GRADING

IM-035-3(194)87--13-77

LETTING DATE

POLK Co.

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

POLK COUNTY

GRADING

I-35/80/235

I-35/80/235 Interchange Northeast of Des Moines (Stage 3A)

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
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REVISIONS

	TOTAL
PROJECT IDENTIFICATION NUMBER	
10-77-035-010-03	
PROJECT NUMBER	
IM-035-3(194)87--13-77	
R.O.W. PROJECT NUMBER	

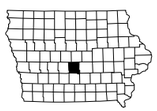
INDEX OF SHEETS

No.	DESCRIPTION
A Sheets	**Title Sheets**
A.1	Title Sheet
A.2	Location Map Sheet
A.3 - 6	Project Key Map Sheets
B Sheets	**Typical Cross Sections and Details**
B.1 - 5	Roadway Typical Sections and Details
B.6	Detour Typical Sections and Details
B.7	Chichaqua Valley Trail Typical Section
B.8	Special Ditch Typical Section
D Sheets	**Mainline Plan and Profile Sheets**
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 10	I-35 Northbound
* D.11 - 14	I-235 Northbound
* D.15	I-80 Mainline-Survey
* D.16	I-80 Mainline
E Sheets	**Side Road Plan and Profile Sheets**
* E.1	Chichaqua Valley Trail
* E.2	NE 54th Avenue
* E.3	NE 29th Street
* E.4	NE Broadway Avenue
* E.5	Special Ditches
F Sheets	**Detour or Temporary Pavement Sheets**
* F.1	DET_3_14 I-35 NB
G Sheets	**Survey Sheets**
G.1 - 2	Survey Control Points, Reference Ties & Bench Marks
G.3 - 6	Horizontal Control Alignment Geometry
G.7 - 11	Mainline andRamp Geometrics
J Sheets	**Traffic Control and Staging Sheets**
* J.1	Traffic Control & Staging Notes
* J.2	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.3	Staging Overview
* J.4 - 21	Staging and Traffic Control Sheets
K Sheets	**Interchange Sheets**
* K.1 - 2	Ramp A Plan & Profile Sheets
* K.3 - 4	Ramp B Plan & Profile Sheets
* K.5 - 9	Ramp G Plan & Profile Sheets
K.10 - 15	Interchange Drainage & Site Grading
M Sheets	**Storm Sewer Sheets**
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.3 - 12	Storm Sewer Plan and Profile Sheets "ML or SR Name"
N Sheets	**Traffic Signal Sheets**
N.1 - 14	Signing Locations and Detail Sheets
R Sheets	**Erosion Control Sheets**
RC.1 - 7	Sediment Control Quantities Tabulations
RR.1 - 18	Erosion Control Plan Sheets
U Sheets	**500 Series, Mod.Stds. and Detail Sheets**
U.1 - 41	Special Details
V Sheets	**Bridge and Culvert Situation Plans**
V.2 - 17	Bridge Situation Plans
V.18 - 19	Ramp B Retaining Wall Details
V.20	Ramp B Retaining Wall Plan & Profile
W Sheets	**Mainline Cross Sections**
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 85	Mainline Cross Sections
X Sheets	**Side Road Cross Sections**
X.1 - 15	Side Road Cross Sections
Y Sheets	**Ramp Cross Sections**
Y.1 - 65	Ramp Cross Sections

H Sheets

* Color Plan Sheets

For Project Location Map
Refer to Sheet A.2



INTERSTATE 235 DESIGN DATA URBAN		
2012 AADT	63,000	V.P.D.
2050 AADT	105,600	V.P.D.
2050 DHV	11,000	V.P.H.
TRUCKS	9	%
Total Design ESALs	--	

INTERSTATE 35 DESIGN DATA URBAN		
2012 AADT	75,200	V.P.D.
2050 AADT	125,800	V.P.D.
2050 DHV	13,000	V.P.H.
TRUCKS	14	%
Total Design ESALs	--	

INTERSTATE 80 DESIGN DATA URBAN		
2012 AADT	84,100	V.P.D.
2050 AADT	133,900	V.P.D.
2050 DHV	13,900	V.P.H.
TRUCKS	19	%
Total Design ESALs	--	

ROADWAY DESIGN

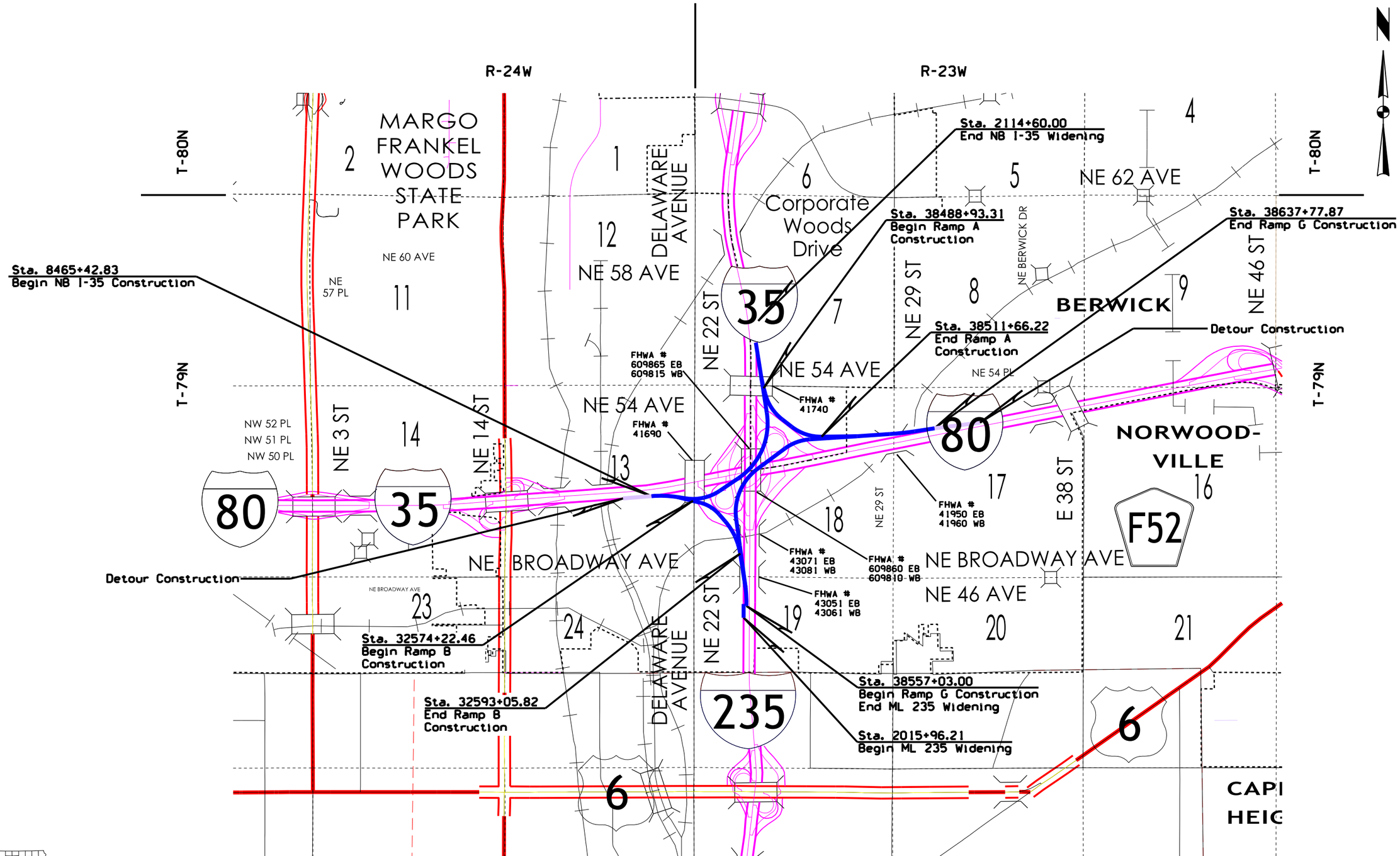
LICENSED PROFESSIONAL ENGINEER
CHRISTOPHER M. MALMBERG
17598
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Date
Christopher M. Malmberg
Printed or Typed Name

My license renewal date is December 31, 2022

Pages or sheets covered by this seal: A.1-A.6, B.1-B.8, C.1-C.4, D.1-D.16, E.1-E.5, F.1, G.1-G.11, J.1-J.15, K.1-K.15, U.1-U.13, W.1-W.88, X.1-X.15, Y.1-Y.53



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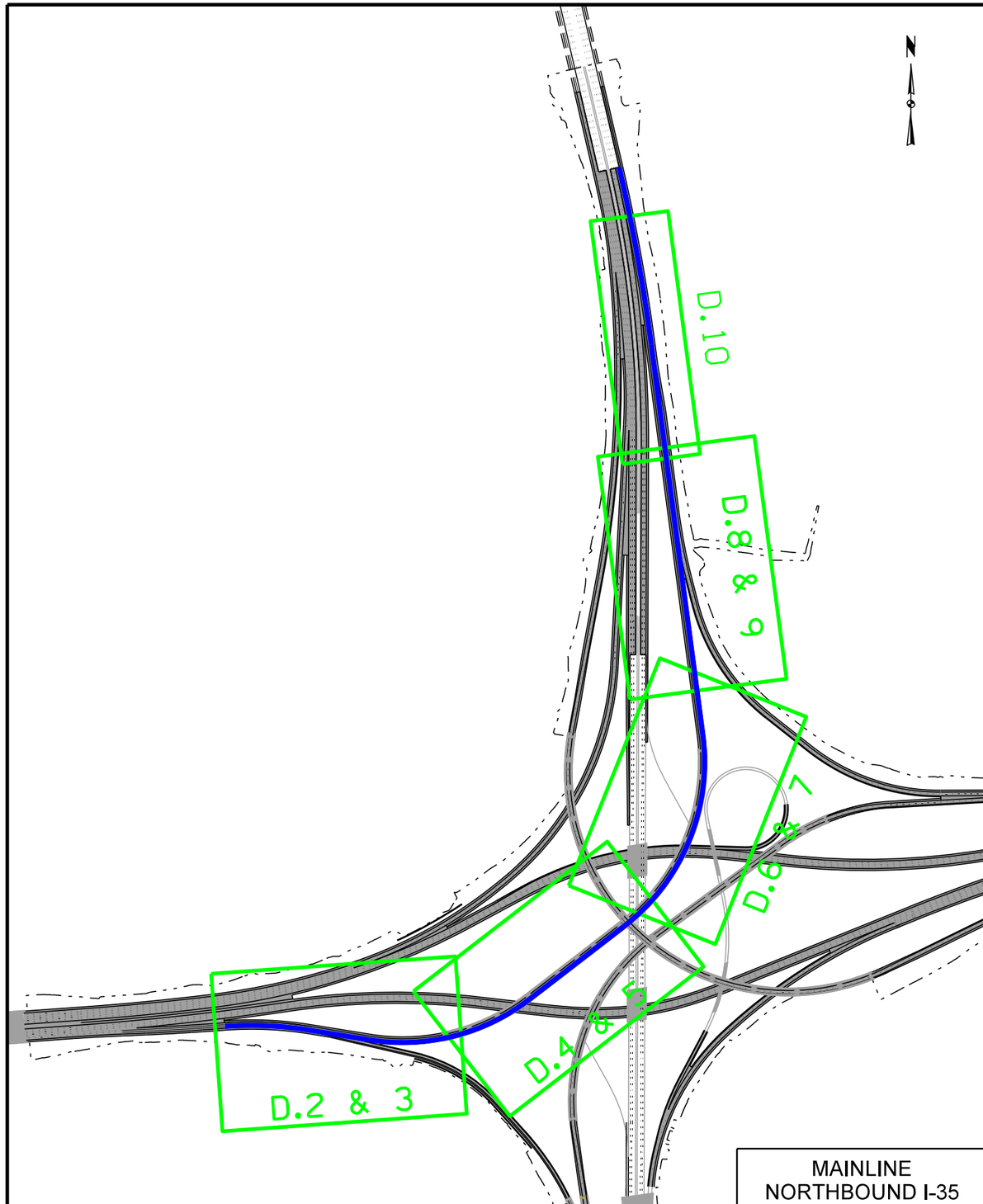
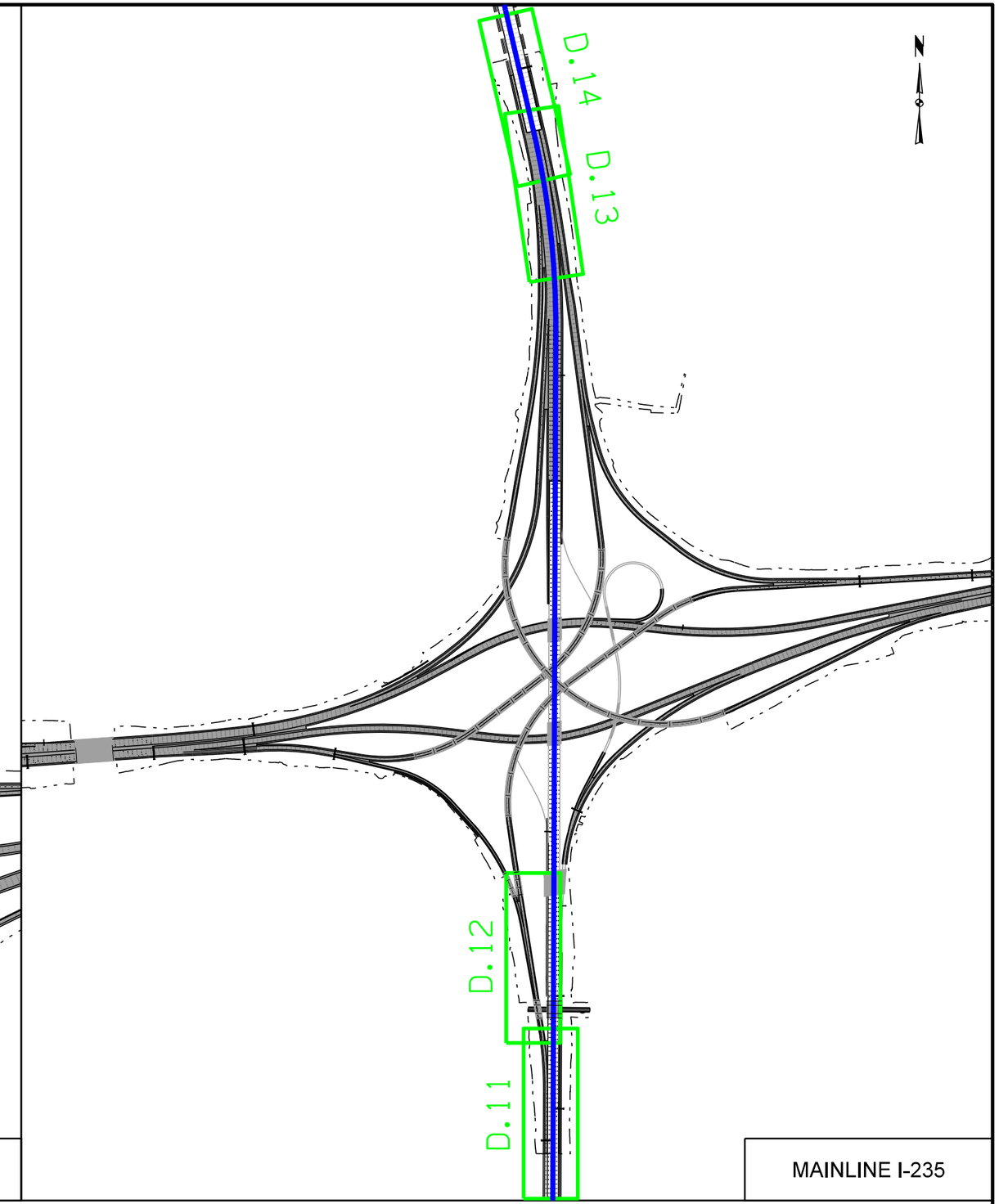


MAINLINE
NORTHBOUND I-35



MAINLINE I-235

Project Key Maps

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER A.3

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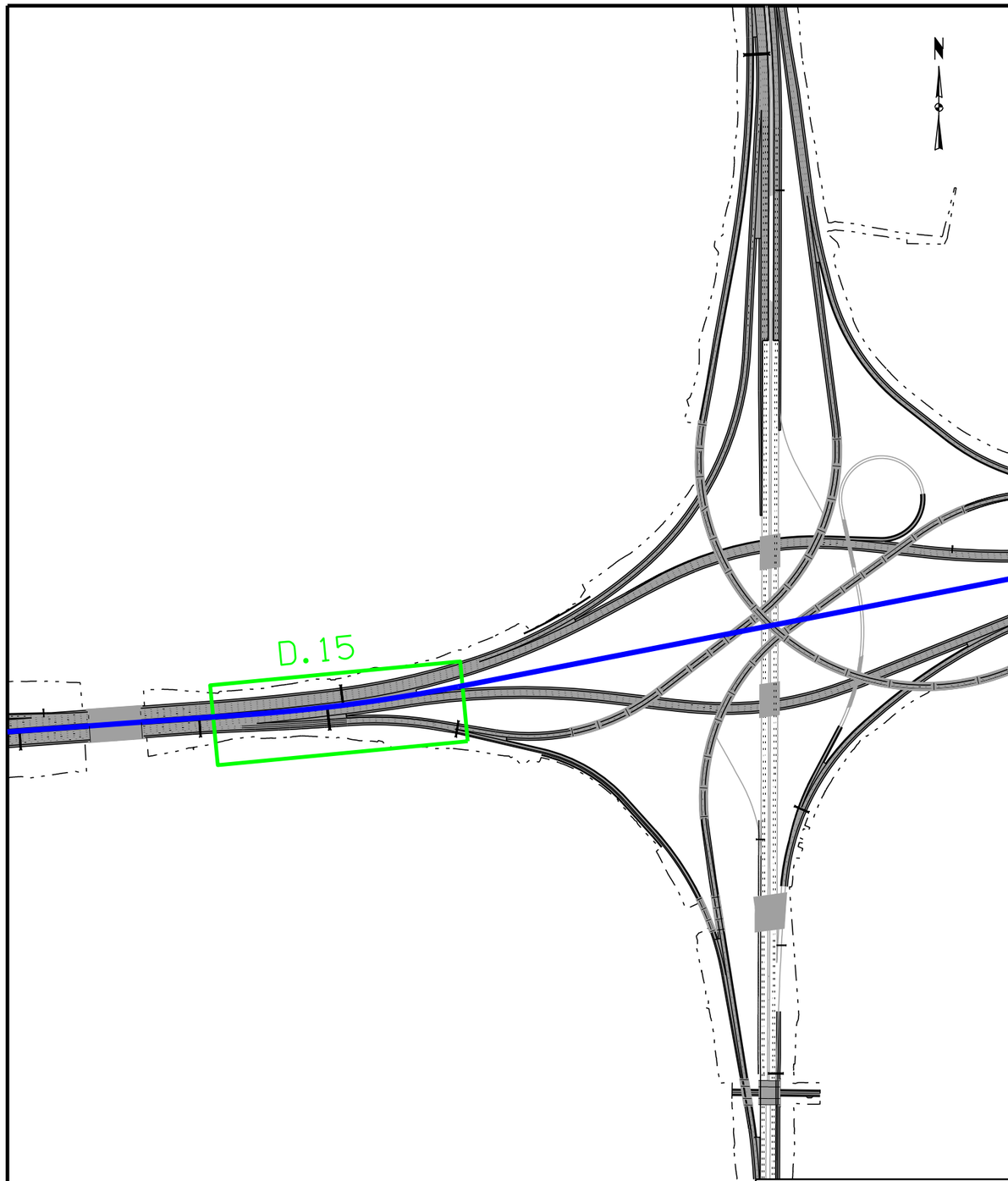
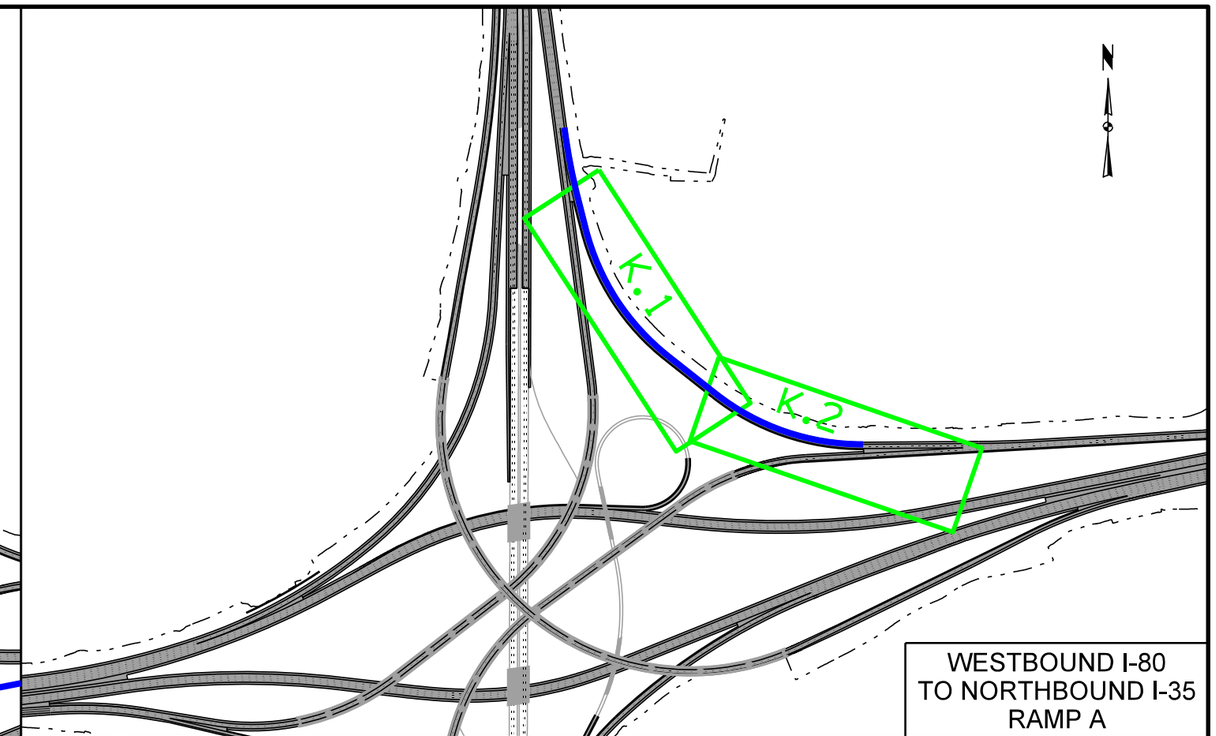
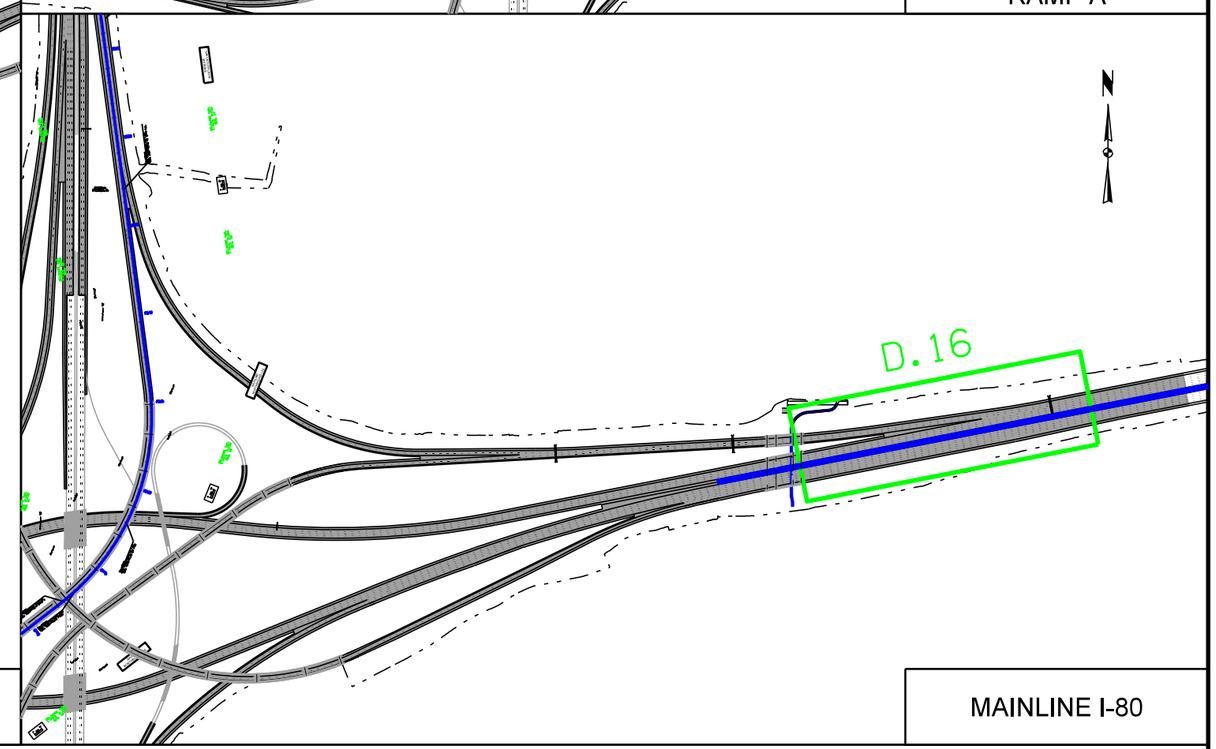


SURVEY I-80



WESTBOUND I-80
TO NORTHBOUND I-35
RAMP A



MAINLINE I-80

Project Key Maps

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER A.4

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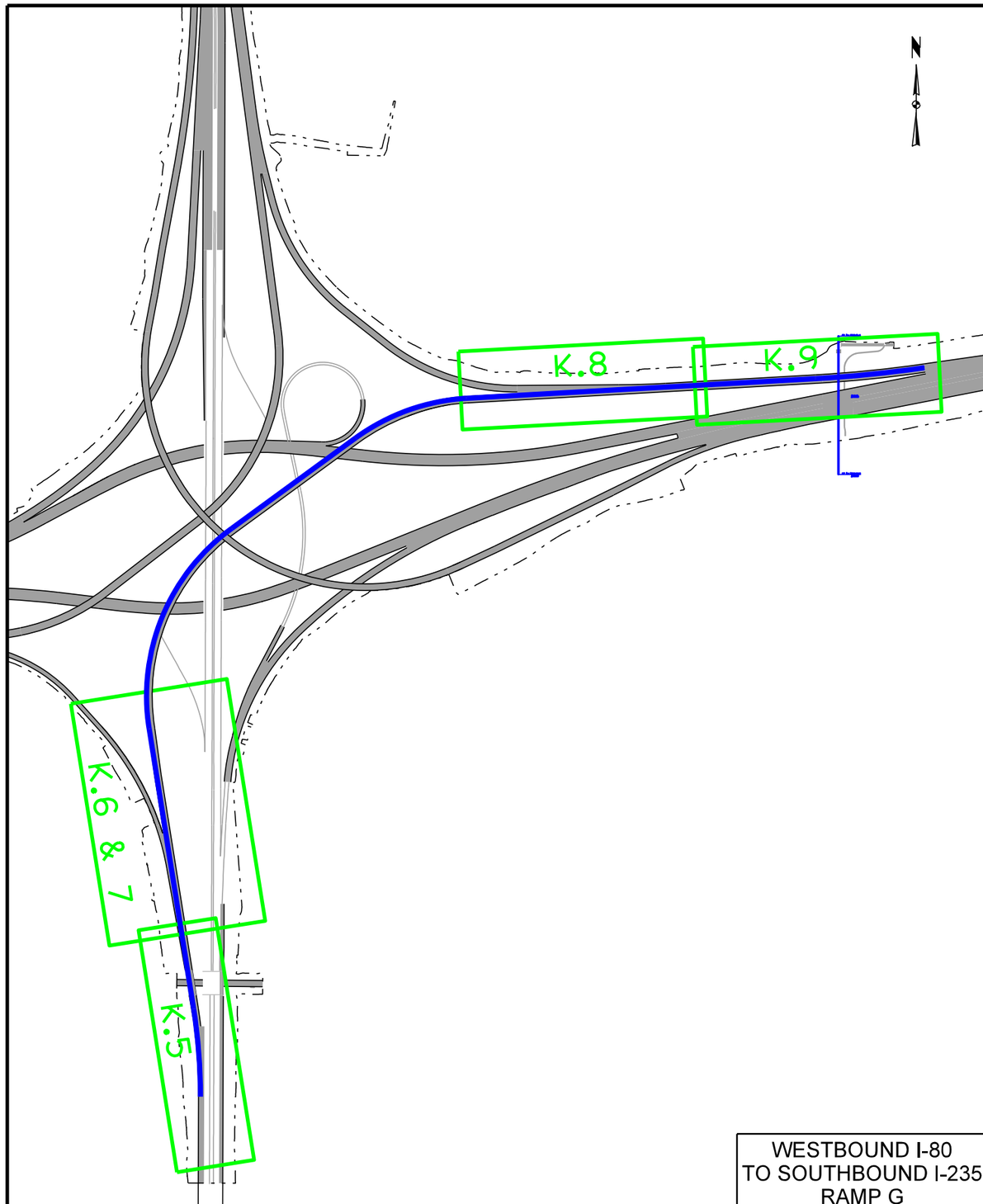
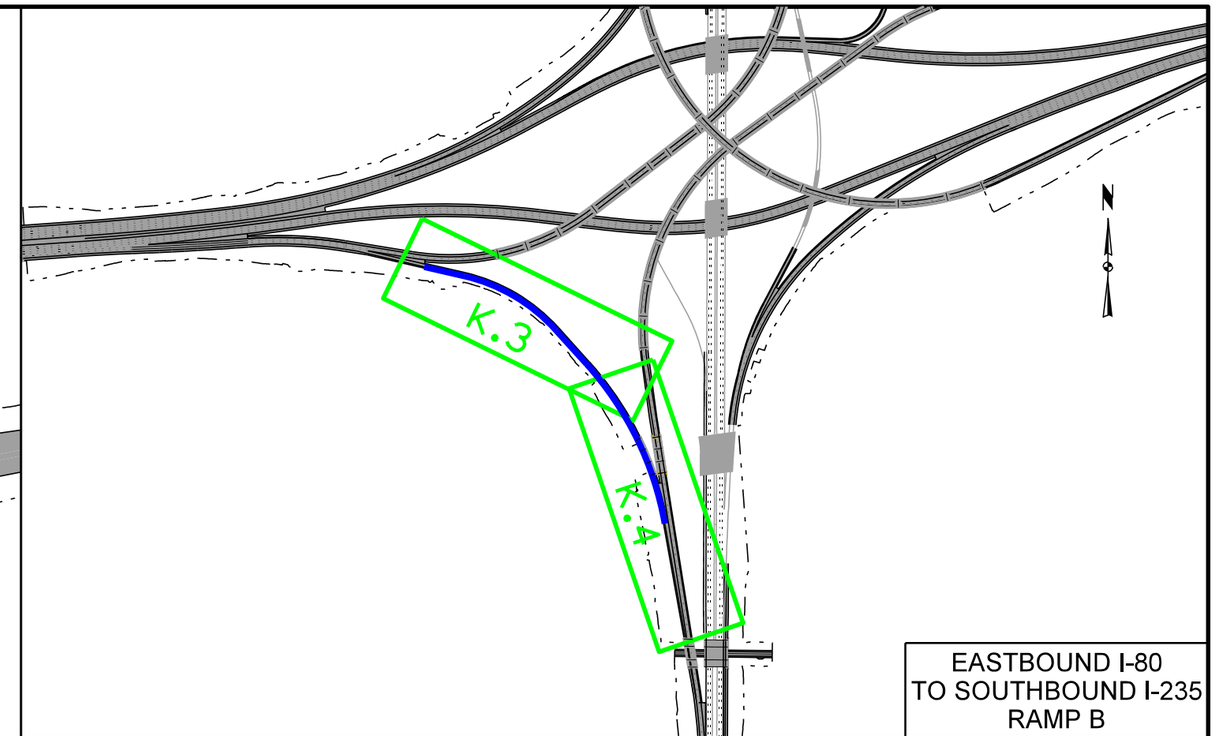
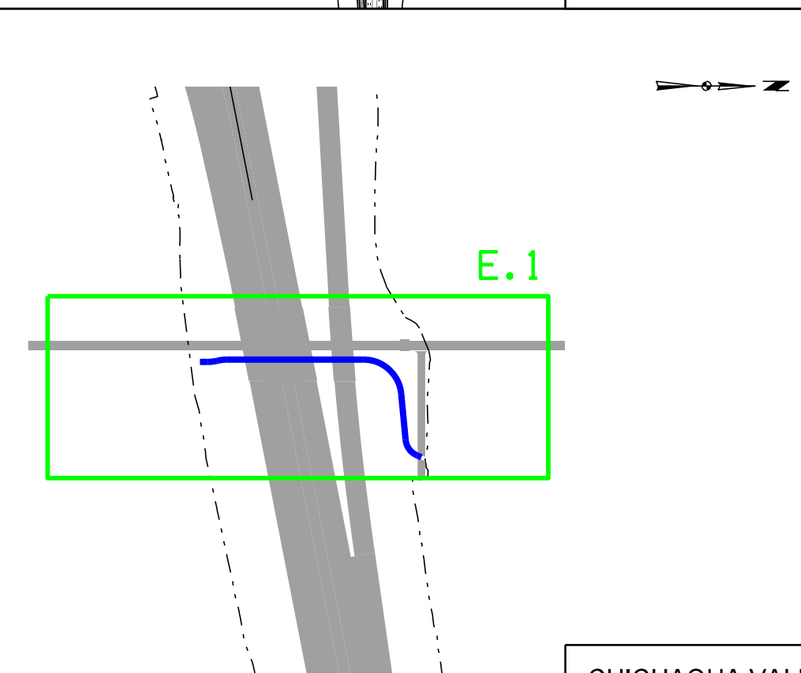


WESTBOUND I-80
TO SOUTHBOUND I-235
RAMP G



EASTBOUND I-80
TO SOUTHBOUND I-235
RAMP B



CHICHAQUA VALLEY
TRAIL

Project Key Maps

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER A.5

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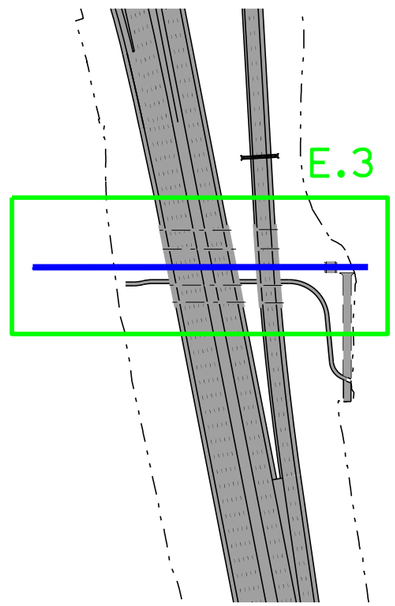
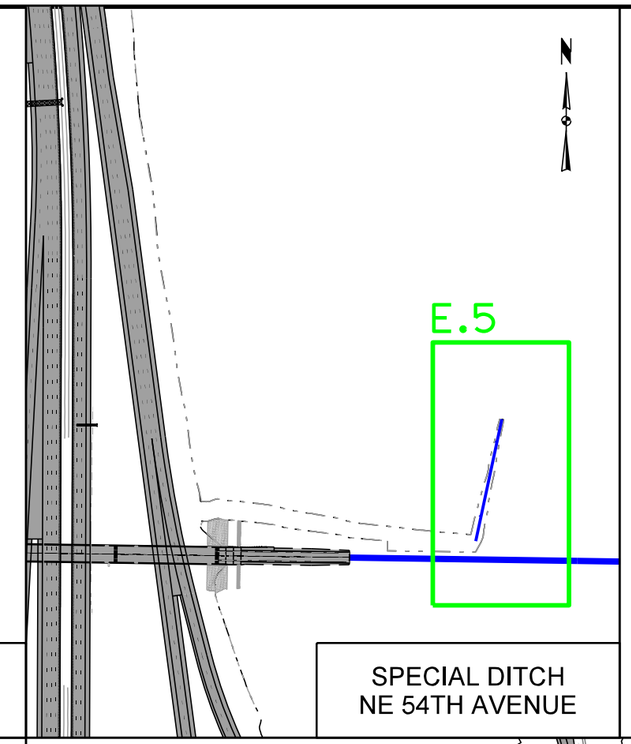
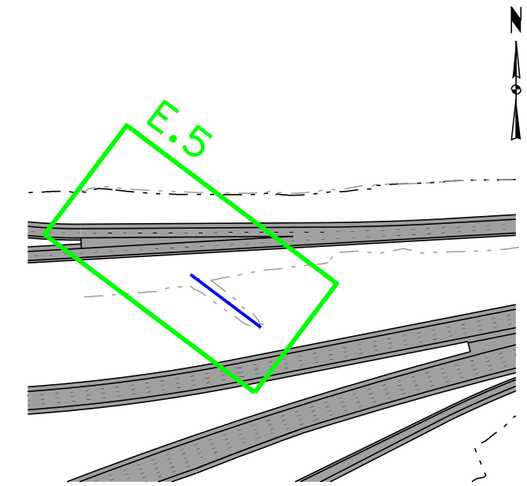


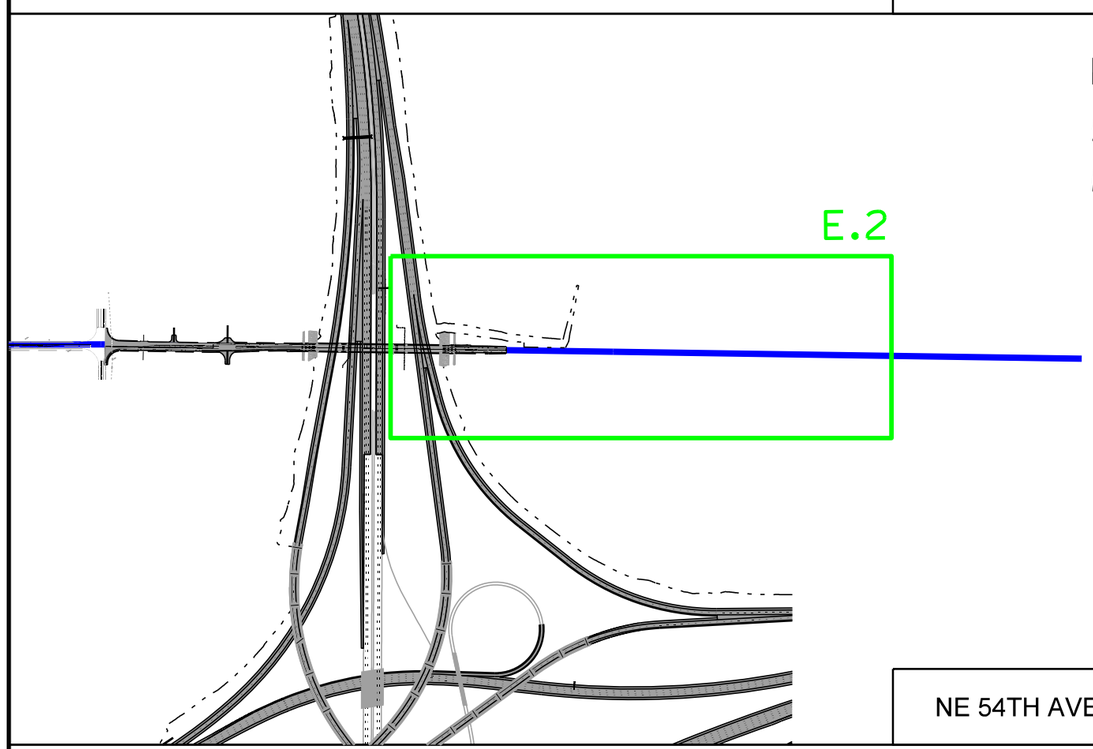
NE 29TH STREET



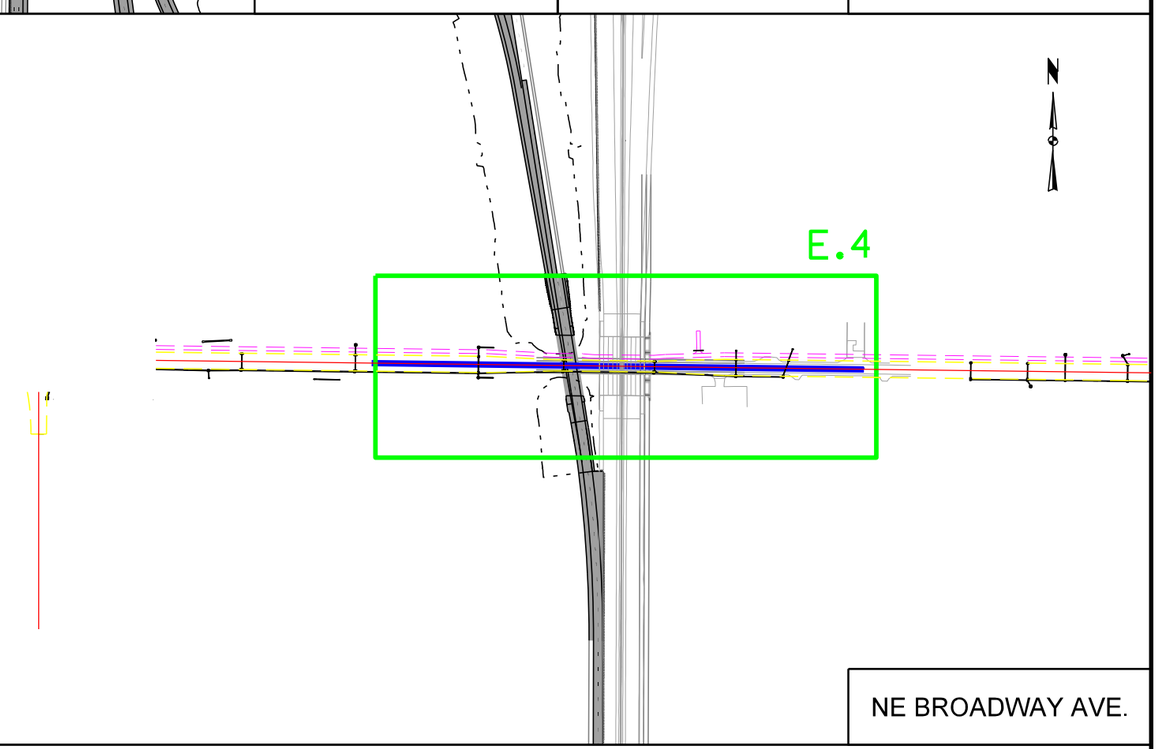
SPECIAL DITCH
NE 54TH AVENUE



SPECIAL DITCH
RAMP G



NE 54TH AVENUE



NE BROADWAY AVE.

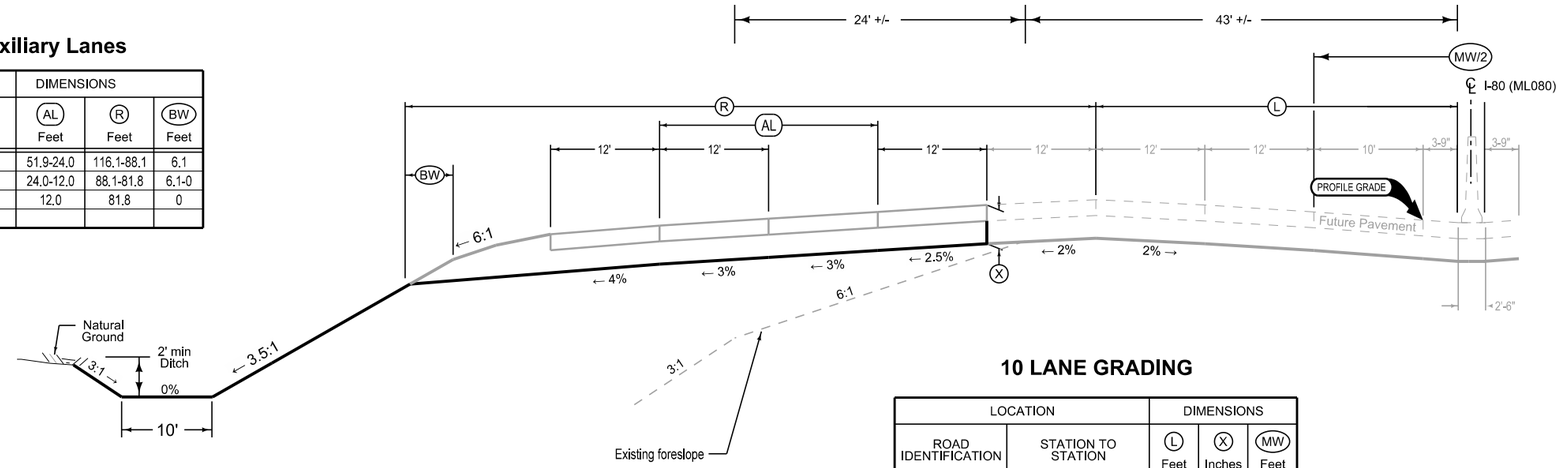
Project Key Maps

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER A.6

8:40:15 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194A01.sht

10 Lane Foreslope Grading w/Auxiliary Lanes

LOCATION			DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION		(AL) Feet	(R) Feet	(BW) Feet
ML080	5137+77.87	5143+38.72	51.9-24.0	116.1-88.1	6.1
ML080	5143+38.72	5147+28.08	24.0-12.0	88.1-81.8	6.1-0
ML080	5147+28.08	5150+58.17	12.0	81.8	0



10 LANE GRADING

LOCATION			DIMENSIONS		
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(X) Inches	(MW) Feet
ML080	5137+77.87	5150+58.17	37.75	30	30

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

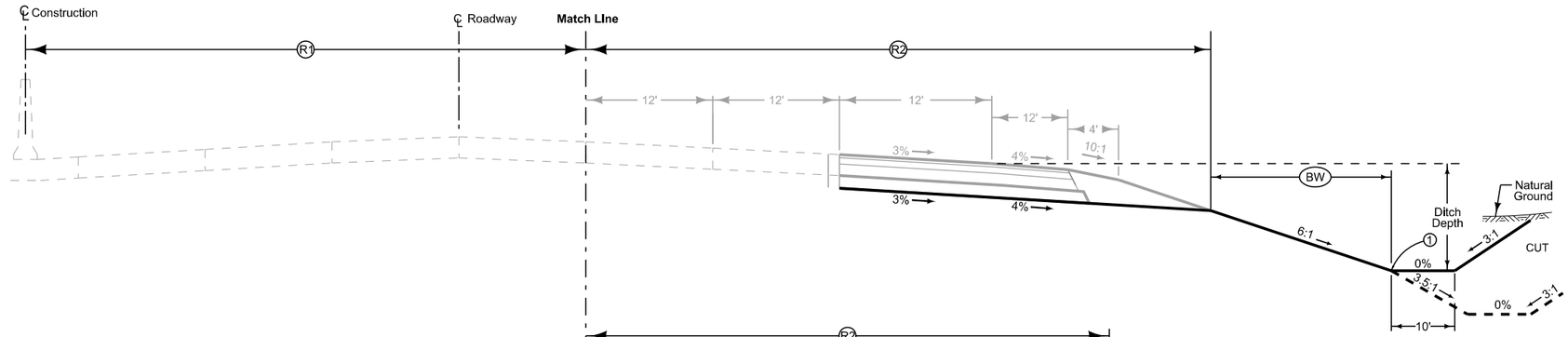
See Tab 112-9 for shoulder quantities.

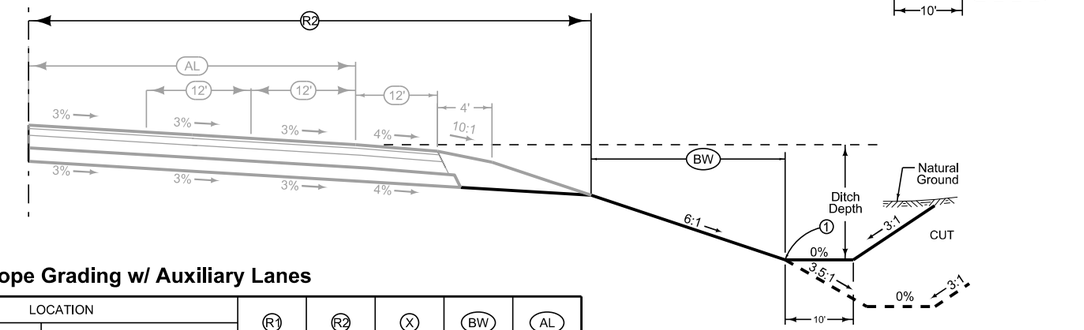
Grading

MAINLINE I-80 (WESTBOUND)

12-Lane Foreslope Grading

LOCATION			R1	R2	X	BW
ROAD IDENTIFICATION	STATION TO STATION		Feet	Feet	Inches	Feet
ML235	2109+31.25	2114+60.00	49	69.8	30	2.2





6-Lane Foreslope Grading w/ Auxiliary Lanes

LOCATION			R1	R2	X	BW	AL
ROAD IDENTIFICATION	STATION TO STATION		Feet	Feet	Inches	Feet	
ML235	2099+16.25	2109+31.25	49.1-49	94.0-69.8	30	2.2	

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

See Tab 112-9 for shoulder quantities.

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

Section view is in direction of traffic.

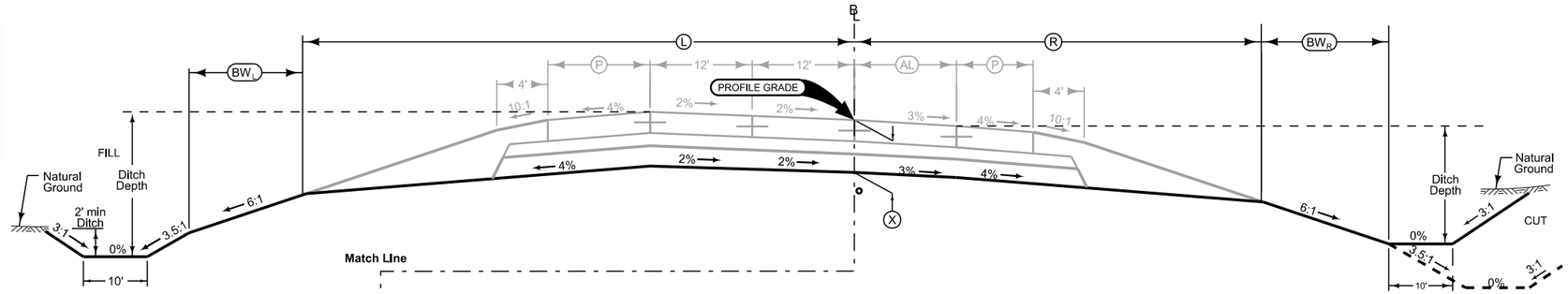
Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

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

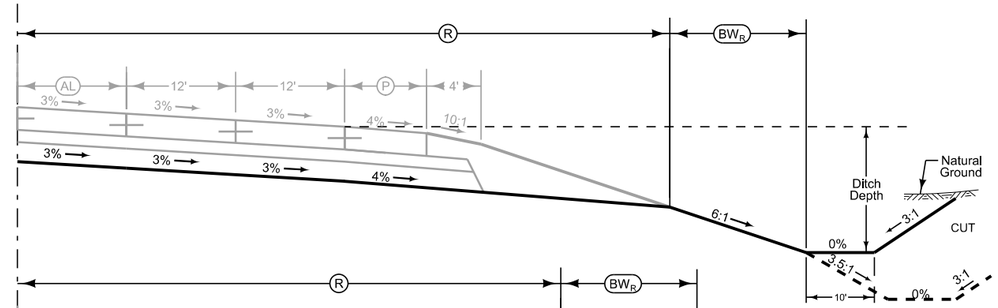
See Tab 112-9 for shoulder quantities.

Grading
ML 235 SOUTHBOUND,
ML 235 NORTHBOUND
(Future)

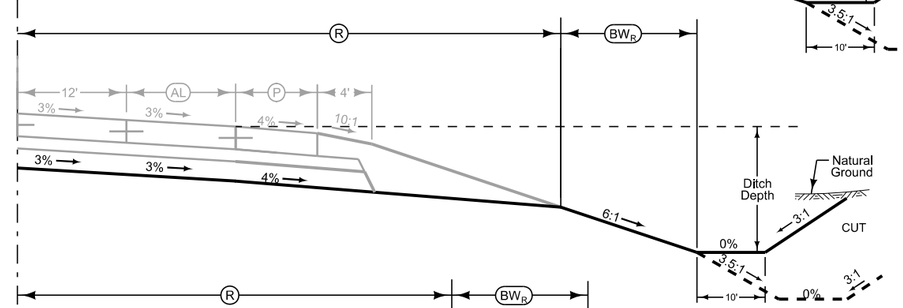
LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet	AL Feet
NEMM	ML035N	8465+42.83	8470+36.1	57.0	45.0	30	0.0	0.0	12
NEMM	ML035N	8470+36.1	8474+22.46	57.0	45.0-69.9	30	0.0	0.0	12-40



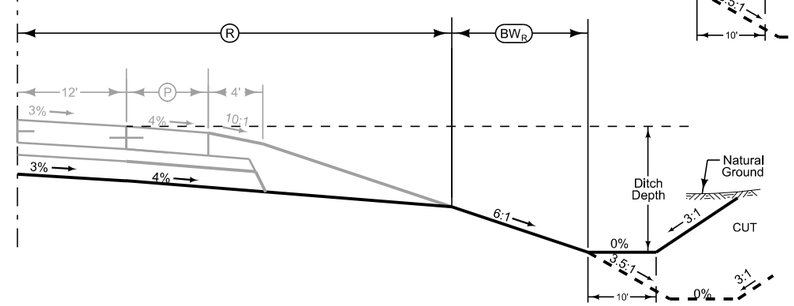
LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet	AL Feet
NEMM	ML035N	8474+22.46	8478+33.22	57.0	33.0	30	0.0	0.0	0.0
NEMM	ML035N	8504+90.22	8515+96.11	57.0	33.0	30	0.0	0.0	0.0



LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet	AL Feet
NEMM	ML035N	8515+96.11	8520+16.11	57.0	82.4-57.0	30	0.0	0.0	49.1-24



LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet	AL
NEMM	ML035N	8520+16.11	8526+75.00	57.0	57.0	30	0.0	-	12
NEMM	ML035N	8526+75.00	8529+75.00	57.0	57.0-45.0	30	0.0	0.0	12-0



LOCATION				DIMENSIONS				
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet
NEMM	ML035N	8529+75.00	8532+37.46	57.0	45.0	30	0.0	-

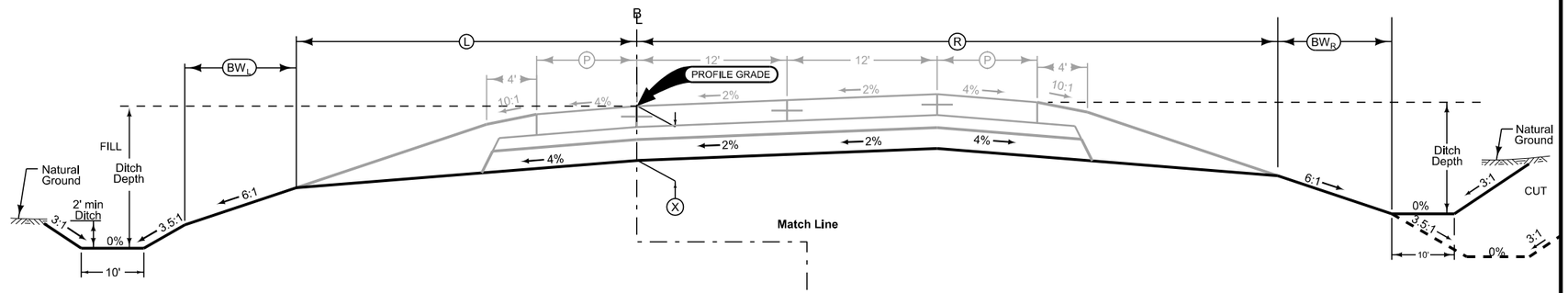
See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

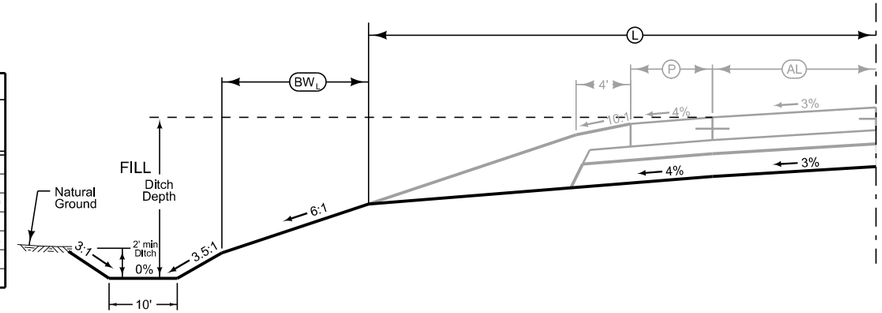
Grading
ML035N

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER B.3

LOCATION				DIMENSIONS				
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet
NEMM	235A	38488+93.31	38511+66.22	28.1	49.0	30	0.0	4.2
NEMM	235G	38557+03.00	38557+30.04	28.1	49.0	30	0.0	0.0



LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet	AL Feet
NEMM	235G	38557+30.04	38557+53.16	28.1	49.0	30	0.0	0.0	0.0
NEMM	235G	38557+53.16	38559+09.54	33.8-36.8	49.0	30	0.0	0.0	0-3
NEMM	235G	38560+69.54	38567+30.44	36.6-49.8	49.0	30	0.0	0.0	6.76-20
NEMM	235G	38567+30.44	38569+60.04	49.8-69.1	49.0	30	0.0	0.0	20-39
NEMM	235G	38611+66.22	38618+16.50	85.0-52.4	49.0	30	0.0	0.0	52-19.5
NEMM	235G	38618+16.50	38621+16.13	52.4-45.0	49.0	30	0.0	0.0	19.5-12
NEMM	235G	38621+16.13	38637+77.87	45.0	49.0	30	0.0	0.0	12

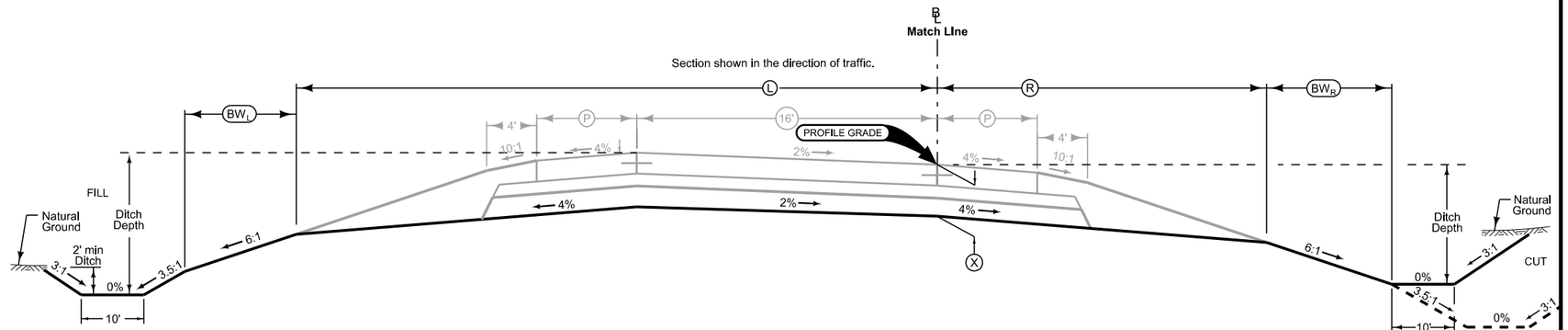


See Tab 100-24 or 100-25 for pavement quantities.

