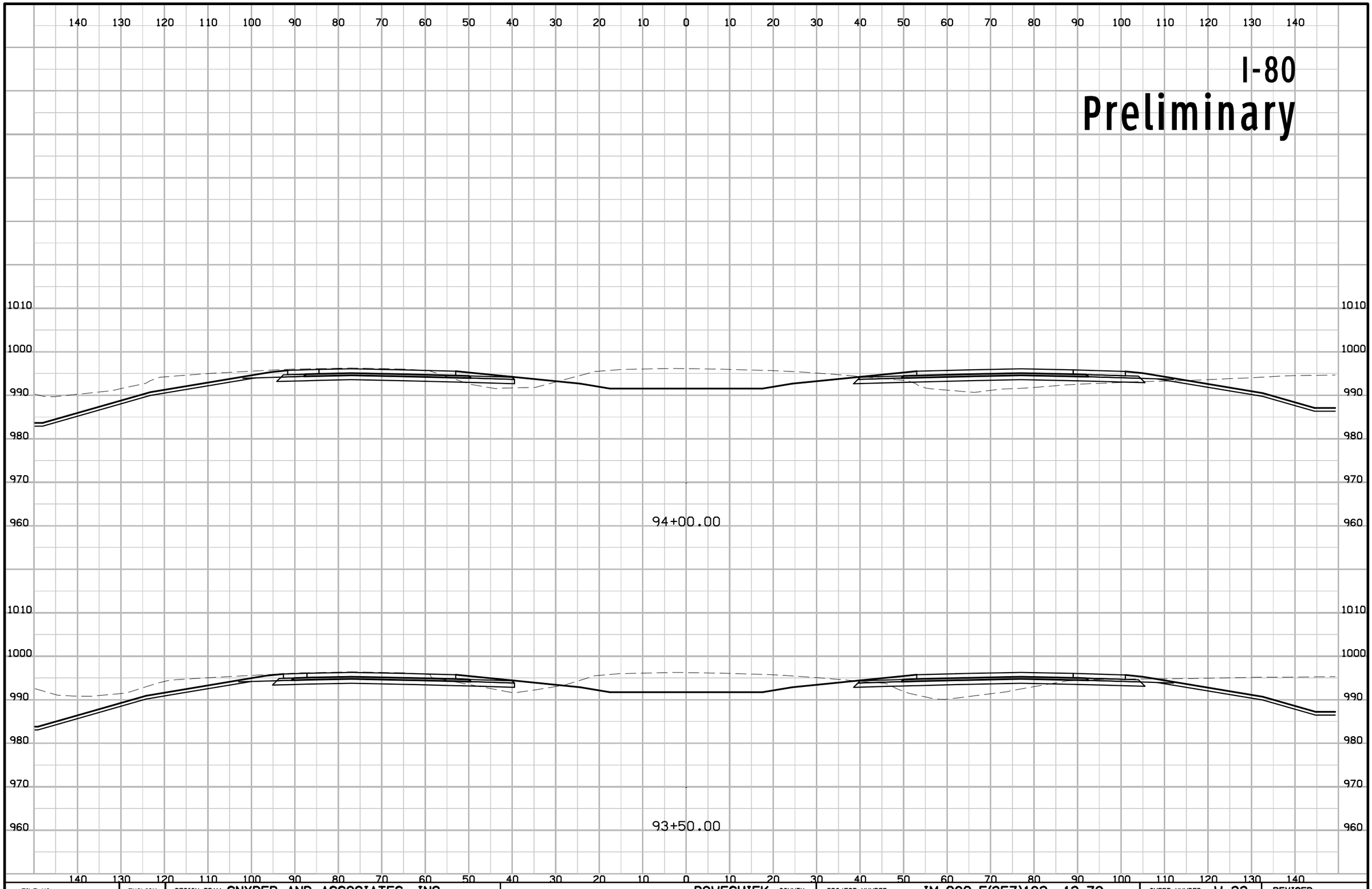
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.33	REVISED

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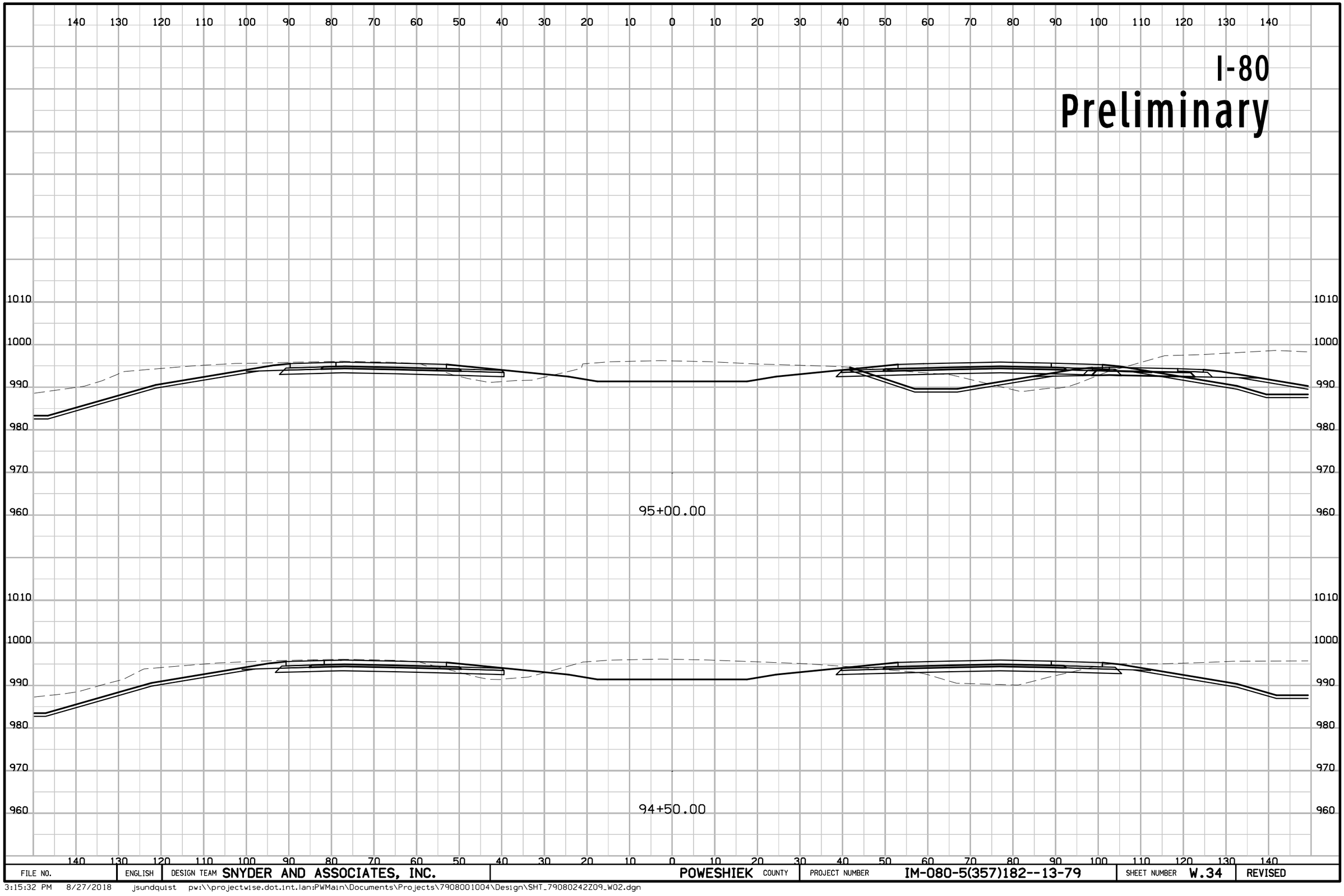
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.34	REVISED

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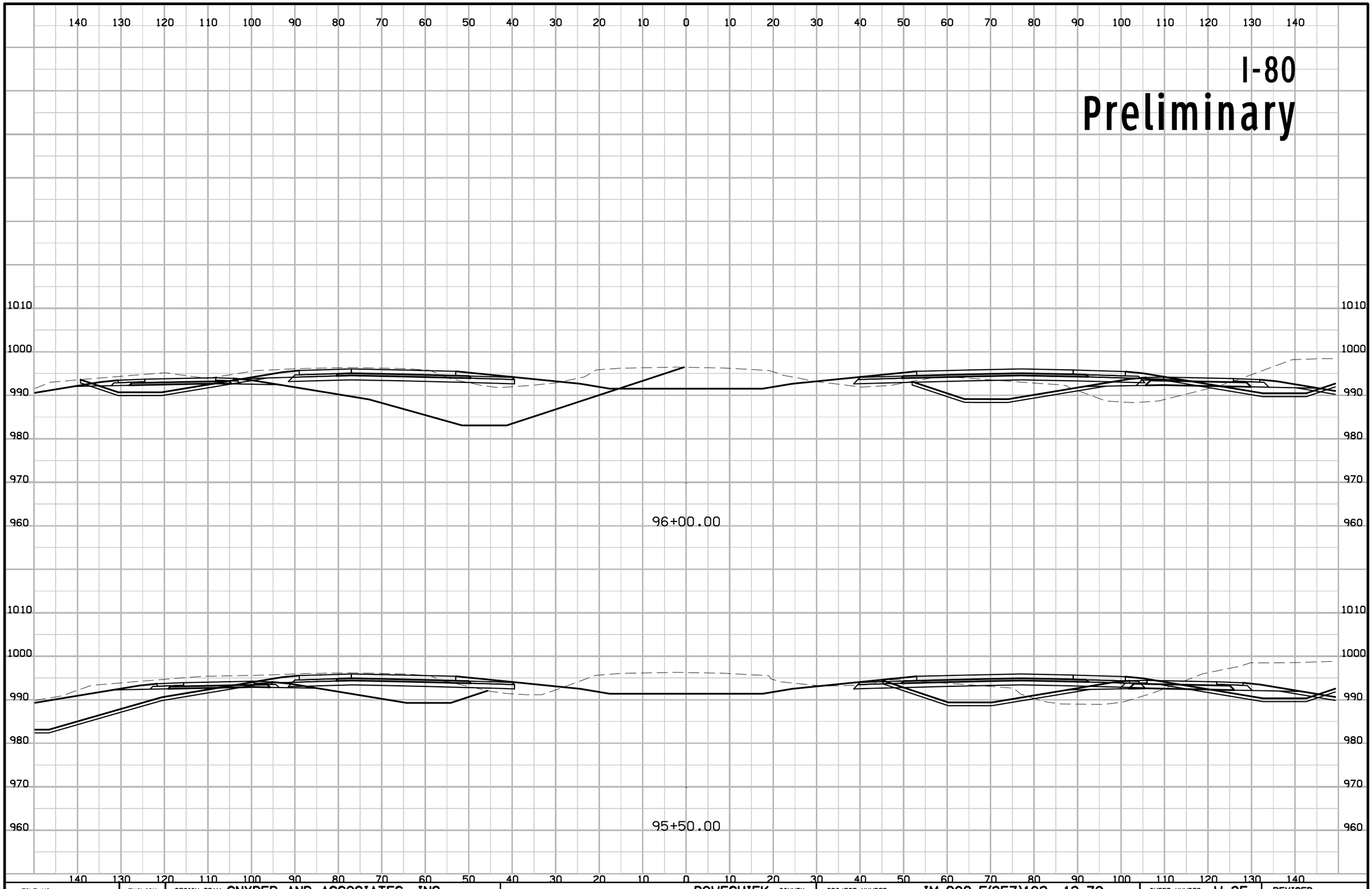
I-80
Preliminary

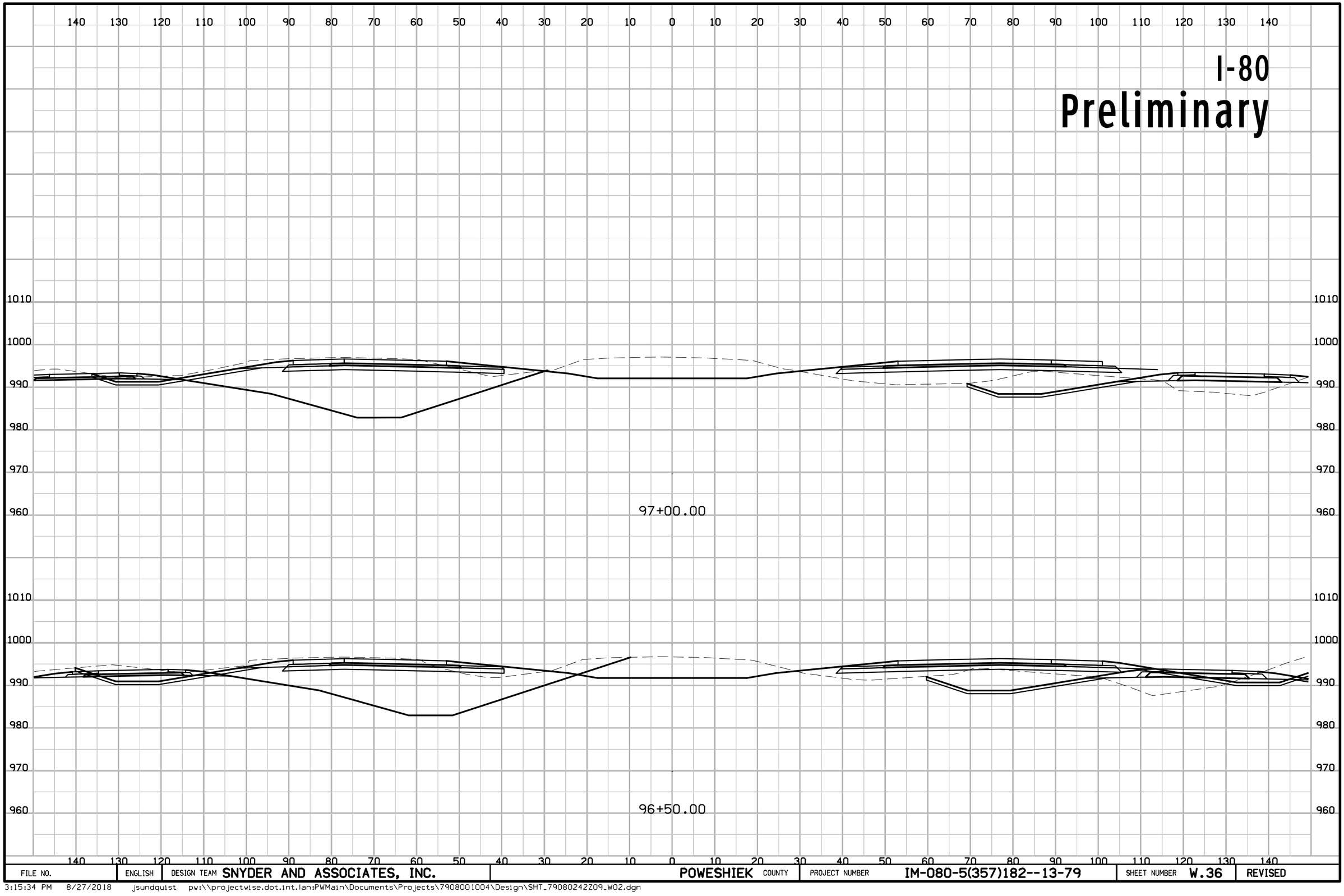


FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.35	REVISED

3:15:33 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

Preliminary

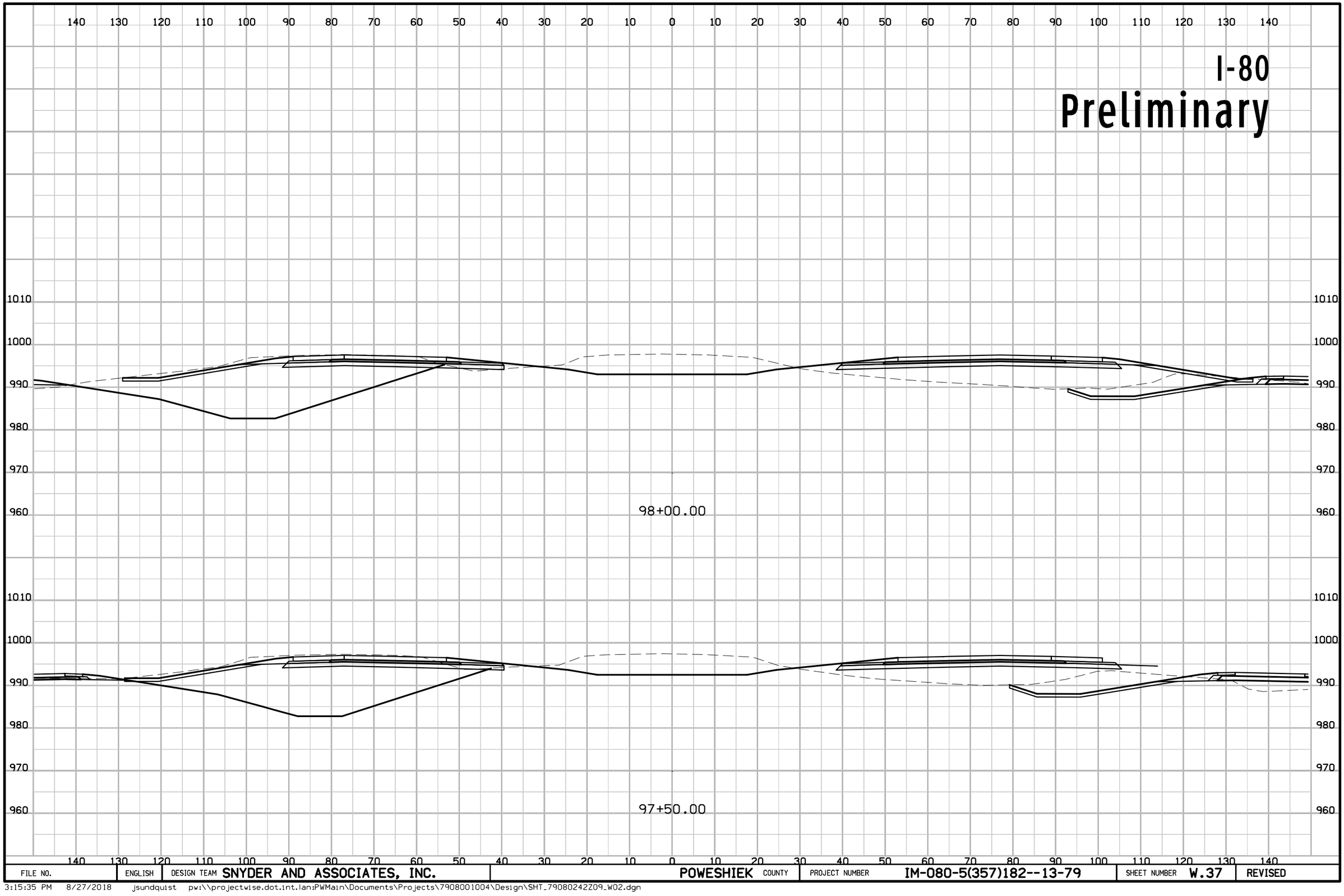


FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.36	REVISED

3:15:34 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.37	REVISED

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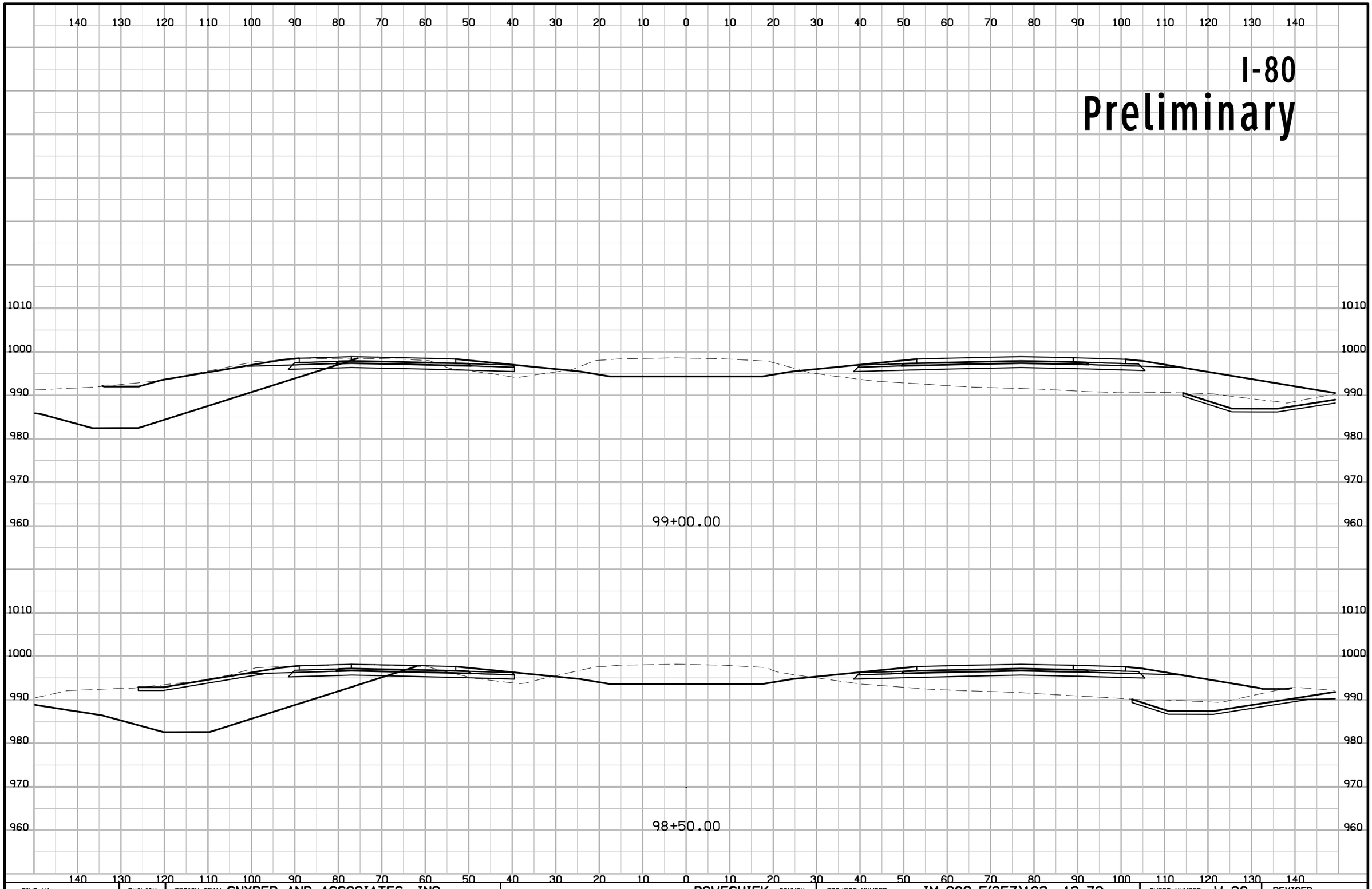
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.38	REVISED

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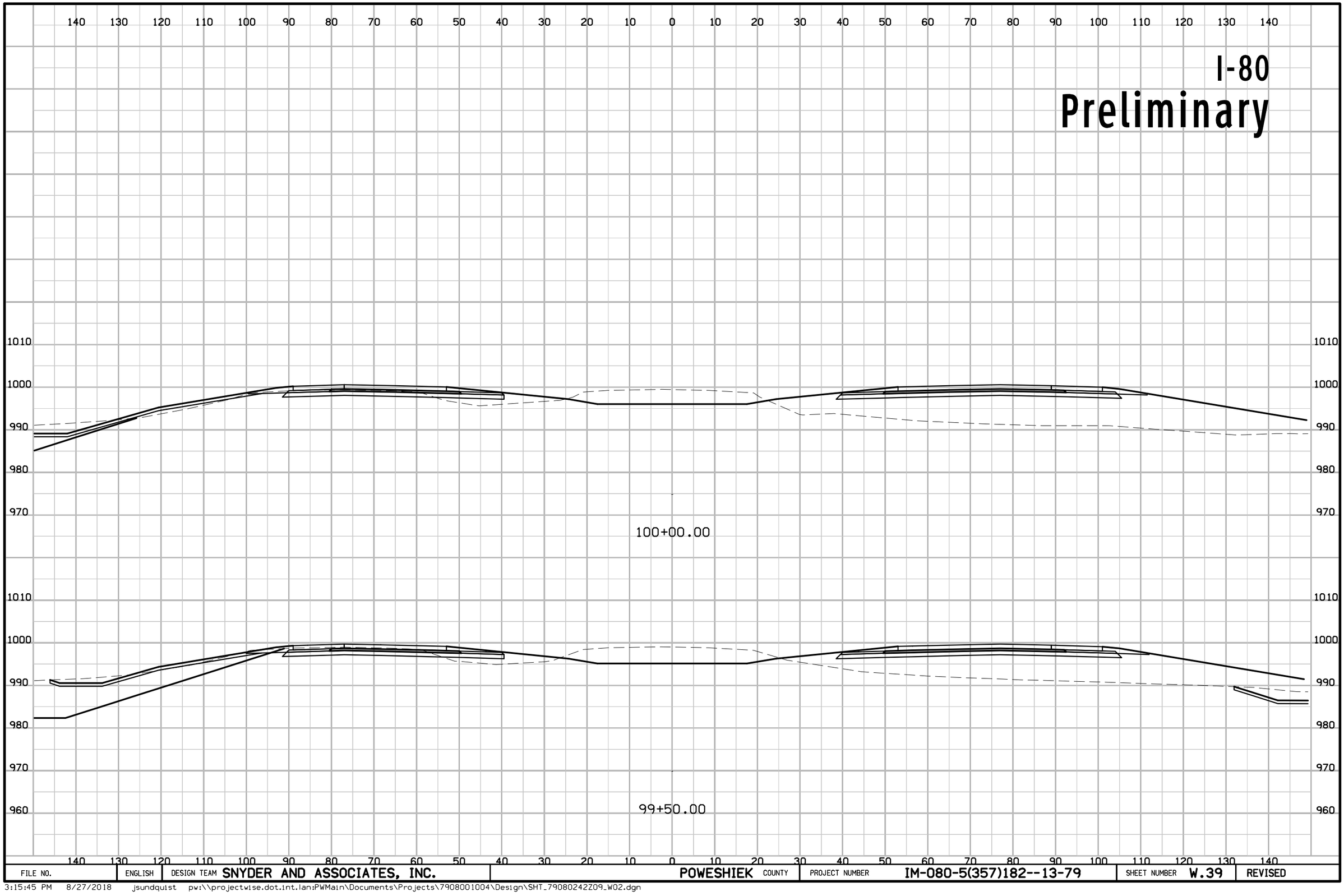
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.39	REVISED

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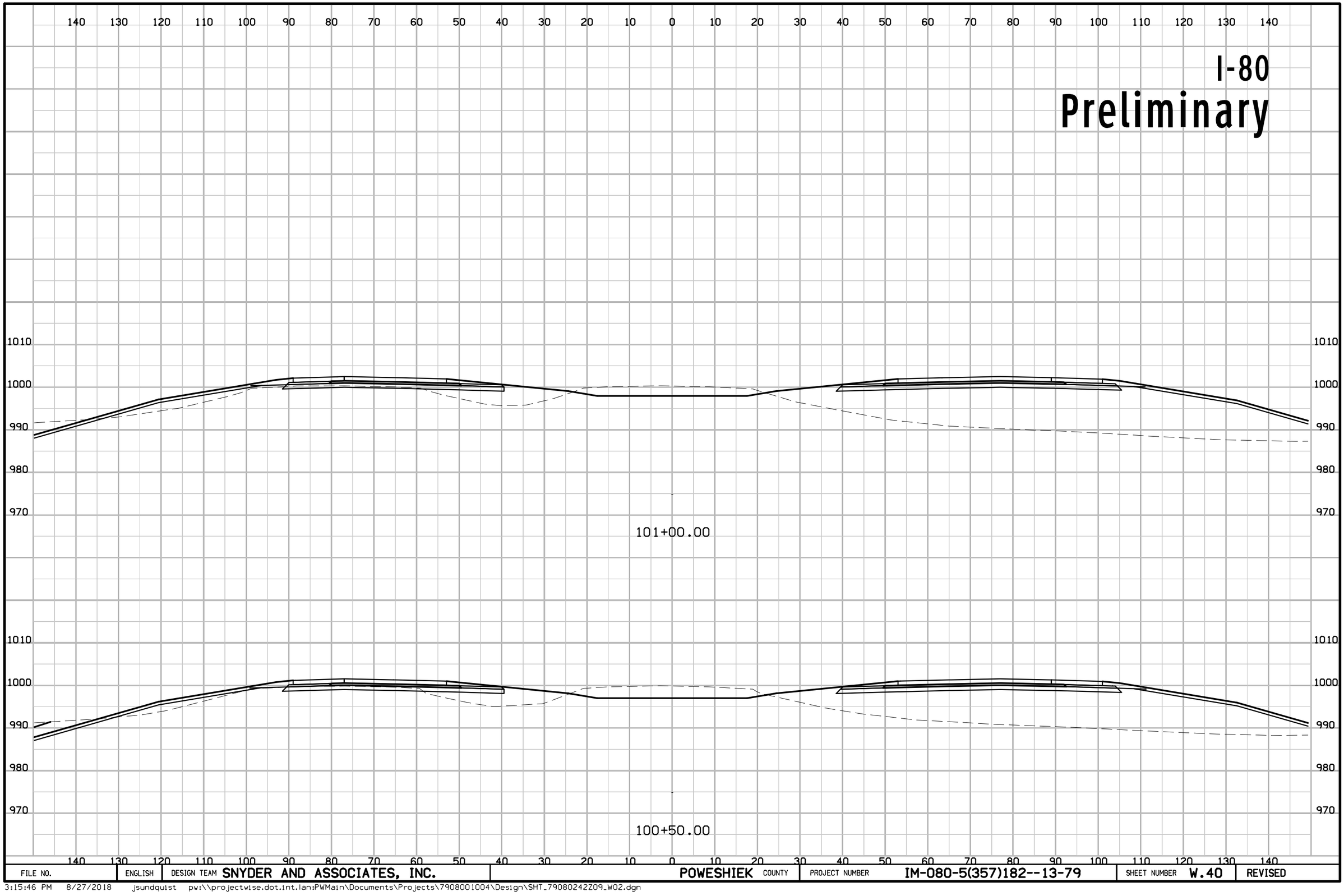
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.40	REVISED

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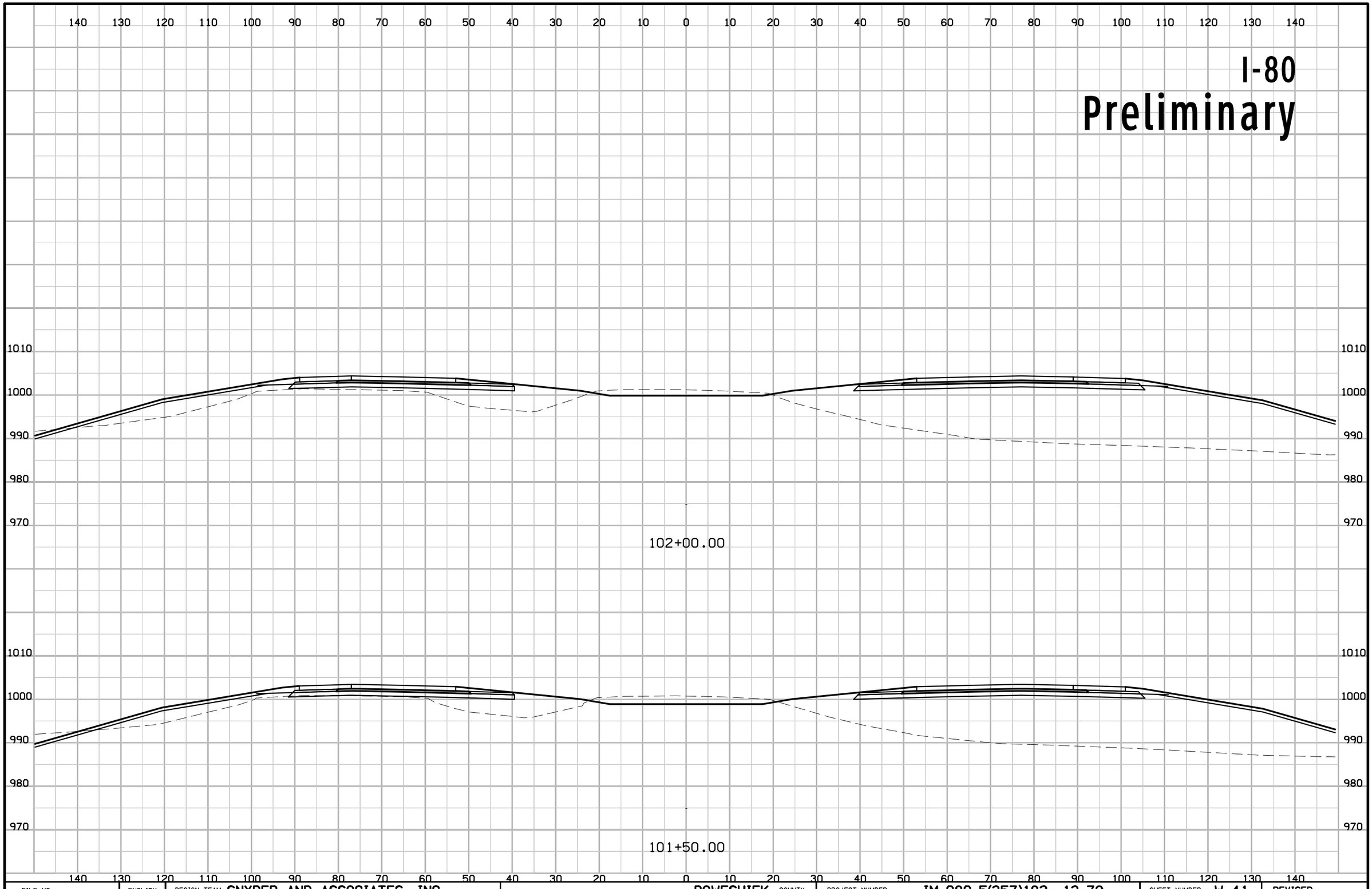
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.41	REVISED

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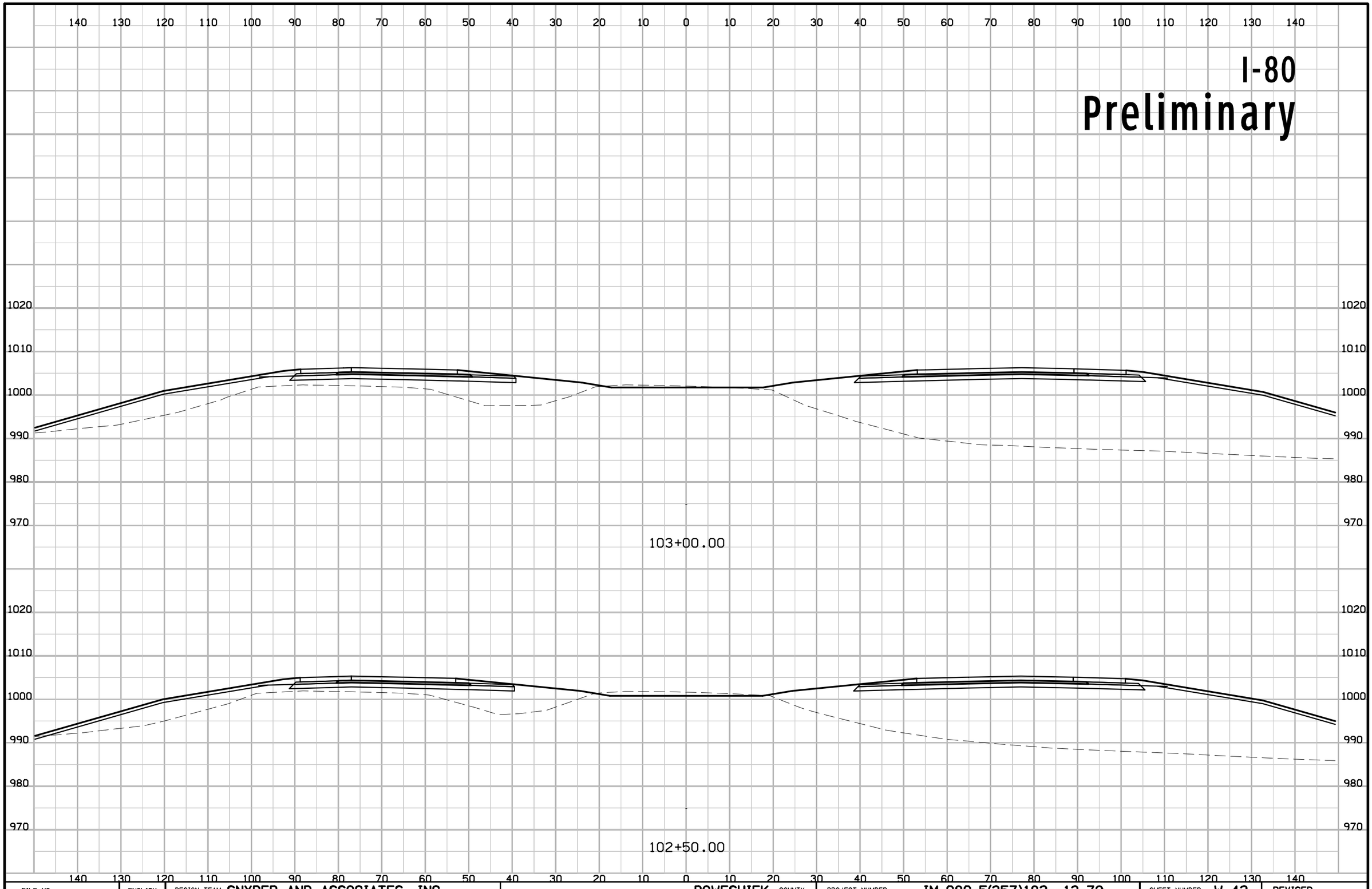
I-80
Preliminary



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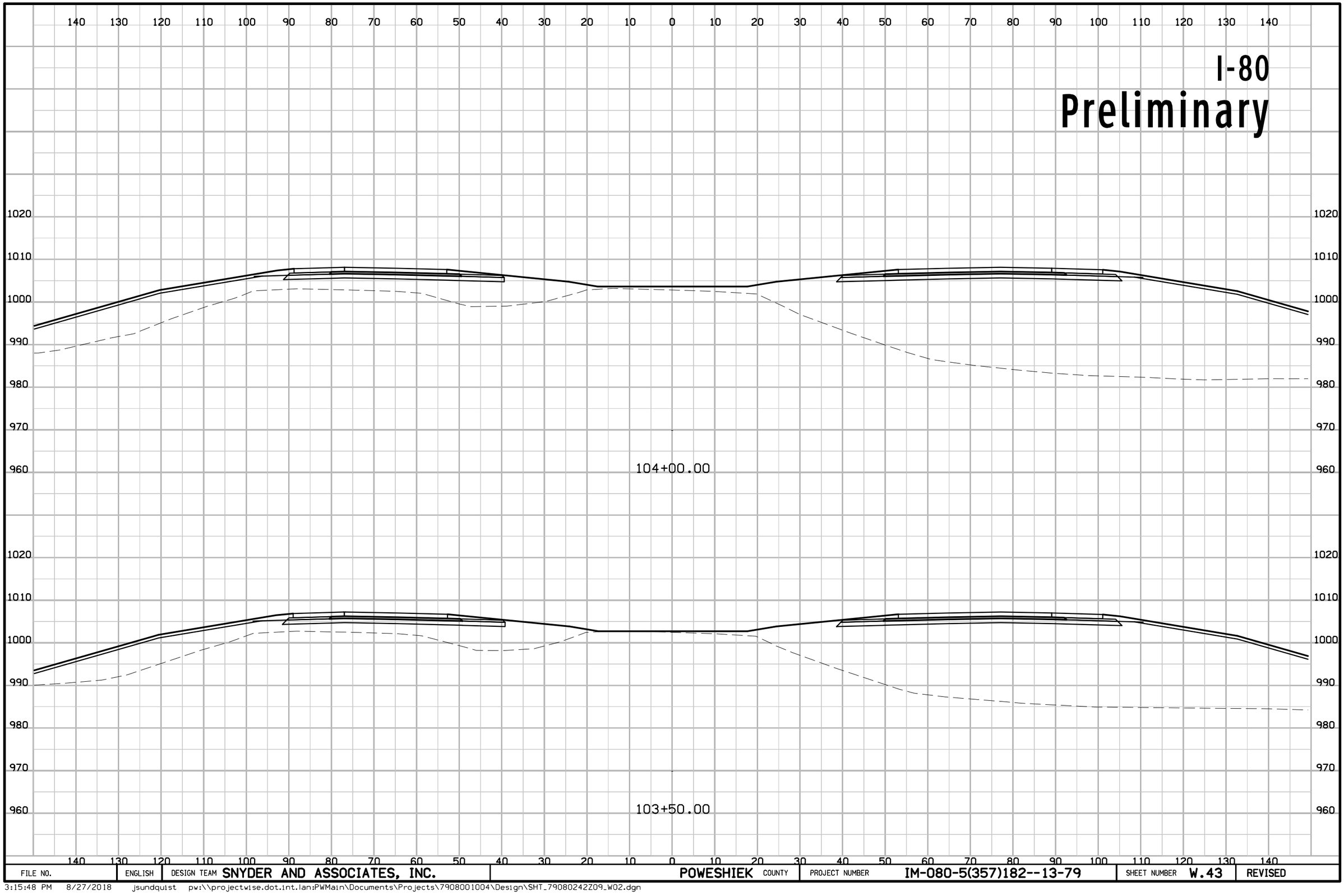
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.43	REVISED

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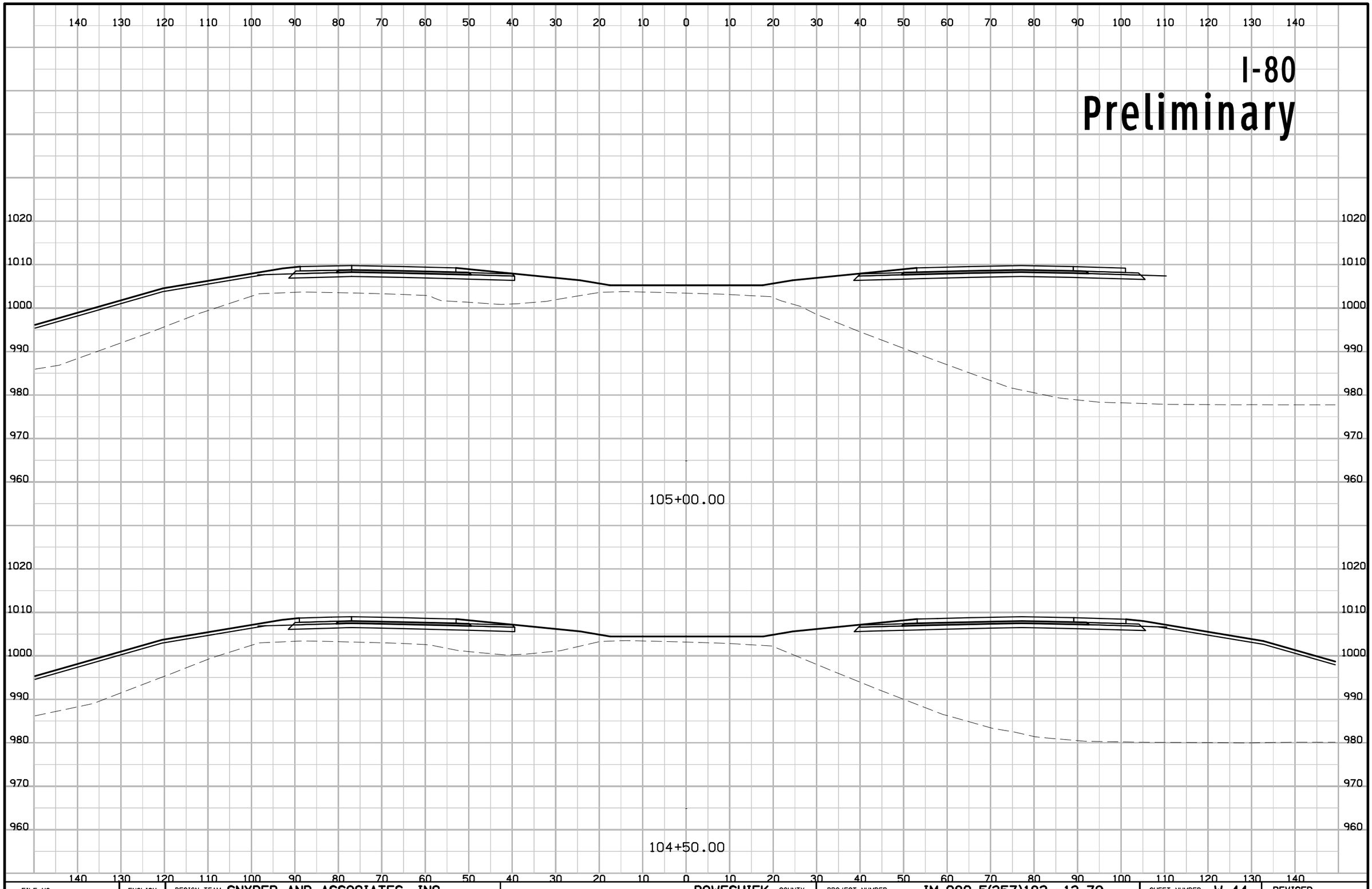
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.44	REVISED

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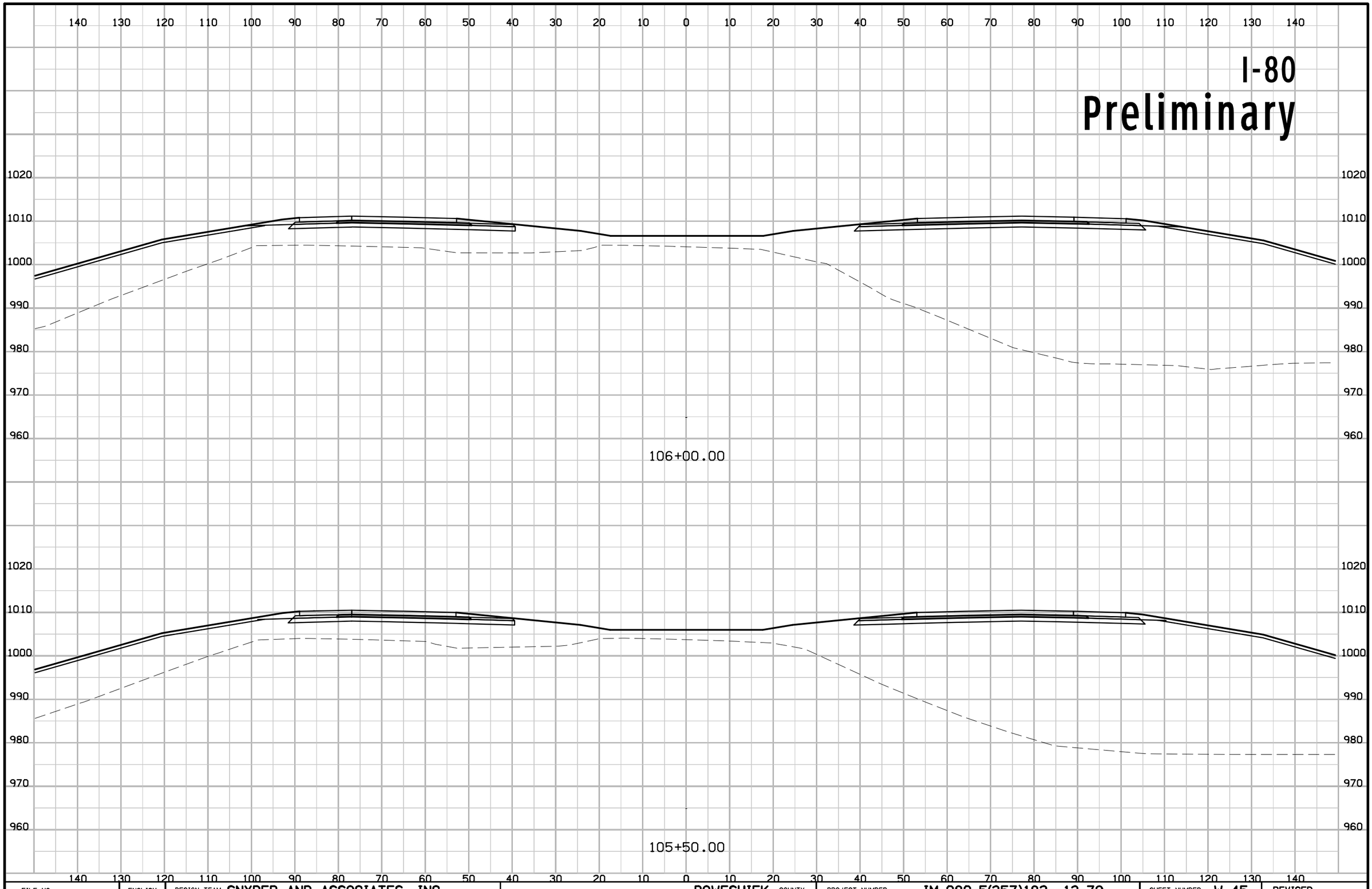
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.45	REVISED

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I-80

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

1020 1010 1000 990 980 970 960

107+00.00

1020 1010 1000 990 980 970 960 950

106+50.00

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 SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.46	REVISED

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I-80

Preliminary

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1020 1010 1000 990 980 970 960

108+00.00

107+50.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.47	REVISED

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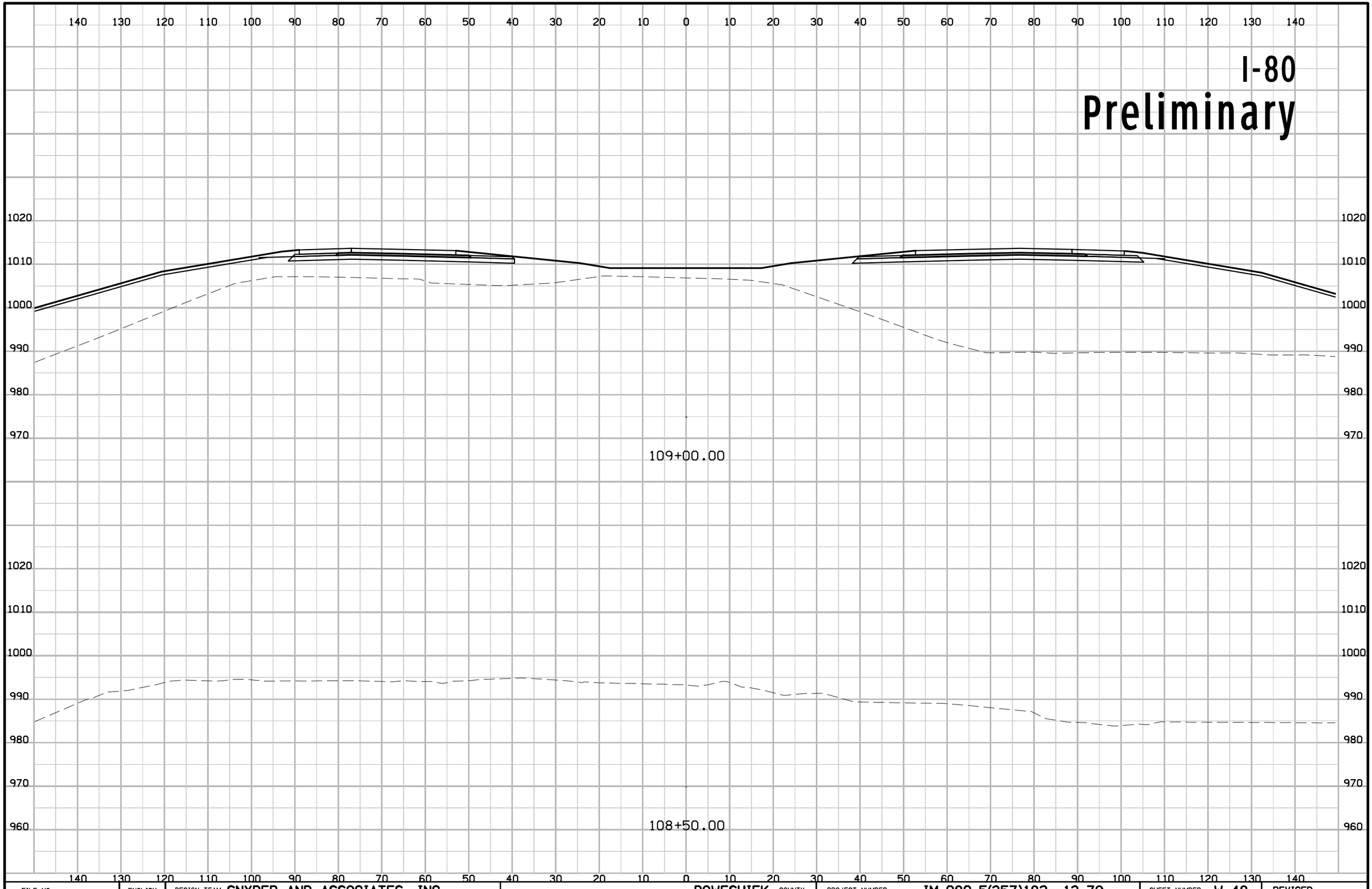
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.48	REVISED

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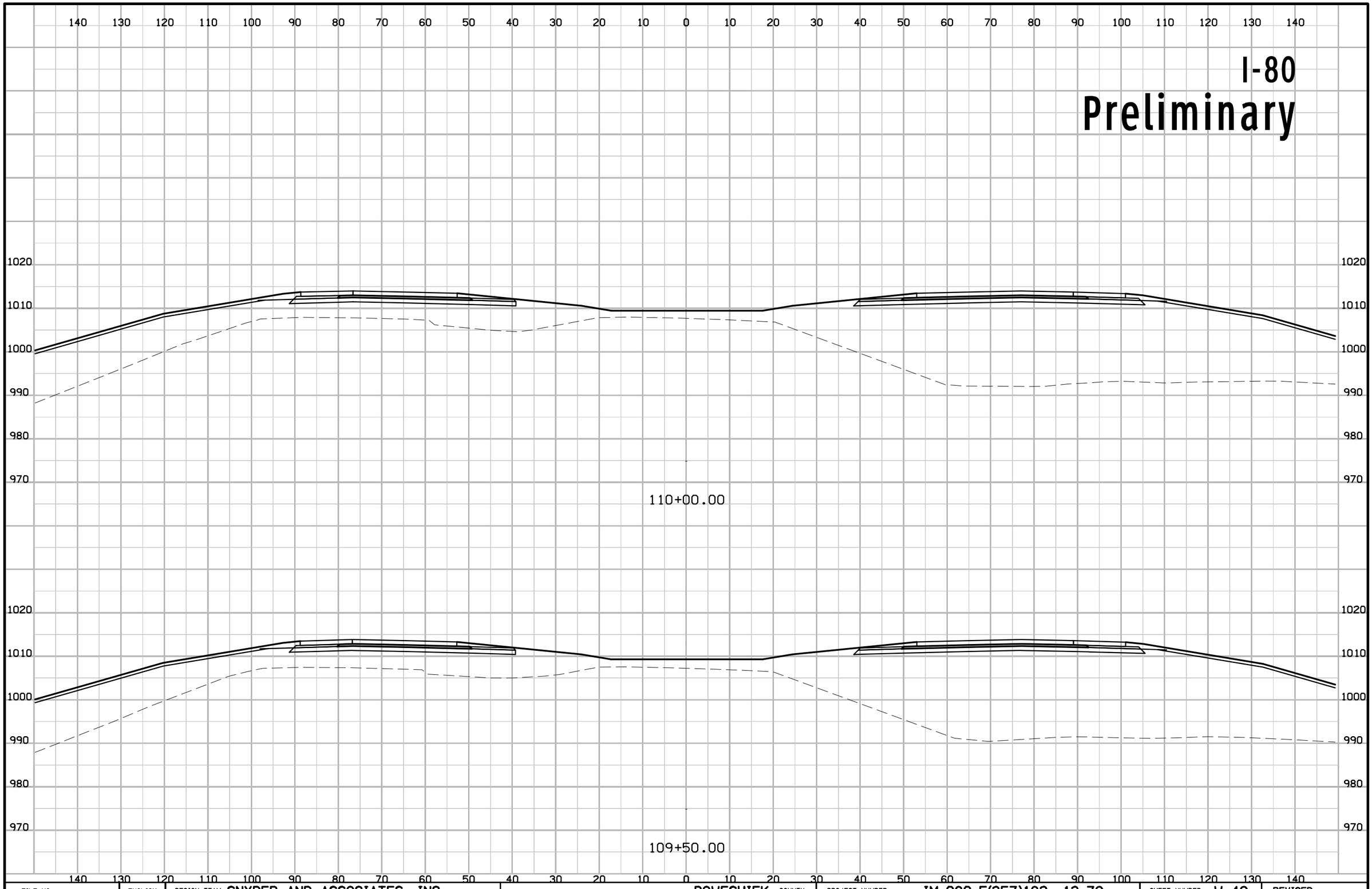
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.49	REVISED

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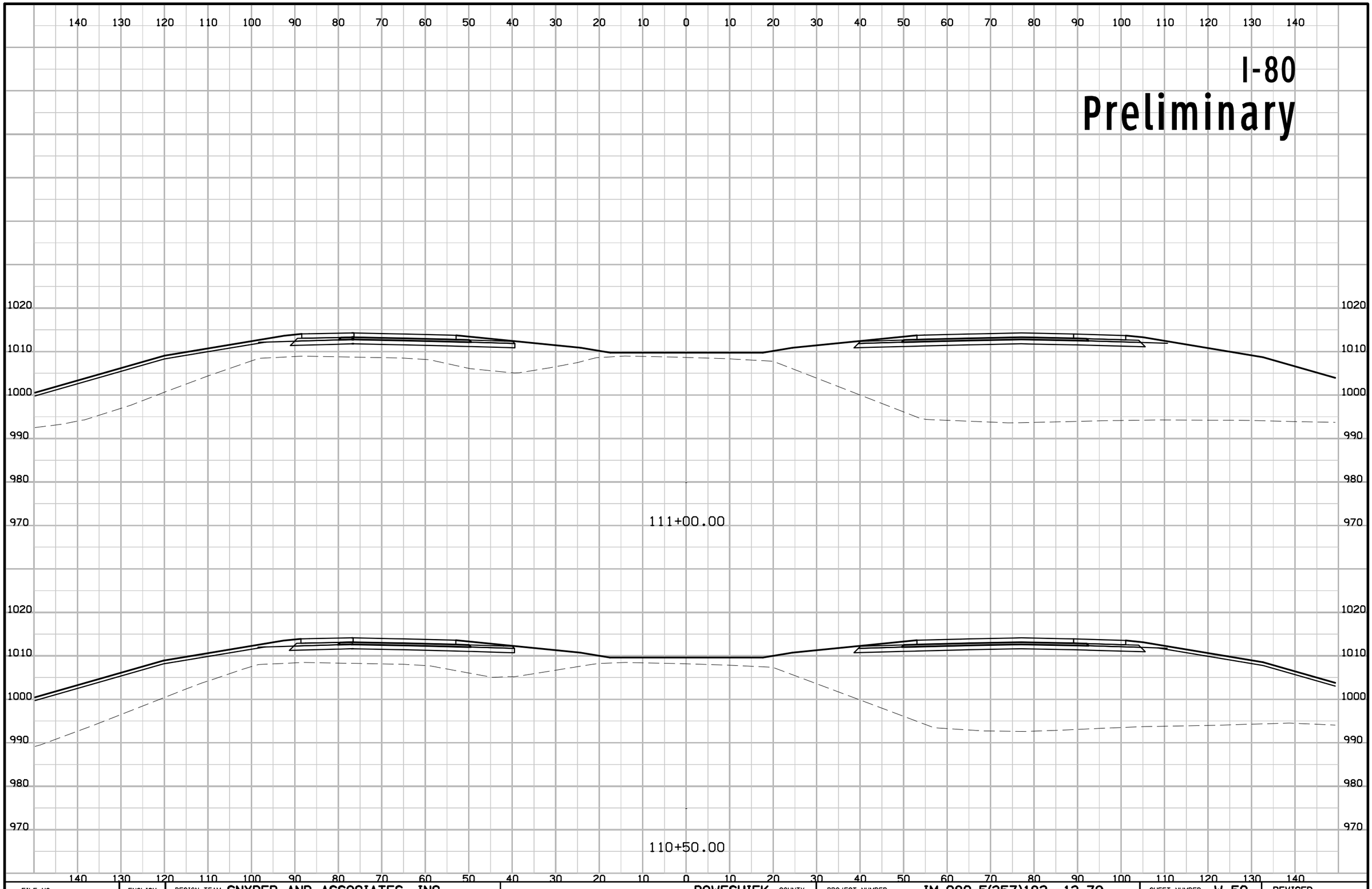
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.50	REVISED

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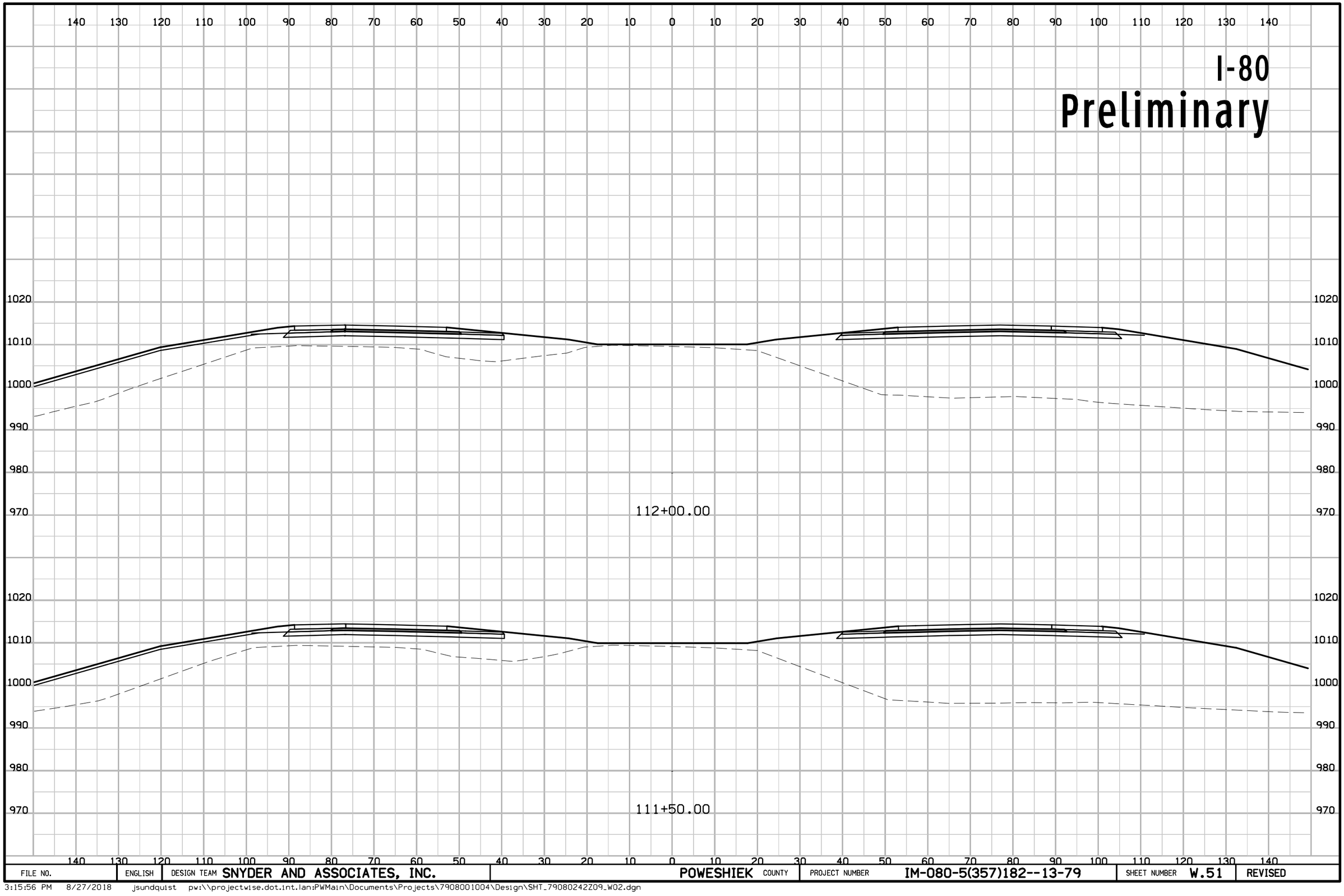
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.51	REVISED

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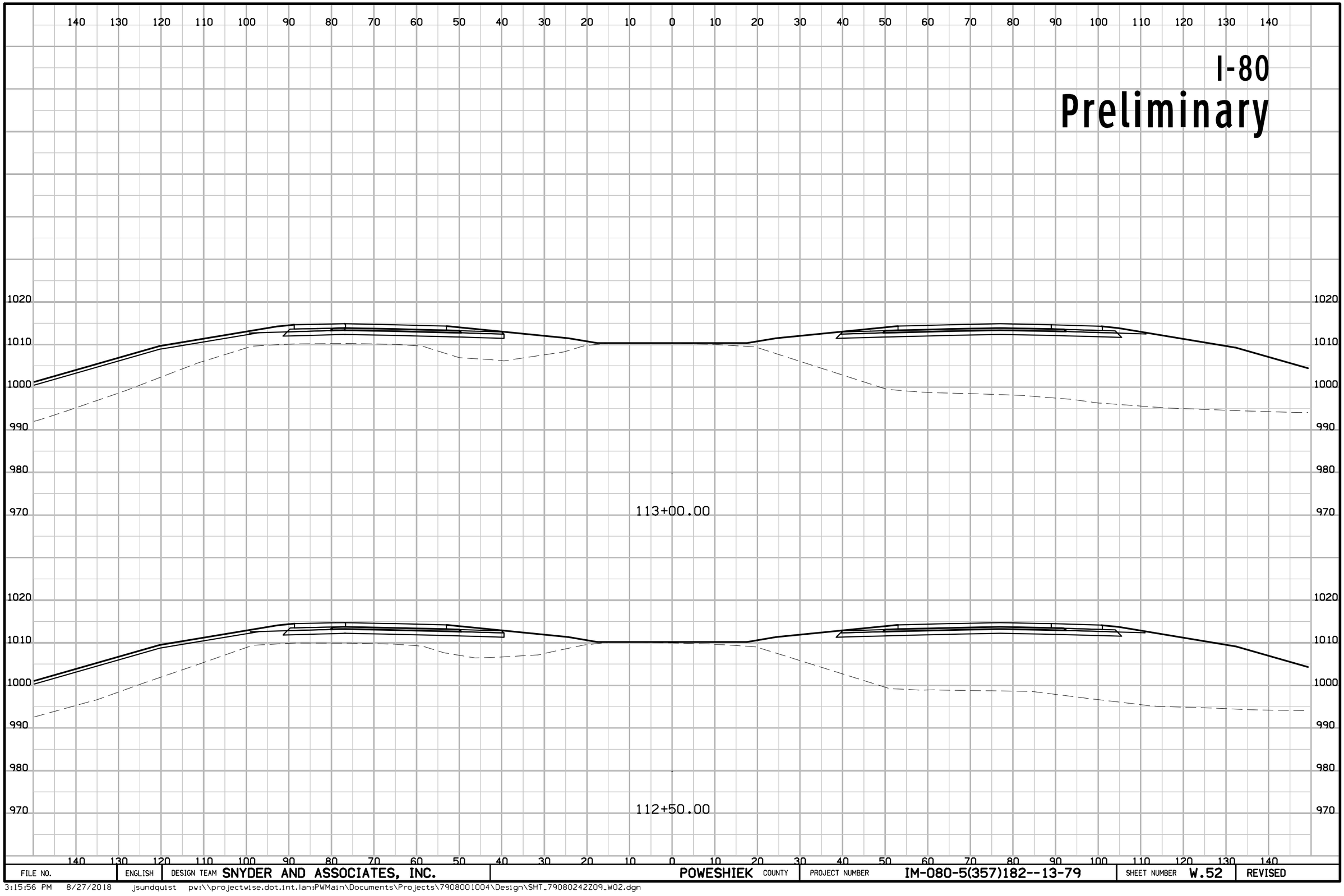
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.52	REVISED

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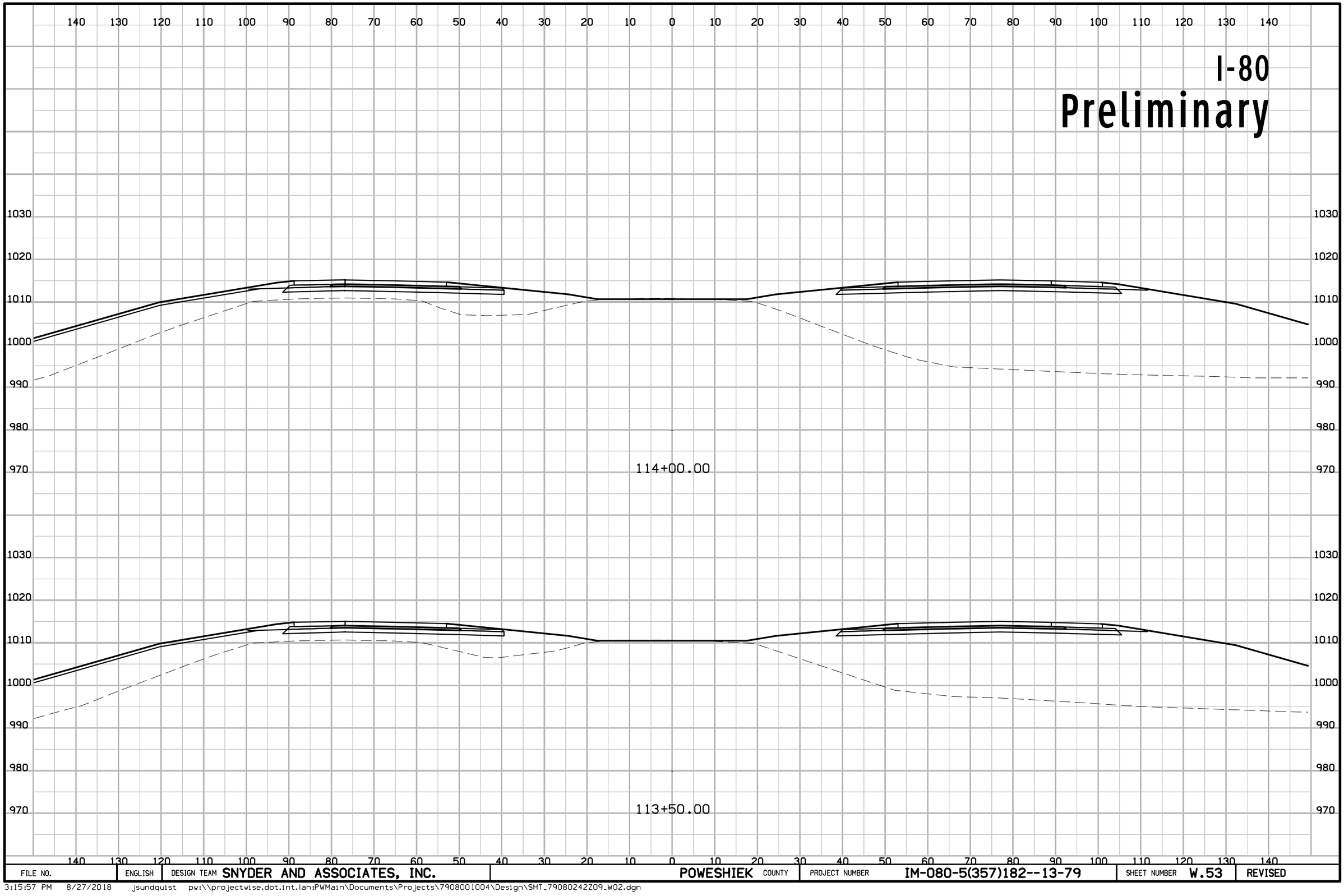
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.53	REVISED

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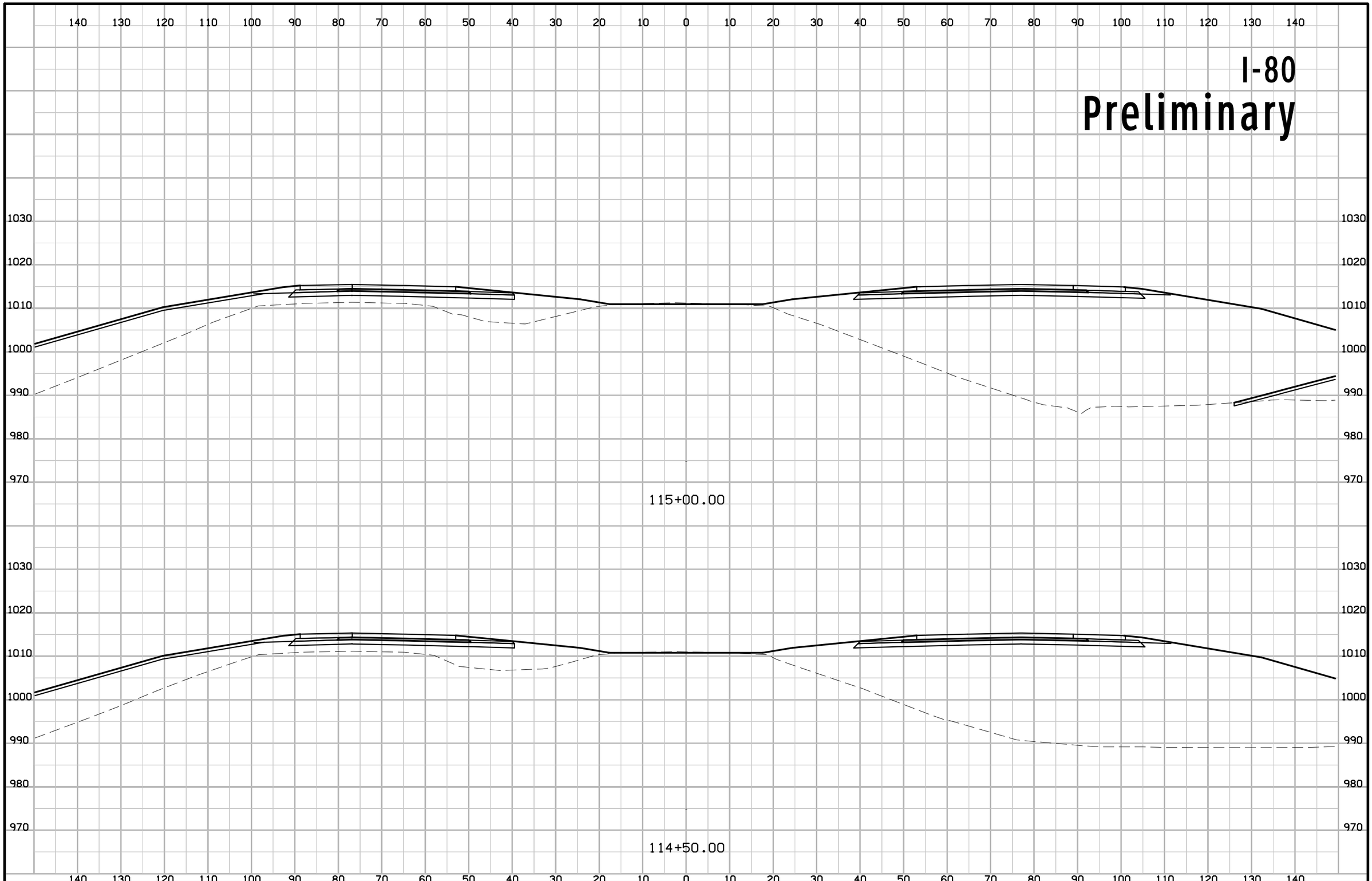
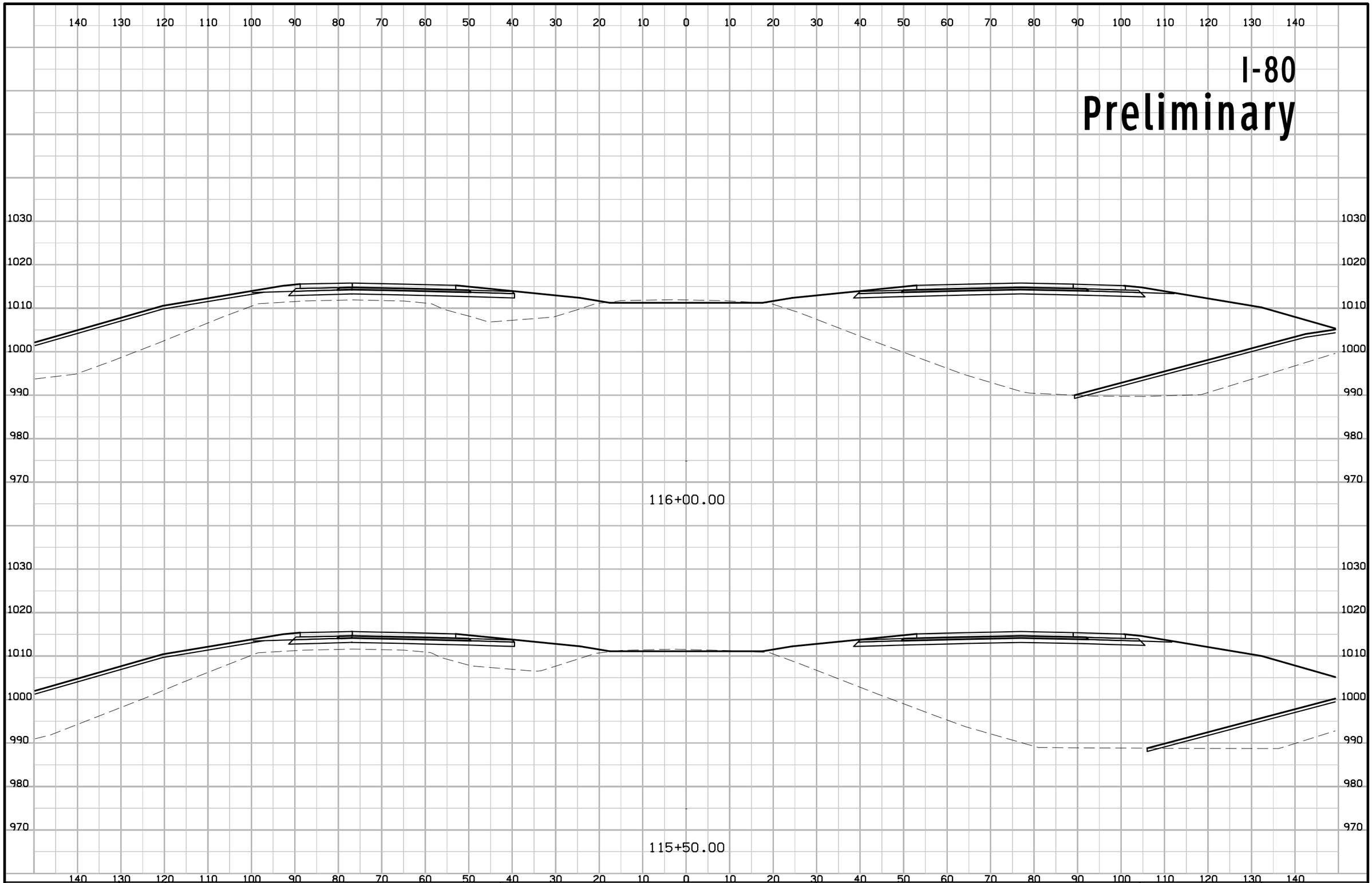
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.54	REVISED

3:15:58 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.55	REVISED

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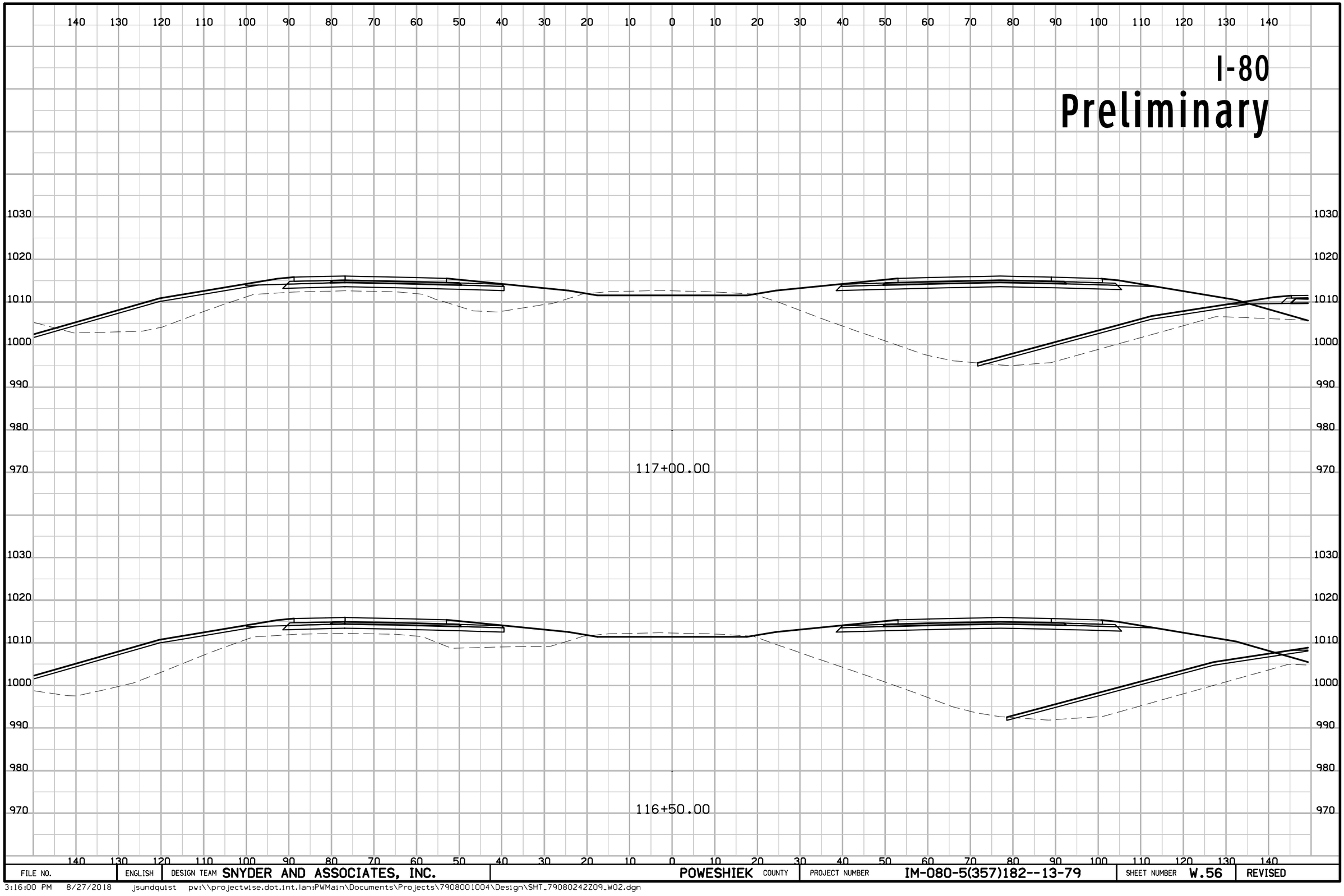
I-80
Preliminary

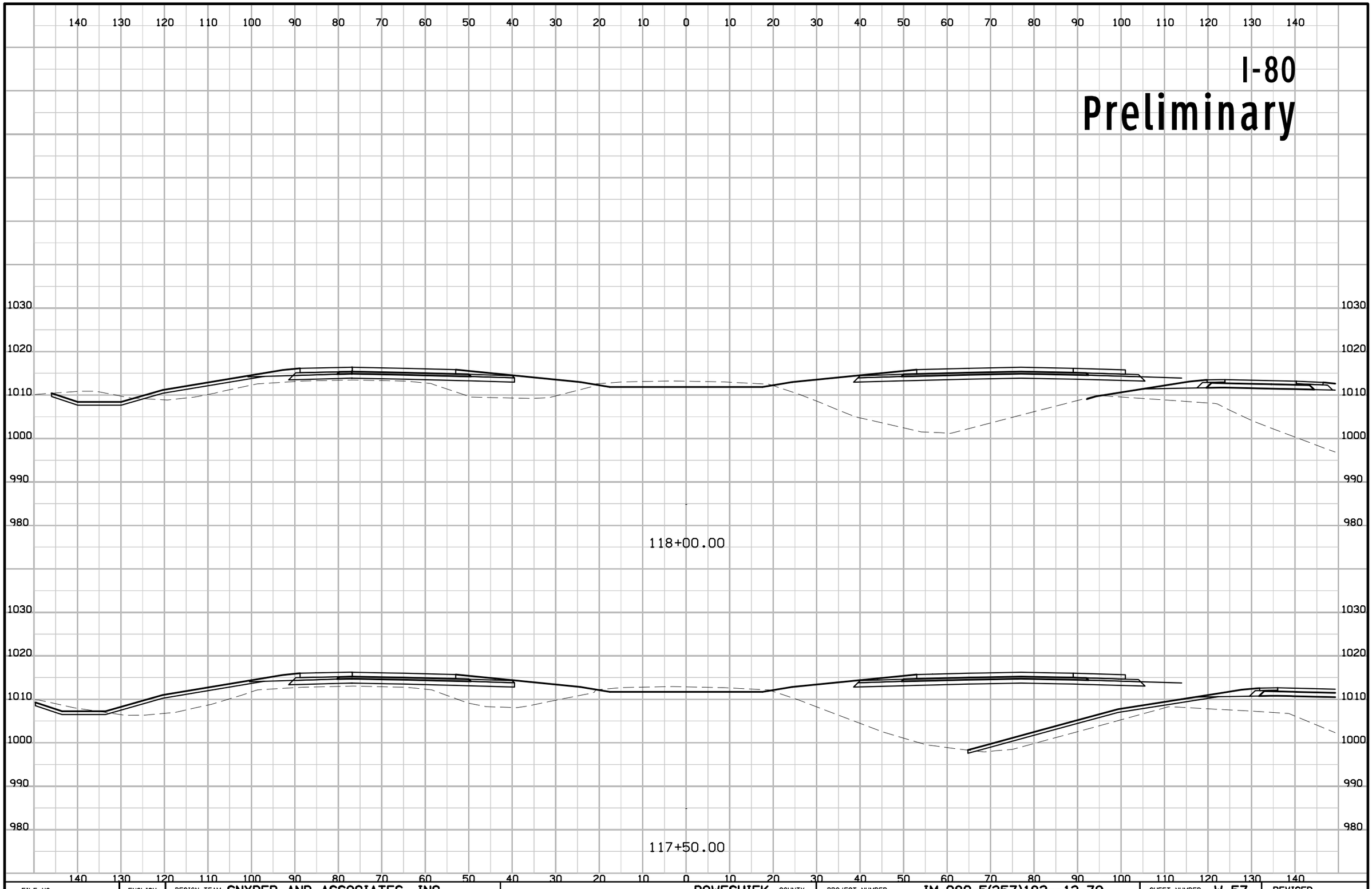


FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.56	REVISED

3:16:00 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

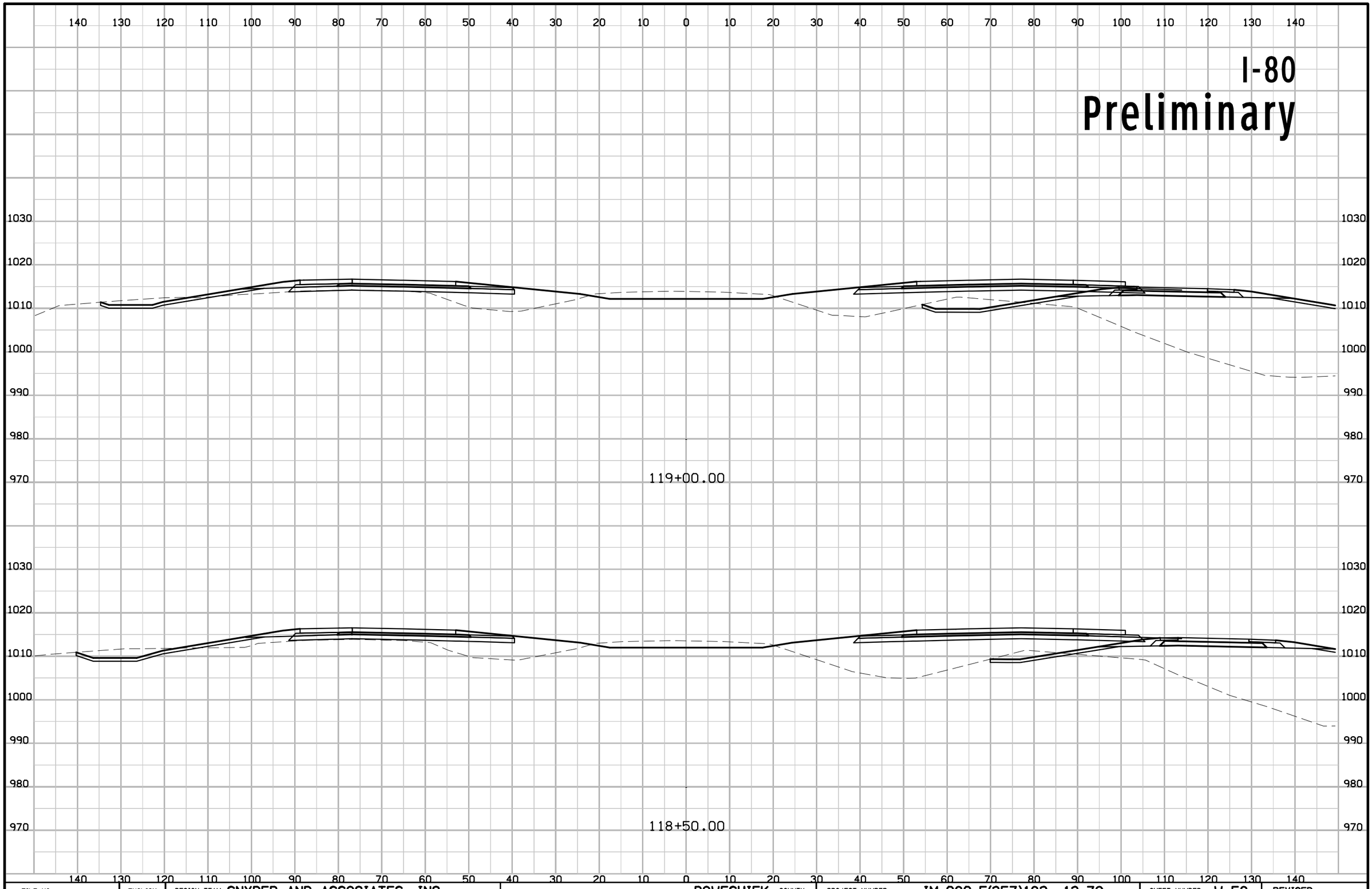
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.57	REVISED

3:16:01 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.58	REVISED

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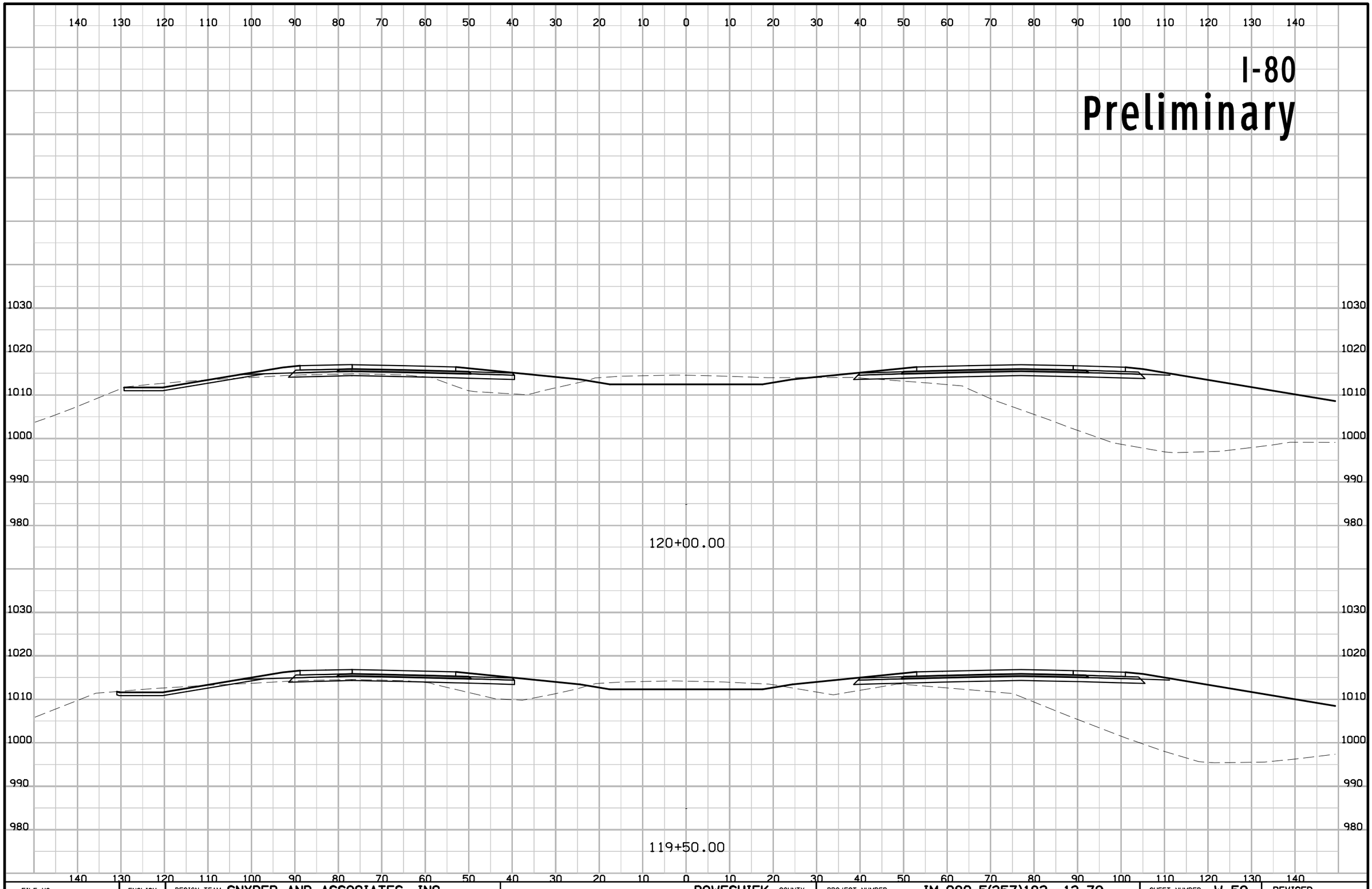
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.59	REVISED

3:16:03 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80
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

1030
1020
1010
1000
990
980

121+00.00

120+50.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.60	REVISED

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I-80
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

1030
1020
1010
1000
990
980

122+00.00

1030
1020
1010
1000
990
980

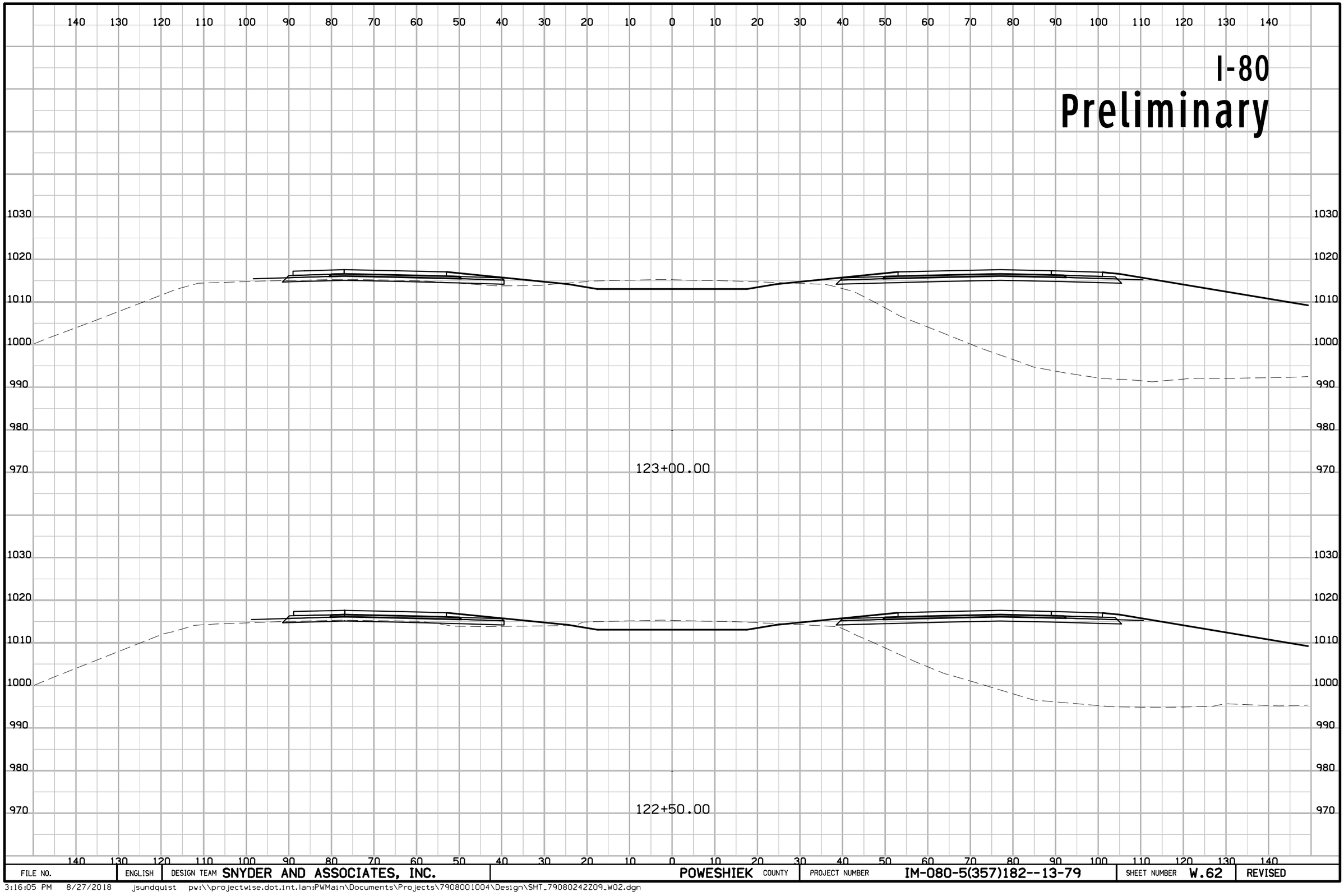
121+50.00

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 SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.61	REVISED

3:16:04 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.62	REVISED

3:16:05 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

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

1030
1020
1010
1000
990
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970

124+00.00

123+50.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.63	REVISED

3:16:06 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

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

1030
1020
1010
1000
990
980
970

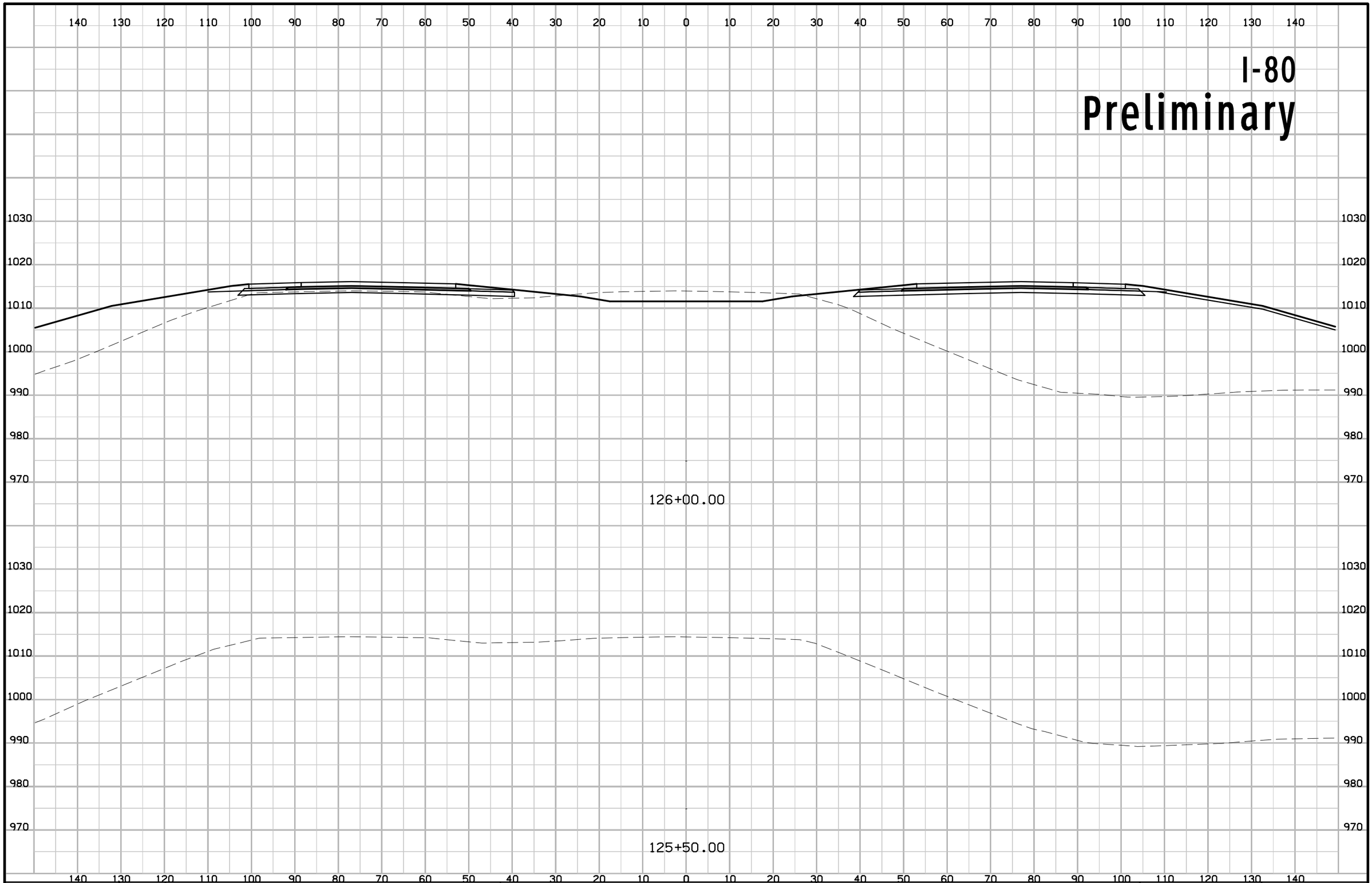
125+00.00

124+50.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.64	REVISED

3:16:07 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.65	REVISED

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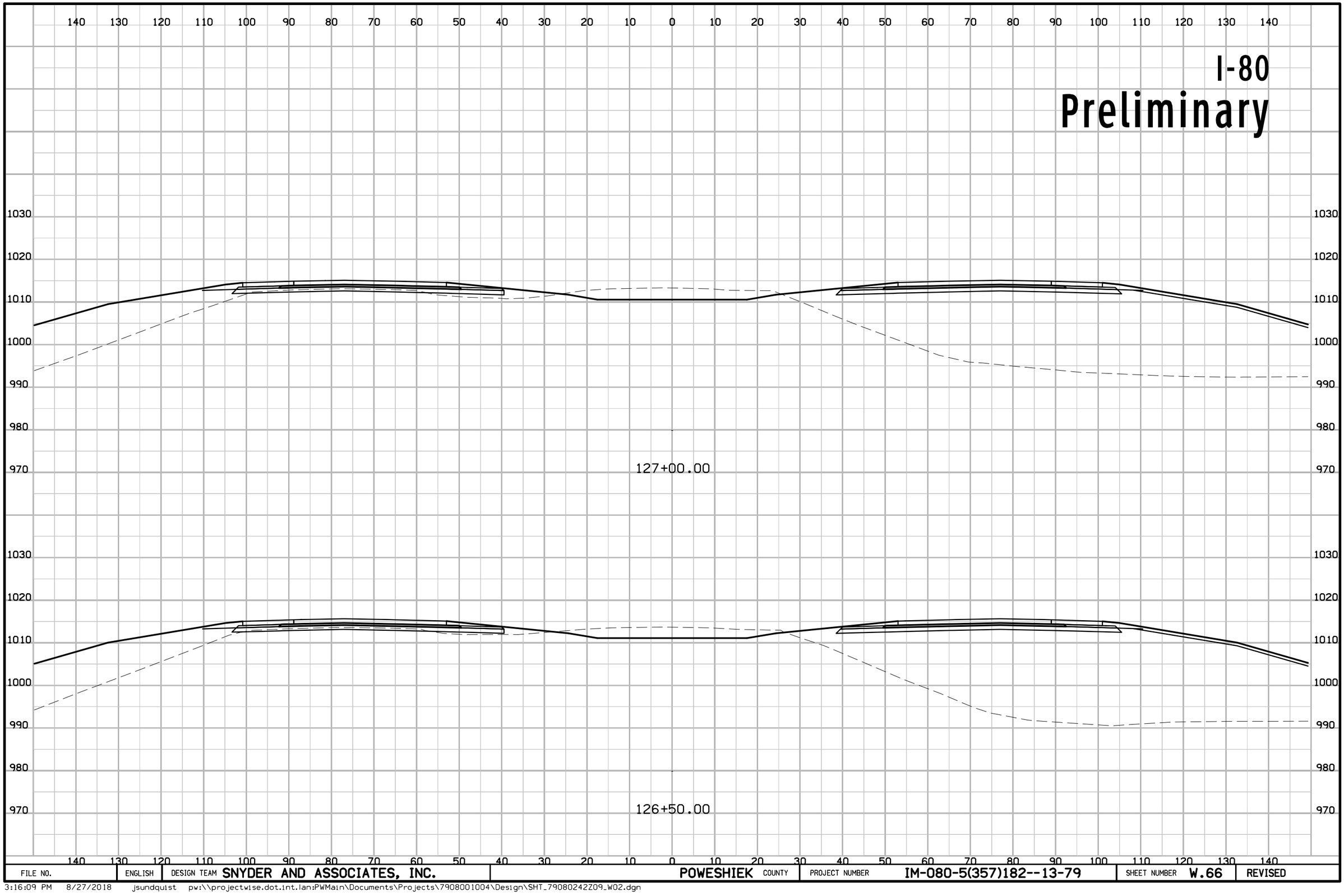
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.66	REVISED