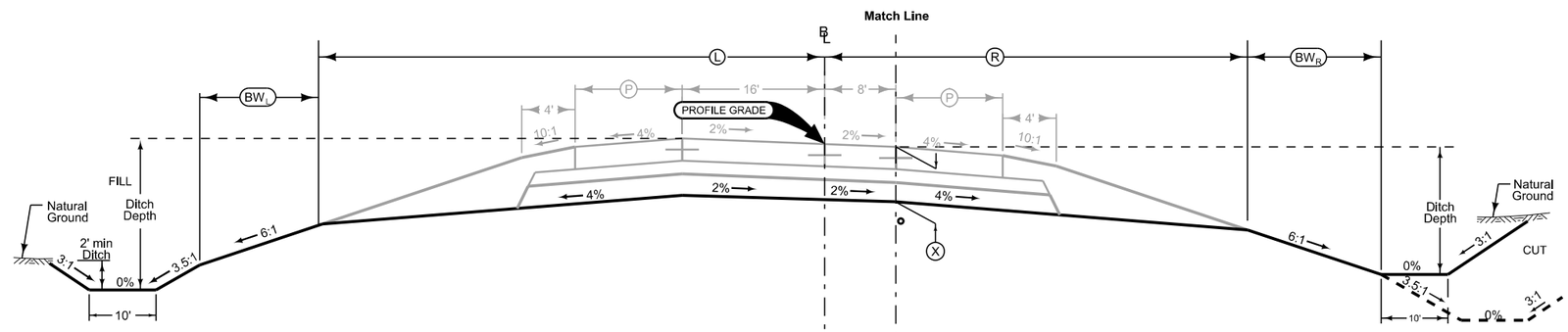
See Tab 112-9 for shoulder quantities.

Grading
RAMP 235A,
RAMP 235G

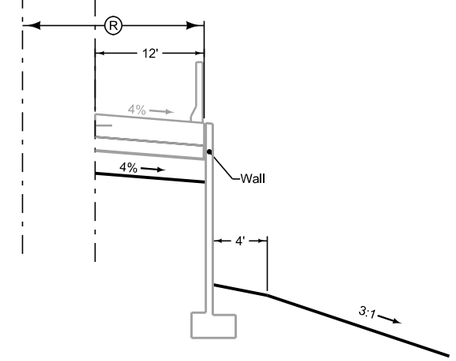
LOCATION				DIMENSIONS				
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet
NEMM	235B	32574+22.46	32579+41.71	40.0	26.0	30	2.2	2.2
NEMM	235B	32587+55.00	32590+34.72	40.0	26.0	30	2.2	2.2
NEMM	235B	32592+48.72	32593+05.82	40.0	26.0	30	2.2	2.2



LOCATION				DIMENSIONS				
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet
NEMM	235B	32579+41.71	32581+41.71	40.0	29.8-43.7	30	2.2	2.2-0
NEMM	235B	32581+41.71	32582+09.38	40.0	43.7	30	2.2	0.0
NEMM	235B	32582+09.38	32582+21.88	40.0	43.7-42.2	30	2.2	0.0
NEMM	235B	32582+21.88	32582+75.00	40.0	42.2	30	2.2	0.0
NEMM	235B	32585+75.00	32587+55.00	40.0	41-29.8	30	2.2	0-2.2



LOCATION				DIMENSIONS				
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	X Inches	BW_L Feet	BW_R Feet
NEMM	235B	32582+75.00	32585+75.00	41.8	21.8	30	2.2	-



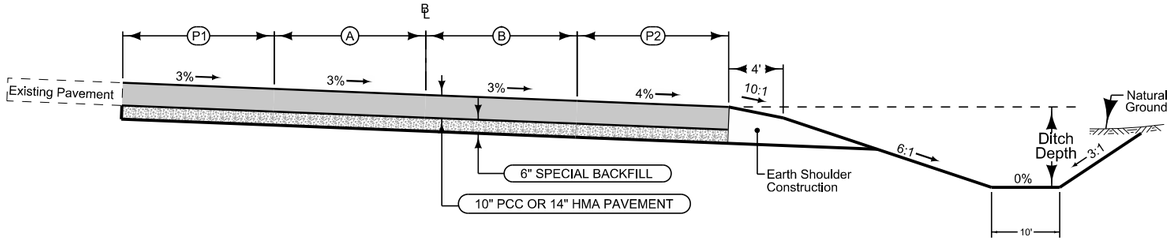
Section view is in direction of traffic.

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

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

See Tab 112-9 for shoulder quantities.

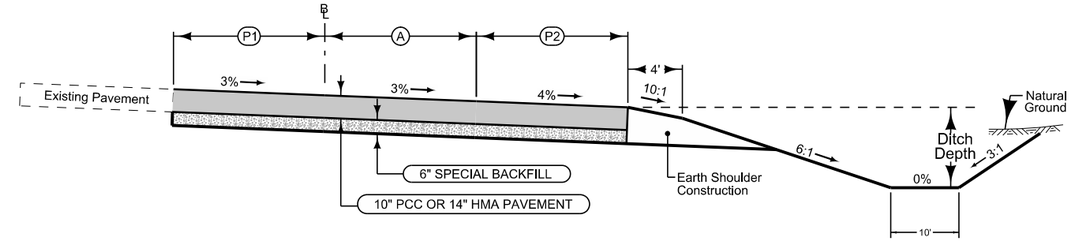
Grading
RAMP 235B



Section shown in the direction of traffic.

STATION TO STATION		P1 Feet	A Feet	B Feet	P2 Feet
10+07.86	13+41.56	0.0	0.0-12.0	12.0	12.0
13+41.56	16+85.36	0.0-23.9	12.0	12.0	12.0
16+85.36	18+45.89	12.0	12.0	12.0	12.0

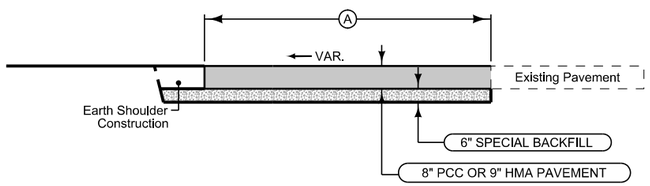
EB I-35/80 TO NB I-35
DETOUR PAVEMENT
DET_3_10
(Future)



Section shown in the direction of traffic.

STATION TO STATION		P1 Feet	A Feet	P2 Feet
1157+53.27	1156+73.17	0	0	12.0
1156+73.17	30+40.77	0.0	0.0-16.0	12.0
30+40.77	25+60.57	0.0-23.9	16.0	12.0
25+60.57	20+25.00	8.0	16.0	12.0

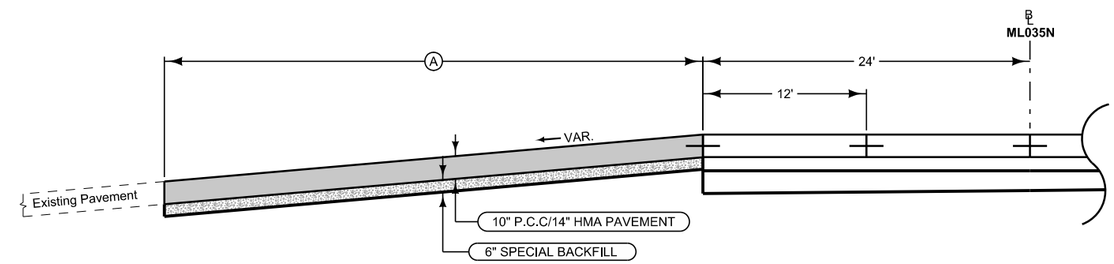
WB I-80 TO NB I-35
DETOUR PAVEMENT
DET_3_20



Section shown in the direction of traffic.

ROAD IDENTIFICATION	STATION TO STATION		A Feet
SUR080	1064+80.91	1068+43.04	11.6-6.0
SUR080	1068+43.04	1069+08.09	6.0

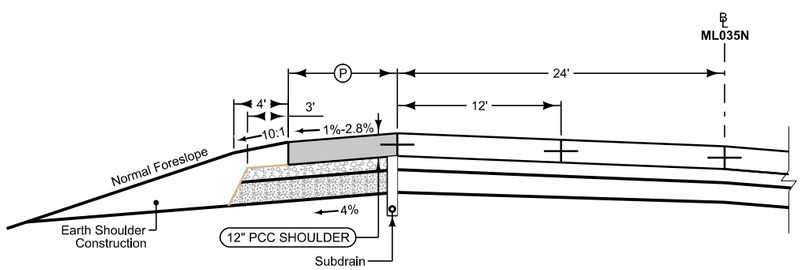
EB I-35/80
DETOUR PAVEMENT
DET_3_12
(Future)



Section shown in the direction of traffic.

ROAD IDENTIFICATION	STATION TO STATION		A Feet
ML035N	8532+38.63	8539+69.18	24.28-2

NORTHBOUND I-35
DET_3_22



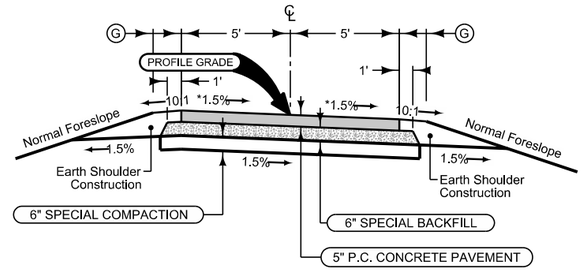
Section shown in the direction of traffic.

ROAD IDENTIFICATION	STATION TO STATION		P Feet
ML035N	8465+42.83	8466+13.39	12.0

NB 1-35
DETOUR PAVEMENT
DET_3_14

Earth Shoulder

BEGIN STATION	END STATION	(G) Feet
13+50.00	13+70.79	2 (MIN)
17+25.59	20+98.08	2 (MIN)



Earth Shoulder

BEGIN STATION	END STATION	(G) Feet
13+50.00	13+70.79	2 (MIN)
17+25.59	20+98.08	2 (MIN)

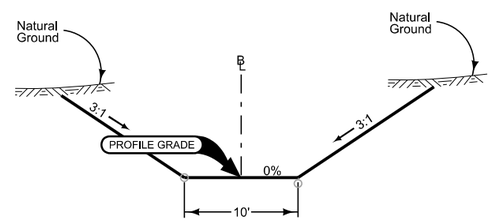
Trail Jointing:
Transverse joints: C at 10' spacing.

ROAD IDENTIFICATION	BEGIN STATION	END STATION
CHICHAQUA VALLEY TRAIL	13+50.00	13+70.79
CHICHAQUA VALLEY TRAIL	17+25.59	21+18.01

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

See Tab 112-9 for shoulder quantities.

CHICHAQUA VALLEY TRAIL



ROAD IDENTIFICATION	BEGIN STATION	END STATION
RAMP G SPECIAL DITCH	4100+00.00	4102+33.19
54th AVE SPECIAL DITCH	4200+00.00	4203+28.85

SPECIAL DITCHES

SURVEY SYMBOLS

- PPA Power Pole Co. 1
- PRA Power Riser Co. 1
- UB Utility Box
- TSG Traffic Signal
- TSL Traffic Signal and Luminare
- TCB Traffic Signal Box
- LUM Luminaire
- TPD Telephone Pedestal
- MH Utility Access (Manhole)
- IN Storm Sewer Intake
- INB Storm Sewer Beehive Intake
- WV Water Valve
- FHYD Fire Hydrant
- SI Sign
- SL Speed Limit Sign
- BB Billboard
- MM Mile Marker Post
- ROW Right of Way Rail
- TEV Evergeen Tree
- SHR Shrub
- TDC Tree Deciduous
- SWAMP
- FLG Flagpole
- BCL Bridge Centerline
- BD Bridge Deck
- BLS Bridge Low Steel
- UE Utility Elevation
- PRO Profile Shot
- BRG Bridge
- PLG Location of General Photo
- PIP Pipe Culvert
- SOP Size of Pipe or Culvert
- DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- DIK Centerline of Dike or Dam
- GDL Guard Rail Steel
- GPR Guard Post (4 or More Posts)
- GDC Guard Rail Cable
- RIP Rip-Rap
- TLN Tree Line
- TIL Tile Line
- FCL Chain Link and Security Fence
- FW Wire Fence
- RET Retaining Walls

- EP Edge of Paved Roads (ML or SR)
- SNP Unpaved Shoulder
- CU Back of Curb
- GU Gutter In Front of Curb
- ENT Centerline BL of Entrance
- ENP Edge Paved Entrance & Park Lot
- ENU Edge Unpaved Entrance & Parking
- SWK Sidewalk
- CON Concrete or A/C Slab
- E1 ELA Underground Electric Line Co. 1
- E2 ELA Underground Electric Line Co. 2
- E3 ELA Underground Electric Line Co. 3
- T1 ELA Underground Telephone Line Co. 1
- FO FOA Underground Fiber Optic Co. 1
- FO2 FOB Underground Fiber Optic Co. 2
- FO3 FOB Underground Fiber Optic Co. 3
- FO4 FOB Underground Fiber Optic Co. 4
- G GLA Underground Gas Line Co. 1
- W WLA Underground Water Line Co. 1
- St.S. STA Storm Sewer Line Co. 1
- St.S.2 STA Storm Sewer Line Co. 2

UTILITY LEGEND

This is a POINT 25 Project and is subject to the provisions of IAC 761-115.25.

Mid American Energy - Power and Gas
Michael Younts
E1, G — 10510 Douglas Avenue
Urbandale, Iowa 50322
515-252-6565 - myounts@midamerican.com

Iowa D. O. T. - Lighting and Fiber Optic
E2 — Tony Taylor
800 Lincoln Way
FO3 — Ames, Iowa 50010
515-239-1902 - Tony.Taylor@dot.iowa.gov
Olsson Associates - Gregory T. Seib
601 P Street
Lincoln, Nebraska 68508
402-458-5037
gseib@olssonassociates.com

Polk County - Lighting and Traffic Signals
Kurt Bailey
E3 — 5885 NE 14th Street
Des Moines, Iowa 50313
515-286-3705
Kurt.Bailey@polkcountyiowa.gov

Century Link - Telephone and Fiber Optics
Dustin Withers
T1 — 2103 East University Avenue
Des Moines, Iowa 50317
FO — 515-263-7202
Dustin.Withers@centurylink.com

Windstream - Fiber Optics
Jim Wiand
FO2 — 115 South 2nd Avenue West
Newton, Iowa 50208
641-787-2270
jim.wiand@windstream.com

Iowa Communications Network (ICN) - Fiber Optics
Larry Klawitter
FO3 — Grimes State Office Building
400 East 14th Street
Des Moines, Iowa 50319
515-229-2046
larry.klawitter@iowa.gov

Iowa Network Services (INS) - Fiber Optics
Jeff Klocko
FO4 — 7760 Office Plaza Drive South
West Des Moines, Iowa 50266
515-830-0445
Jeff@netins.com

Des Moines Water Works - Water
Matt Smith
W — 2201 George Flagg Parkway
Des Moines, Iowa 50321
515-283-8781
msmith@dmww.com

St.S. — IDOT or Private

Polk County - Storm Sewer
Kurt Bailey
St.S.2 — 5885 NE 14th Street
Des Moines, Iowa 50313
515-286-3705
Kurt.Bailey@polkcountyiowa.gov

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)	Proposed Future Pavement 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

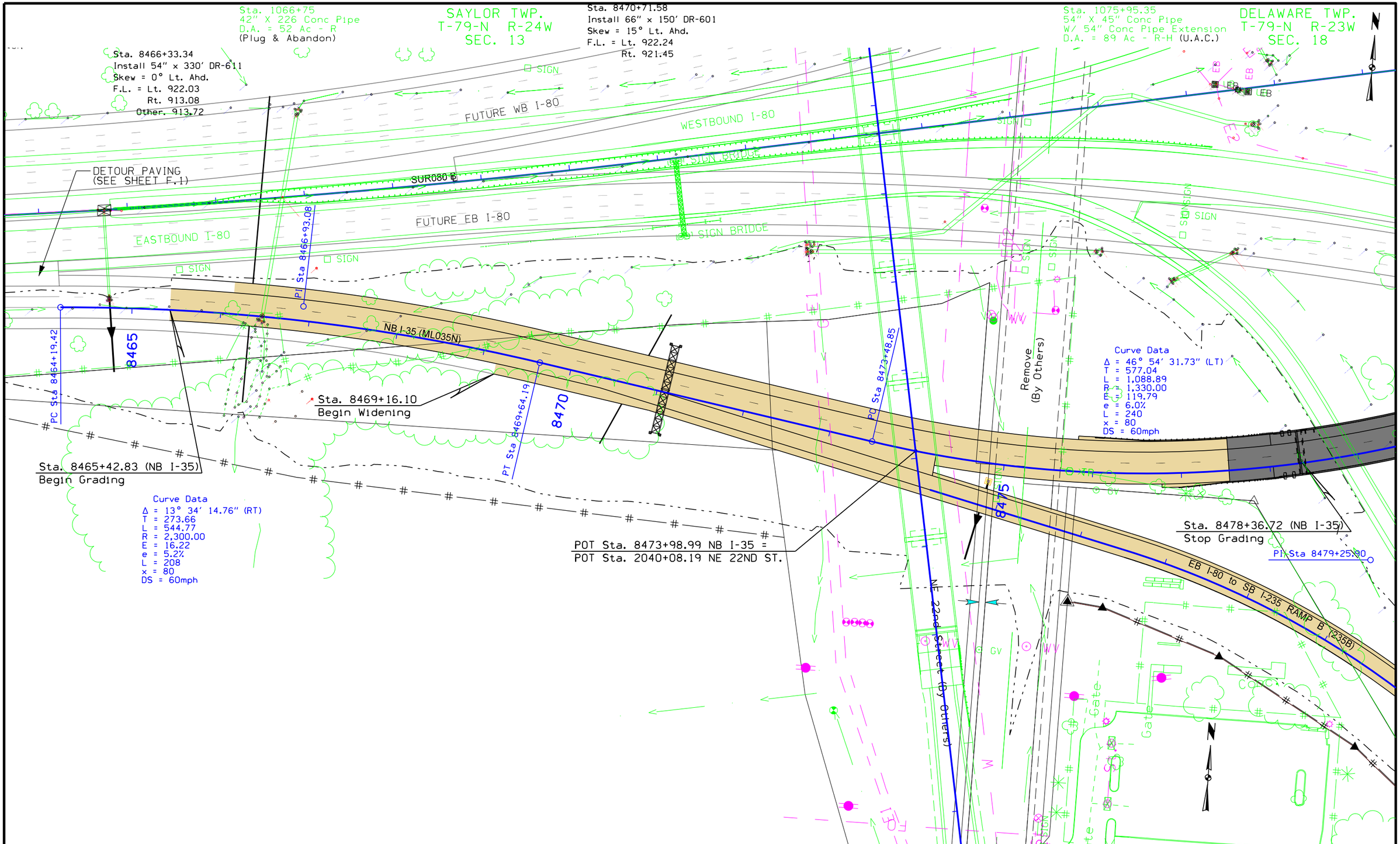
Reference Point
Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Trench Drain
- HighTension Cable Guardrail
- Sheet Pile
- Pavement Removal
- Clearing & Grubbing Area

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)



MAINLINE
NORTHBOUND I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.2

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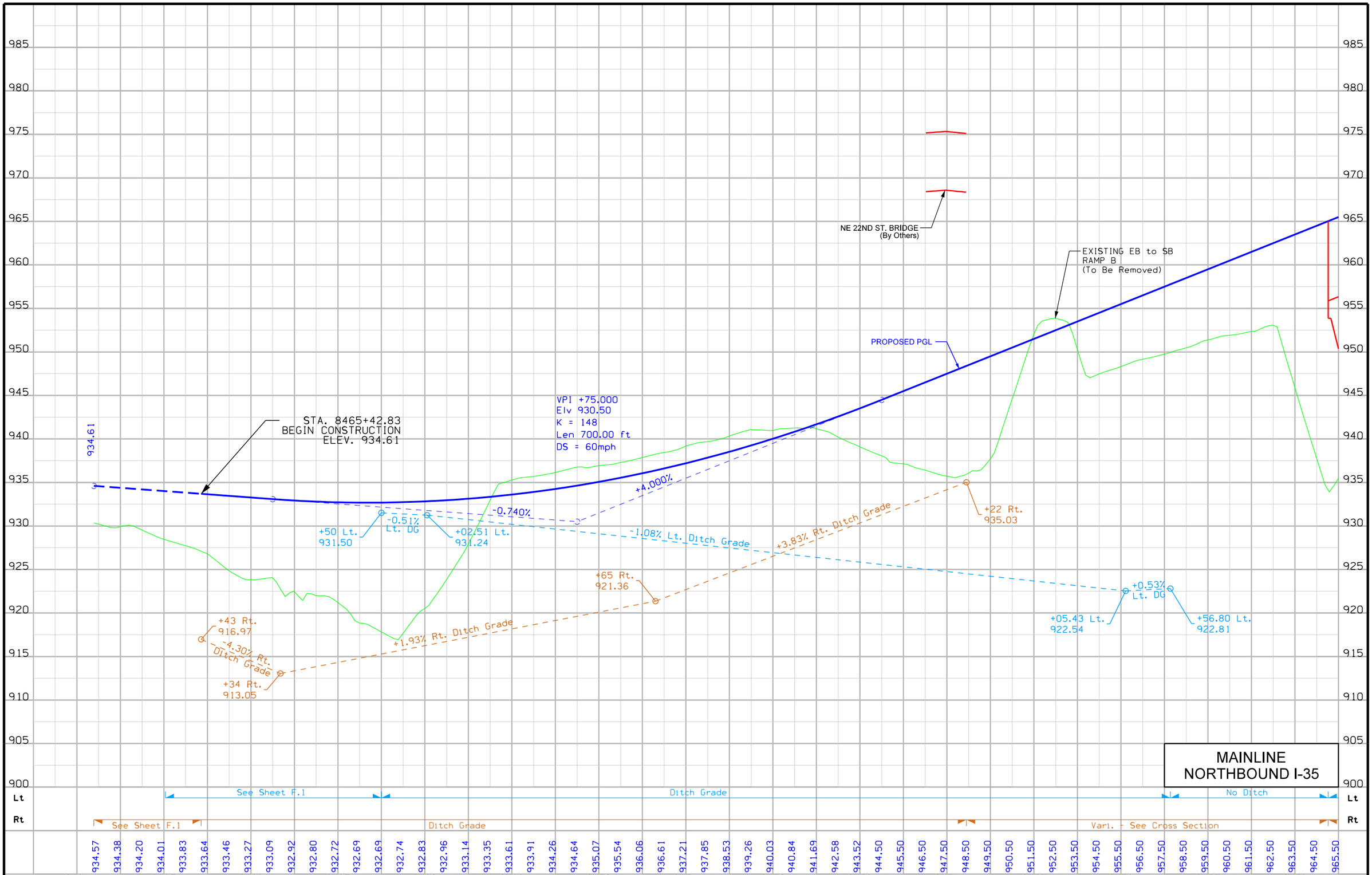
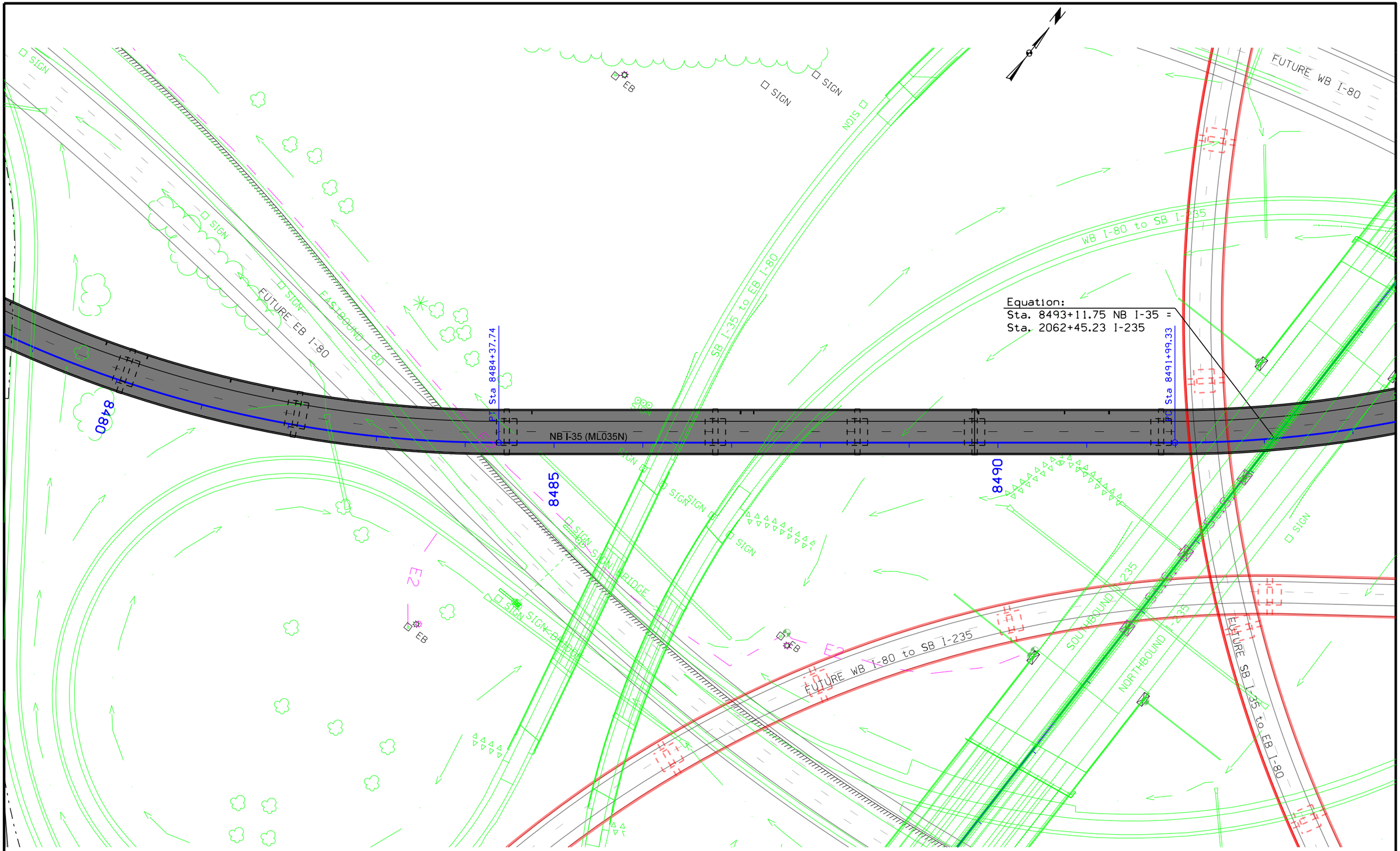


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.3

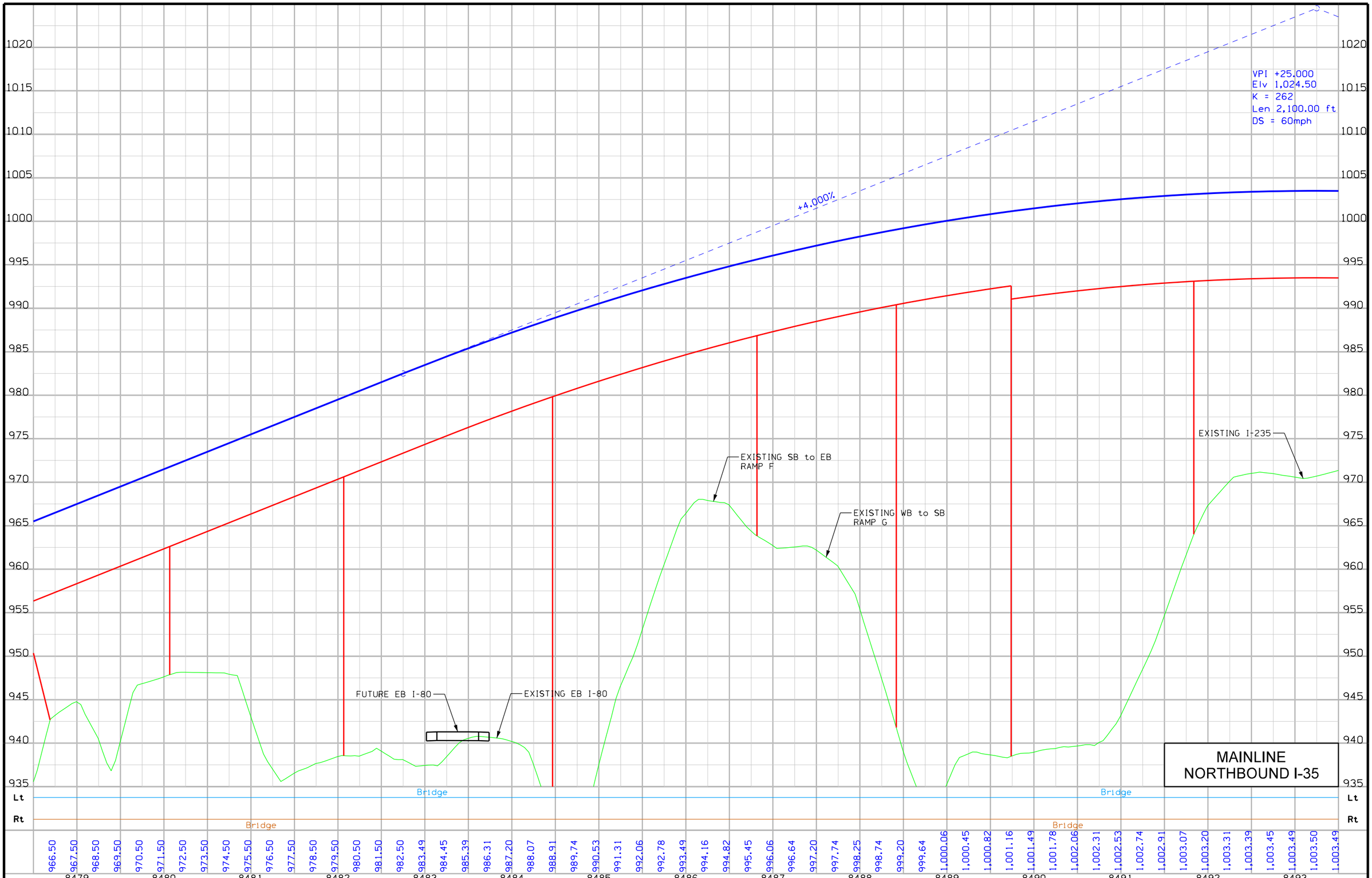
11:19:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht



MAINLINE
NORTHBOUND I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.4

11:20:00 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.5

11:20:09 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht

Sta. 2065+90
42" X 212' Conc. Pipe
D.A. = 3 Ac - Median
(U.A.C)

Sta. 2067+05,
63' Lt
12" X 83' C.M.P.
(U.A.C)

Sta. 2067+05,
63' Rt
12" X 84' C.M.P.
(U.A.C)

FUTURE SB I-35 to EB I-80

WESTBOUND I-80

FUTURE SB I-235

FUTURE NB I-235

SOUTHBOUND I-235

NORTHBOUND I-235

2070

2065

FUTURE WB I-80

WB I-80 to SB I-235

8495

8500

8505

NB I-35 (ML035N)

Sta. 8508+00.00 (NB I-35)
Resume Grading

PT Sta 8505+89.13

Sta. 8504+86.73 (NB I-35)
Resume Grading

Sta. 8505+50.00 (NB I-35)
Stop Grading

NB I-235 to WB I-80

WB I-80 to NB I-35
RAMP A (235A)

FUTURE WB I-80 to SB I-235

Curve Data
Δ = 59° 52' 18.89" (LT)
T = 765.89
L = 1,389.80
R = 1,330.00
E = 204.76
e = 6.0%
L = 240
x = 80
DS = 60mph

PI Sta 8499+65.23

REMOVE 116' C.M.P.
INSTALL 40° ELBOW AND
INSTALL 12" X 124' C.M.P.
DR-622

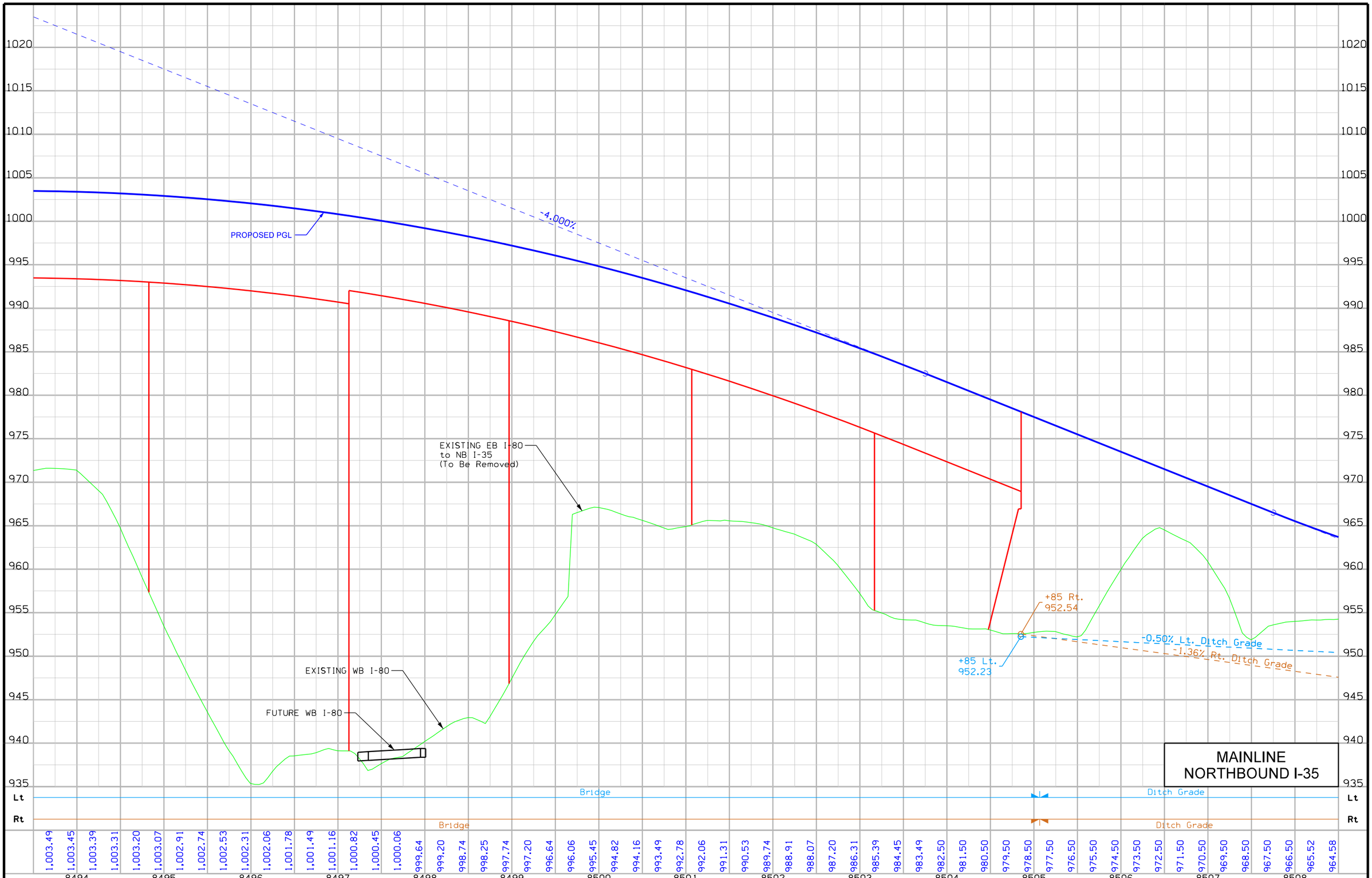
Sta. 2062+83,
63' Rt.
12" X 116' C.M.P.

0 FEET 50

MAINLINE
NORTHBOUND I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.6

11:20:17 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.7

11:20:26 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht

DELAWARE TWP.
T-79-N R-23W
SEC. 18

Sta. 2083+12.47
24" X 165'
Conc Pipe
D.A. = 0.6 Ac - R
(U.A.C.)

Sta. 2084+98.30
24" X 159'
Conc Pipe
D.A. = 24 Ac - R
(U.A.C.)

DELAWARE TWP.
T-79-N R-23W
SEC. 17

SOUTHBOUND I-235
NORTHBOUND I-235
SIGN BRIDGE
SIGN
FUTURE SB I-235 to EB I-80
FUTURE SB I-235 to WB I-80
FUTURE SB I-235
FUTURE NB I-235
F03
EB
NB I-35 (ML035N)
8510
8515
8520
WB I-80 to NB I-35
RAMP A (235A)
NE 54TH STREET
APPROX. SEC. LINE

POT Sta. 8417+05.64 NB I-35 =
POT Sta. 2237+18.96 NE 54TH AVE.

Note:
Underground fiber was relocated during construction of the NE 54th Avenue bridge and is not as shown on this plan.
Update of fiber location will be required.

Sta. 8512+64.00
Install 24" x 254' DR-601
Skew = 22° Lt. Ahd.
F.L. = Lt. 943.20
Rt. 939.19

DELAWARE TWP.
T-79-N R-23W
SEC. 18

0 FEET 50

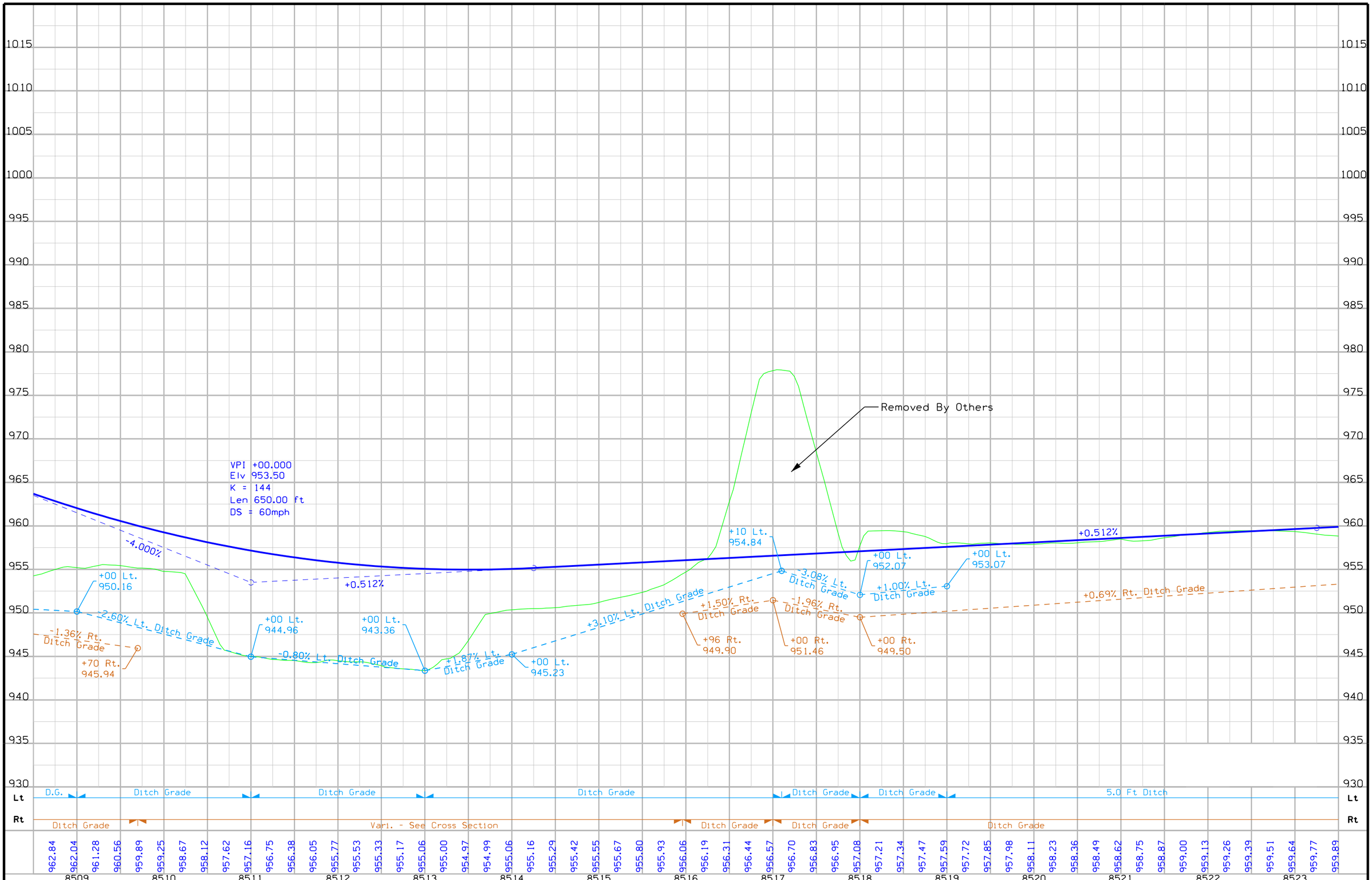
Sta. 8518+00.00
Install 52" x 32" x 114' DR-601
Skew = 0° Lt. Ahd.
F.L. = Lt. 952.07
Rt. 949.50

DELAWARE TWP.
T-79-N R-23W
SEC. 17

MAINLINE
NORTHBOUND I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.8

11:20:34 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht



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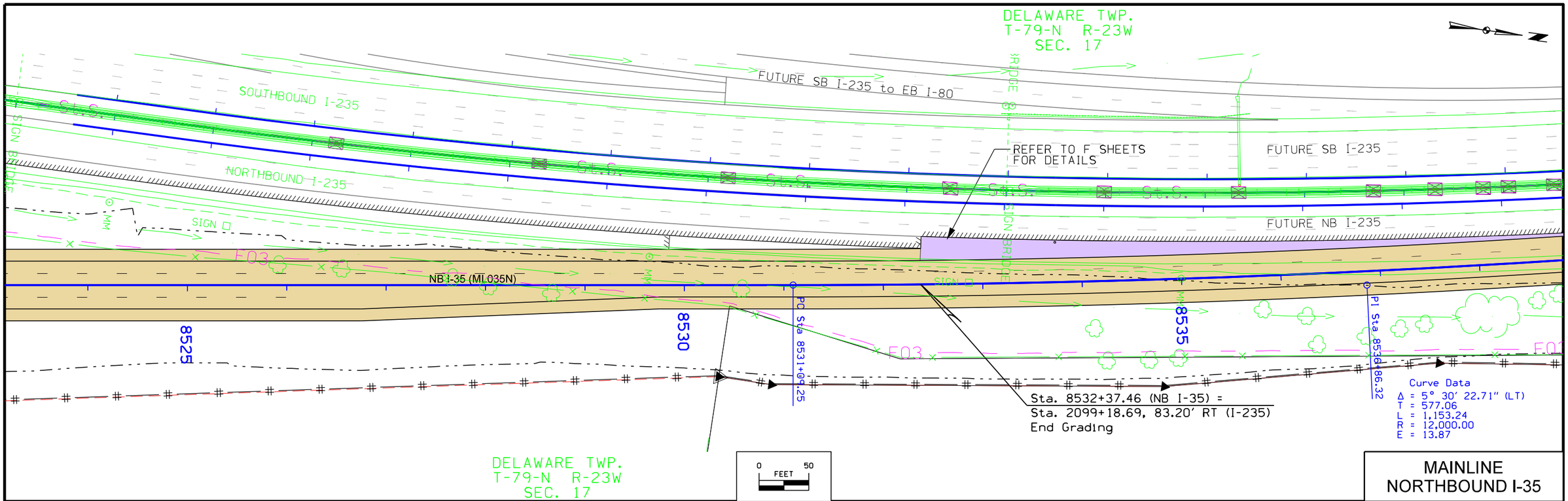

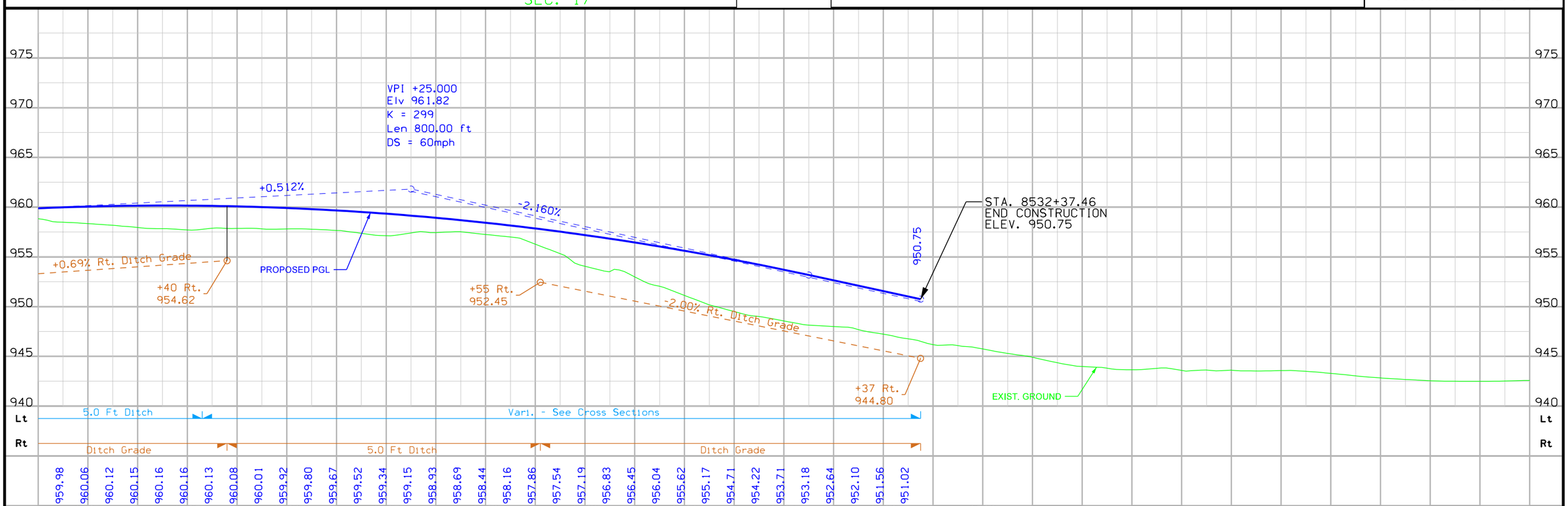

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.10

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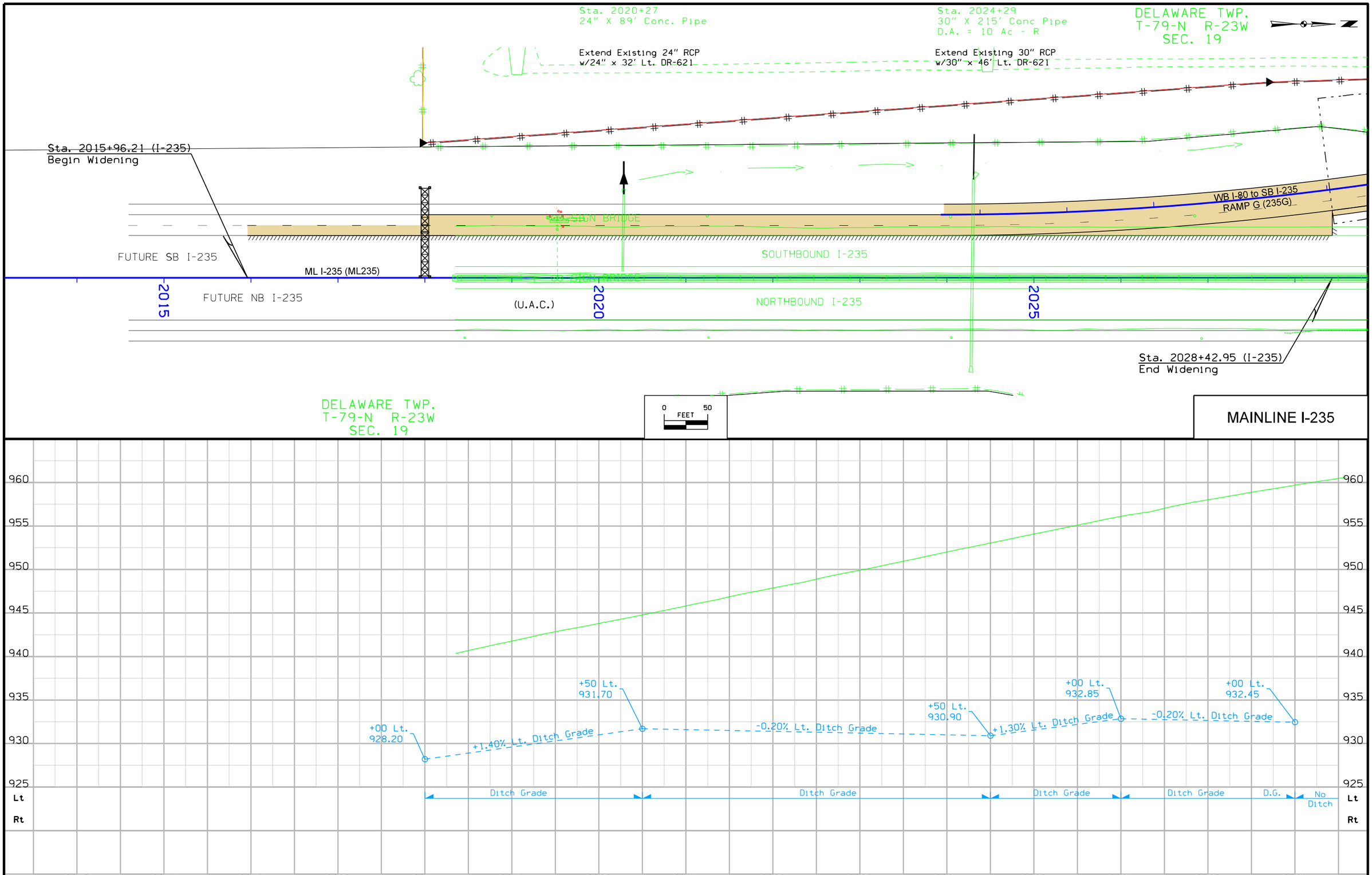
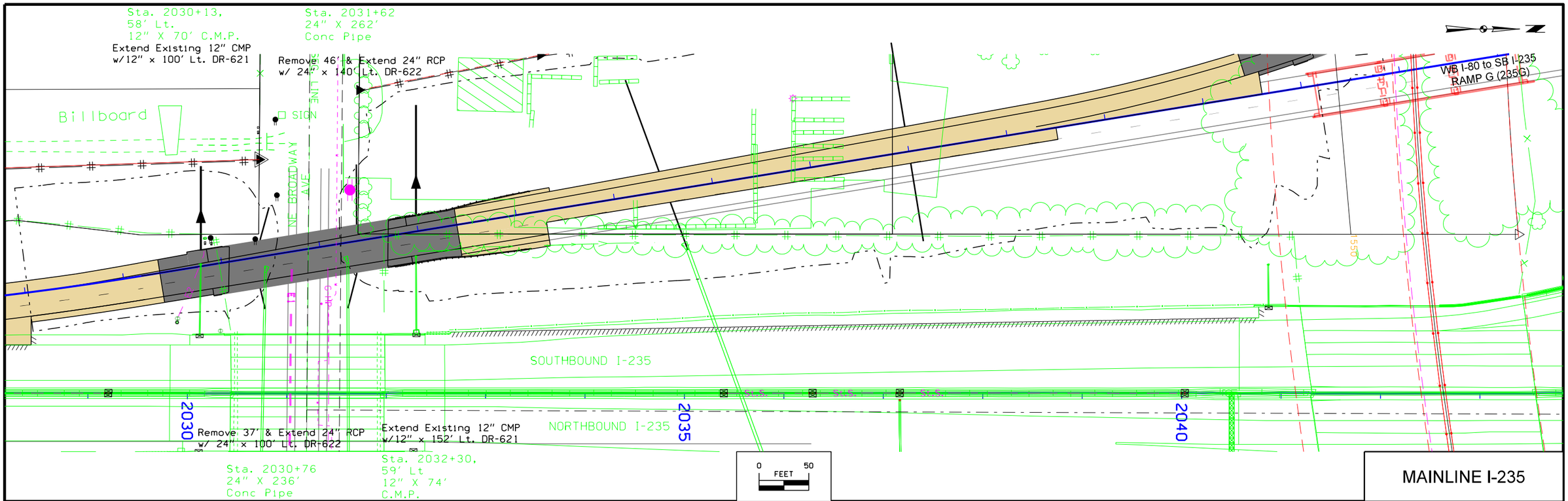
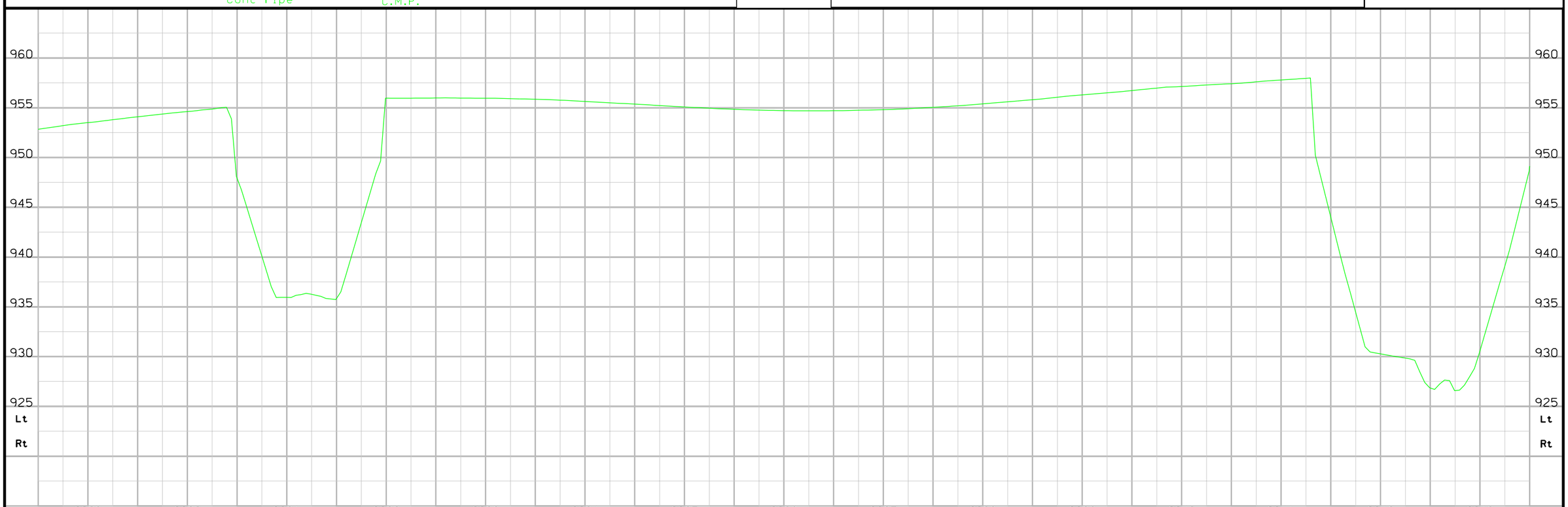