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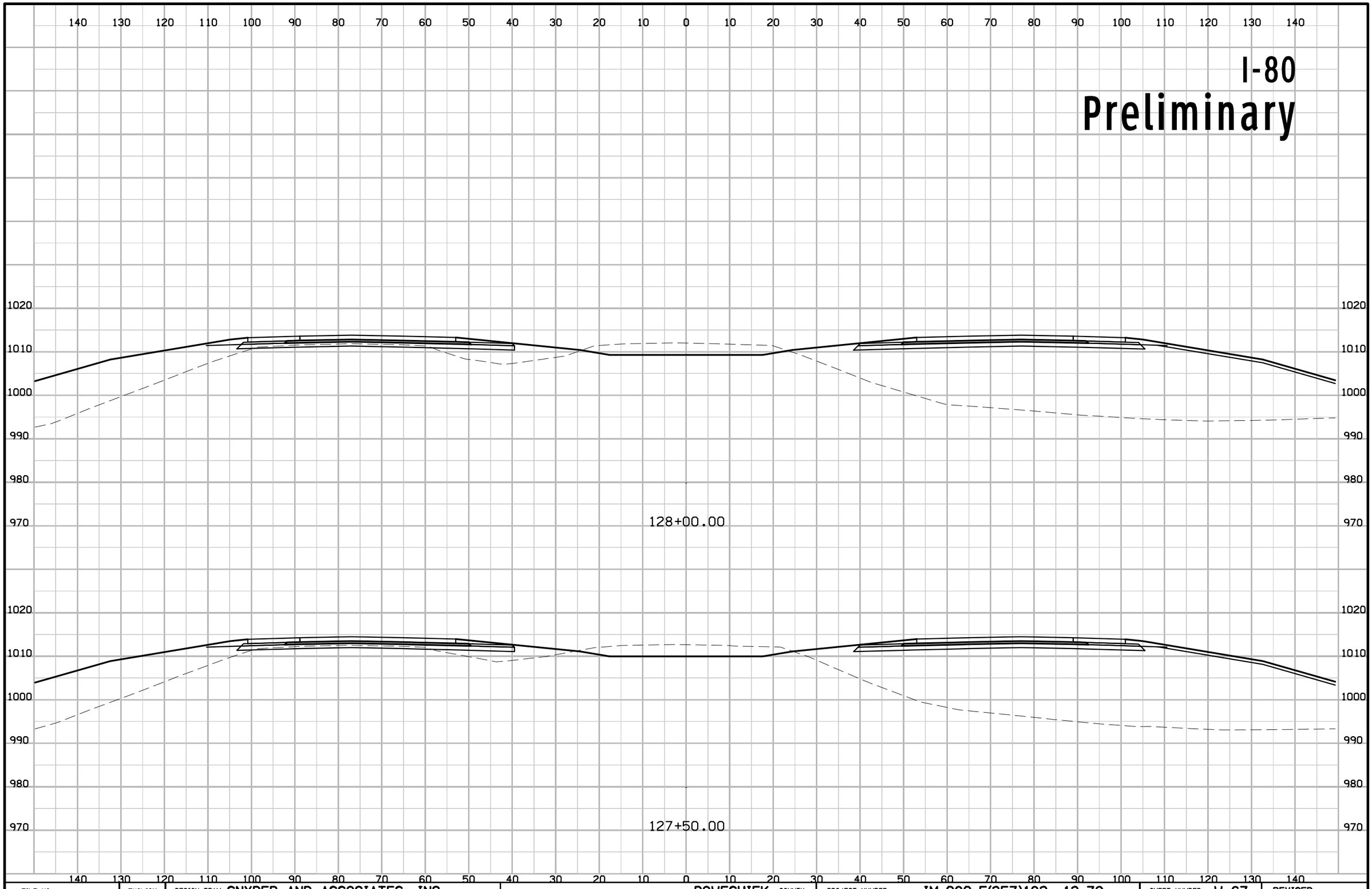
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.67	REVISED

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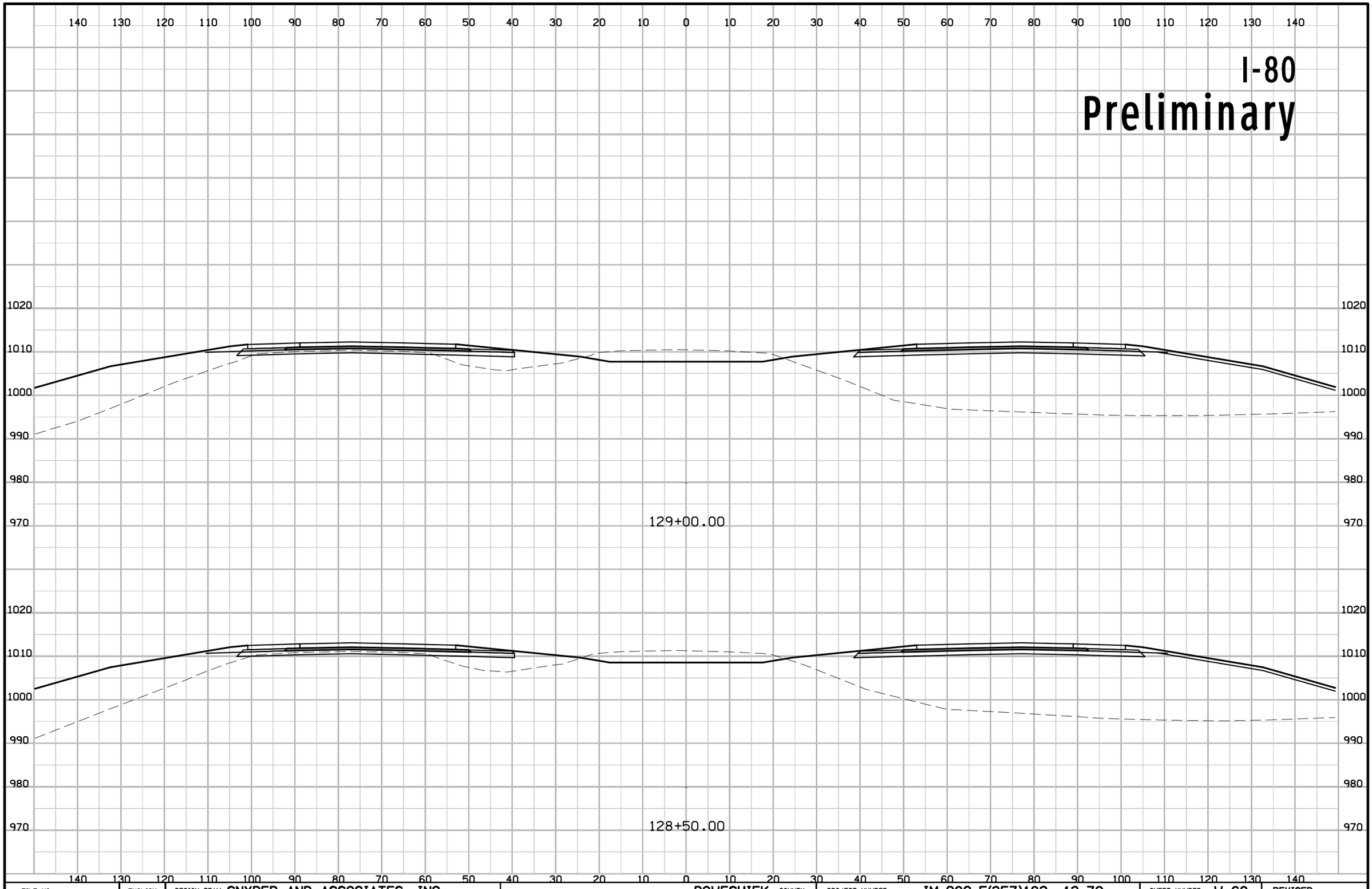
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.68	REVISED

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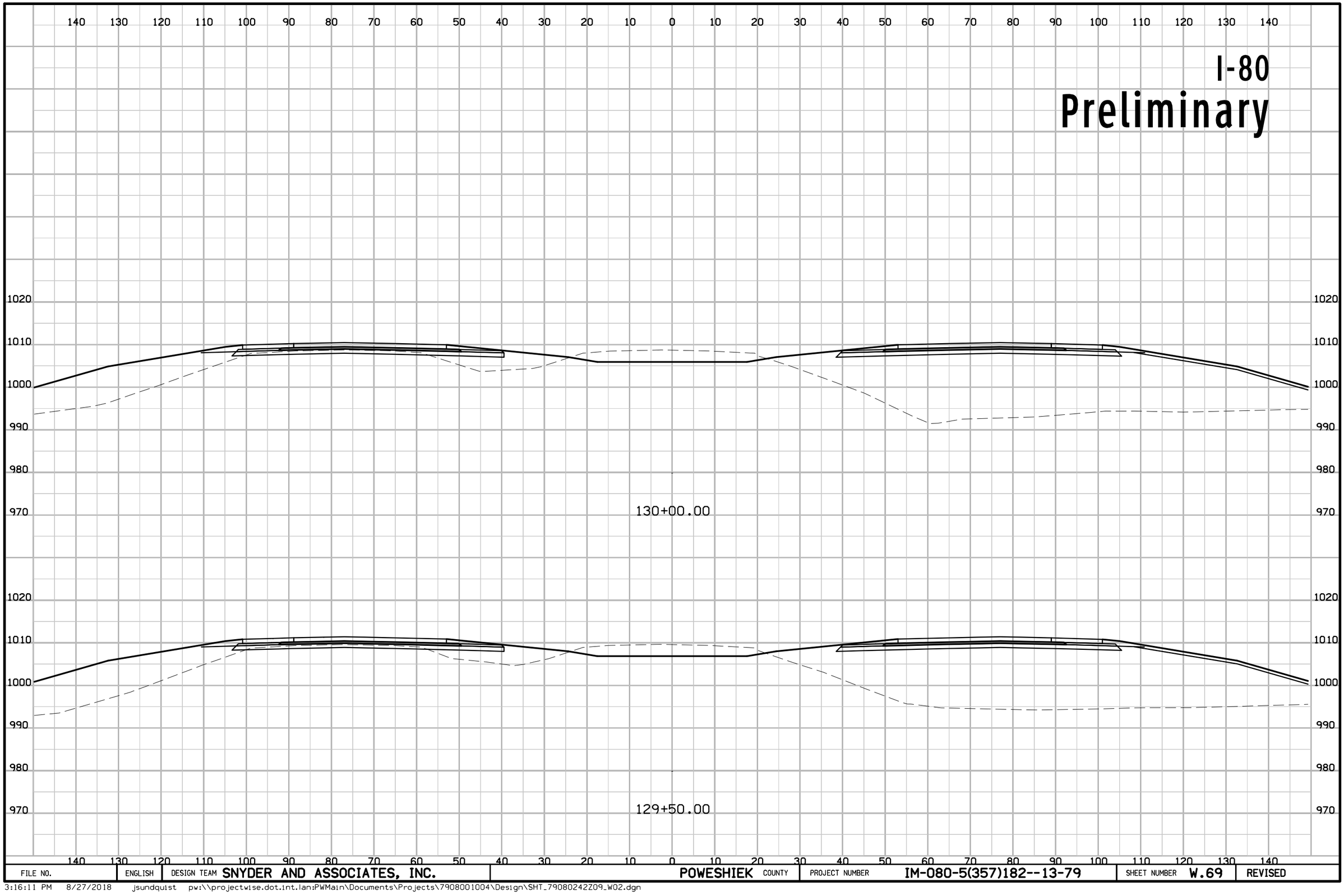
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.69	REVISED

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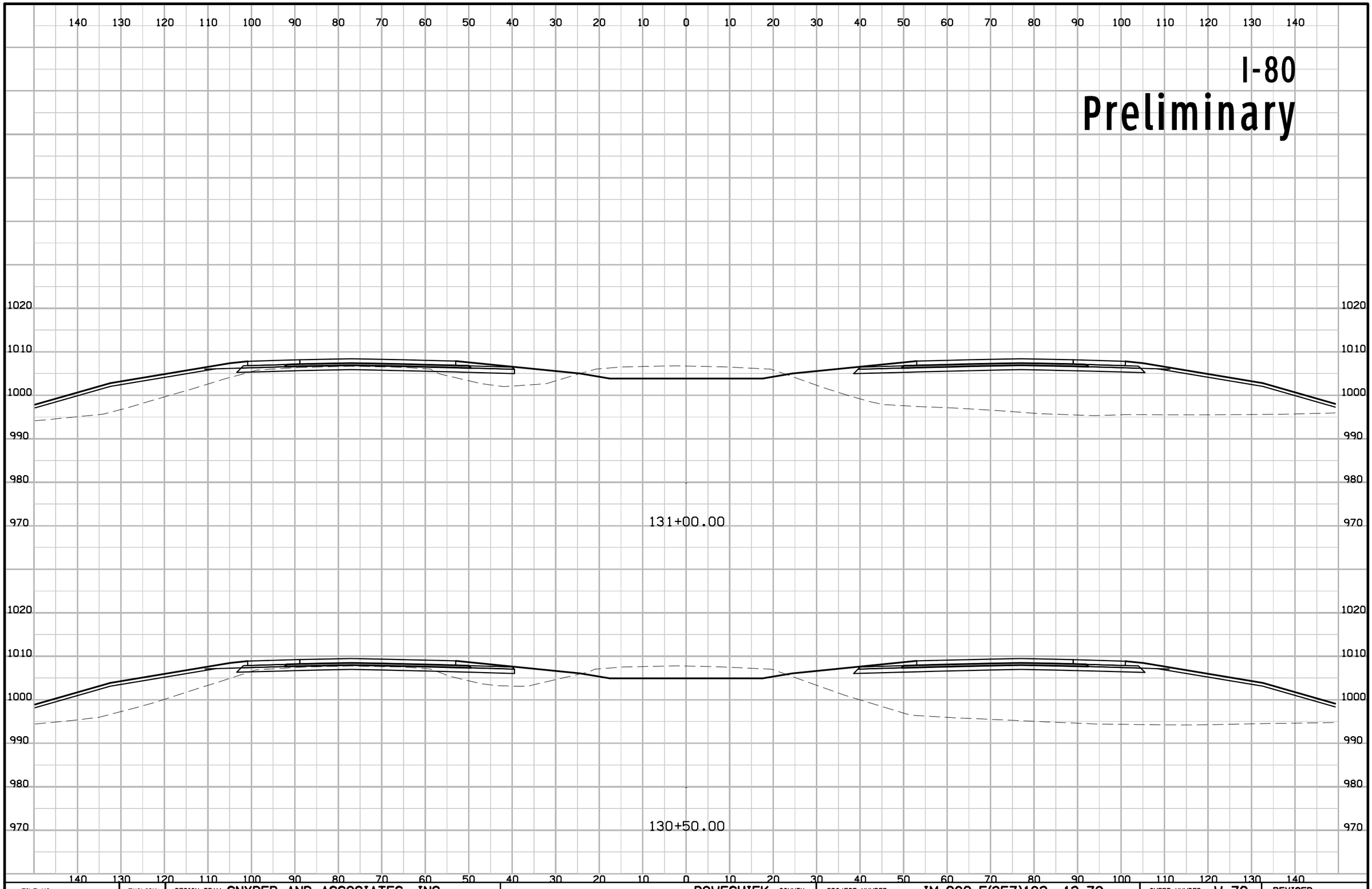
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.70	REVISED

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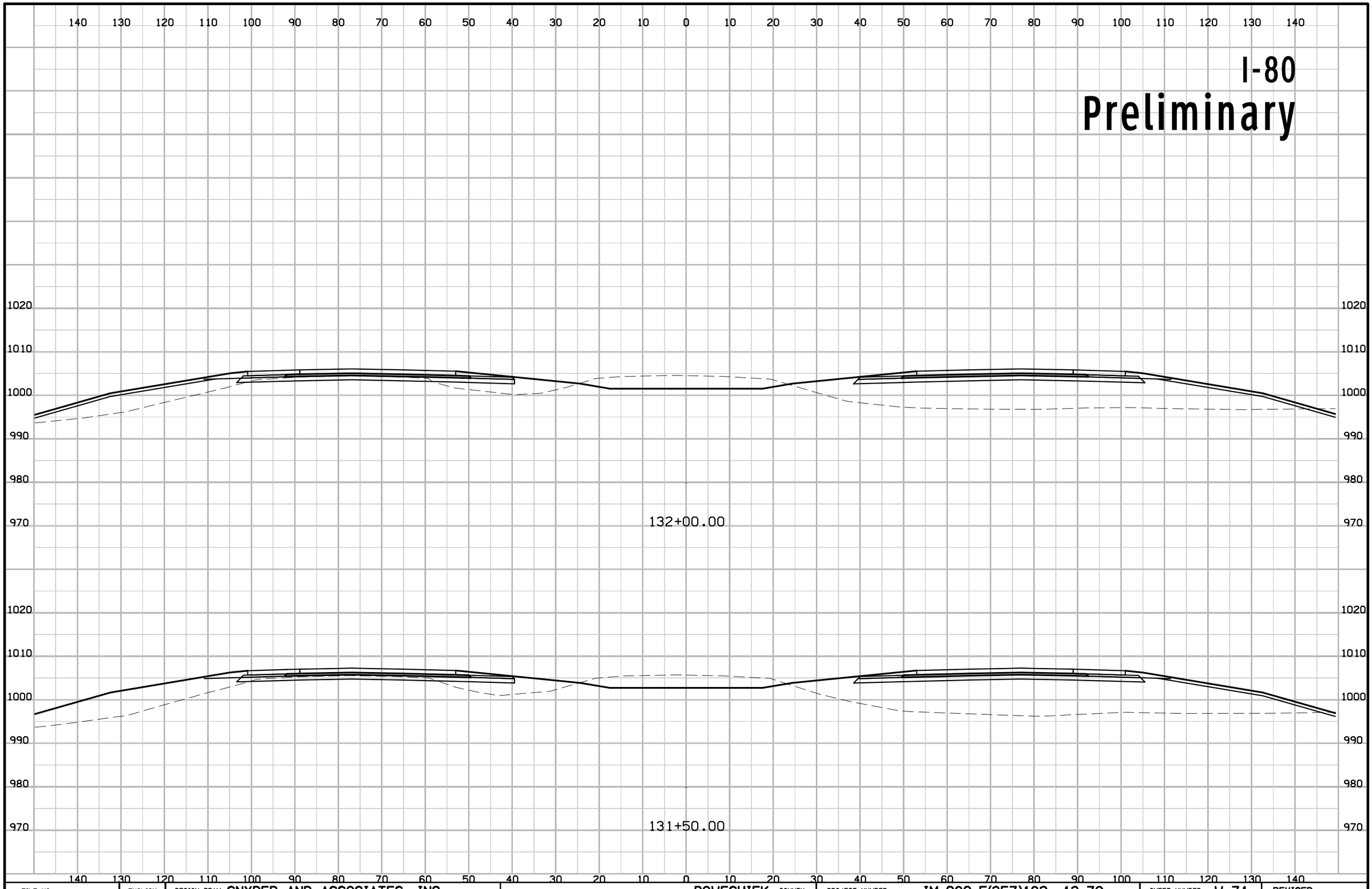
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.71	REVISED

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I-80

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

1010
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133+50.00

1010
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970

133+00.00

1010
1000
990
980
970

132+50.00

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 SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.72	REVISED

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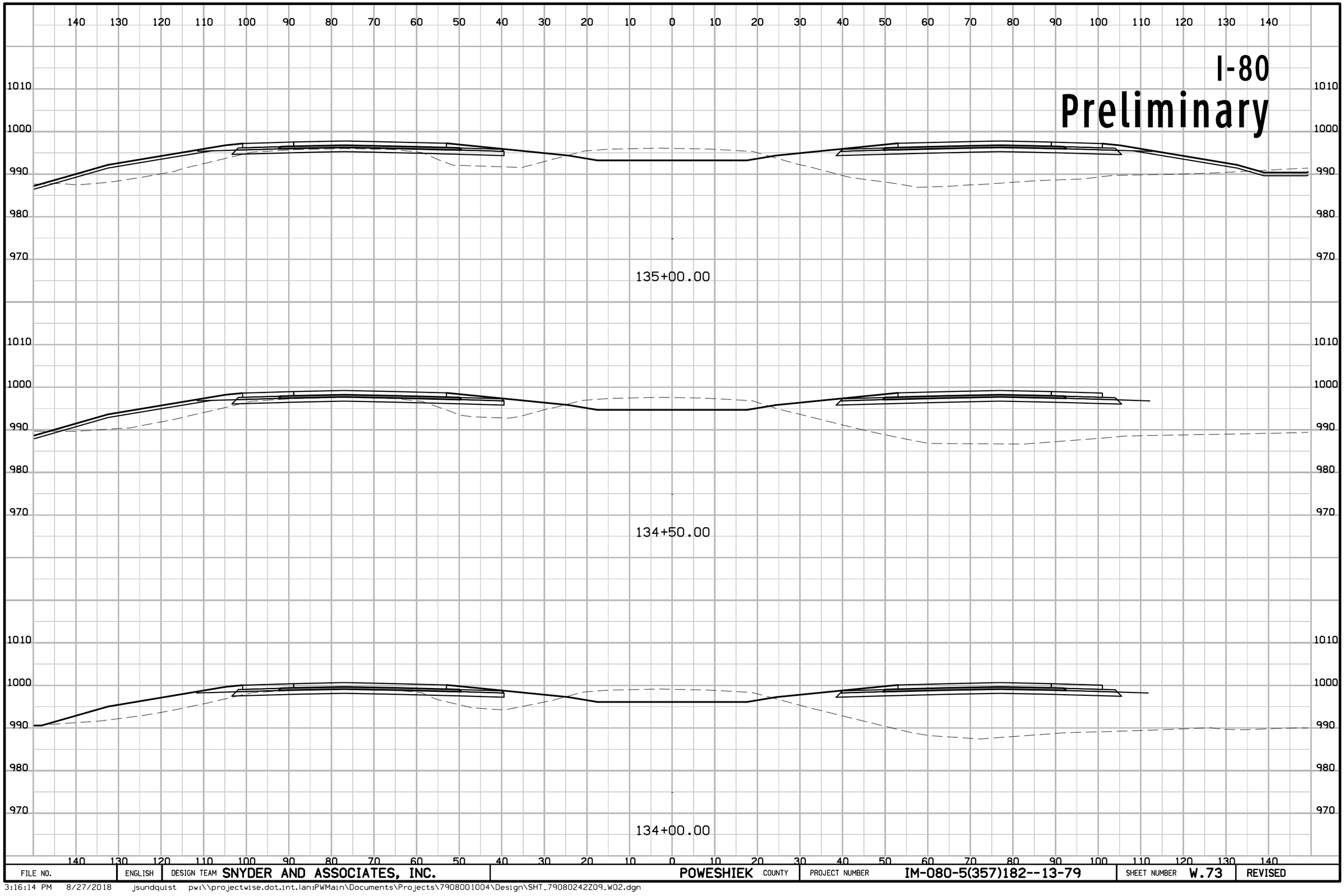
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.73	REVISED

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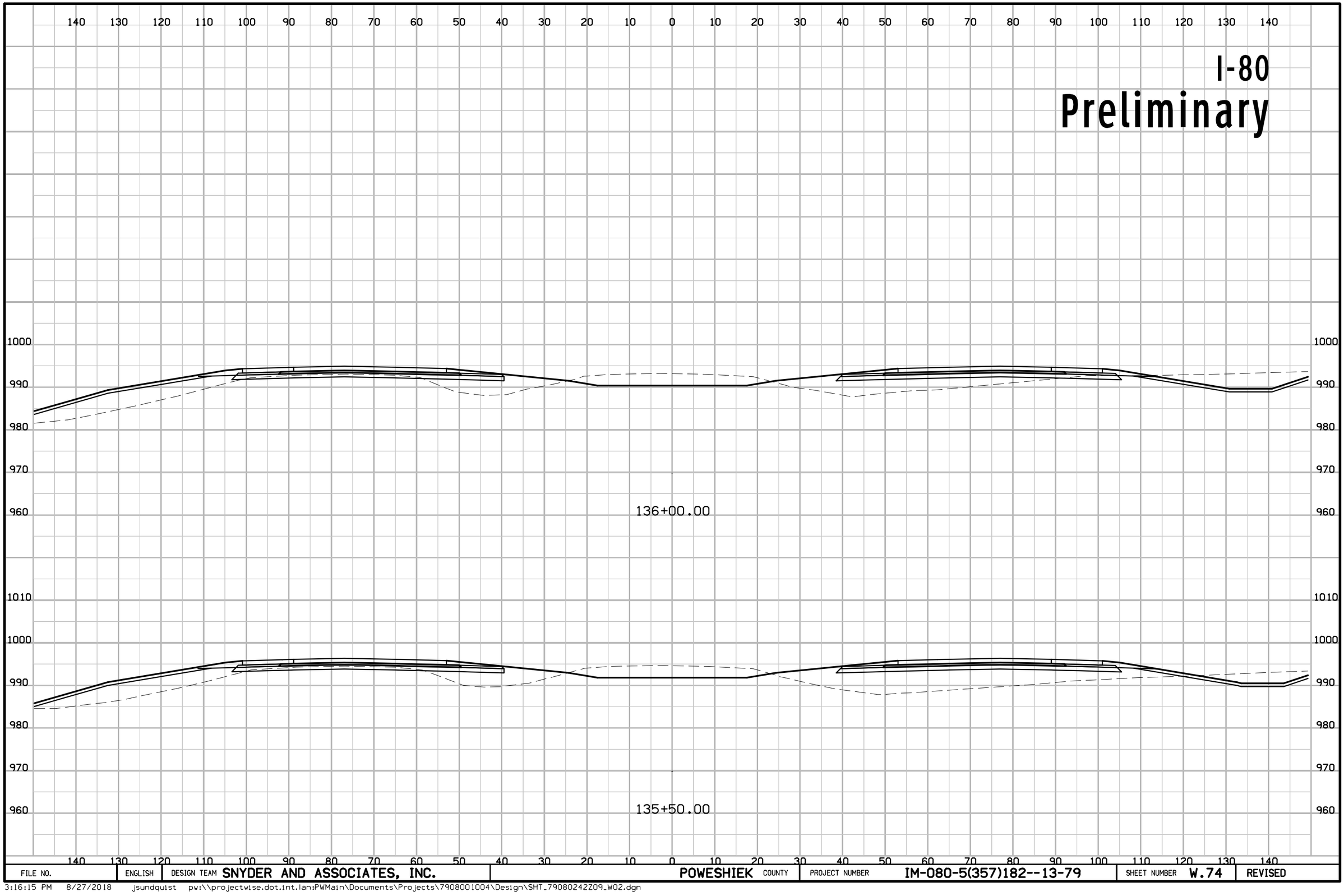
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.74	REVISED

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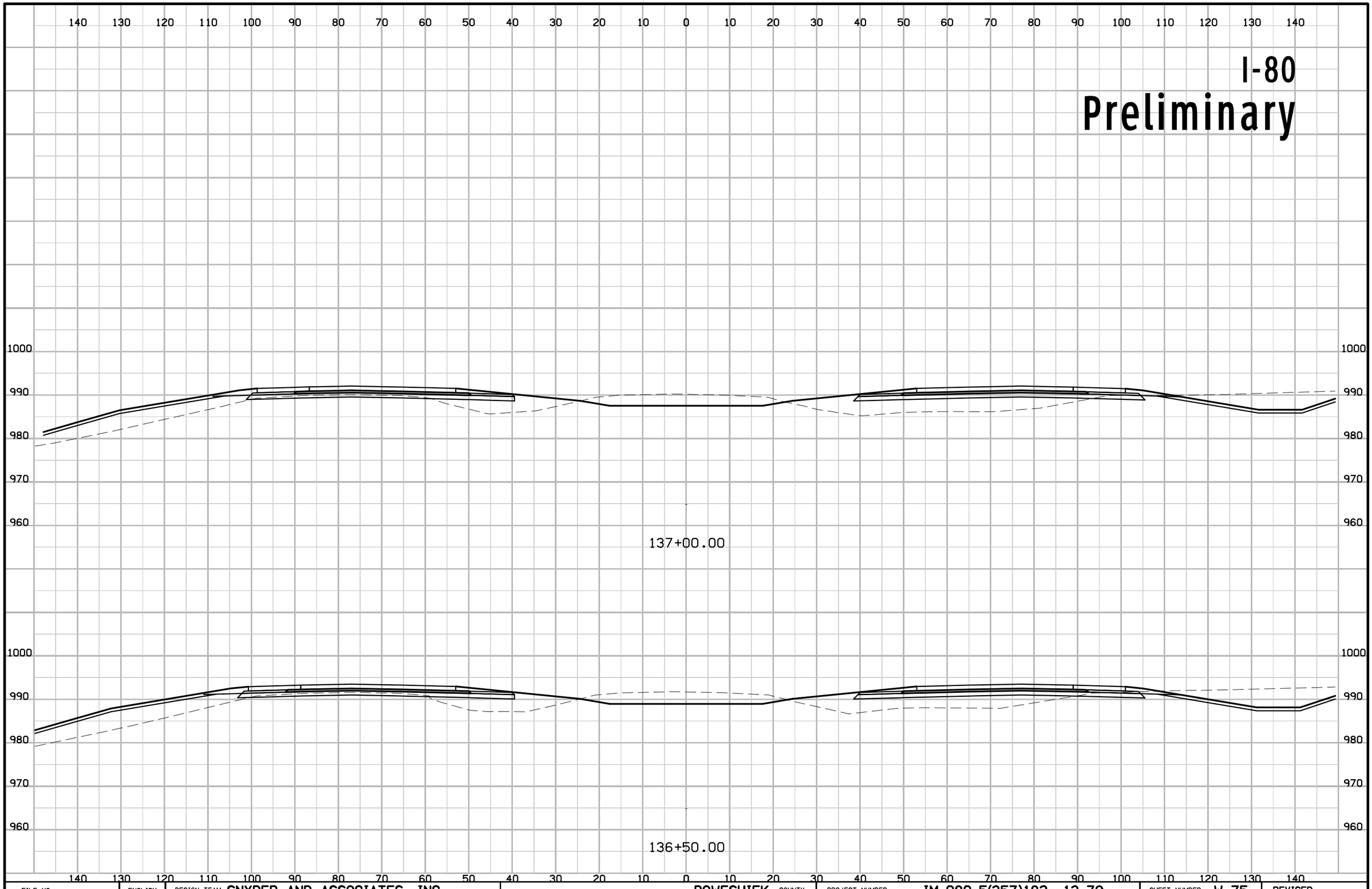
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.75	REVISED

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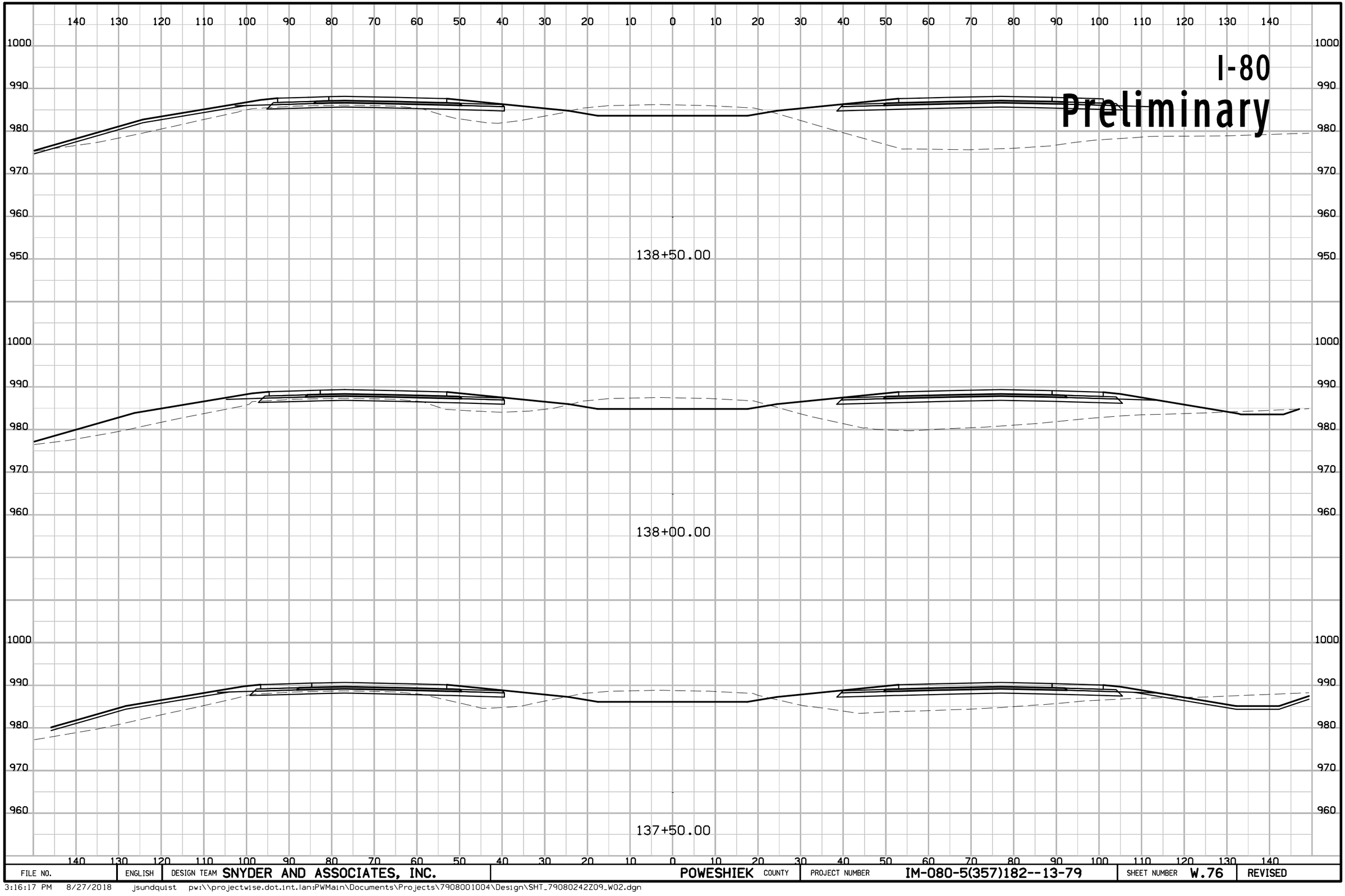
I-80

Preliminary



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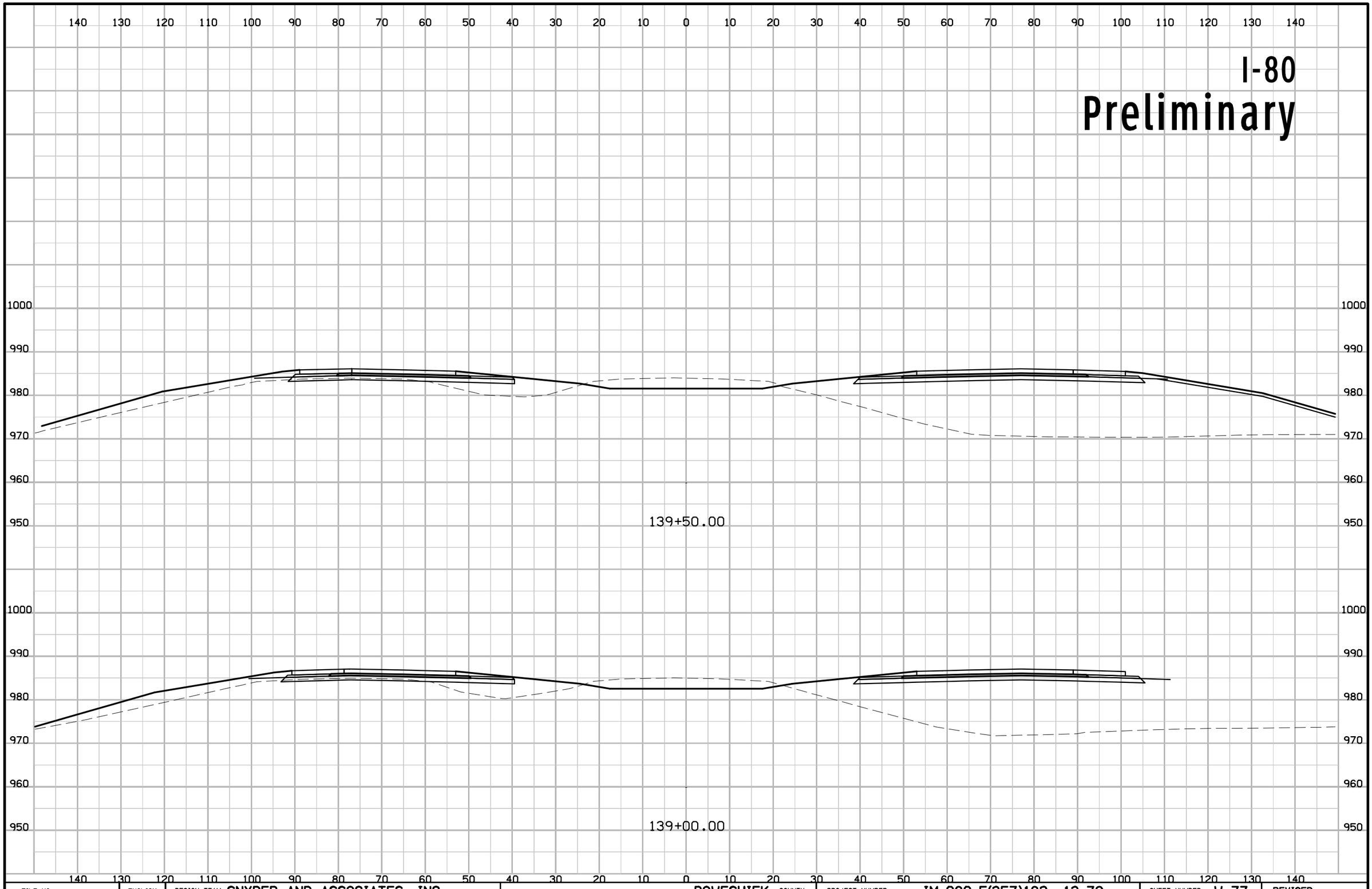
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.77	REVISED

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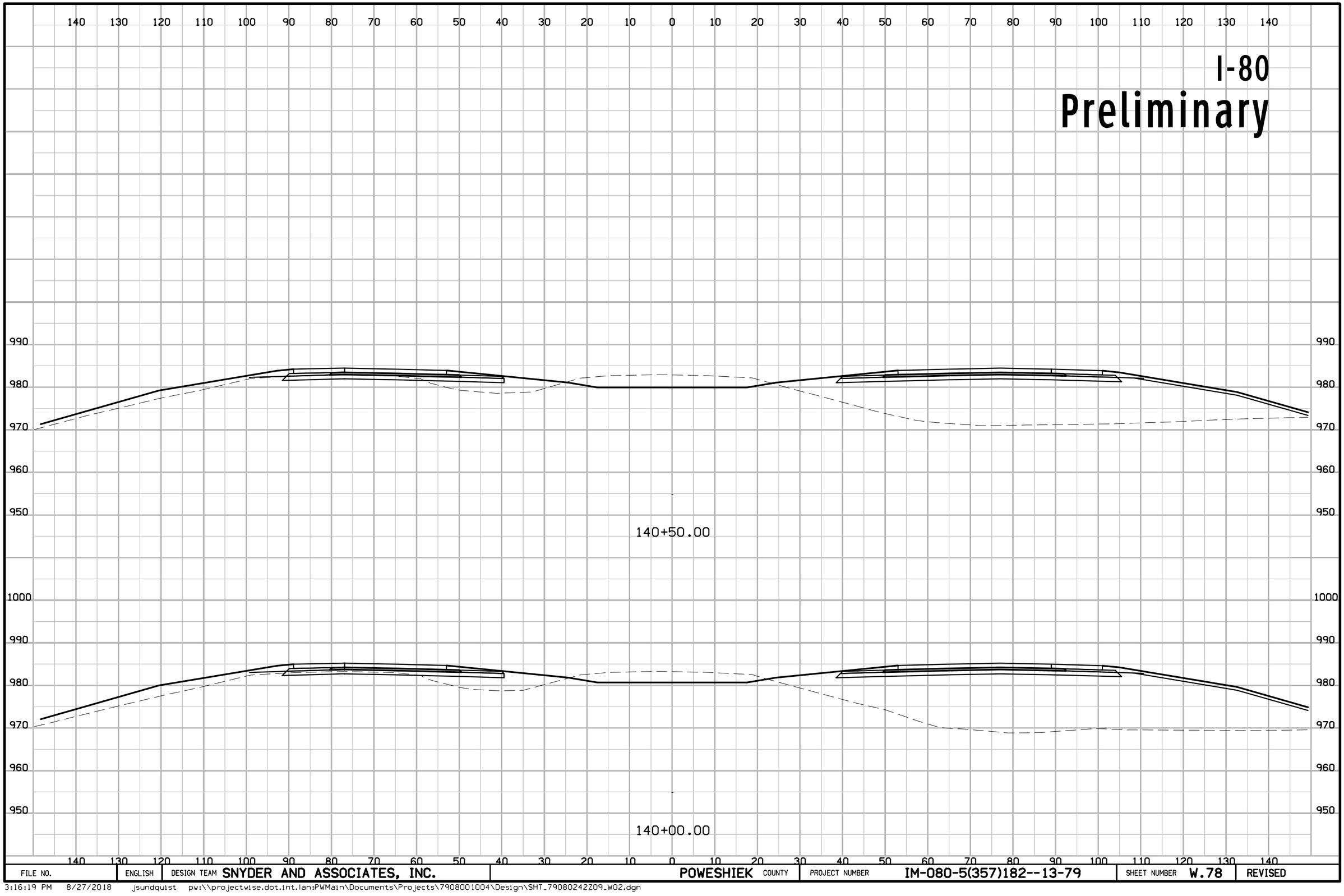
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.78	REVISED

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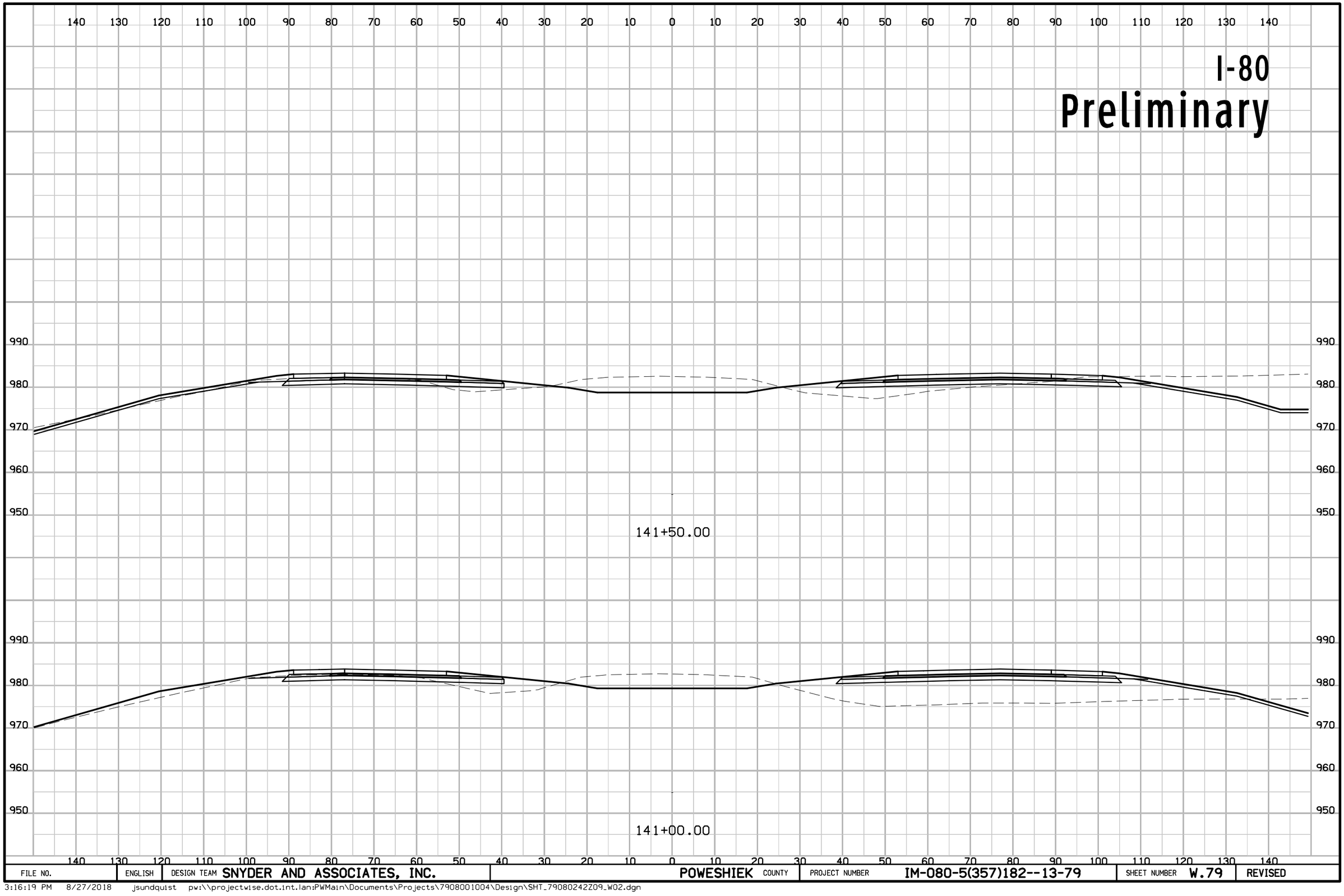
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.79	REVISED

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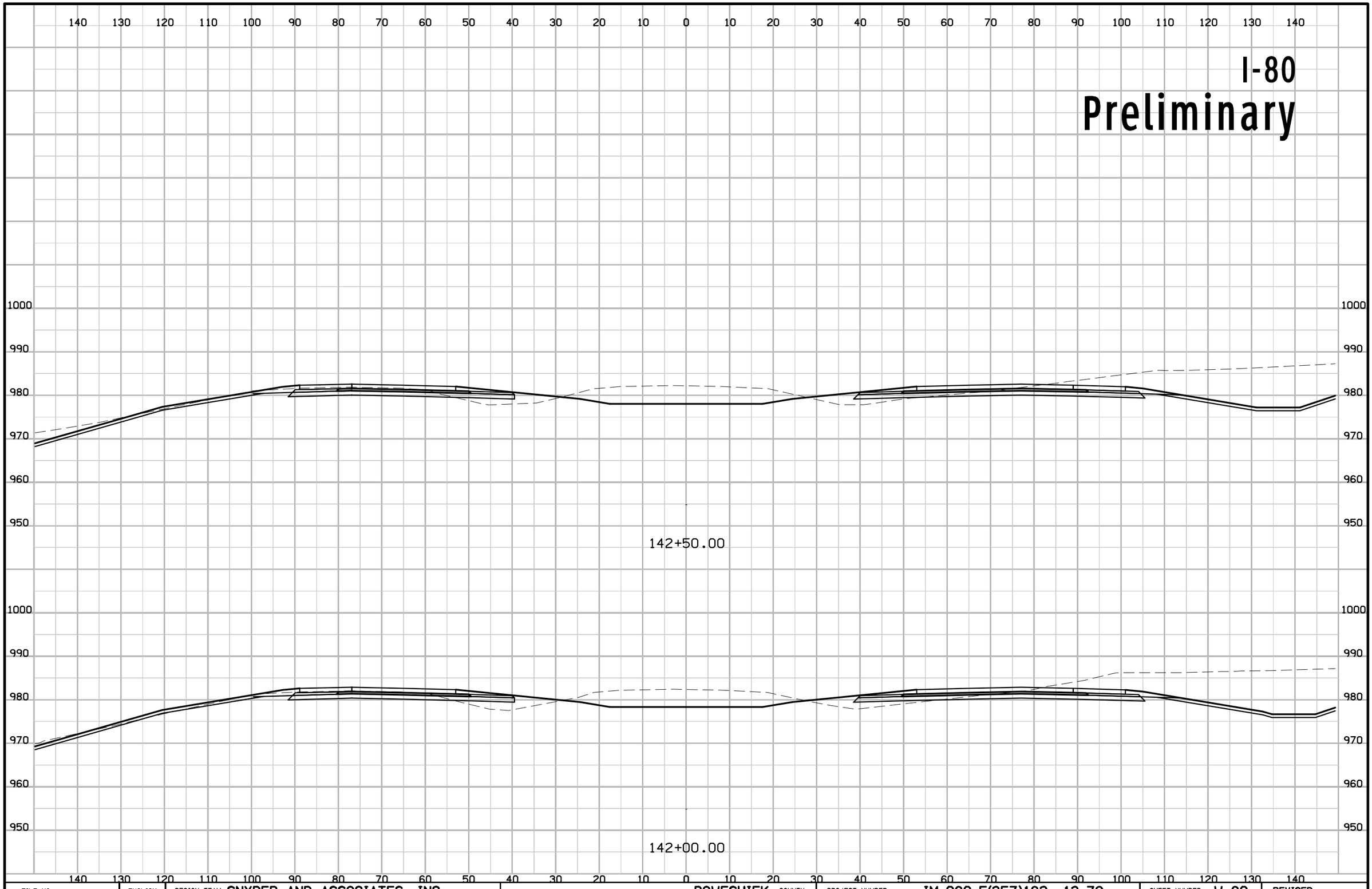
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.80	REVISED

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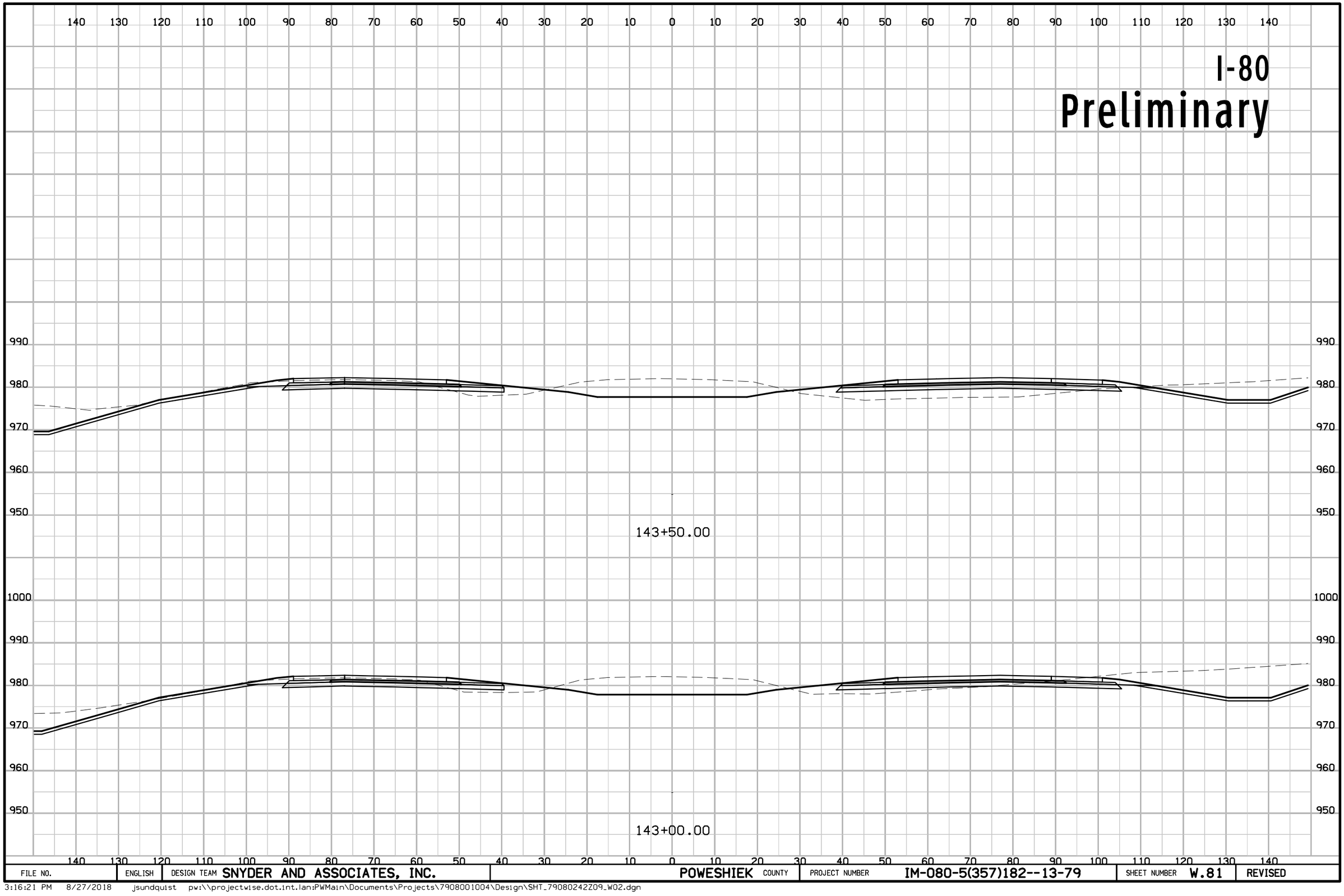
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.81	REVISED

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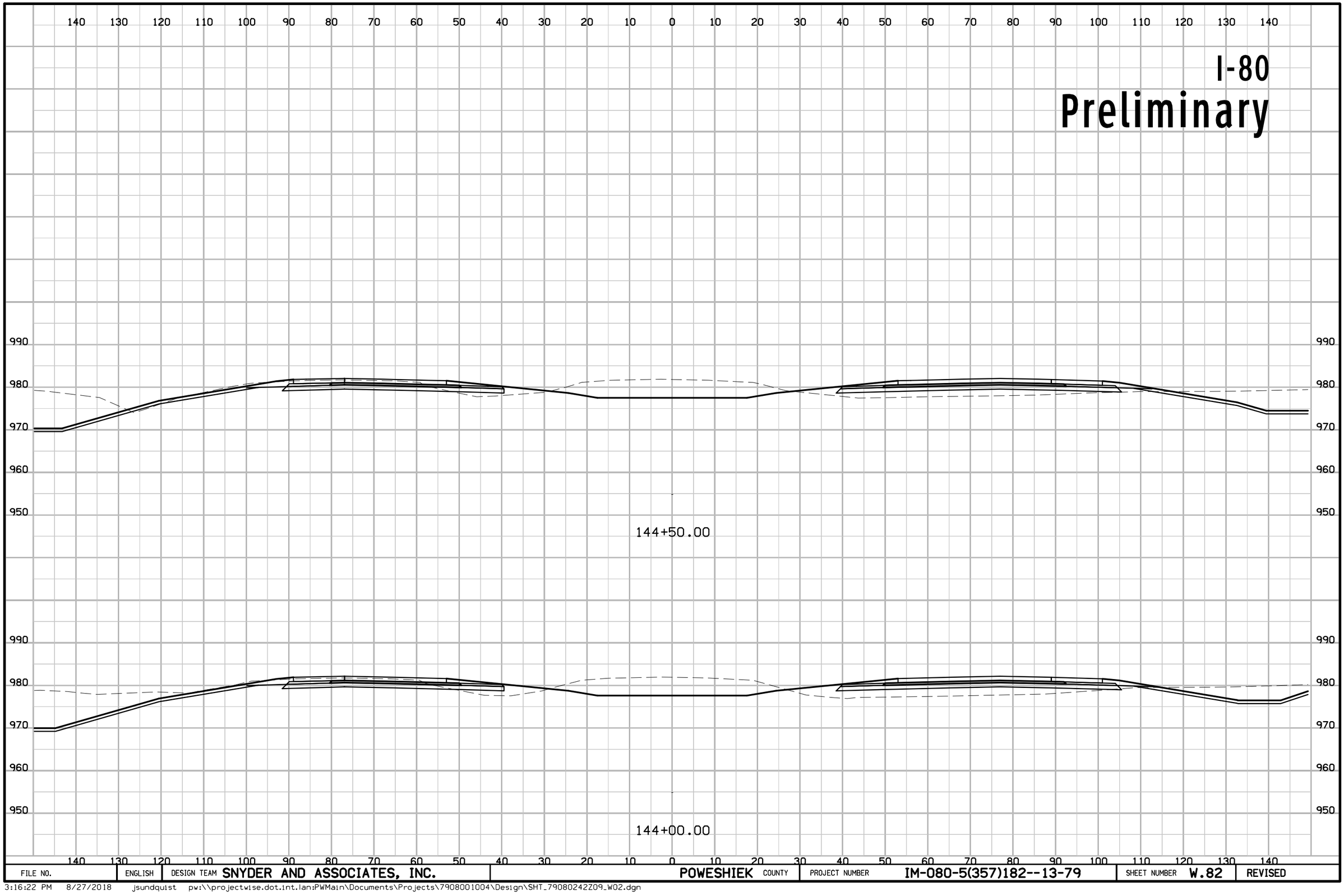
I-80
Preliminary



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I-80
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

990 980 970 960 950

146+00.00

145+50.00

145+00.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.83	REVISED

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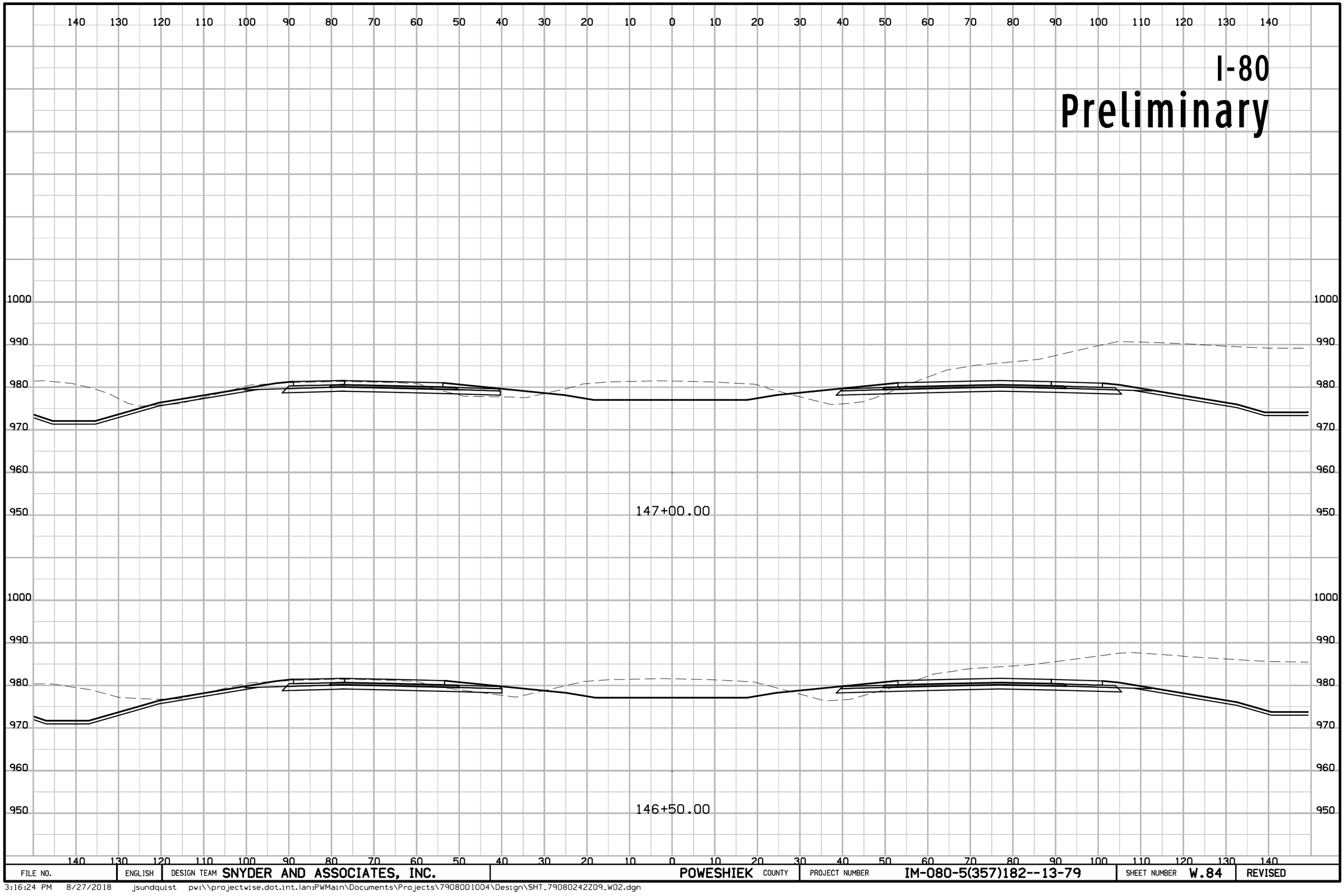
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.84	REVISED

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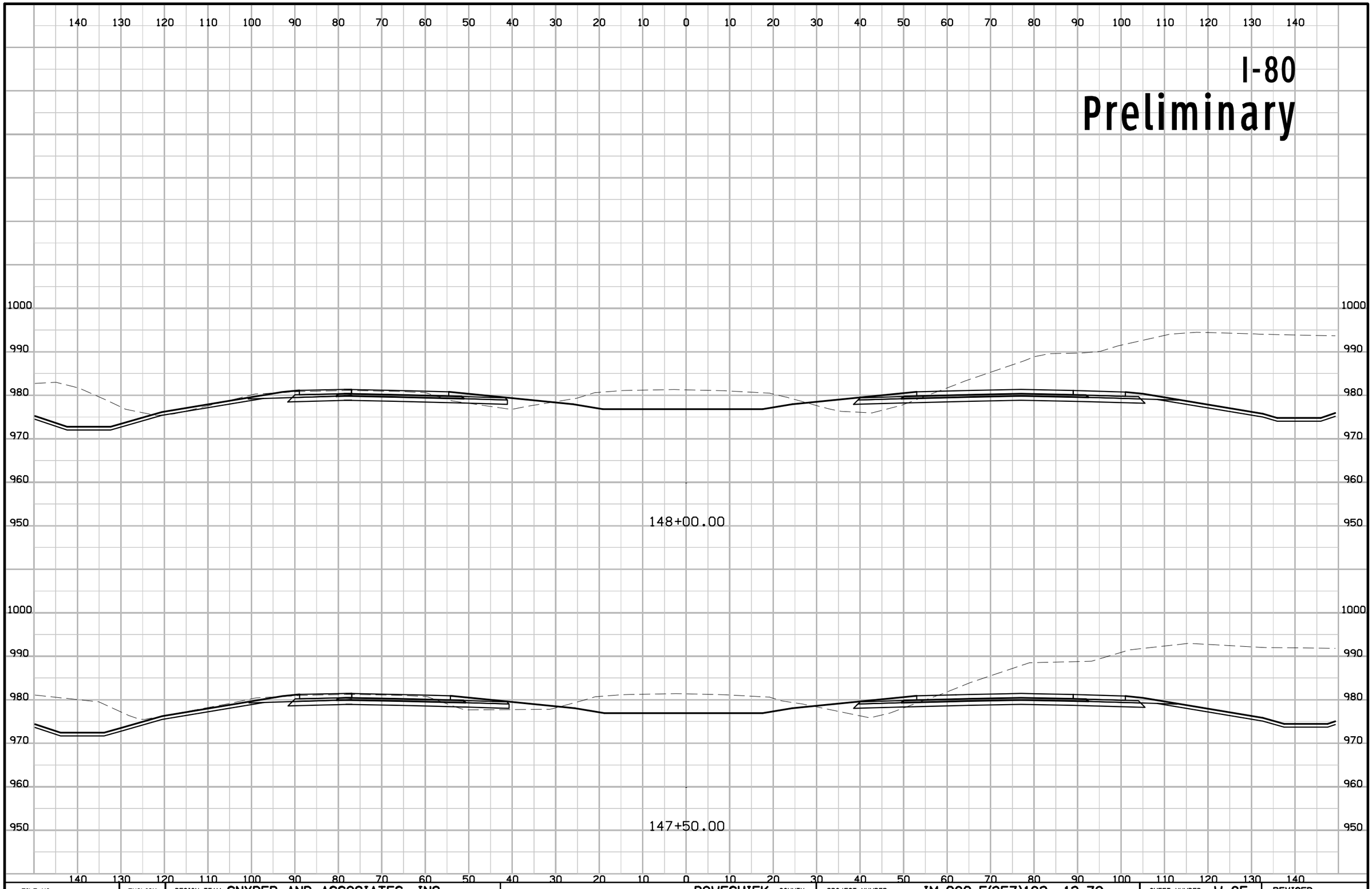
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.85	REVISED

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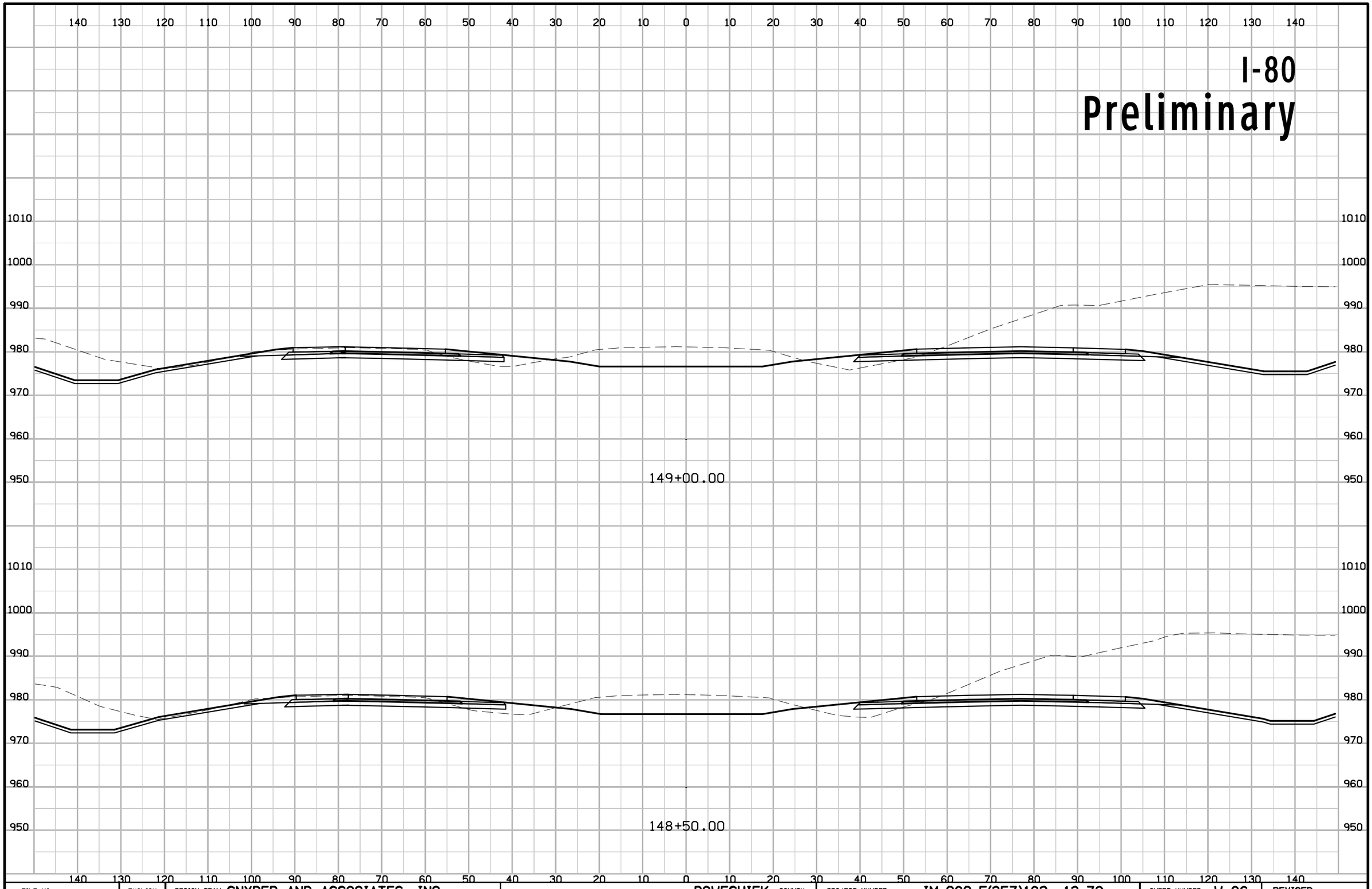
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.86	REVISED

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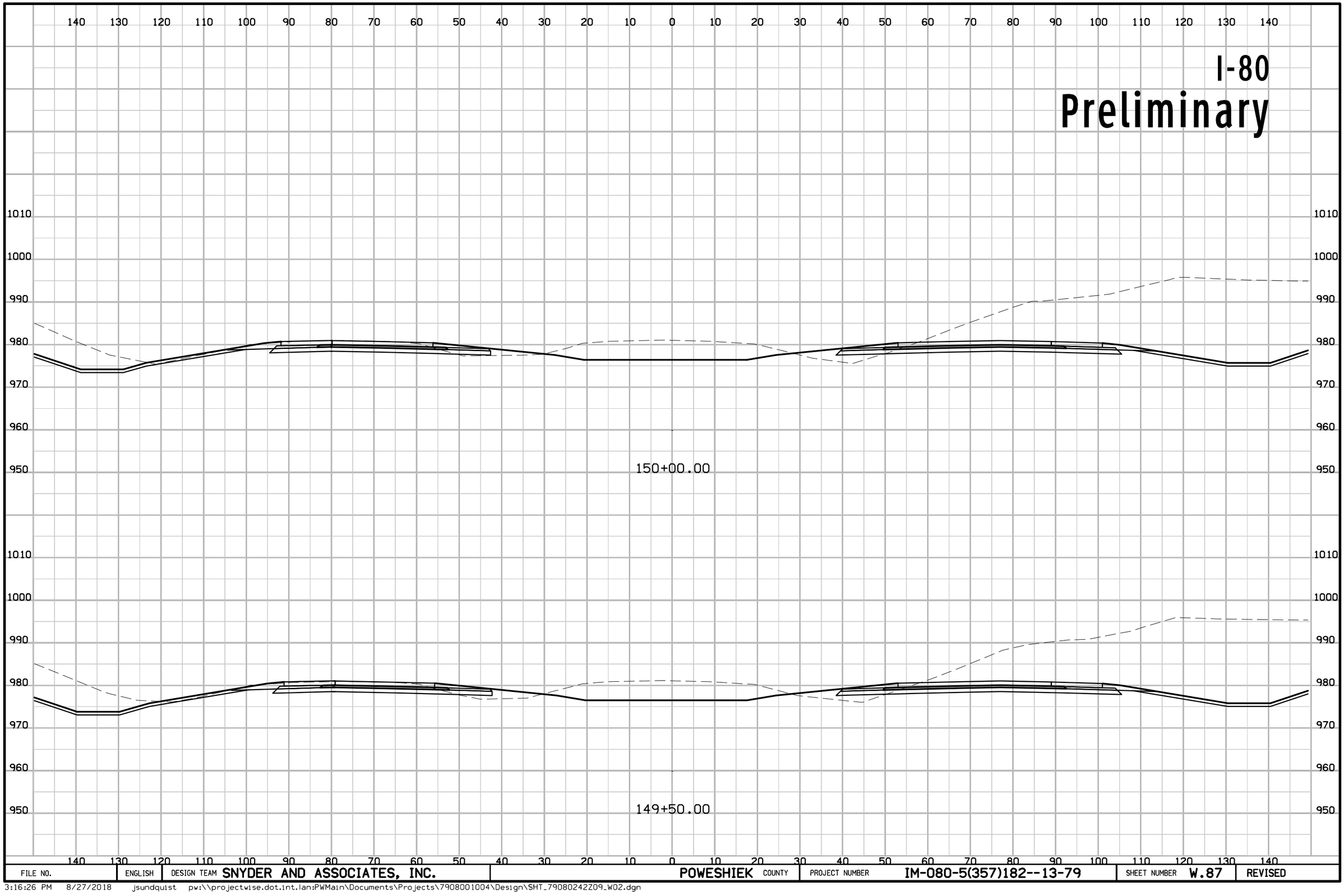
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.87	REVISED

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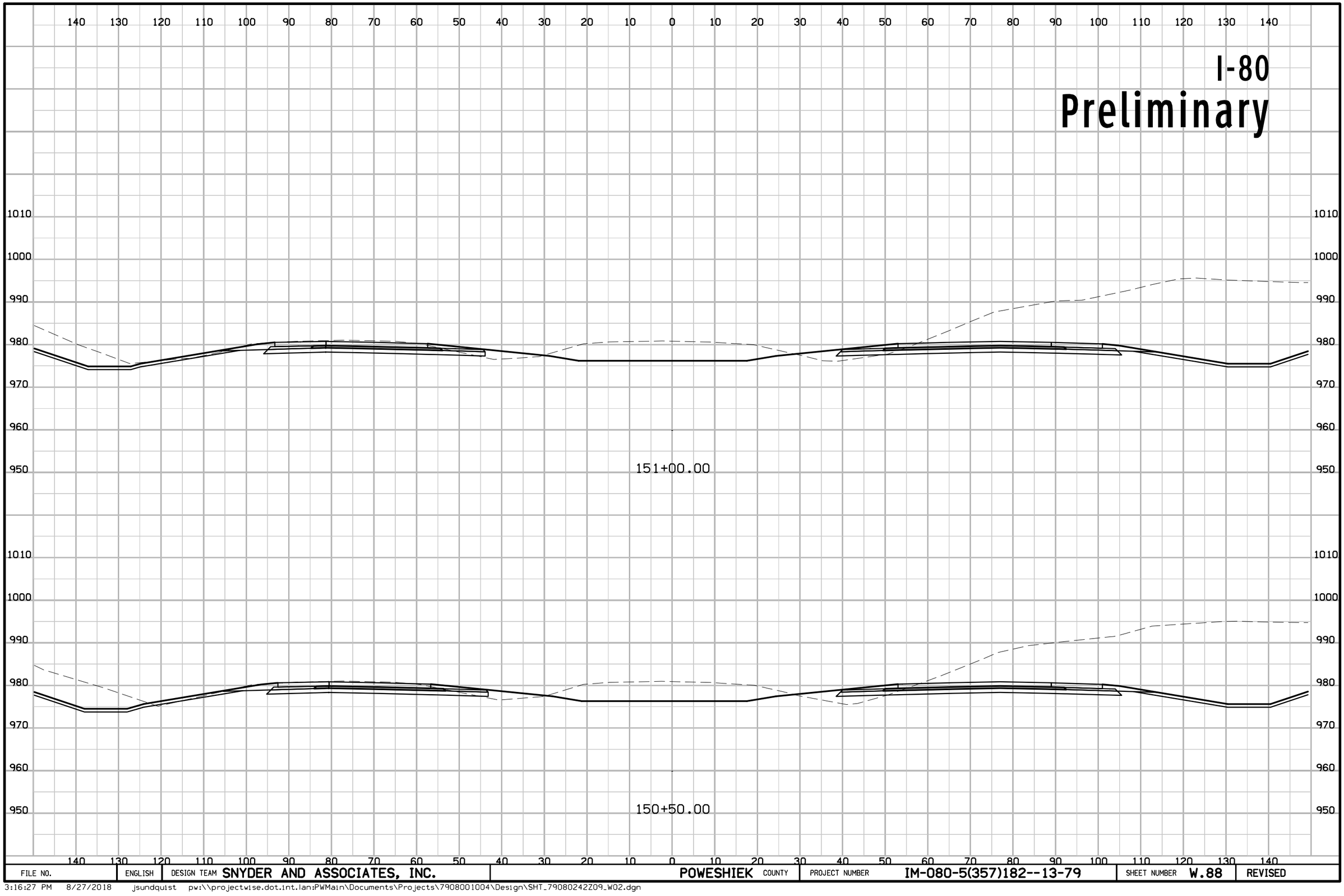
I-80
Preliminary

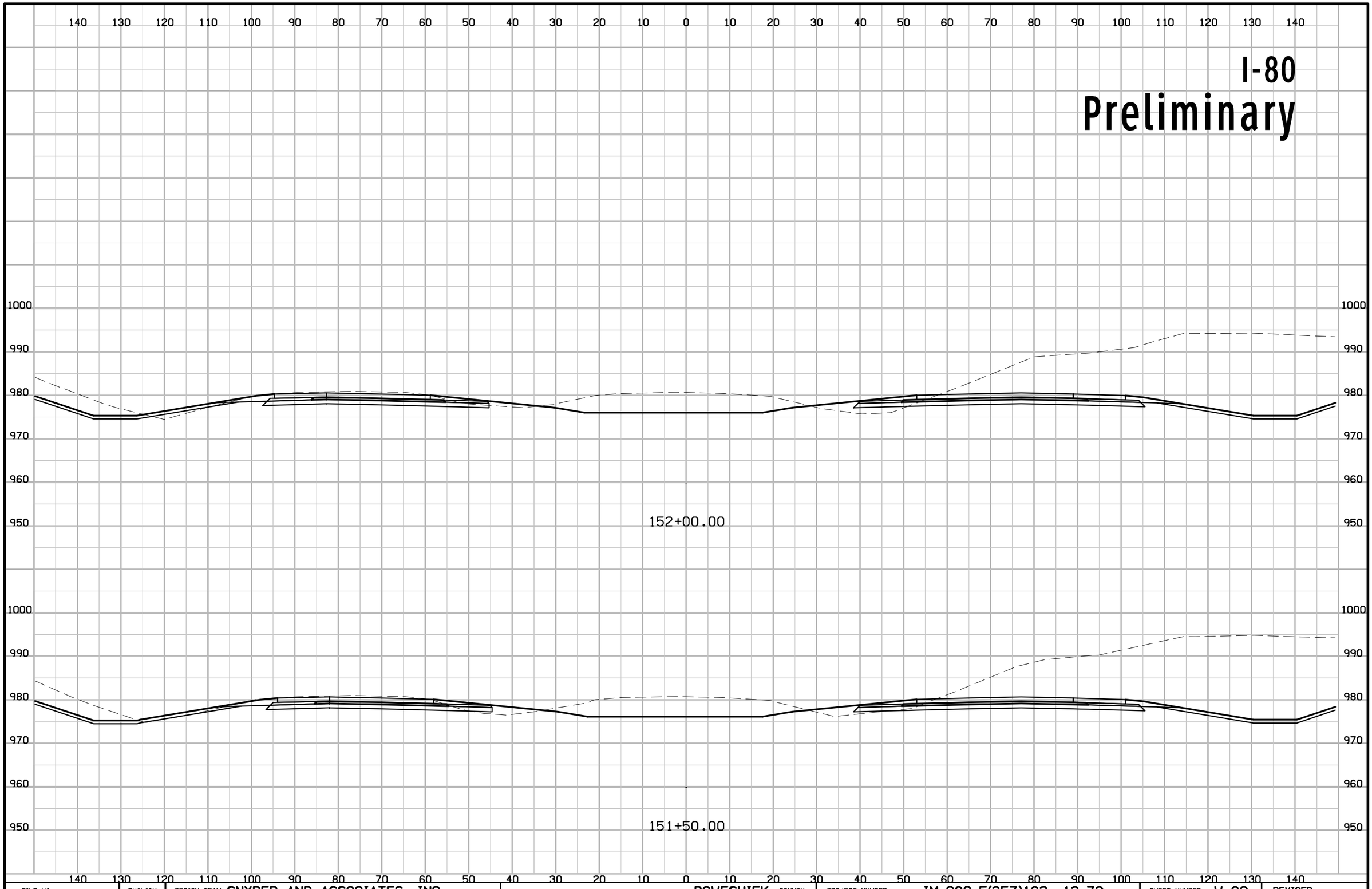


FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.88	REVISED

3:16:27 PM 8/27/2018 jsundquist pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\7908001004\Design\SHT_79080242Z09_W02.dgn

I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.89	REVISED

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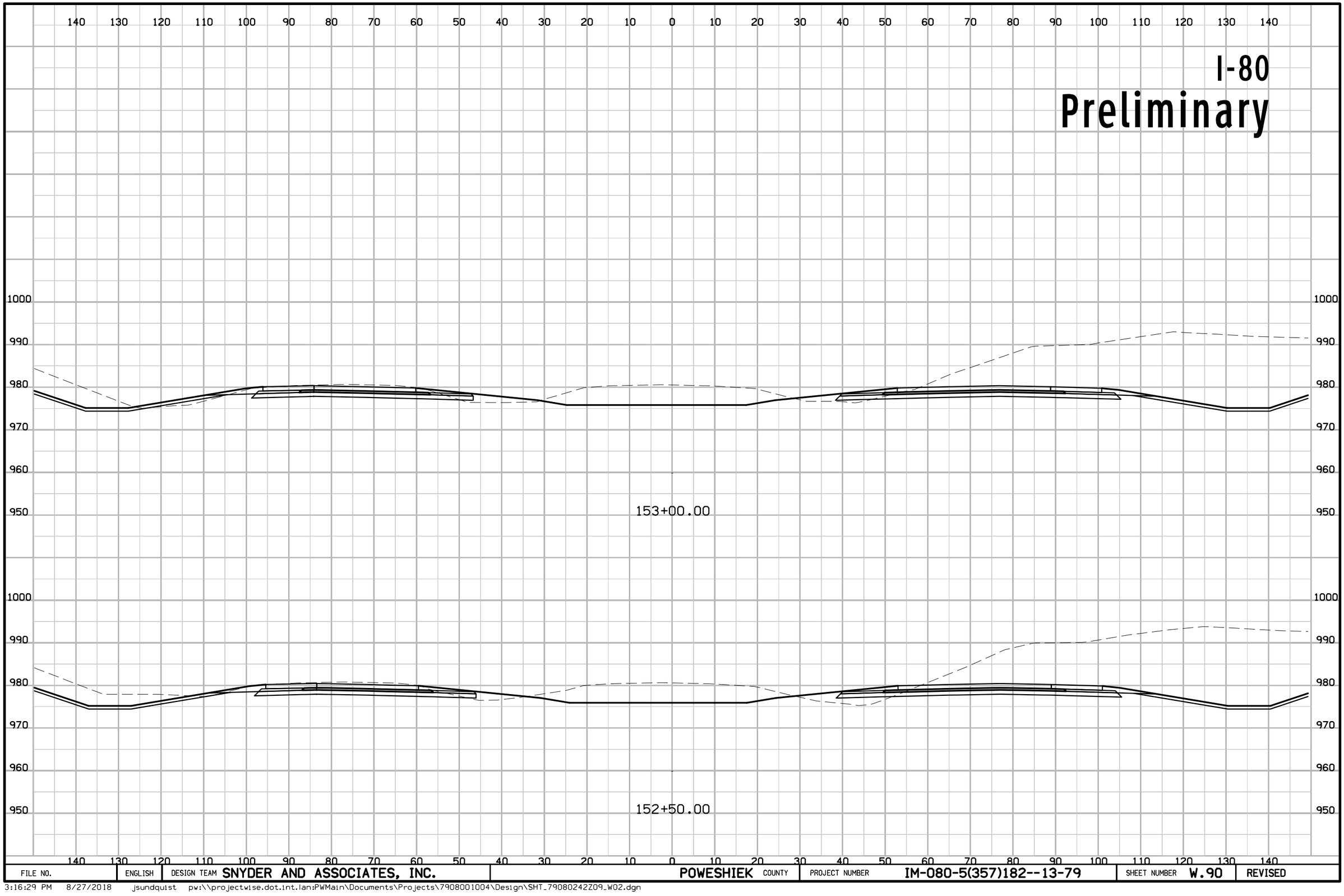
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.90	REVISED

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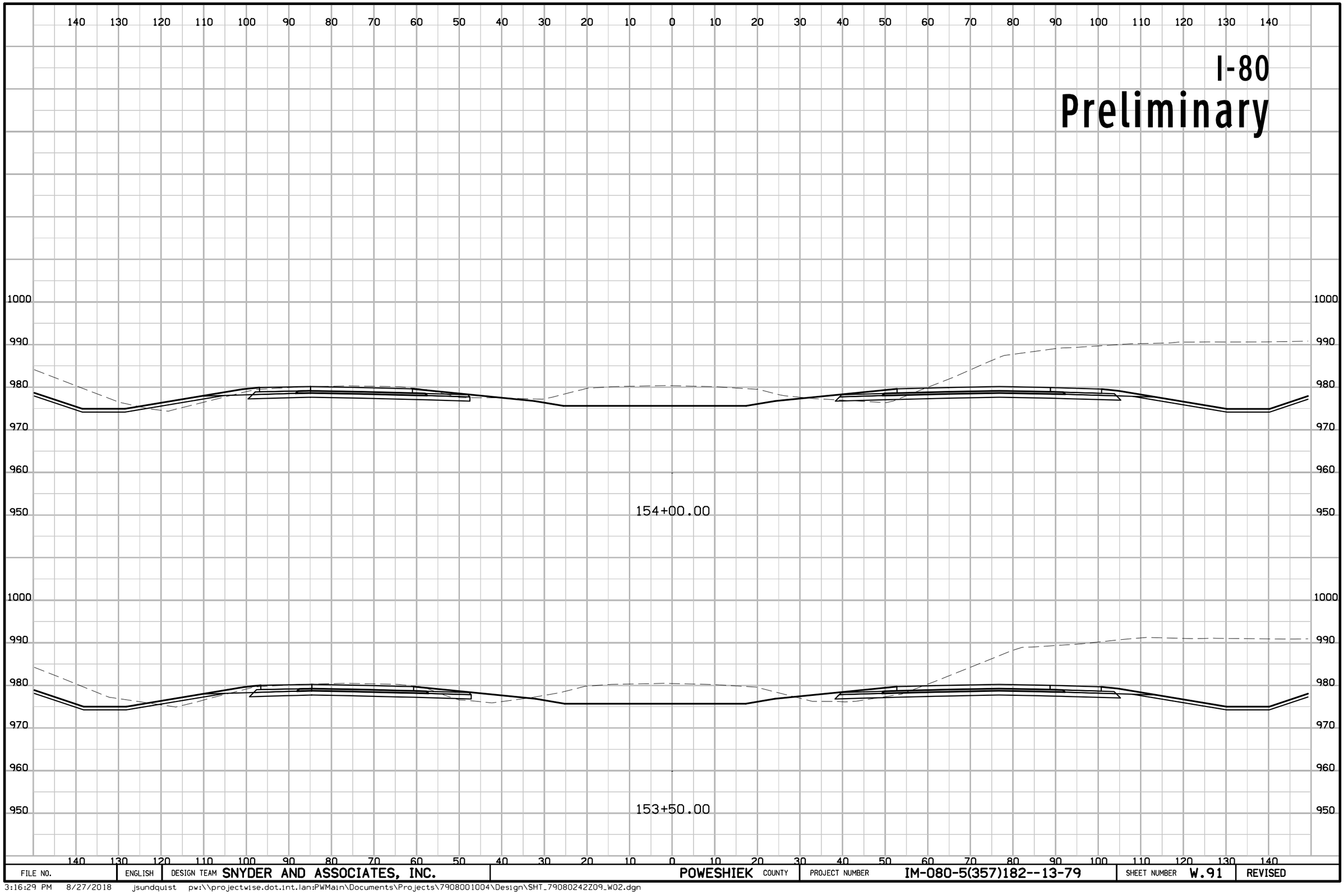
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.91	REVISED

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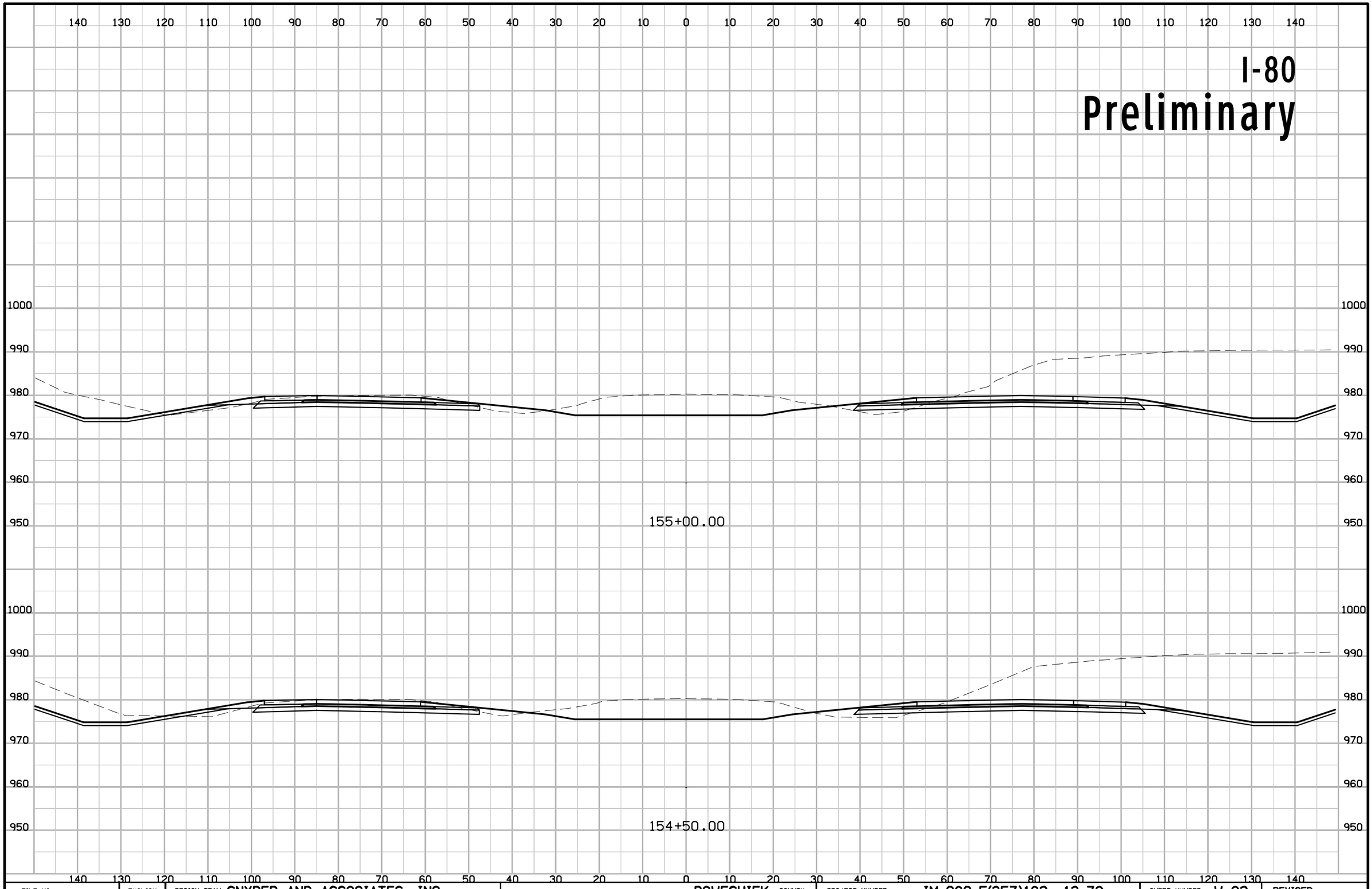
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.92	REVISED

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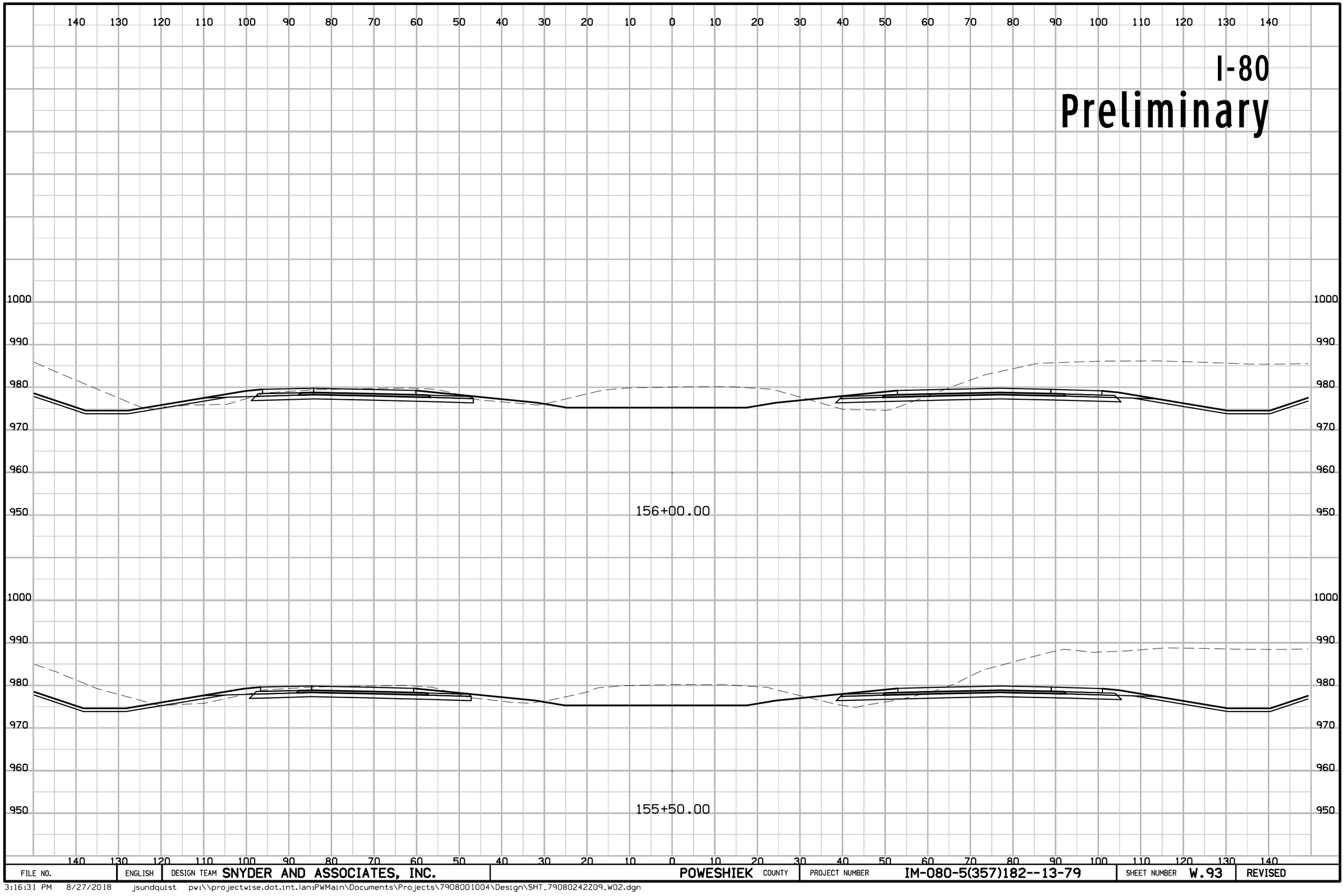
I-80
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.93	REVISED

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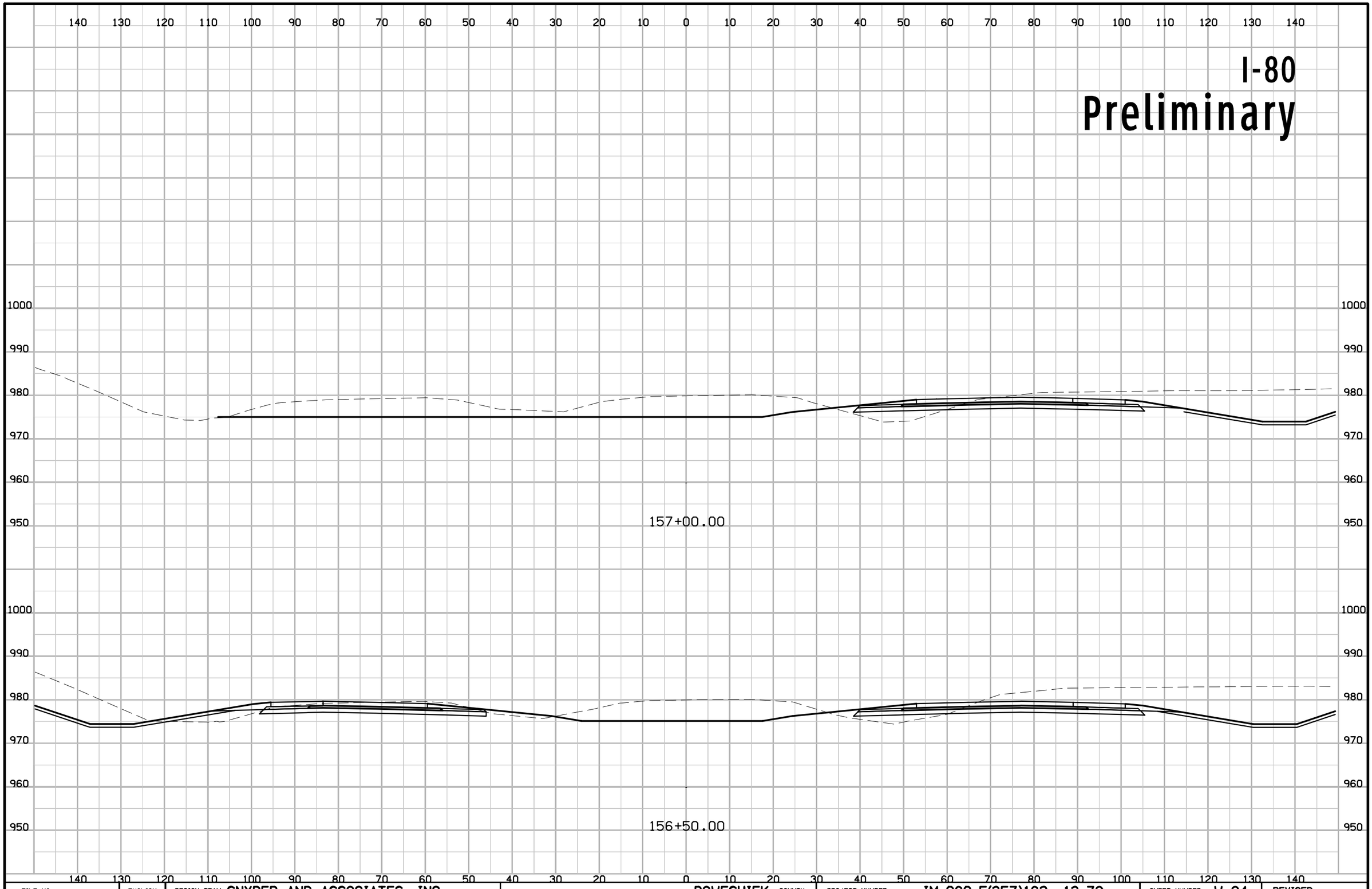
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.94	REVISED

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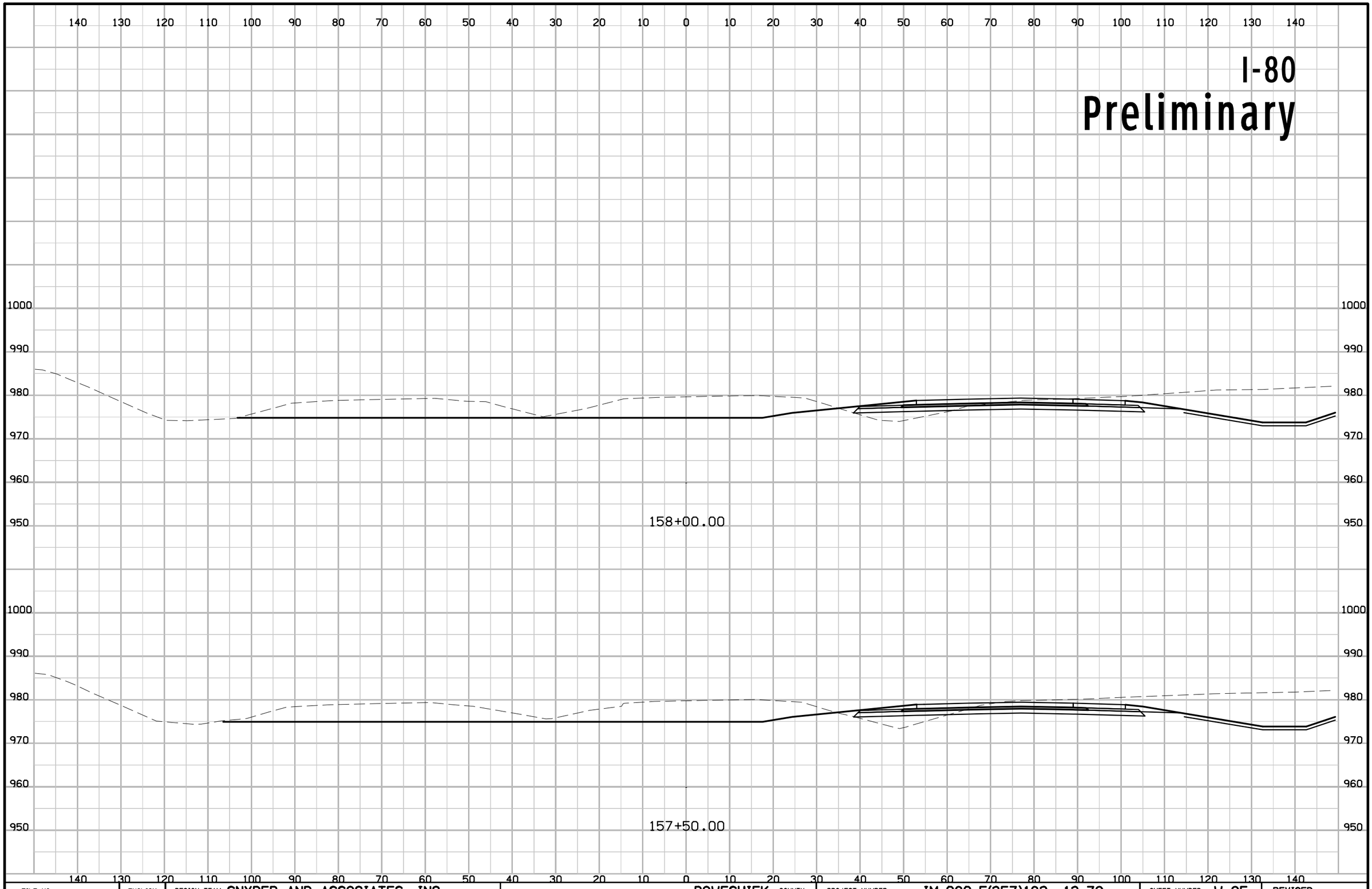
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.95	REVISED

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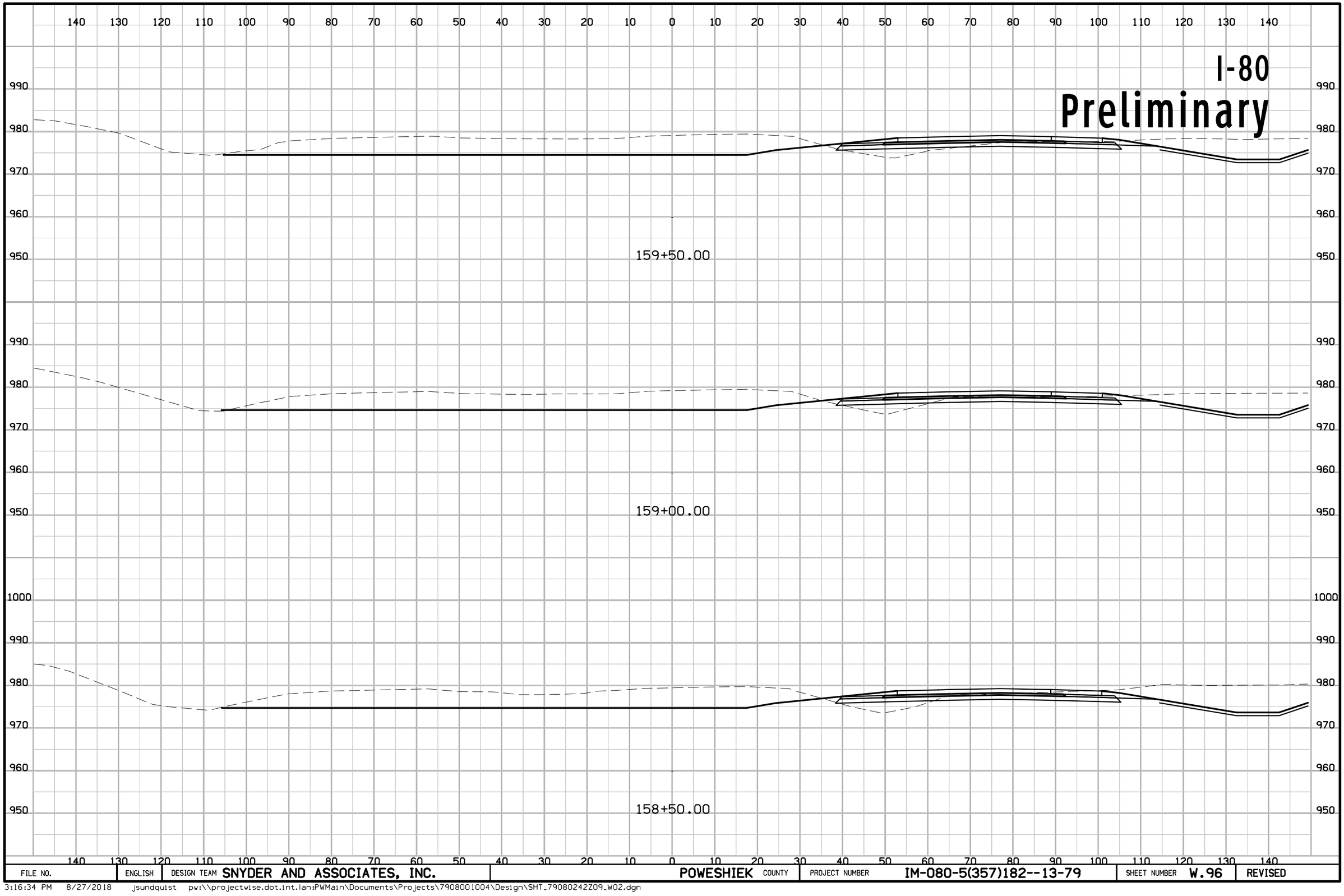
I-80

Preliminary



FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.96	REVISED

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I-80

Preliminary

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990 980 970 960 950

160+50.00

160+00.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER W.97	REVISED

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RAMP A
Preliminary

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990 980 970 960 950

1508+50.00

1508+00.00

1507+50.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.1	REVISED

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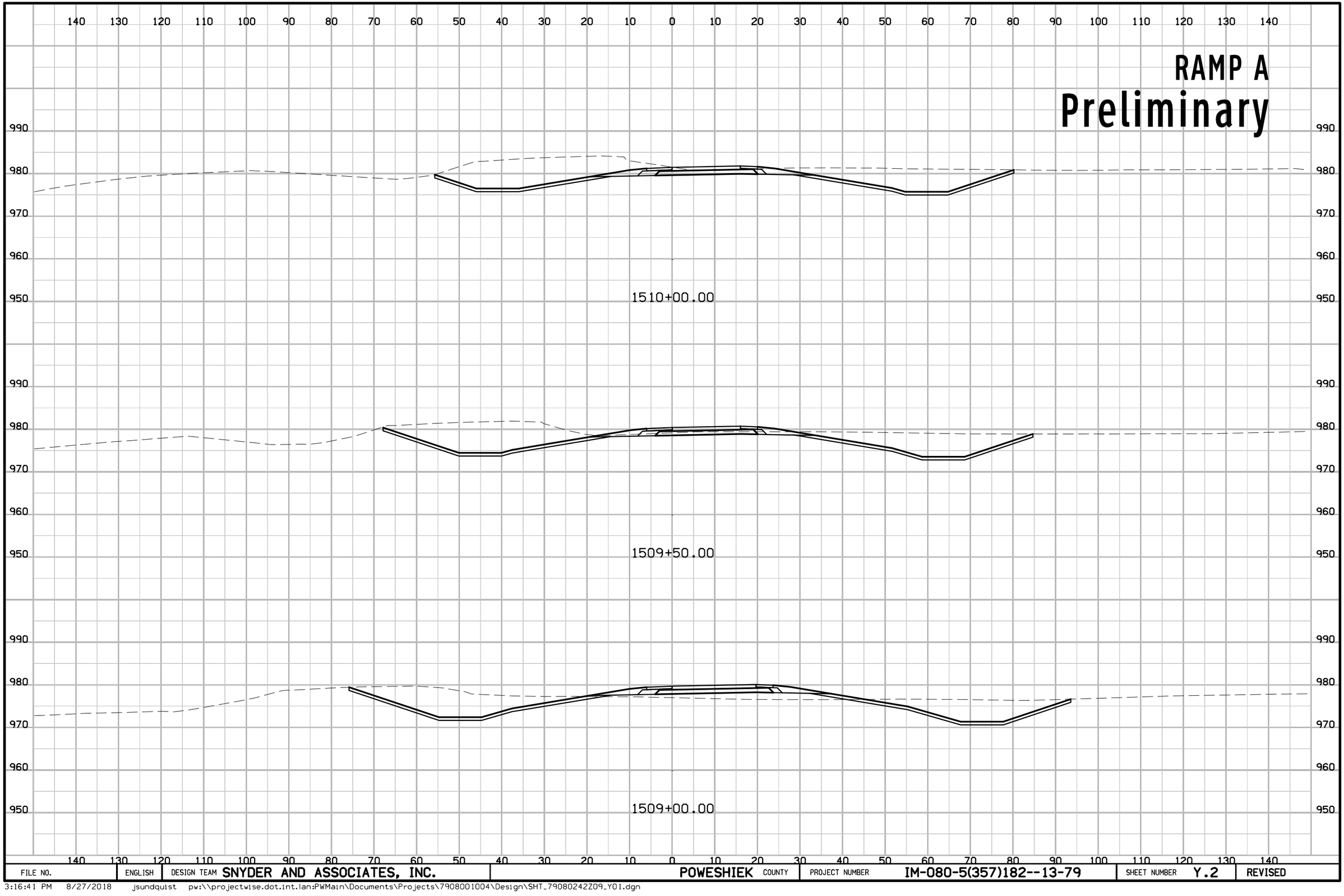