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.11

11:21:01 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht





FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.12	REVISED

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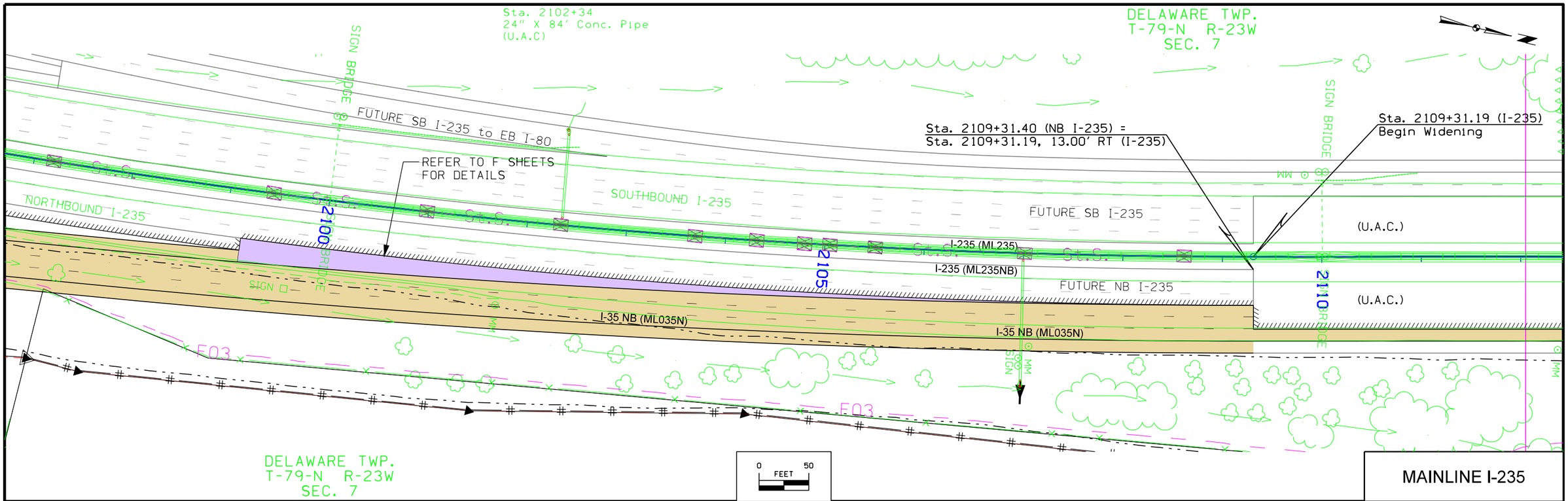

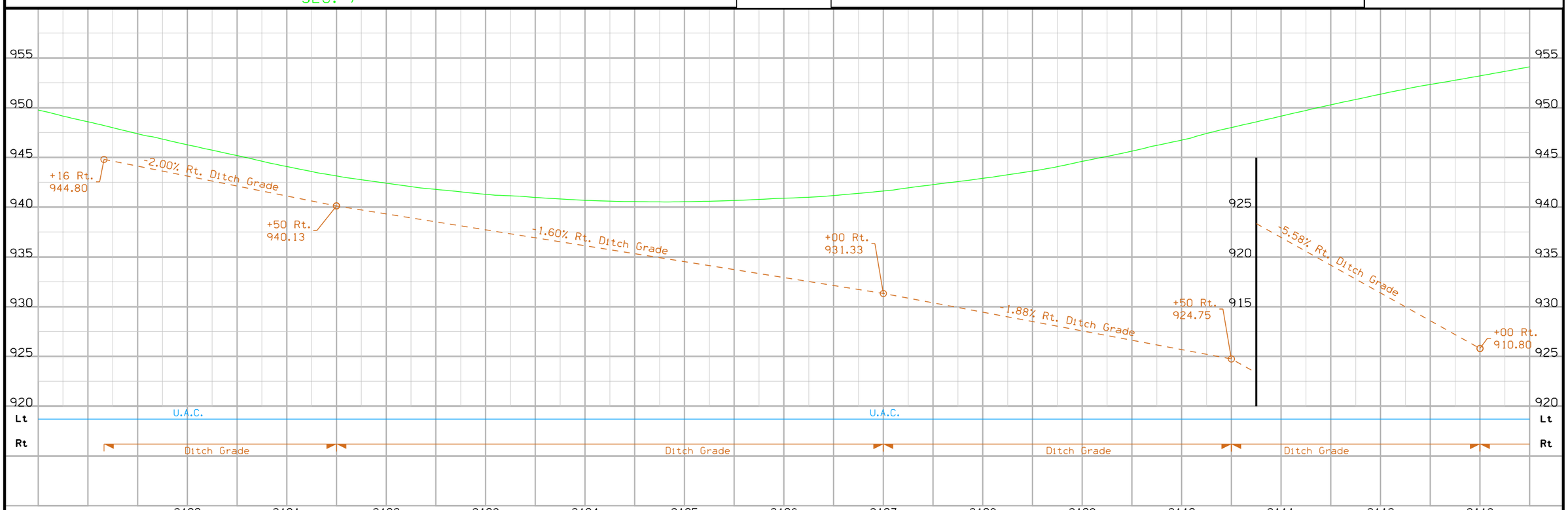

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.13

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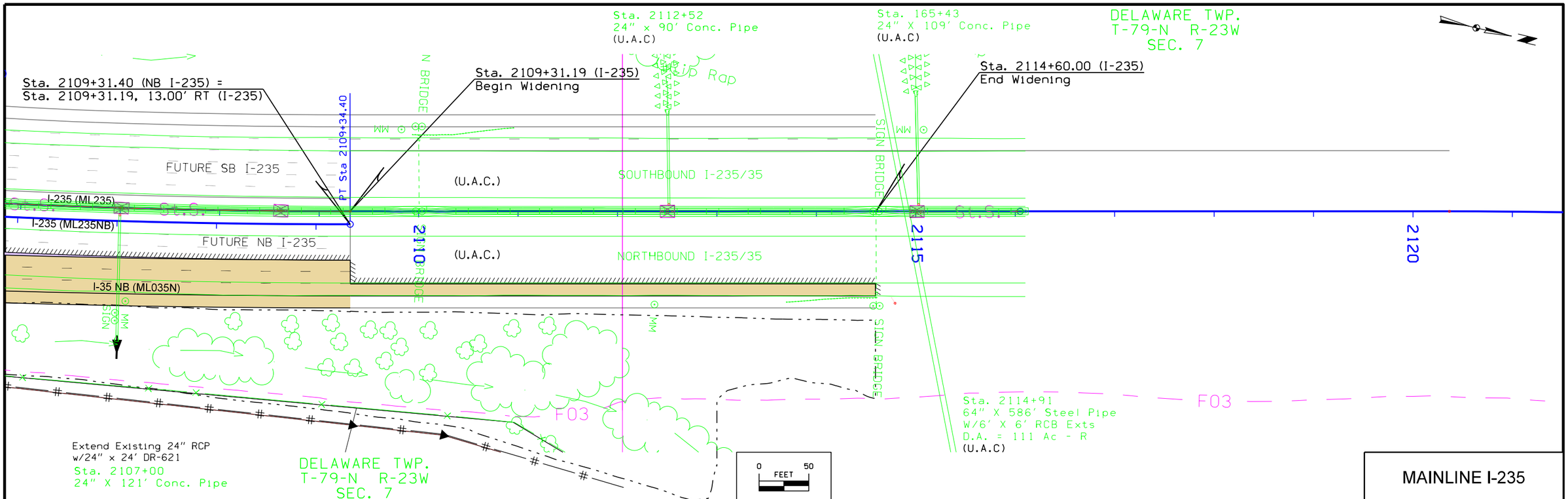

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.14

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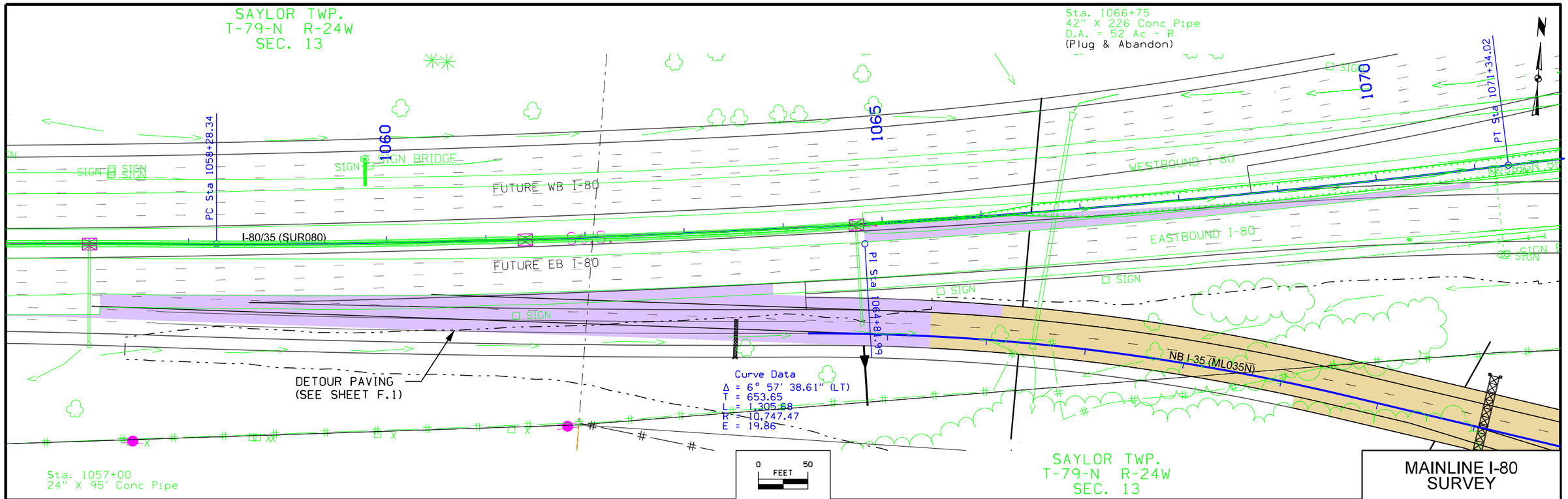

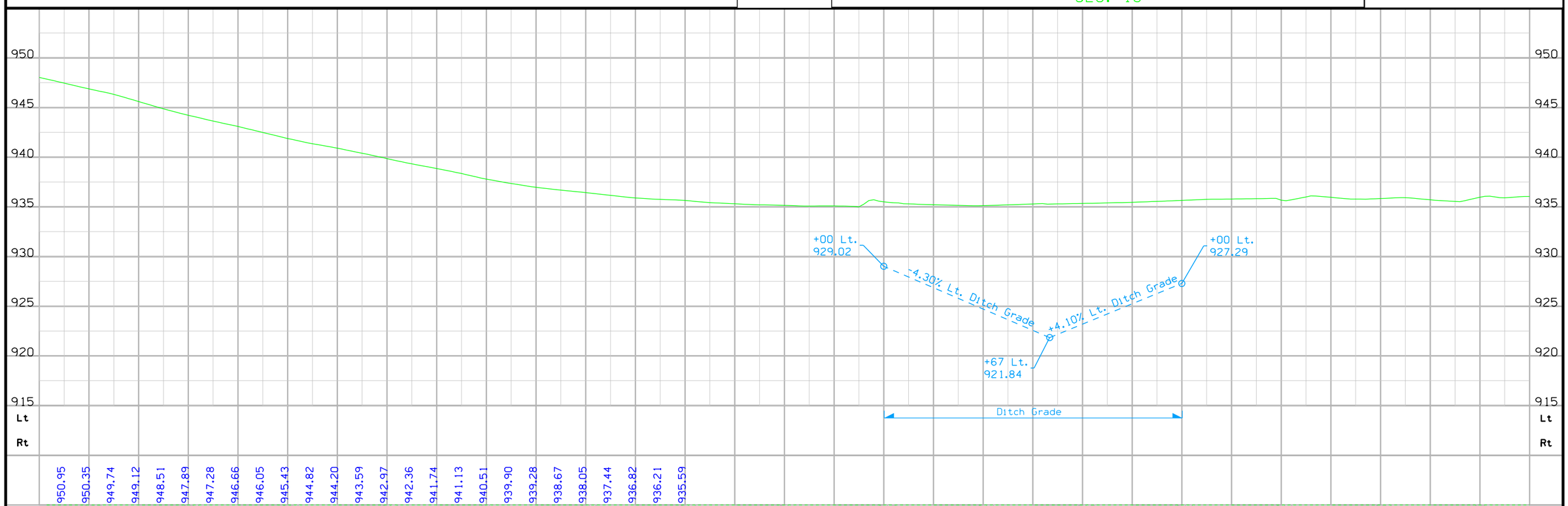

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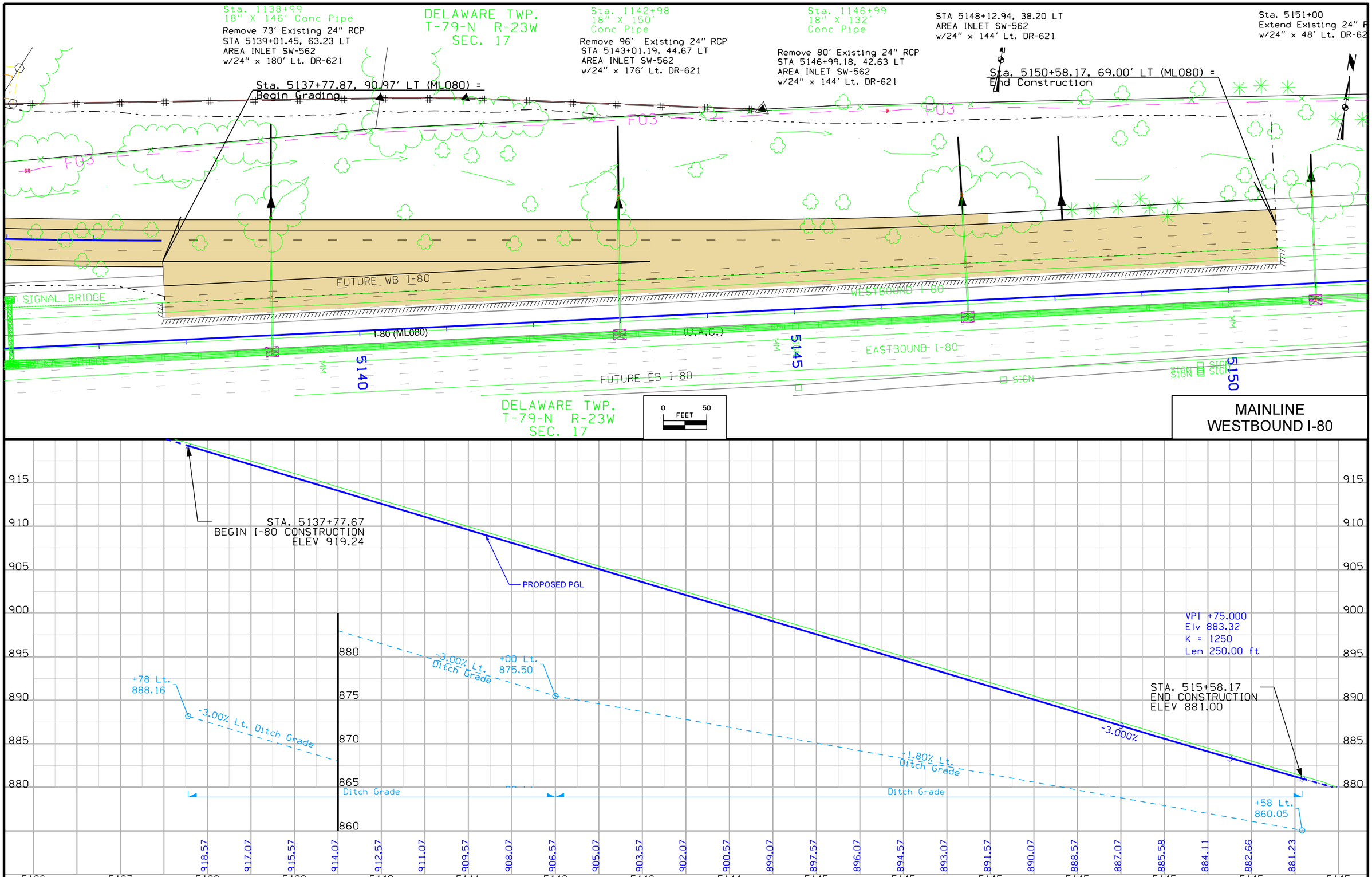


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER D.16

11:21:45 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194D02.sht

DELAWARE TWP.
T-79-N R-23W
SEC. 18

DELAWARE TWP.
T-79-N R-23W
SEC. 18

Equation:
Sta. 17+52.13 CV TRAIL
=Sta. 386+81.86 RAMP G

(U.A.C.)

NE 29TH STREET

APPROX. SEC. LINE

PC Sta 13+85.12
PI Sta 13+95.26
PT Sta 14+05.14
PI Sta 15+24.79
PI Sta 15+34.87
PRC Sta 17+06.44
PI Sta 17+16.67
PI Sta 18+34.34
PC Sta 18+03.57
PT Sta 19+50.98
PC Sta 20+52.14
PI Sta 20+81.39
PT Sta 21+05.08
PC Sta 14+30.20
PI Sta 14+40.35
PT Sta 14+50.22
PC Sta 16+86.06
PI Sta 16+96.28
PT Sta 17+26.82

T1
C1
C2
C3
C4
C5
C6
15
20

FUTURE WB I-80
EASTBOUND I-80
WESTBOUND I-80
FUTURE EB I-80
WB I-80 to SB I-235 RAMP G (235G)

Sta. 13+98.43 CV TRAIL
Begin Construction

Trail Grading Matchline

Driveway Grading

Sta. 21+18.01 CV TRAIL
End Construction

Sta. 20+85.00
Install 44" x 27" x 26' DR-601
Skew 30° Rt. Ahd.
F.L. = Lt. 895.15'
Rt. 893.89'

Curve Data
C1 Δ = 22° 56' 27.65" (RT)
T = 10.15
L = 20.02
R = 50.00
E = 1.02

Curve Data
C2 Δ = 22° 56' 27.65" (LT)
T = 10.15
L = 20.02
R = 50.00
E = 1.02

Curve Data
C3 Δ = 11° 40' 45.25" (LT)
T = 10.23
L = 20.38
R = 100.00
E = 0.52

Curve Data
C4 Δ = 11° 40' 45.25" (RT)
T = 10.23
L = 20.38
R = 100.00
E = 0.52

Curve Data
C5 Δ = 84° 27' 36.42" (RT)
T = 90.77
L = 147.41
R = 100.00
E = 35.05

Curve Data
C6 Δ = 60° 39' 51.21" (LT)
T = 29.26
L = 52.94
R = 50.00
E = 7.93

0 50
FEET

DELAWARE TWP.
T-79-N R-23W
SEC. 17

DELAWARE TWP.
T-79-N R-23W
SEC. 17

CHICHAQUA VALLEY TRAIL

930
925
920
915
910
905
900
895
Lt
Rt

PROPOSED RAMP G BRIDGE

VPI +75.214
Elv 911.17
K = 20
Len 100.00 ft

STA. 13+98.43
BEGIN CONSTRUCTION
MATCH EXISTING
ELEV 906.74

+0.500%

+3.639%

-1.000%

VPI +53.304
Elv 910.06
K = 32
Len 100.00 ft

VPI +48.434
Elv 906.24
K = 22
Len 100.00 ft

-4.628%

VPI +25.004
Elv 899.61
K = 28
Len 100.00 ft

STA. 21+18.01
END CONSTRUCTION
MATCH EXISTING
ELEV 898.68

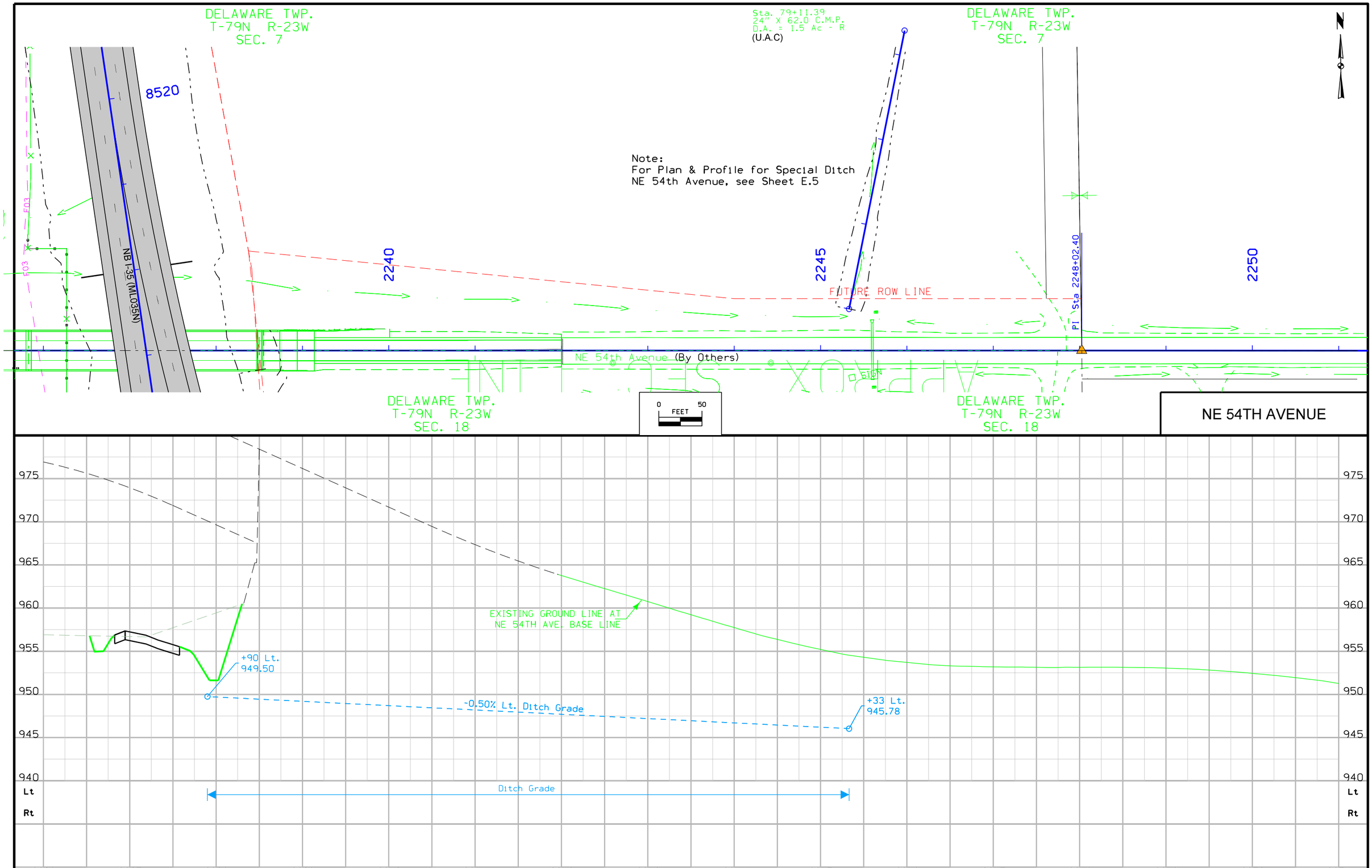
-1.000%

906.73 906.84 908.12 909.60 910.29 910.54 910.79 910.89 909.86 907.71 905.39 903.08 900.88 899.47 898.86

10 11 12 13 14 15 16 17 18 19 20 21 22

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER E.1

11:42:30 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194E01.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER E.2

11:42:35 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194E01.sht

DELAWARE TWP.
T-79-N R-23W
SEC. 18

Sta. 38805+75.07
24" x 26' CMP
(Remove)

Equation:
Sta. 38806+23.10 SR 29TH ST.=
Sta. 38632+22.58 RAMP G

DELAWARE TWP.
T-79-N R-23W
SEC. 18

Sta. 38807+75.00 (SR29TH)
Begin Construction
Sta. 38808+00.00 (SR29TH)
End Construction

+20 Prop.
Type "M" Dike
Elev. 905.50

EASTBOUND
WESTBOUND
FUTURE WB
CLOSE
CLOSE

APPROX. SEC. LINE

POT Sta 38800+00.00
38800

38805

POT Sta 38808+85.14

Interim Trail

Trail
Grading
Matchline

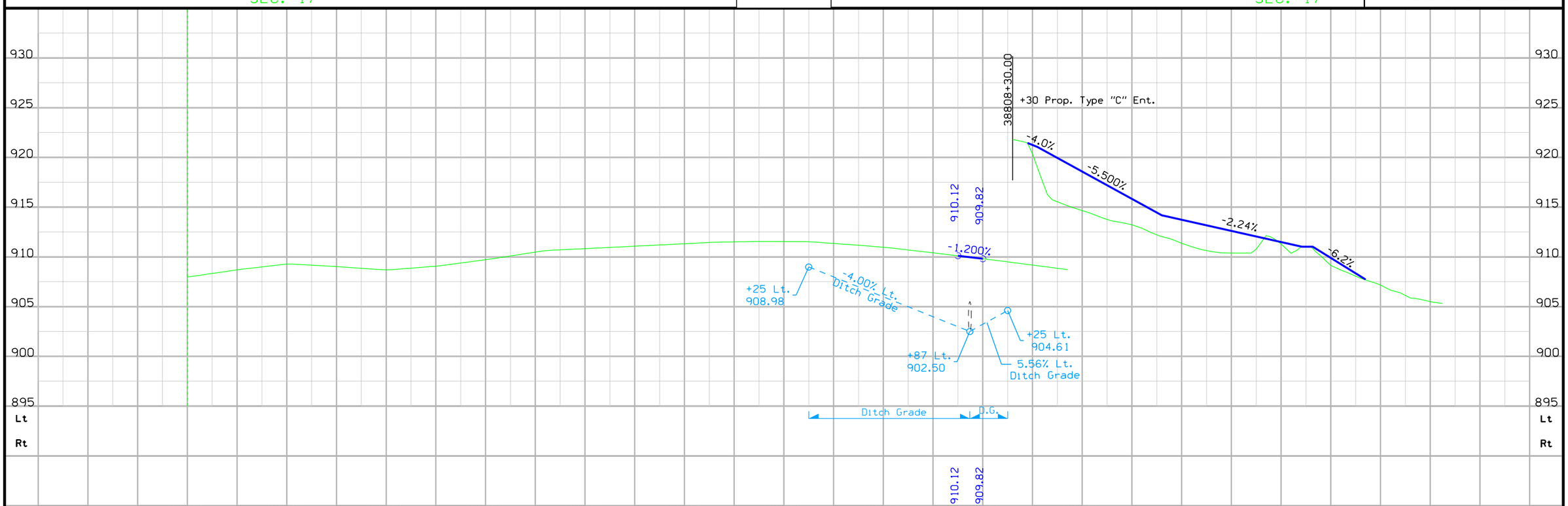
Driveway Grading

DELAWARE TWP.
T-79-N R-23W
SEC. 17

0 50
FEET

DELAWARE TWP.
T-79-N R-23W
SEC. 17

SIDE ROAD
NE 29th STREET



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER E.3

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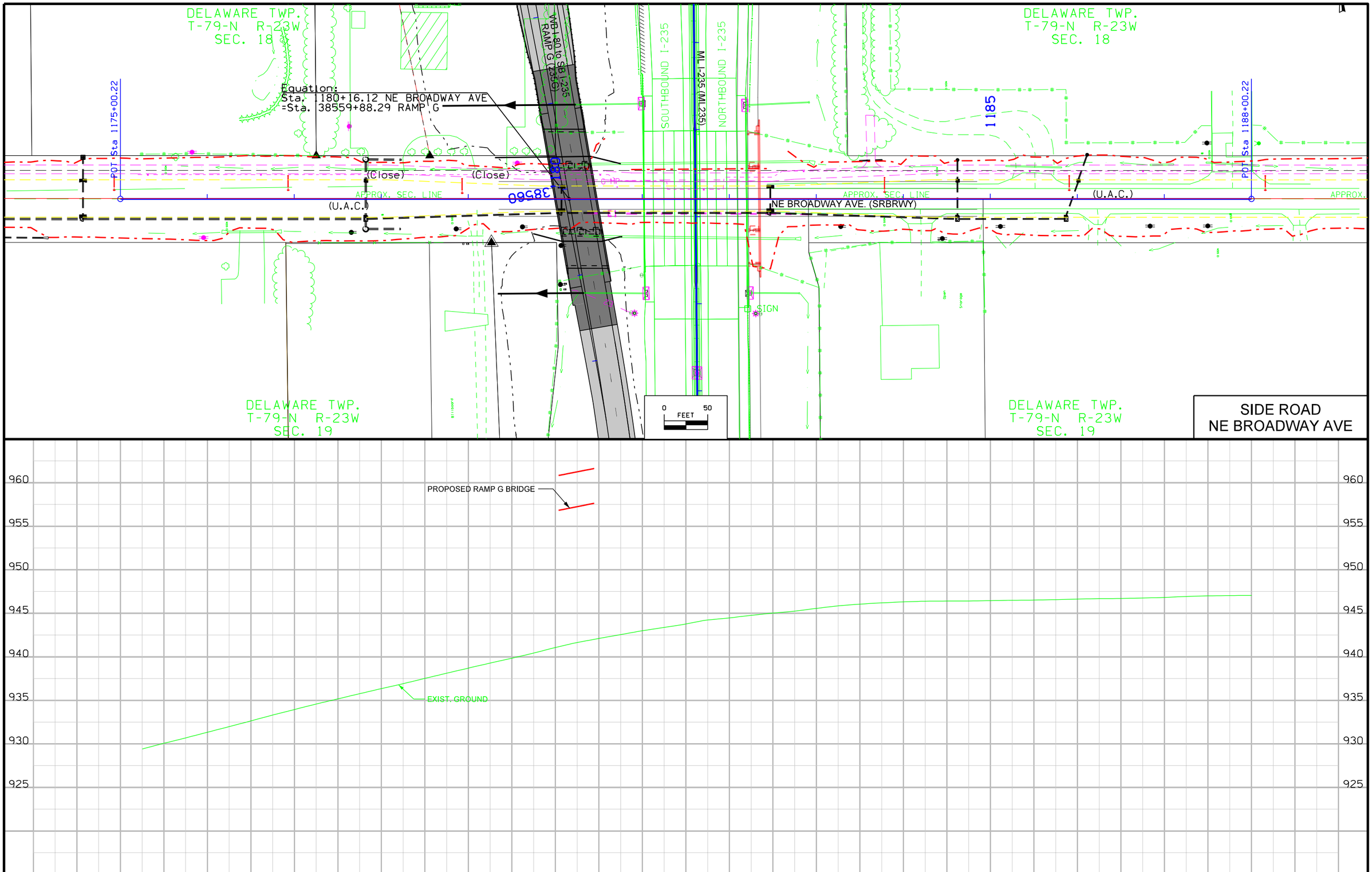

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER E.4

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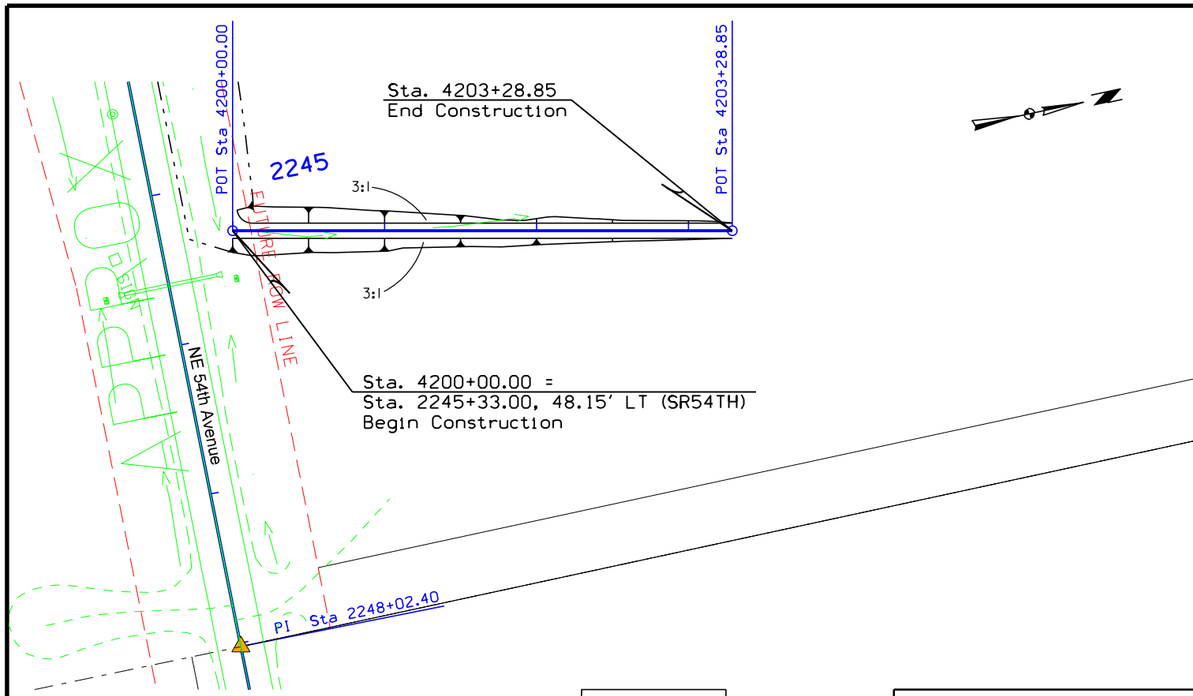
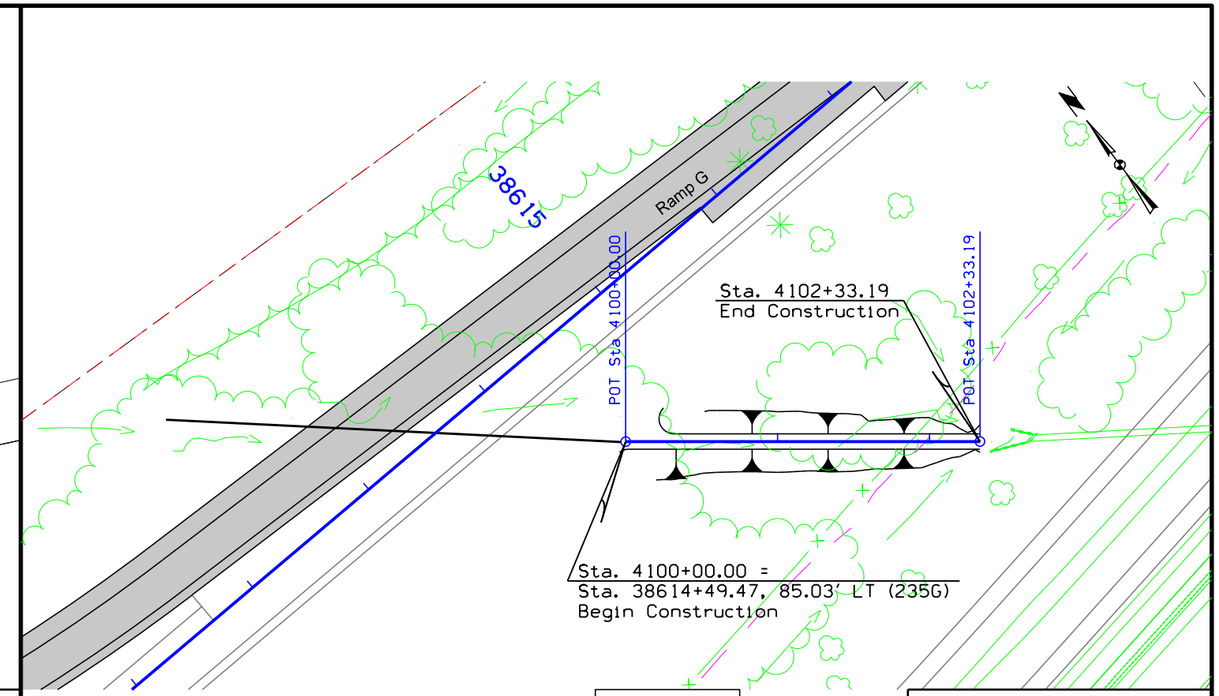


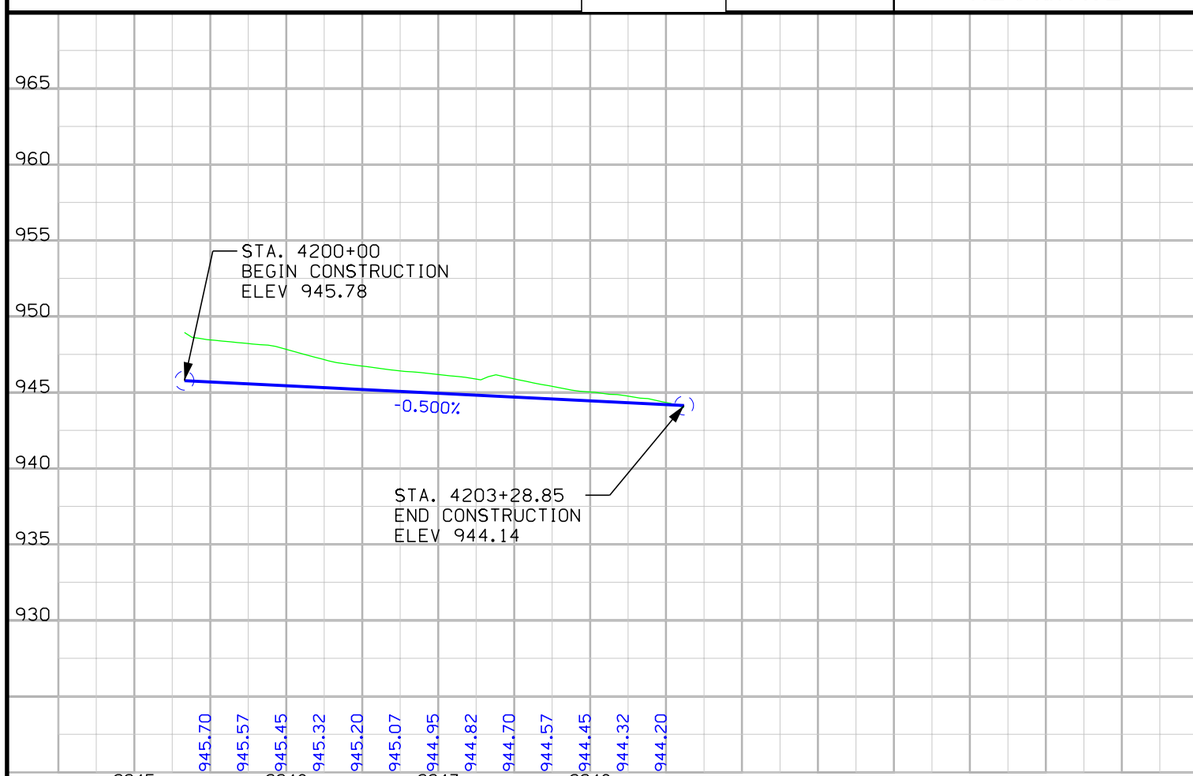
0 FEET 50

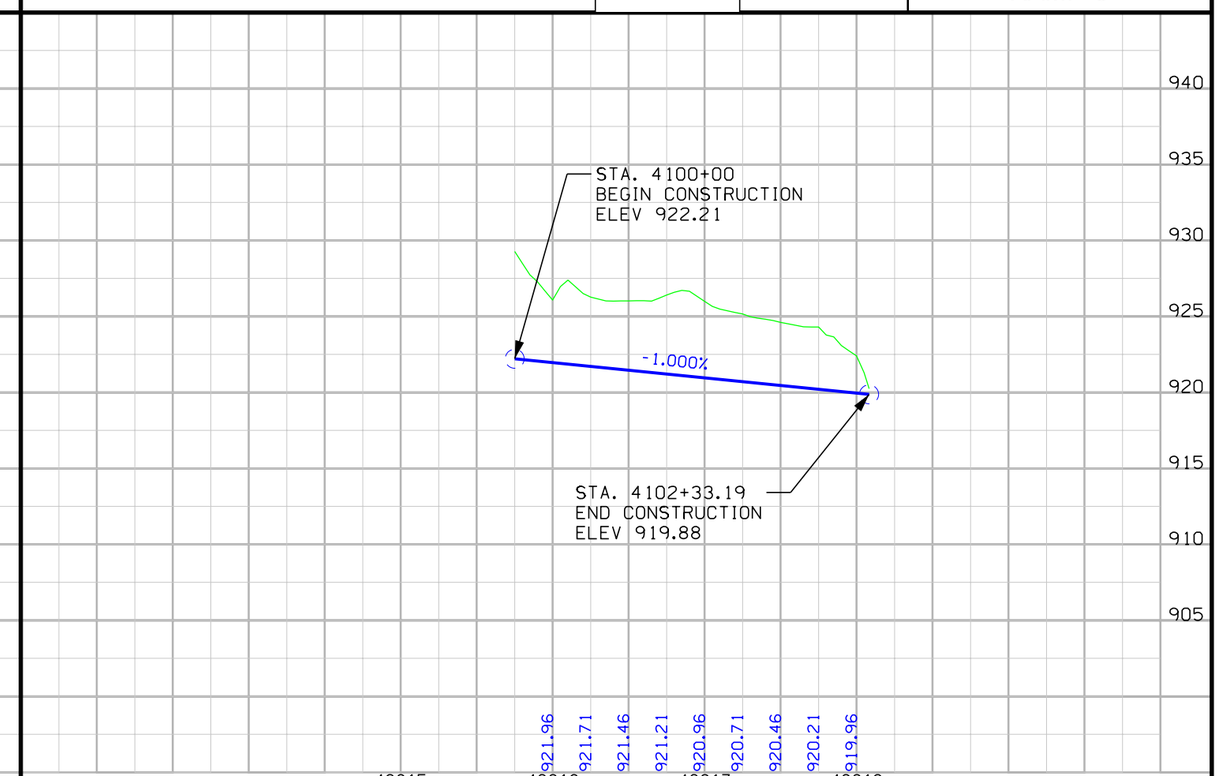
SPECIAL DITCH
NE 54th AVE



0 FEET 50

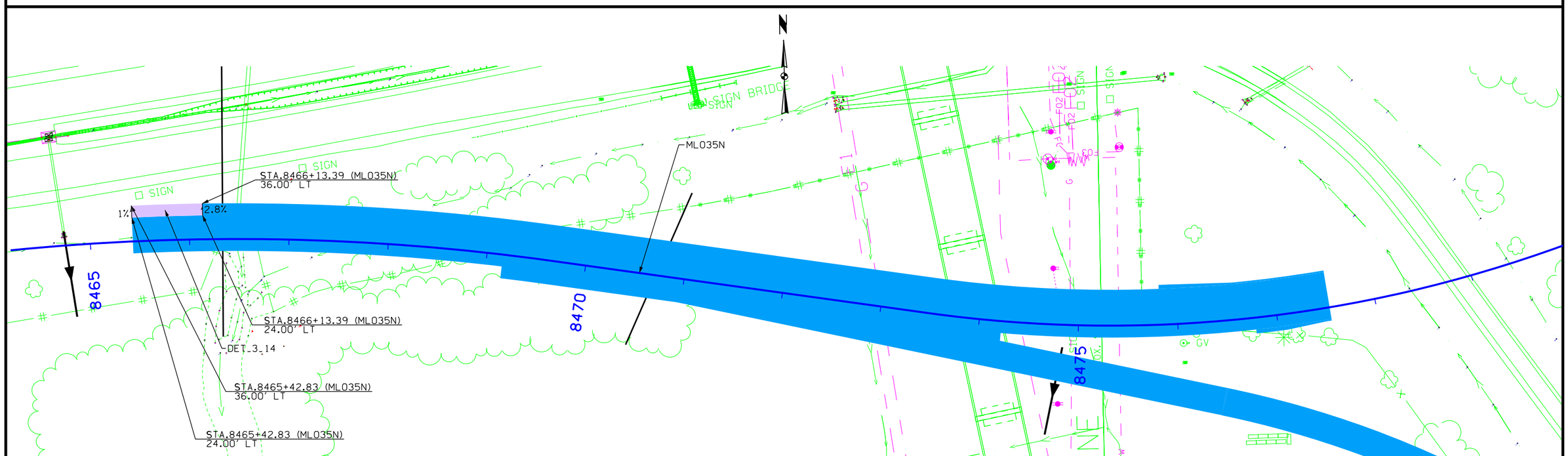
SPECIAL DITCH
RAMP G





FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER E.5

11:42:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194E01.sht



This Sheet
For Information Only

INTERSTATE 80/35
NORTHEAST MIX MASTER
DET_3_14 STAGE 1 (197)

	Iowa DOT\HDR	POLK	IM-035-3(194)87--13-77	F.1	

8:45:58 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194F01.sht

Survey Information

County: Polk
PIN: 10-77-035-010-03
Project Number: IM-035-3(194)87--13-77
Location: I-35/80/235 Interchange NE Of Des Moines(Stage 3A)
Type of Work: Grading
Project Directory: 7703501010
This Index covers SAP's 0742.2, 0742.3 and 0742.4

General Information

Measurement units for this survey are US survey feet. This survey is for phase 3 of the NE Mixmaster ramp reconstruction. This survey uses the same coordinate system as the Delaware Ave. IM-035-4(161)87--13-77 and 54th. Ave. IM-035-4(160)87--13-77 Surveys. Phase 3 surveying was accomplished by an IDOT design survey crew and 2 consulting firms. IDOT surveyed project control, mainline alignments, culvert surveys, utility survey, photo control survey and selected ground features. R.E.Y. Consultants surveyed mainline pavement and interchange ramps using mobile LiDAR. Snyder and Associates surveyed railroads. Aerial survey will also be used to create a project surface and to add other topographic features.

IDOT Design Party Personnel

John Dewey- Party Chief
Robert Mingus- Party Chief
Myron Fox- Assistant Party Chief

IDOT Date(s) of Survey

Begin Date 04/2014
End Date 09/2014

R.E.Y Engineers, Inc.
Contract No. 801AH; WO7

Date(s) of R.E.Y. Survey
June-July 2014

Snyder and Associates
Contract No. 433AF; WO 5

Date(s) of R.E.Y. Survey
Oct. 2014

Project Control Information

GPS Control from previous surveys were used as follows:
GPS PROJECT : Sap 323 & 324 STP-69-4(65)--2c-77 (2000 Survey)
STATE PLANE COORDINATE ZONE 1402 (IOWA SOUTH LAMBERT)
STATE PLANE COORDINATES HELD AT POINT G030
AVERAGE PROJECT LATITUDE = 41 40 12.05576
RESULTING RADIUS = 6363663.482 (METERS)
MEAN PROJECT ELEVATION = 285.000 (METERS)
SEA LEVEL FACTOR = 0.999955216
AVERAGE PROJECT SCALE FACTOR = 0.999982250
COMBINED FACTOR (GRID) = 0.999937467
1 / GRID = 1.000062537
VERTICAL DATUM = NAVD 88 <> HORIZONTAL DATUM = NAD 83 (1996)

GPS Control point G024 coordinates from previous surveys were used and the following points were re-observed and adjusted: G013, G025, G026 and G027. G010, G011, G029 and G030 were searched for but not found. It is presumed reconstruction has obliterated those points. Point G128 from an I-235 survey was re- observed and adjusted. Points G128 and G026 are FENO monuments. All other points are 5/8" Rebar. Two FENO monuments were added. These are points 100 and 101.
It is intended that the control included in the re-observation will be the primary control used for future survey work. The FENO monuments designated as 26,100,101 and 128 to the north, south, east and west of the interchange are constructed to hold horizontal and vertical position reasonably well. The other rebar can be used but should be verified first relative to the FENO monuments. It is anticipated additional temporary marks in the interchange will be needed at various stages as the project progresses. Those temporary marks will be established as needed relative to this control.

Alignment Information

Mainline Alignment (I-80)

The I 80 alignment is relative to the control in the metric as-built plans IM-35-3(116)85--13-77 computed from a 1994 metric I 80 survey alignment. Metric alignment points were scaled and translated to this survey coordinate system. No rotation was required. Sta 2000+00.00 was assigned to the PC of the metric I 80 curve west of the Delaware Ave. Bridge. Stationing was run ahead without station equation to the end of the alignment at the mixmaster interchange central intersection point.

This Mainline survey relates to the mainline plan stationing as follows:

CP Sta. 1024+84.88, 97.35' Lt this survey (English)
=CP Sta. 312+34.97, 29.67m Lt Project # IM-35-3(116)85—13-77 (Metric)

POT Sta. 1075+46.01, 0.04' Lt this survey (English)
=POT Sta. 327+77.59, 0.010m Lt Project # IM-35-3(116)85—13-77 (Metric)

POT Sta. 1181+51.81 this survey (English)
=POT Sta. 1181+53.0 Project # IM-80-5(145)137--13-77 (English)

Mainline Alignment (I-35)

From 2001/2002 I-35 Realignment, Project # IM-35-4(101)—13-77
The mainline alignment for this survey is a retrace of Project # IM-35-4(101)—13-77. The mainline alignment was created in centerline of median. Stationing was obtained at PI Sta. 2001+60.36 and carried ahead to PI Sta. 3100+53.44 without equation. The following PI points were used to create this CL alignment.