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.2	REVISED

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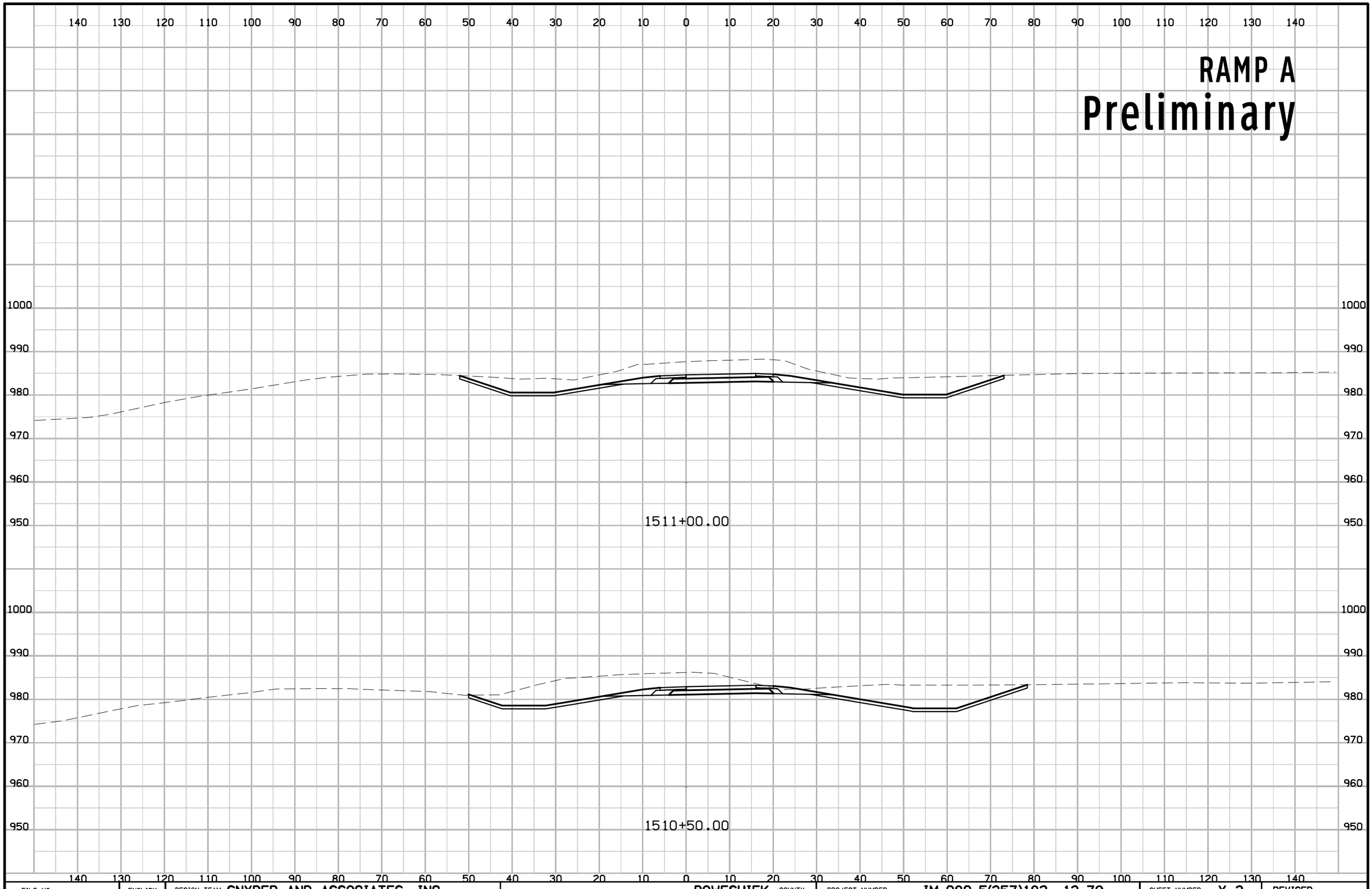

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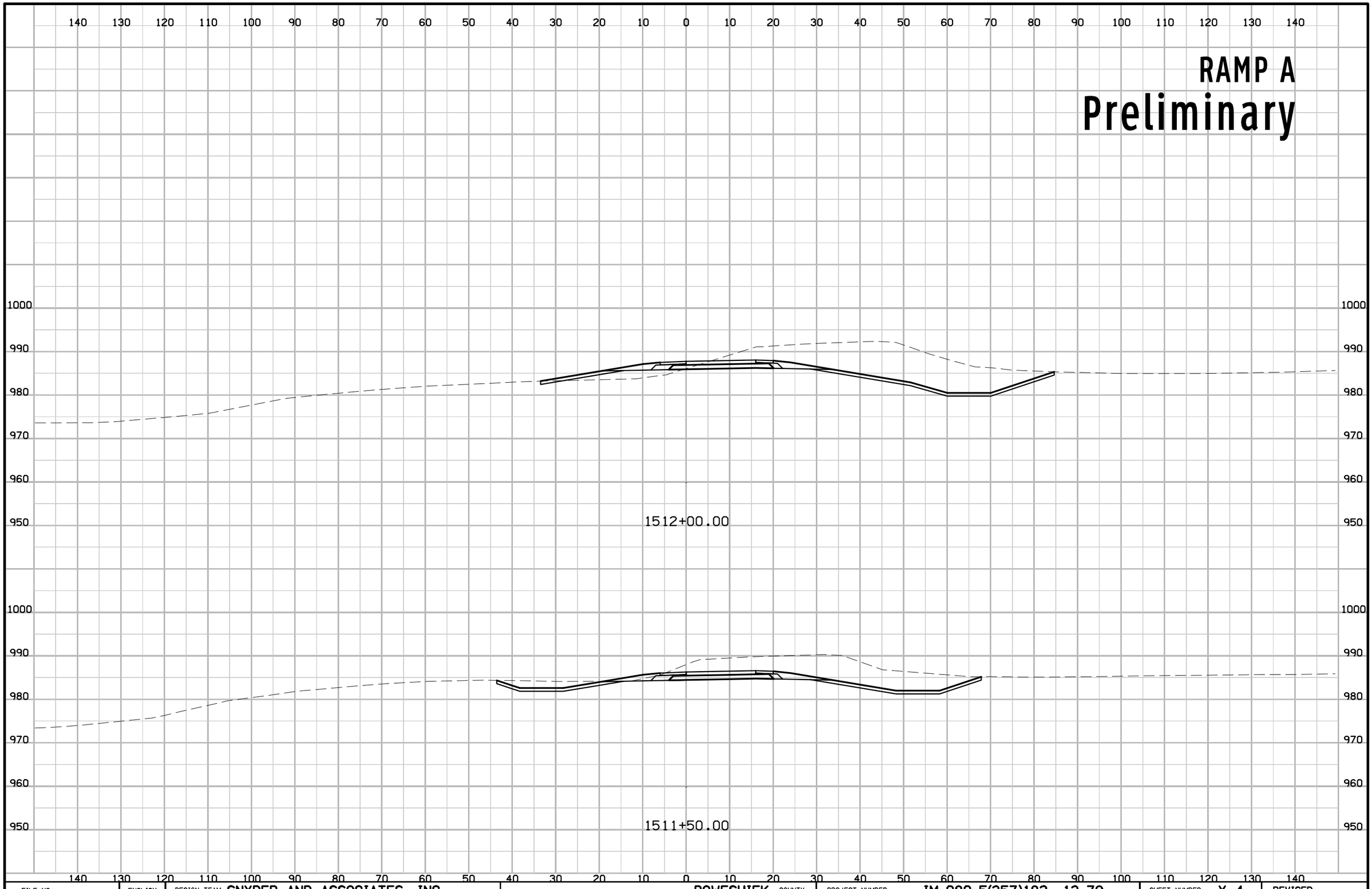

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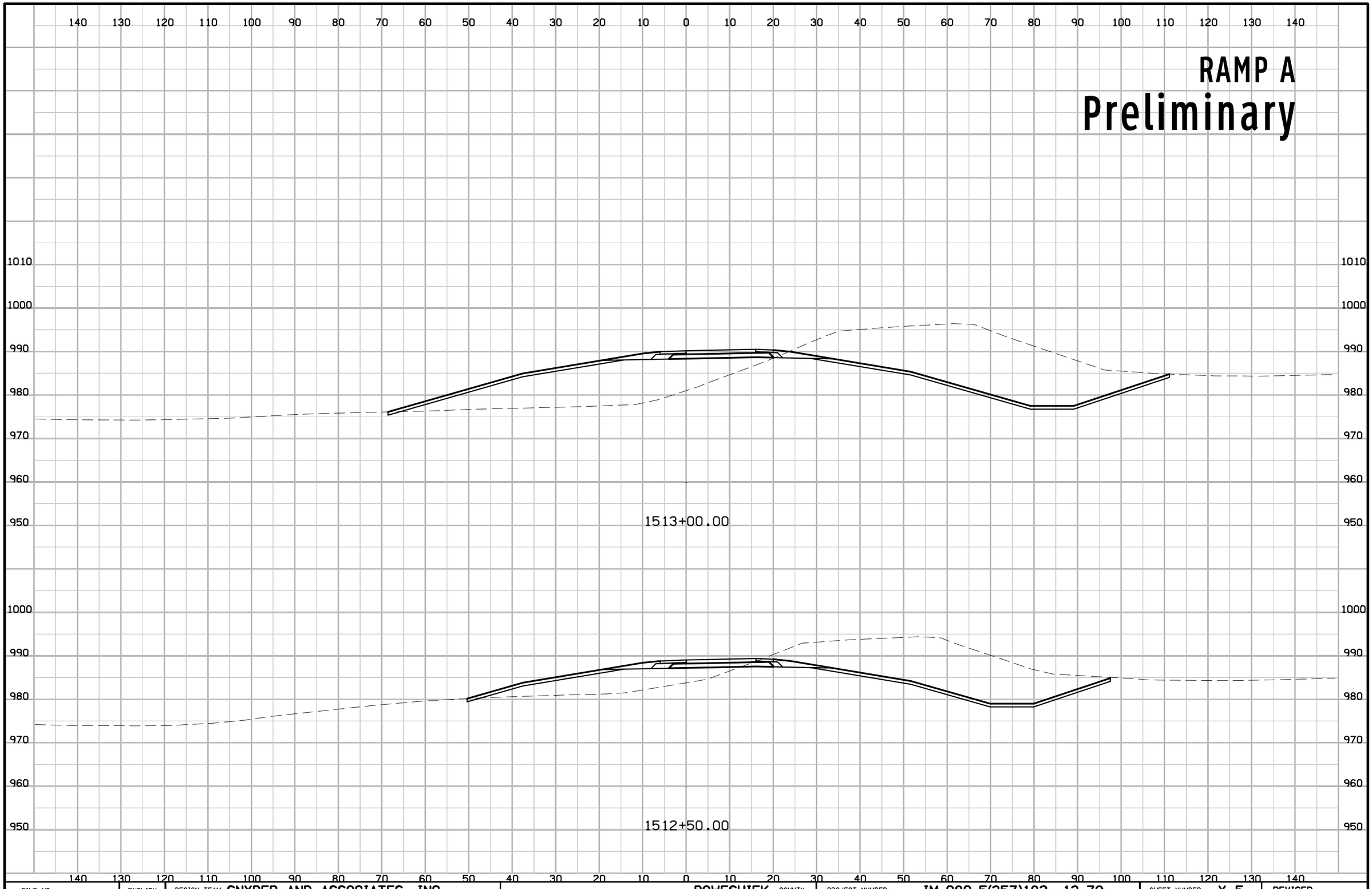

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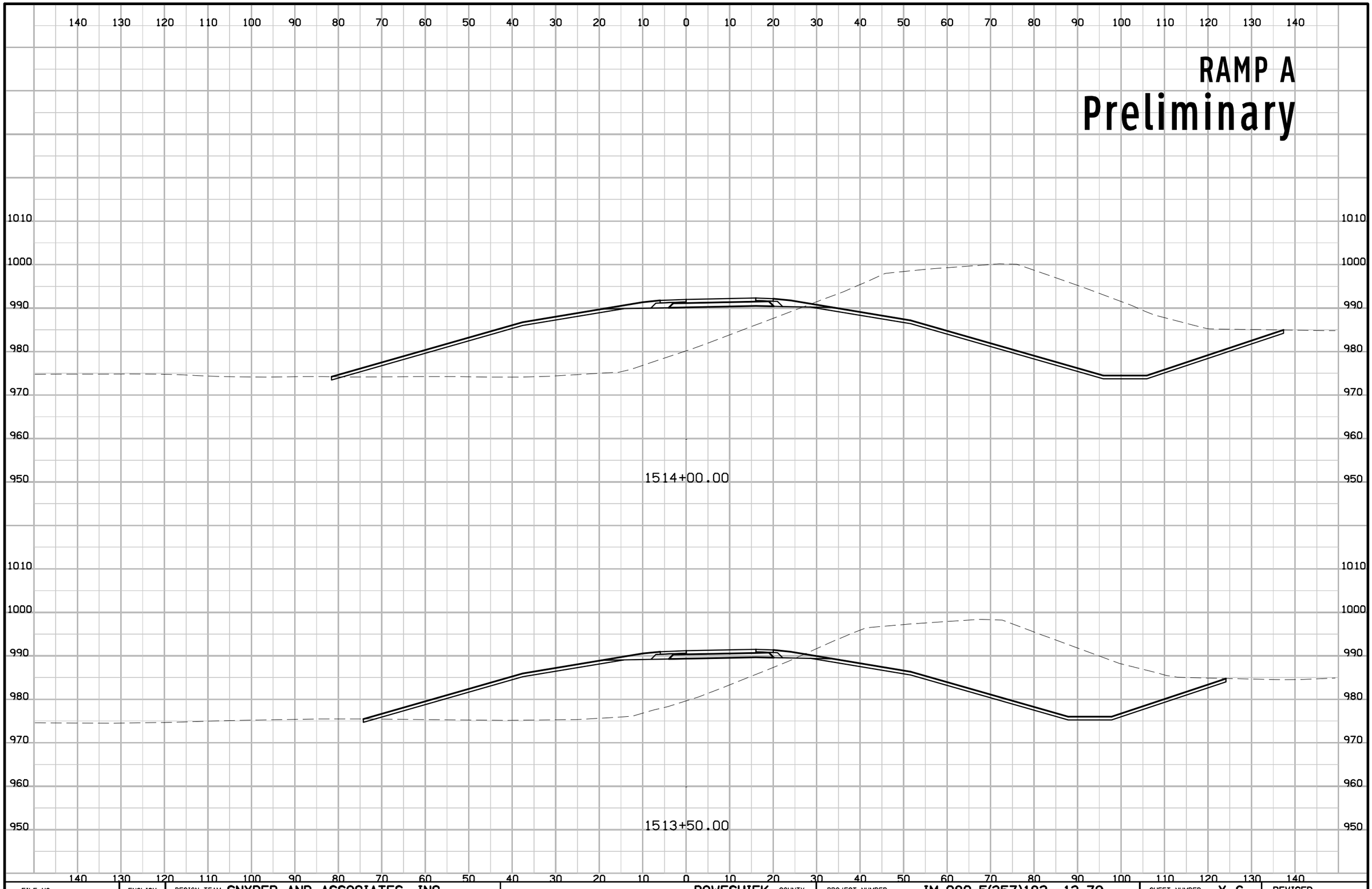

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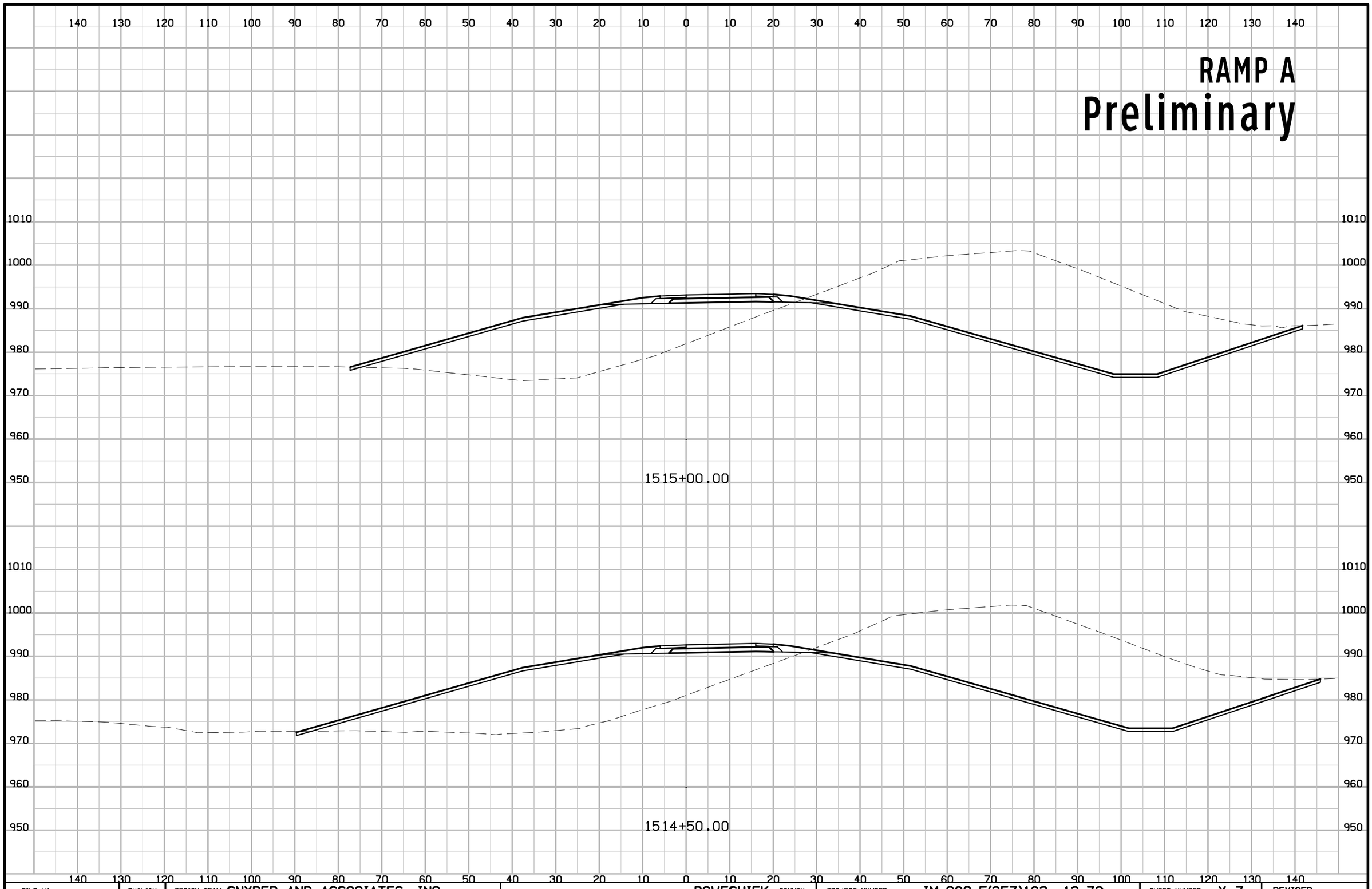

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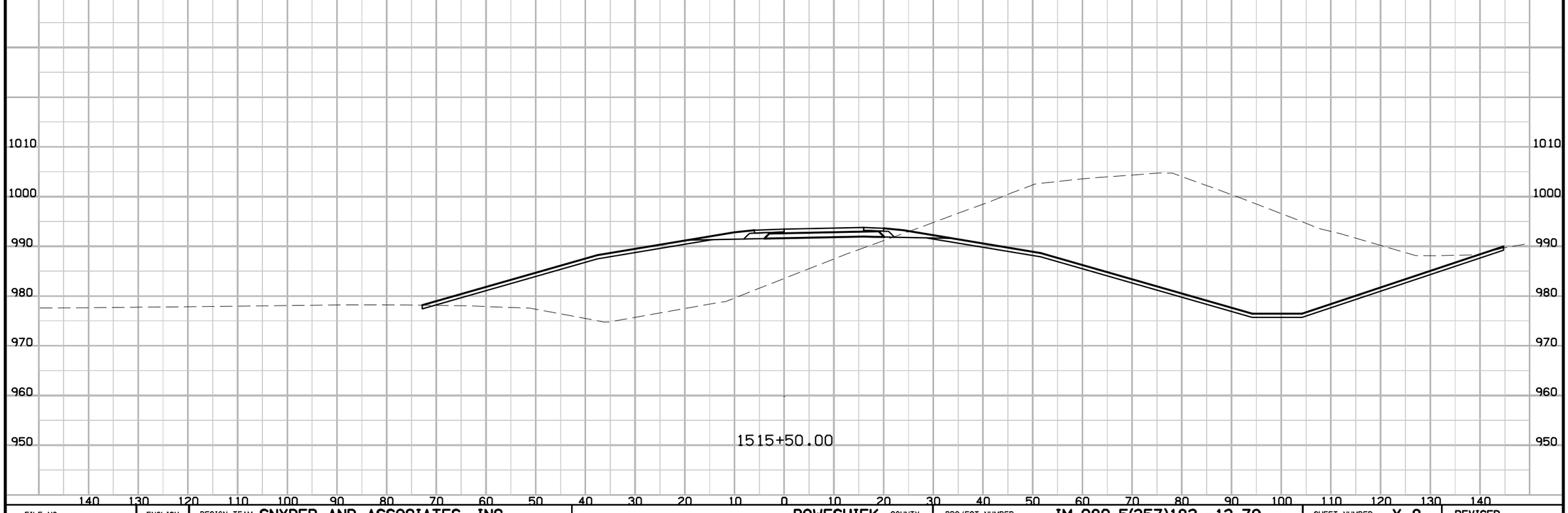

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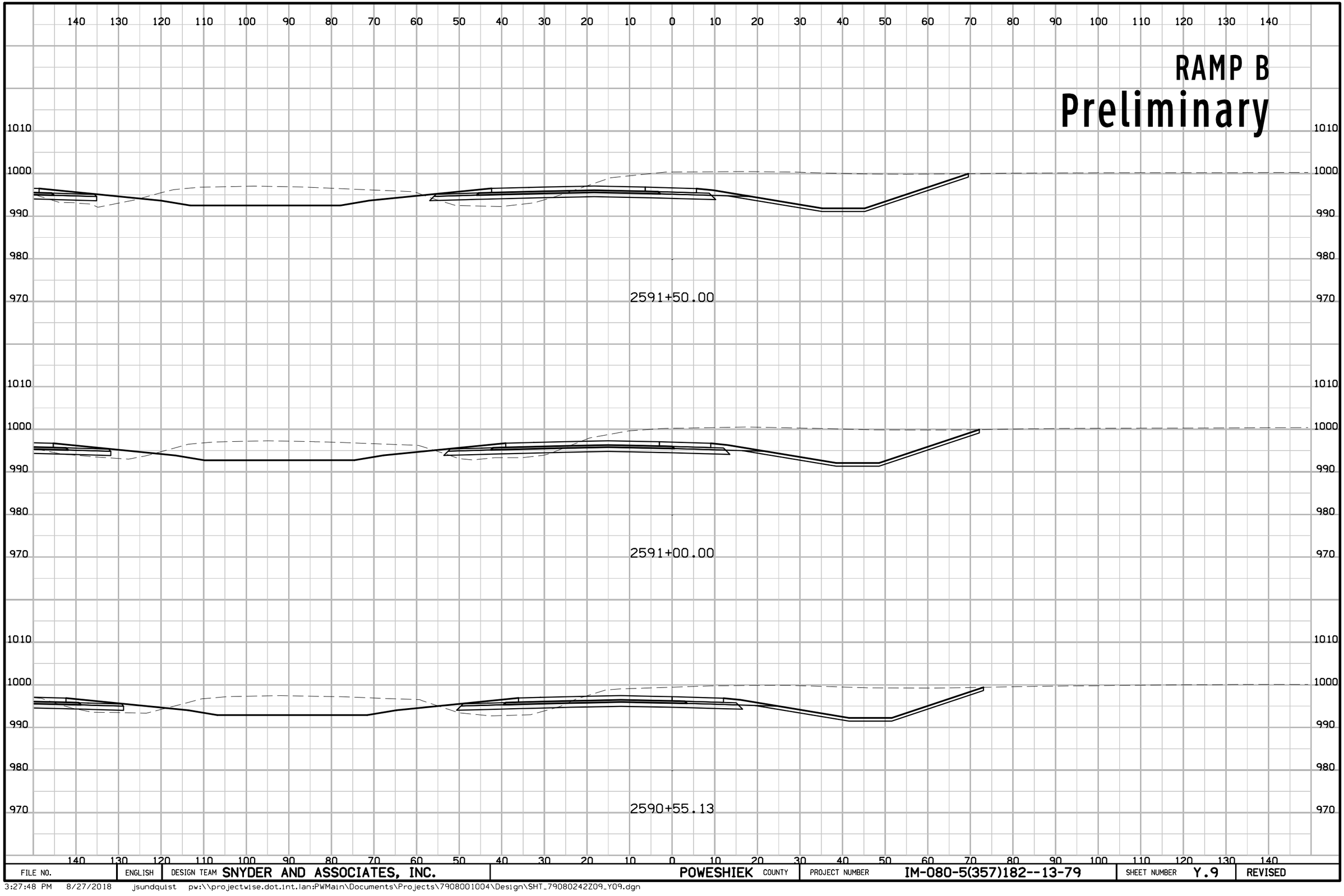

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.9	REVISED

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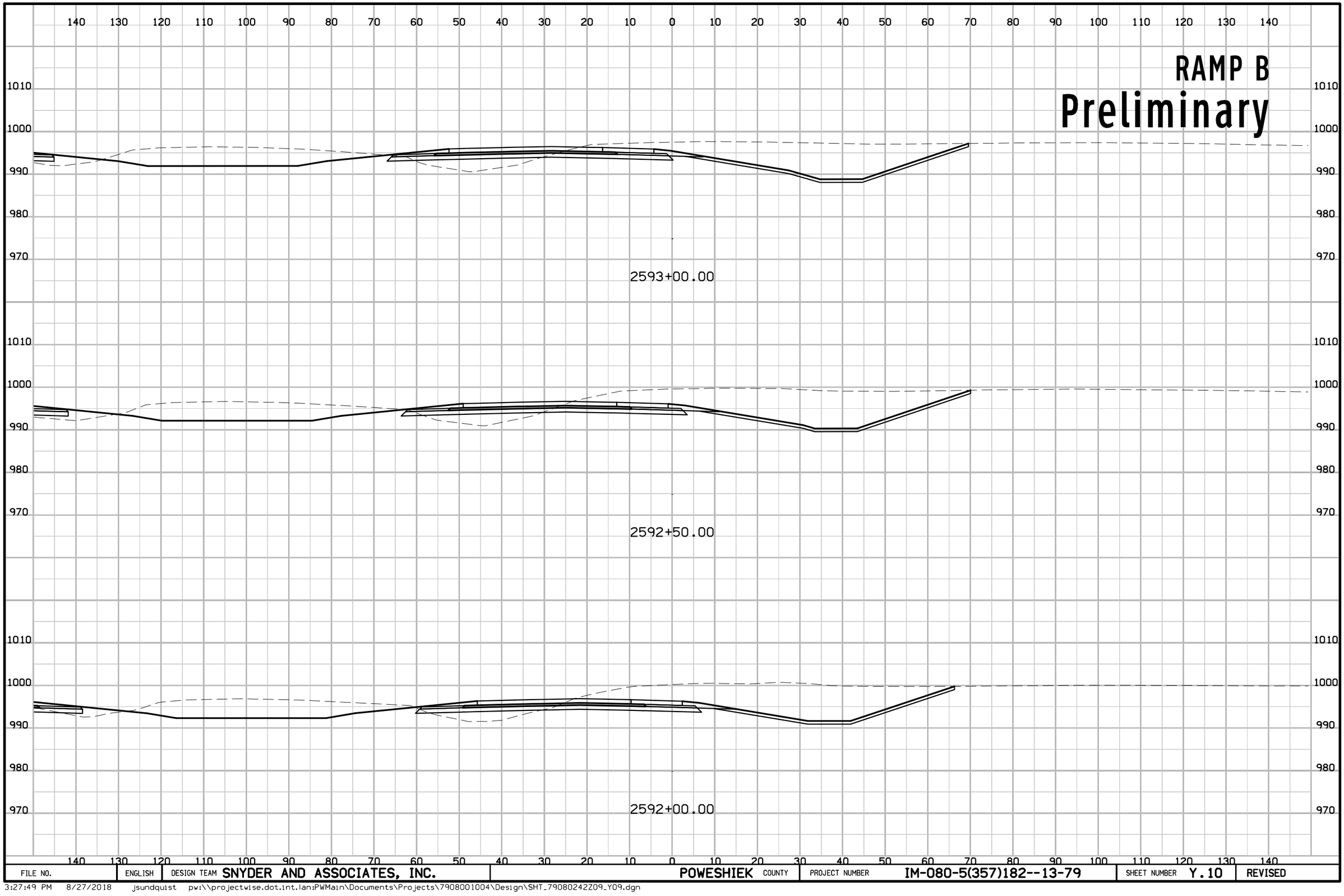

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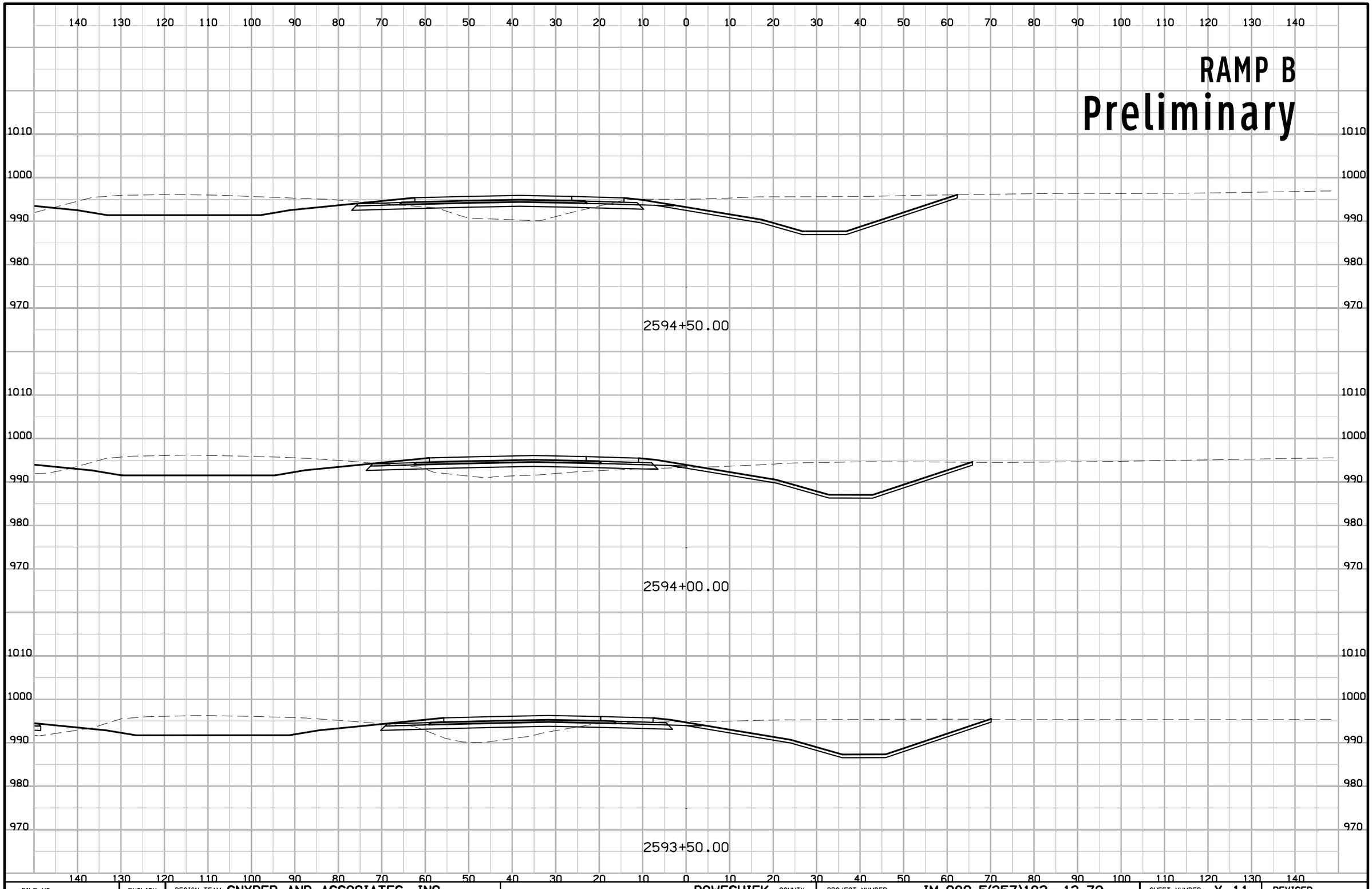

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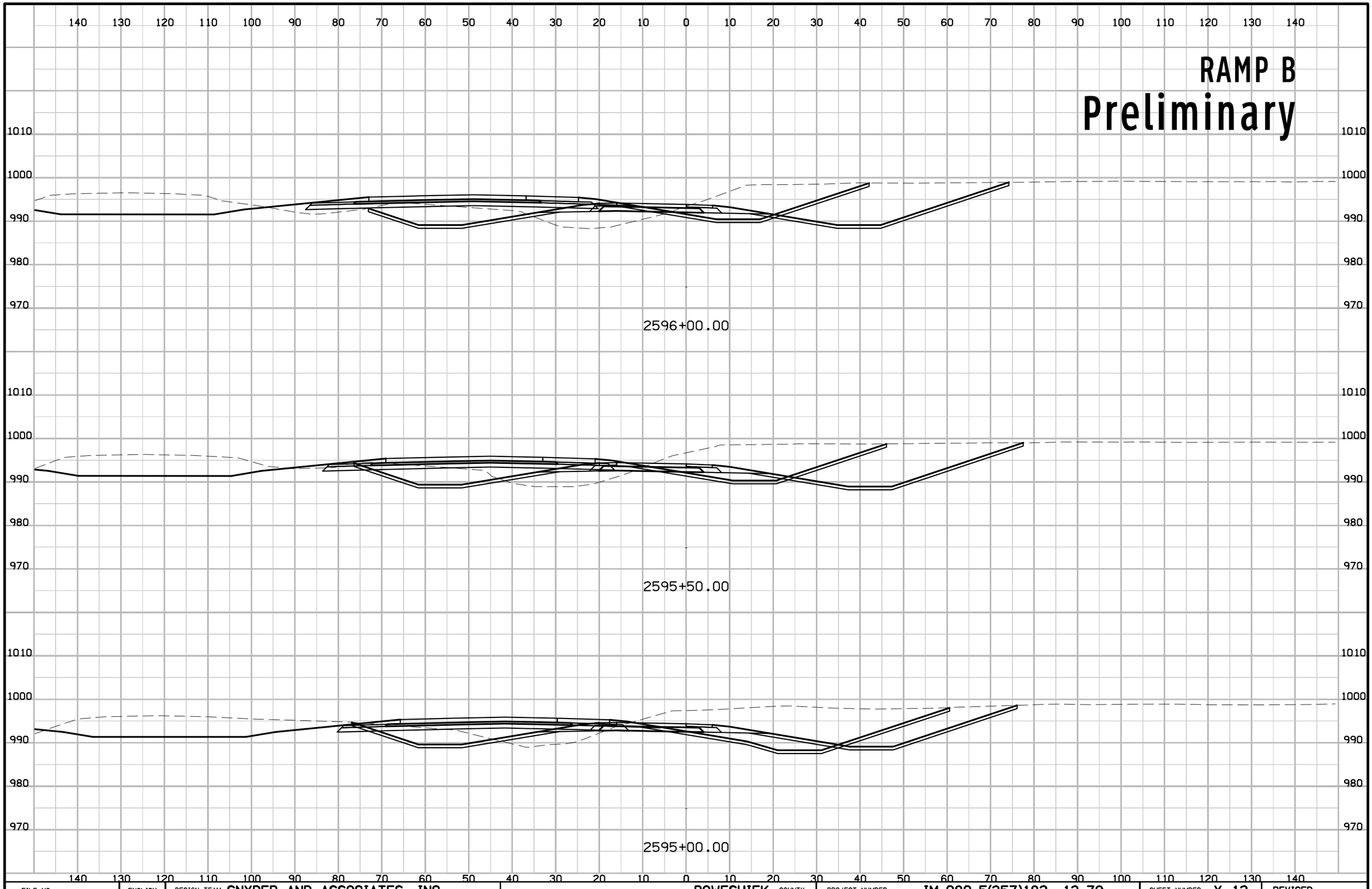

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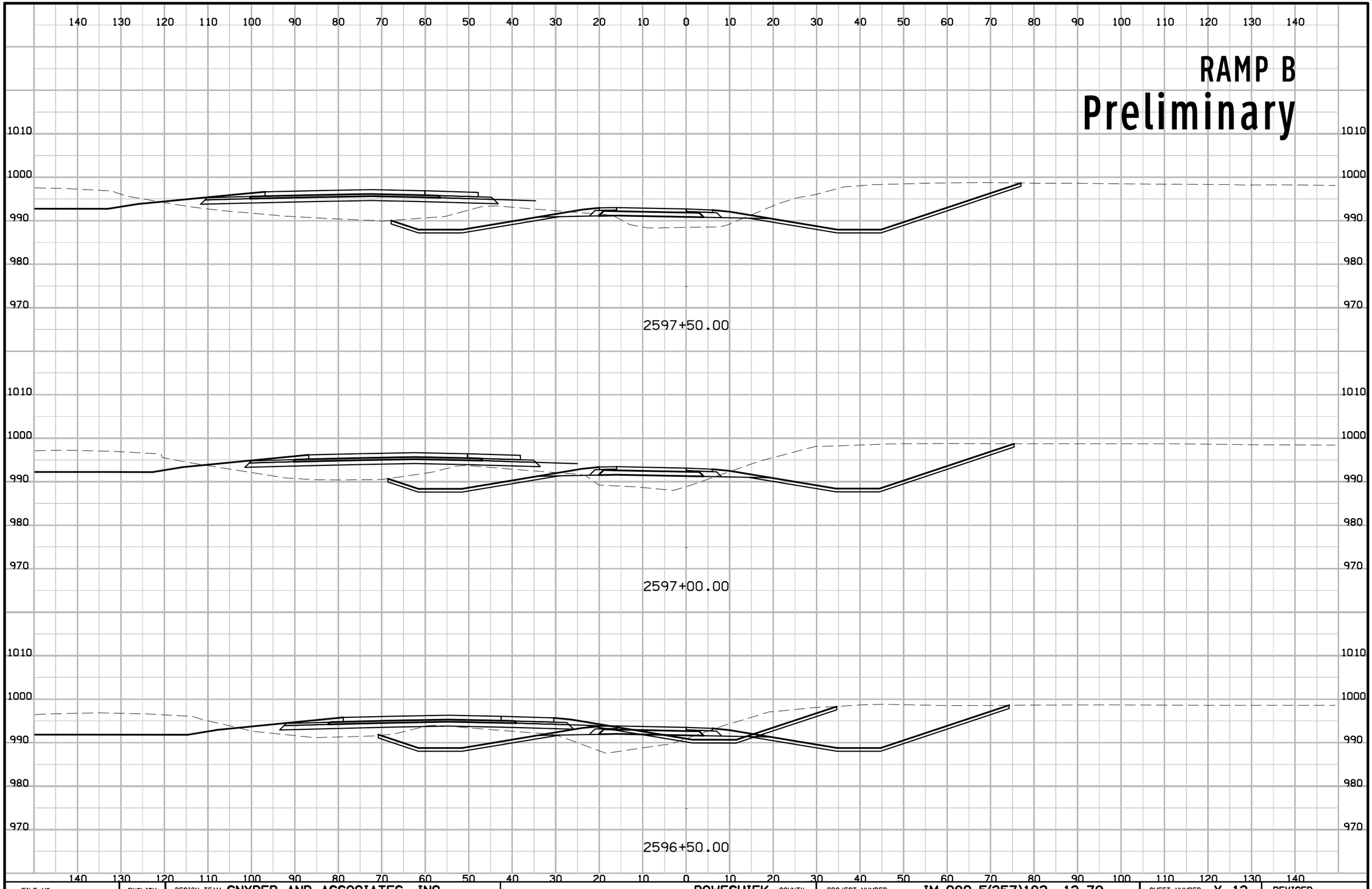

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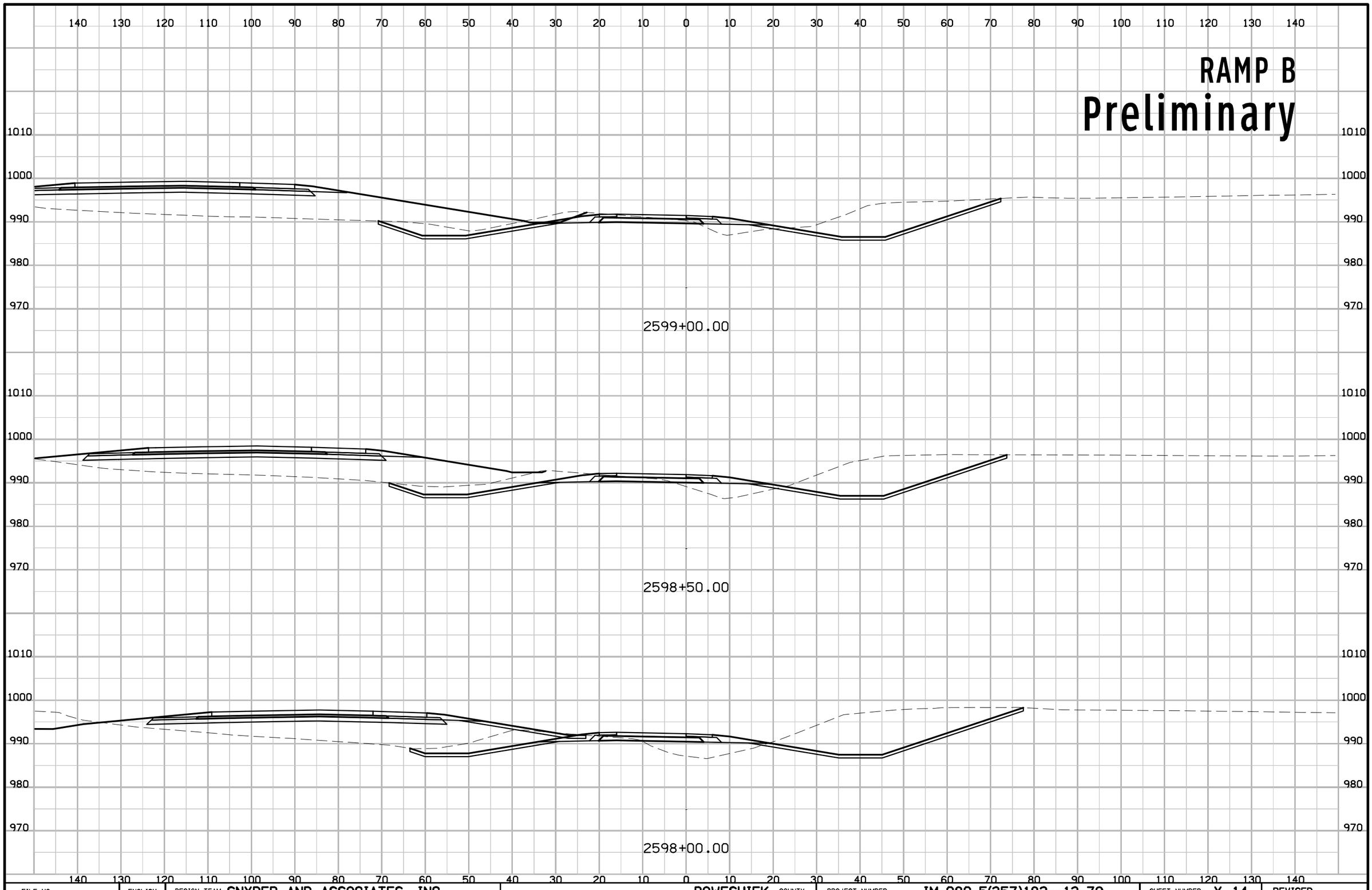

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.14	REVISED

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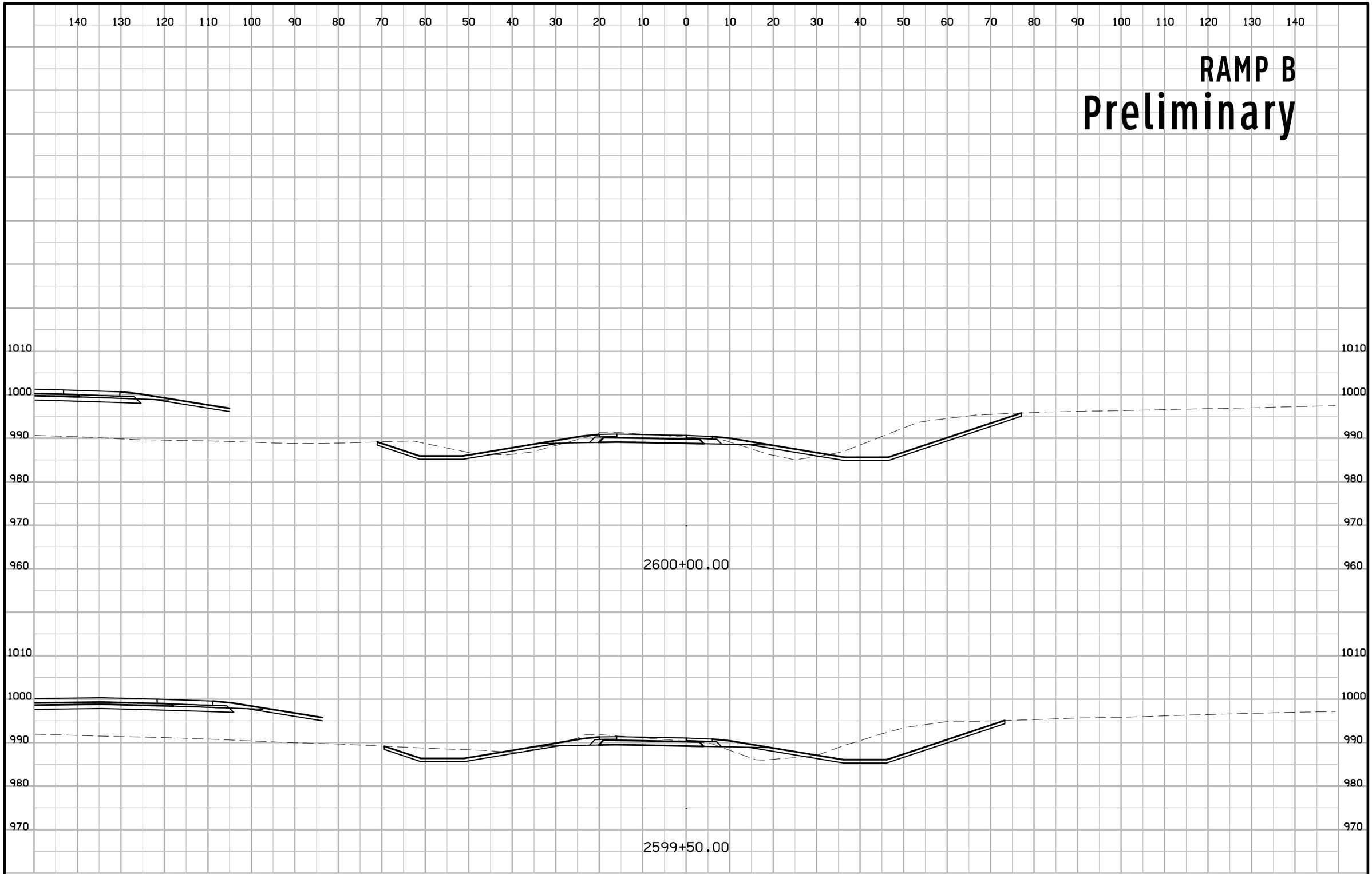

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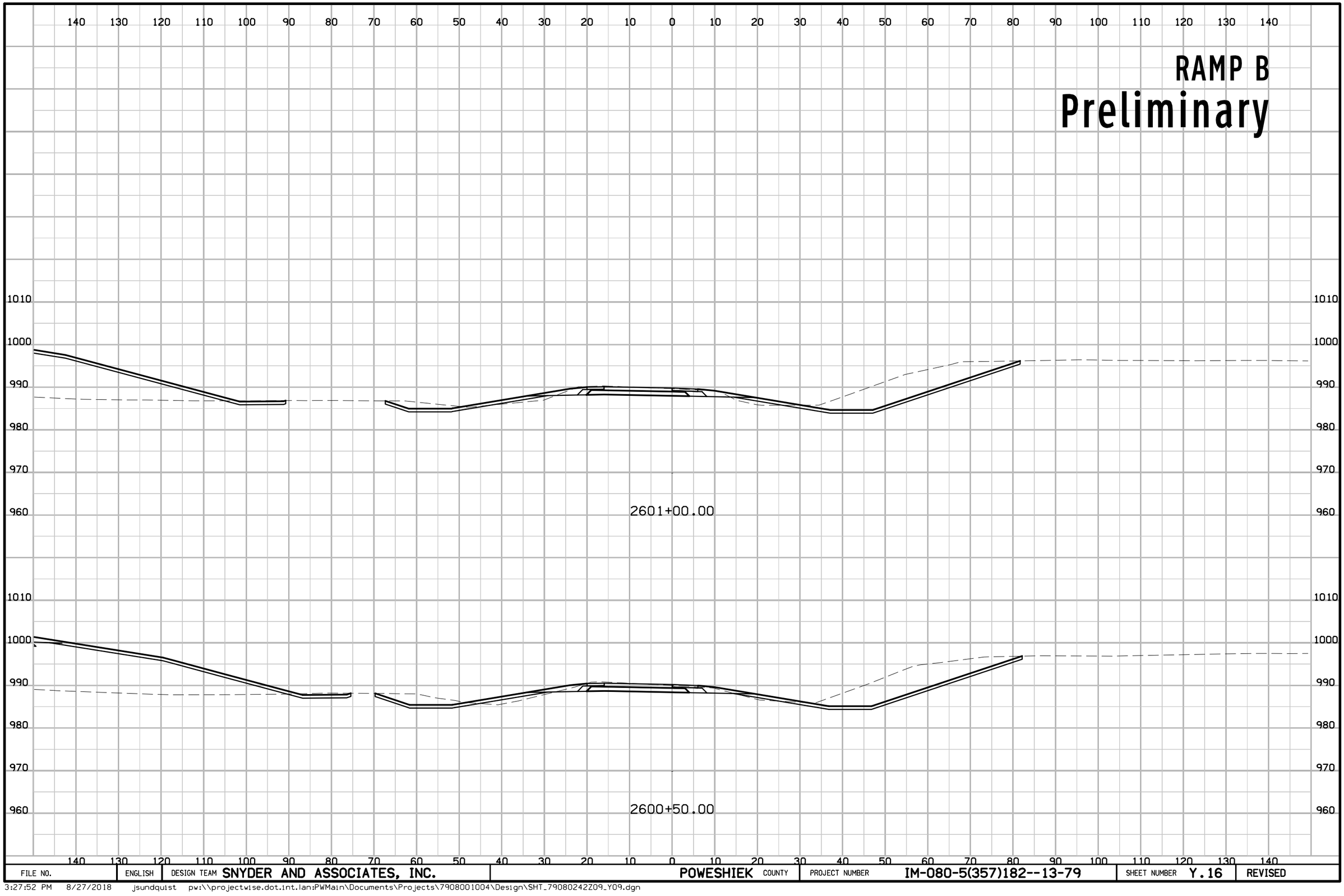