PI 2001+60.36 Project # IM-35-4(101)88—13-77 (not found or set)
PI 3100+53.44 Project # IM-35-4(101)88—13-77 (not found or set)

This Mainline survey relates to the mainline plan stationing as follows:

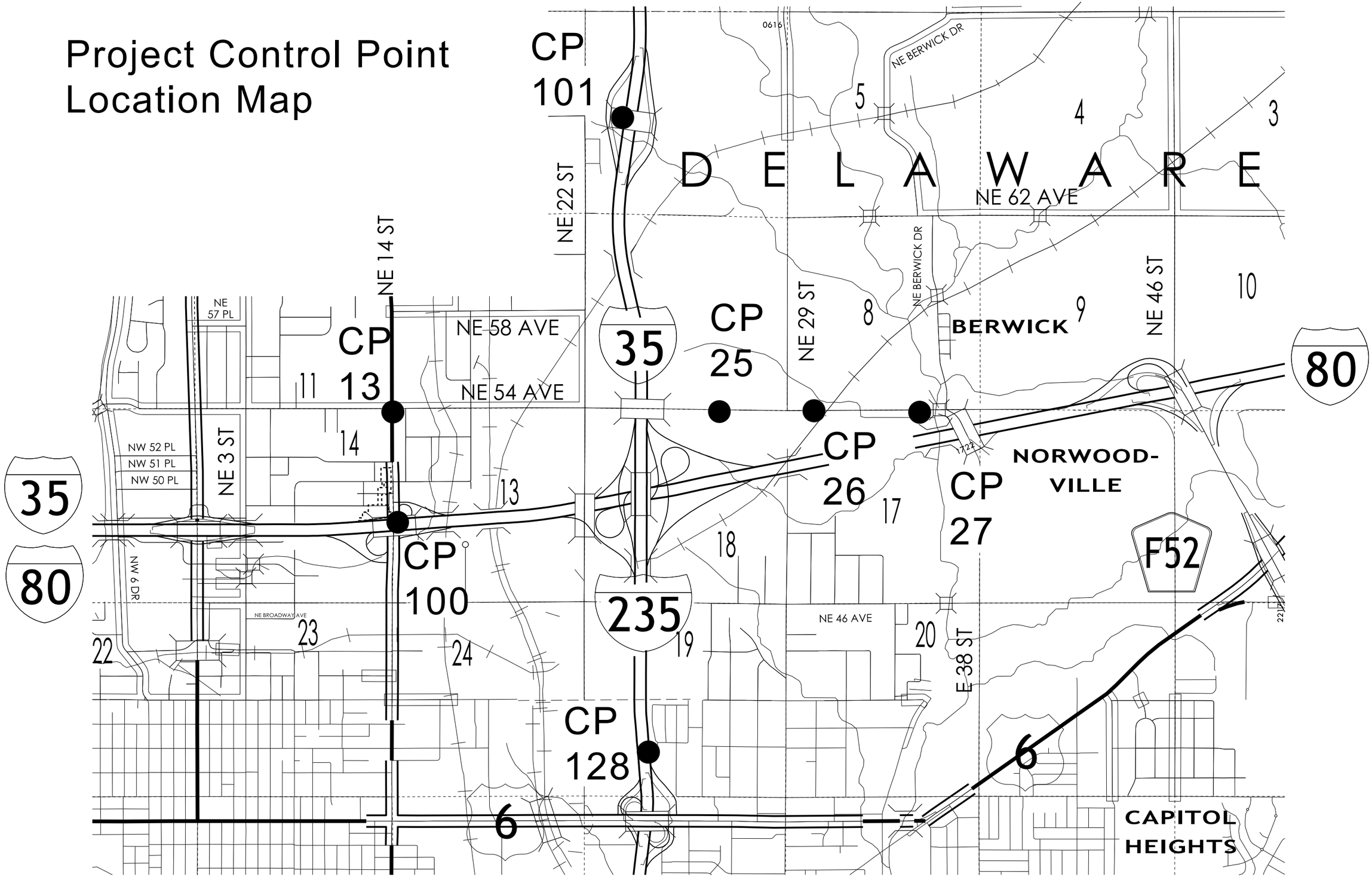
PI Sta. 2001+60.36 this survey
=PI Sta. 2001+60.36 Project # IM-35-4(101)88—13-77

PI Sta. 2100+53.74 this survey
=PI Sta. 3100+53.44 Project # IM-35-4(101)88—13-77

Project Control -FENO monuments are also Bench Marks

Name	Ground Northing (USft)	Ground Easting (USft)	Elevation (USft)	Description
13	604251.756	1612997.613	933.158	rebar, 6" deep, in the SE quad. of intersection NE 14th (US 69) & NE 54th Ave., 13' south of ROW rail; 62' south of NE 54th Ave.;
25	604260.796	1621907.741	939.609	rebar, 6" deep, in the south sideditch, @ the west edge of field entrance south, and adj. to inlet of CMP under NE 54th Ave.; 22' west of field entr.; 10' from inlet CMP; 5' from edge AC slab.
26	604283.735	1624489.54	886.7	Feno. Monument, w/cap stamped "026", 6" deep, in the north ROW/shoulder of NE 54th Ave., 9' north of edge AC slab; 128' from P.I. of NE 54th Ave. with of RR crossing.
27	604243.29	1627372.639	838.959	rebar, 6" deep, in the south edge of shoulder, on the west side of a field entrance; 31' west of approx. center gravel field south; 13' south of edge AC slab of NE 54th Ave.; 40' north of center large CMP under entrance.
100	601242.316	1613129.094	904.541	Feno. Monument
101	612281.879	1619265.525	932.935	Feno. Monument
128	594971.978	1619970.2	933.868	Feno. Monument between top backslope and ROW fence in east ROW

Project Control Point Location Map



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER G.2	REVISED

11:53:01 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194G01.sht

ALIGNMENT COORDINATES

101-16
10-20-09

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																		
90		5128+03.54	602,662.82	1,623,353.19															
91		5188+97.59	603,831.81	1,629,334.07															
92		5208+07.61	604,179.78	1,631,212.12															
93		5240+69.50	604,805.49	1,634,413.44															
	I-80 ML SURVEY																		
8011		975+28.38	600,997.23	1,608,212.44															
SUR080-1								998+08.83	600,998.02	1,610,492.89	1004+20.94	600,998.23	1,611,105.00	1010+32.54	601,041.98	1,611,715.55			
8012		1024+84.88	601,145.79	1,613,164.17															
8013		1055+07.15	601,361.80	1,616,178.71															
SUR080-2								1058+28.34	601,384.75	1,616,499.08	1064+81.98	601,431.47	1,617,151.06	1071+34.02	601,556.86	1,617,792.56			
8014		1240+69.40	604,805.49	1,634,413.44															
	I-35 NORTHBOUND																		
ML035N-1								8464+19.42	601,337.20	1,617,100.02	8466+93.08	601,357.77	1,617,372.91	8469+64.19	601,313.73	1,617,643.01			
ML035N-2								8473+48.85	601,251.83	1,618,022.66	8479+25.90	601,158.98	1,618,592.19	8484+37.74	601,511.45	1,619,049.07			
ML035N-3								8491+99.33	601,976.65	1,619,652.07	8499+65.23	602,444.47	1,620,258.48	8505+89.13	603,203.78	1,620,158.24			
ML035N-4								8531+09.25	605,702.22	1,619,828.39	8536+86.32	606,274.32	1,619,752.86	8542+62.49	606,836.53	1,619,622.78			
	I-235																		
23510		1949+59.42	590,888.03	1,619,611.10															
ML235-1								1973+48.82	593,260.91	1,619,891.57	1976+35.85	593,545.95	1,619,925.27	1979+20.97	593,832.02	1,619,901.74			
ML235-2								1999+18.25	595,822.57	1,619,738.02	2001+63.13	596,066.63	1,619,717.95	2004+07.71	596,311.51	1,619,718.77			
ML235-3								2091+68.42	605,072.17	1,619,748.25	2100+53.74	605,957.48	1,619,751.23	2109+31.19	606,820.01	1,619,551.67			
ML235-4								2120+36.80	607,897.17	1,619,302.45	2133+30.72	609,157.79	1,619,010.79	2145+94.73	610,438.20	1,619,197.30			
ML235-5								2175+76.86	613,389.19	1,619,627.15	2181+89.48	613,995.41	1,619,715.45	2187+99.48	614,607.95	1,619,706.02			
23511		2221+71.45	617,979.53	1,619,654.15															
	I-235 NORTHBOUND (NORTH END I-235)																		
309100		2090+59.42	604,963.12	1,619,762.88															
ML235NB-1								2091+68.09	605,071.79	1,619,763.13	2096+10.48	605,514.19	1,619,764.17	2100+51.90	605,953.75	1,619,714.23			
ML235NB-2								2100+51.90	605,953.75	1,619,714.23	2104+93.64	606,392.67	1,619,664.37	2109+34.40	606,822.94	1,619,564.34			
	I-235 SOUTHBOUND (NORTH END I-235)																		
309200		2090+59.42	604,963.22	1,619,732.88															
ML235SB-1								2091+68.07	605,071.88	1,619,733.37	2096+08.60	605,512.40	1,619,735.34	2100+48.16	605,950.22	1,619,686.57			
ML235SB-2								2100+48.16	605,950.22	1,619,686.57	2104+88.55	606,387.91	1,619,637.82	2109+27.97	606,817.08	1,619,539.01			
	RAMP A																		
235A-1								38484+75.18	604,621.62	1,619,995.26	38486+84.50	604,414.10	1,620,022.66	38488+93.31	604,211.33	1,620,074.59			
235A-2								38490+63.31	604,046.65	1,620,116.77	38495+12.65	603,611.36	1,620,228.26	38499+29.96	603,332.87	1,620,580.89			
235A-3								38502+68.51	603,123.05	1,620,846.58	38507+35.22	602,833.80	1,621,212.84	38511+66.22	602,836.84	1,621,679.54			
	RAMP B																		
303220		32574+22.46	601,202.23	1,618,091.36															
235B-1								32576+53.97	601,149.86	1,618,316.87	32579+68.33	601,078.75	1,618,623.08	32582+63.12	600,845.23	1,618,833.52			
235B-2								32585+22.66	600,652.43	1,619,007.27	32590+41.99	600,266.64	1,619,354.94	32595+34.44	599,755.47	1,619,446.66			
	RAMP G																		
235G-1								38552+54.84	598,296.98	1,619,652.83	38555+37.05	598,579.19	1,619,653.78	38558+18.03	598,857.90	1,619,609.50			
235G-2								38576+34.09	600,651.46	1,619,324.57	38584+47.75	601,455.05	1,619,196.91	38590+94.52	601,934.59	1,619,854.24			
235G-3								38600+76.01	602,513.05	1,620,647.15	38604+68.41	602,744.31	1,620,964.16	38608+39.16	602,766.46	1,621,355.93			
235G-4								38630+76.49	602,892.74	1,623,589.70	38634+27.39	602,912.55	1,623,940.05	38637+77.87	602,962.58	1,624,287.37			

ALIGNMENT COORDINATES

101-16
10-20-09

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)
	CHICHAQUA VALLEY TRAIL																		
TRAIL1		13+68.43	602,526.64	1,623,779.87															
TRAIL2								13+85.12	602,543.32	1,623,779.87	13+95.26	602,553.47	1,623,779.87	14+05.14	602,562.81	1,623,783.82			
TRAIL3								14+30.20	602,585.90	1,623,793.58	14+40.35	602,595.24	1,623,797.54	14+50.22	602,605.39	1,623,797.53			
TRAIL4		15+24.79	602,679.95	1,623,797.52															
TRAIL5		15+34.87	602,689.95	1,623,798.76															
TRAIL6								16+86.06	602,841.14	1,623,798.73	16+96.28	602,851.37	1,623,798.72	17+06.44	602,861.39	1,623,796.65			
TRAIL7								17+06.44	602,861.39	1,623,796.65	17+16.67	602,871.40	1,623,794.58	17+26.82	602,881.63	1,623,794.58			
TRAIL8								18+03.57	602,958.37	1,623,794.56	18+94.34	603,049.14	1,623,794.54	19+50.98	603,057.93	1,623,884.88			
TRAIL9								20+52.14	603,067.72	1,623,985.56	20+81.39	603,070.55	1,624,014.68	21+05.08	603,097.32	1,624,026.48			
TRAIL10		22+18.00	603,200.65	1,624,072.02															
	NE 29TH ST																		
308100		38800+00.00	602,279.20	1,623,735.62															
308101		38808+85.14	603,164.34	1,623,735.41															
	NE 54TH AVE																		
221917		2219+15.91	604,336.66	1,618,209.25															
221918		2248+02.40	604,295.07	1,621,095.43															
	SPECIAL DICTH NE 54TH																		
841800		4200+00.00	604,347.10	1,620,826.76															
841801		4203+28.85	604,668.65	1,620,895.68															
	SPECIAL DICTH RAMP G																		
V1100		4100+00.00	602,716.01	1,621,970.08															
V1101		4102+33.19	602,575.84	1,622,156.43															

SPIRAL OR CIRCULAR CURVE DATA

101-17
04-19-11

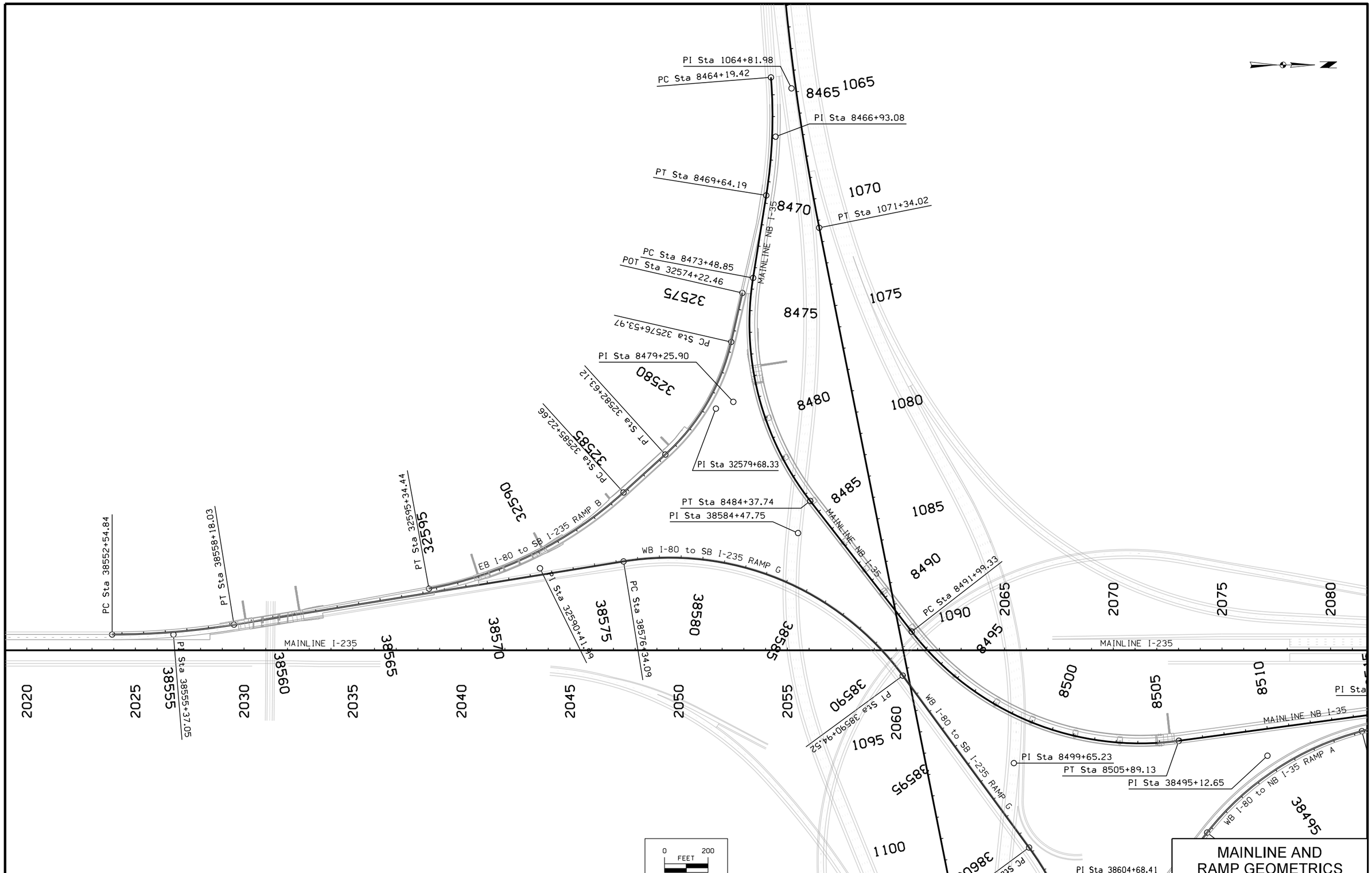
Name	Location	Δ_{SCS}	Horizontal Alignment Data													Remarks
			Spiral Data								Curve Data					
			θs	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	Δ_c	T	L	R	E	
	I-80 ML SURVEY															
SUR080-1											4° 04′ 43.41″ LT	612.11′	1,223.71′	17,190.00′	10.89′	
SUR080-2											6° 57′ 38.61″ LT	653.65′	1,305.68′	10,747.47′	19.86′	
	I-35 NORTHBOUND															
ML035N-1											13° 34′ 14.76″ RT	273.66′	544.77′	2,300.00′	16.22′	
ML035N-2											46° 54′ 31.73″ LT	577.04′	1,088.89′	1,330.00′	119.79′	
ML035N-3											59° 52′ 18.89″ LT	765.89′	1,389.80′	1,330.00′	204.76′	
ML035N-4											5° 30′ 22.71″ LT	577.06′	1,153.24′	12,000.00′	13.87′	
	I-235															
ML235-1											11° 26′ 34.74″ LT	287.03′	572.15′	2,864.79′	14.34′	
ML235-2											4° 53′ 40.67″ RT	244.88′	489.46′	5,729.58′	5.23′	
ML235-3											13° 13′ 11.22″ LT	885.31′	1,762.76′	7,639.98′	51.12′	
ML235-4											21° 18′ 52.28″ RT	1,293.92′	2,557.93′	6,875.99′	120.69′	
ML235-5											9° 10′ 08.25″ LT	612.62′	1,222.62′	7,639.98′	24.52′	
	I-235 NORTHBOUND (NORTHERLY END I-235)															
ML235NB-1											6° 36′ 56.13″ LT	442.39′	883.81′	7,654.39′	12.77′	
ML235NB-2											6° 36′ 24.10″ LT	441.74′	882.51′	7,653.45′	12.74′	
	I-235 SOUTHBOUND (NORTHERLY END I-235)															
ML235SB-1											6° 36′ 45.46″ LT	440.53′	880.08′	7,625.57′	12.71′	
ML235SB-2											6° 36′ 35.18″ LT	440.39′	879.81′	7,626.51′	12.70′	
	RAMP A															
235A-1											6° 50′ 41.78″ LT	209.32′	418.13′	3,500.00′	6.25′	
235A-2											37° 20′ 05.39″ LT	449.34′	866.65′	1,330.00′	73.85′	
235A-3											38° 40′ 21.70″ LT	466.71′	897.70′	1,330.00′	79.51′	
	RAMP B															
235B-1											34° 54′ 05.36″ RT	314.35′	609.15′	1,000.00′	48.25′	
235B-2											31° 51′ 07.08″ RT	519.33′	1,011.78′	1,820.00′	72.65′	
	RAMP G															
235G-1											9° 13′ 10.55″ LT	282.21′	563.19′	3,500.00′	11.36′	
235G-2											62° 54′ 53.64″ RT	813.67′	1,460.44′	1,330.00′	229.15′	
235G-3											32° 52′ 34.42″ RT	392.40′	763.15′	1,330.00′	56.68′	
235G-4											4° 57′ 40.47″ LT	350.91′	701.38′	8,100.00′	7.60′	
	CHICHAQUA VALLEY TRAIL															
TRAIL2											22° 56′ 27.65″ RT	10.15′	20.02′	50.00′	1.02′	
TRAIL3											22° 56′ 27.65″ LT	10.15′	20.02′	50.00′	1.02′	
TRAIL6											11° 40′ 45.25″ LT	10.23′	20.38′	100.00′	0.52′	
TRAIL7											11° 40′ 45.25″ RT	10.23′	20.38′	100.00′	0.52′	
TRAIL8											84° 27′ 36.42″ RT	90.77′	147.41′	100.00′	35.05′	
TRAIL9											60° 39′ 51.21″ LT	29.26′	52.94′	50.00′	7.93′	

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														
ML035N	ML035-1	2300	5.2	208	80	PV-303	[1]		8464+19.42	8464+81.82						8464+33.82	8464+33.82		
							8470+29.79		8469+64.19	8469+01.79						8469+49.79	8469+49.79		
ML035N	ML035N-2	1330	6.0	240	80	PV-303	8472+60.85		8473+48.85	8474+20.85						8473+40.85	8473+40.85		
							8485+25.74		8484+37.74	8483+65.74						8484+45.74	8484+45.74		
ML035N	ML035N-3	1330	6.0	240	80	PV-303	8490+63.33		8491+99.33	8492+23.33						8491+43.33	8491+43.33		Refer to Modified PV-303 CASE B
ML035N	ML035N-3	1330	6.0	240	80	PV-303													
							8508+85.13	8508+05.13	8505+89.13	8505+65.13						8506+45.13	8506+45.13		Refer to Modified PV-303 CASE A
ML035N	ML035N-4	12000	NC	N/A	N/A														No Superelevation
																			No Superelevation
235A	235A-2	1330	5.4	194	72	PV-303	[2]		38490+63.31	38491+21.51						38490+71.21	38490+71.21		
							38499+93.76		38499+29.96	38498+71.76						38499+22.06	38499+22.06		
235A	235A-3	1330	5.4	194	72	PV-303	38502+04.71		38502+68.51	38503+26.71						38502+76.41	38502+76.41		
							[3]		38511+66.22	38511+08.02						38511+58.32	38511+58.32		
235B	235B-1	1000	6.0	216	72	PV-303	32575+74.77		32576+53.97	32577+18.77						32576+46.77	32576+46.77		
							32583+42.32		32582+63.12	32581+98.32						32582+70.32	32582+70.32		
235B	235B-2	1820	4.6	166	72	PV-303	32584+78.46		32585+22.66	32585+72.46						32585+50.81	32585+50.81		
							[4]		32595+34.44	32594+84.64						32595+06.29	32595+06.29		
235G	235G-1	3500	3.0	108	72	PV-303	[5]		38552+54.84	[5]									
							38558+21.63		38558+18.03	38557+85.63									
235G	235G-2	1330	5.4	194	72	PV-303	38574+26.29	38574+98.29	38576+34.09	38576+92.29						38576+41.99	38576+41.99		
235G	235G-2	1330	5.4	194	72	PV-303													
							38591+58.32		38590+94.52	38590+36.32						38590+86.62	38590+86.62		
235G	235G-3	1330	5.4	194	72	PV-303	38600+12.21		38600+76.01	38601+34.21						38600+83.91	38600+83.91		
235G	235G-3	1330	5.4	194	72	PV-303													
							38610+46.96	38609+74.96	38608+39.16	38607+80.96						38608+31.26	38608+31.26		
235G	235G-4	8100	NC	N/A	N/A														No Superelevation

NOTE:
[1] Sta. 8465+42.83 5.2%. Refer to K Sheets.
[2] Sta. 38490+71.23 4.0%. Refer to K Sheets.
[3] Sta. 38511+66.22 3.78%. Refer to Ramp A Exit Detail in the U Sheets.
[4] Refer to Ramp B Entrance Detail in the U Sheets.
[5] Refer to Ramp G Entrance Detail in the U Sheets.



MAINLINE AND RAMP GEOMETRICS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER G.7

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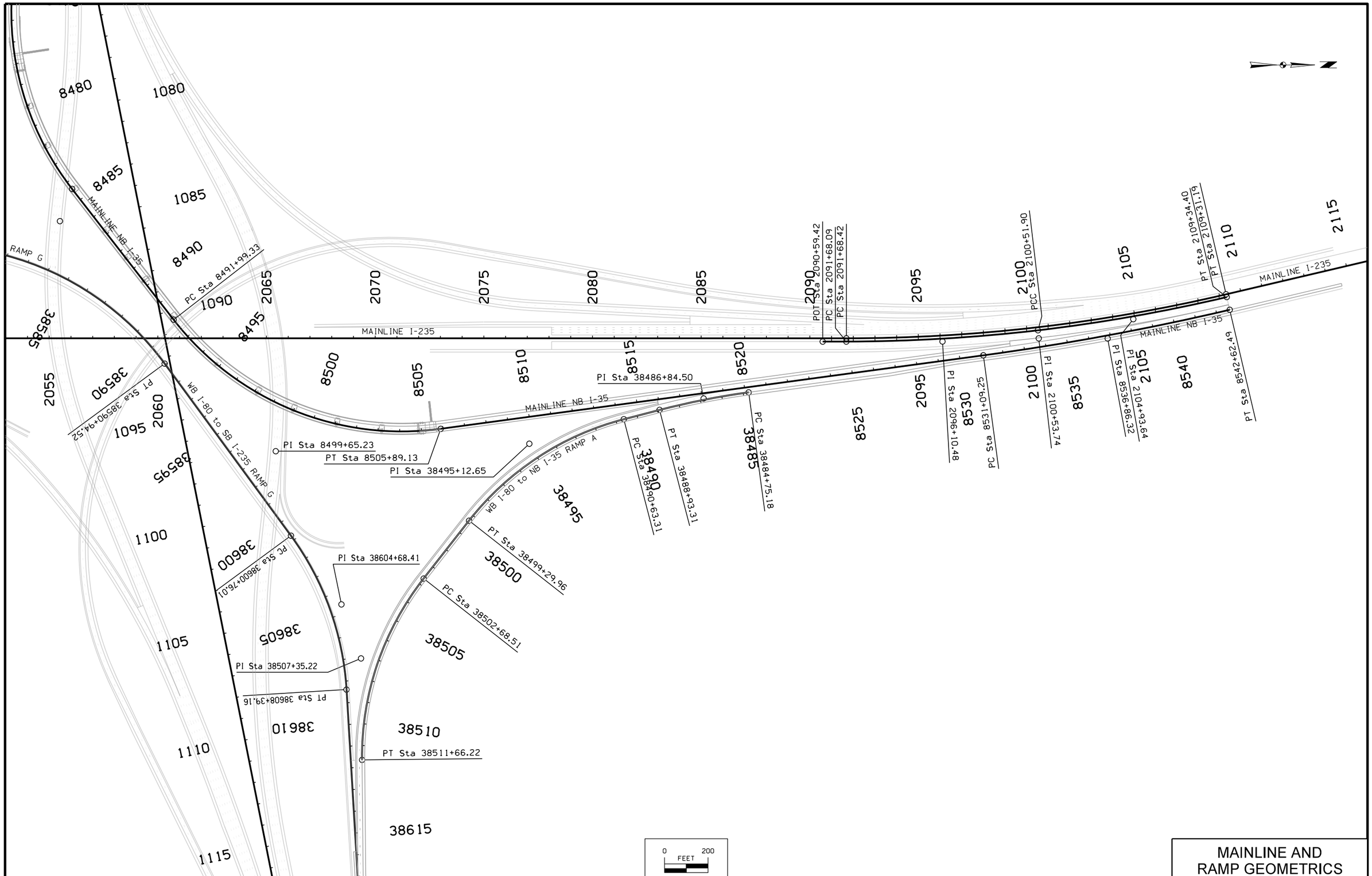

MAINLINE AND
RAMP GEOMETRICS

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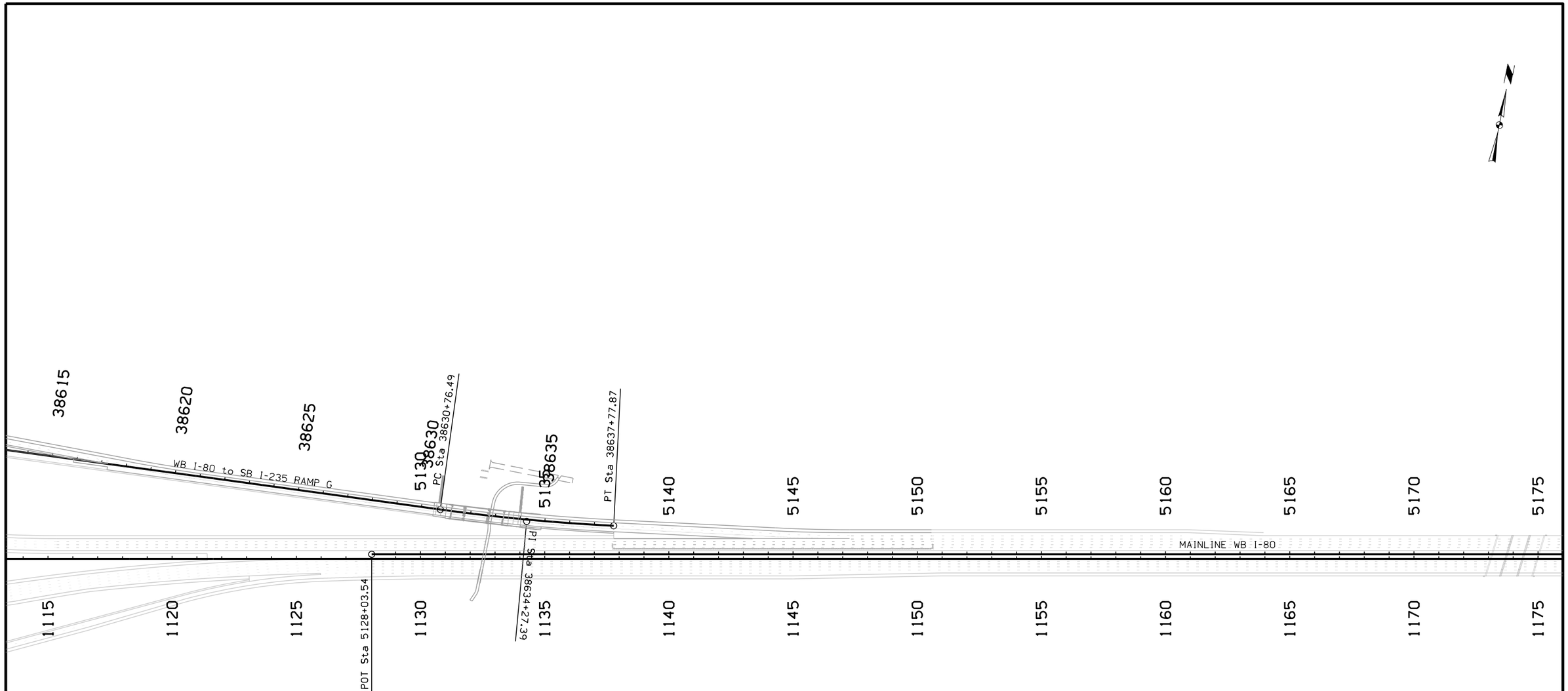

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FEET

MAINLINE AND
RAMP GEOMETRICS

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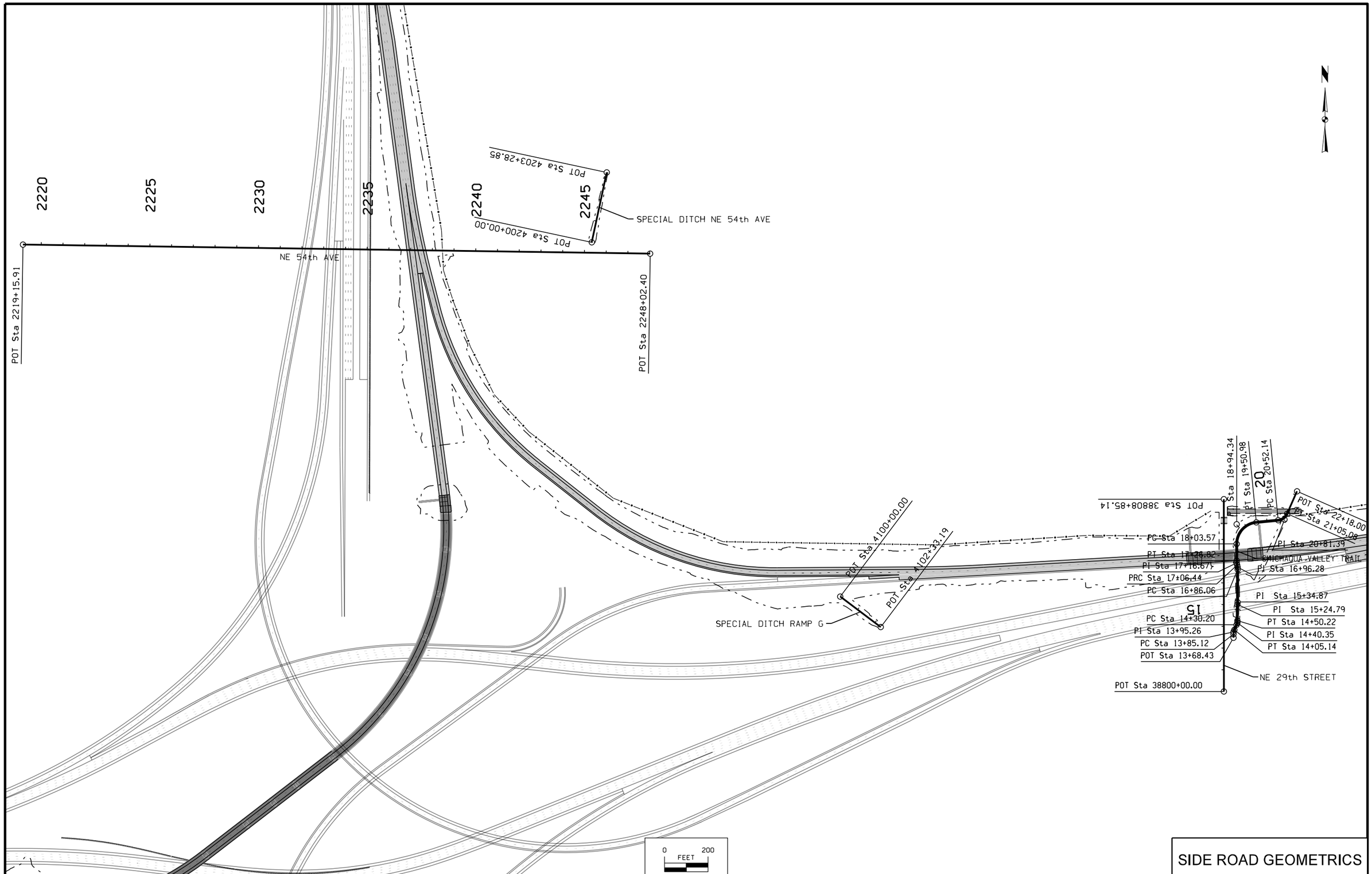

SIDE ROAD GEOMETRICS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER G.10

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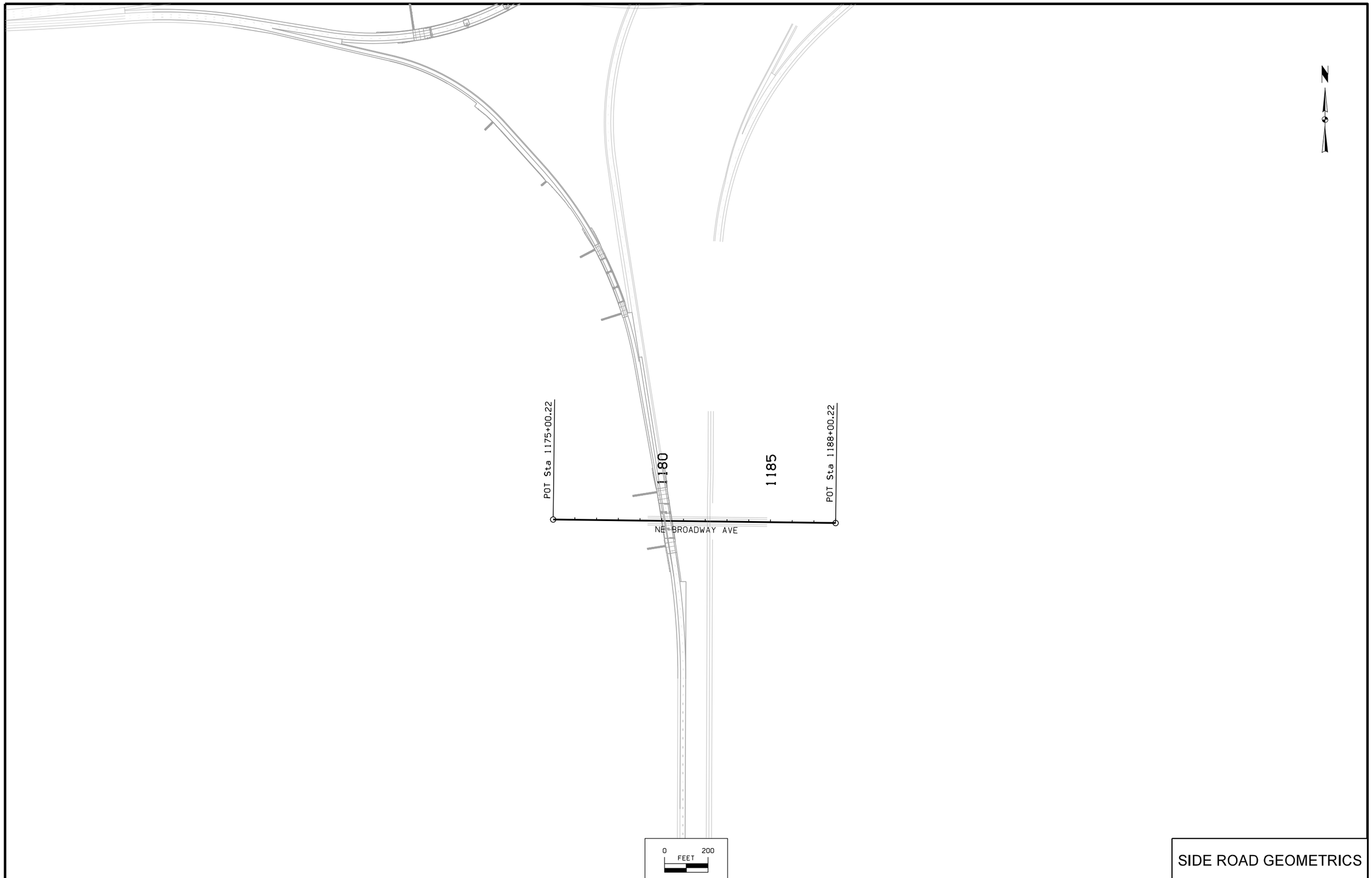


SIDE ROAD GEOMETRICS

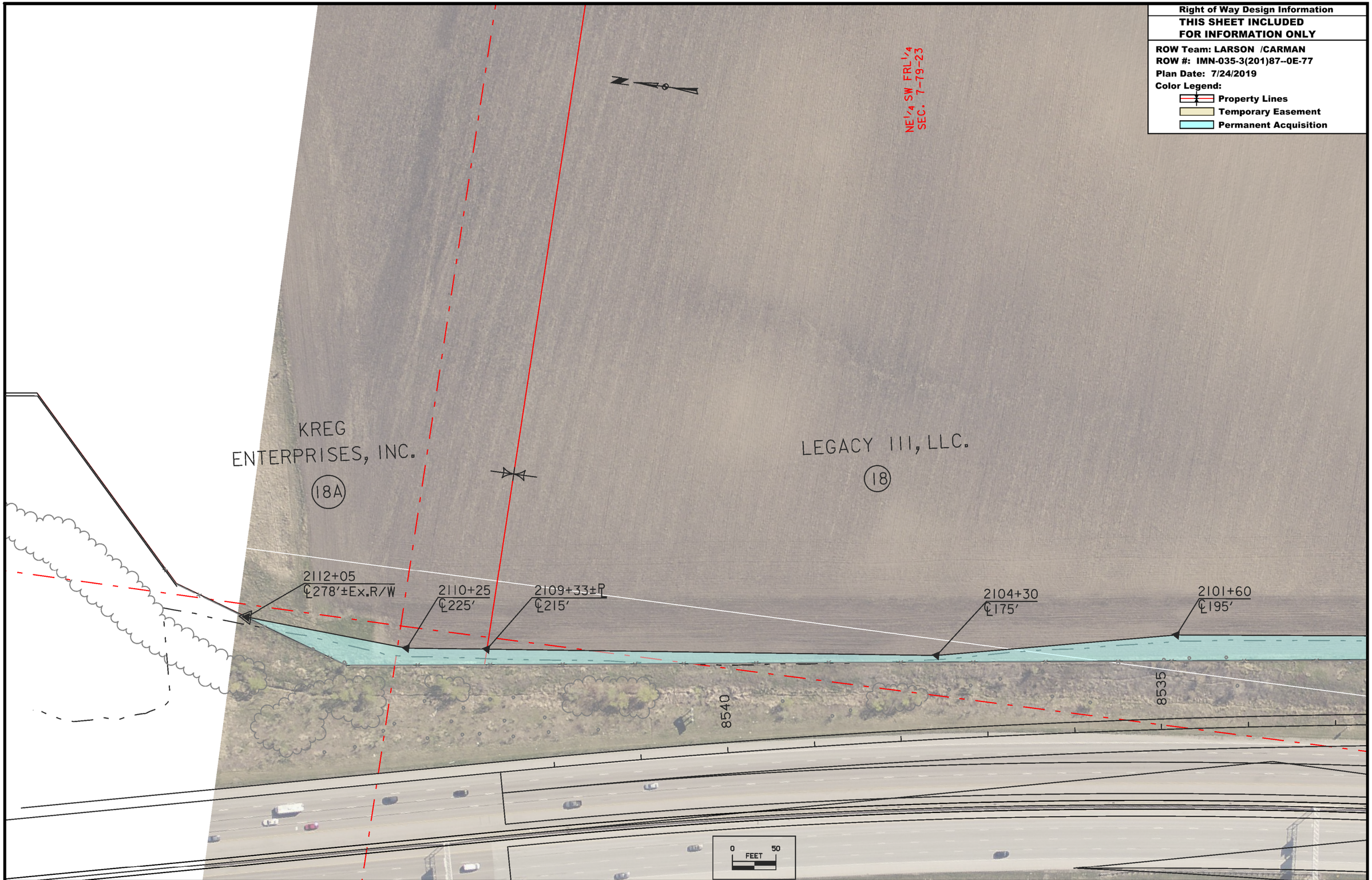
FILE NO.	ENGLISH	DESIGN TEAM	COUNTY	PROJECT NUMBER	SHEET NUMBER G.11

11:53:07 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194G01.sht

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: LARSON /CARMAN
ROW #: IMN-035-3(201)87--0E-77
Plan Date: 7/24/2019
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition



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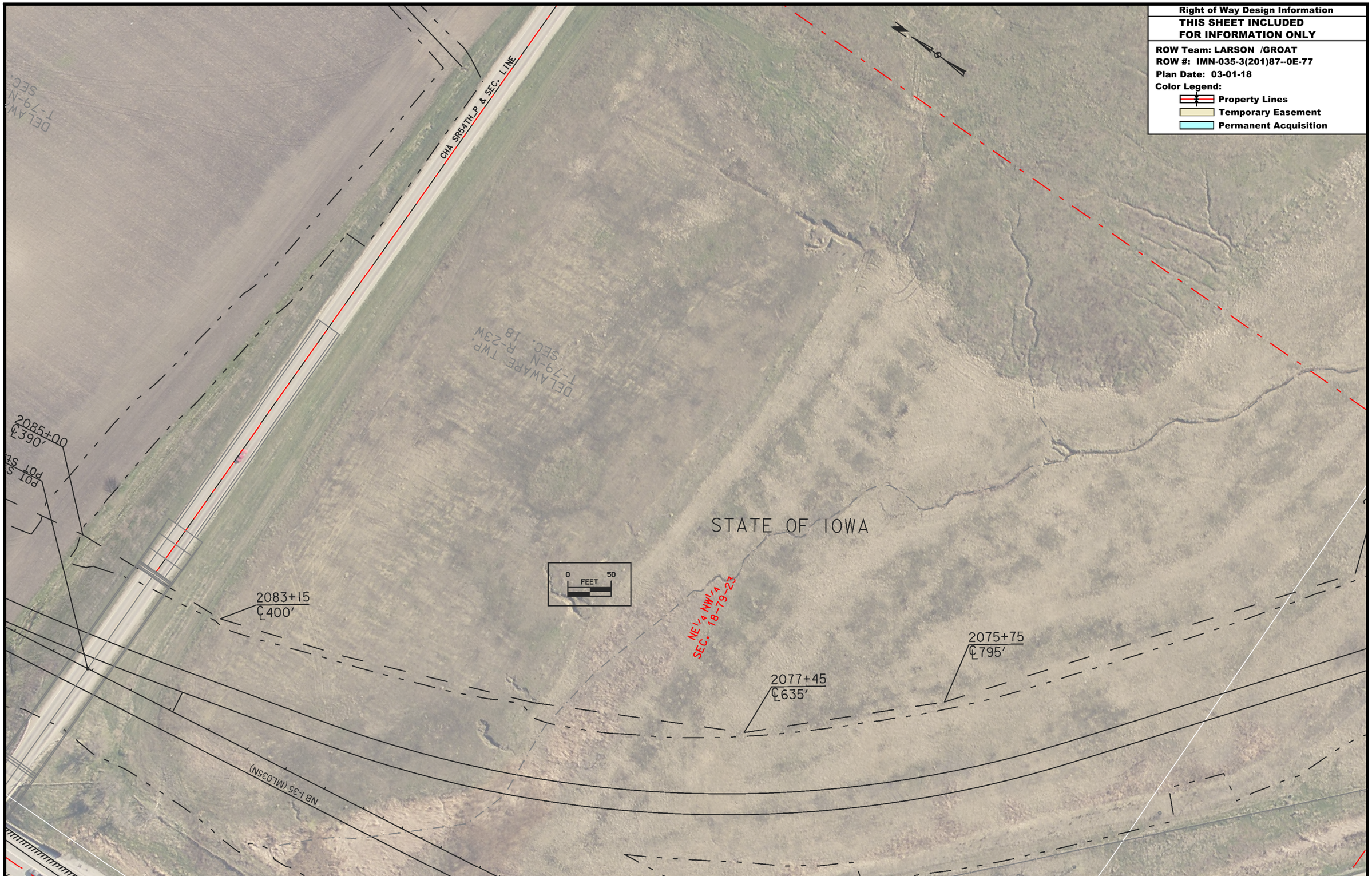

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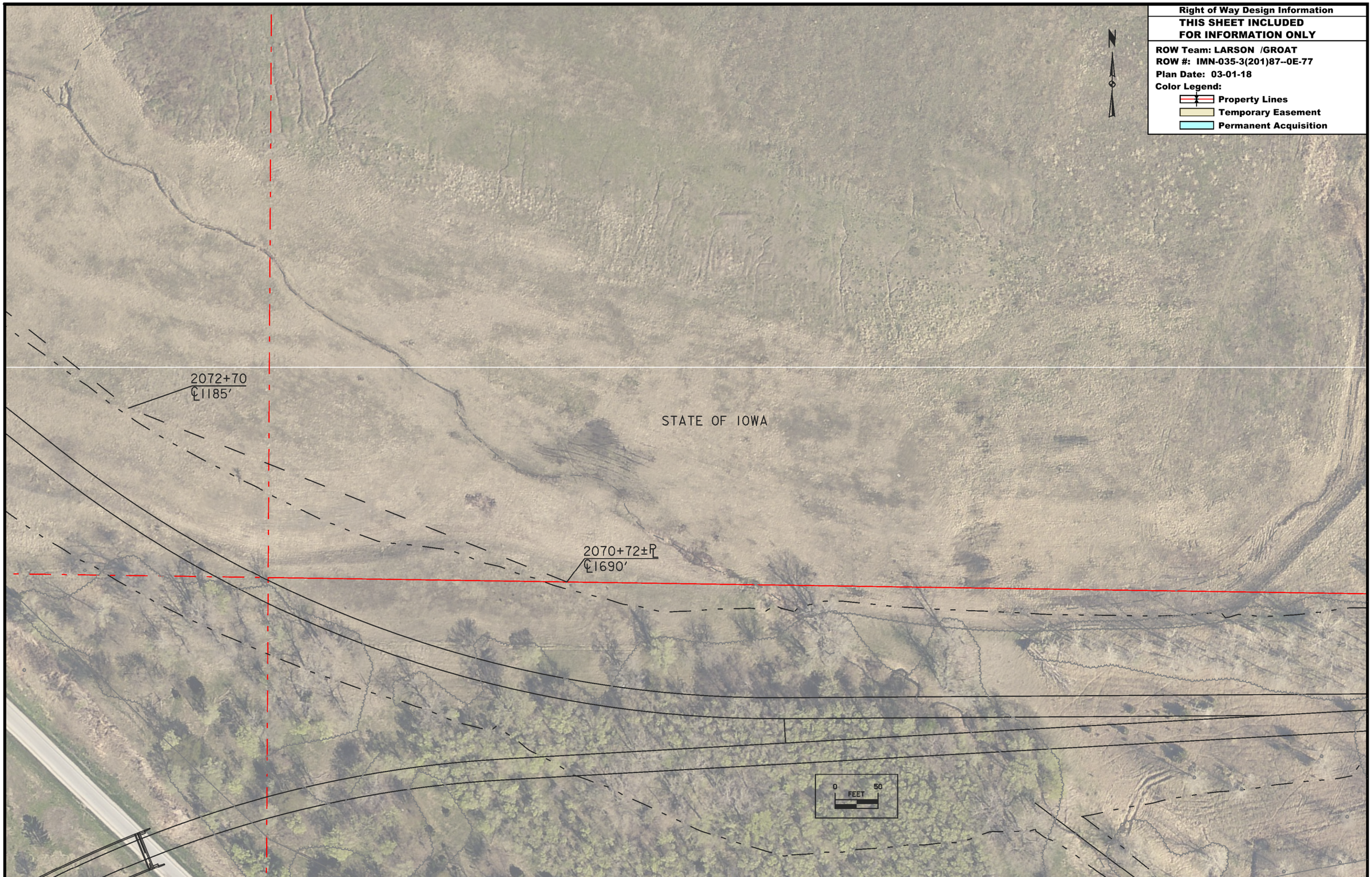

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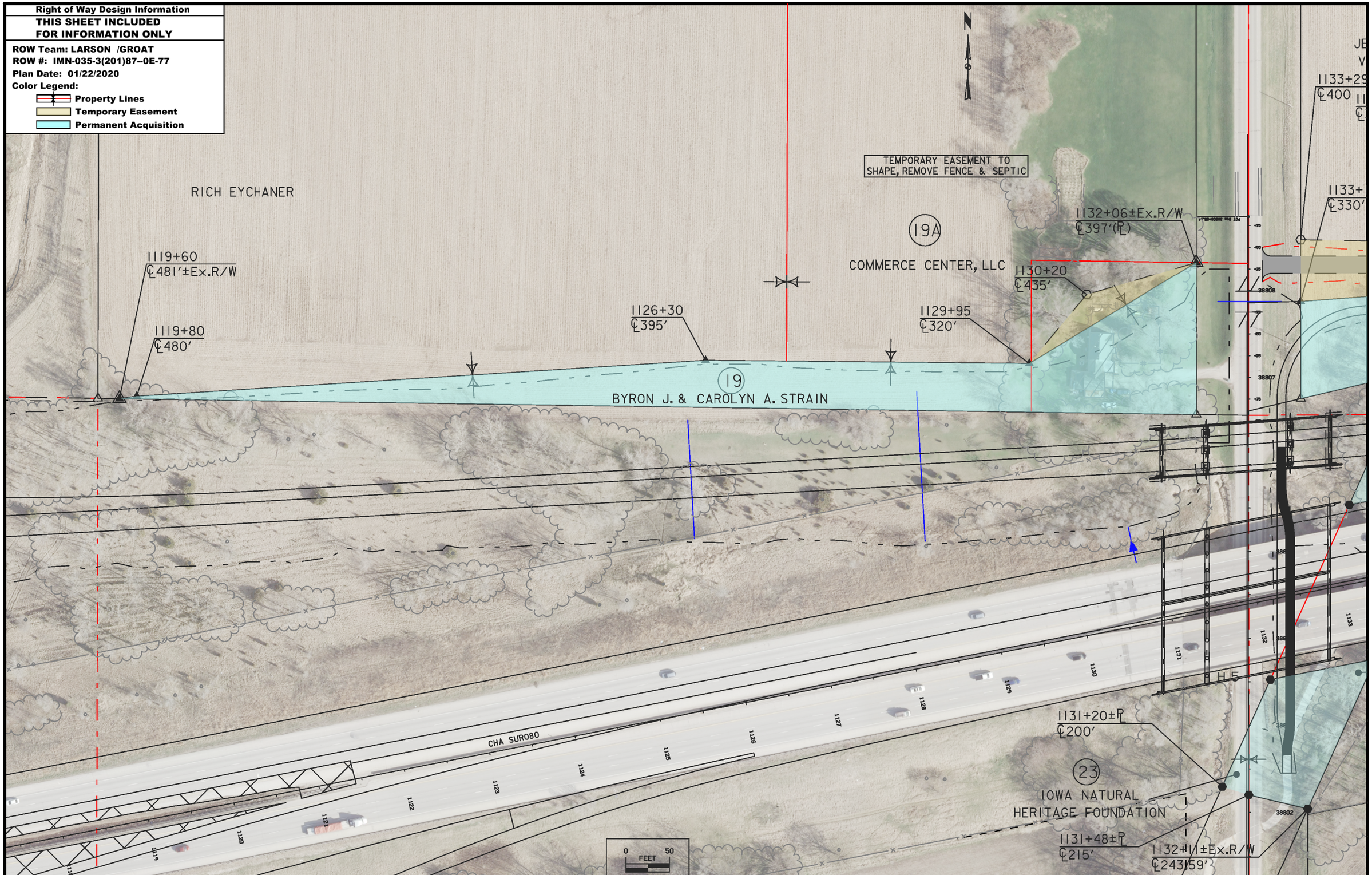
Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: LARSON /GROAT
ROW #: IMN-035-3(201)87--0E-77
Plan Date: 01/22/2020
Color Legend:
- Property Lines
- Temporary Easement
- Permanent Acquisition



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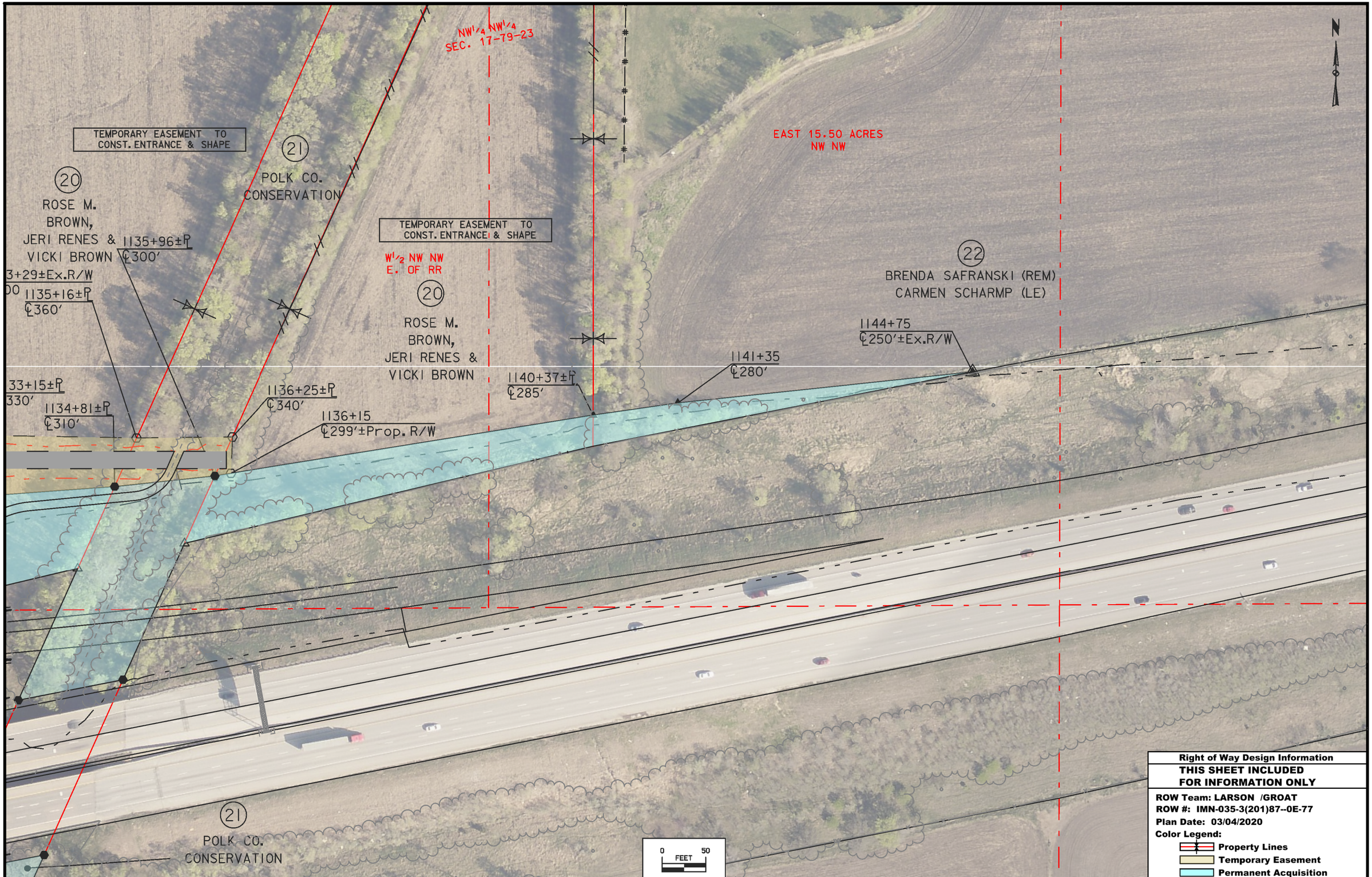

Right of Way Design Information

THIS SHEET INCLUDED FOR INFORMATION ONLY

ROW Team: LARSON /GROAT
ROW #: IMN-035-3(201)87--0E-77
Plan Date: 03/04/2020
Color Legend:
- **Property Lines**
- **Temporary Easement**
- **Permanent Acquisition**

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IMN-035-4(194)87--0E-77	SHEET NUMBER H.6

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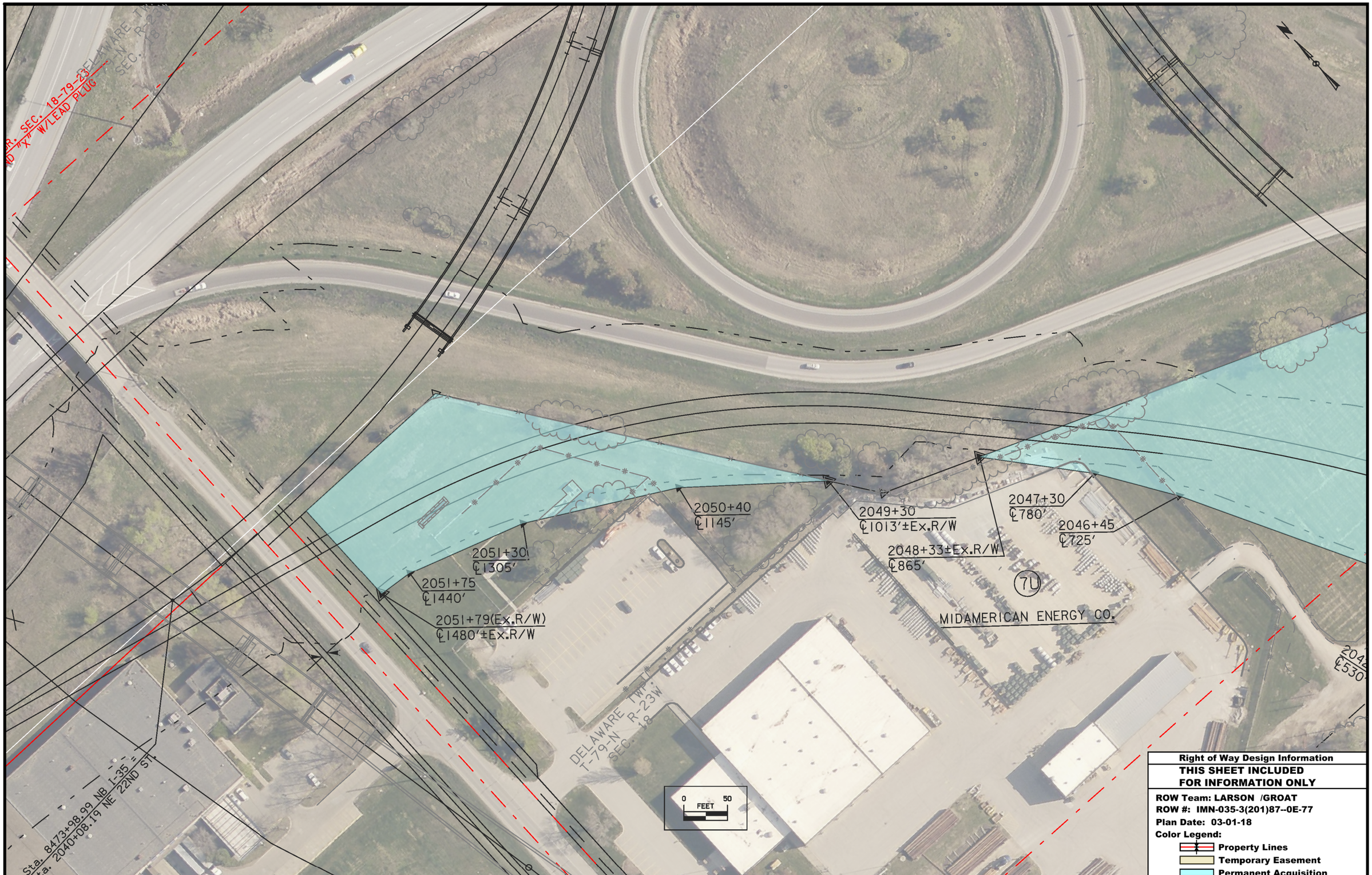

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER H.7

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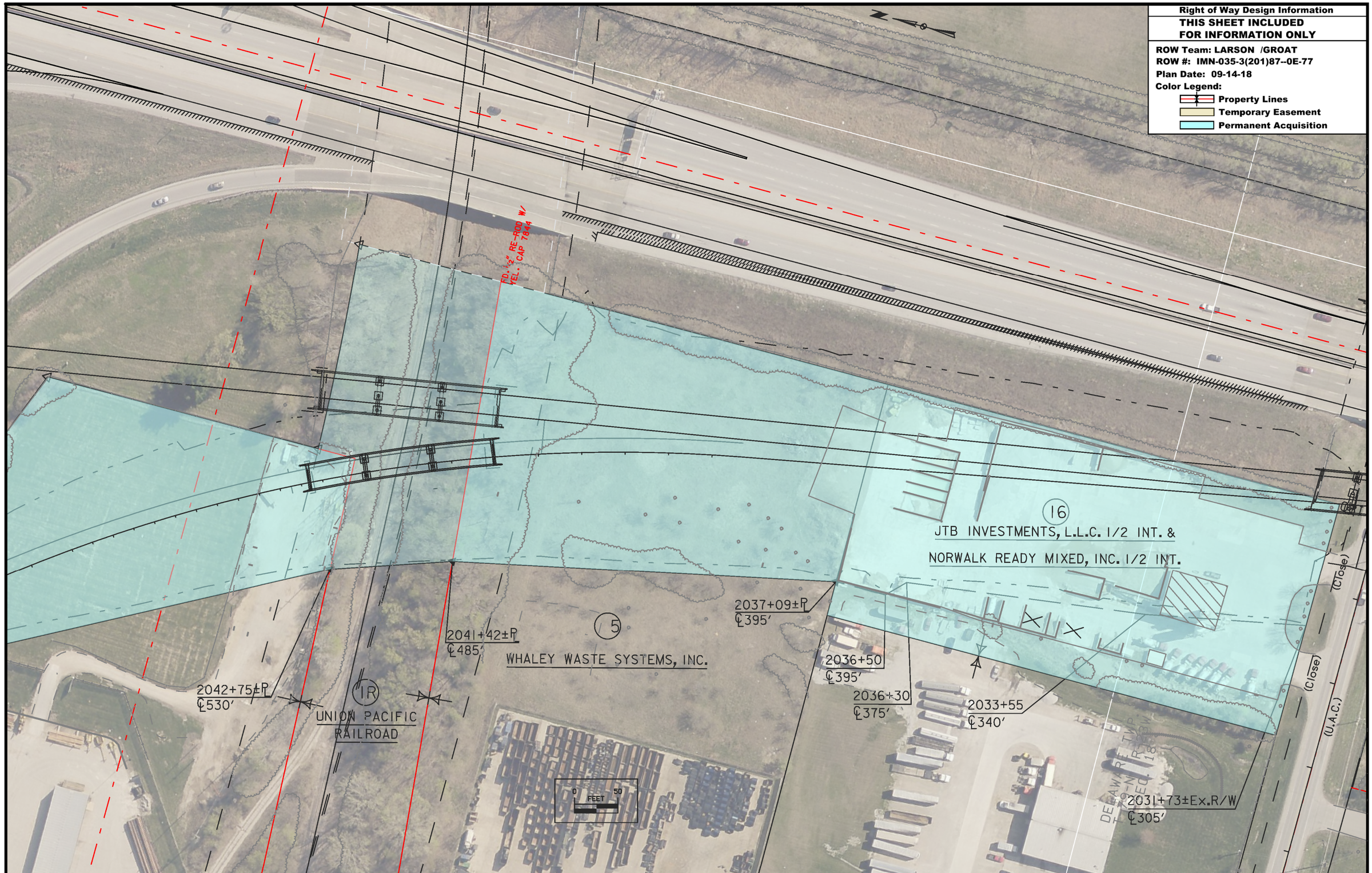

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER H.8

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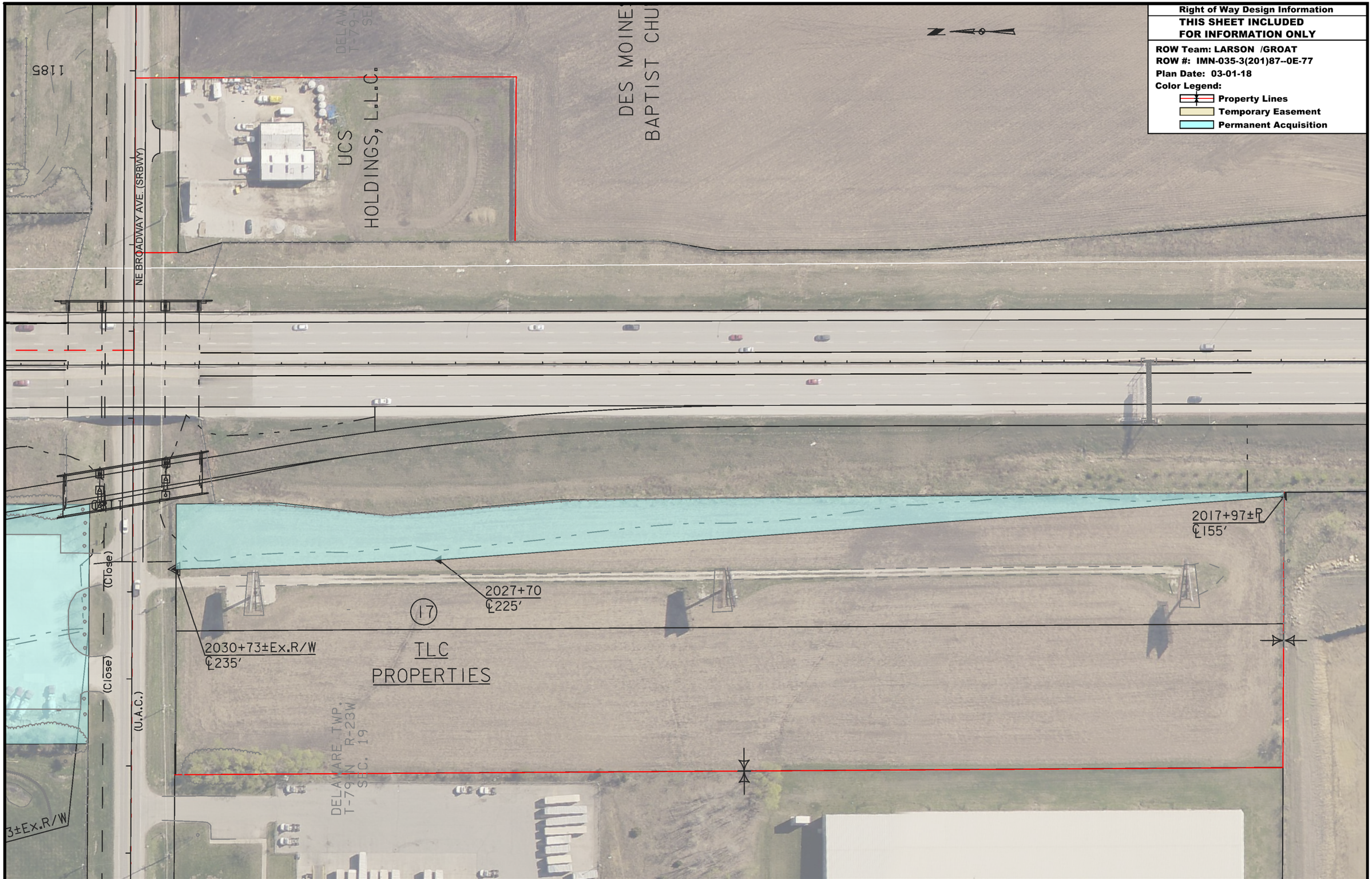

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER H.9

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108-23A
08-01-08

TRAFFIC CONTROL PLAN

1. Traffic will be maintained on I-35, I-235, and I-80 at all times as provided on the following staging sheets, except as provided for in the following notes.

   A. Temporary nighttime full road closure of I-35, I-235, and I-80 will be permitted as follows.

      - Short duration of up to 20 minutes to complete overhead work and to set new bridge beams. The Contractor shall submit the traffic control plan 2 weeks in advance to the Engineer for approval.
      - Extended durations of over 20 minutes to remove existing bridge or place bridge beams.
        I-35, I-235, and I-80 traffic will be detoured to local roads per Off Site Detours.
        The Contractor shall submit the traffic control plan 2 weeks in advance for the Engineer's approval.

2. Install PCMS on interstates per Off-Site Detour plans for extended duration temporary nighttime full road closure. Coordinate messages with Engineer.

3. Coordinate with Engineer during temporary nighttime road closures to display sign messages on permanent DMS on I-235 NB, NB I-35/EB I-80, I-35 SB, and I-80 EB.

4. Contractor shall fully remove all detour signing nightly.

5. Contractor is responsible for installation, maintenance, and removal of all detour signing.

108-26A
08-01-08

STAGING NOTES

STAGING NOTES

Stage 3A-1

Traffic:
-Maintain Traffic on existing roadways.
-Maintain traffic with lane closures during off-peak hours for shoulder strengthening and milling/filling rumble strip activities
-Temporary closures for erecting overhead sign truss

Construction:
-Construct footings and erect overhead sign truss at Sta. 1030+87.01 on EB I-80/35
-Construct median footing at Sta. 1057+45.46 on EB I-80/35 for overhead sign truss
-Construct I-80/35 EB shoulder strengthening/widening in median west of NE 22nd St
-Remove existing Dynamic Message Sign at Sta. 2019+52.31 on WB I-235 and footings
-Construct median footing for overhead dynamic message sign at Sta. 2019+98.21 on WB I-235

Stage 3A-2

Traffic:
-Maintain Traffic on existing roadways.
-Maintain traffic via detour widening and lane shifts
-Reduce I-35 NB to 3 lanes just north of NE 54th Ave.
-I-80/35 EB, I-80 WB, I-235 SB, and I-35NB traffic in chute design at tie-ins
-Temporary short term closures of I-80 EB and WB, I-35 NB, SB to EB ramp, EB to NB ramp and WB to SB ramp for setting beams
-Temporary closures of NE 29th St. for setting beams
-Temporary closures of Chichaqua Valley Trail for tying in trail pavement and setting beams
-Temporary closures of NE Broadway Ave. for setting beams
-Place Portable Changeable Message Sign on WB I-235 to temporarily replace existing DMS that is being removed
-Temporary closures for erecting overhead sign truss and DMS truss

Construction:
-Construct I-35 NB ramp and flyover bridge with gaps at EB to SB ramp and WB to NB ramp
-Construct I-35 NB interim exit Taper and interim shoulder
-Construct outside footing at Sta. 1057+45.46 on EB I-80/35 for overhead sign truss and erect structure
-Grade and pave relocated temporary, interim and portions of ultimate Chichaqua Valley Trail
-Construct Ramp G Bridge over NE 29th St and relocated Chichaqua Valley Trail
-Construct footing and erect cantilevered sign truss at Sta. 1170+31.40 on WB I-80
-Construct footing and erect cantilevered sign truss at Sta. 1201+62.99 on WB I-80
-Construct retaining wall along Ramp B
-Construct Ramp B bridge over UPRR
-Construct Ramp G bridge over Broadway Ave
-Grade and pave Ramp G partial, Ramp A and Ramp B
-Construct Ramp G interim exit Taper
-Construct outside footing at Sta. 2019+98.21 on WB I-235 for overhead dynamic message sign and erect structure

Stage 3B

Traffic:
-Maintain traffic on existing and new roadway
-No chute design
-Open Ramp G partial, Ramp A and Ramp B to traffic
-Permanently close existing EB to SB ramp and WB to NB ramp to traffic

Construction:
-Complete Gap on I-35 NB bridge and grade and pave gap
-Remove existing EB to SB and WB to NB ramps

Stage 3C-Complete

Traffic:
-Open I-35 NB to traffic
-Permanently close existing I-35 NB left exit ramp to traffic
-Temporary short term closures of I-80 WB for ramp bridge demo

Construction:
-Remove existing I-35 NB left exit ramp pavement and bridge

CROSS SECTION VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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

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

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned
SHADING	**Design Color No.**	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

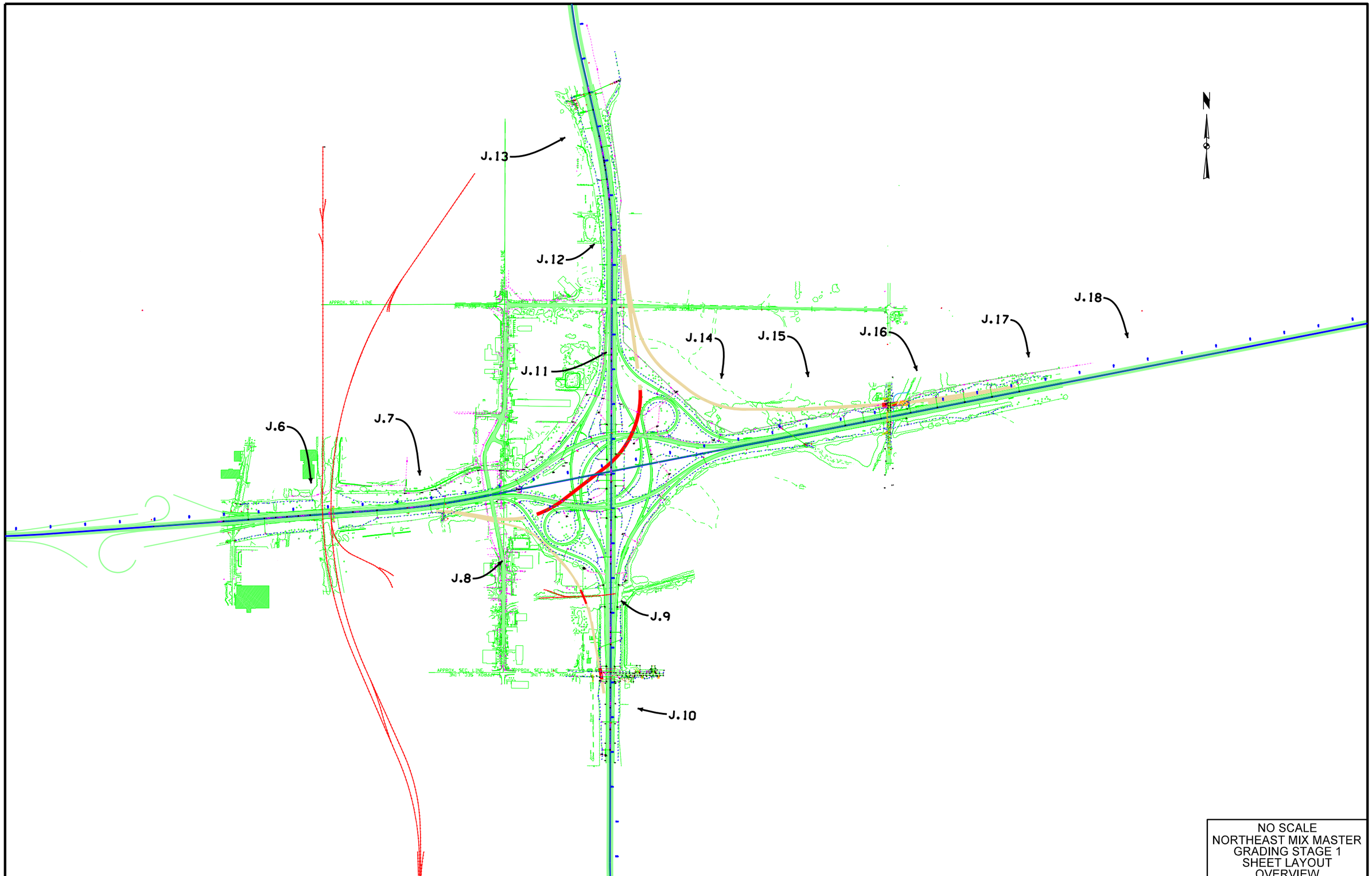
PLAN VIEW PATTERN AND SYMBOL LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

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

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

TRAFFIC CONTROL AND STAGING LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES J)



NO SCALE
NORTHEAST MIX MASTER
GRADING STAGE 1
SHEET LAYOUT
OVERVIEW

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.3

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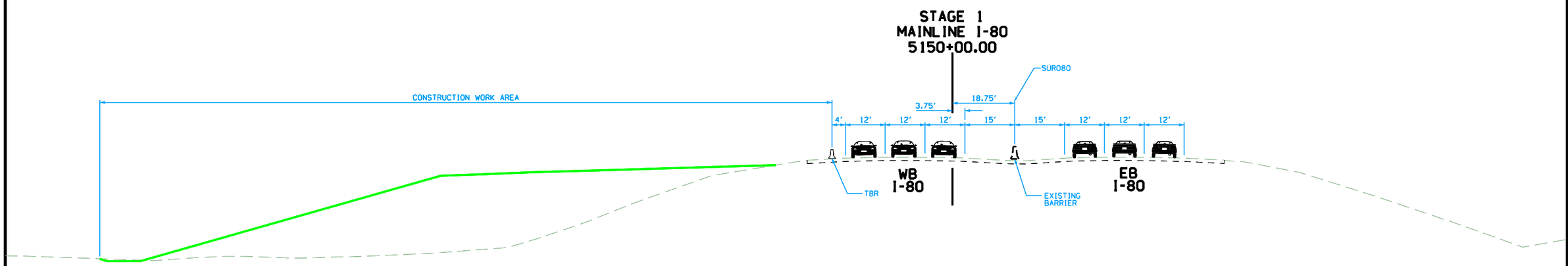
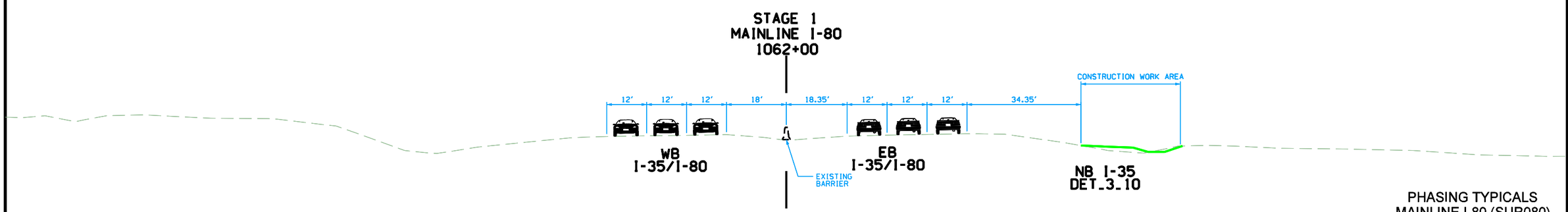


PHASING TYPICALS
MAINLINE I-80 (ML080)
STA. 5150+00



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STA. 1062+00

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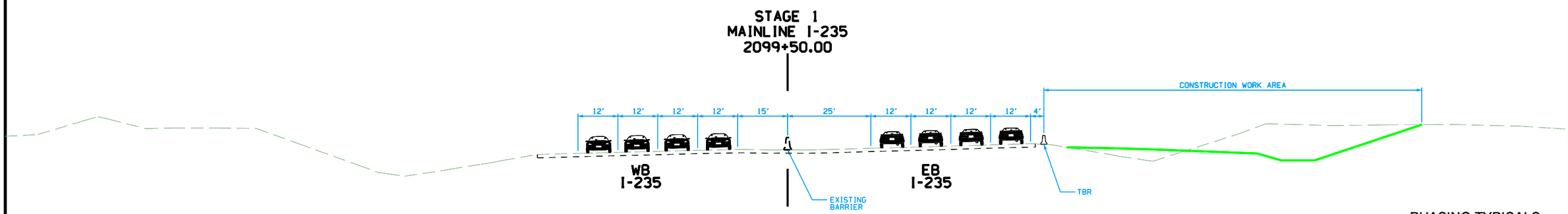

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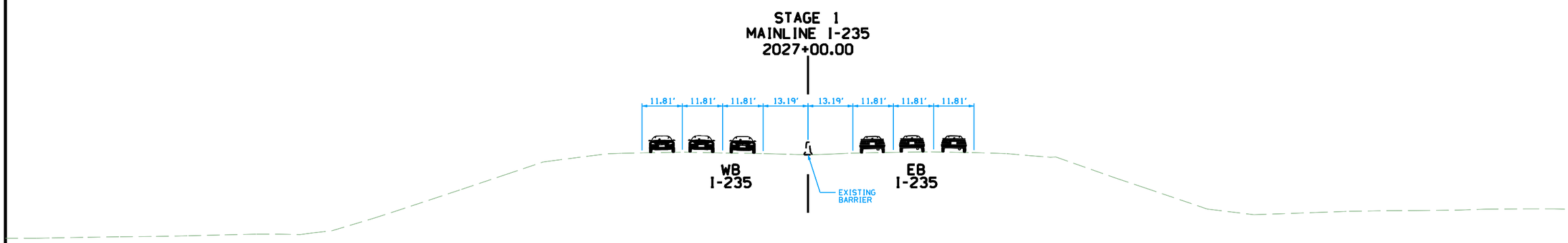
MAINLINE I-235 (ML235)
STA. 2099+50



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STA. 2027+00

FILE NO.	ENGLISH	DESIGN TEAM	Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	J.5

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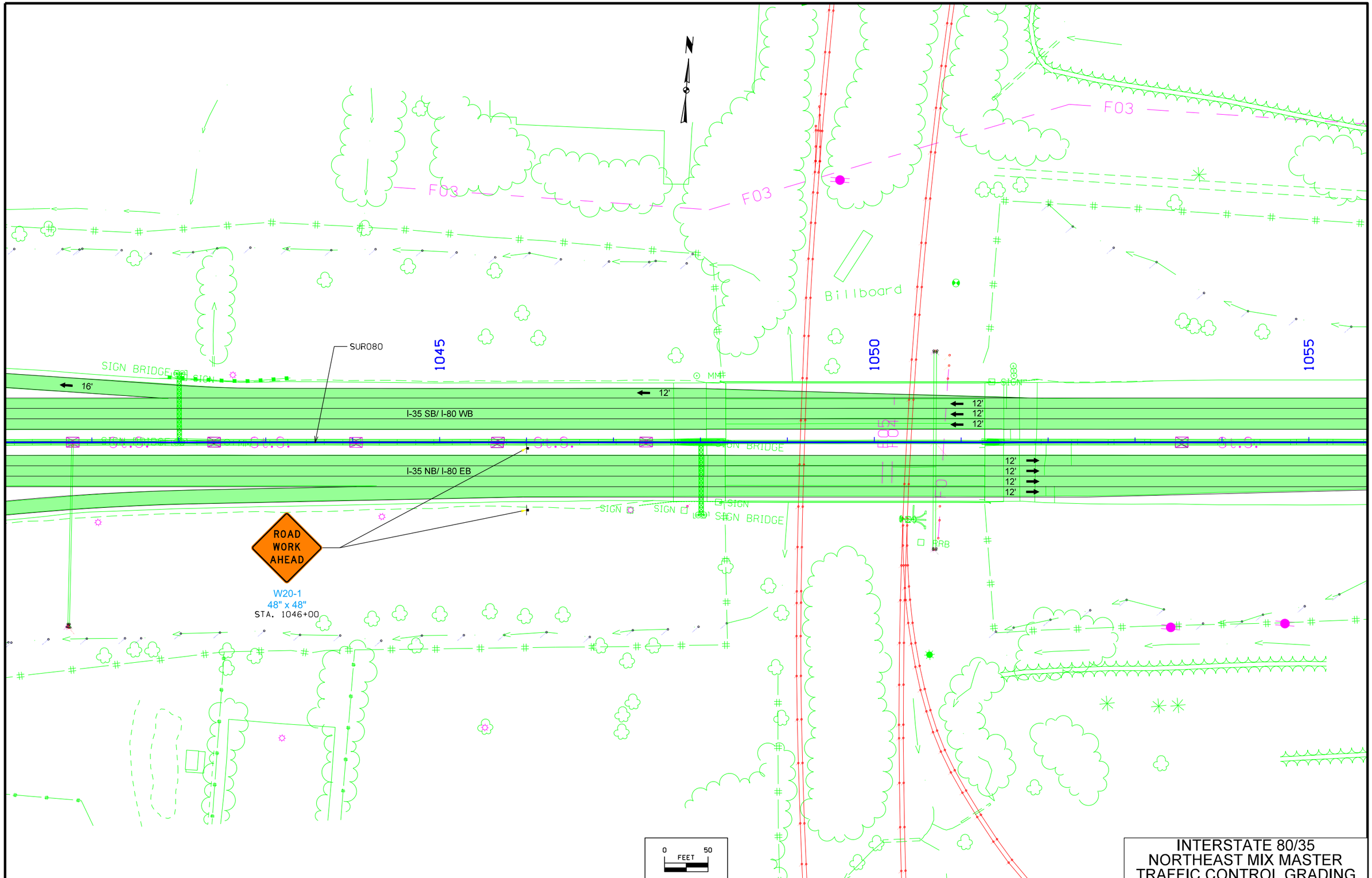

INTERSTATE 80/35
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.6

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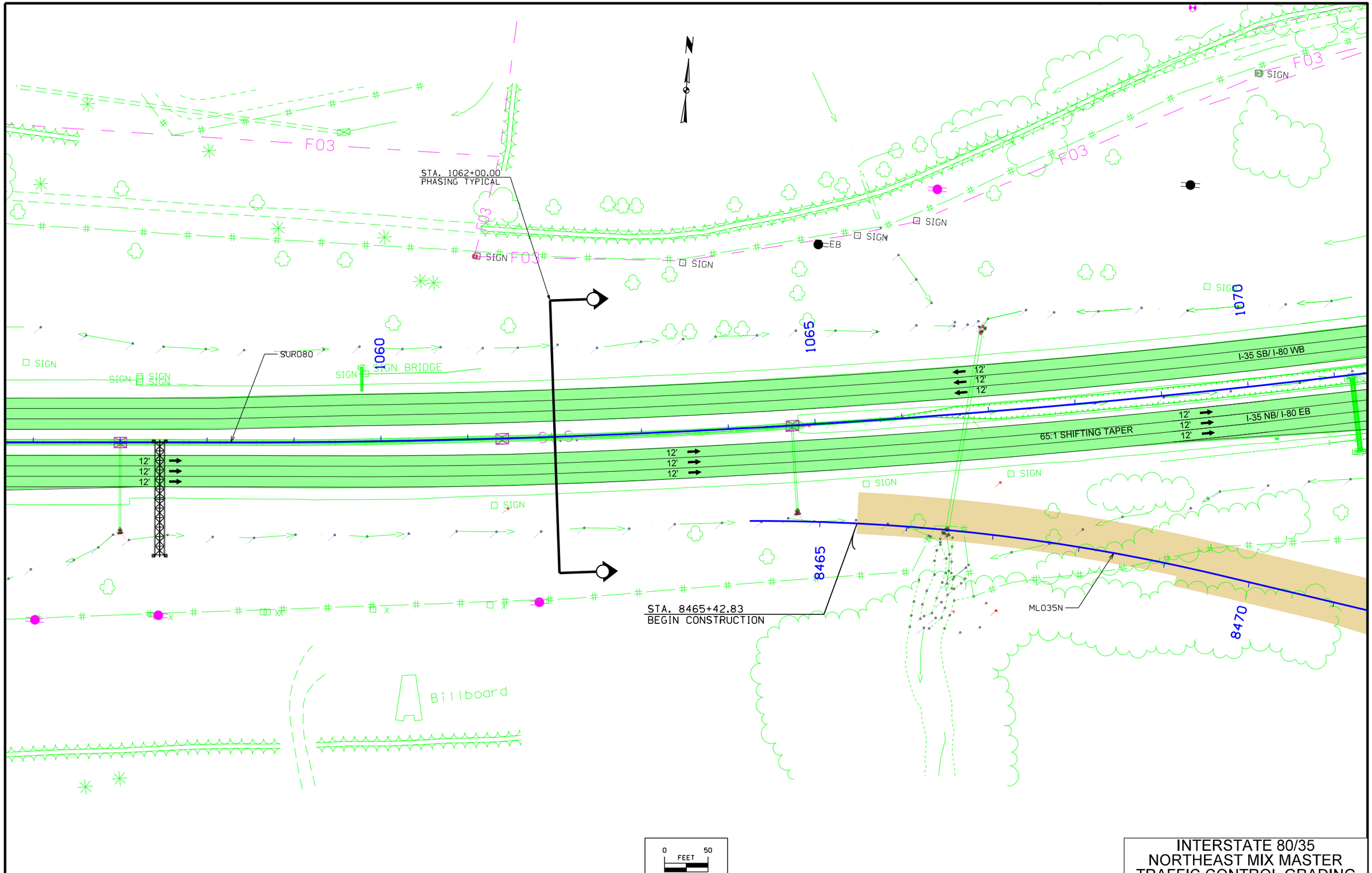

INTERSTATE 80/35
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.7

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STA. 8478+36.72
STOP ML035N GRADING

STA. 8477+34.07, 209.88' LT
BEGIN TBR

STA. 32583+48.58, 60.40' LT
END TBR

EB I-80 to SB I-235 RAMP B (235B)

ML035N

235B

STA. 32574+22.46
BEGIN RAMP B GRADING

0 FEET 50

INTERSTATE 35/RAMP B
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.8

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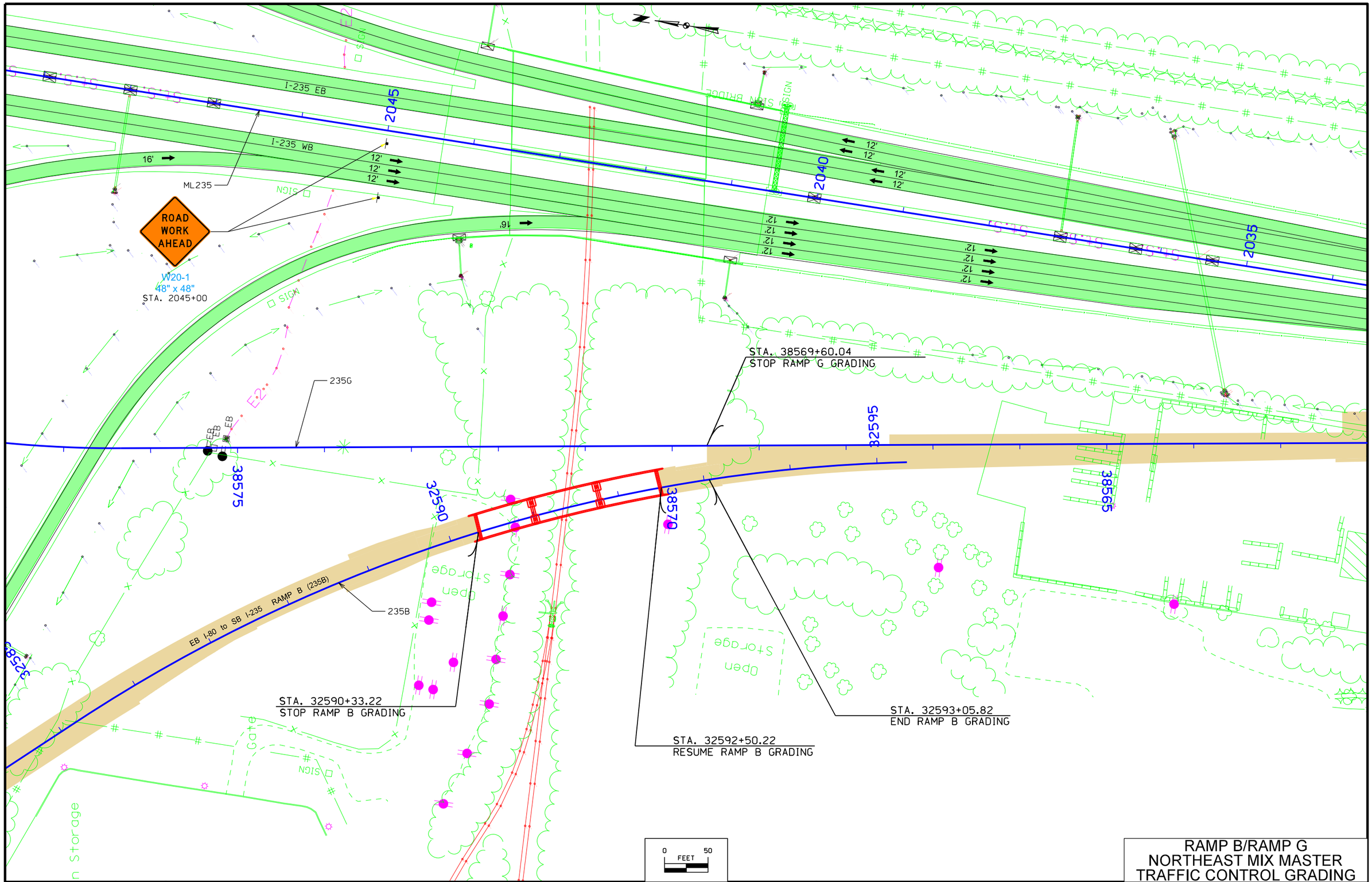

RAMP B/RAMP G
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.9

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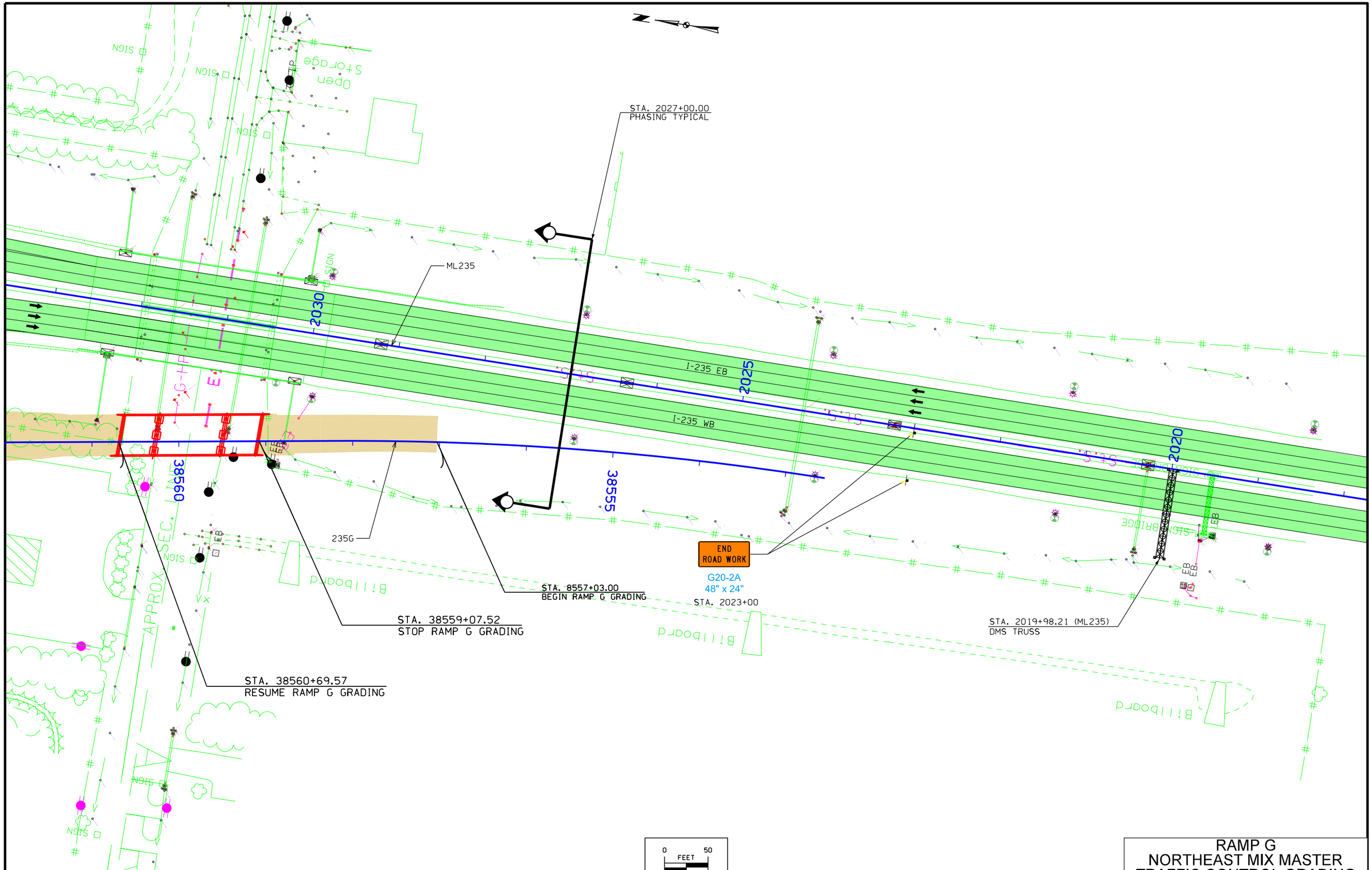

RAMP G
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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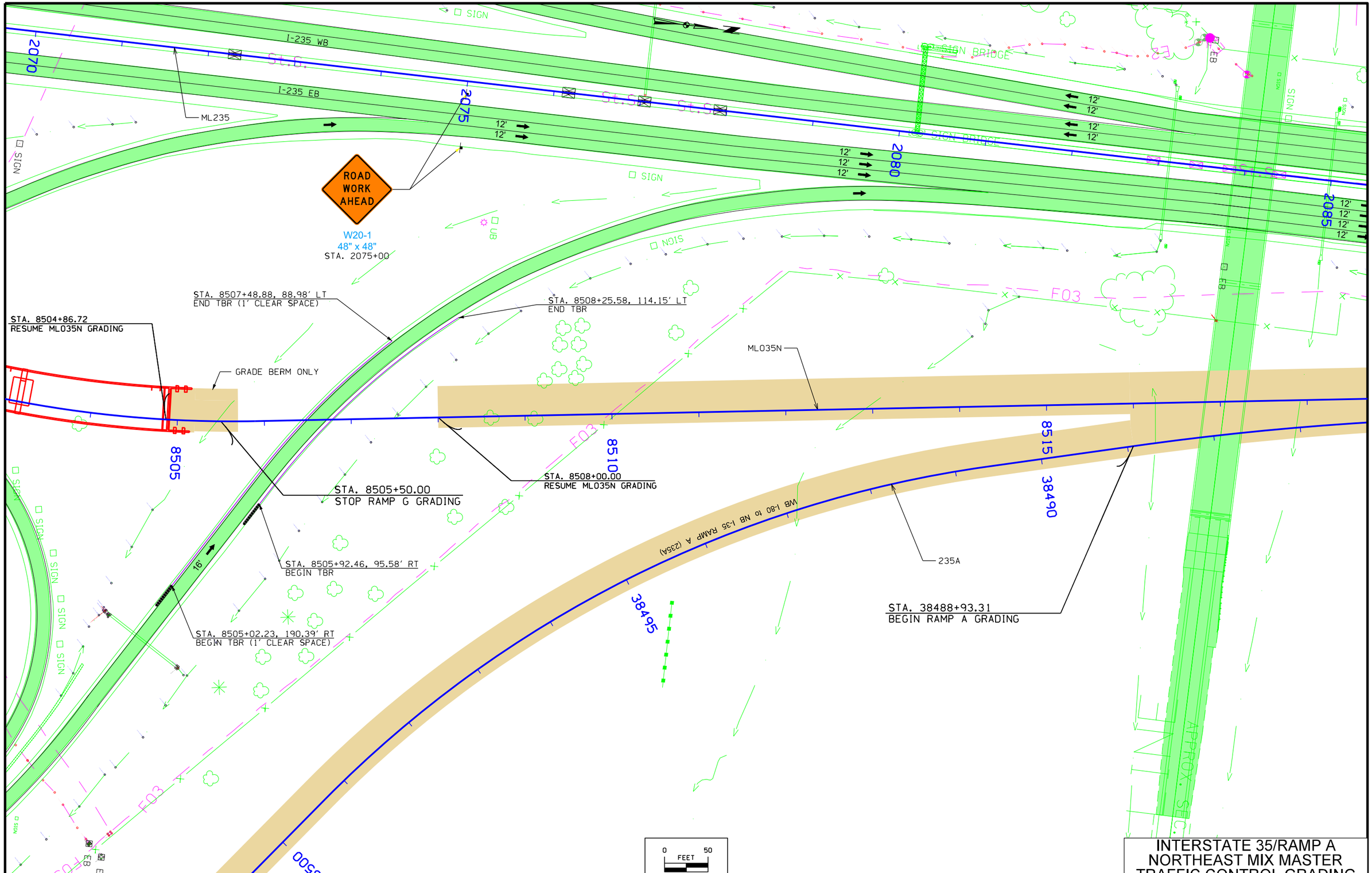

INTERSTATE 35/RAMP A
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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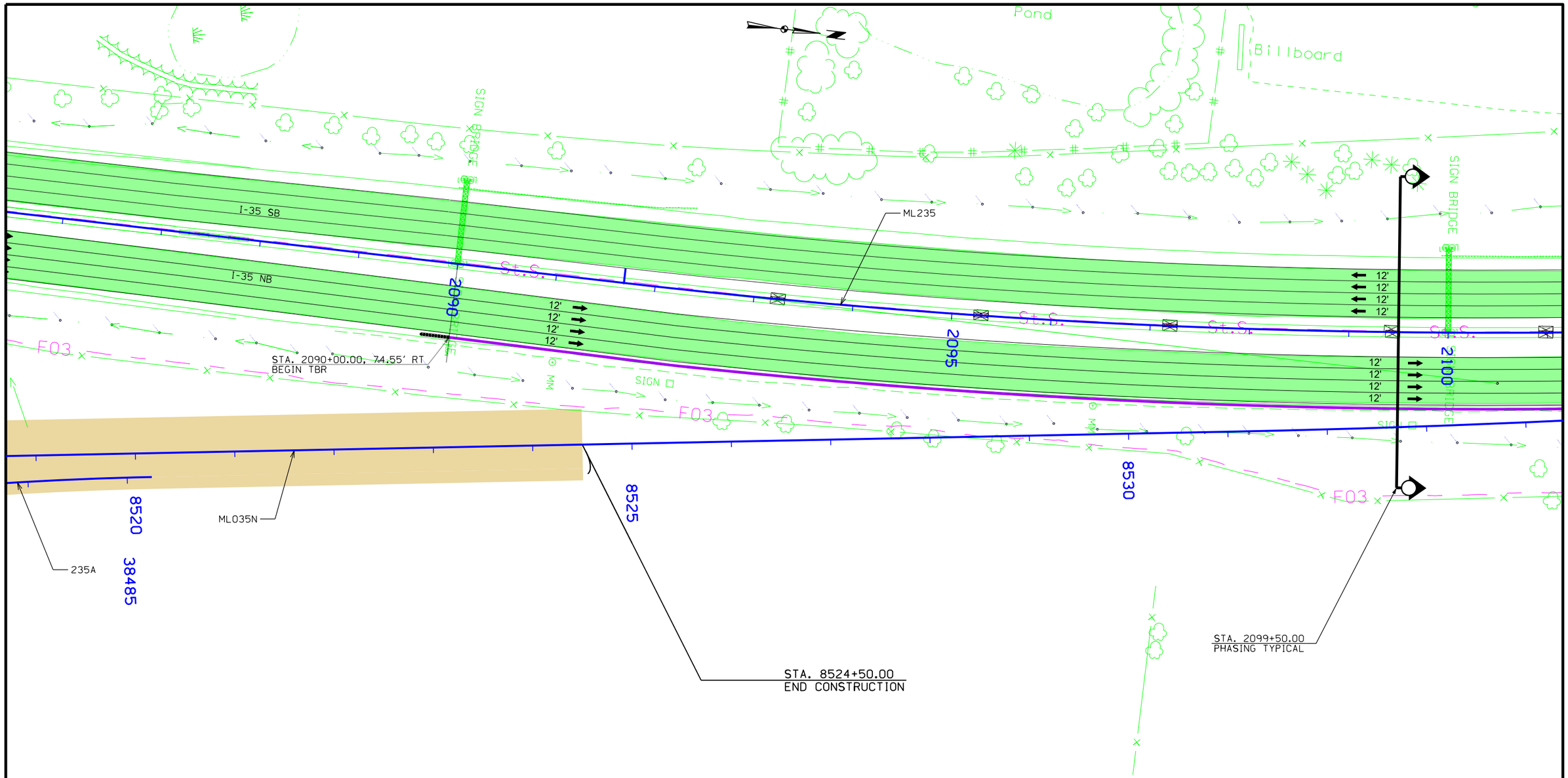

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FEET

INTERSTATE 35/RAMP A
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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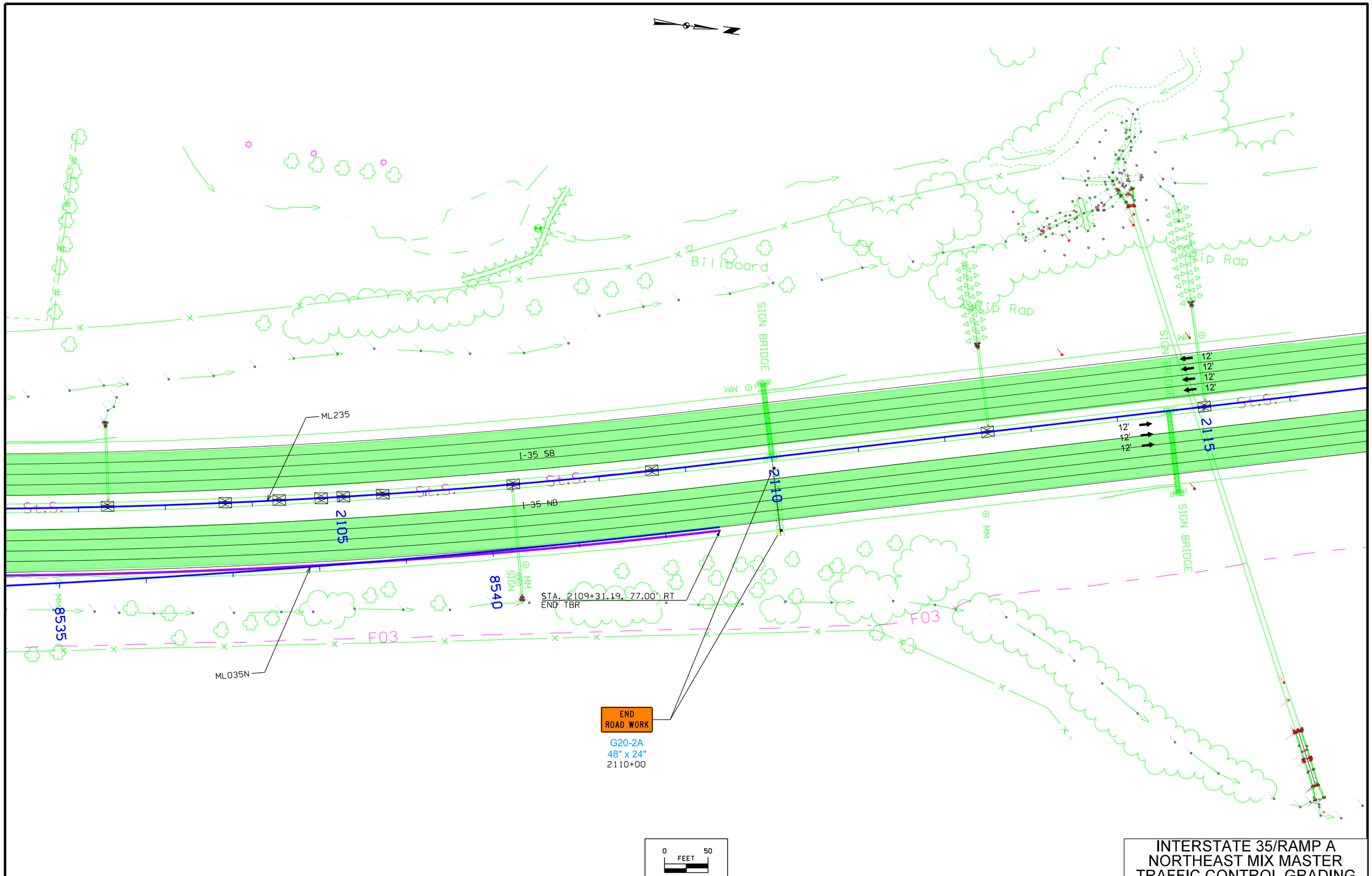

INTERSTATE 35/RAMP A
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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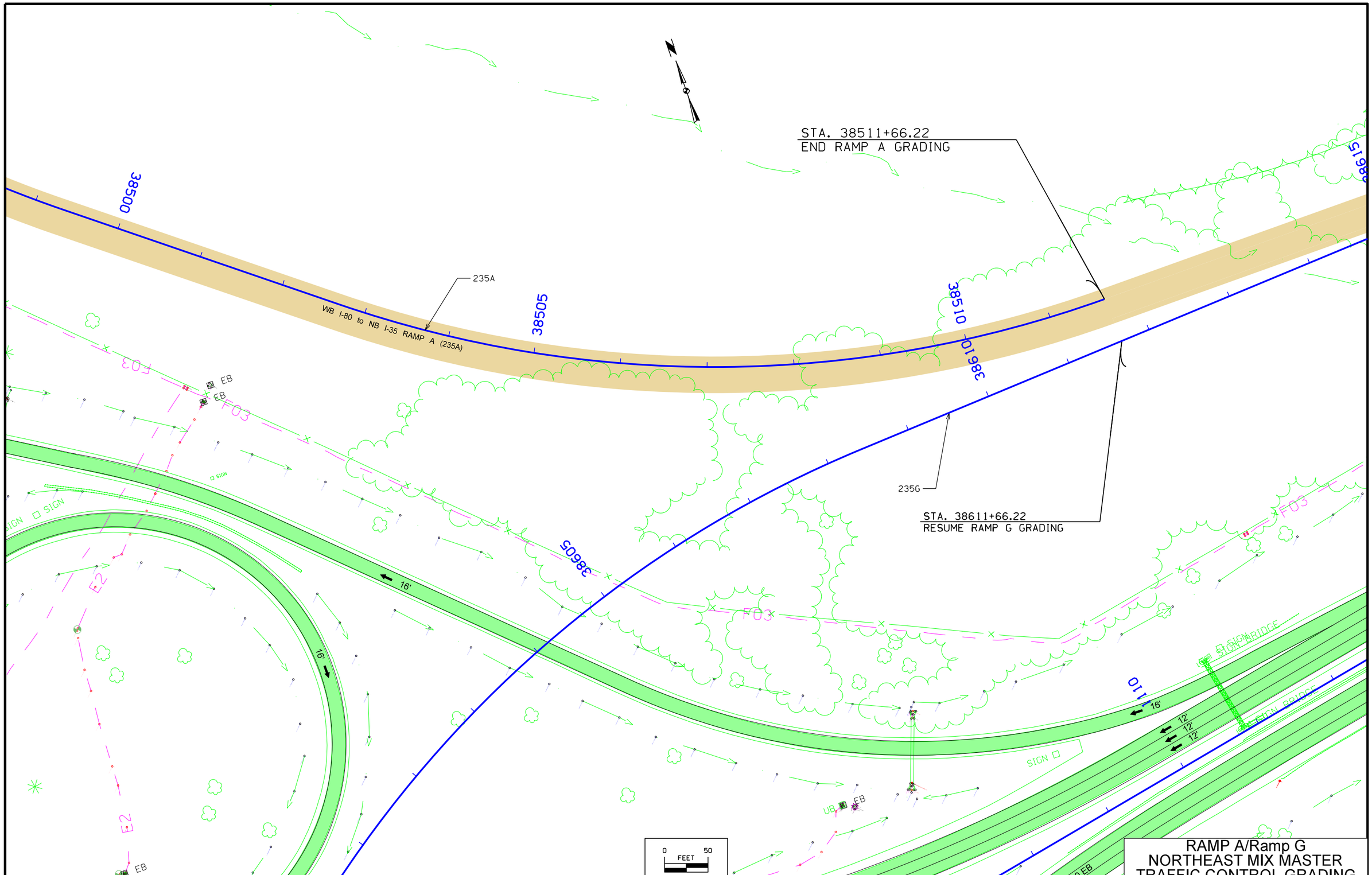

RAMP A/Ramp G
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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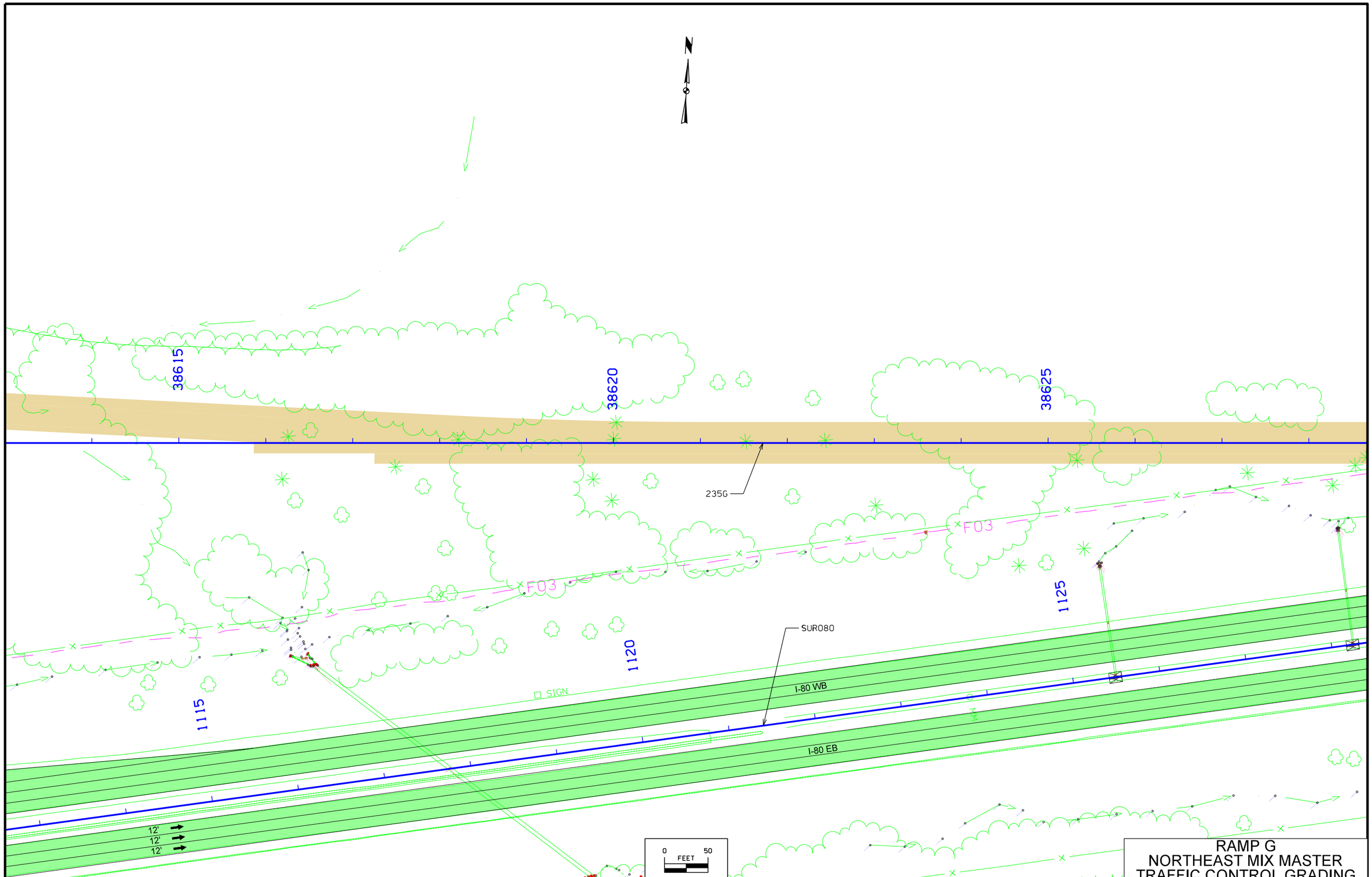