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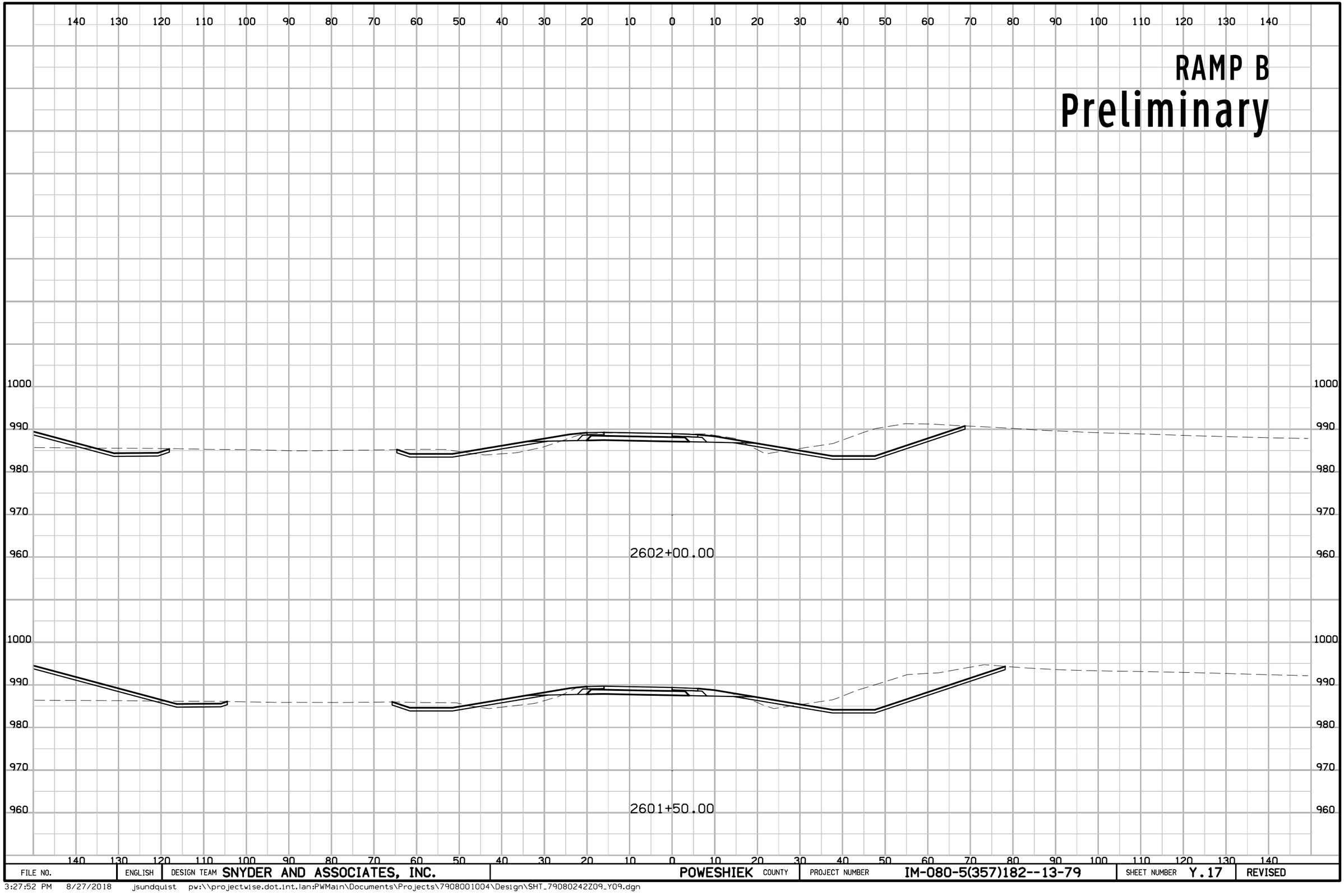

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.17	REVISED

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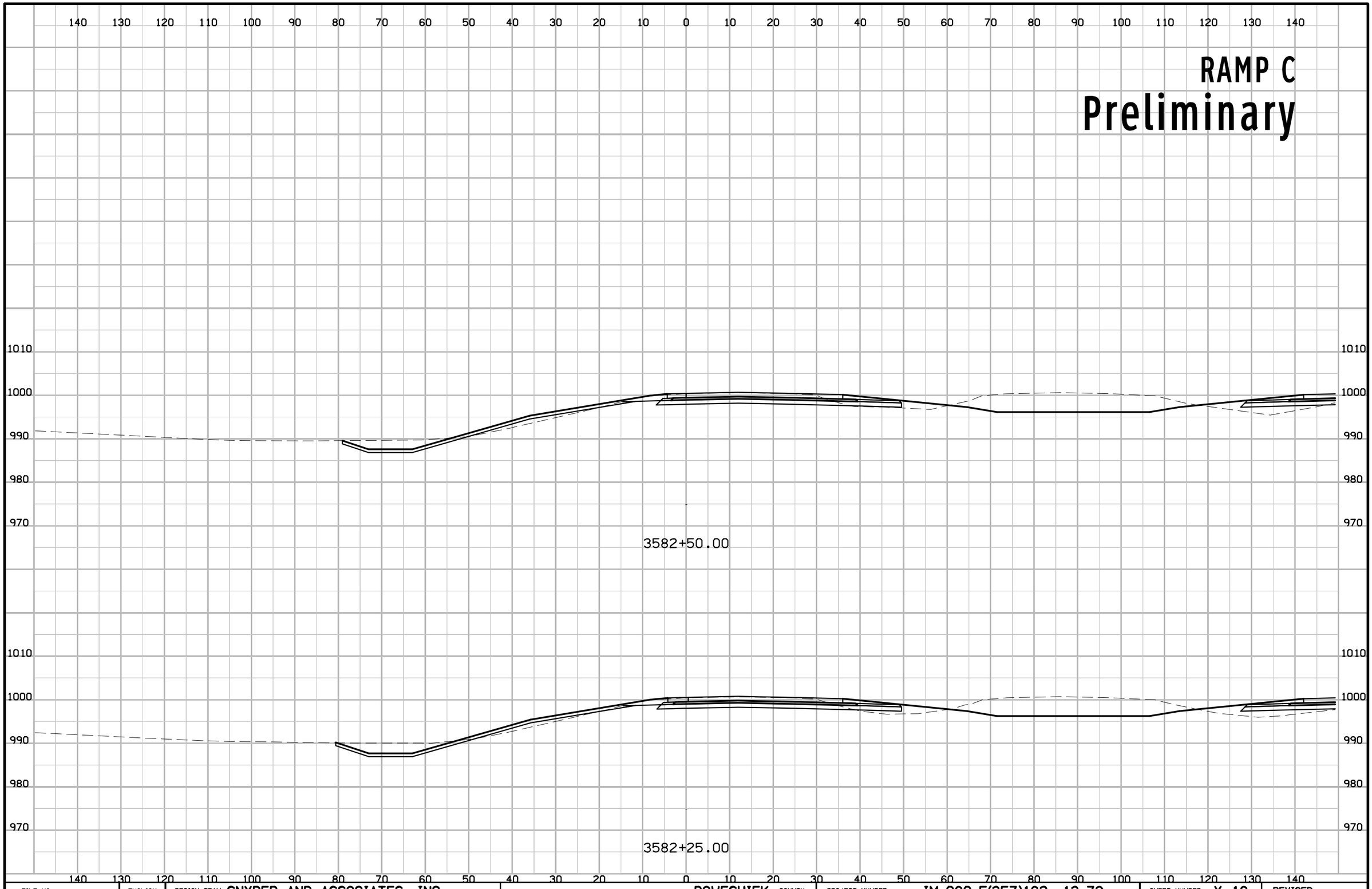

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RAMP C

Preliminary

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1010
1000
990
980
970

3583+50.00

3583+00.00

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.19	REVISED

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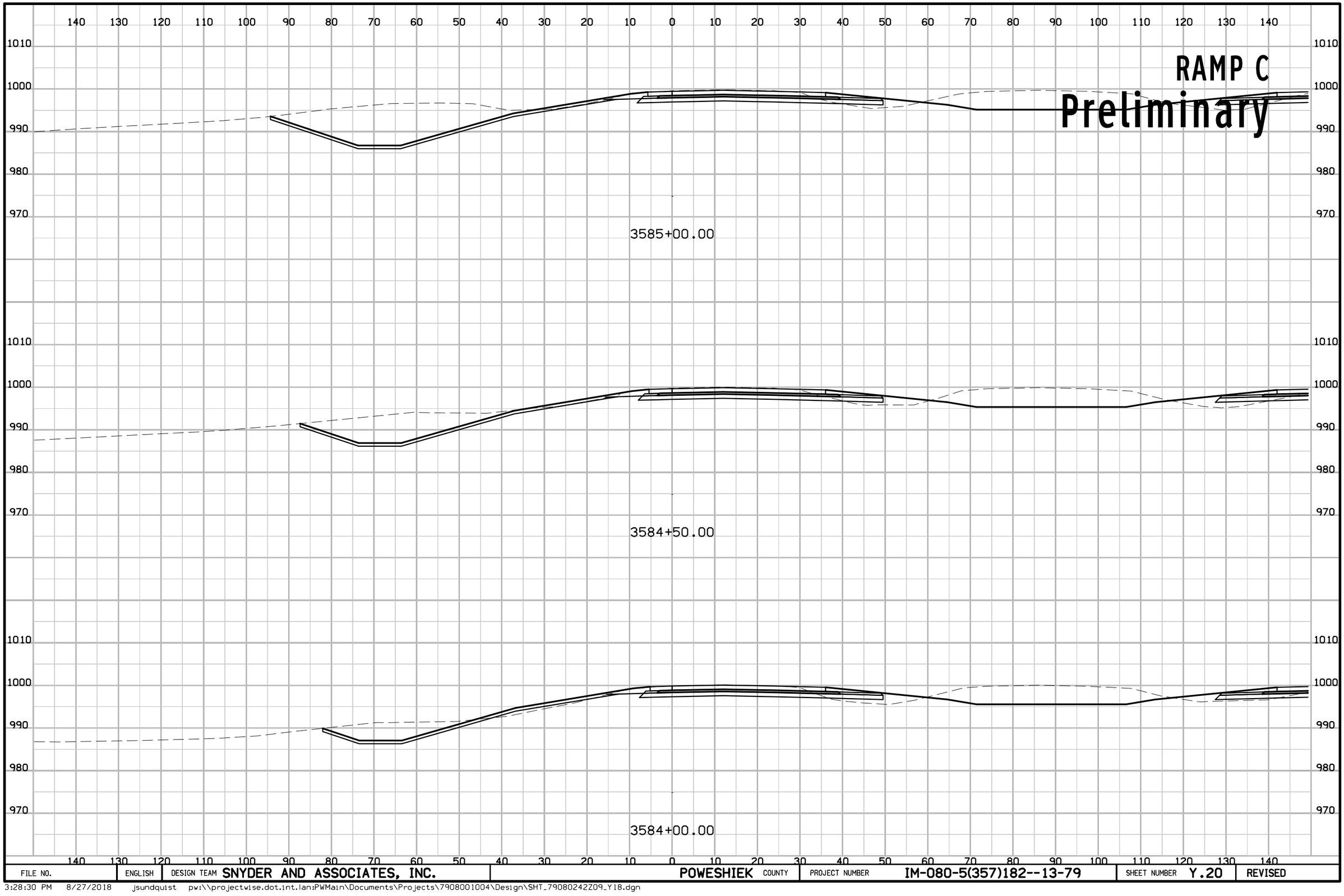

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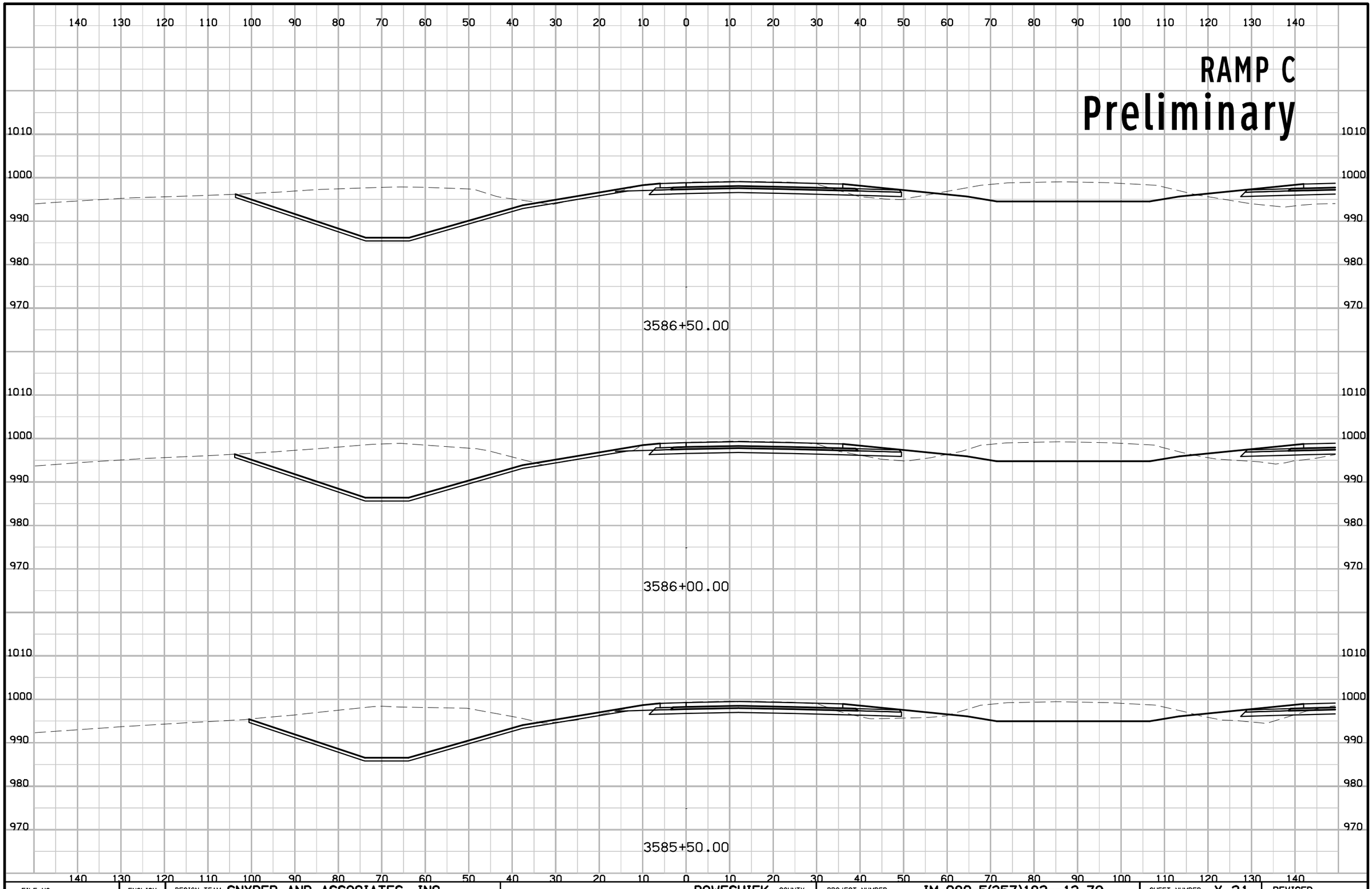

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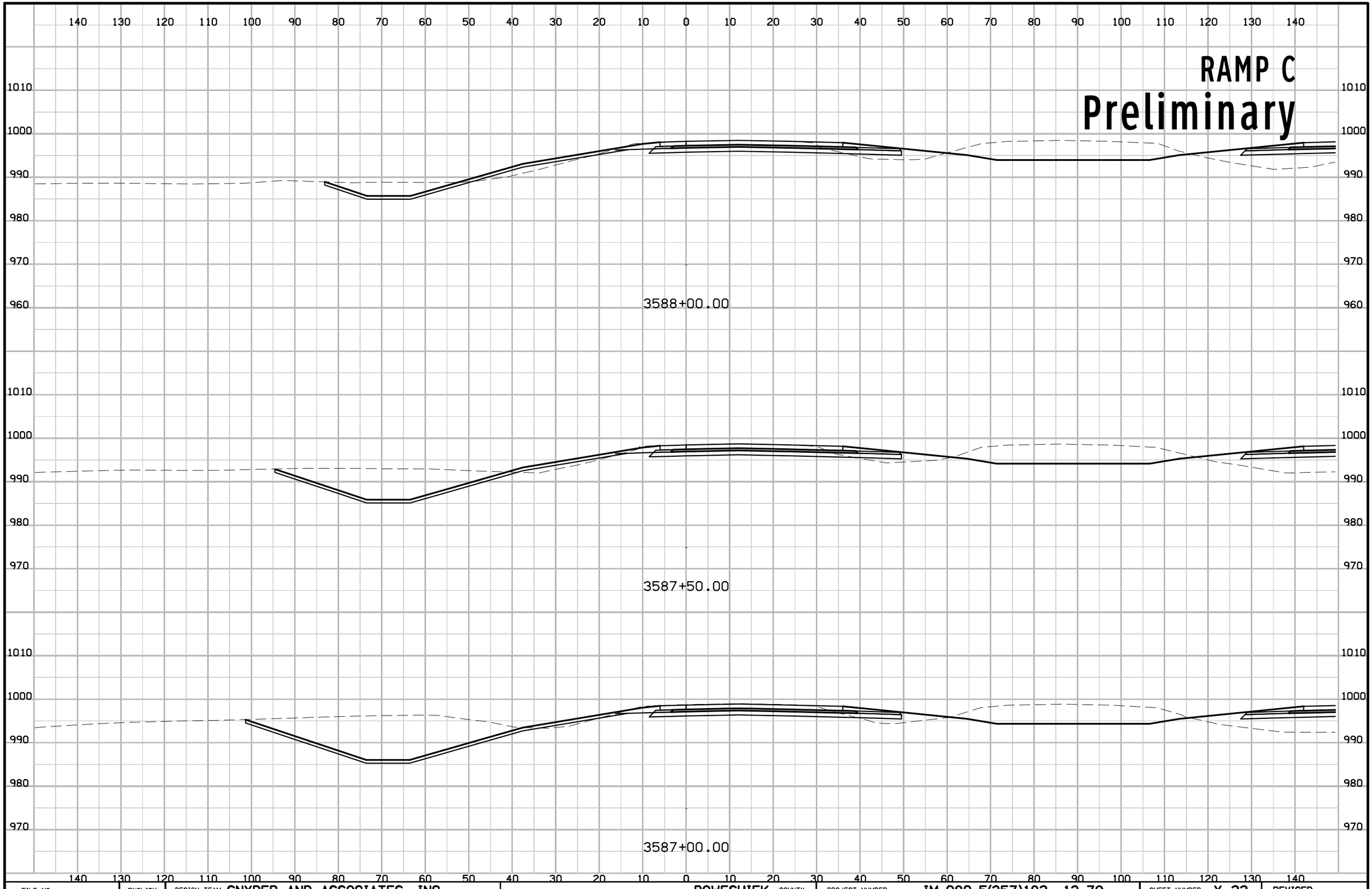

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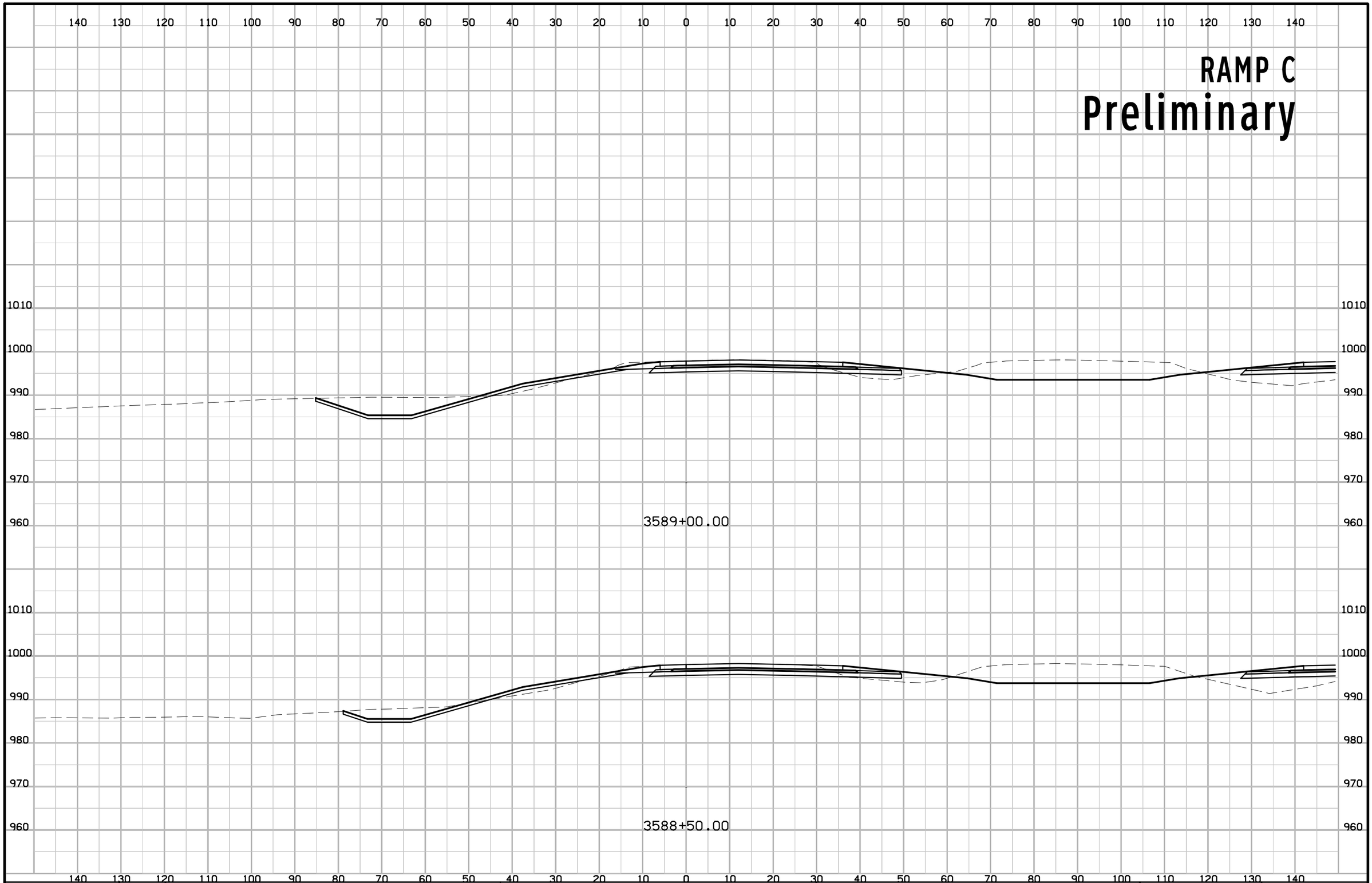

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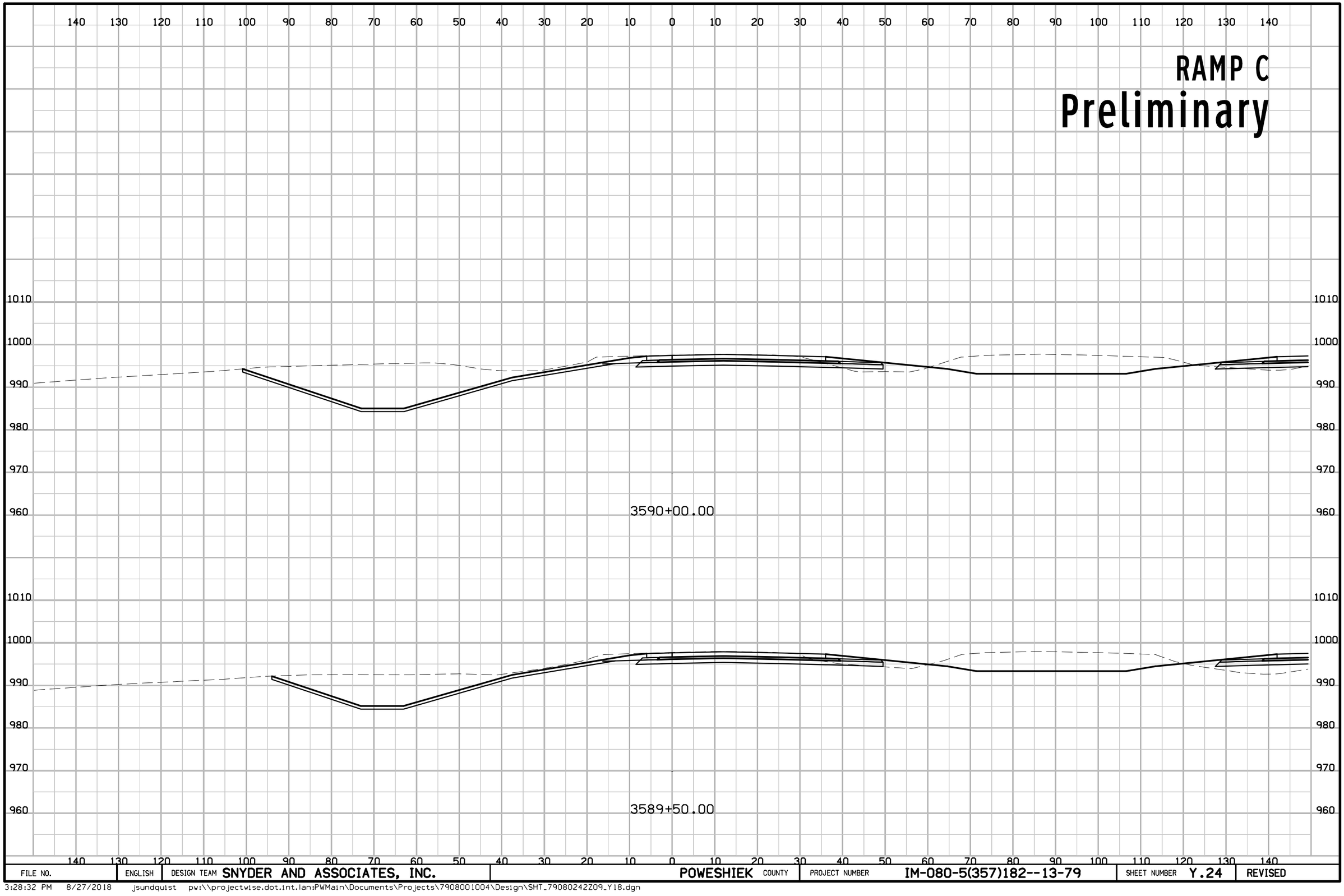

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.24	REVISED

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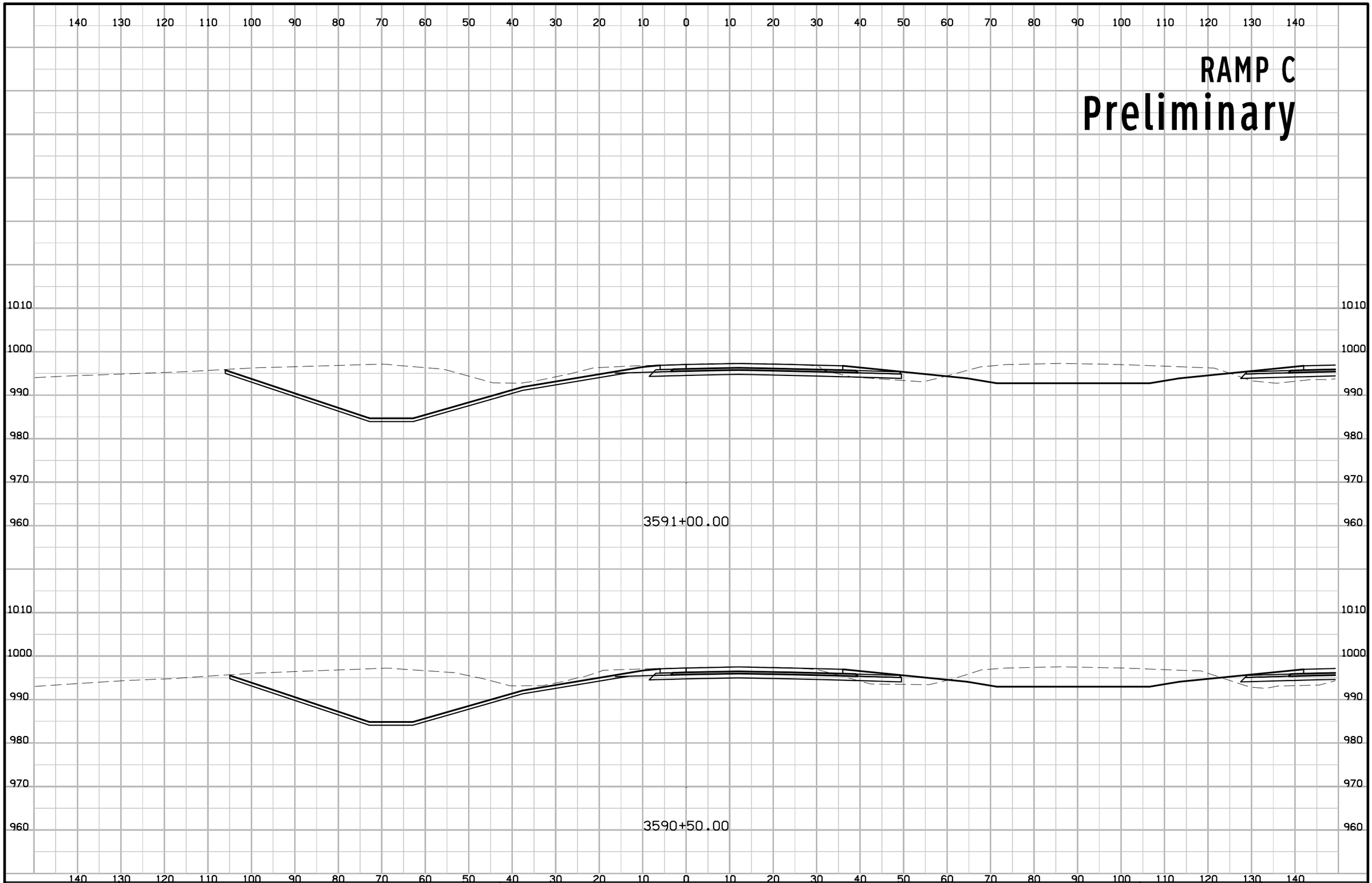

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.25	REVISED

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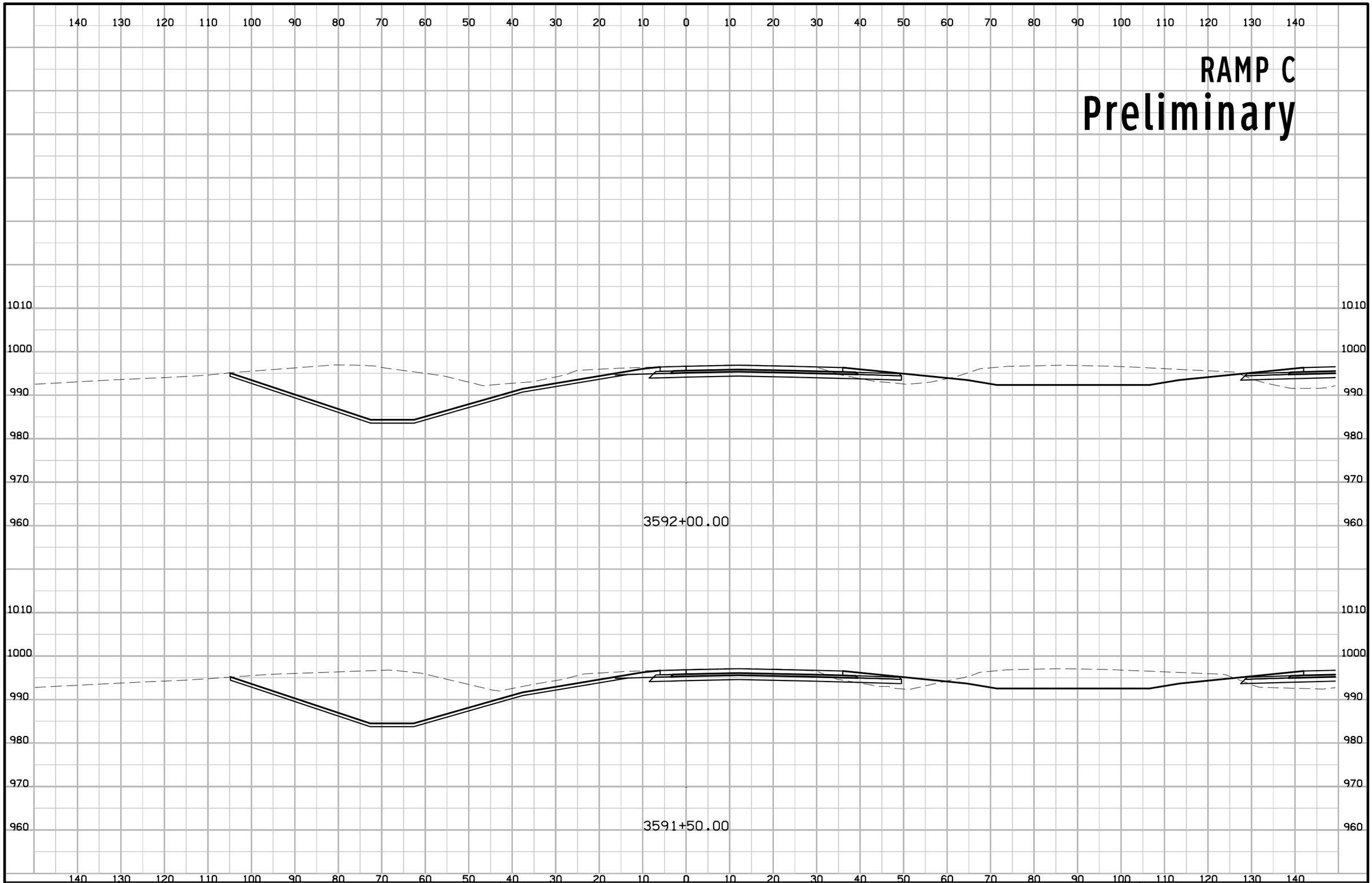

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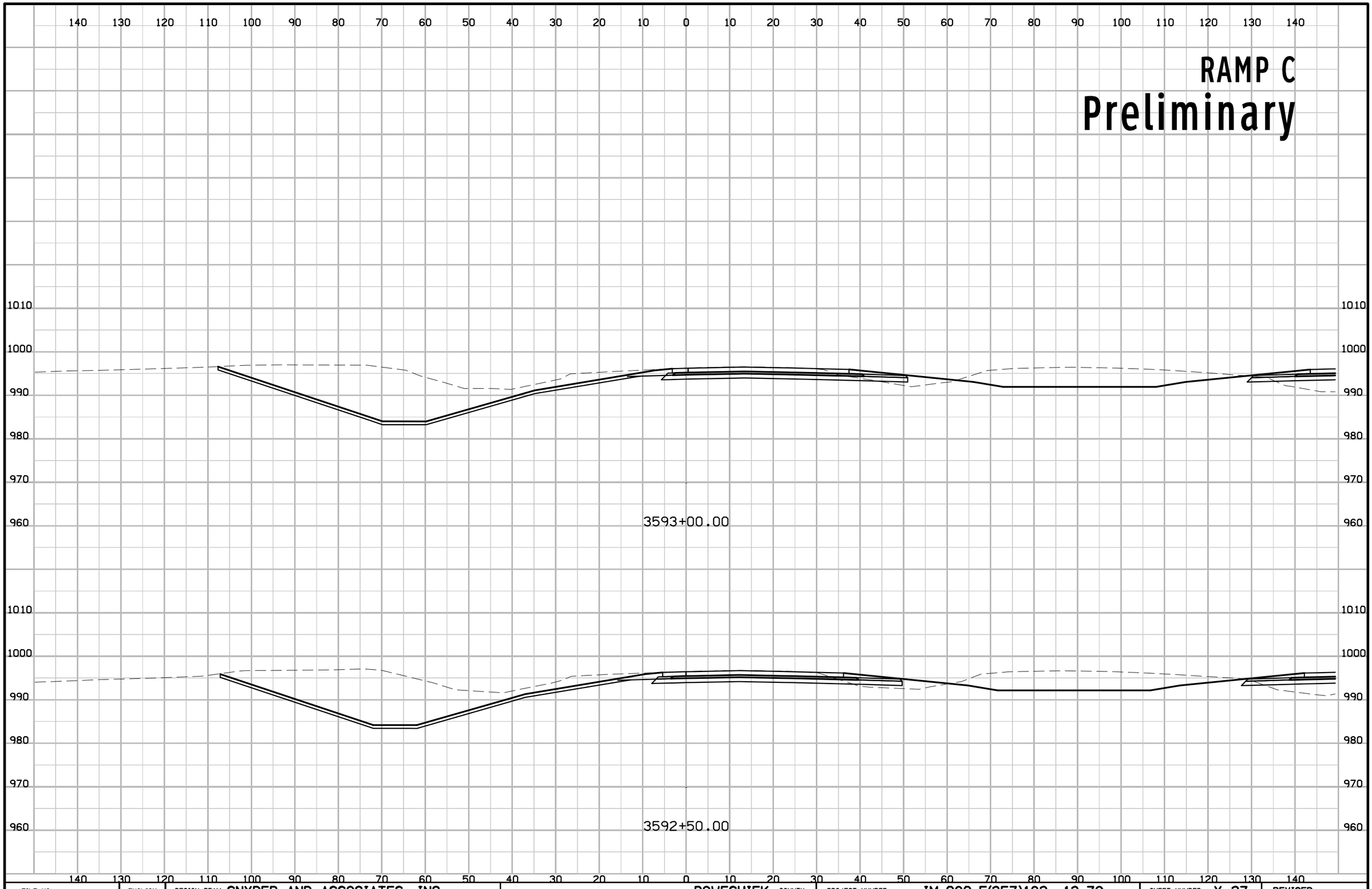

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.27	REVISED

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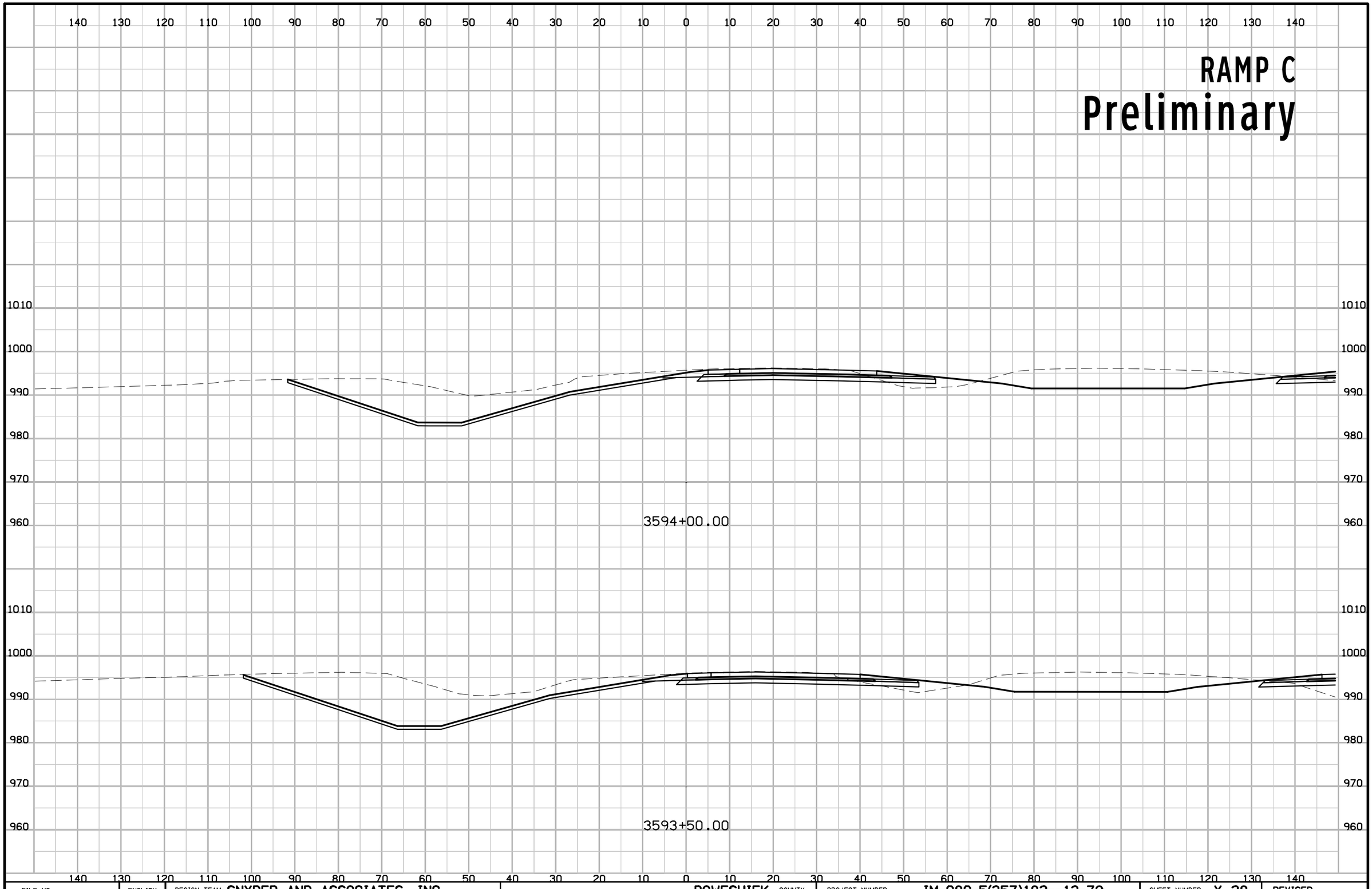

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.28	REVISED

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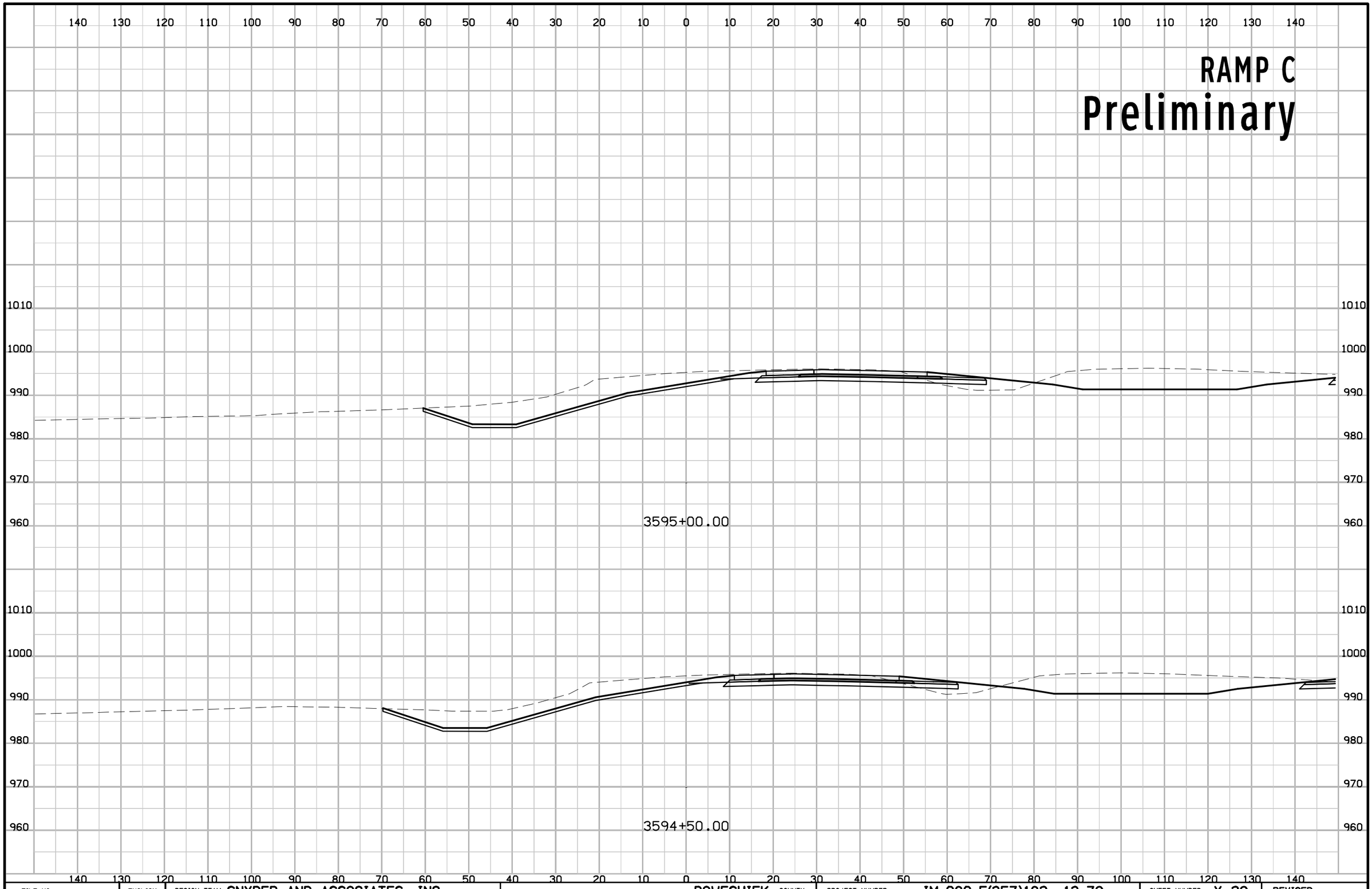

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.29	REVISED

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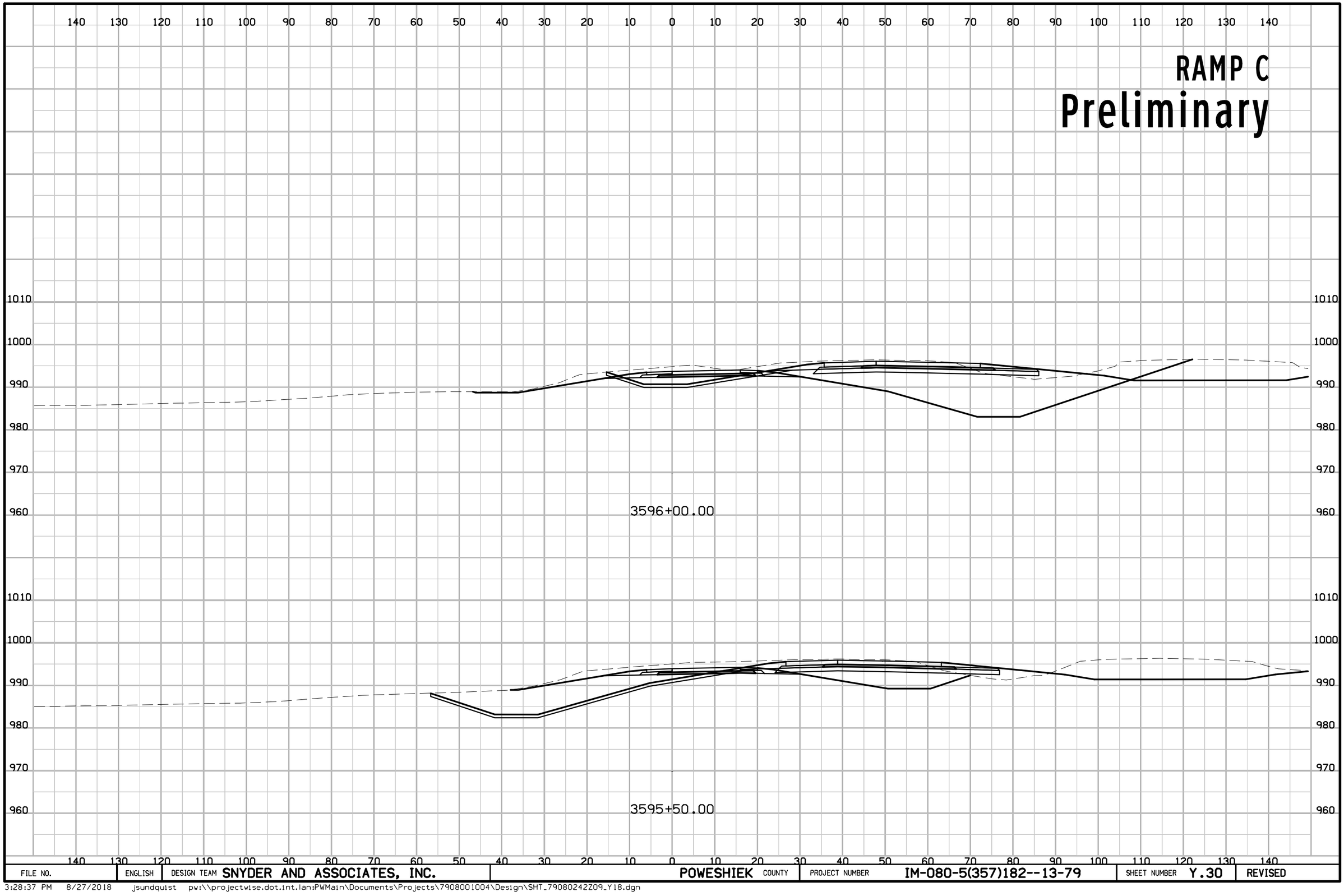

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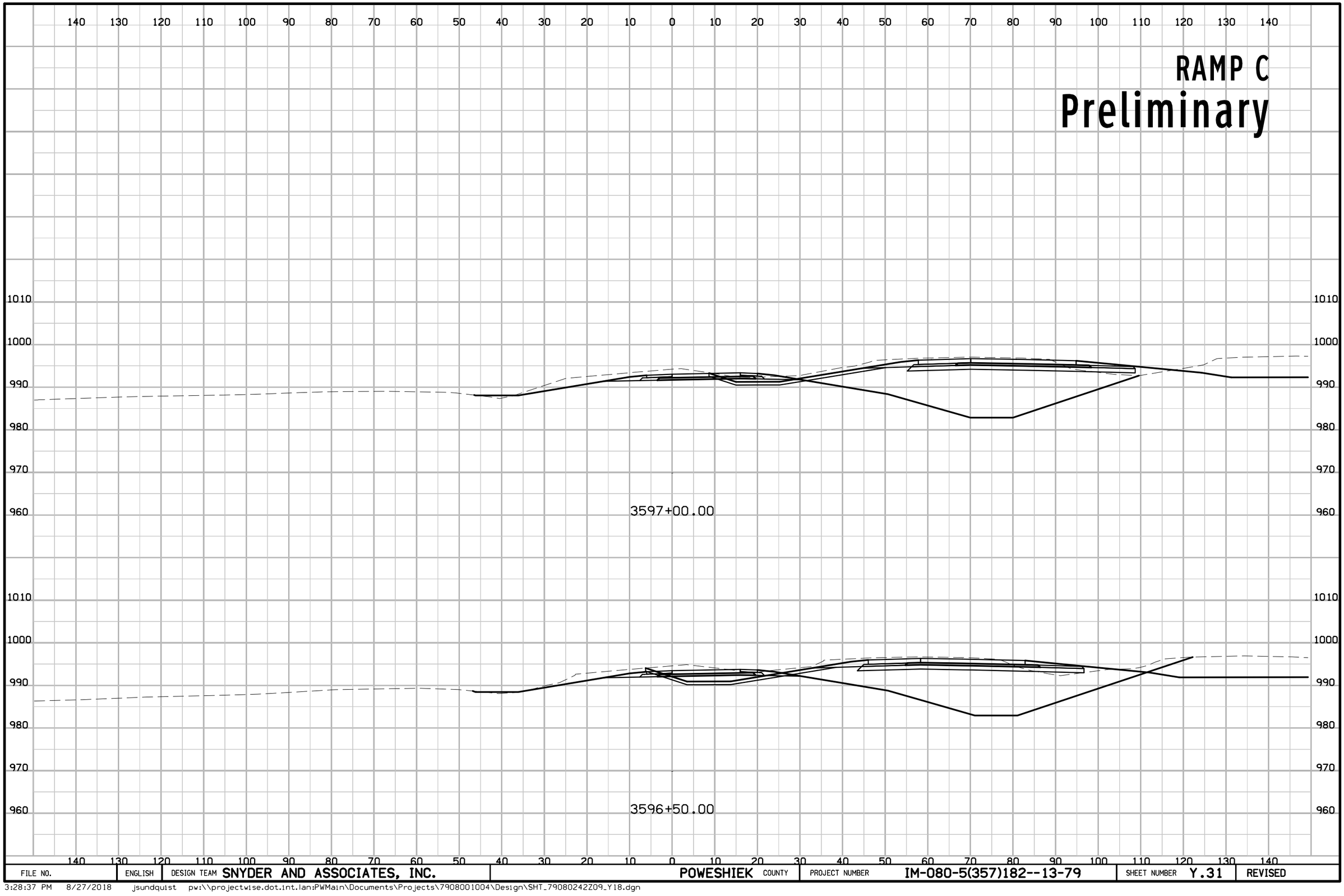

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.31	REVISED

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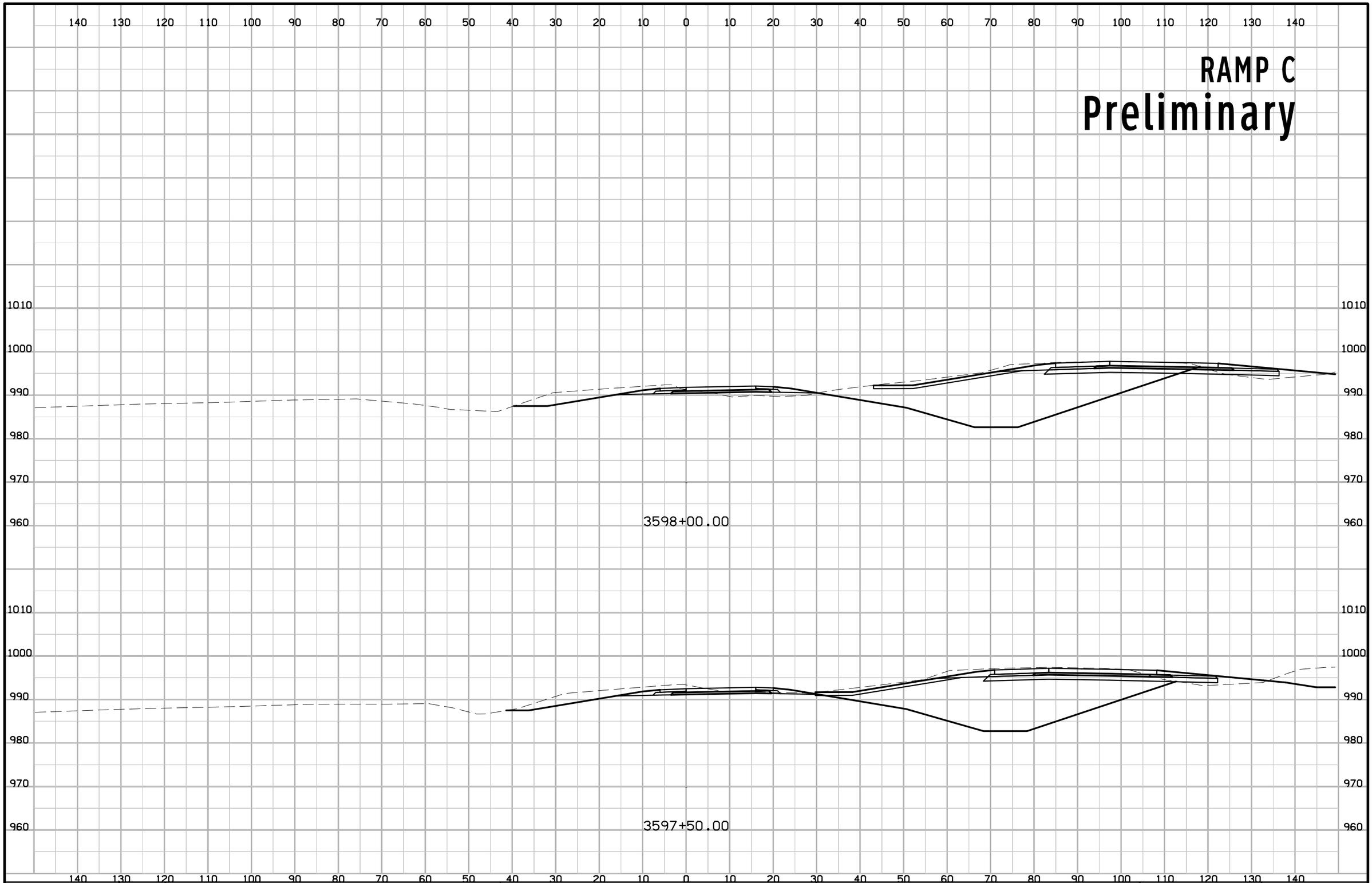

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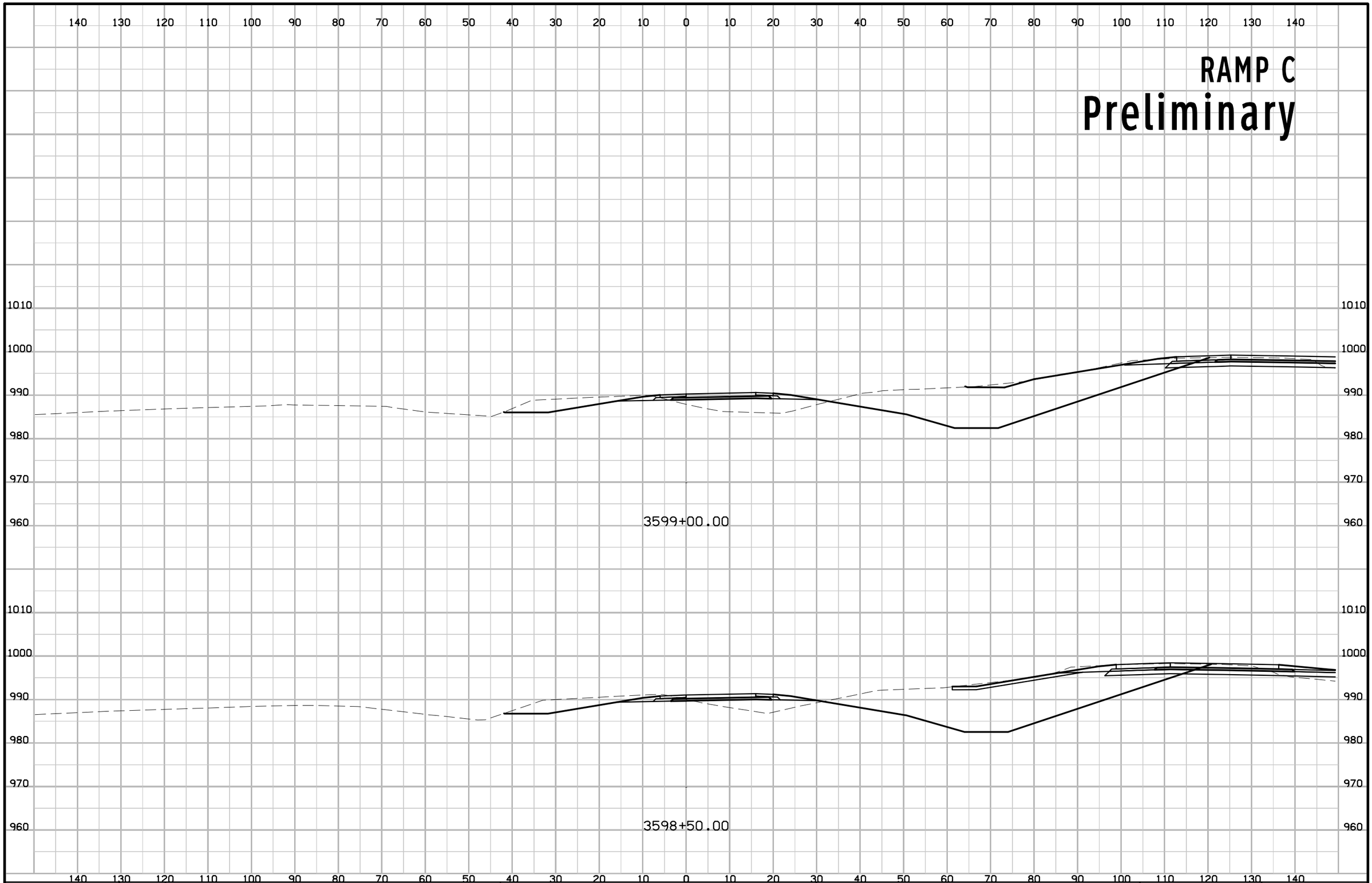

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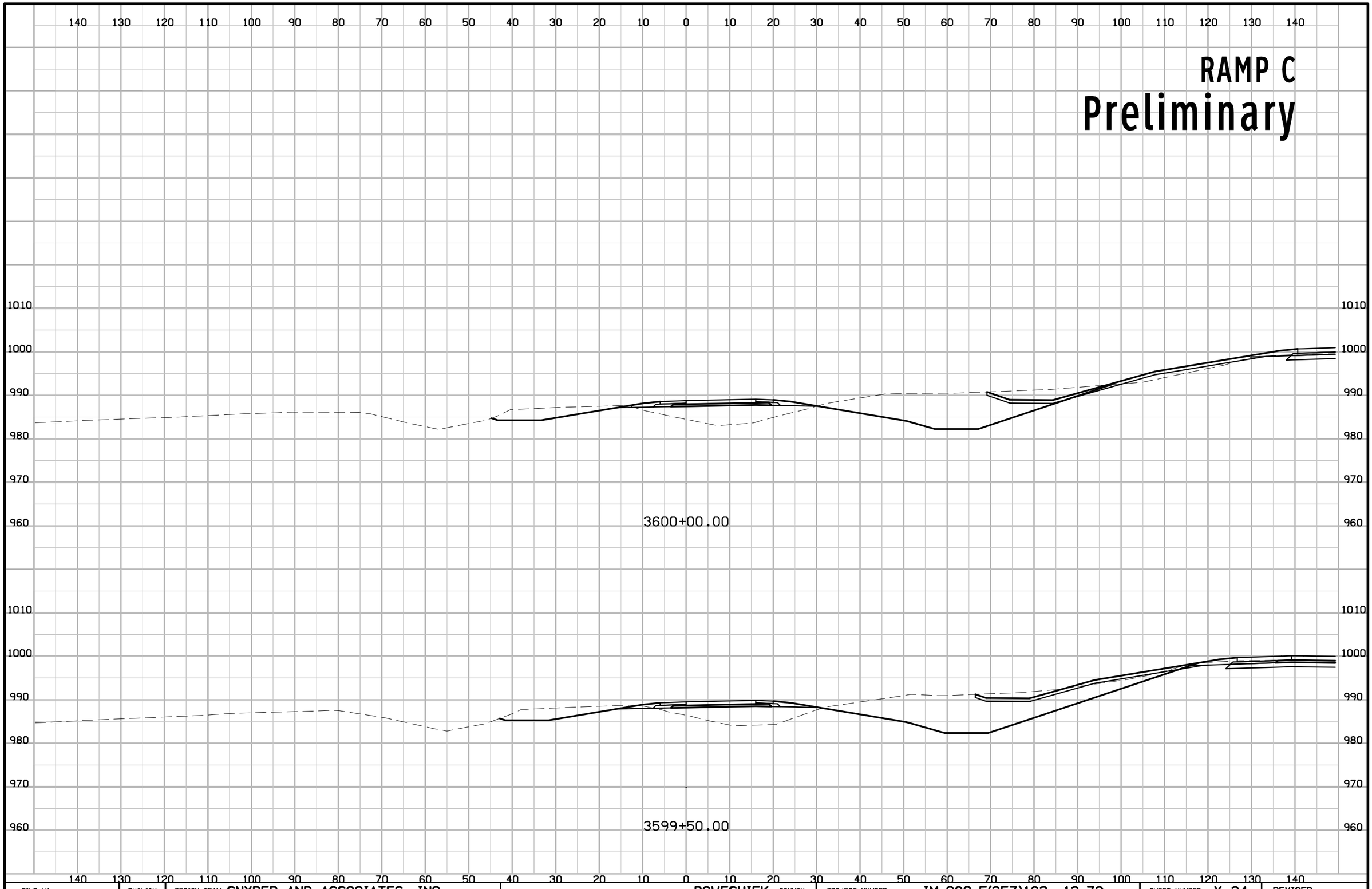

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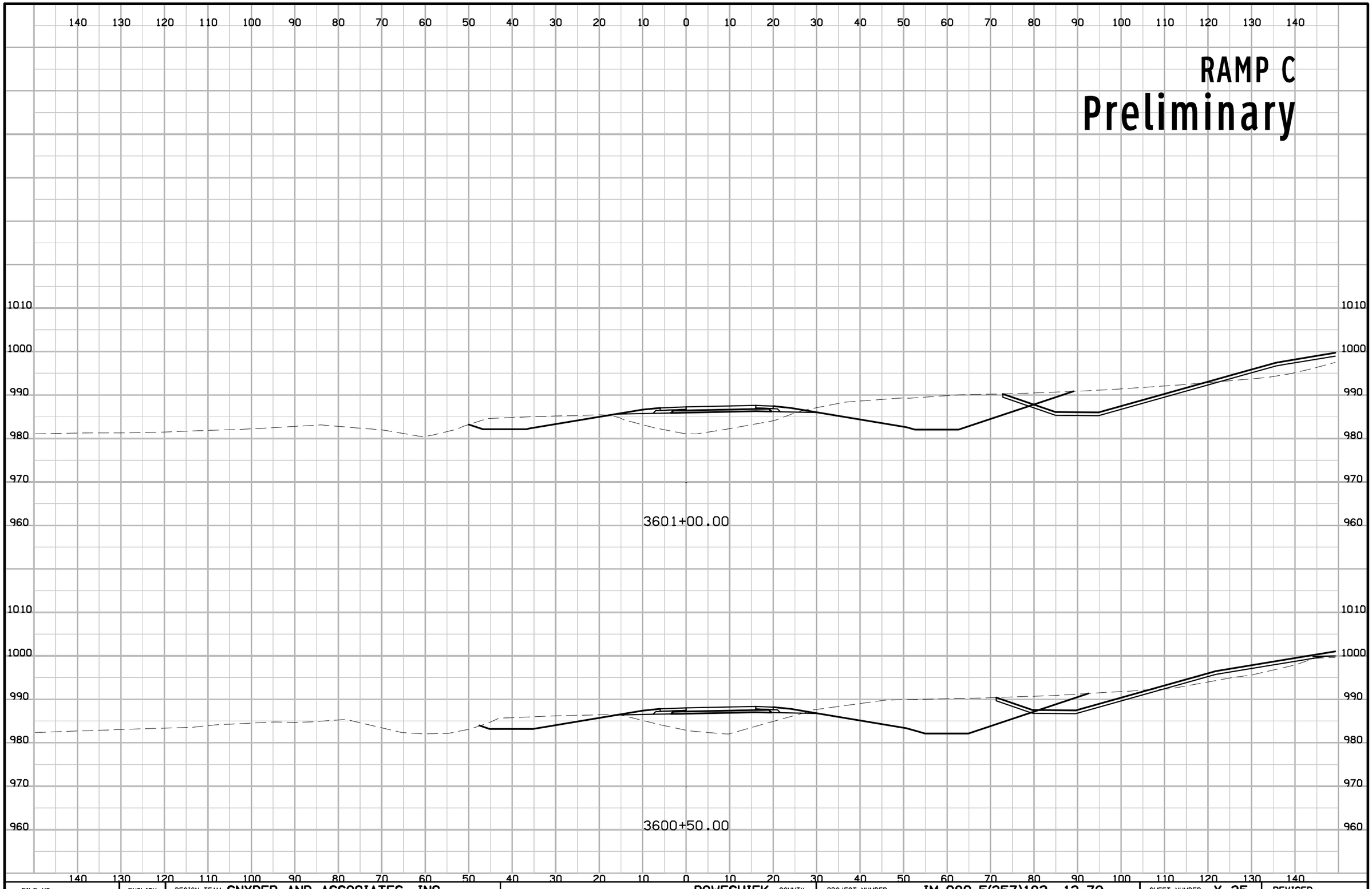

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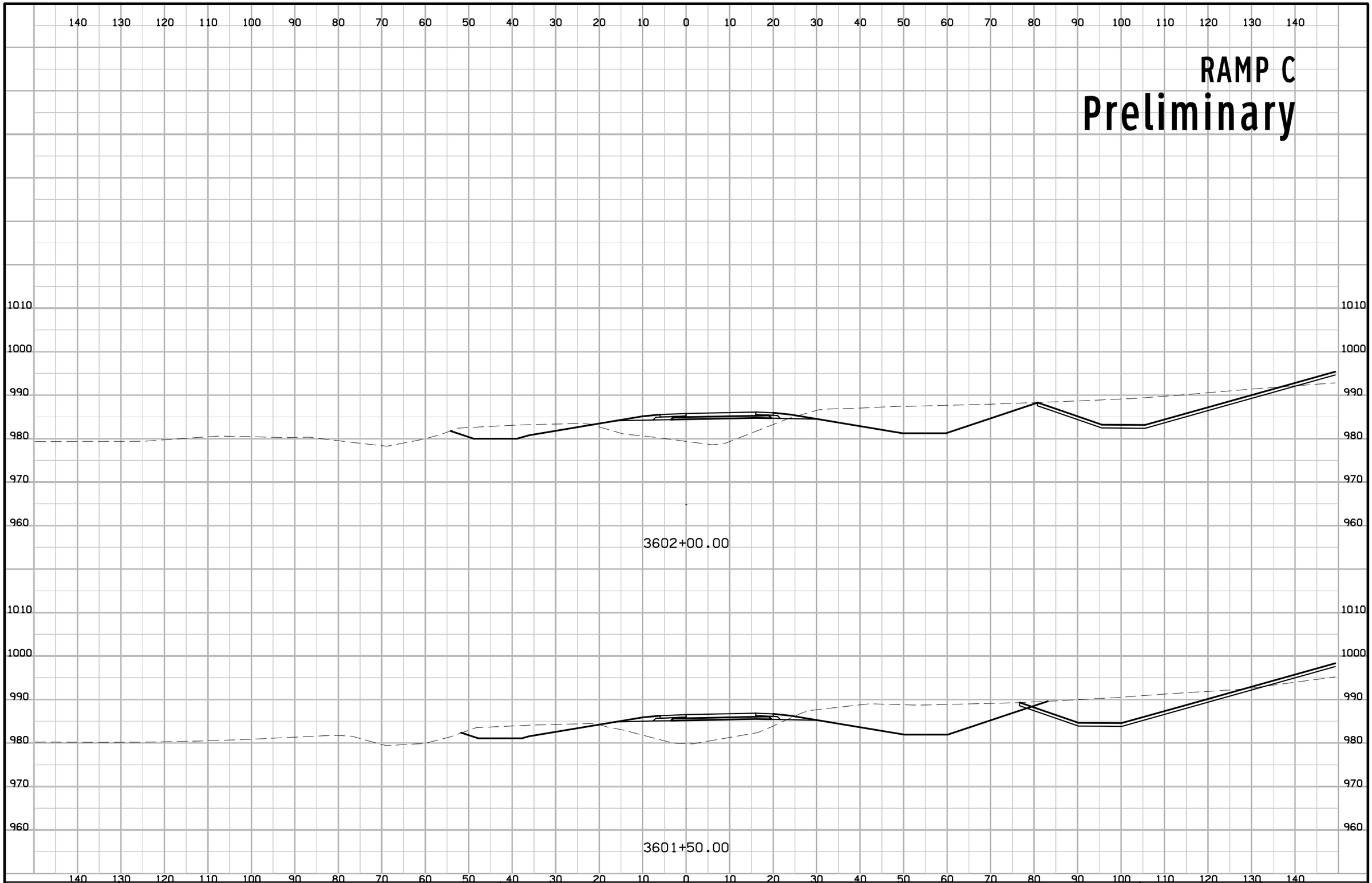

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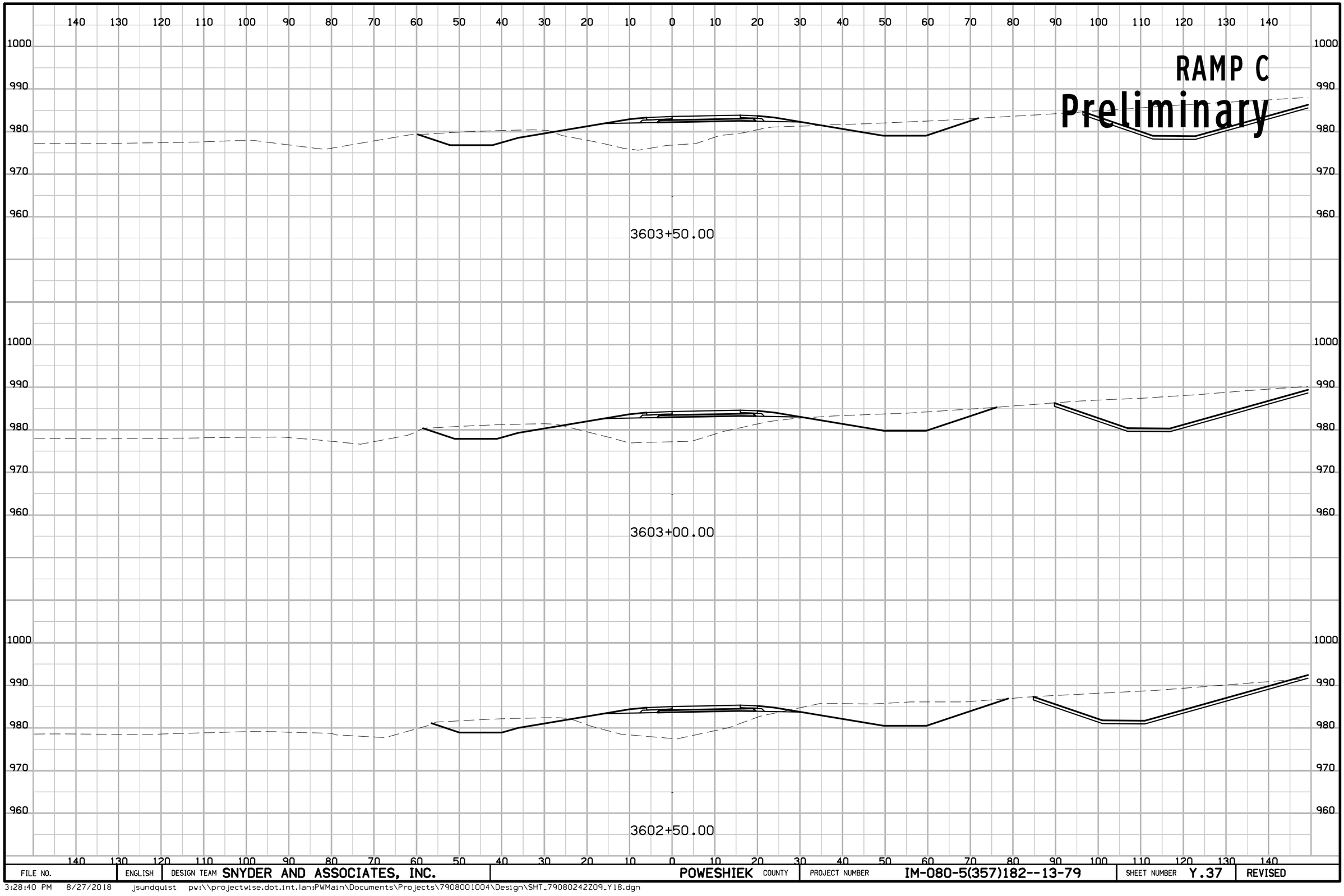

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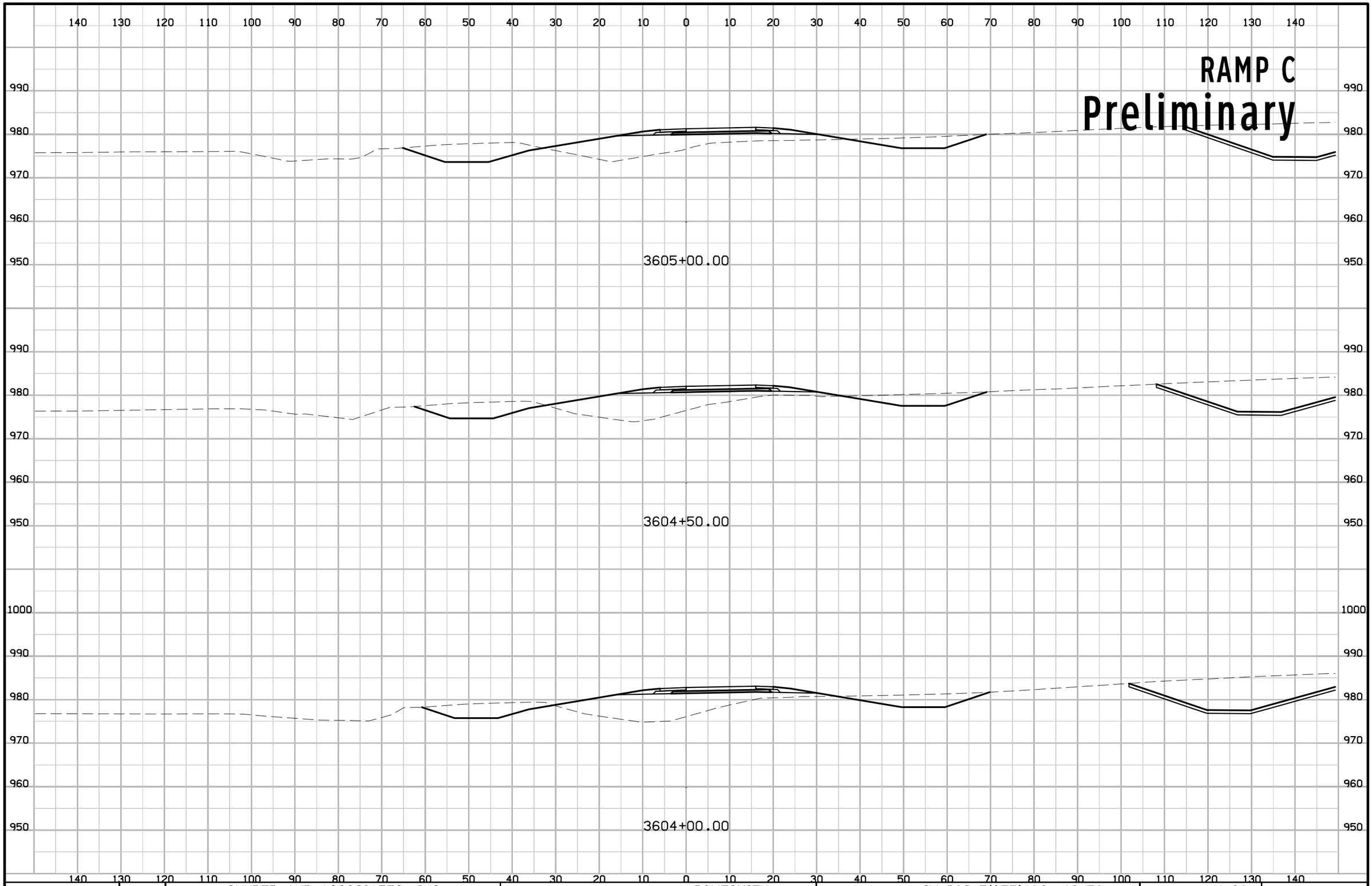

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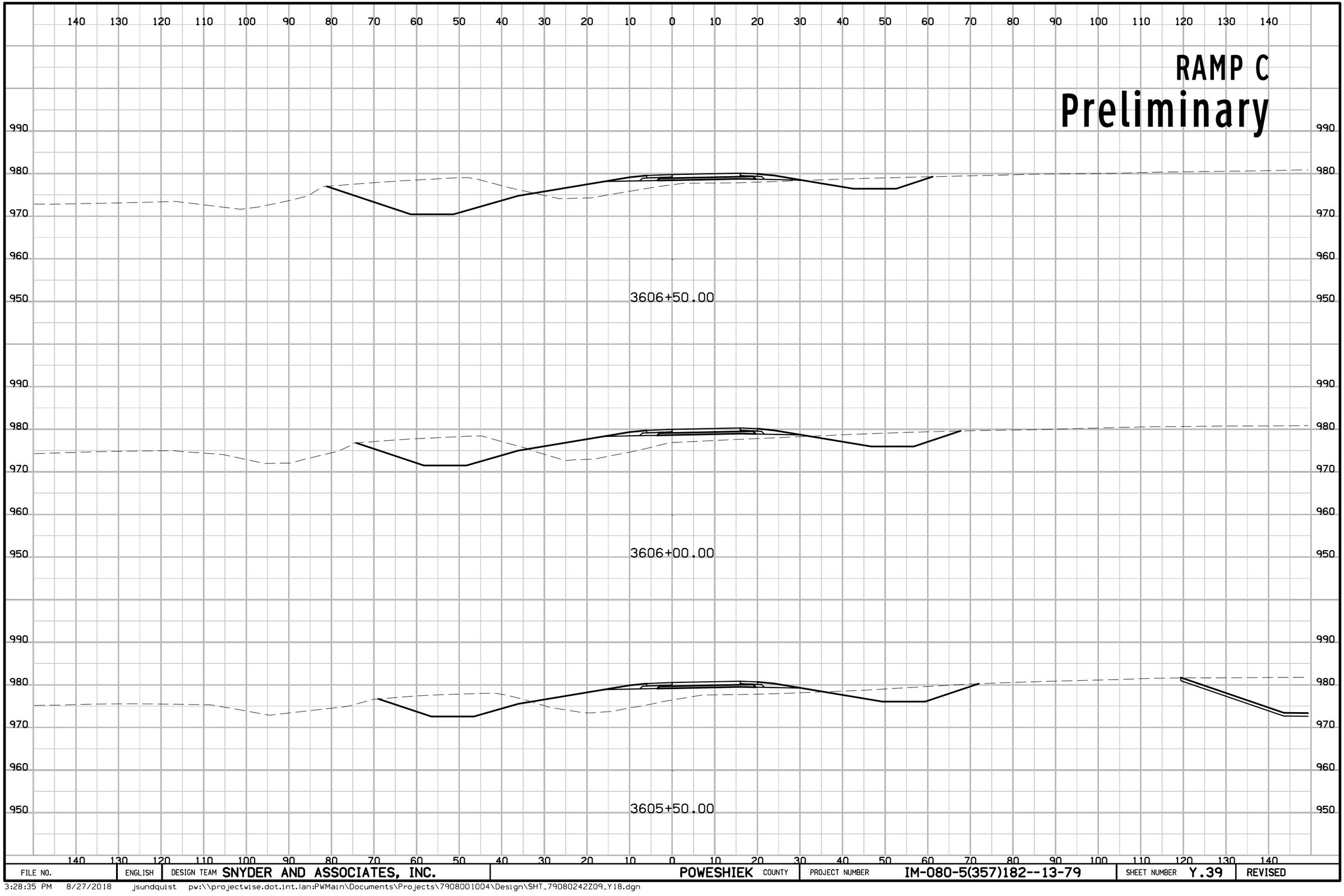

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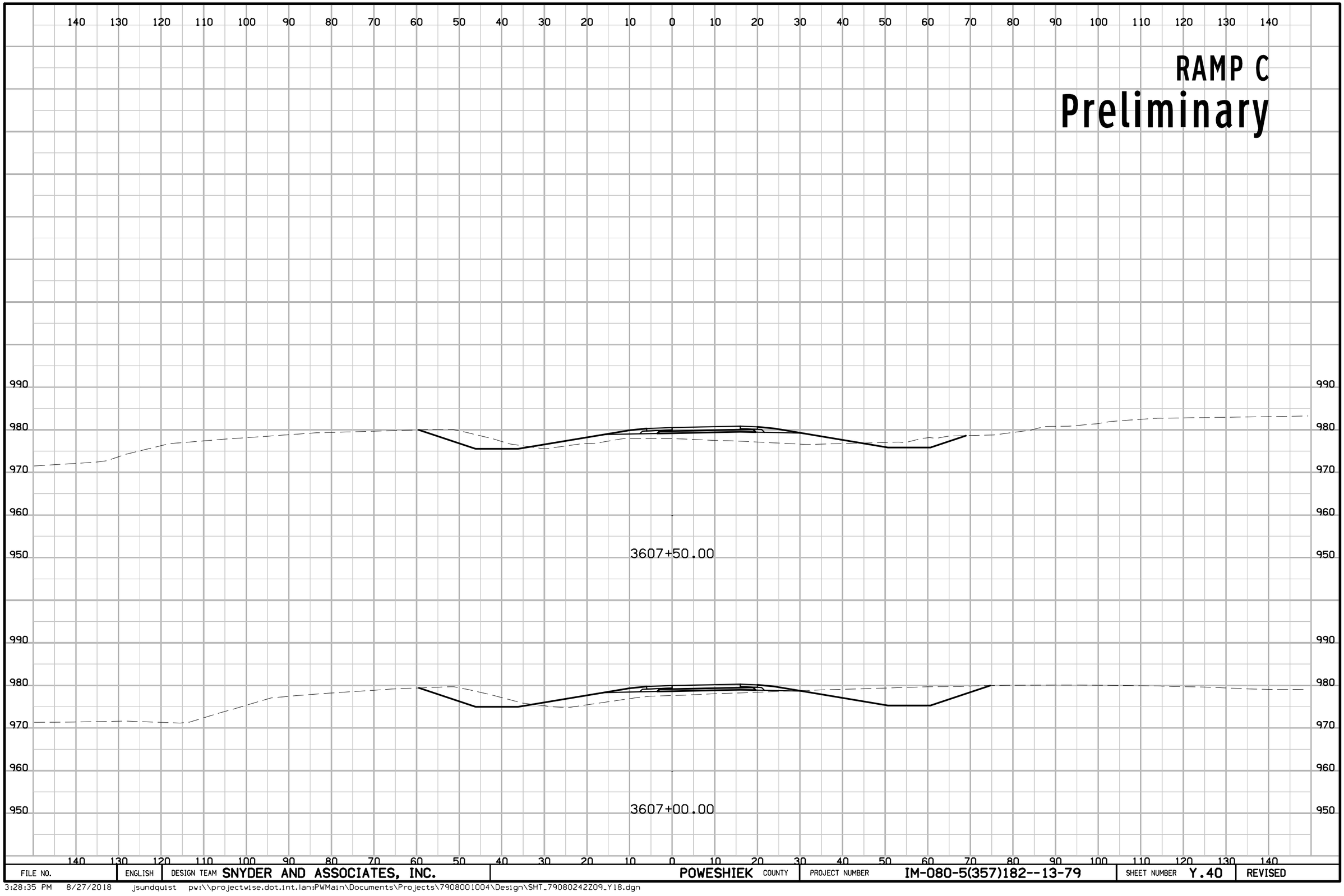

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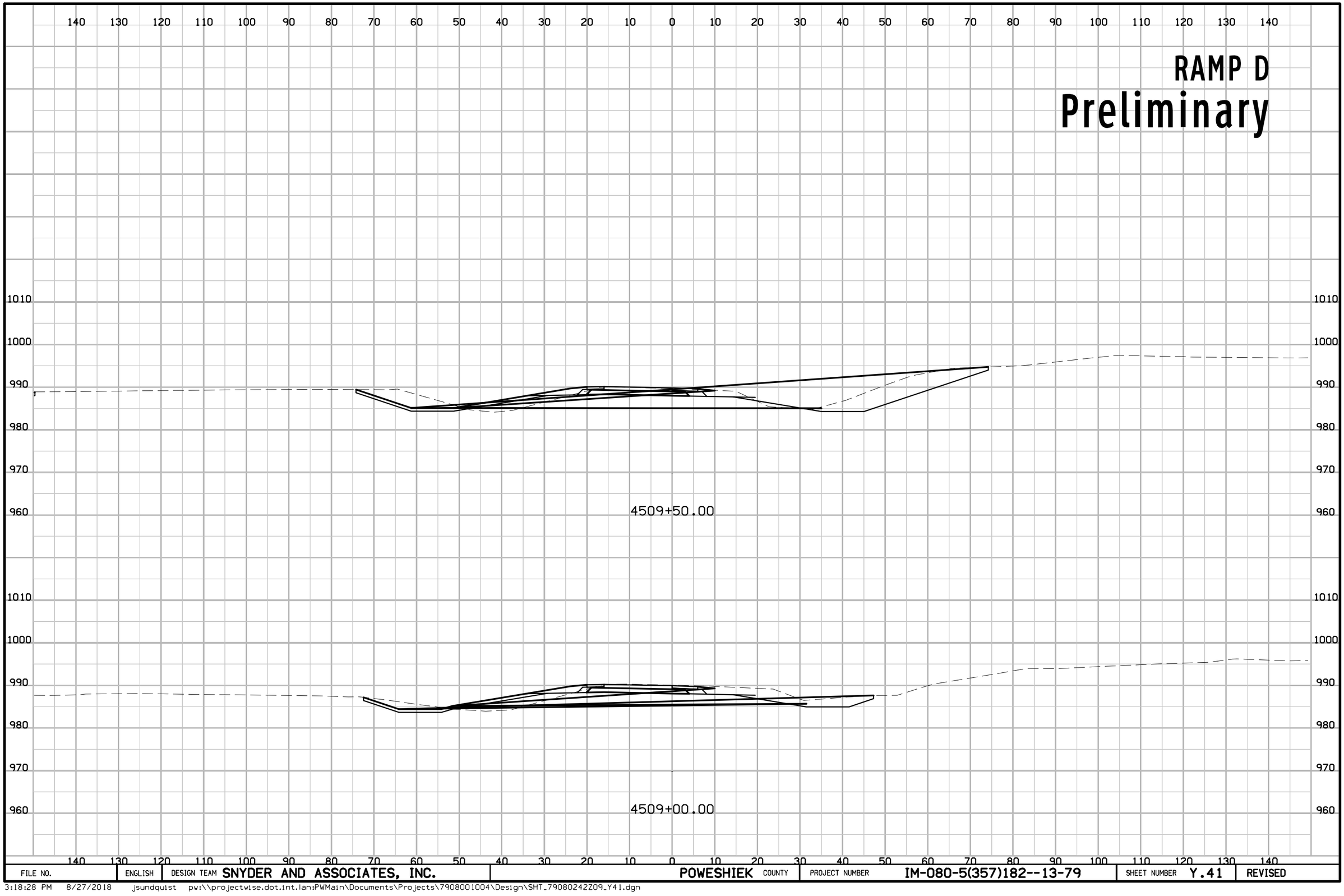

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.41	REVISED

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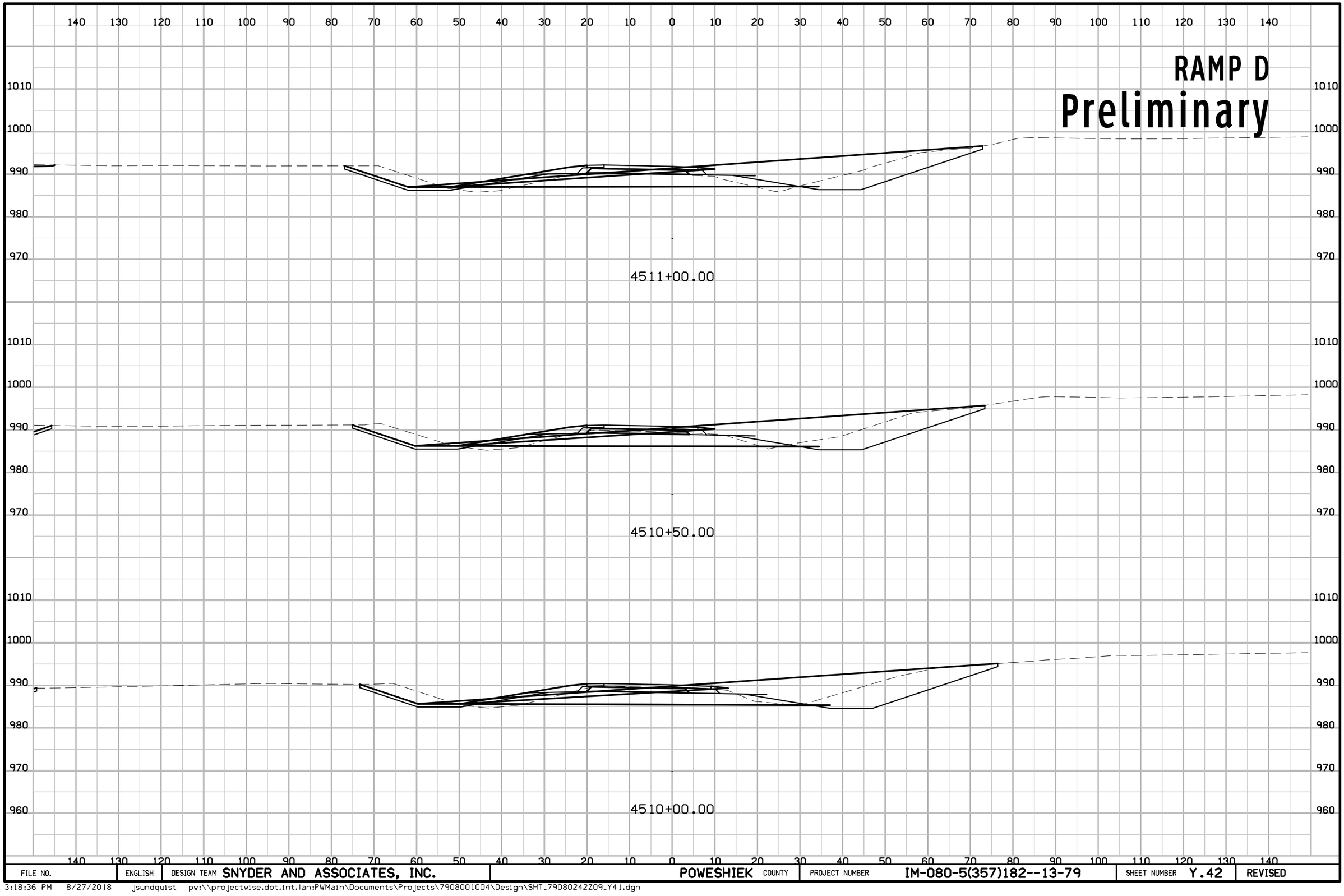

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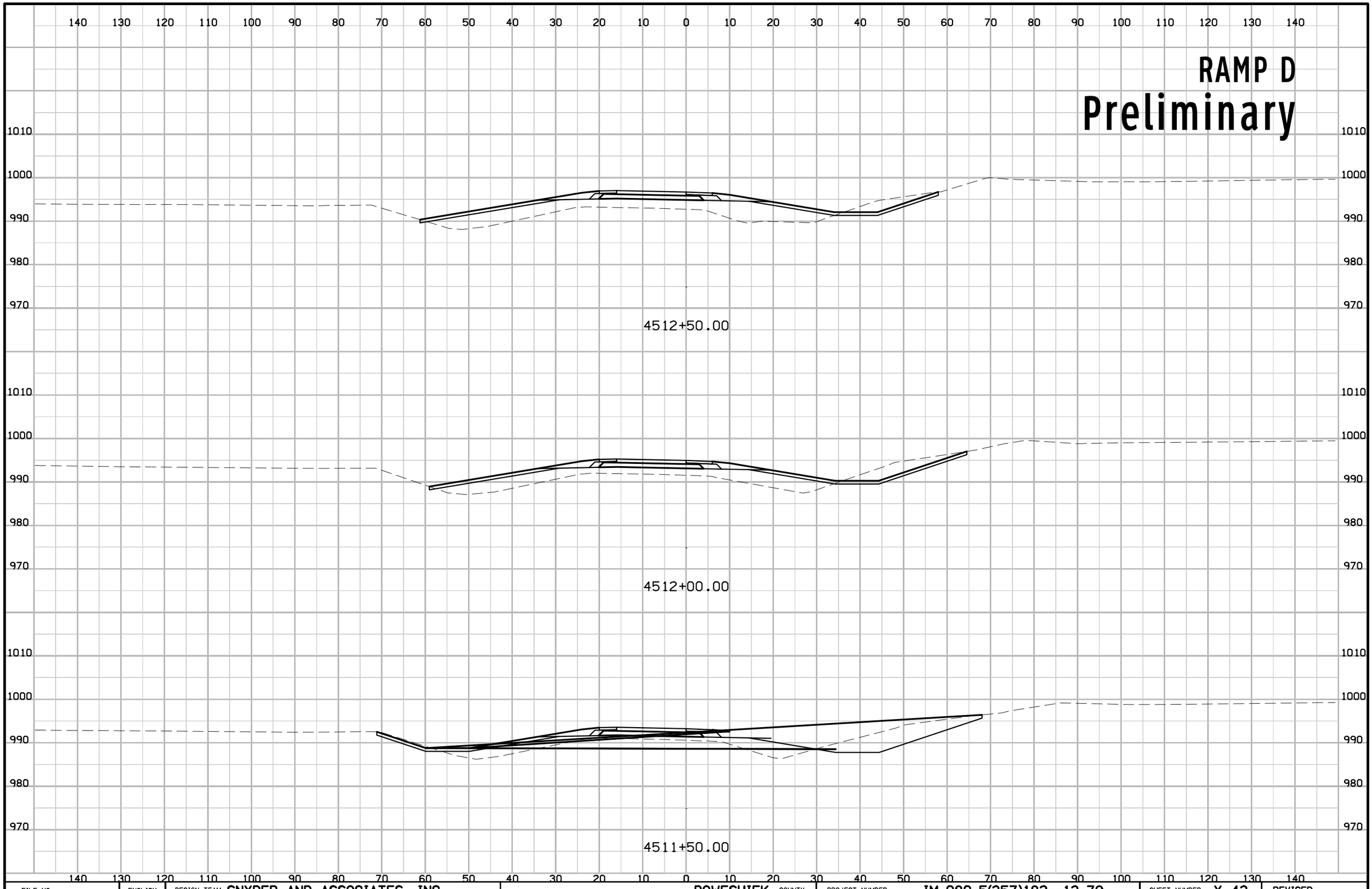

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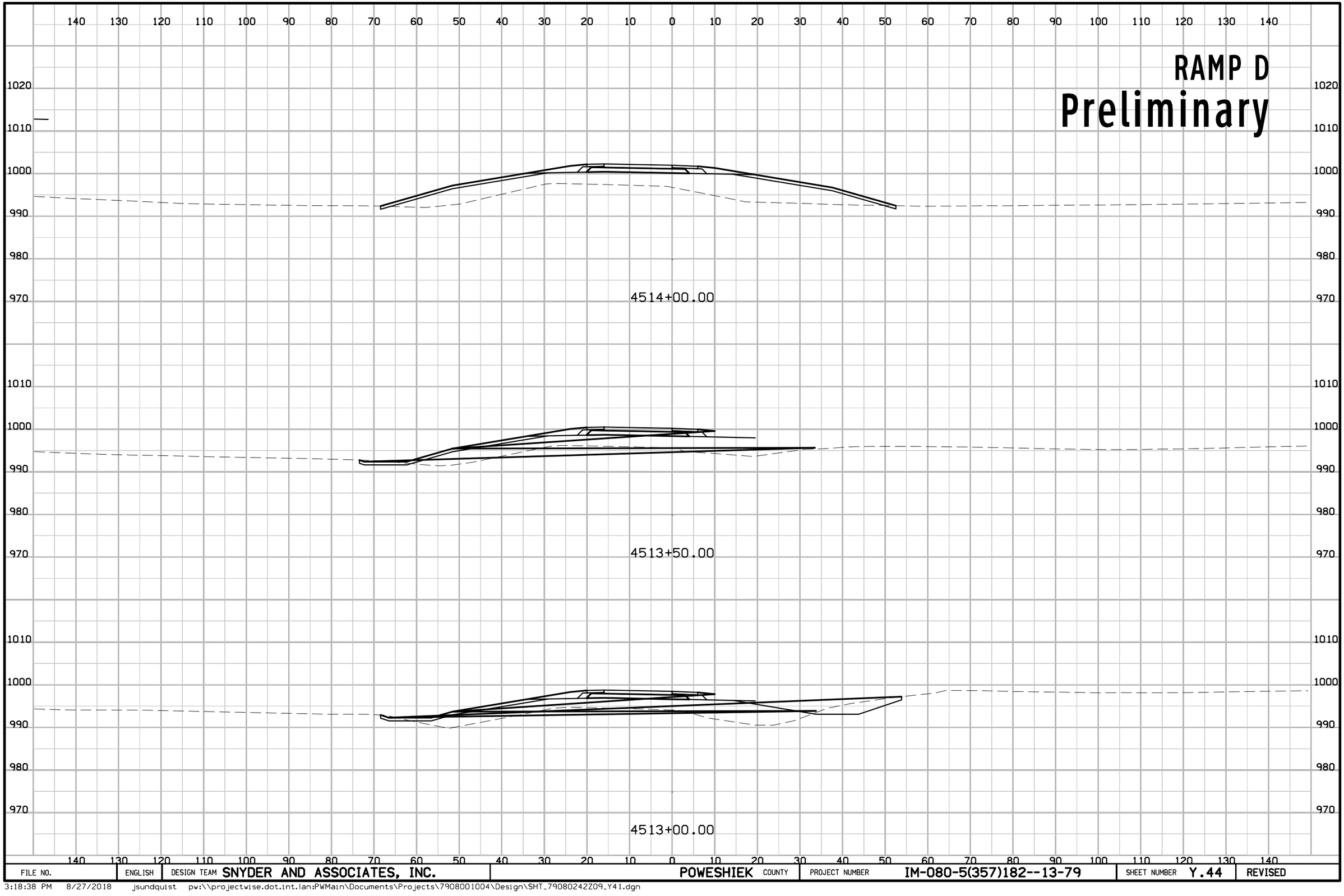

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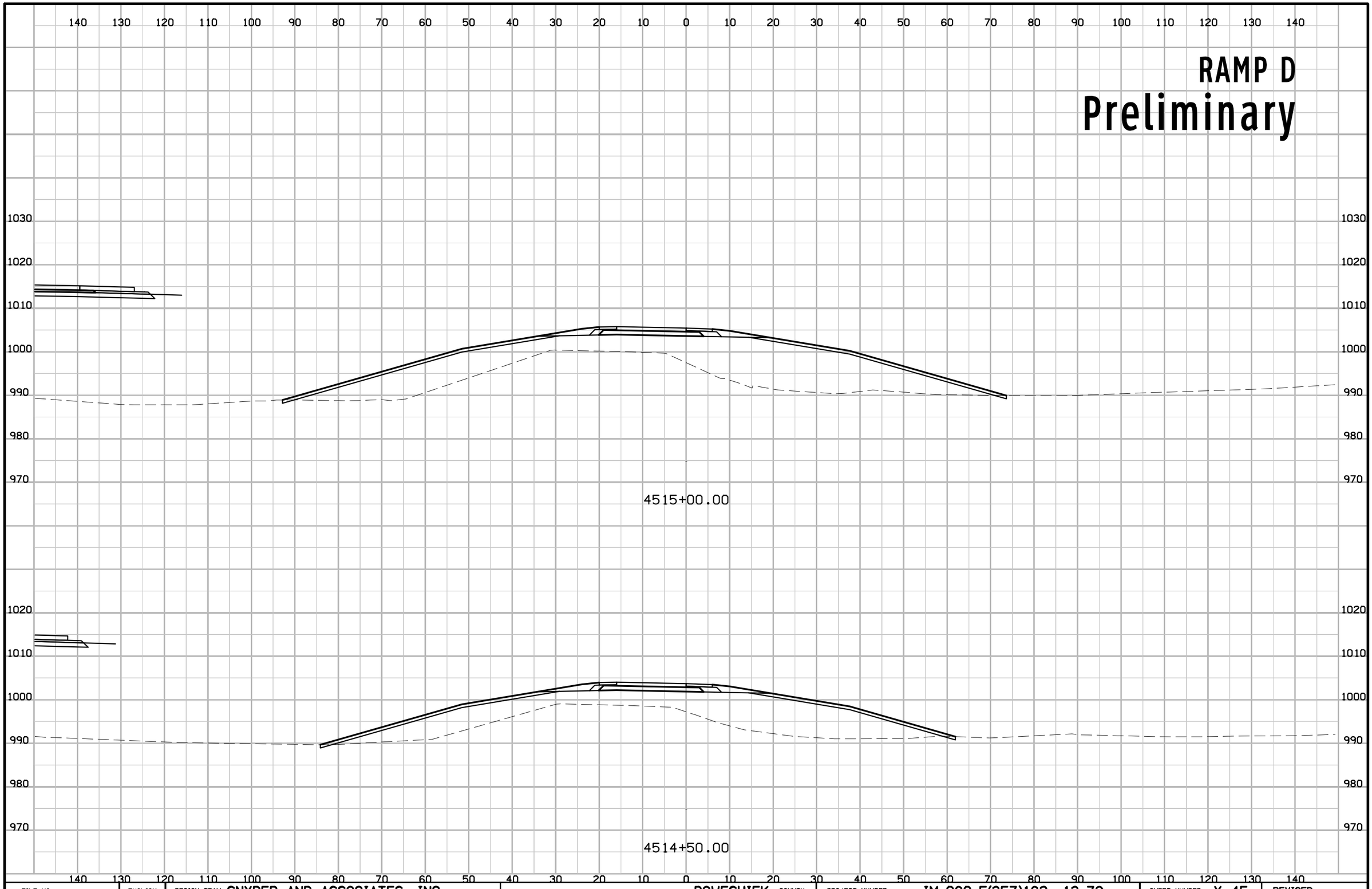

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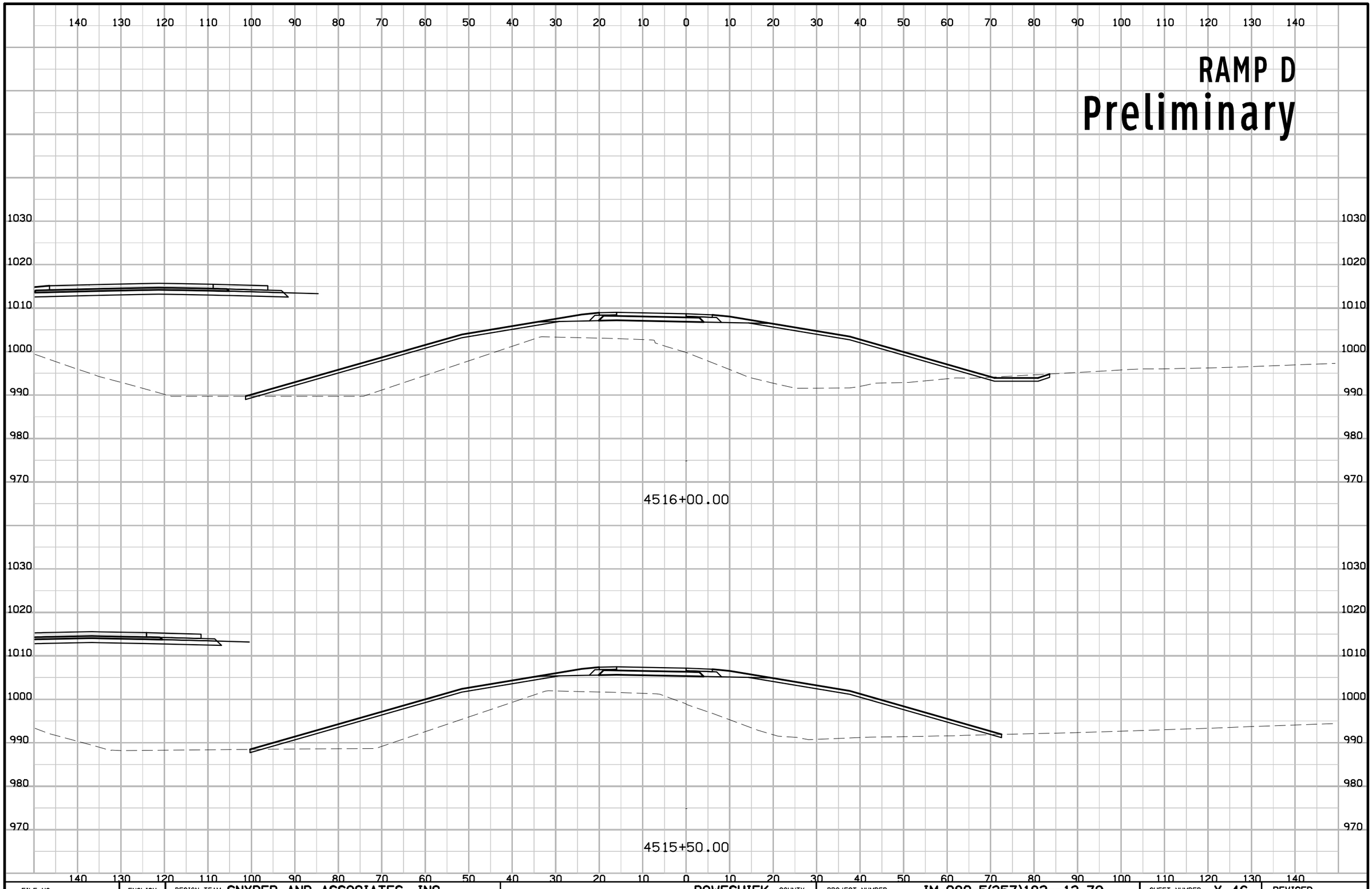