RAMP G
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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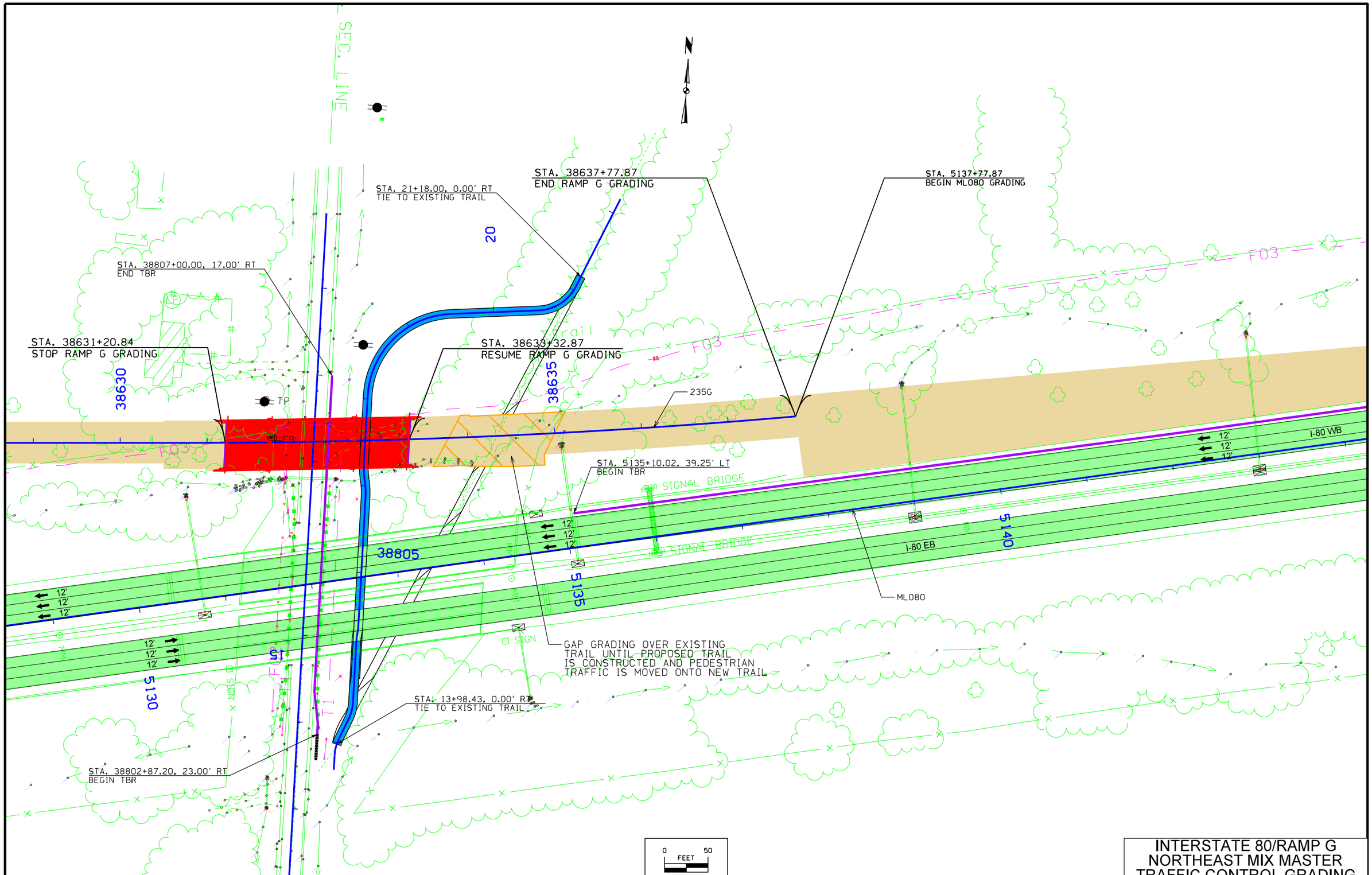

INTERSTATE 80/RAMP G
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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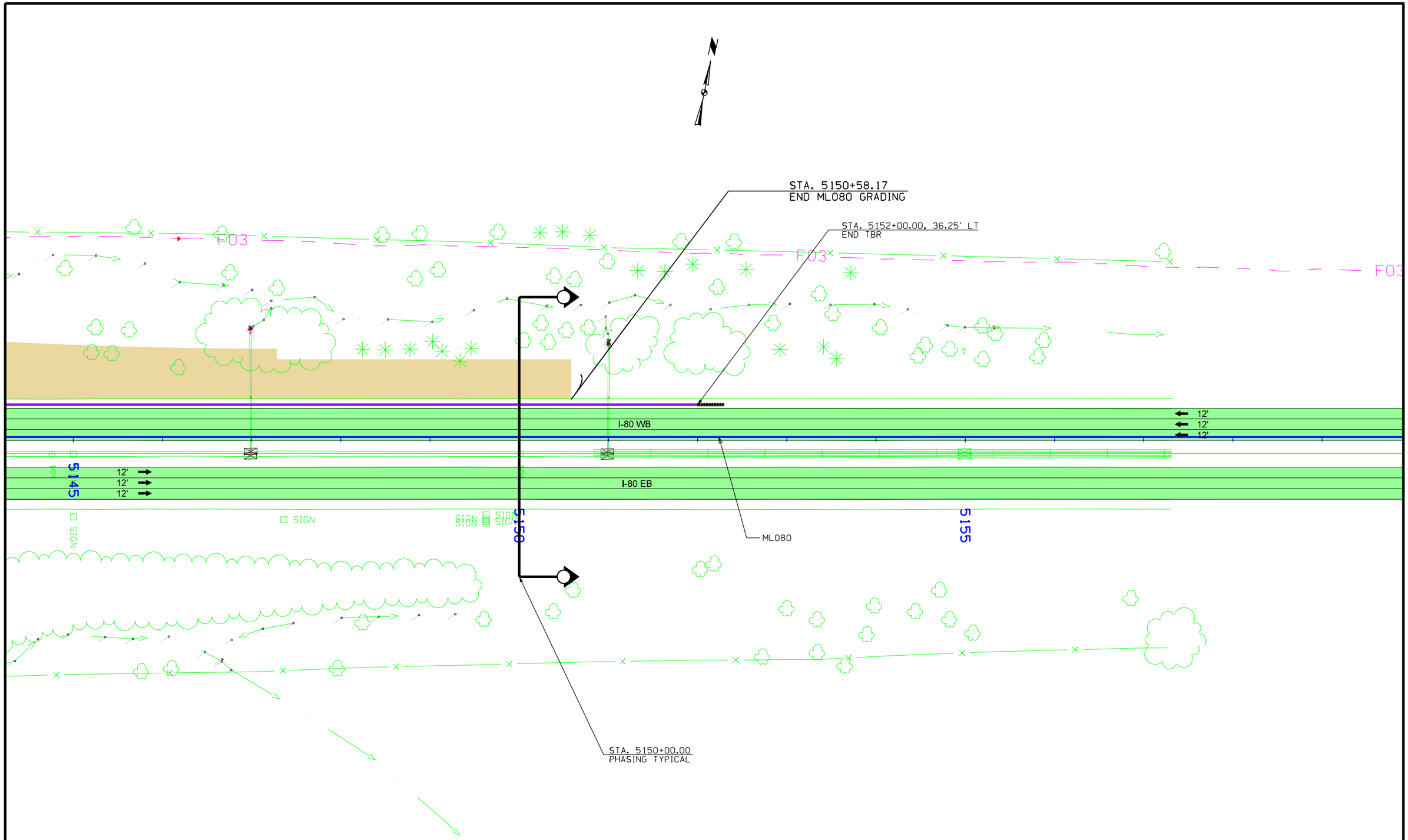

INTERSTATE 80
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.17

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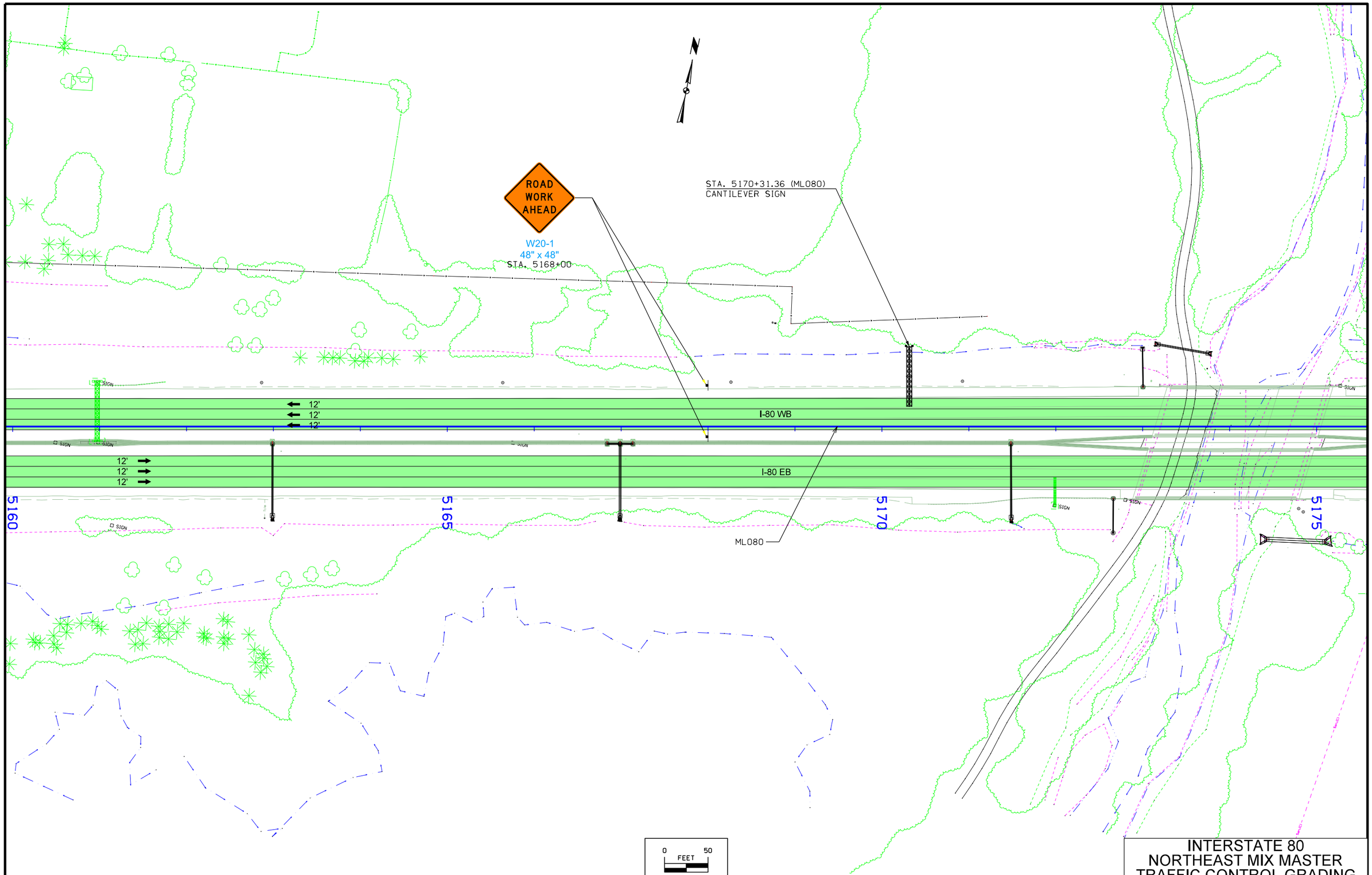

INTERSTATE 80
NORTHEAST MIX MASTER
TRAFFIC CONTROL GRADING

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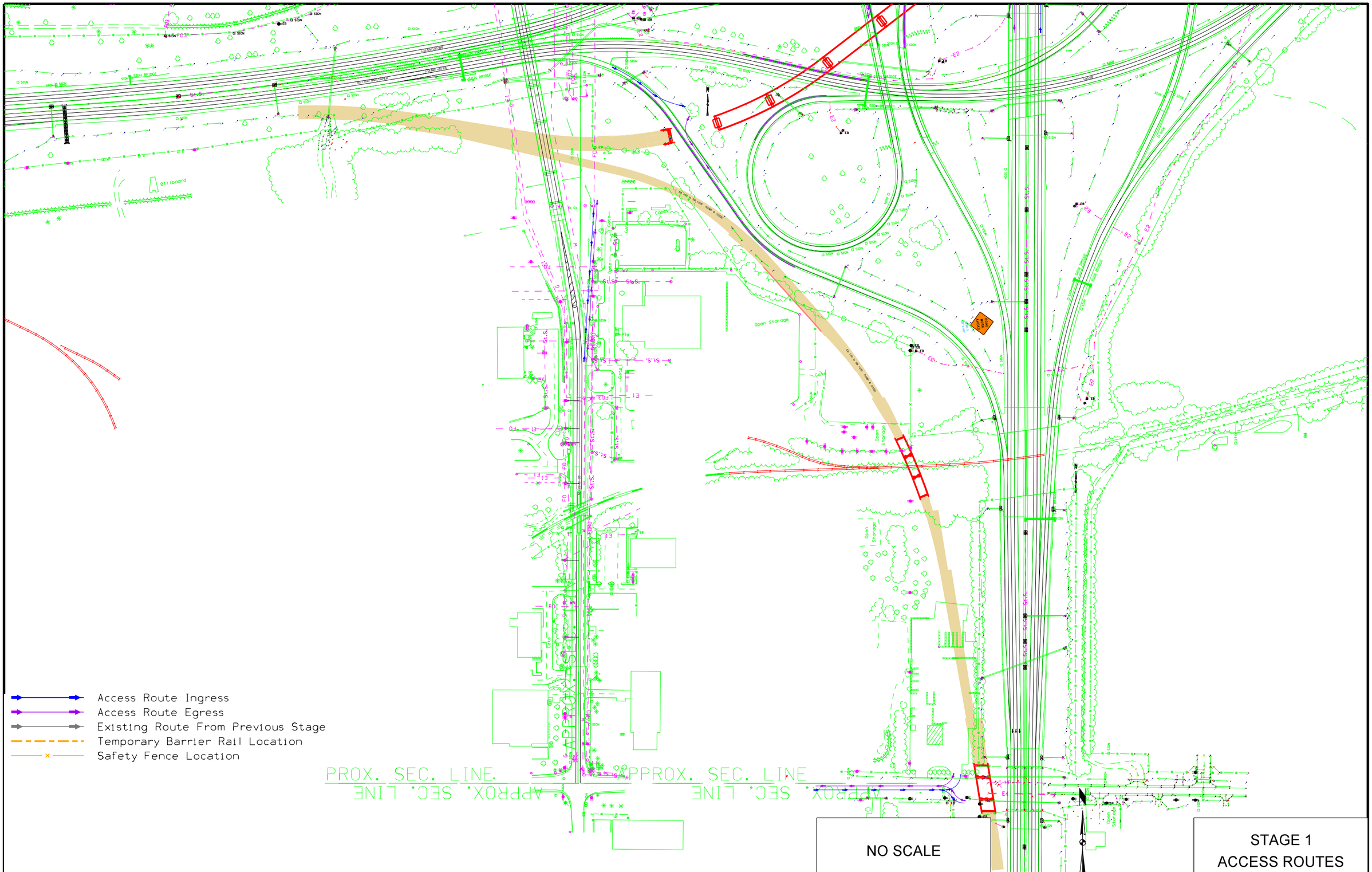

STAGE 1
ACCESS ROUTES

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER J.19

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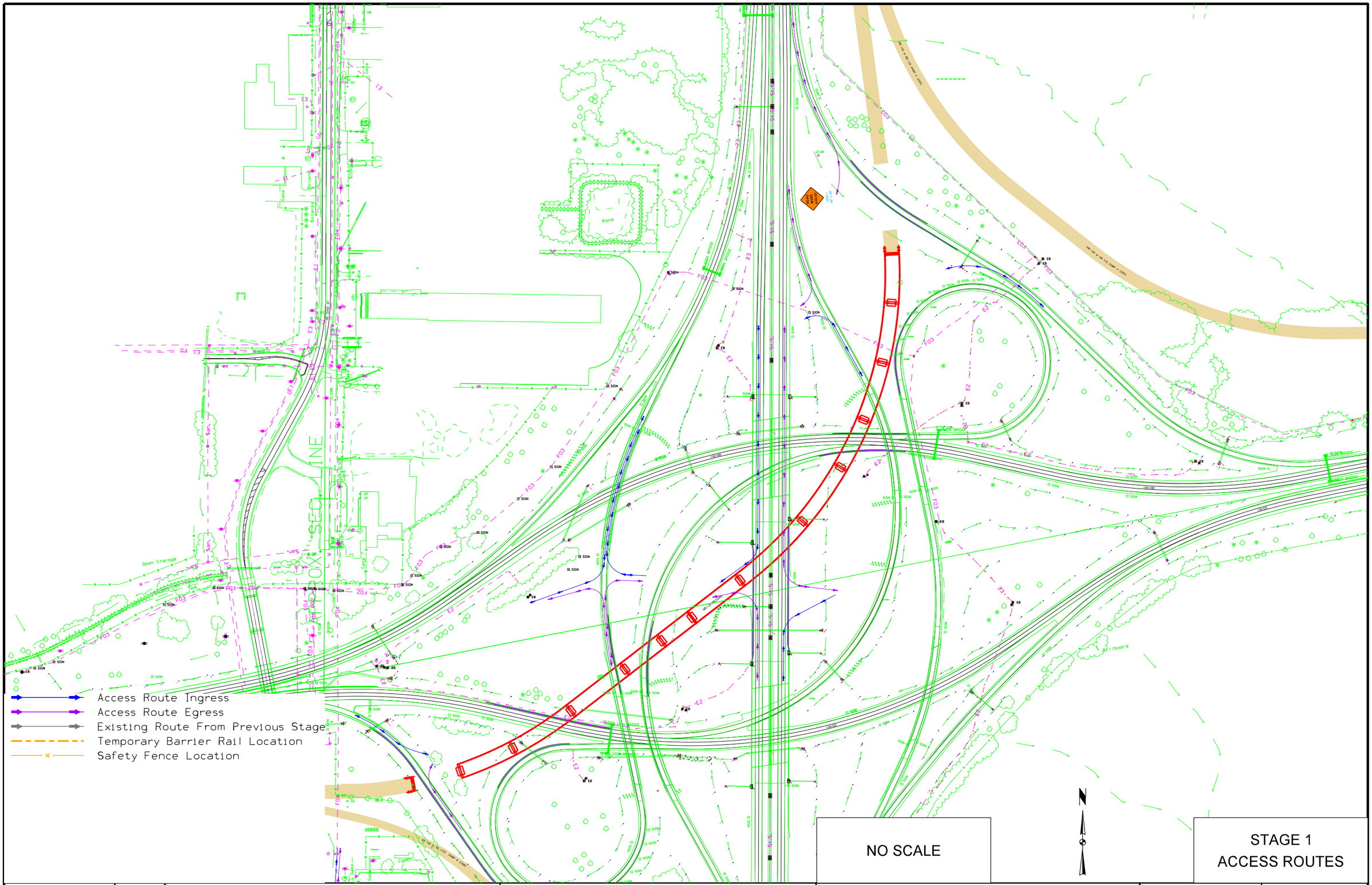

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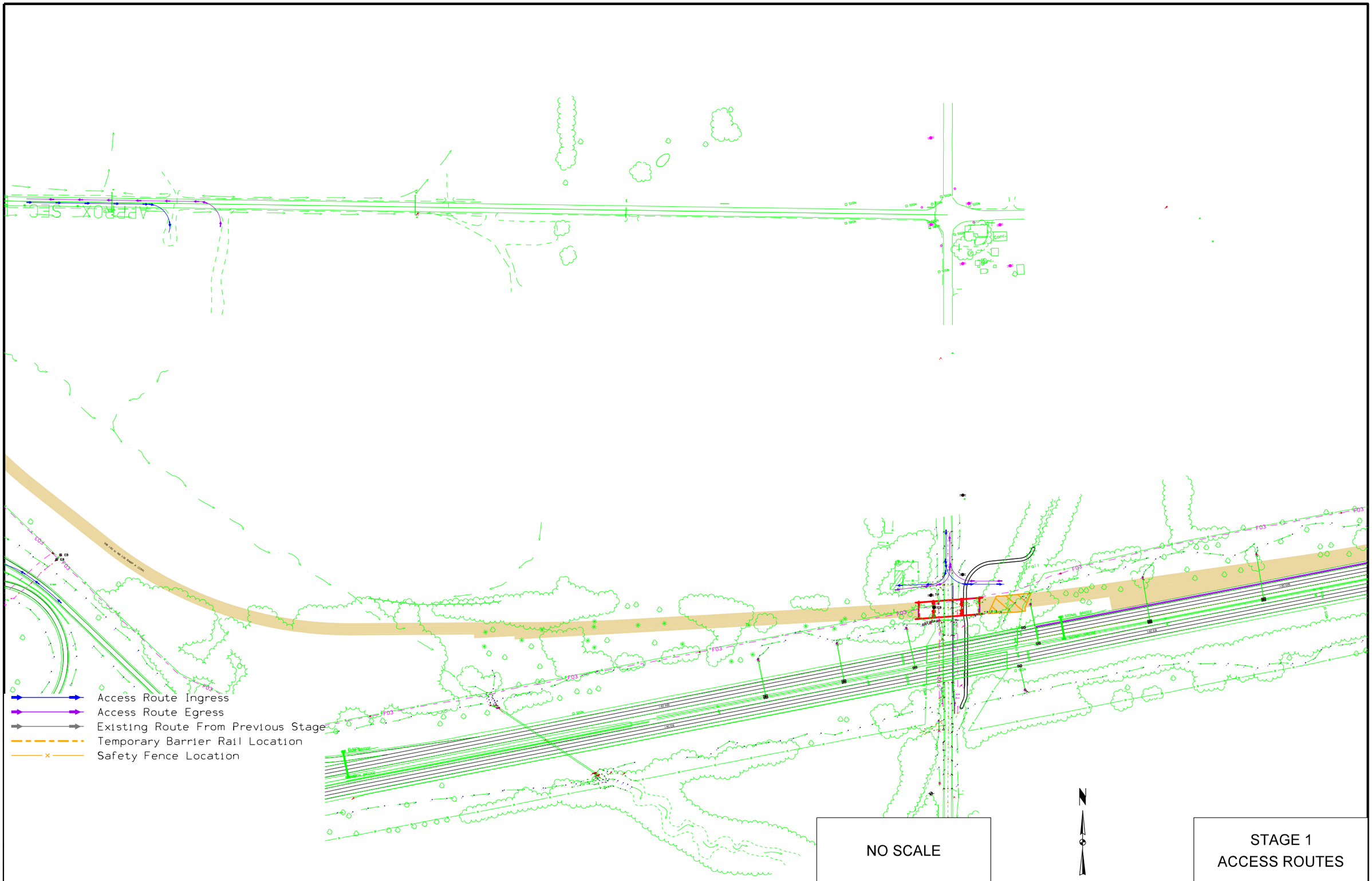

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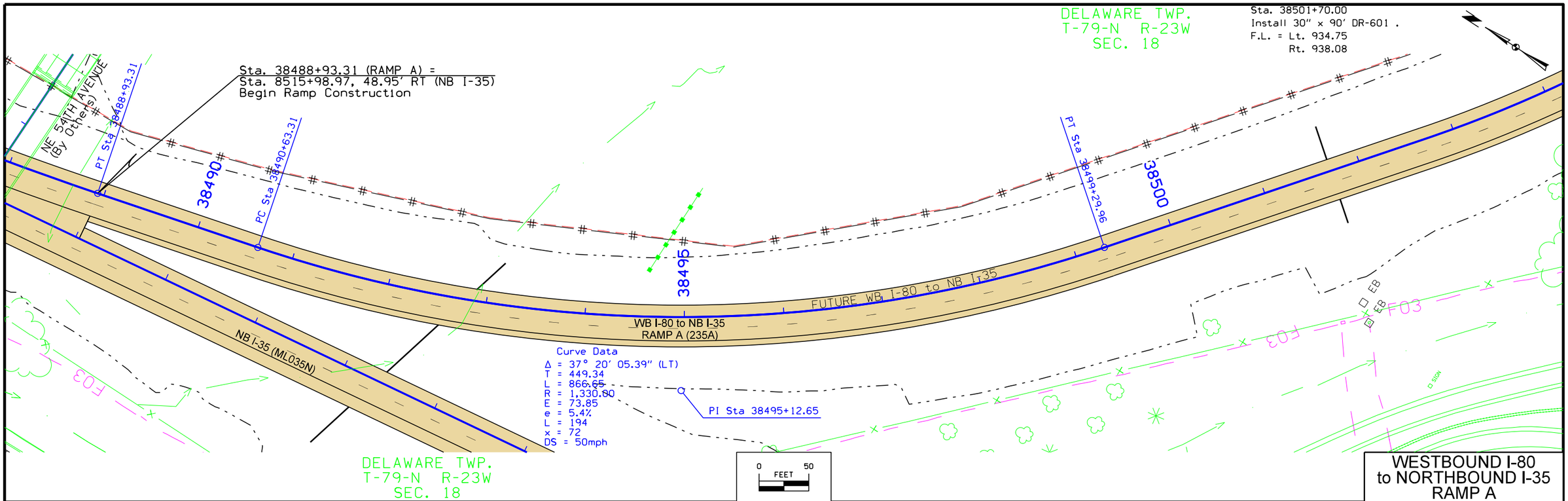
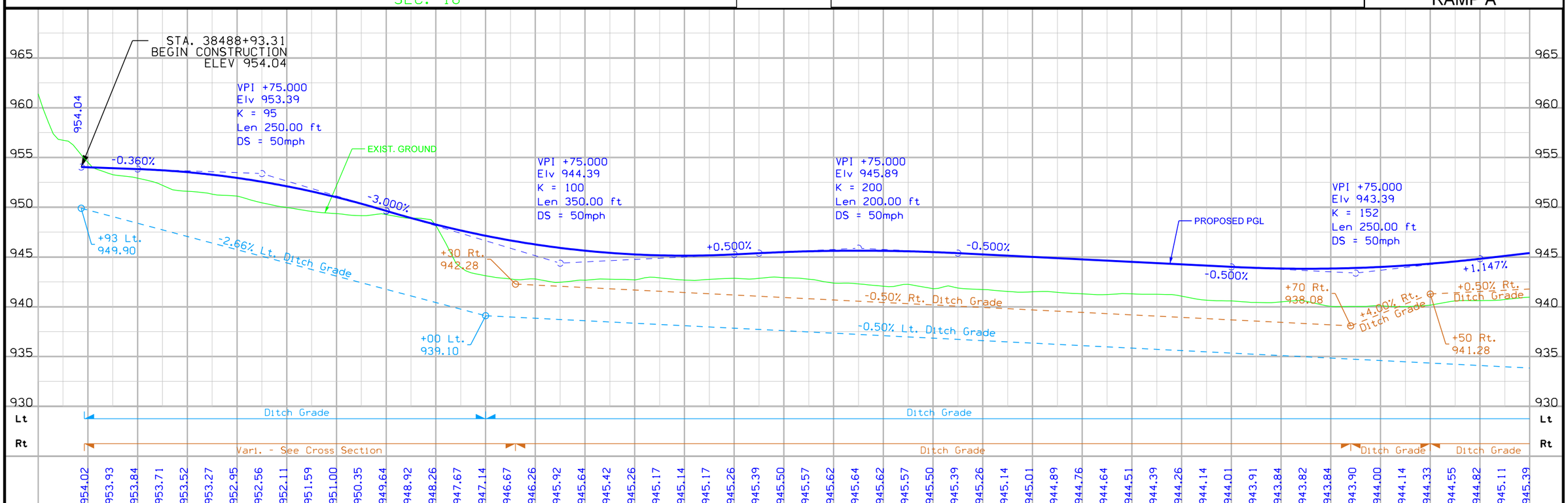
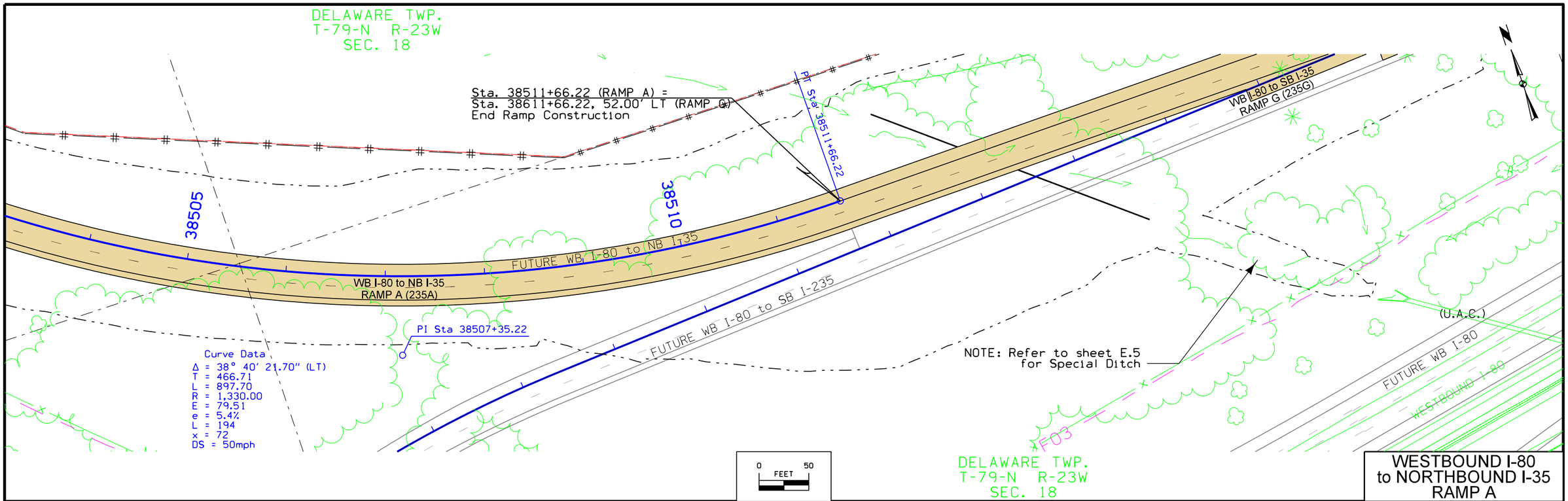
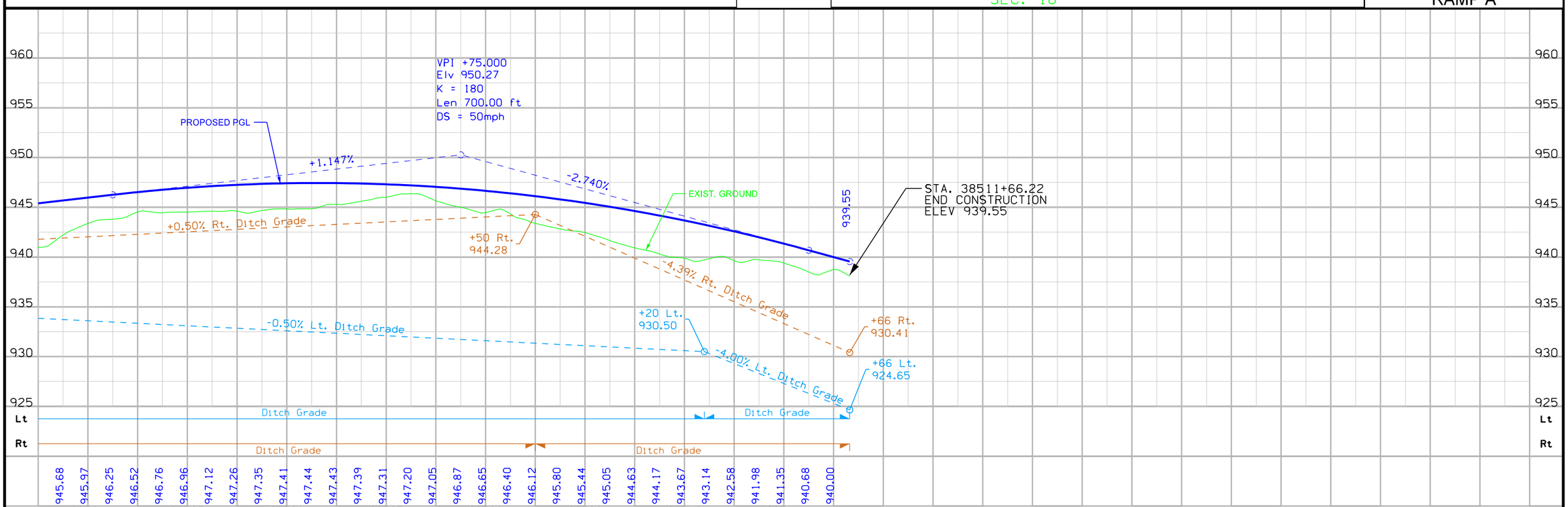




FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.1

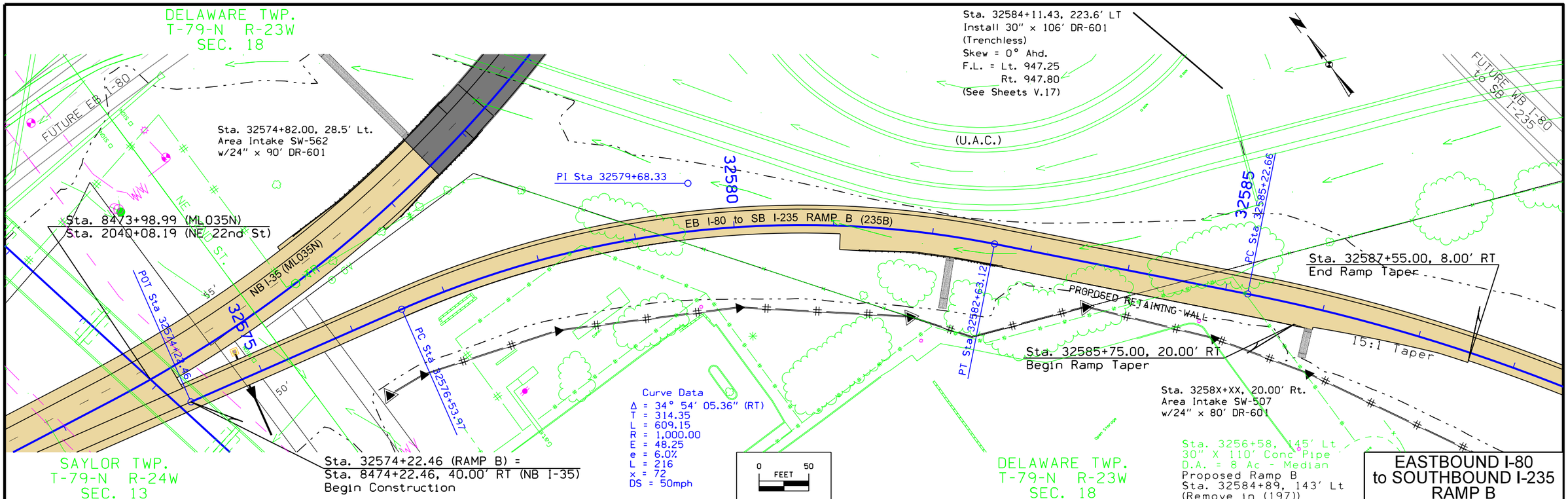
12:08:09 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht

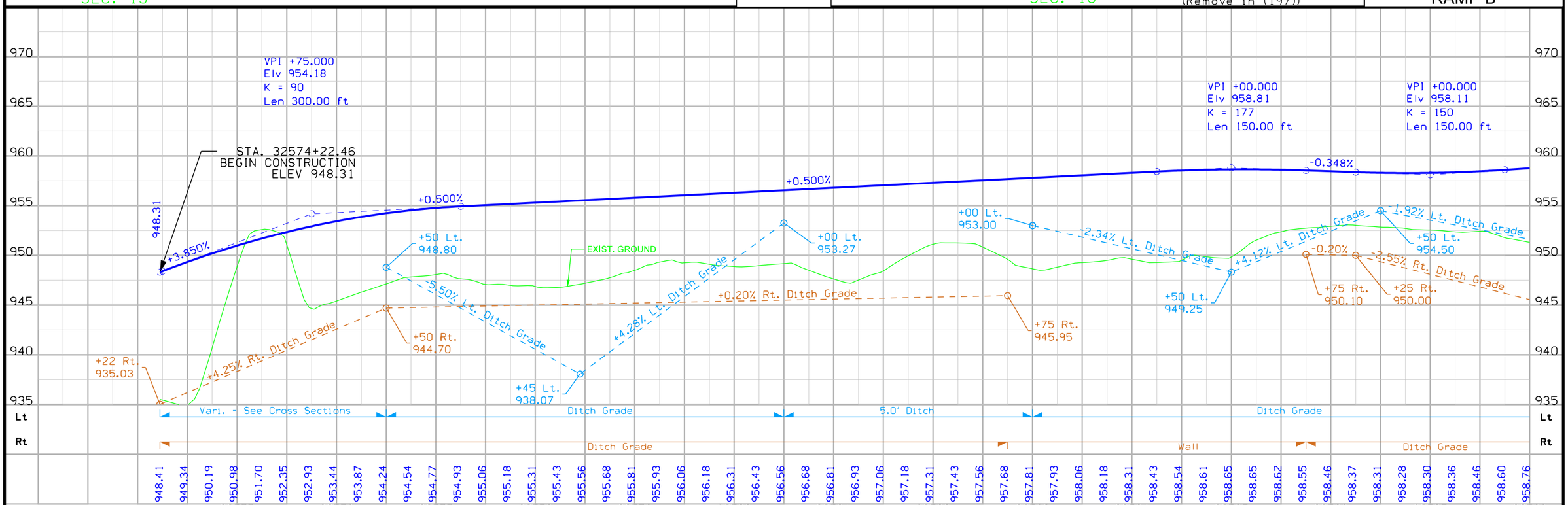




FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.2

12:08:15 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht





FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.3

12:08:22 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht

Sta. 32589+00.00
Install 30" x 124' DR-601
Skew = 0° Ahd.
F.L. = Lt. 949.70
Rt. 943.00

DELAWARE TWP.
T-79-N R-23W
SEC. 18

FUTURE WB I-80 to SB I-235

UPRR

PI Sta 32590+41.99

32590

EB I-80 to SB I-235 RAMP B (235B)

32595

PT Sta 32595+34.44

NORTHBOUND I-235

SOUTHBOUND I-235

FUTURE NB I-235

FUTURE SB I-235

NE BROADWAY AVENUE

Open Storage

Curve Data
Δ = 31° 51' 07.08" (RT)
T = 519.33
L = 1,011.78
R = 1,820.00
E = 72.65
e = 4.6%
L = 166
x = 72
DS = 50mph

Sta. 32593+05.82 (RAMP B) =
Sta. 38569+57.72, 38.90' LT (RAMP G)
End Construction

0 50
FEET

DELAWARE TWP.
T-79-N R-23W
SEC. 18

EASTBOUND I-80
to SOUTHBOUND I-235
RAMP B

VPI +00.000
Elv 961.37
K = 277
Len 200.00 ft

961.30

+0.652%

-0.070%

STA. 32593+05.82
END CONSTRUCTION
ELEV 961.30

+00 Lt.
949.70

-1.92% Lt.
Ditch Grade

EXIST. GROUND

-2.55% Rt.
Ditch Grade

-1.00% Rt. Ditch Grade

+00 Rt.
943.00

+50 Rt.
941.50

970
965
960
955
950
945
940
935

Lt
Rt

Ditch Grade
Bridge

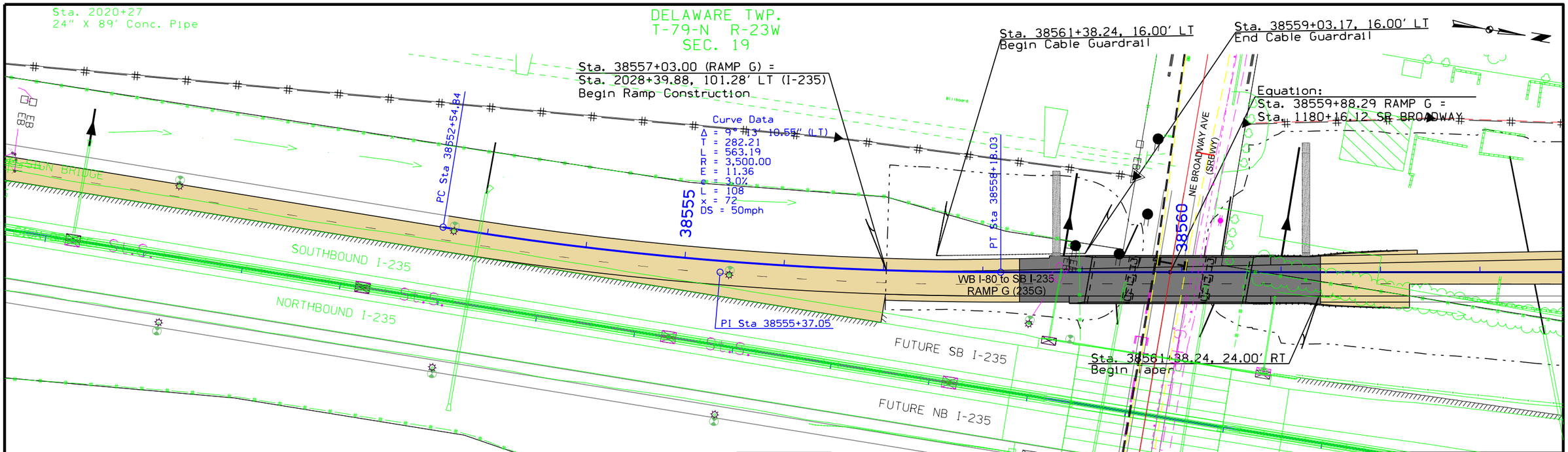
Ditch Grade
Ditch Grade
Bridge

958.93 959.09 959.25 959.42 959.58 959.74 959.91 960.07 960.23 960.40 960.56 960.72 960.87 961.00 961.11 961.19 961.25 961.29 961.31 961.30

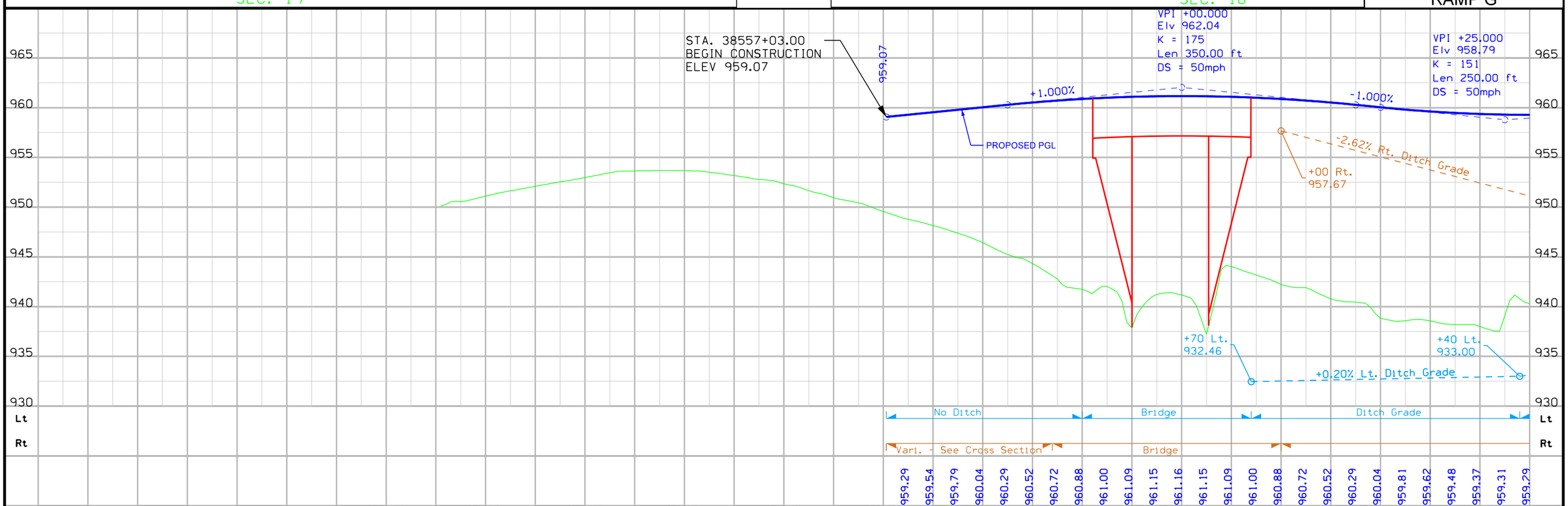
32588 32589 32590 32591 32592

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.4

12:08:28 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



WESTBOUND I-80
to SOUTHBOUND I-235
RAMP G



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.5

12:08:34 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht

Sta. 2035+56
36" X 294'
Conc Pipe
D.A. = 16 Ac - R

Extend Existing 36" RCP
w/36" x 174' DR-626

Sta. 38566+00.00
Install 24" x 190' DR-601
Skew = 0° Ahd.
F.L. = Lt. 936.93
Rt. 944.58

DELAWARE TWP.
T-79-N R-23W
SEC. 18

Open Storage

UPRR

SIGN

Gate

EB I-80 to SB I-235 RAMP B (235B)

Note: For Gore Detail,
Refer to sheet U.5

38565

38570

38575

WB I-80 to SB I-235
RAMP G (235G)

FUTURE WB I-80 to SB I-235

PC Sta 38576+34.09

Sta. 38567+50.04 (Ramp G)

Sta. 38569+60.04 (Ramp G) =
Sta. 32593+09.10, 38.82' LT (Ramp B)
End Ramp G Construction

SOUTHBOUND I-235

St.S. St.S. St.S.

NORTHBOUND I-235

SIGN BRIDGE

SIGN

FUTURE SB I-235

FUTURE NB I-235

St.S. St.S. St.S.

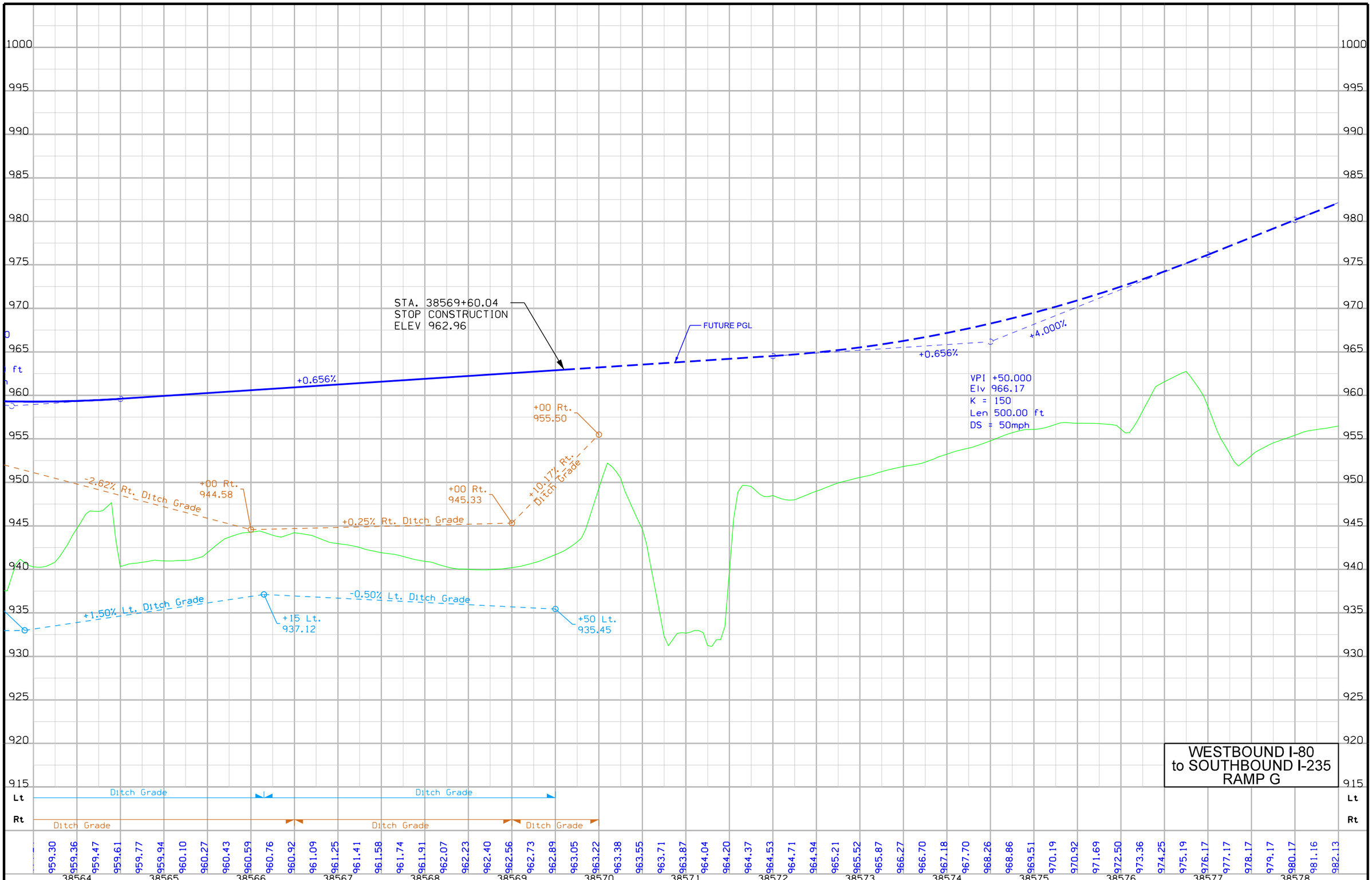
0 FEET 50

DELAWARE TWP.
T-79-N R-23W
SEC. 18

WESTBOUND I-80
to SOUTHBOUND I-235
RAMP G

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.6

12:08:41 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



WESTBOUND I-80
to SOUTHBOUND I-235
RAMP G

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.7

12:08:46 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht

DELAWARE TWP.
T-79-N R-23W
SEC. 18

Sta. 38613+57.50
Install 73" x 45" x 284' RCP DR-601
Skew = 47° Rt. Ahd.
F.L. = Lt. 922.50
Rt. 922.24

38619+50 Prop. Type "M" Dike
Elev. =927.00

Note: For Gore Detail,
Refer to sheet U.4

WB I-80 to NB I-35
RAMP A (235A)

38610

38615

38620

WB I-80 to SB I-235
RAMP G (235G)

FUTURE WB I-80 to SB I-235

PT Sta 38608+39.16

Sta. 38611+66.22 (Ramp G) =
Sta. 38511+66.22, 51.93' RT (Ramp A)
Begin Ramp G Construction

Sta. 38615+86.22
Begin Widening

Note: For Special Ditch,
Refer to sheet E.5

0 50
FEET

DELAWARE TWP.
T-79-N R-23W
SEC. 18

WESTBOUND I-80
to SOUTHBOUND I-235
RAMP G

FUTURE PGL

STA. 38611+66.22
RESUME CONSTRUCTION
ELEV 941.11

EXIST. GROUND

VPI +75.000
Elv 927.17
K = 267
Len 1200.00 ft
DS = 50mph

4.000%

+0.500%

+66 Rt.
930.41

-3.00% Rt. Ditch Grade

-4.00% Lt.
Ditch Grade

+66 Lt.
924.65

+20 Lt.
922.50

+0.20% Lt. Ditch Grade

+40 Rt.
922.20

+0.60% Rt. Ditch Grade

+75 Lt.
923.41

+15 Rt.
924.45

+50 Lt.
924.12

-0.50% Lt. Ditch Grade

950 945 940 935 930 925 920 915

Lt: Ditch Grade | Vari. - See Cross Sections | Ditch Grade

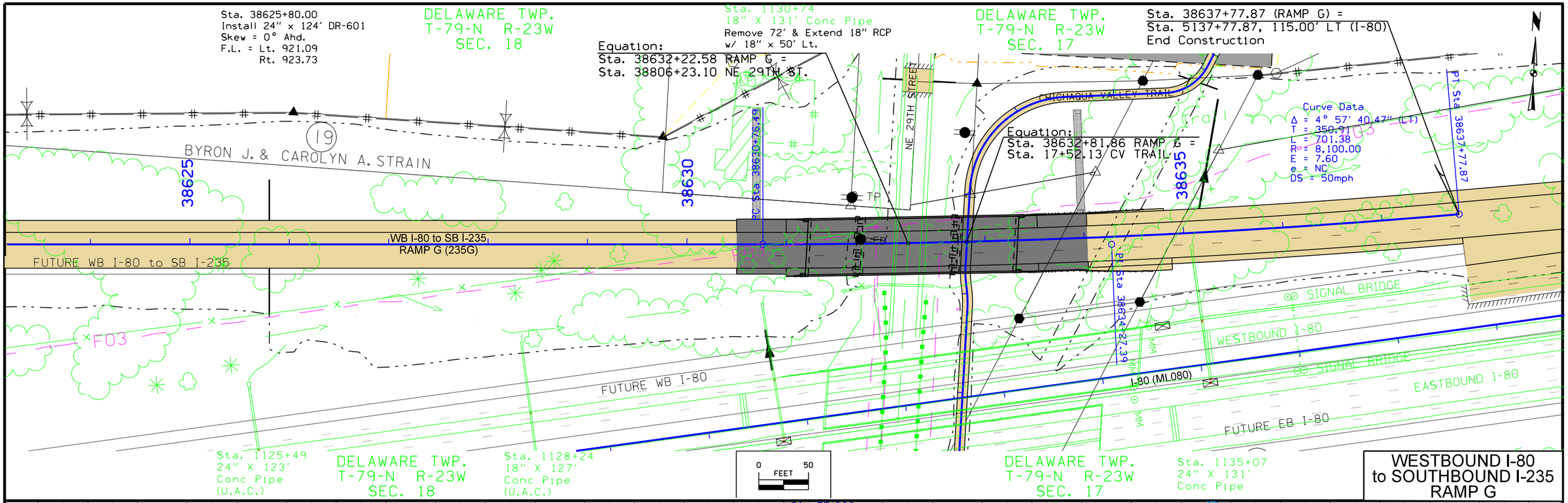
Rt: Ditch Grade | No Ditch | See Westbound I-80 Left Ditch

951.17 950.18 949.22 948.28 947.36 946.46 945.59 944.74 943.92 943.12 942.34 941.59 940.86 940.15 939.47 938.81 938.17 937.56 936.97 936.40 935.86 935.34 934.84 934.37 933.92 933.49 933.09 932.71 932.36 932.03 931.72 931.43 931.17 930.93 930.72 930.53 930.36 930.21 930.09 929.99 929.92 929.87 929.84 929.84 929.86 929.90 929.97 930.06 930.17 930.29 930.42 930.54 930.67 930.79 930.92 931.04 931.17 931.29 931.42 931.54

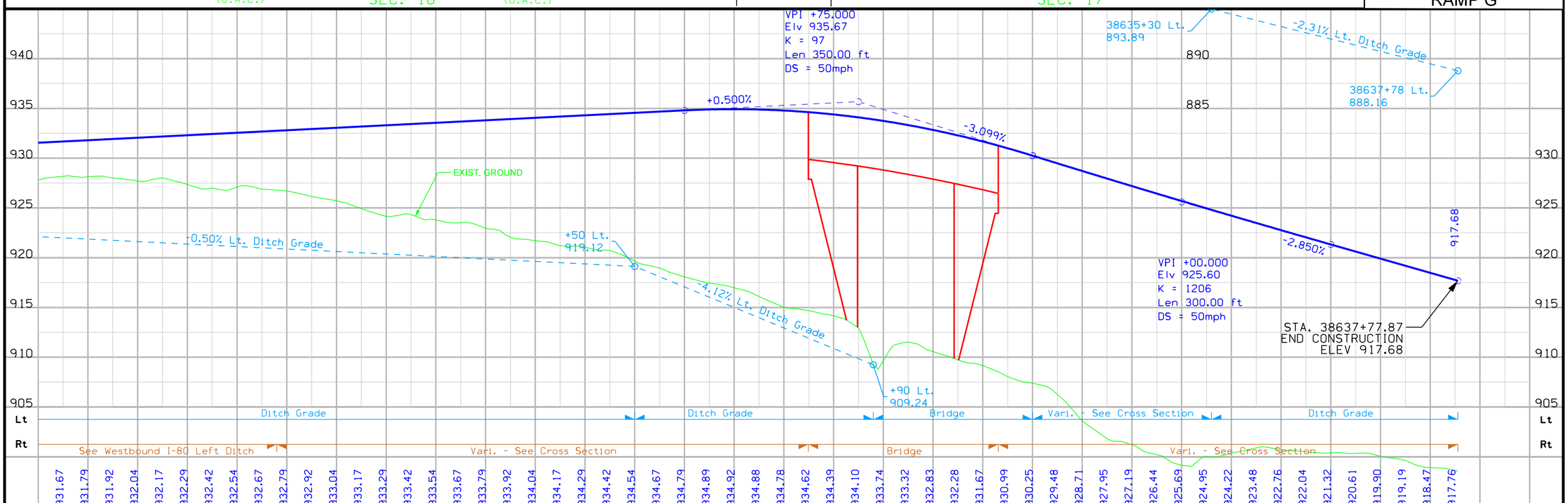
38609 38610 38611 38612 38613 38614 38615 38616 38617 38618 38619 38620 38621 38622 38623