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.46	REVISED

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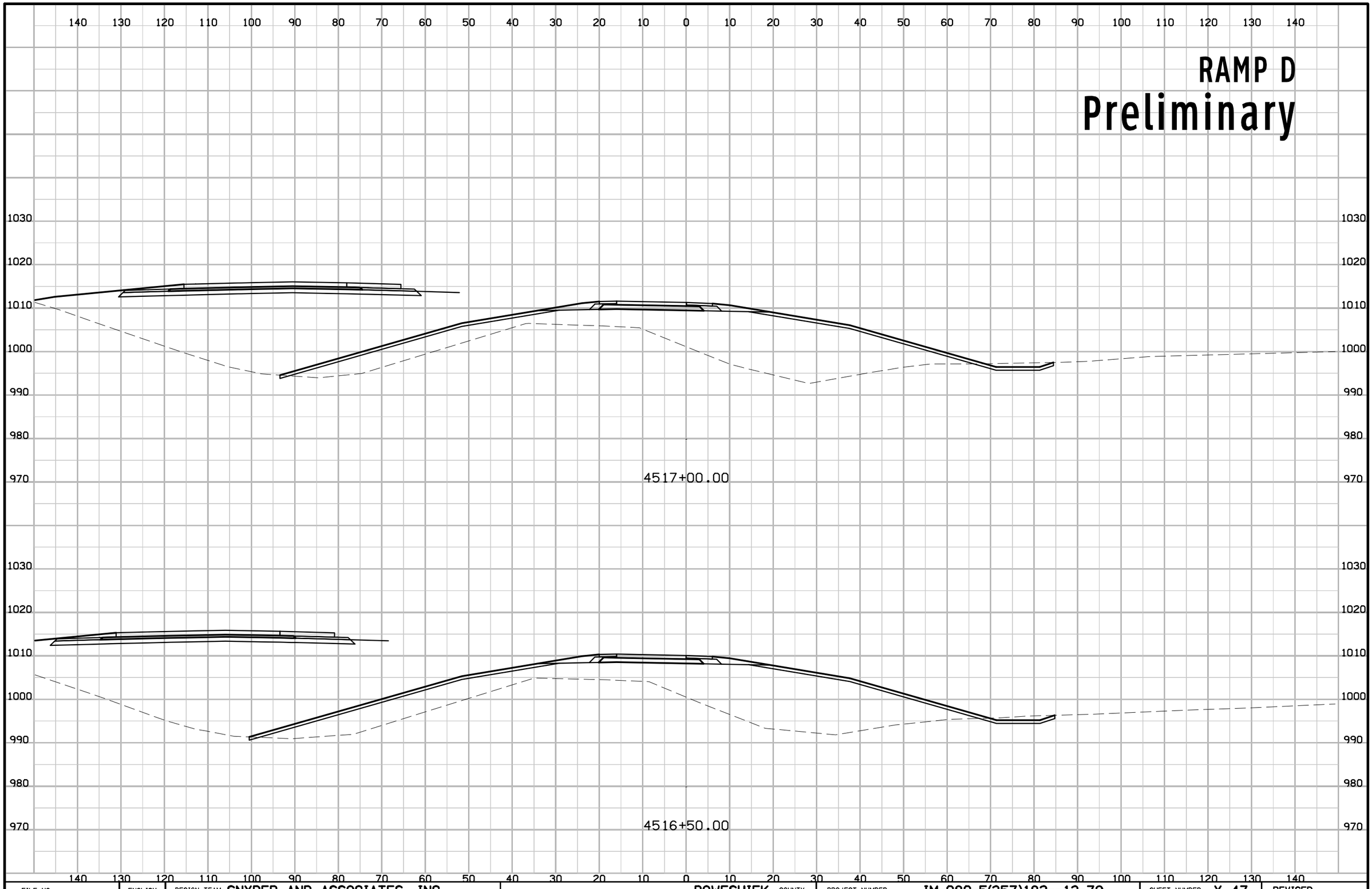

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.47	REVISED

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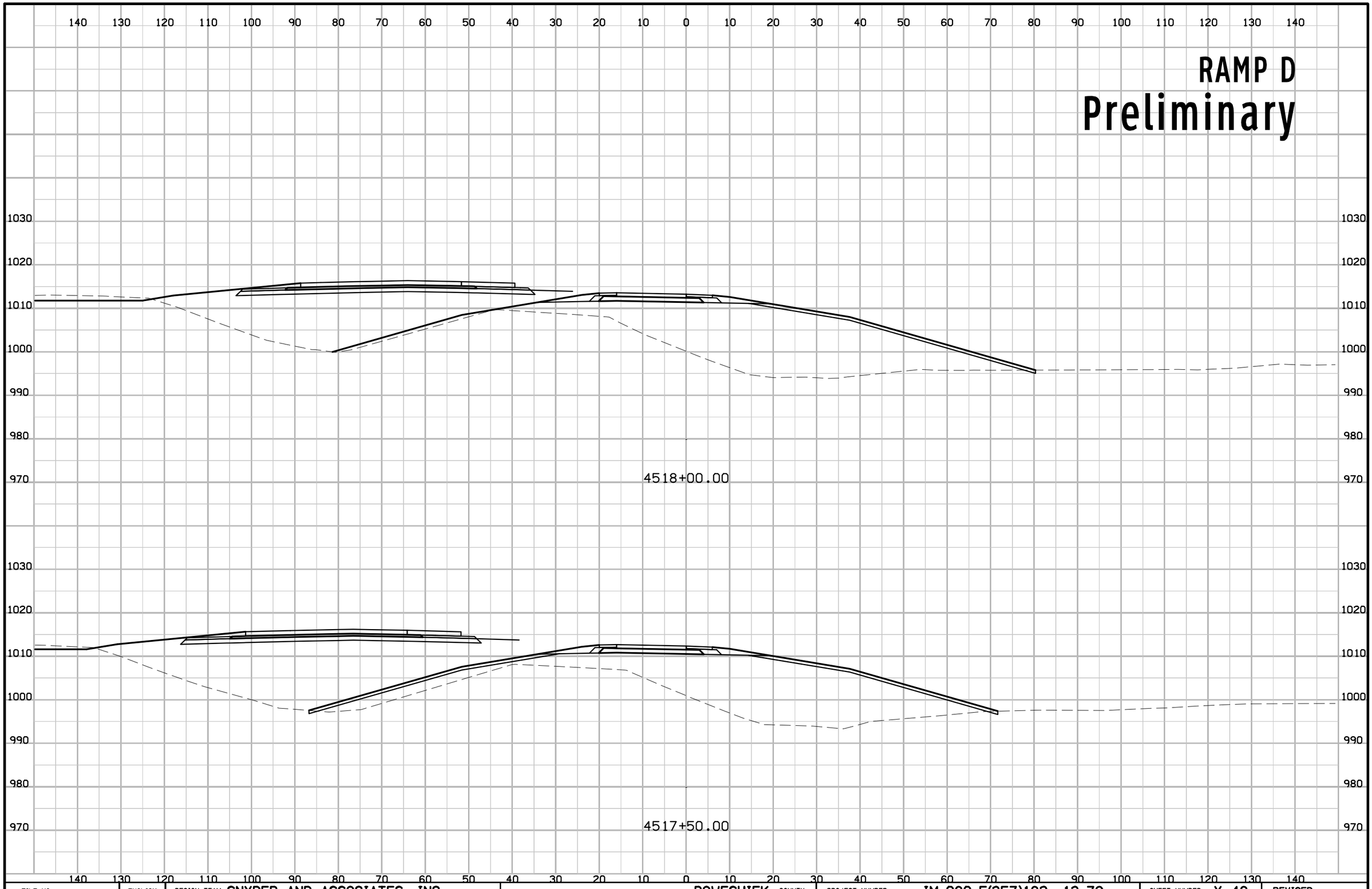

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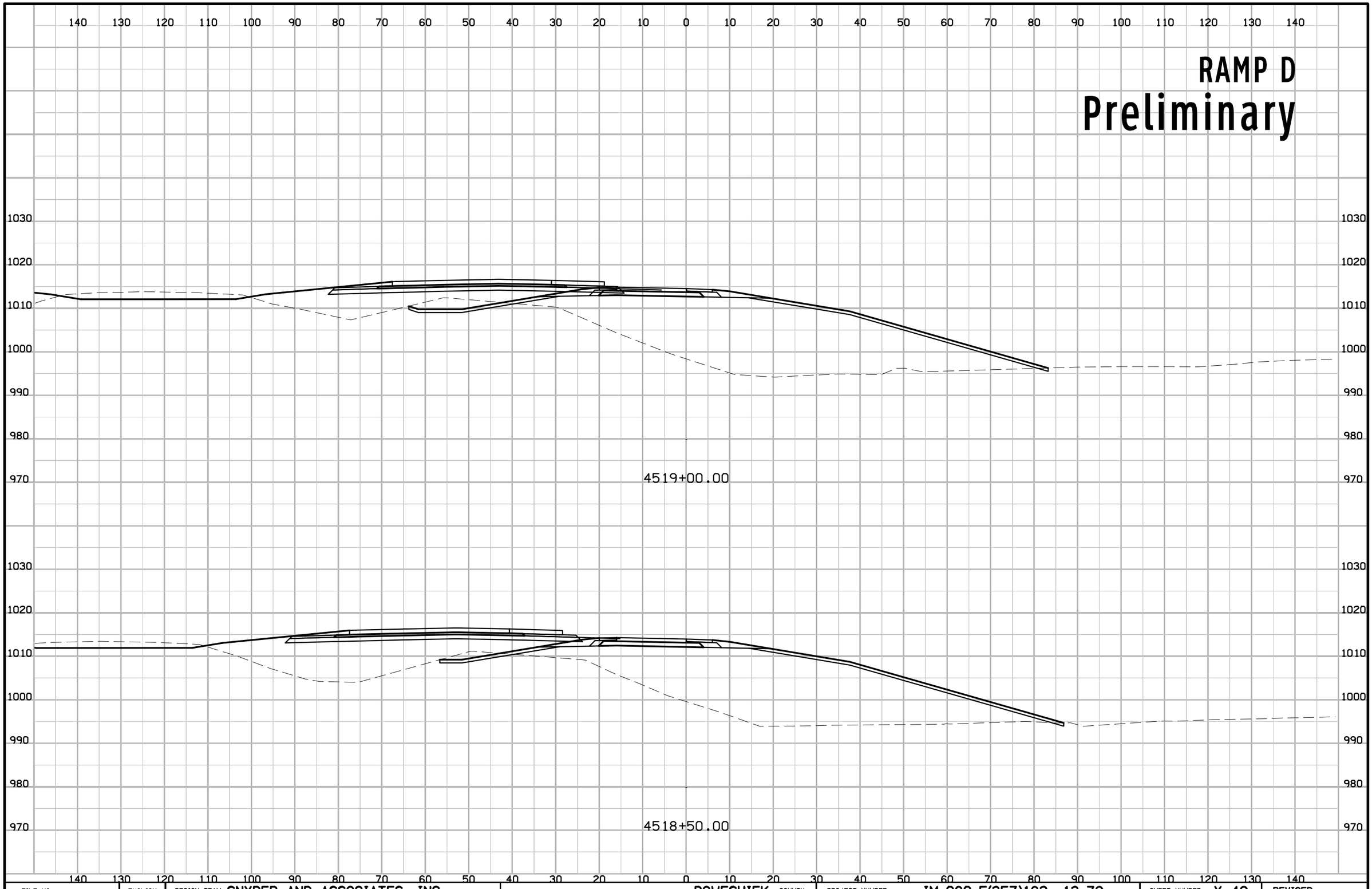

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.49	REVISED

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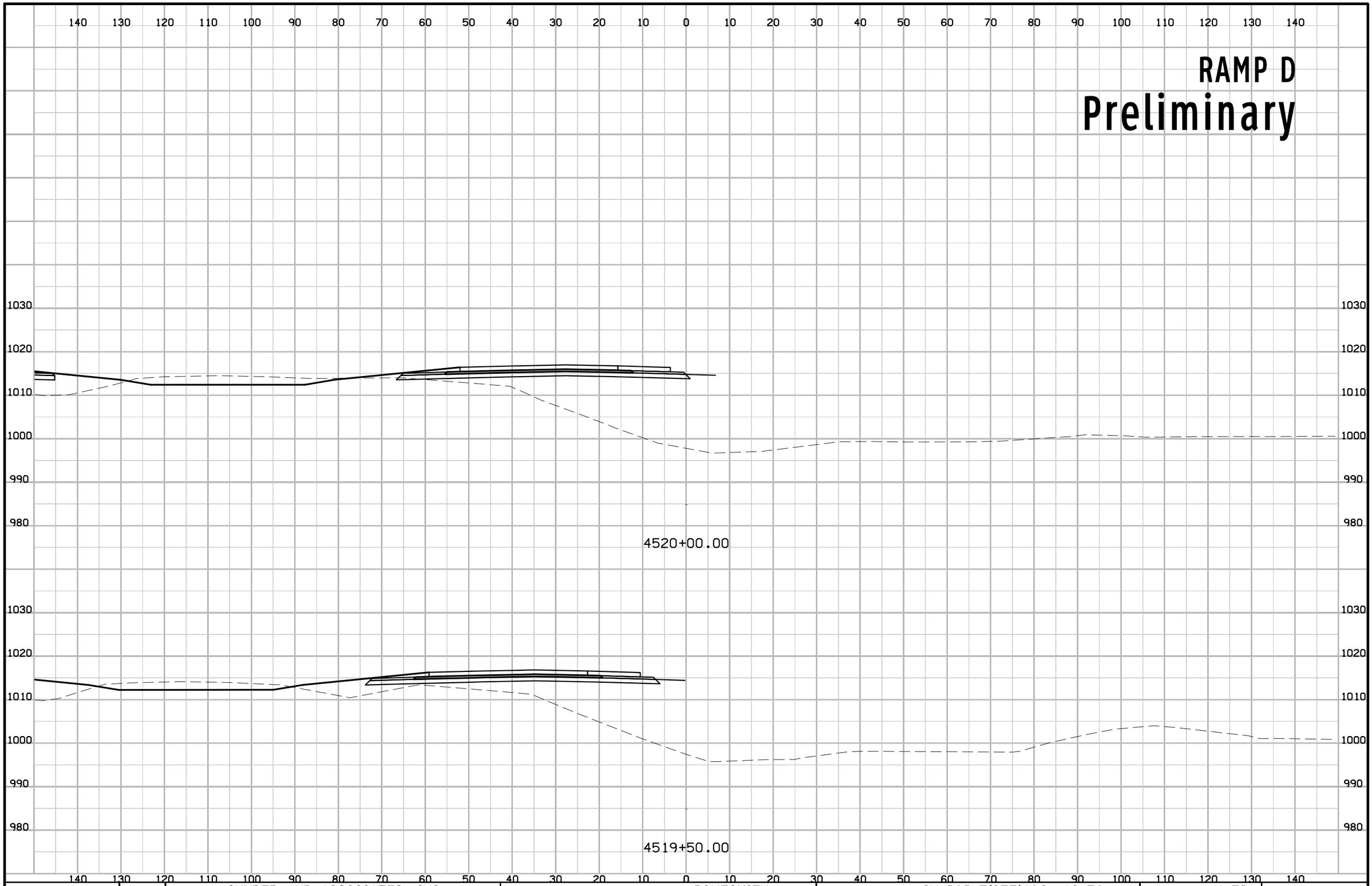

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.50	REVISED

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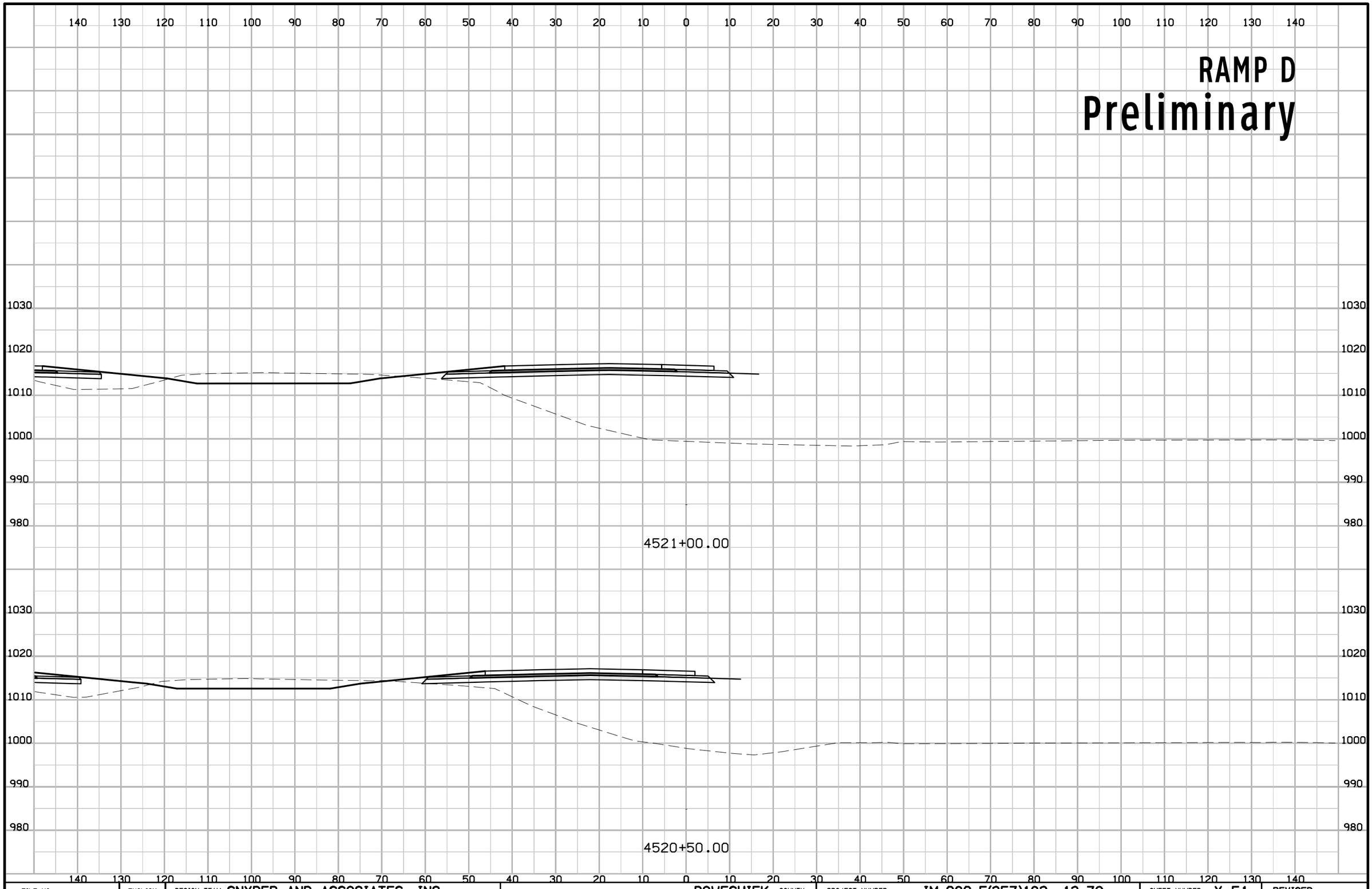

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.51	REVISED

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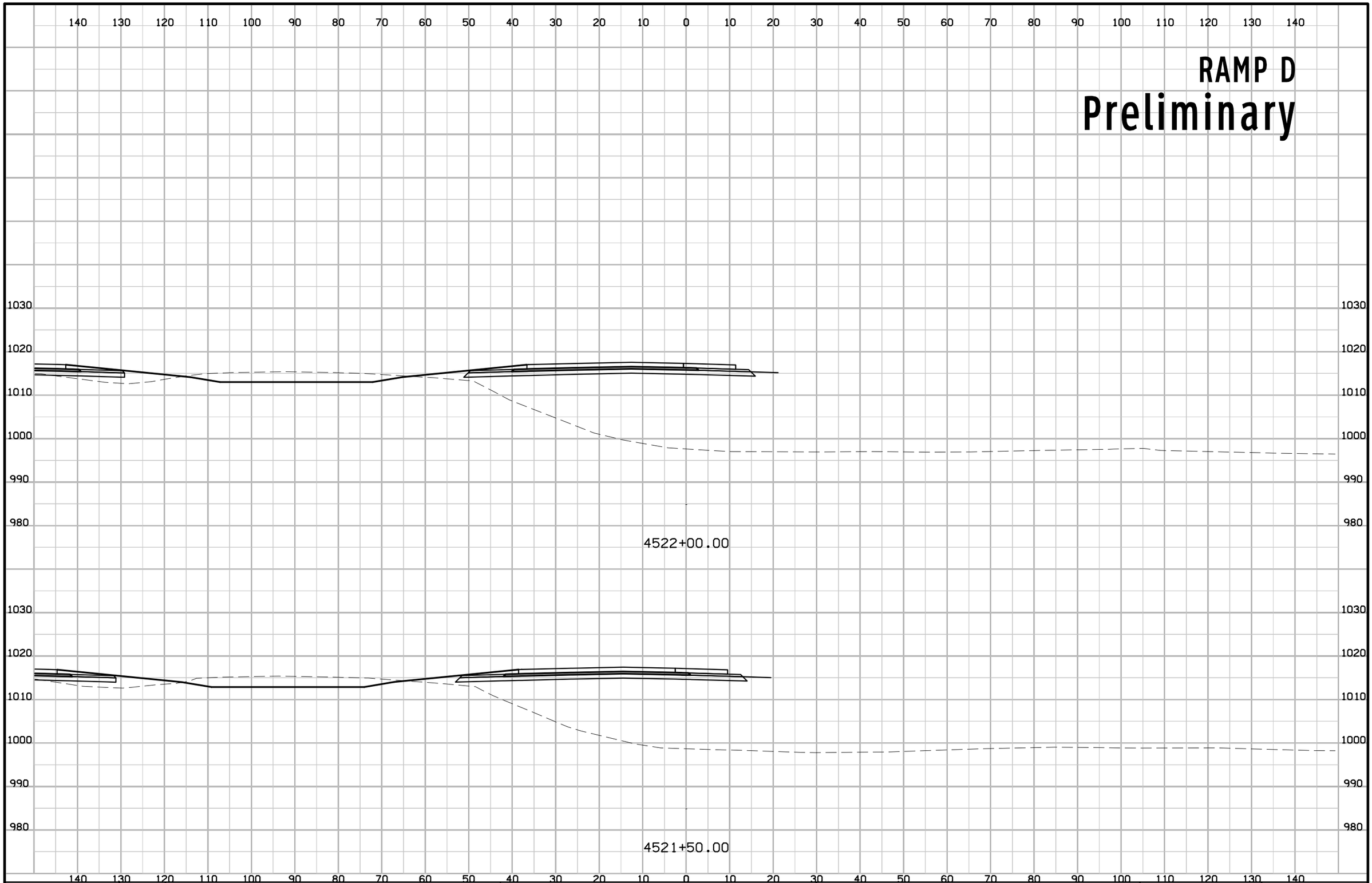

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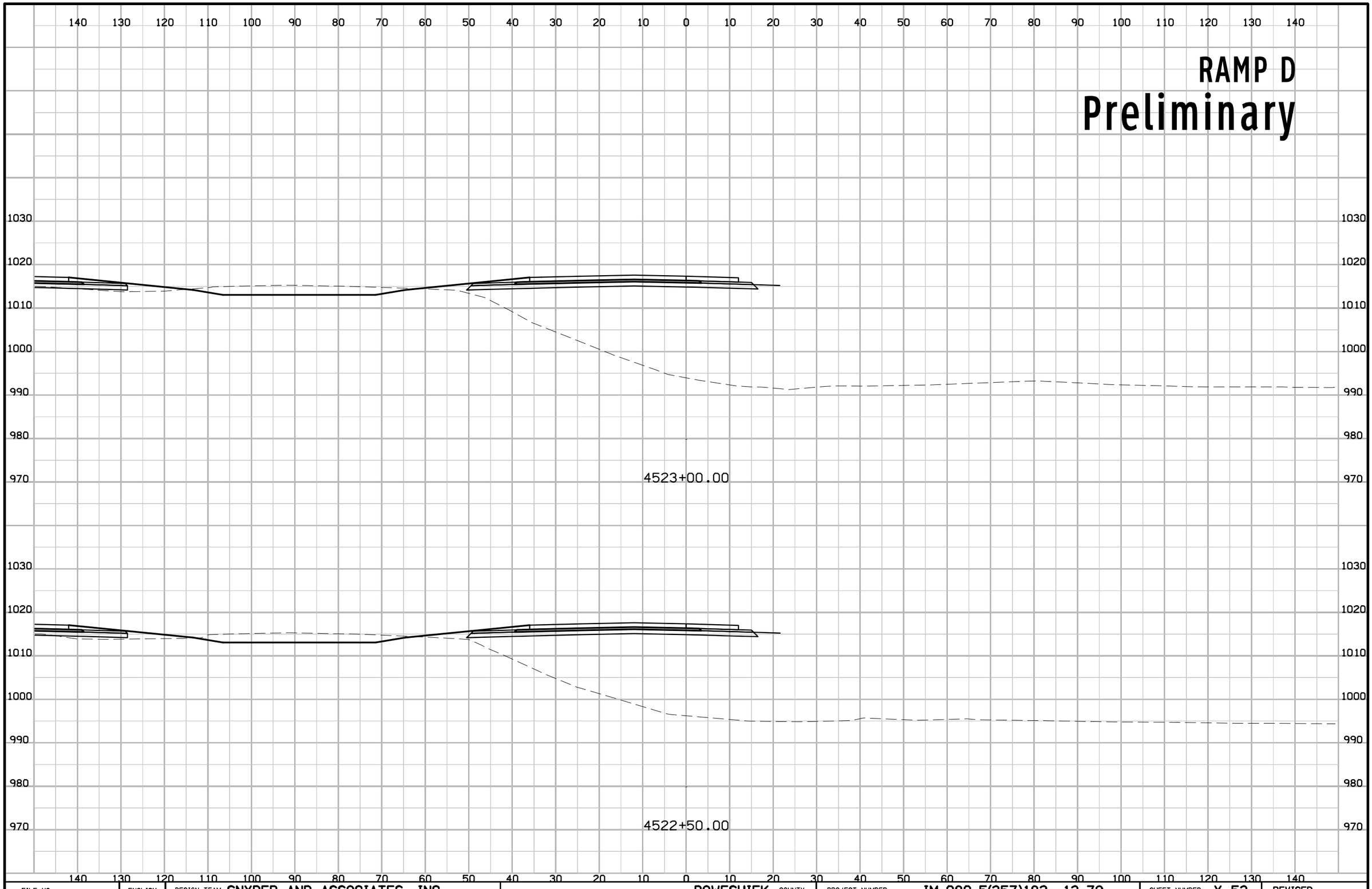

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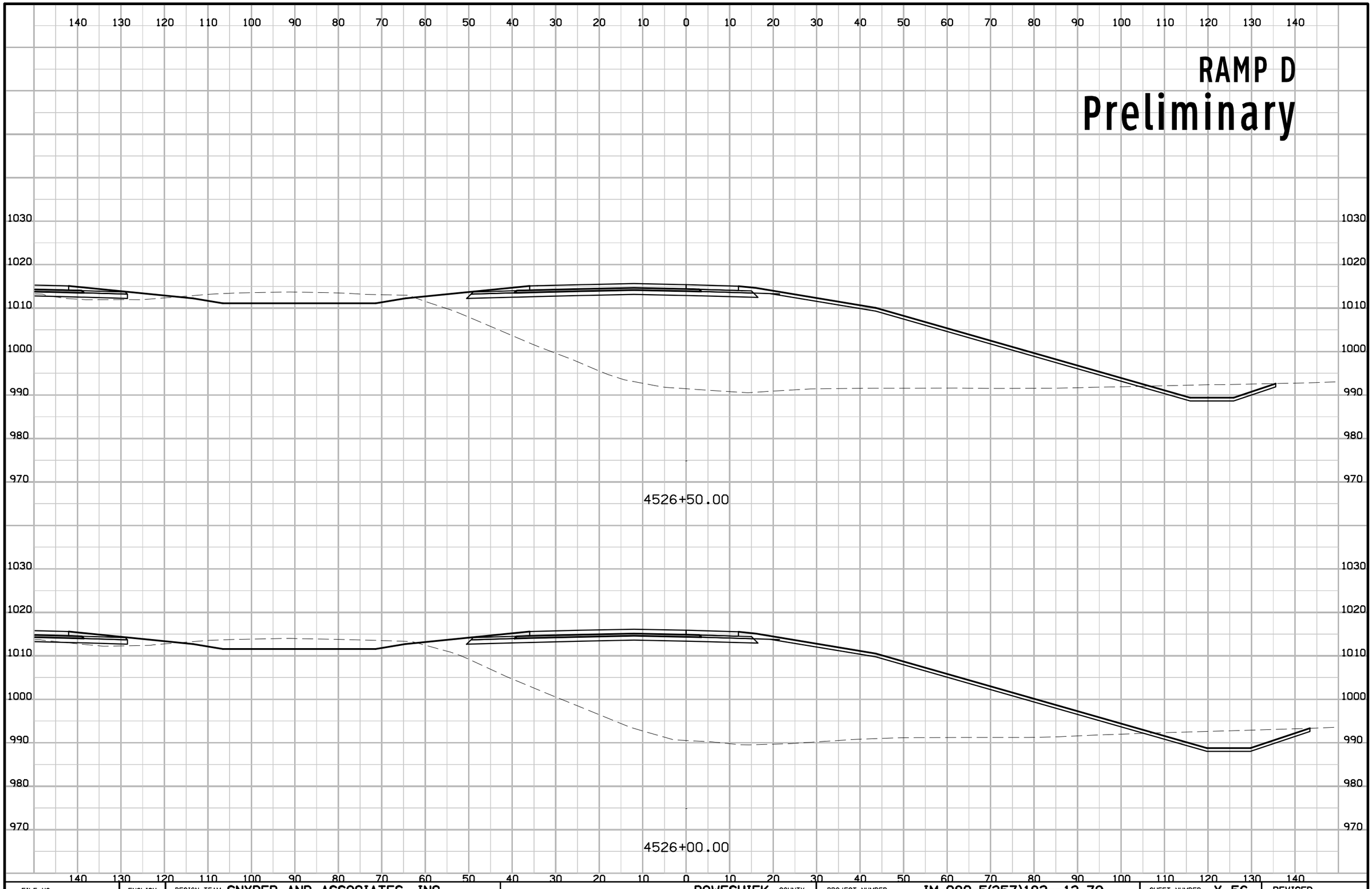

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.56	REVISED

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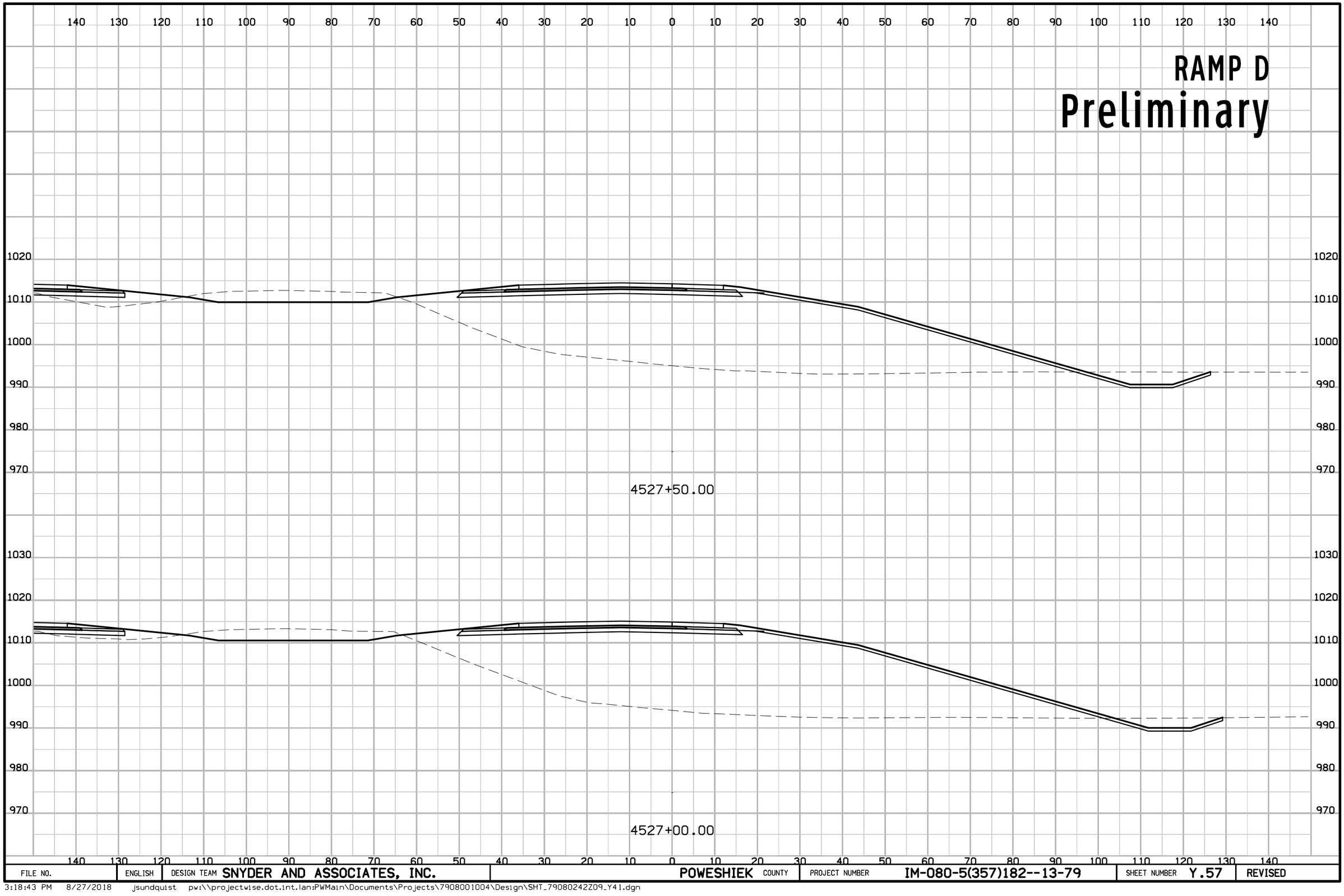

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.57	REVISED

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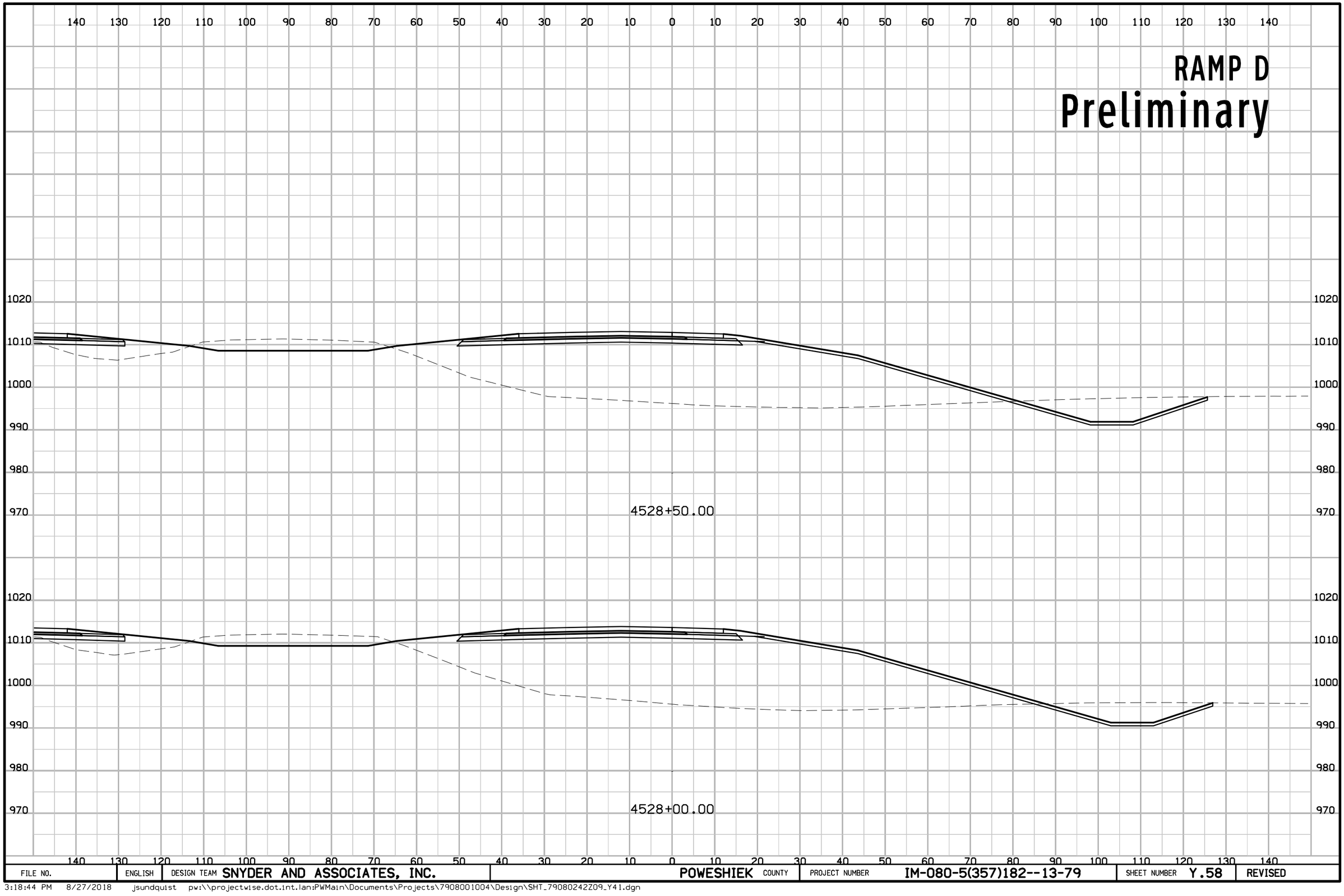

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.58	REVISED

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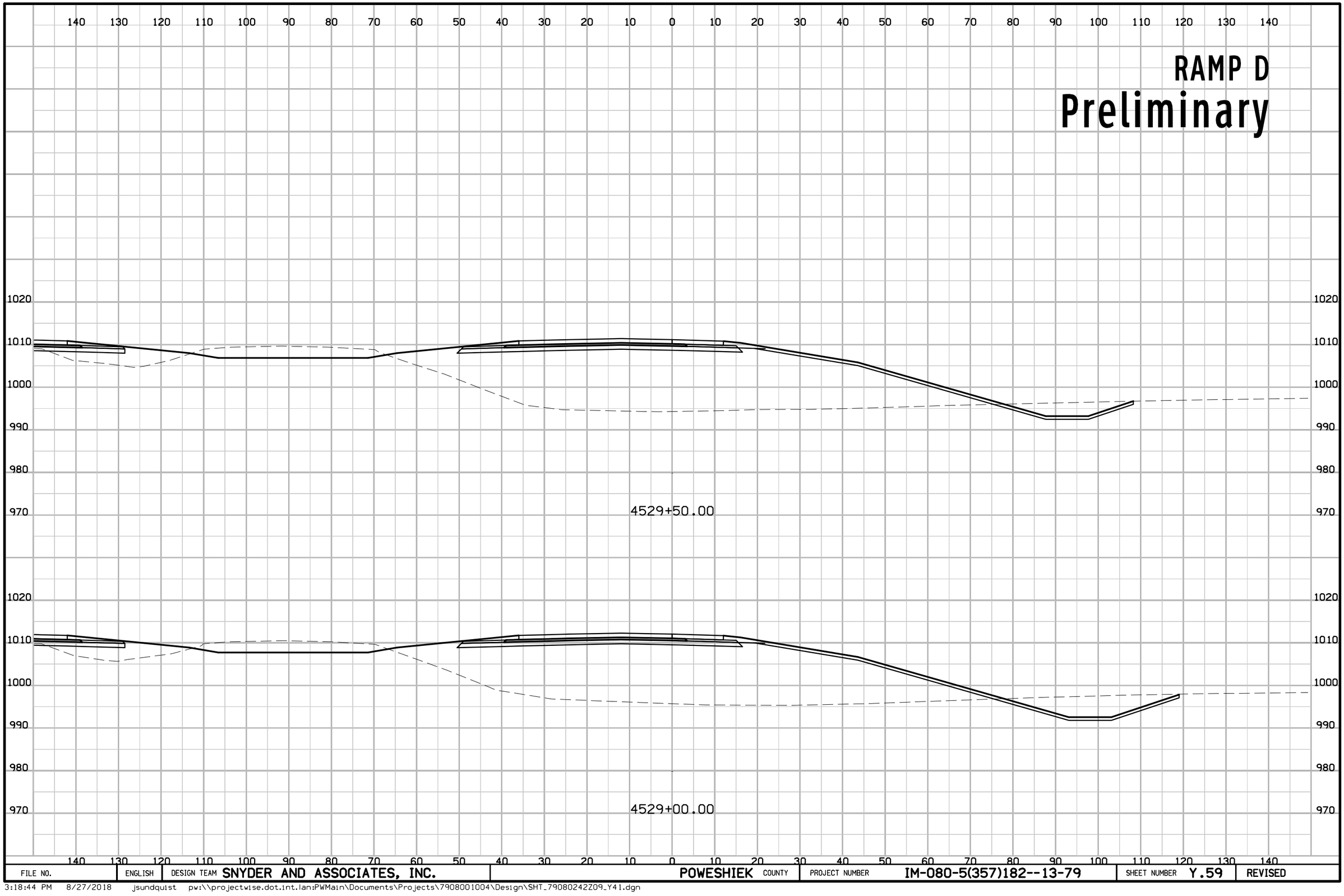

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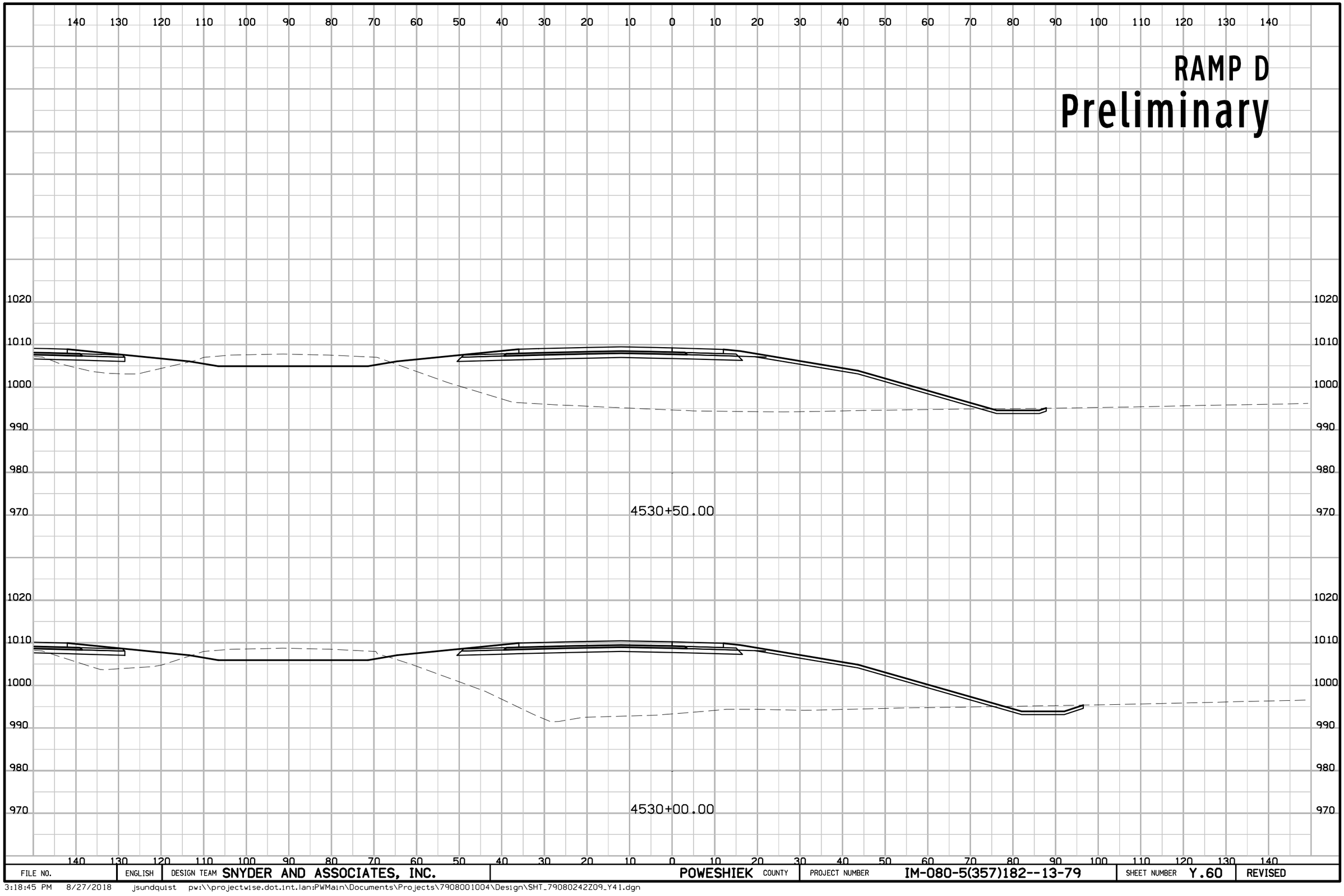

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.60	REVISED

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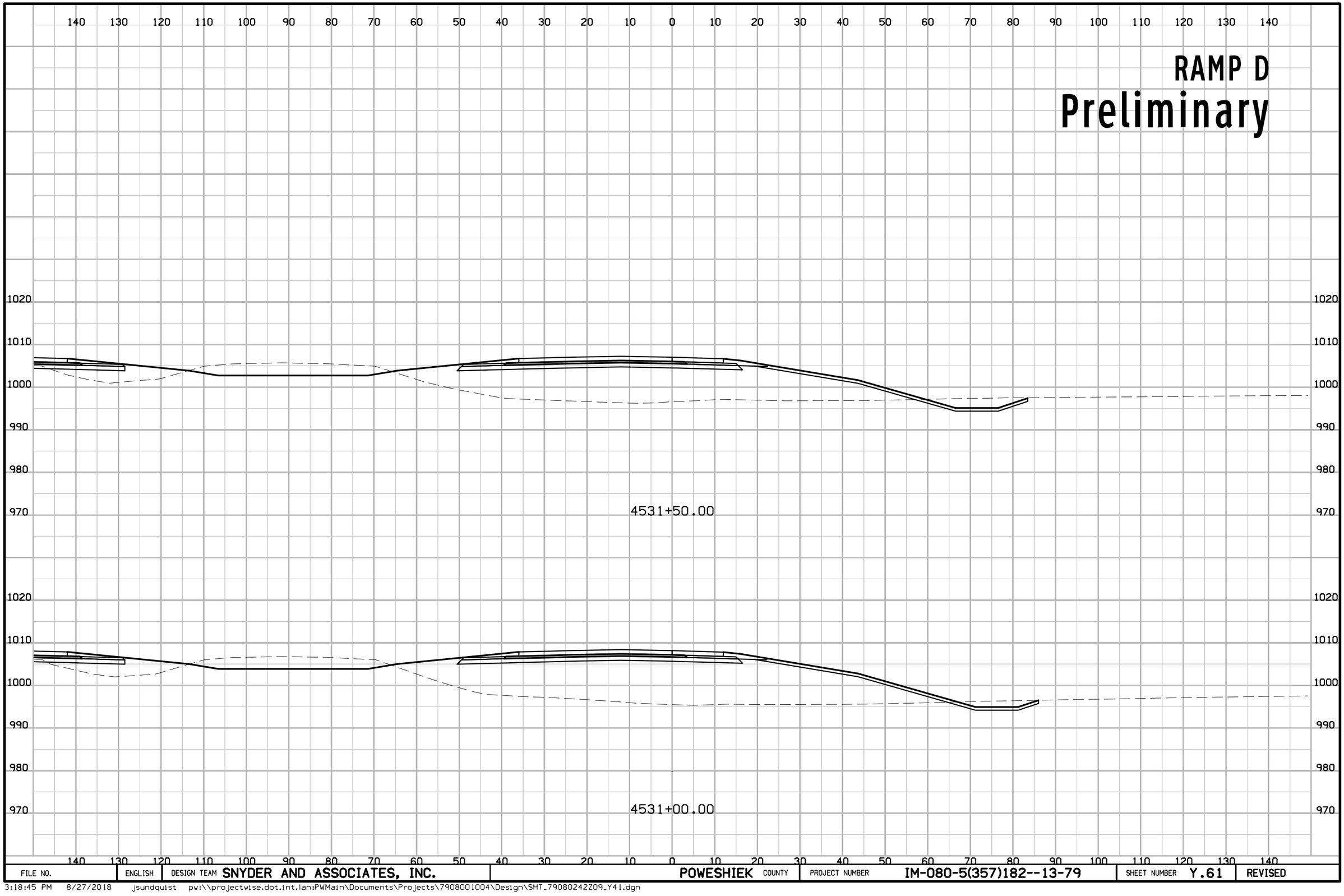

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.61	REVISED

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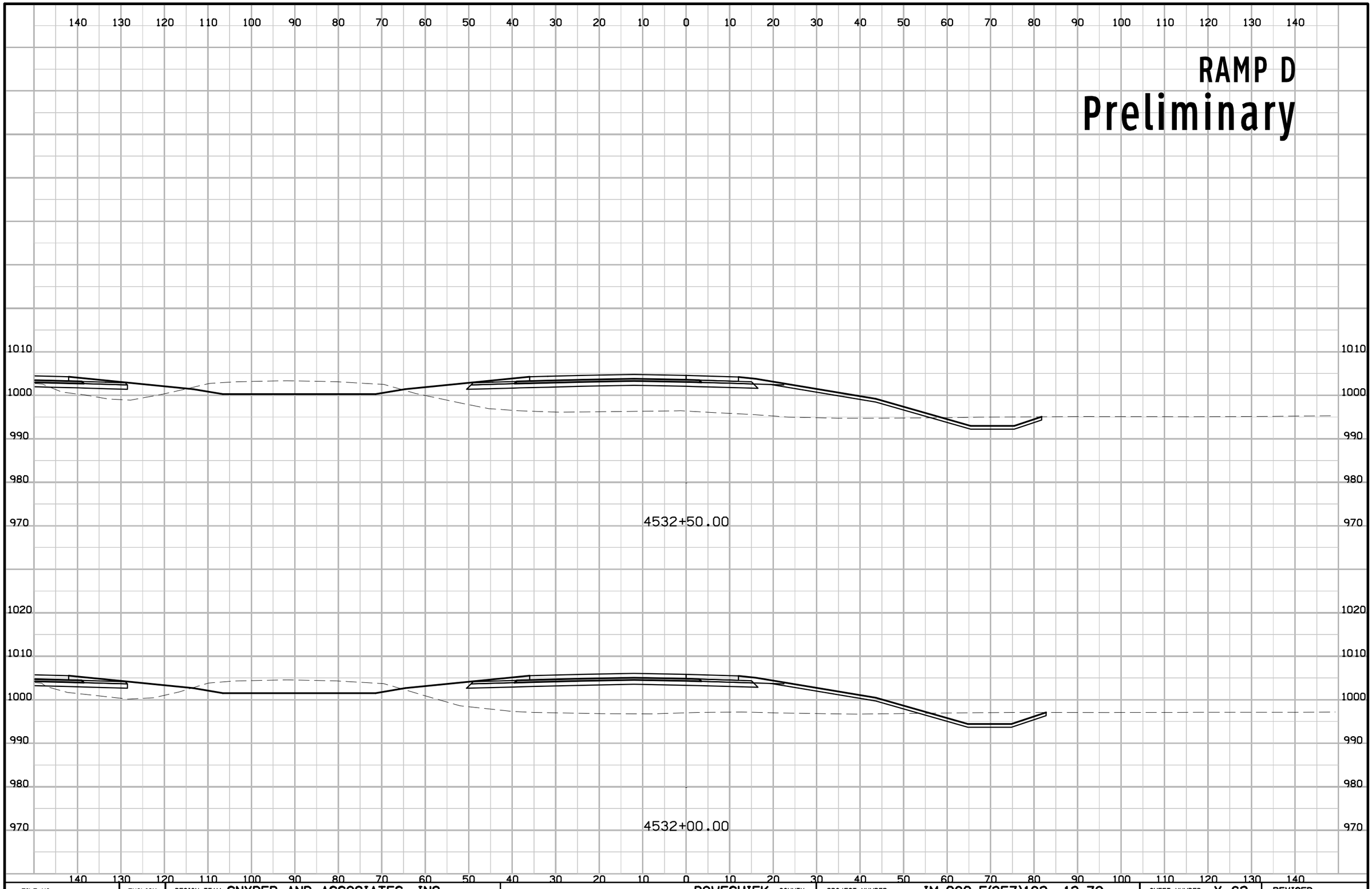

FILE NO.	ENGLISH	DESIGN TEAM SNYDER AND ASSOCIATES, INC.	POWESHIEK COUNTY	PROJECT NUMBER IM-080-5(357)182--13-79	SHEET NUMBER Y.62	REVISED

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