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.8

12:08:52 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht

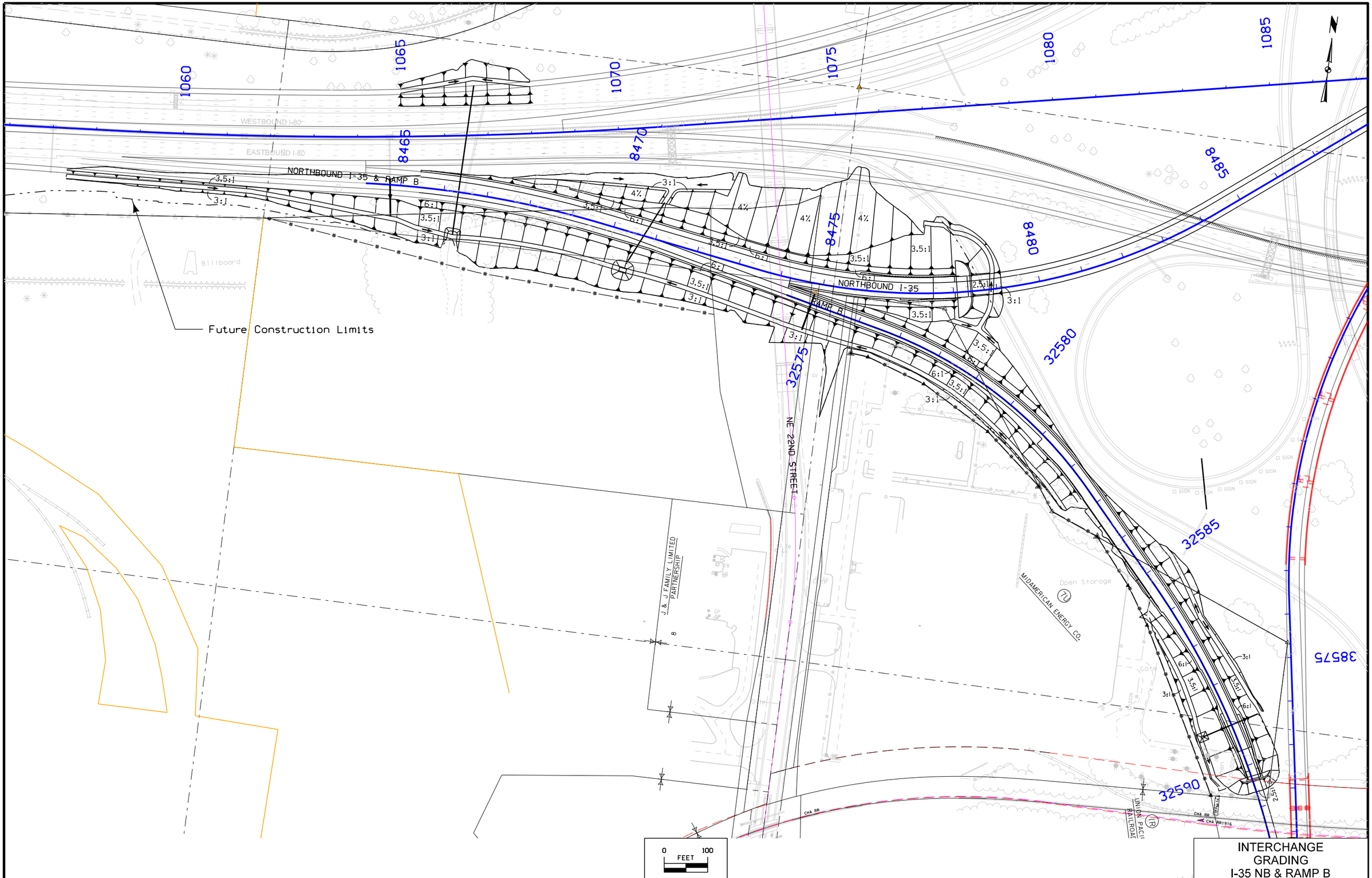


WESTBOUND I-80 to SOUTHBOUND I-235 RAMP G



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.9

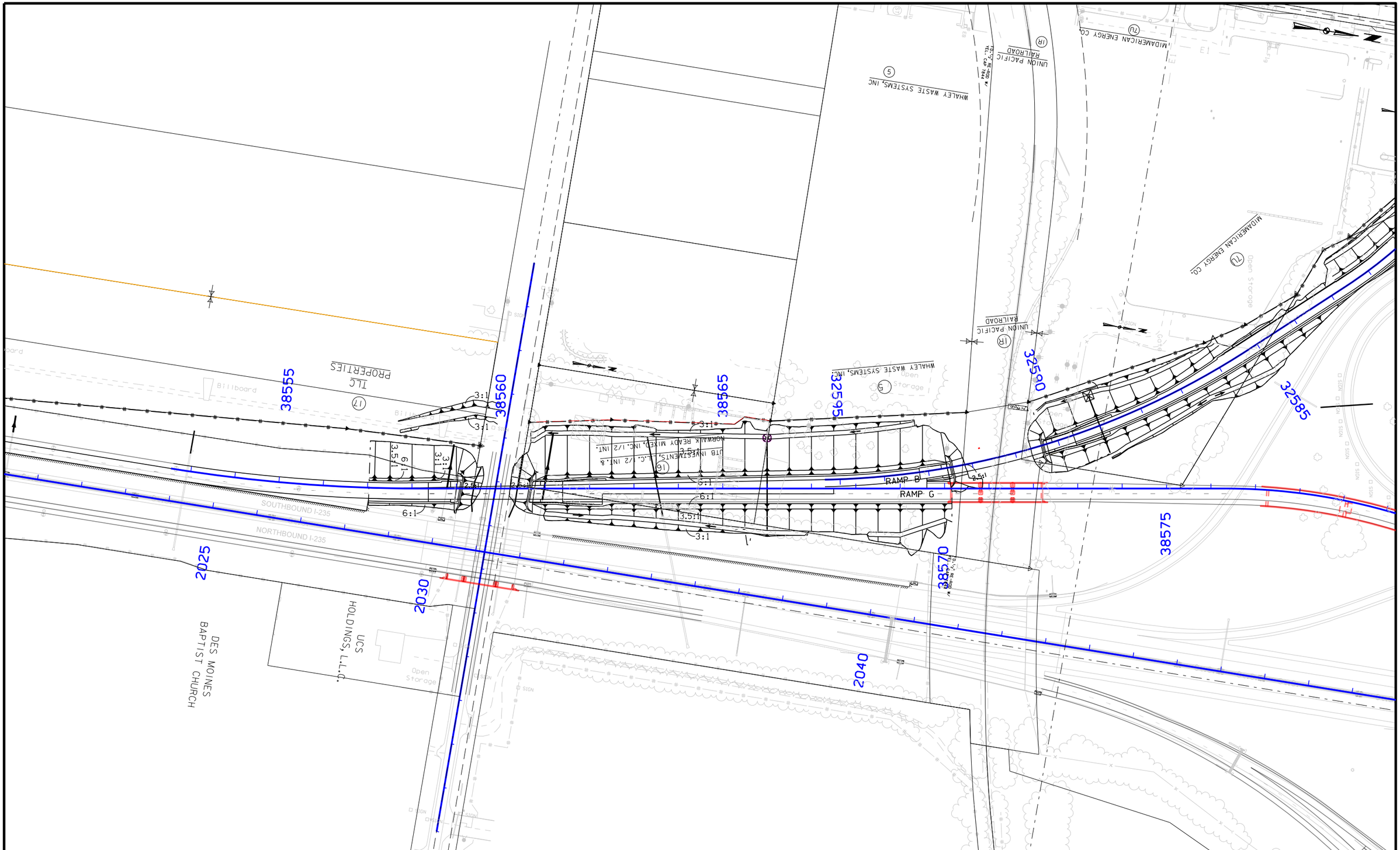
12:08:57 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



INTERCHANGE
GRADING
I-35 NB & RAMP B

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.10

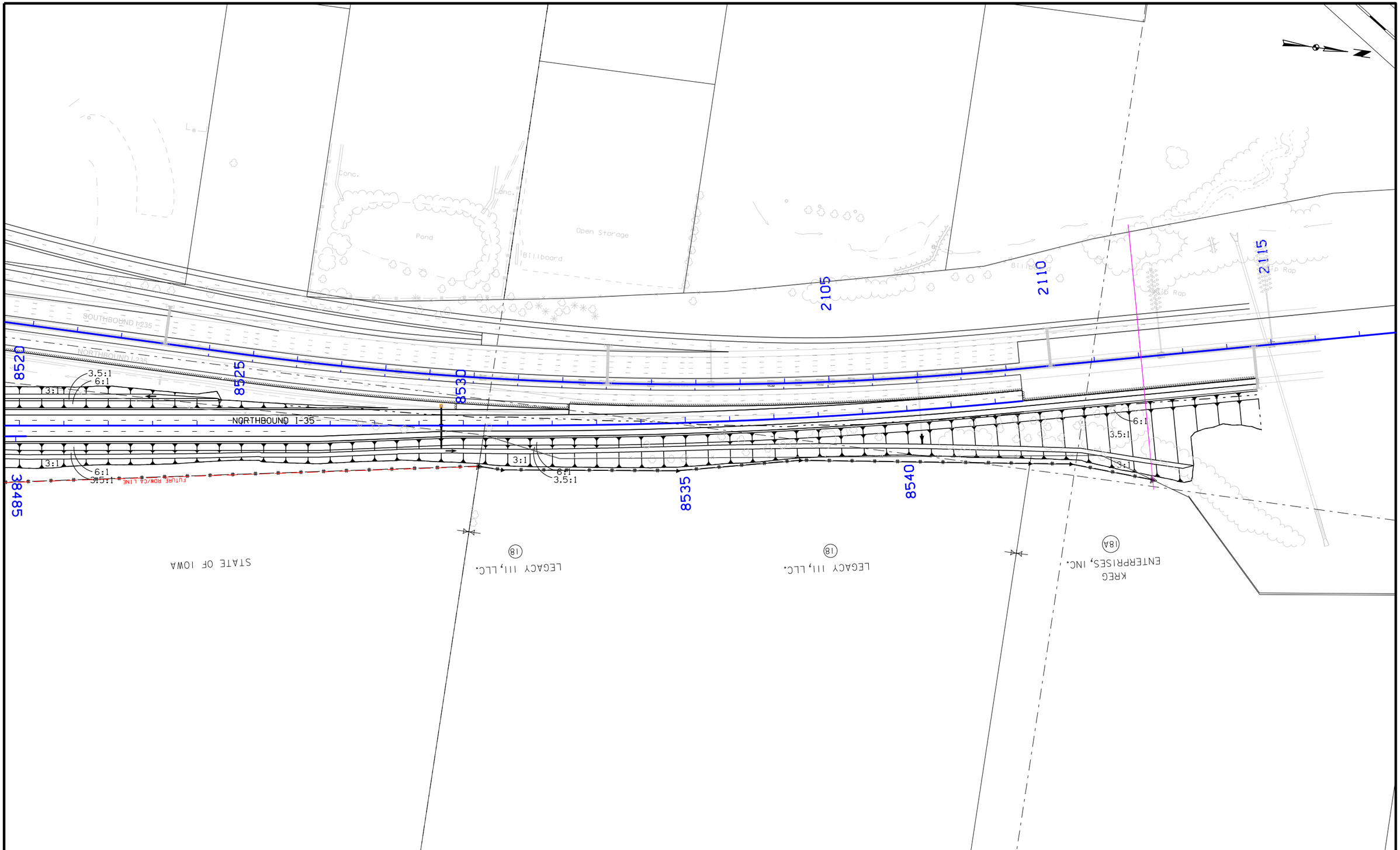
12:09:03 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



INTERCHANGE
GRADING
RAMP B & G

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.11

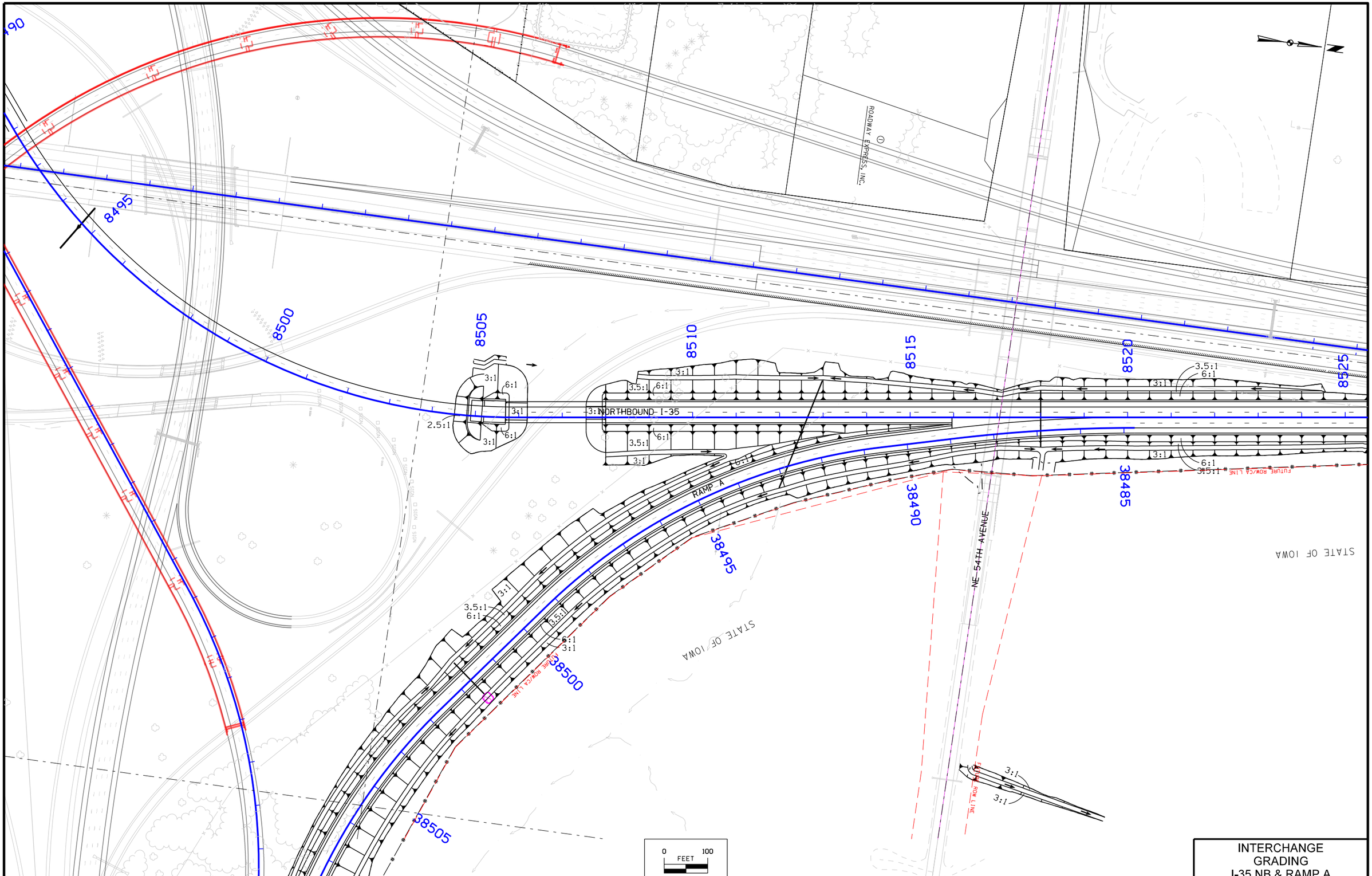
12:09:10 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



INTERCHANGE GRADING I-35 NB

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.12

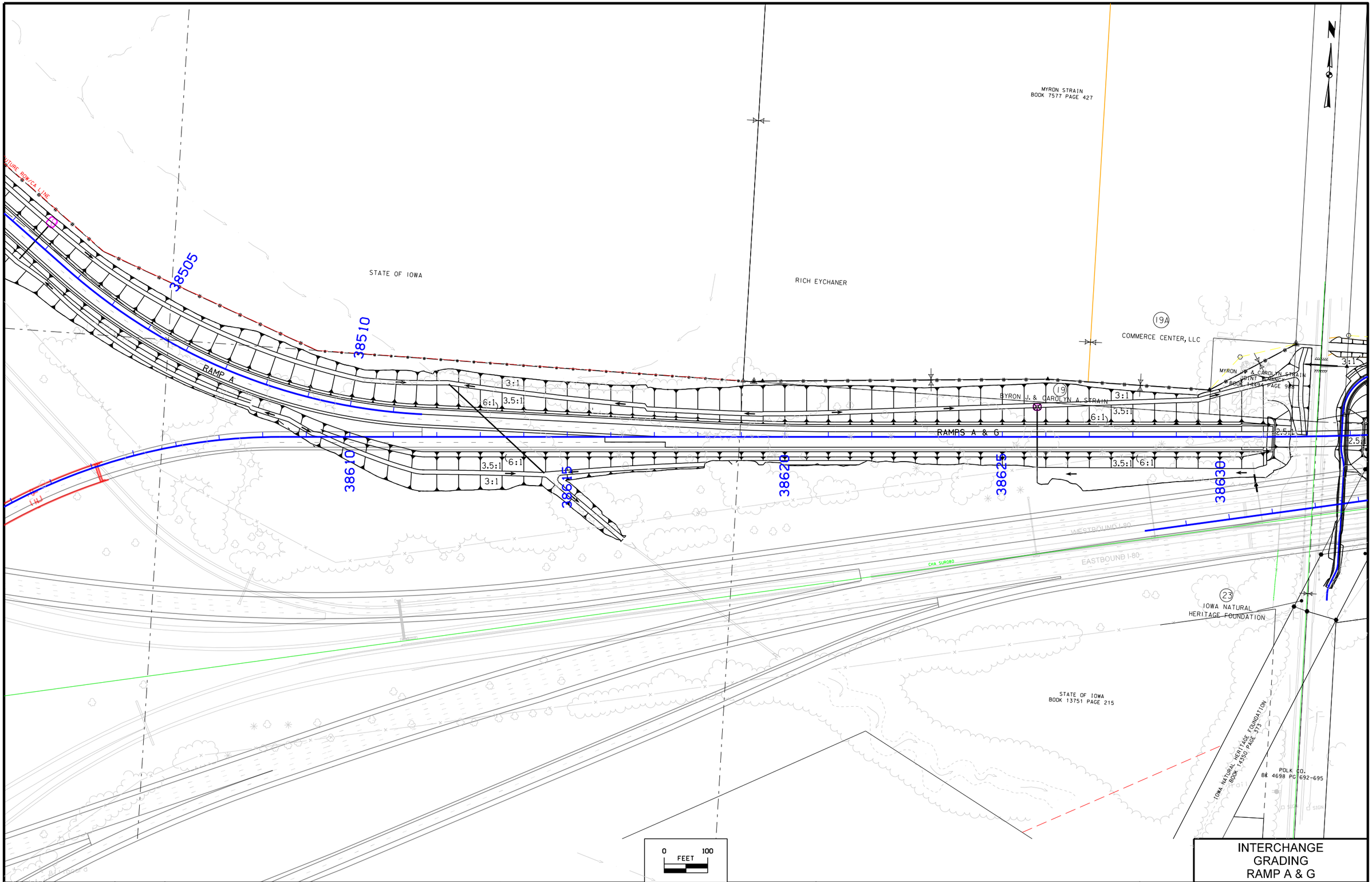
12:09:16 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



INTERCHANGE
GRADING
I-35 NB & RAMP A

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.13

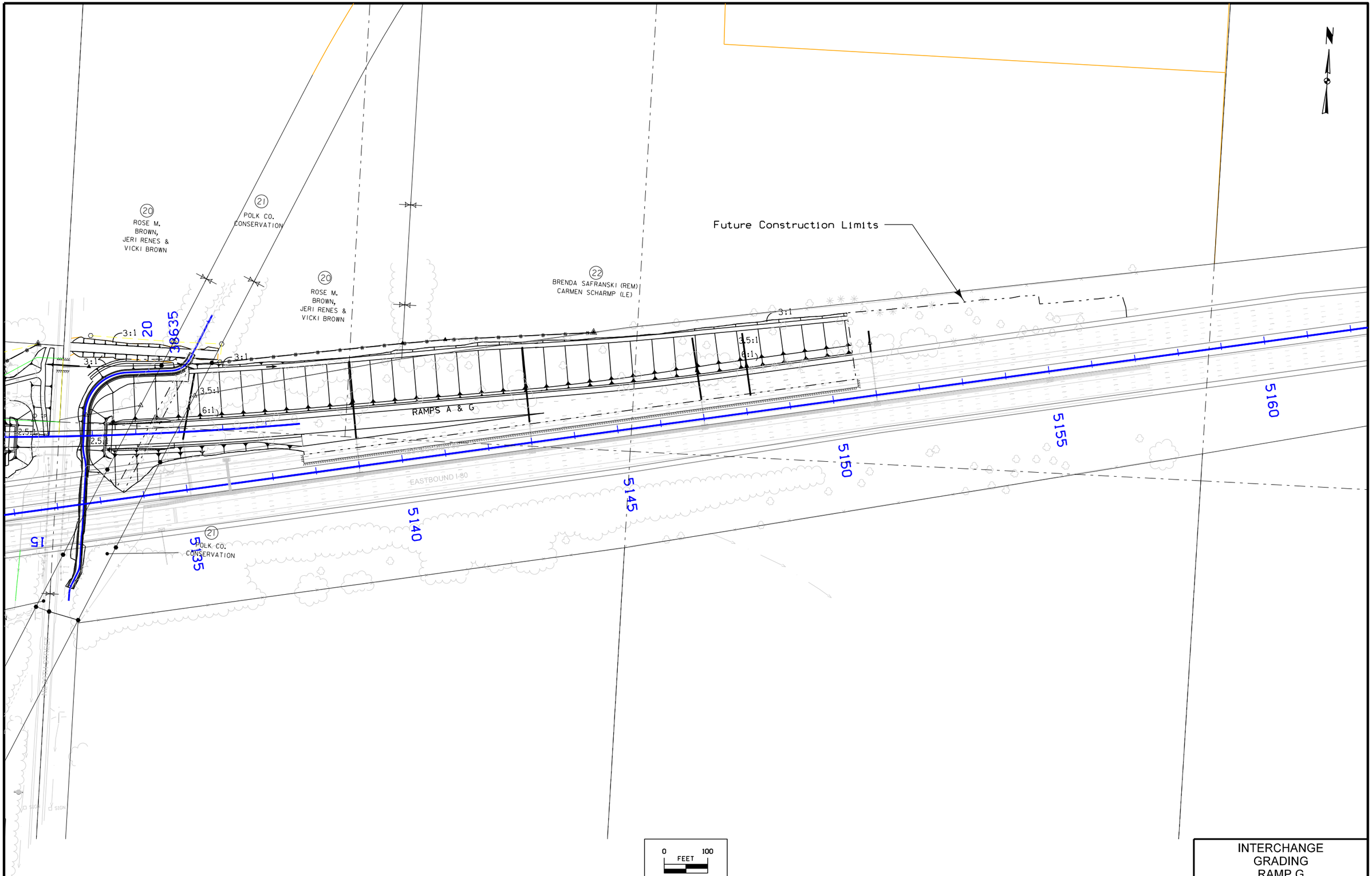
12:09:22 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



INTERCHANGE
GRADING
RAMP A & G

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.14

12:09:28 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht



INTERCHANGE GRADING RAMP G

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER K.15

1:56:24 PM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194K01.sht

STORM SEWER

(1) Diameter or equivalent diameter
* Bid Item
** For SW-545

INTAKES AND UTILITY ACCESSES

No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Extension Length** FT	Notes
	Existing Structures (For Information Only)					
26	5135+06.95, 18.984 Rt.	RA-47	926.63	922.34		UAC
30	5139+00.00, 18.50 Rt	SW-547	915.25	911.18		UAC
30A	5139+00.39, 43.71 Lt	DR-122	908.78			Elbow
32	5142+99.50, 18.71 Rt	SW-547	903.13	899.04		UAC
32A	5143+01.00, 43.7 Lt	DR-122	896.64			Elbow
34	5147+00.00, 18.60 Rt	SW-547	891.33	887.16		UAC
34A	5146+99.21, 44.15 Lt.	DR-122	884.76			Elbow
36	5151+00.00, 19.00 ft	SW-547	879.13	875.22		UAC
36A	5151+00.24, 43.85 Lt.	DR-122	872.81			Elbow
	Proposed Structures					
27	5135+25.00, 0.0 Lt	SW-547	926.8	920.8		Future Stg 5
27A	5135+25.14, 94.50 Lt	SW-562	924.5	917.31		
27B	5135+38.24, 158.59 Lt	DR-122	918			Elbow
27C	5135+53.14, 235.68 Lt	DR 122	894			Elbow
29A	5137+29.29, 83.00 Lt	SW-562				
29B	5137+24.18, 140.00 Lt	DR-122	914			Elbow
29C	5134+24.18, 220.00 Lt	DR-122	889.69			Elbow
30AA	5139+00.14, 25.0 Lt	SW-511	915.8	909.5		Temp. Inlet
30B	5139+03.48, 130.63 Lt	DR 122	886.27			Elbow
32AA	5143+01.50, 25.0 Lt	DR-122	903.71	897.4		Elbow
32B	5143+03.82, 134.63 Lt	DR 122	876.35			Elbow
34AA	5146+99.32, 25.17 Lt.	SW511	891.78	885.49		Temp. Inlet
34B	5146+98.81, 116.91 Lt	DR-122	868.93			Elbow
36B	5151+00.67, 100.04 LT	DR-122	860.78			Elbow

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

Line Number	Intake/ Utility Access No. From	To	Class 'D'	(1) Pipe Size IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
Existing Pipes (For Information Only)													
P-26A	e26	26A	2000	24		64.0	3.67		922.63	920.23		M.8	
P-26B	26A	26B	2000	24		72.0	27.28		920.23	900.7		M.8	
P-30A	e30	30AA	2000	18		58.7	4.09		911.18	908.78		M.9	
P-30AA	30AA	30A	2000	18		17.7	4.09		909.5	908.78		M.9	
P-30B	30A	30B	2000	18		87.0	25.88		908.78	886.27		M.9	
P-32A	e32	32A	2000	18		39.2	4.07		899.04	897.44		M.10	
P-32AA	32A	32AA	2000	18		18.7	4.07		897.4	896.64		M.10	
P-32B	32AA	32B	2000	18		91.0	22.3		896.64	876.35		M.10	
P-34A	34	34AA	2000	18		39.3	4.05		887.16	885.57		M.10	
P-34AA	34AA	34A	2000	18		18.0	4.05		885.49	884.76		M.10	
P-34B	34A	34B	2000	18		72.8	21.75		884.76	868.93		M.10	
P36A	36	36AA	2000	18		42.8	4.06		875.22	873.48		M.13	
P36AA	36AA	36A	2000	18		15.6	4.06		873.44	871.81		M.13	
P36B	36A	36B	2000	18		56.2	21.41		872.81	860.78		M.13	
Proposed Pipes													
P-26C	26B	26C	2000	24	128	124.0	5.33		900.7	894.06		M.8	
P-26D	26c	26Apr	2000	24	22	20.0			894.06	894.06		M.8	
P-27a	27	27A	2000	24	20	16.0	31		918.91	918.5		M.8	Stub out and cap
P-27B	27B	27C	2000	24	68	64.0	0.4		918.5	917.55		M.8	
P-27C	27C	27D	2000	24	83	78.5	30		917.55	894		M.8	
P-26D	27D	27Apr	2000	24	22	20.0	0.4		894	893.92		M.8	
P-29B	29A	29B	2000	24	60	56.0	3.21		915.75	914		M.9	
P-29C	29B	29C	2000	24	84	80.0	30		914	889.69		M.9	
P-29D	29C	29Apr	2000	24	26	24.0			889.69	889.69		M.9	
P-30C	30B	30C	2000	18	106	104.0	1.59		886.27	884.63		M.9	
P-32C	30B	32Apr	2000	18	80	77.3	3.3		876.35	873.8		M.10	
P-34C	30C	34Apr	2000	18	74	71.2	3.39		868.93	866.52		M.10	
P36C	36B	36Apr	2000	18		72.5	20.8		860.78	859.27		M.13	NEMM Stg. 5

SURVEY SYMBOLS

- PPA Power Pole Co. 1
- PRA Power Riser Co. 1
- UB Utility Box
- TSG Traffic Signal
- TSL Traffic Signal and Luminare
- TCB Traffic Signal Box
- LUM Luminaire
- TPD Telephone Pedestal
- MH Utility Access (Manhole)
- IN Storm Sewer Intake
- INB Storm Sewer Beehive Intake
- WV Water Valve
- FHYD Fire Hydrant
- SI Sign
- SL Speed Limit Sign
- BB Billboard
- MM Mile Marker Post
- ROW Right of Way Rail
- TEV Evergeen Tree
- SHR Shrub
- TDC Tree Deciduous
- SWAMP
- FLG Flagpole
- BCL Bridge Centerline
- BD Bridge Deck
- BLS Bridge Low Steel
- UE Utility Elevation
- PRO Profile Shot
- BRG Bridge
- PLG Location of General Photo
- PIP Pipe Culvert
- SOP Size of Pipe or Culvert
- DU Centerline Draw or Stream (Up)
- D Centerline Draw or Stream (Down)
- DIK Centerline of Dike or Dam
- GDL Guard Rail Steel
- GPR Guard Post (4 or More Posts)
- GDC Guard Rail Cable
- RIP Rip-Rap
- TLN Tree Line
- TIL Tile Line
- FCL Chain Link and Security Fence
- FW Wire Fence
- RET Retaining Walls

- EP Edge of Paved Roads (ML or SR)
- SNP Unpaved Shoulder
- CU Back of Curb
- GU Gutter In Front of Curb
- ENT Centerline BL of Entrance
- ENP Edge Paved Entrance & Park Lot
- ENU Edge Unpaved Entrance & Parking
- SWK Sidewalk
- CON Concrete or A/C Slab
- E1 ELA Underground Electric Line Co. 1
- E2 ELA Underground Electric Line Co. 2
- ELA Underground Electric Line Co. 3
- T1 ELA Underground Telephone Line Co. 1
- FO FOA Underground Fiber Optic Co. 1
- FO2 FOB Underground Fiber Optic Co. 2
- FO3 FOB Underground Fiber Optic Co. 3
- FO4 FOB Underground Fiber Optic Co. 4
- G GLA Underground Gas Line Co. 1
- W WLA Underground Water Line Co. 1
- St.S. STA Storm Sewer Line Co. 1
- STA Storm Sewer Line Co. 2

UTILITY LEGEND

This is a POINT 25 Project and is subject to the provisions of IAC 761-115.25.

Mid American Energy - Power and Gas
Michael Younts
E1, G — 10510 Douglas Avenue
Urbandale, Iowa 50322
515-252-6565 - myounts@midamerican.com

Iowa D. O. T. - Lighting and Fiber Optic
E2 — Tony Taylor
800 Lincoln Way
FO3 — Ames, Iowa 50010
515-239-1902 - Tony.Taylor@dot.iowa.gov
Olsson Associates - Gregory T. Seib
601 P Street
Lincoln, Nebraska 68508
402-458-5037
gseib@olssonassociates.com

Polk County - Lighting and Traffic Signals
Kurt Bailey
5885 NE 14th Street
Des Moines, Iowa 50313
515-286-3705
Kurt.Bailey@polkcountyiowa.gov

Century Link - Telephone and Fiber Optics
Dustin Withers
T1 — 2103 East University Avenue
Des Moines, Iowa 50317
FO — 515-263-7202
Dustin.Withers@centurylink.com

Windstream - Fiber Optics
Jim Wiand
FO2 — 115 South 2nd Avenue West
Newton, Iowa 50208
641-787-2270
jim.wiand@windstream.com

Iowa Communications Network (ICN) - Fiber Optics
Larry Klawitter
FO3 — Grimes State Office Building
400 East 14th Street
Des Moines, Iowa 50319
515-229-2046
larry.klawitter@iowa.gov

Iowa Network Services (INS) - Fiber Optics
Jeff Klocko
FO4 — 7760 Office Plaza Drive South
West Des Moines, Iowa 50266
515-830-0445
Jeff@netins.com

Des Moines Water Works - Water
Matt Smith
W — 2201 George Flagg Parkway
Des Moines, Iowa 50321
515-283-8781
msmith@dmww.com

St.S. — IDOT or Private

Polk County - Storm Sewer
Kurt Bailey
5885 NE 14th Street
Des Moines, Iowa 50313
515-286-3705
Kurt.Bailey@polkcountyiowa.gov

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Topographic Features, Utilities, and Labels
Black	(17)	Proposed Storm Sewer Details, Alignment, Stationing, Tic Marks, and Alignment Annotation
SHADING	**Design Color No.**	
Gray, Light	(48)	Proposed Pavement Shading

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Gray, Dark	(112)	Existing Ground Line Profile and Existing Utilities Information
Black	(17)	Proposed Pipes and Intakes

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Plug and Abandon Existing Pipe or Structure
- Removal of Existing Pipe or Structure
- Previously Constructed Pipe or Structure
- Direction of Pipe Flow

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

- Existing Ground
- Proposed Ground
- Previously Constructed Pipe or Structure
- Proposed Pipe or Structure

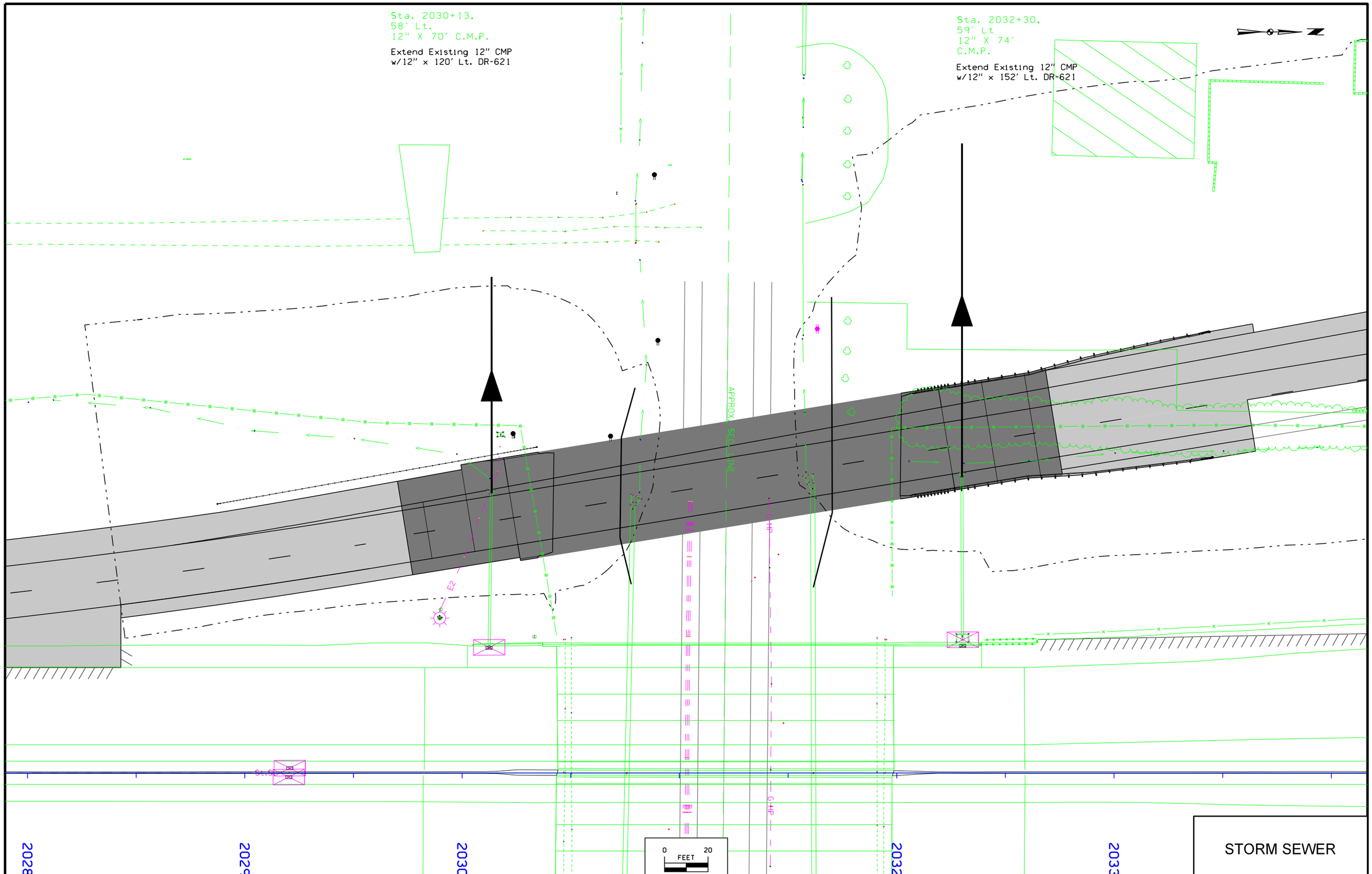
Reference Point
Station
- Survey Line
- Section Corner
- Ground Line Intercept
- Saw Cut
- Guardrail
- Clearing & Grubbing Area
- Pavement Removal

RIGHT-OF-WAY LEGEND

- Proposed Right-of-Way
- Existing and Proposed Right-of-Way
- Easement and Existing Right-of-Way
- Borrow
- Easement (Temporary)
- Easement
- Excess
- A/C Access Control

STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

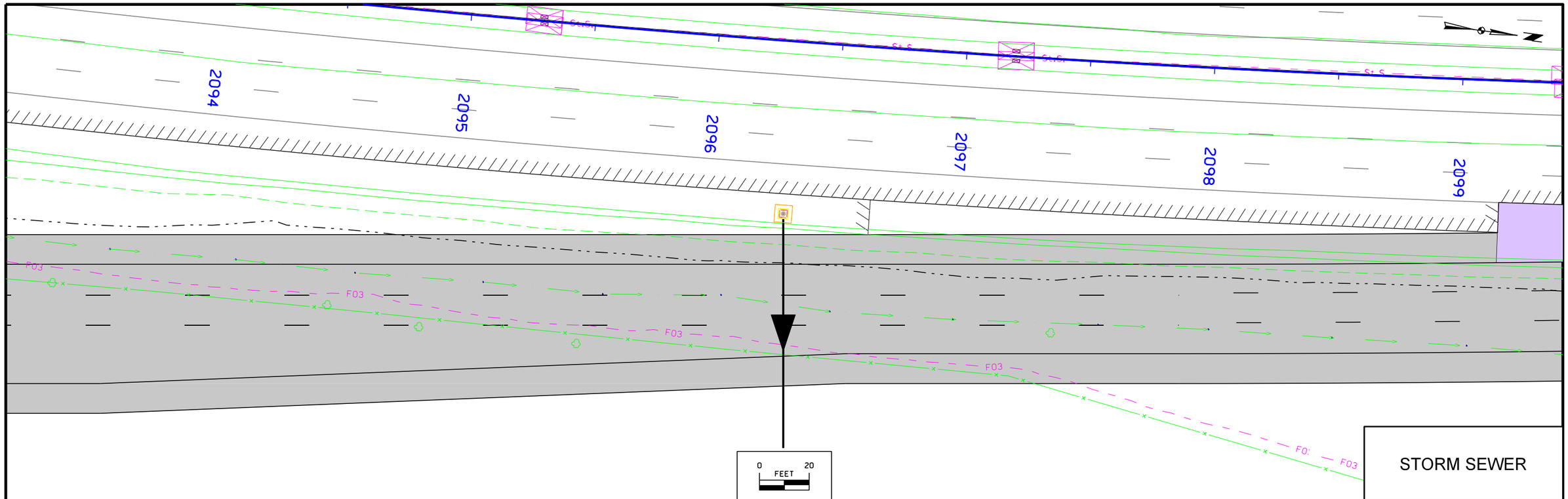
(COVERS SHEET SERIES M)



STORM SEWER

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER M.3

8:53:44 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194M03.sht



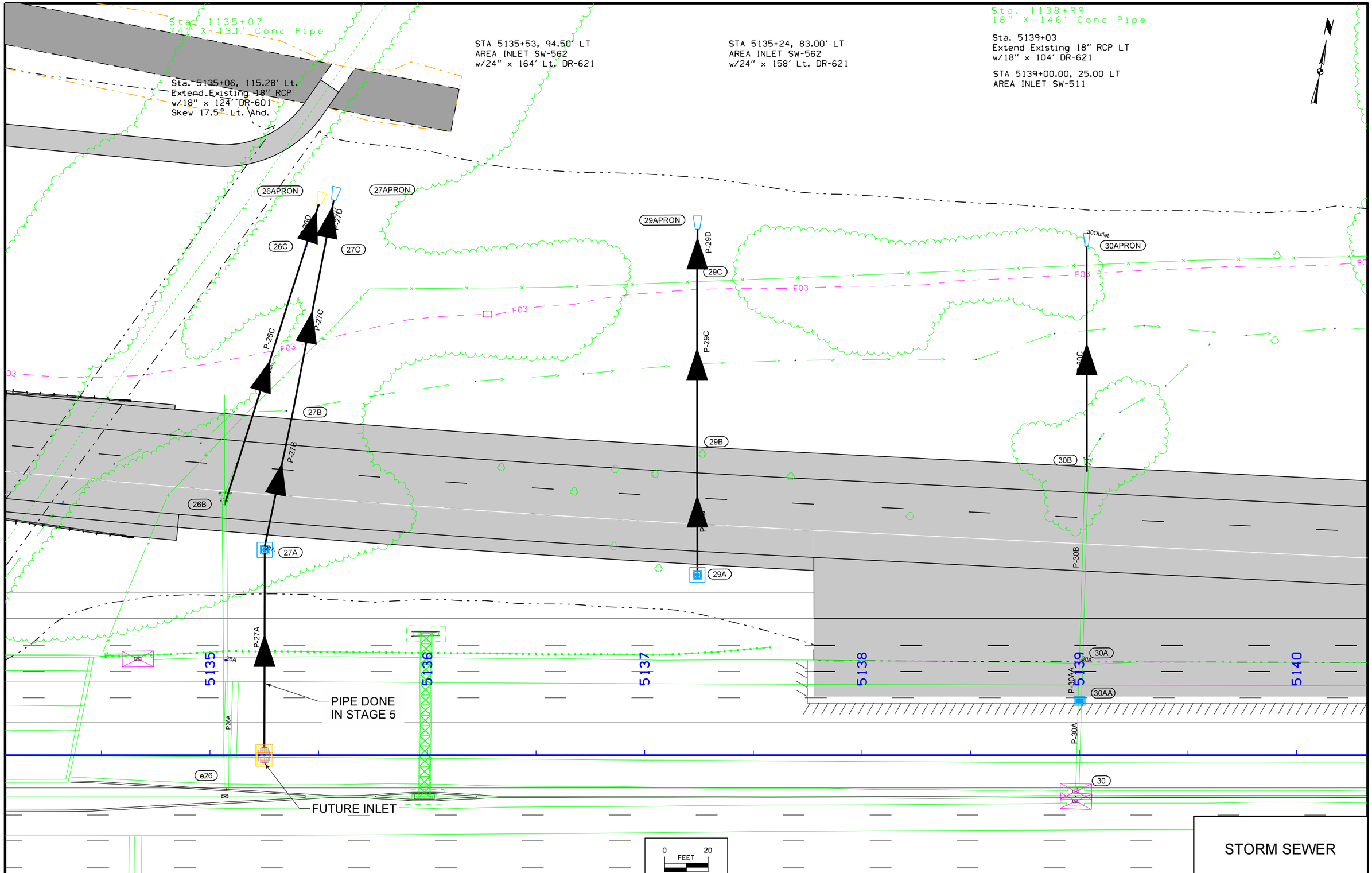
STORM SEWER

0000

0000

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER M.5

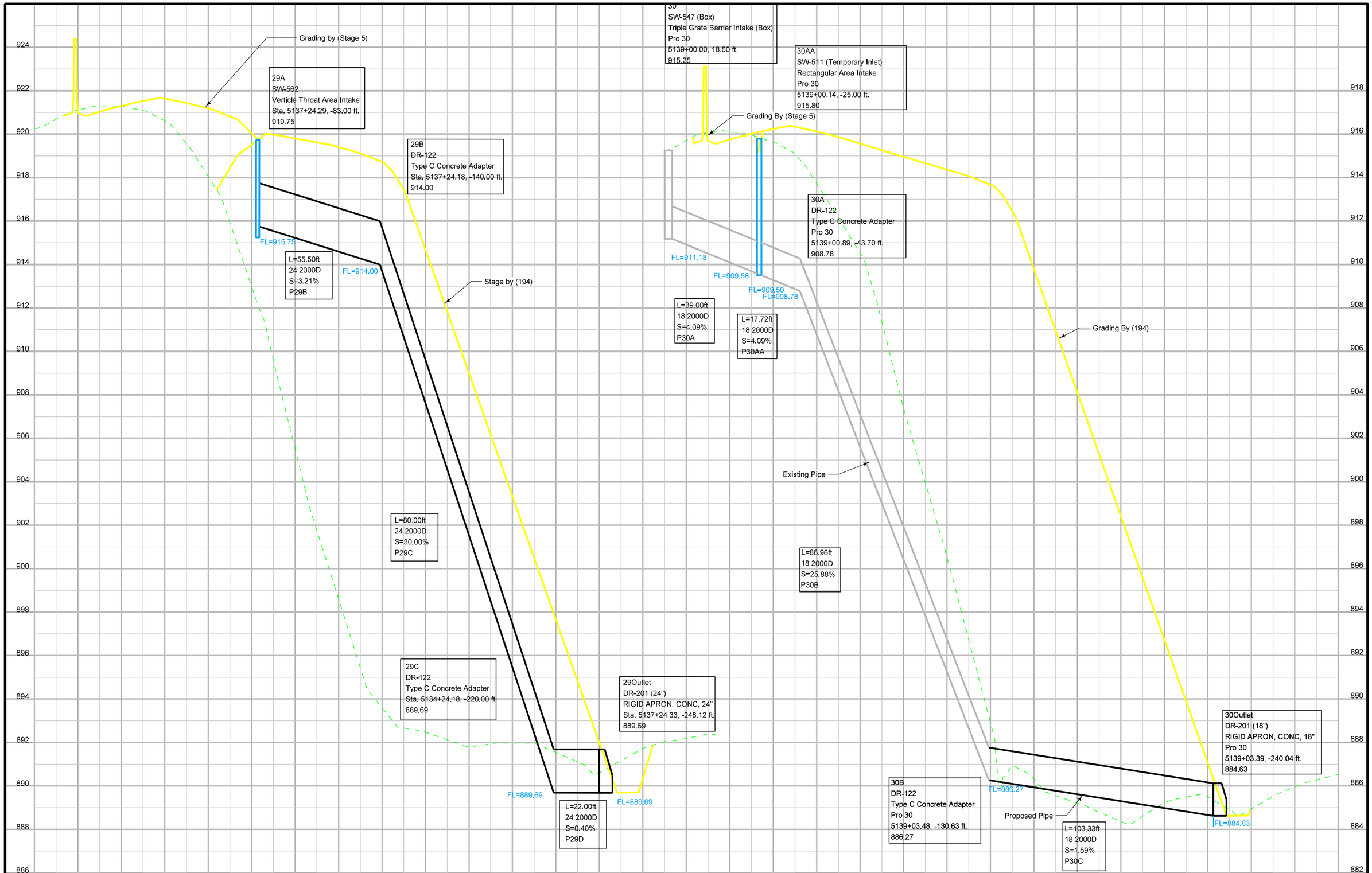
8:53:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194M03.sht



STORM SEWER

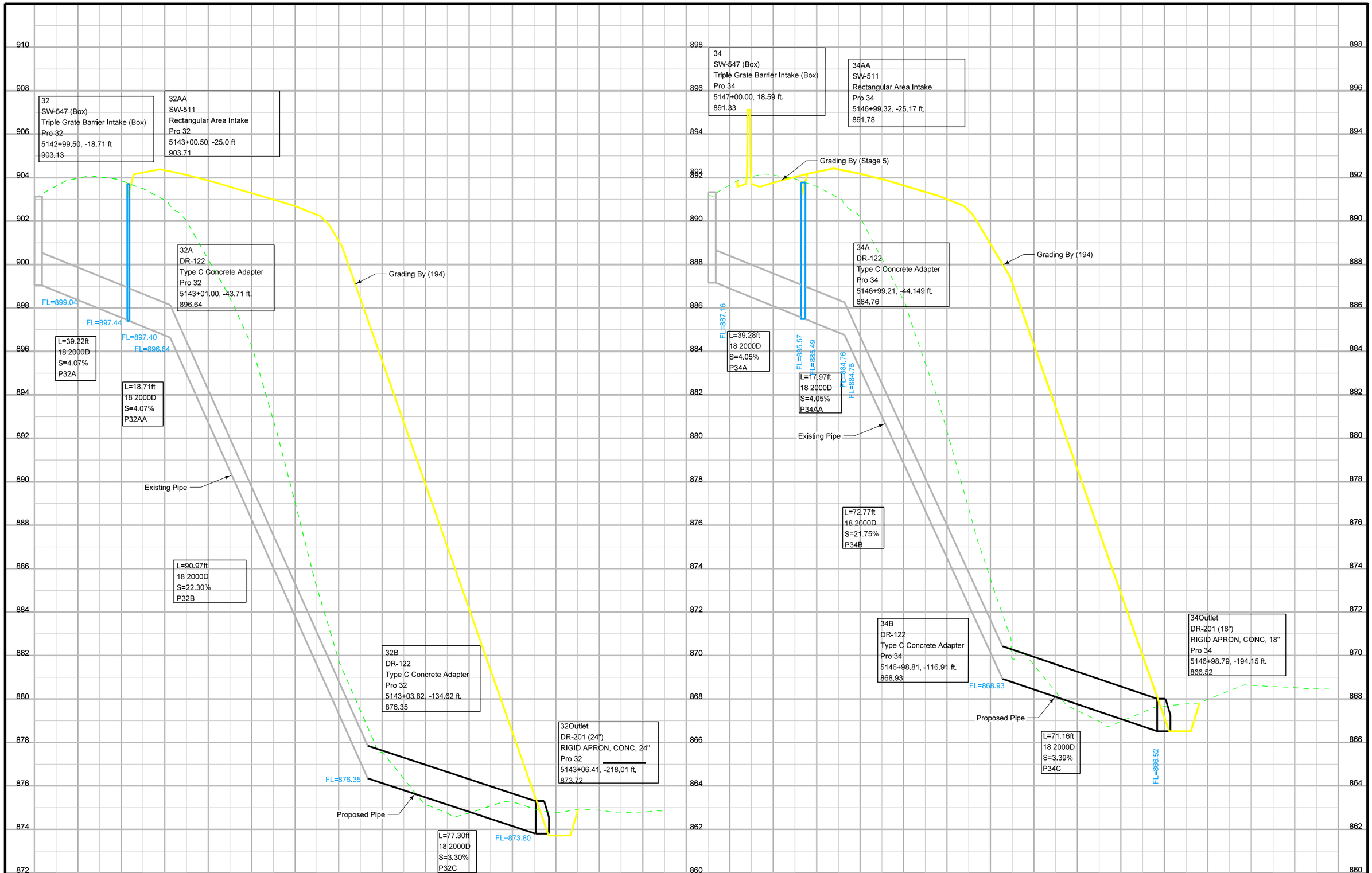
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER M.7

8:53:53 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194M03.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER M.9

8:53:57 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194M03.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER M.11

8:54:01 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194M03.sht

Sta. 1146+99
18" X 132'
Conc Pipe

Sta. 5146+99
Extend Existing 18" RCP
w/18" x 72' Lt. DR-621

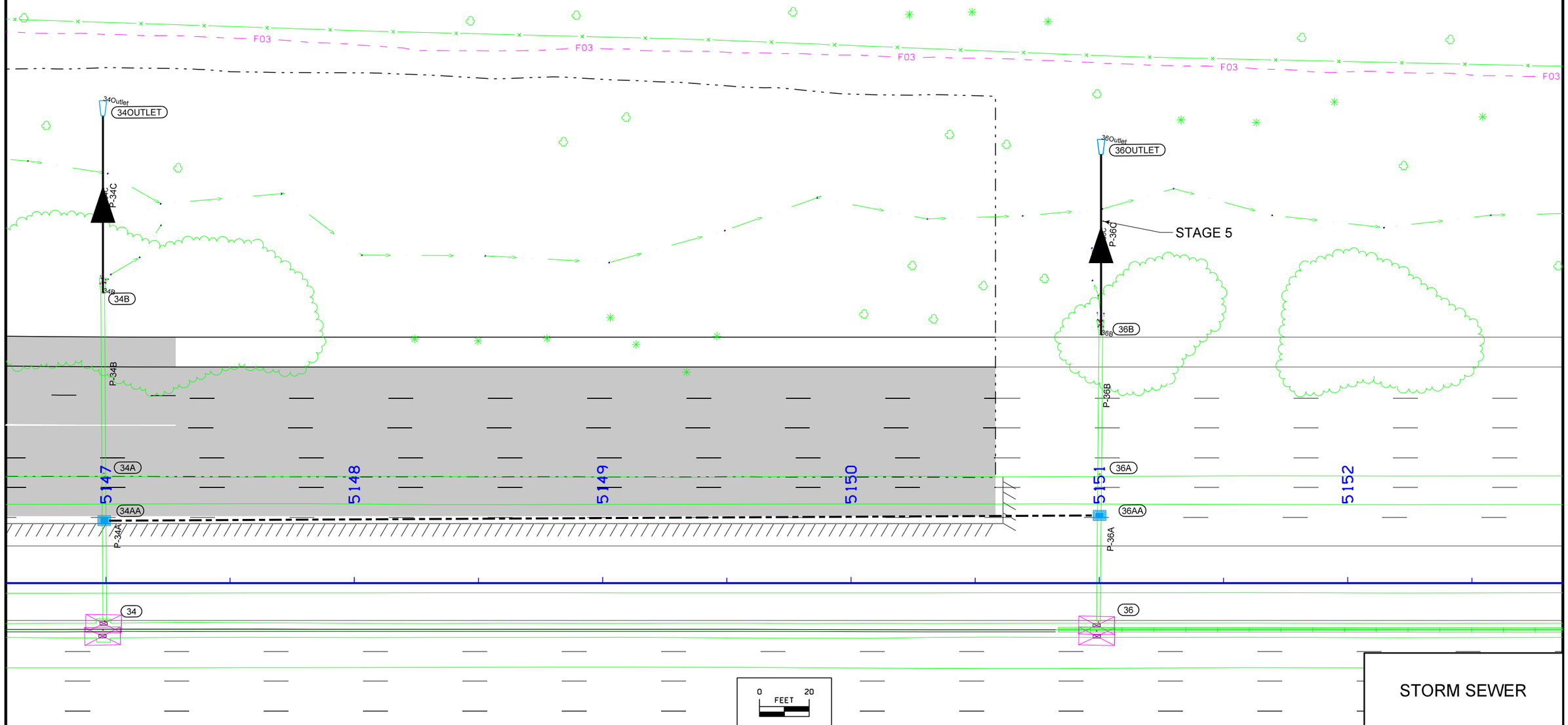
STA 5147+00.00, 25.00 LT
TEMPORARY INLET SW-511

STA 5147+00.00 TO 5151+00, 25.0 LT
TEMPORARY DR-502 SLOTTED DRAIN

Sta. 1150+99
18" X 116'
Conc Pipe

Sta. 5151+00
Extend Existing 24" RCP
w/24" x 48' Lt. DR-621

STA 5151+00.00, 25.00 LT
TEMPORARY INLET SW-511



STORM SEWER

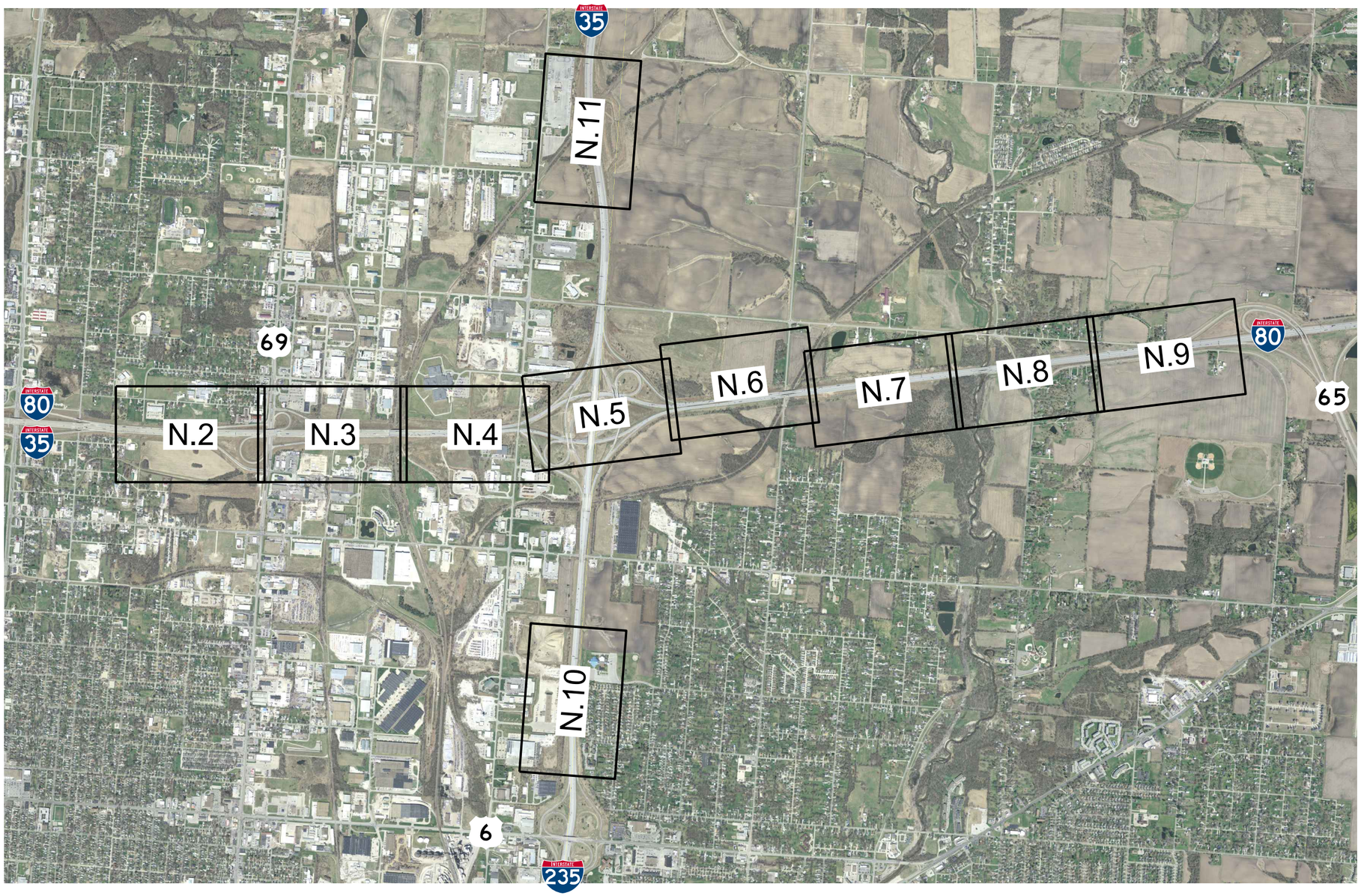
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER M.12

8:54:04 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194M03.sht

KEY MAP

LEGEND

- Existing Structure
- Proposed Structure
- Existing Sign (East 80 Davenport)
- Proposed Sign (East 80 Davenport)



NO SCALE

SHEET LAYOUT OVERVIEW

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.1

9:22:42 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

NOTE:

1. A structural analysis of the existing structure may be necessary to verify the existing structure can support the modified sign loads.

995

1000

1005

1010

1015

1020

80/35-77-X
M3000_STAGE_3

NORTH WEST
35 235
Minneapolis
Des Moines
1 MILE

REPLACE REMOVED SIGN

NORTH WEST
35 235
Des Moines
Minneapolis
1 ¼ MILES

REMOVE

69
E 14th St
Ankeny
EXIT ONLY

EXISTING TO REMAIN

EXISTING STRUCTURE TO REMAIN

SEE NOTE 1

NORTH
35
Minneapolis
1 ¼ MILES
EXIT ONLY

EAST
80
Davenport

WEST
235
Des Moines
1 MILE

REMOVE ALL EXISTING SIGNS

EXISTING STRUCTURE TO REMAIN

0 100
FEET

STAGE 3 SIGN LOCATION DETAILS ALONG I-80/I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.2

9:24:56 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

NOTES:

1. Structure to be located in ultimate location outside of future widening.

2. Structure to be located outside of future widening.

3. Structure lengths shown are approximate and are rounded to the nearest 5 feet.

STAGE 3 SIGN LOCATION DETAILS ALONG I-80/I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.3

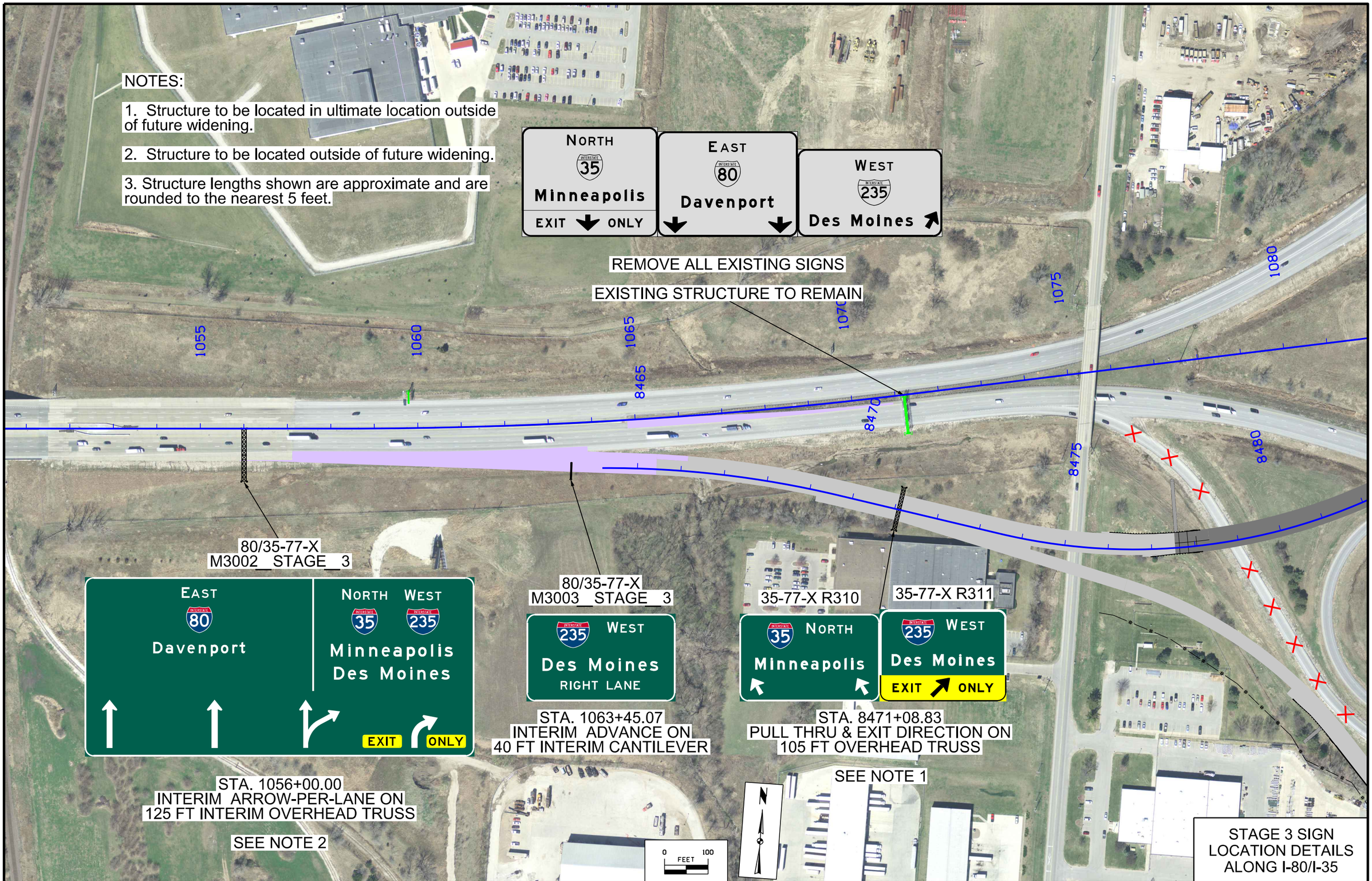
9:26:03 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

NOTES:

1. Structure to be located in ultimate location outside of future widening.

2. Structure to be located outside of future widening.

3. Structure lengths shown are approximate and are rounded to the nearest 5 feet.



STAGE 3 SIGN LOCATION DETAILS ALONG I-80/I-35

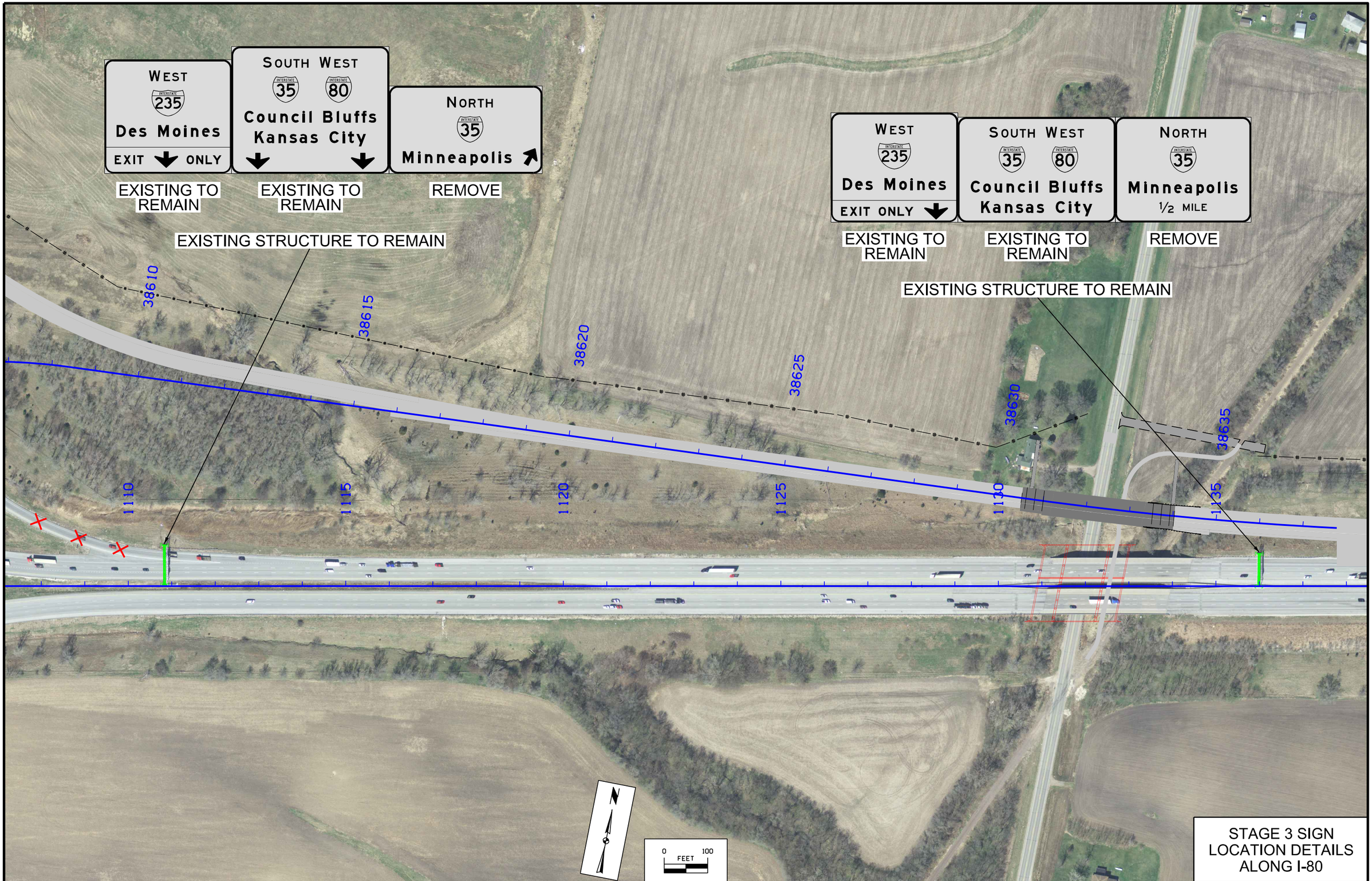
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.4

9:27:54 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

STAGE 3 SIGN LOCATION DETAILS ALONG I-80

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.5

9:29:16 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht



STAGE 3 SIGN LOCATION DETAILS ALONG I-80

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.6

9:30:22 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

NOTE:

1. A structural analysis of the existing structure may be necessary to verify the existing structure can support the modified sign loads.

80-77-X
M4002_STAGE_3

STAGE 3 SIGN LOCATION DETAILS ALONG I-80

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.7

9:31:28 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

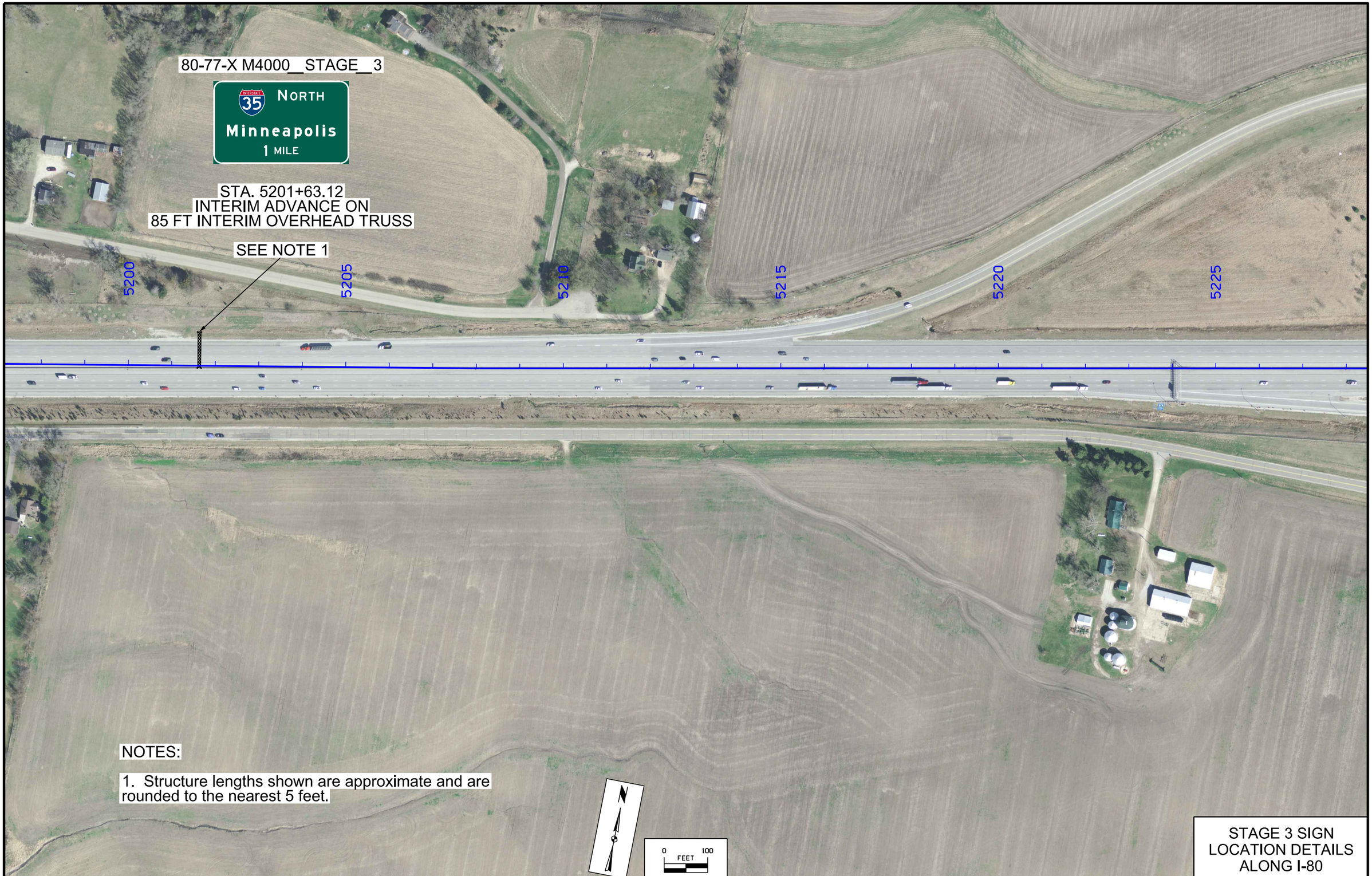
NOTES:

1. Structure lengths shown are approximate and are rounded to the nearest 5 feet.

STAGE 3 SIGN LOCATION DETAILS ALONG I-80

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.8

9:32:36 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht



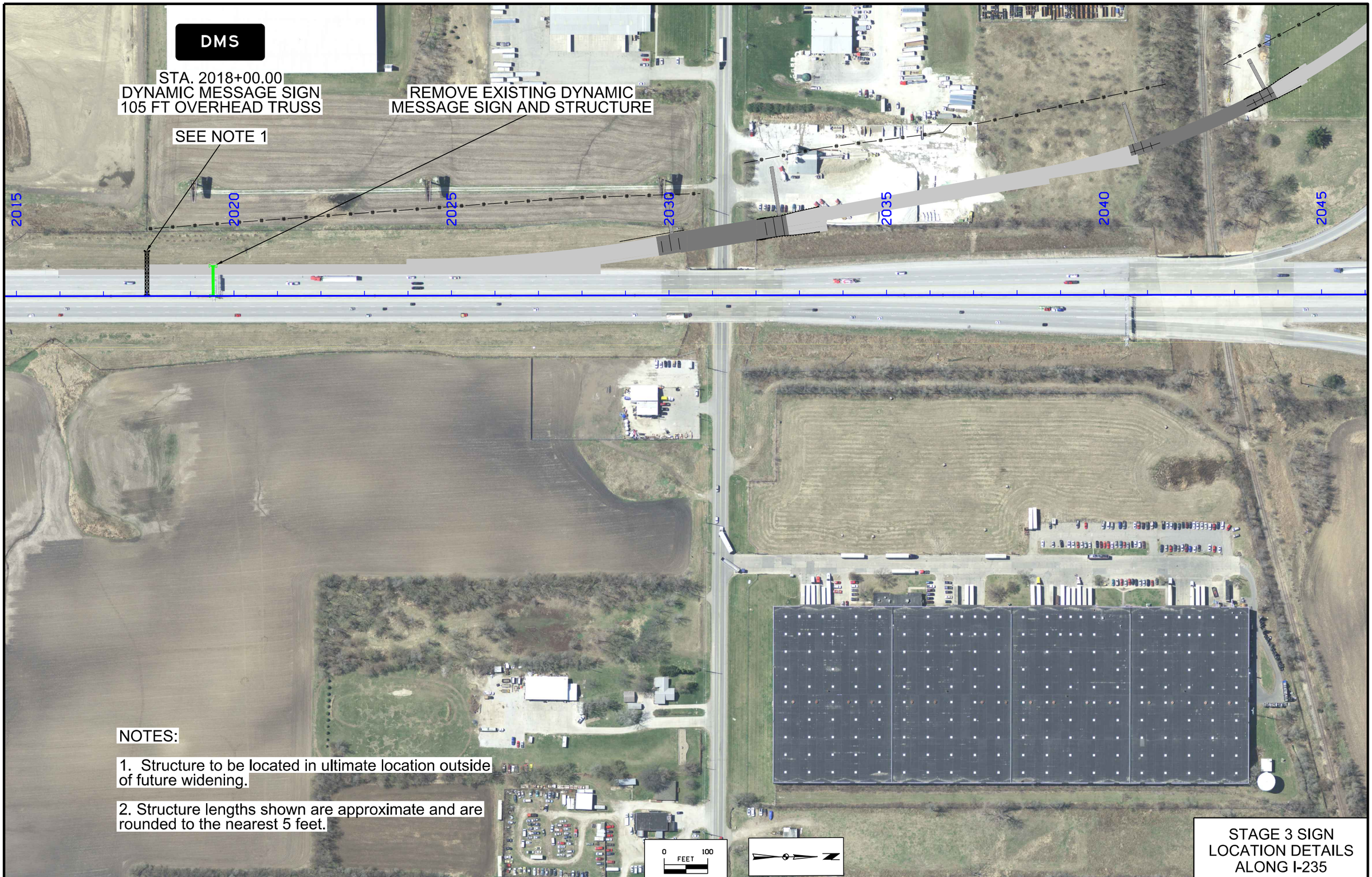
NOTES:

1. Structure lengths shown are approximate and are rounded to the nearest 5 feet.

STAGE 3 SIGN LOCATION DETAILS ALONG I-80

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.9

9:33:43 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht



NOTES:

1. Structure to be located in ultimate location outside of future widening.

2. Structure lengths shown are approximate and are rounded to the nearest 5 feet.

STAGE 3 SIGN LOCATION DETAILS ALONG I-235

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.10

9:35:28 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

STAGE 3 SIGN
LOCATION DETAILS
ALONG I-35

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.11

9:37:40 AM 10/7/2021 JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Roadway\Stage3\(194)_Grading\77035194N01.sht

80/35-77-X M3000_STAGE_3

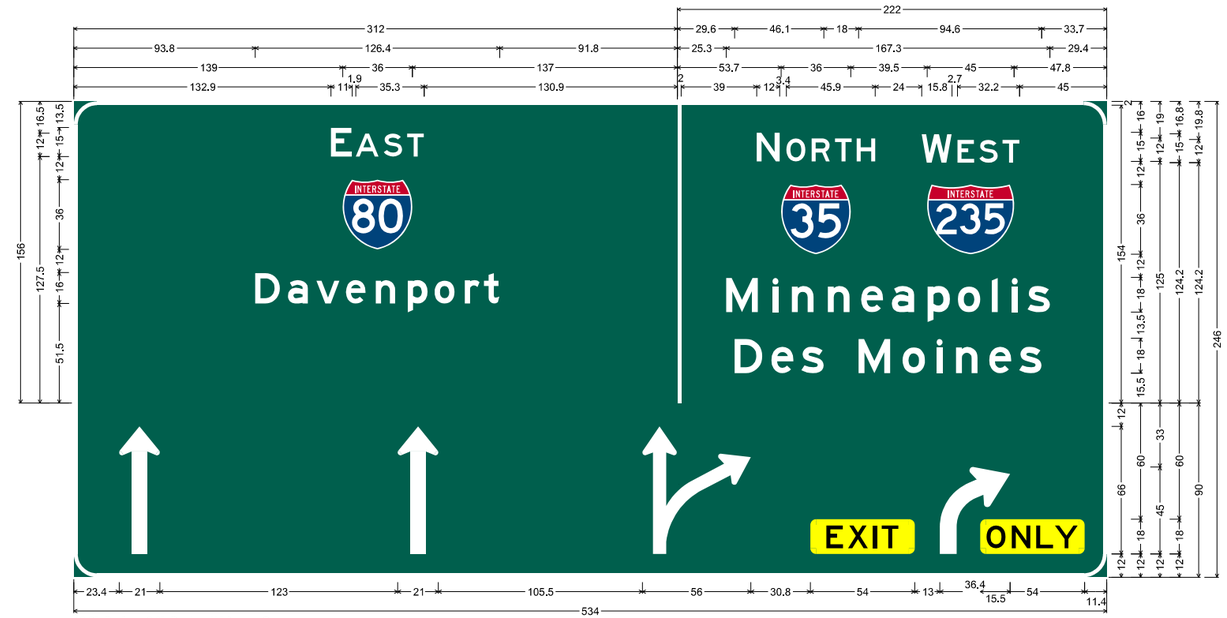
12.0" Radius, 2.0" Border, White on Green;
[N ORTH] E; [W EST] E; [Minneapolis] E Mod;
[Des Moines] E Mod; [1 MILE] E;
Table of letter and object lefts.

N	O	R	T	H	W	E	S	T
28.0	44.6	57.6	69.7	81.0	105.5	125.9	137.1	149.2

41.3	109.3

M	i	n	n	e	a	p	o	l	i	s	
18.4	39.6	48.8	65.3	80.6	94.7	111.2	125.0	140.6	149.8	157.3	
D	e	s	M	o	i	n	e	s			
22.3	39.2	53.0	79.3	99.5	115.1	124.3	139.6	153.4			
1	M	I	L	E							
68.1	85.1	96.9	101.1	110.6							

80/35-77-X M3001_STAGE_3



12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [Davenport] E; [ ] E;
12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [WEST] E; [MInneapolis] E; [Des Moines] E;
12.0" Radius, 2.0" Border, White on Green;
Arrow Custom - 66.0" 90°; Arrow Custom - 66.0" 90°; 30D; Rounded Rectangle 3.0" Radius Yellow;
48A; Rounded Rectangle 3.0" Radius Yellow;
Table of letter and object lefts.

E	A	S	T
132.9	145.8	160.2	172.3

139.0

D	a	v	e	n	p	o	r	t		
93.8	110.7	125.5	140.7	156.1	172.7	186.5	202.1	212.1		
I	N	O	R	T	H	W	E	S	T	
312.0	353.0	368.4	381.5	393.5	404.8	438.3	456.8	468.1	480.2	

365.7	441.2

M	i	n	n	e	a	p	o	l	i	s	
337.3	361.2	371.2	389.8	407.0	422.9	441.4	457.0	474.6	484.9	493.0	
D	e	s	M	o	i	n	e	s			
341.6	360.6	376.1	405.7	428.5	446.0	456.0	473.3	488.7			
I	I	↖	⌒	↗	⌒						
23.4	167.4	293.9	380.7	447.7	468.6						

80/35-77-X M304

12.0" Radius, 2.0" Border, White on Green;
[E AST] E; [Davenport] E Mod; [LEFT LANES] E;
Table of letter and object lefts.

	E	A	S	T
28.5	82.5	98.2	112.6	124.7

D	a	v	e	n	p	o	r	t	
17.8	34.7	49.5	64.7	80.1	96.7	110.5	126.1	136.1	
L	E	F	T	L	A	N	E	S	
34.6	44.0	53.4	62.1	79.4	87.5	99.5	110.1	119.5	

80/35-77-X M305

12.0" Radius, 2.0" Border, White on Green;
[N ORTH] E; [W EST] E; [Minneapolis] E Mod;
[Des Moines] E Mod; [½ MILE] E;
Table of letter and object lefts.

N	O	R	T	H	W	E	S	T
28.0	44.6	57.6	69.7	81.0	105.5	125.9	137.1	149.2

41.3	109.3

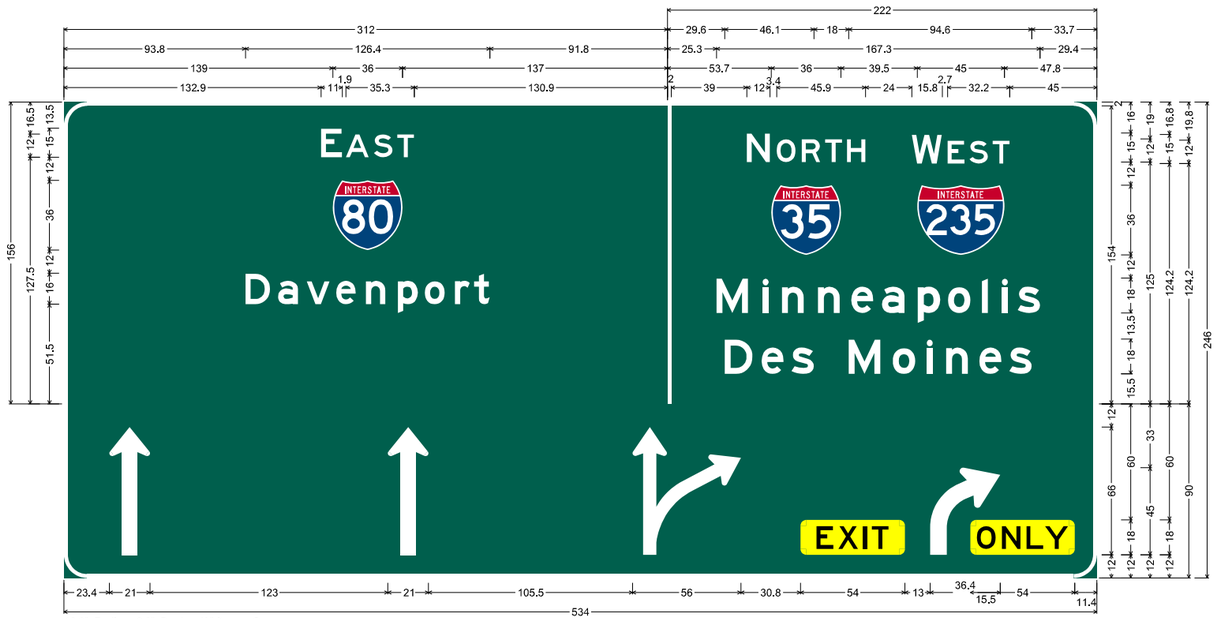
M	i	n	n	e	a	p	o	l	i	s	
18.4	39.6	48.8	65.3	80.6	94.7	111.2	125.0	140.6	149.8	157.3	
D	e	s	M	o	i	n	e	s			
22.3	39.2	53.0	79.3	99.5	115.1	124.3	139.6	153.4			
½	M	I	L	E							
60.5	92.7	104.5	108.8	118.2							

NOTE: SIGN DIMENSIONS ARE IN INCHES

SIGN DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER N.12

80/35-77-X
M3002_STAGE_3



12.0" Radius, 2.0" Border, White on Green;
[EAST] E; [Davenport] E; [ ] E;
12.0" Radius, 2.0" Border, White on Green;
[NORTH] E; [WEST] E; [Minneapolis] E; [Des Moines] E;
12.0" Radius, 2.0" Border, White on Green;
Arrow Custom - 66.0" 90°; Arrow Custom - 66.0" 90°; 30D; Rounded Rectangle 3.0" Radius Yellow;
48A; Rounded Rectangle 3.0" Radius Yellow;
Table of letter and object lefts.

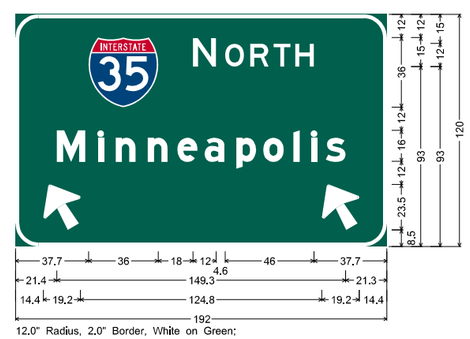
E 132.9	A 145.8	S 160.2	T 172.3
139.0			
D 93.8	a 110.7	v 125.5	e 140.7	n 156.1	p 172.7	o 186.5	r 202.1	t 212.1
I 312.0	N 353.0	O 368.4	R 381.5	T 393.5	H 404.8	W 438.3	E 456.8	S 468.1	T 480.2
365.7	441.2								
M 337.3	i 361.2	n 371.2	n 389.8	e 407.0	a 422.9	p 441.4	o 457.0	l 474.6	l 484.9	s 493.0
D 341.6	e 360.6	s 376.1	M 405.7	o 428.5	i 446.0	n 456.0	e 473.3	s 488.7
I 23.4	I 167.4	293.9	380.7	447.7	468.6

80/35-77-X
M3003_STAGE_3

12.0" Radius, 2.0" Border, White on Green;
[WEST] E; [Des Moines] E; [RIGHT LANE] E;
Table of letter and object lefts.

41.5	W 110.5	E 128.9	S 140.2	T 152.3
D 21.9	e 40.9	s 56.4	M 86.0	o 108.8	I 126.3	n 136.3	e 153.5	s 169.0
R 46.8	I 59.5	G 64.6	H 77.3	T 89.3	L 110.1	A 119.8	N 134.2	E 146.9

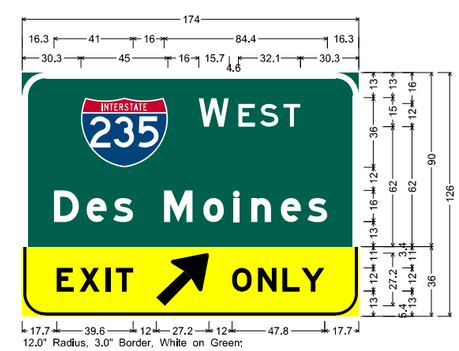
35-77-X R310



12.0" Radius, 2.0" Border, White on Green;
[N ORTH] E; [Minneapolis] E Mod; Arrow 8 - 25.0" 120°;
Arrow 8 - 25.0" 120°;
Table of letter and object lefts.

37.7	N 91.7	O 108.3	R 121.4	T 133.4	H 144.7
M 21.4	i 42.6	n 51.8	n 68.3	e 83.6	a 97.7	p 114.2	o 128.0	l 143.6	l 152.8	s 160.3
14.4	158.4									

35-77-X R311



12.0" Radius, 3.0" Border, White on Green;
[W EST] E; [Des Moines] E Mod;
12.0" Radius, 1.5" Border, 0.5" Indent, Black on Yellow;
[EXIT] E Mod specified length; Arrow I-F - 35.0" 45°;
[ONLY] E Mod specified length;
Table of letter and object lefts.

30.3	W 91.3	E 111.6	S 122.9	T 134.9
D 16.3	e 33.2	s 47.0	M 73.3	o 93.5	I 109.1	n 118.3	e 133.6	s 147.4
E 17.7	X 29.6	I 43.0	T 48.3	69.3	O 108.5	N 121.7	L 134.5	Y 144.3

NOTE: SIGN DIMENSIONS ARE IN INCHES

SIGN DETAILS

80-77-X M4000_STAGE_3

12.0" Radius, 2.0" Border, White on Green;
[N ORTH] E; [Minneapolis] E Mod; [1 MILE] E;
Table of letter and object lefts.

34.7	N 88.7	O 105.3	R 118.4	T 130.4	H 141.7

M 18.4	i 39.6	n 48.8	n 65.3	e 80.6	a 94.7	p 111.2	o 125.0	l 140.6	l 149.8	s 157.3	

1 69.4	M 83.8	I 95.6	L 99.9	E 109.3

80-77-X M4001_STAGE_3

12.0" Radius, 2.0" Border, White on Green;
[N ORTH] E; [Minneapolis] E Mod; [½ MILE] E;
Table of letter and object lefts.

34.7	N 88.7	O 105.3	R 118.4	T 130.4	H 141.7

M 18.4	i 39.6	n 48.8	n 65.3	e 80.6	a 94.7	p 111.2	o 125.0	l 140.6	l 149.8	s 157.3	

½ 60.5	M 92.7	I 104.5	L 108.8	E 118.2

80-77-X M4002_STAGE_3

12.0" Radius, 2.0" Border, White on Green;
[N ORTH] E; [Minneapolis] E Mod; Arrow 8 - 25.0" 60°;
Table of letter and object lefts.

34.7	N 88.7	O 105.3	R 118.4	T 130.4	H 141.7

M 18.4	i 39.6	n 48.8	n 65.3	e 80.6	a 94.7	p 111.2	o 125.0	l 140.6	l 149.8	s 157.3	

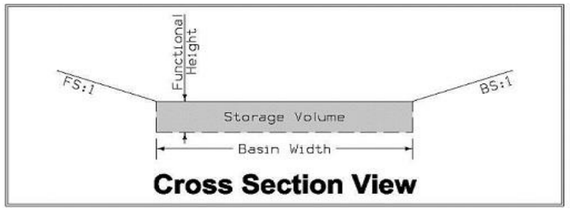
↗ 18.4

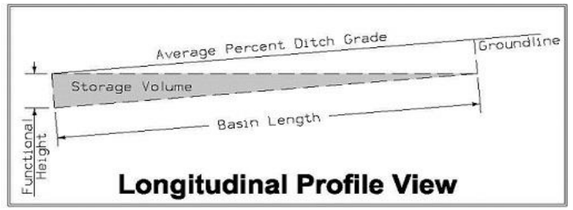
NOTE: SIGN DIMENSIONS ARE IN INCHES

SIGN DETAILS

SILT BASINS

Possible Standard: EW-403





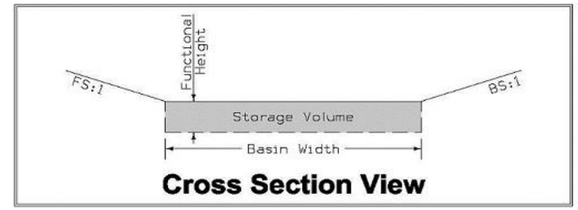
* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

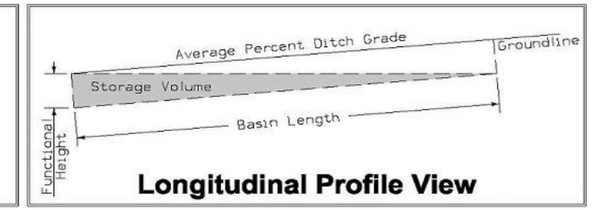
Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
1	8465+60.00	RT	1	1	10.0	50.0	2.85	4.3%	887.5	
1	8467+05.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
1	8468+05.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
1	8469+05.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
1	8470+05.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
1	8471+70.00	LT	1	1	30.0	50.0	2.85	0.5%	4087.5	
1	8476+60.00	LT	1	1	10.0	50.0	2.85	3.6%	975.0	210' LT
1	1066+10.00	LT	1	1	10.0	50.0	2.85	4.3%	887.5	
1	1067+30.00	LT	1	1	10.0	50.0	2.85	4.1%	912.5	
1	32584+70.00	LT	1	1	10.0	50.0	2.85	1.2%	1275.0	
1	32577+30.00	RT	1	1	10.0	50.0	2.85	0.2%	1400.0	
1	32580+40.00	RT	1	1	10.0	50.0	2.85	0.2%	1400.0	
2	32586+05.00	RT	1	1	10.0	50.0	2.85	0.2%	1400.0	
2	32586+95.00	RT	1	1	10.0	50.0	2.85	2.6%	1106.3	
2	32588+15.00	RT	1	1	10.0	50.0	2.85	2.6%	1106.3	
2	32589+55.00	RT	1	1	10.0	50.0	2.85	2.6%	1106.3	
2	32587+30.00	LT	1	1	10.0	50.0	2.85	1.9%	1187.5	
2	32588+60.00	LT	1	1	10.0	50.0	2.85	1.9%	1187.5	
2	32590+00.00	LT	1	1	10.0	50.0	2.85	0.6%	1350.0	
2	32590+64.00	LT	1	1	10.0	50.0	2.85	2.4%	1125.0	
3	32591+50.00	RT	1	1	10.0	50.0	2.85	1.0%	1300.0	
3	32591+85.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
4	38567+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
4	38568+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
4	38569+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
5	38562+00.00	LT	1	1	10.0	50.0	2.85	0.2%	1400.0	
5	38563+00.00	LT	1	1	10.0	50.0	2.85	0.2%	1400.0	
5	38560+50.00	LT	1	1	10.0	50.0	2.85	6.0%	712.5	114' LT
6	38558+35.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
6	38559+60.00	LT	1	1	10.0	35.0	2.85	2.3%	856.6	
7	38555+50.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
7	38557+50.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
8	2025+10.00	LT	1	1	10.0	50.0	2.85	1.3%	1262.5	
8	2024+45.00	LT	1	1	10.0	50.0	2.85	1.8%	1200.0	
8	2022+80.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
8	2021+80.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
8	2020+80.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
9	2018+40.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
10	2110+00.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
10	2108+50.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
10	2107+00.00	RT	1	1	10.0	50.0	2.85	1.9%	1187.5	
10	2105+50.00	RT	1	1	10.0	50.0	2.85	1.6%	1225.0	
10	2104+00.00	RT	1	1	10.0	50.0	2.85	1.6%	1225.0	
10	2102+50.00	RT	1	1	10.0	50.0	2.85	1.6%	1225.0	
10	2101+00.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
10	2099+50.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
10	8531+25.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
10	8529+75.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
10	8528+25.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
10	8526+70.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
11	4200+80.00	Both	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	4201+80.00	Both	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	4202+80.00	Both	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2238+55.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2239+75.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2240+75.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2241+75.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2242+75.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2243+75.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	2244+75.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	54th Ditch
11	8517+40.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
11	8518+70.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	
11	8520+25.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	
11	8521+80.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	
11	8523+35.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	
11	8524+90.00	RT	1	1	10.0	50.0	2.85	0.7%	1337.5	
11	8517+40.00	LT	1	1	10.0	50.0	2.85	3.0%	1050.0	

100-14
10-17-17

SILT BASINS

Possible Standard: EW-403



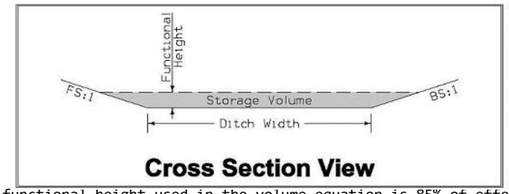


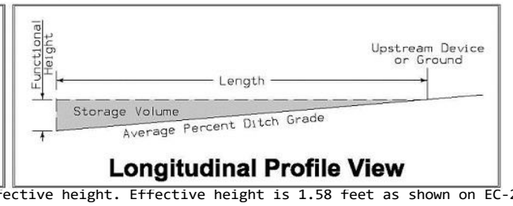
* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location		Bid Items		Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*	
			EACH	EACH	FT	FT	FT		CF	
11	8518+60.00	LT	1	1	10.0	50.0	2.85	1.0%	1300.0	
11	8520+15.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
11	8521+15.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
11	8522+15.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
11	8523+30.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	8511+40.00	LT	1	1	10.0	50.0	2.85	0.8%	1325.0	
12	8512+40.00	LT	1	1	10.0	50.0	2.85	0.8%	1325.0	
12	8513+50.00	LT	1	1	10.0	50.0	2.85	1.9%	1187.5	
12	8504+70.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	130' RT
12	8506+15.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	150' RT
12	8509+00.00	RT	1	1	10.0	50.0	2.85	1.4%	1250.0	
12	8510+00.00	RT	1	1	10.0	50.0	2.85	1.4%	1250.0	
12	38494+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38495+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38496+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38497+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38498+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38499+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38500+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38501+10.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38502+30.00	RT	1	1	10.0	50.0	2.85	4.0%	925.0	
12	38503+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38504+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38505+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38506+25.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38613+90.00	RT	1	1	10.0	50.0	2.85	3.0%	1050.0	
12	38615+50.00	RT	1	1	10.0	50.0	2.85	0.6%	1350.0	
12	38617+00.00	RT	1	1	10.0	50.0	2.85	0.6%	1350.0	
12	38619+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38620+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38621+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38622+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38623+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38624+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38625+00.00	RT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38493+80.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38493+90.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38495+90.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38496+90.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38498+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38499+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38500+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38501+00.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38502+25.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38503+25.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38504+40.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38505+40.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38506+40.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38507+50.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38508+50.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38509+50.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38613+00.00	LT	1	1	10.0	50.0	2.85	0.2%	1400.0	
12	38614+00.00	LT	1	1	10.0	50.0	2.85	0.2%	1400.0	
12	38615+00.00	LT	1	1	10.0	50.0	2.85	0.2%	1400.0	
12	38616+50.00	LT	1	1	10.0	50.0	2.85	0.2%	1400.0	
12	38617+50.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
12	38618+50.00	LT	1	1	10.0	50.0	2.85	0.5%	1362.5	
13	38807+35.00	LT	1	1	10.0	50.0	2.85	4.0%	925.0	
13	38808+35.00	LT	1	1	10.0	50.0	2.85	5.6%	730.0	
13	38808+60.00	RT	1	1	10.0	50.0	2.85	2.0%	1175.0	
13	38637+25.00	LT	1	1	10.0	50.0	2.85	2.3%	1137.5	
13	5144+75.00	LT	1	1	10.0	50.0	2.85	1.8%	1200.0	
13	5146+25.00	LT	1	1	10.0	50.0	2.85	1.8%	1200.0	
13	5148+50.00	LT	1	1	10.0	50.0	2.85	1.8%	1200.0	
13	5150+00.00	LT	1	1	10.0	50.0	2.85	1.8%	1200.0	

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201





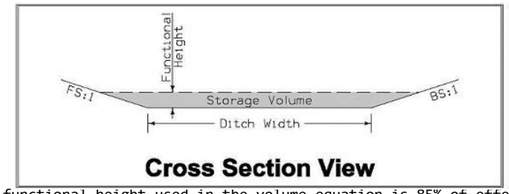
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

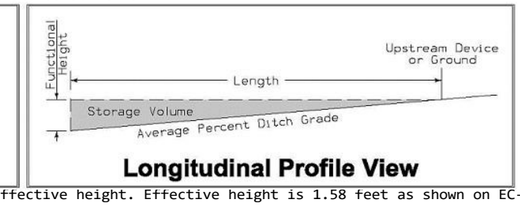
Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
1	1	8466+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	8471+45.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	1	8471+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	1	8472+25.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	1	8472+65.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	1	8473+05.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	1	8473+45.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	1	8473+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.8%	385.8	
1	4	8468+00.00	LT	71.0	8.0	36.0	3.5	3.0	8.2	2.8%	421.9	
1	4	8468+50.00	LT	72.0	8.0	36.0	3.5	3.0	12.1	2.8%	552.8	
1	4	8469+00.00	LT	81.0	9.0	41.0	3.5	3.0	15.0	2.8%	650.2	
1	4	8469+50.00	LT	86.0	9.0	43.0	3.5	3.0	23.0	2.8%	918.8	
1	4	8470+00.00	LT	88.0	9.0	44.0	3.5	3.0	26.5	2.8%	1036.3	
1	1	8476+96.00	LT	40.0	4.0	20.0	3.0	3.0	28.0	3.0%	1075.4	198' LT
1	1	8477+38.00	LT	37.0	4.0	19.0	3.0	3.0	25.0	3.0%	974.6	164' LT
1	1	32574+30.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	32574+65.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	32575+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	32575+35.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	32575+70.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	4	32576+05.00	RT	55.0	6.0	28.0	3.5	3.0	10.0	4.3%	337.6	
1	4	32576+40.00	RT	55.0	6.0	28.0	3.5	3.0	10.0	4.3%	337.6	
1	4	32576+75.00	RT	315.0	32.0	158.0	3.5	3.0	10.0	0.2%	3038.5	
1	4	32579+90.00	RT	286.0	29.0	143.0	3.5	3.0	10.0	0.2%	2749.1	
1	3	32585+20.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
1	1	32585+60.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
1	1	32586+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
1	1	1065+35.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	1065+70.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	1	1066+05.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	3	1066+60.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.3%	337.6	
1	3	1066+80.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.1%	337.6	
1	1	1067+35.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.1%	337.6	
1	1	1067+70.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.1%	337.6	
2	4	32590+30.00	RT	193.0	20.0	97.0	3.5	3.0	10.0	1.0%	1495.1	
2	1	32588+65.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	723.4	
2	1	32588+05.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	723.4	
2	1	32587+45.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	723.4	
2	4	32586+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	723.4	
2	4	32587+00.00	LT	72.0	8.0	36.0	3.5	3.0	10.0	1.9%	482.3	
2	4	32587+75.00	LT	98.0	10.0	49.0	3.5	3.0	10.0	1.9%	723.4	
2	4	32588+50.00	LT	98.0	10.0	49.0	3.5	3.0	10.0	1.9%	723.4	
2	5	32590+05.00	LT	184.0	19.0	92.0	3.5	3.0	10.0	1.0%	1495.1	
2	5	32590+40.00	LT	60.0	6.0	30.0	3.5	3.0	10.0	5.0%	337.6	
2	5	32590+65.00	LT	40.0	4.0	20.0	3.5	3.0	10.0	5.0%	337.6	
3	5	32591+35.00	RT	176.0	18.0	88.0	2.0	0.0	10.0	1.0%	1180.6	
3	5	32591+85.00	LT	124.0	13.0	62.0	2.0	0.0	10.0	1.0%	1180.6	
4	4	38569+50.00	LT	77.0	8.0	39.0	3.5	3.0	10.0	0.5%	3038.5	
5	1	38560+70.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.4%	3038.5	
5	1	38563+85.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.5%	964.6	
5	1	38564+85.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.5%	964.6	
5	1	38561+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38561+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38562+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38562+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38563+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38563+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38564+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38564+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
5	1	38565+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
6	5	38557+75.00	LT	97.0	10.0	49.0	3.5	3.0	10.0	1.0%	771.7	
6	1	38558+50.00	RT	13.0	2.0	7.0	3.5	3.0	0.0	0.5%	439.6	
7	5	38556+00.00	LT	150.0	15.0	75.0	3.5	0.0	10.0	0.5%	1078.1	
7	5	38557+00.00	LT	90.0	9.0	45.0	3.5	3.0	10.0	1.0%	723.4	
8	5	2023+25.00	LT	113.0	12.0	57.0	3.0	0.0	10.0	1.2%	806.8	
8	5	2024+25.00	LT	298.0	30.0	149.0	3.0	0.0	10.0	0.5%	2218.6	
8	5	2025+25.00	LT	93.0	10.0	47.0	3.0	0.0	10.0	1.0%	605.1	
9	1	2018+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.0%	1495.1	

100-18
10-16-18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201





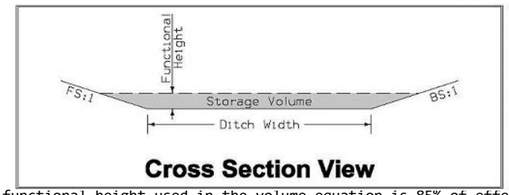
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

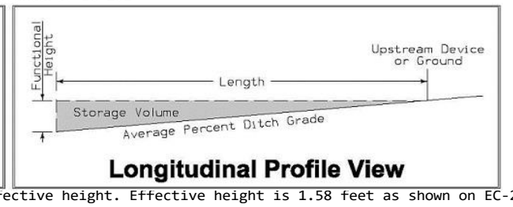
Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
9	1	2019+55.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.4%	434.1	
9	1	2020+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.4%	434.1	
10	1	2113+75.00	RT	22.0	3.0	11.0	4.0	3.0	8.0	4.5%	298.5	
10	1	2113+53.00	RT	23.0	3.0	12.0	4.0	3.0	9.0	4.5%	322.0	
10	1	2113+30.00	RT	27.0	3.0	14.0	4.0	3.0	13.0	4.5%	416.0	
10	1	2113+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2112+70.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2112+40.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2112+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2111+80.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2111+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2111+20.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2110+90.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	5.6%	289.4	
10	1	2110+60.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.9%	723.4	
10	1	2109+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.9%	723.4	
10	1	2109+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.9%	723.4	
10	1	2108+35.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.9%	723.4	
10	1	2107+60.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.9%	723.4	
10	1	2106+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2106+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2105+35.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2104+60.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2103+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2103+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2102+35.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2101+60.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.6%	723.4	
10	1	2100+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	2100+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	2099+35.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	8531+80.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	8531+05.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	8530+30.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	8529+55.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
10	1	8528+80.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.0%	1495.1	
10	1	8527+25.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.6%	1495.1	
10	1	8525+70.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.6%	289.4	
11	1	4200+13.00	BOTH	22.0	3.0	11.0	3.0	3.0	10.0	0.5%	2967.4	54th Ditch
11	1	4203+28.00	BOTH	114.0	12.0	57.0	3.0	3.0	10.0	0.5%	2967.4	54th Ditch
11	1	2239+10.00	LT	22.0	3.0	11.0	3.0	3.0	10.0	0.5%	1224.7	54th Ditch
11	1	2242+25.00	LT	22.0	3.0	11.0	3.0	3.0	10.0	0.5%	2967.4	54th Ditch
11	1	8517+90.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	2.0%	723.4	
11	1	8518+20.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.7%	1495.1	
11	1	8519+75.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.7%	1495.1	
11	1	8521+30.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.7%	1495.1	
11	1	8522+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.7%	1495.1	
11	1	8524+40.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.7%	1495.1	
11	3	8517+90.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.0%	1495.1	
11	3	8518+10.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
11	1	8519+65.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
11	1	8522+80.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
12	1	8509+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	289.4	
12	1	8509+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
12	1	8510+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
12	1	8510+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
12	1	8511+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.6%	482.3	
12	3	8512+90.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.8%	1495.1	
12	1	8514+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.1%	482.3	
12	1	8514+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.1%	482.3	
12	1	8515+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.1%	482.3	
12	1	8515+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.1%	482.3	
12	1	8516+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.1%	482.3	
12	1	8516+50.00	LT	28.0	3.0	14.0	6.0	3.0	10.0	3.1%	538.7	
12	1	8508+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.4%	964.6	
12	1	8509+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.4%	964.6	
12	1	8510+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	1.4%	964.6	
12	1	38494+70.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	1688.0	
12	1	38497+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
12	1	38501+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	

100-18
10-16-18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201





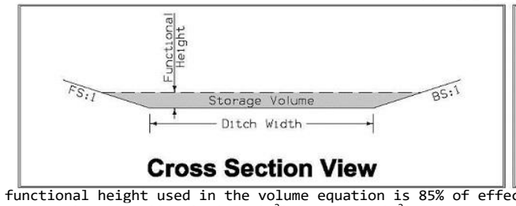
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

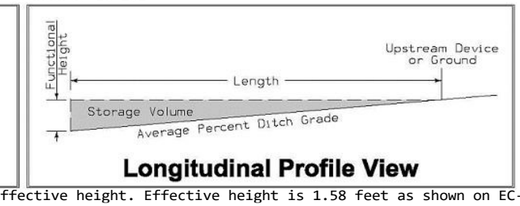
Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
12	1	38502+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
12	1	38505+65.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	2749.1	
12	1	38508+75.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38509+10.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38509+45.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38509+80.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38510+15.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38510+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38510+85.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38511+20.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38511+55.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	4.4%	337.6	
12	1	38612+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
12	1	38612+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
12	1	38613+00.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
12	1	38613+50.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
12	1	38614+90.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.6%	1495.1	
12	1	38616+45.00	RT	23.0	3.0	12.0	3.5	3.0	10.0	0.6%	1495.1	
12	5	38618+00.00	RT	332.0	34.0	166.0	3.5	0.0	10.0	0.5%	2612.4	
12	5	38621+15.00	RT	336.0	34.0	168.0	3.5	0.0	10.0	0.5%	2612.4	
12	5	38624+30.00	RT	135.0	14.0	68.0	3.5	0.0	10.0	0.5%	2612.4	
12	1	38489+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.5%	964.6	
12	1	38489+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38490+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38490+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38491+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38491+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38492+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38492+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38493+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38494+30.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38497+45.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38500+60.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38503+75.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38506+90.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.7%	482.3	
12	1	38510+05.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
12	1	38510+45.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
12	1	38510+85.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
12	1	38511+25.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
12	1	38611+70.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
12	3	38612+10.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	4.0%	385.8	
12	3	38612+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.2%	3038.5	
12	1	38615+65.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.2%	3038.5	
12	1	38618+80.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
13	3	38626+00.00	RT	65.0	7.0	33.0	3.5	10.0	38.0	0.4%	9955.4	
13	1	38629+15.00	RT	43.0	5.0	22.0	3.5	3.0	30.0	0.4%	4615.2	
13	1	38620+05.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	482.3	
13	1	38623+20.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
13	1	38626+35.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
13	1	38629+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	0.5%	3038.5	
13	4	38636+25.00	LT	45.0	5.0	23.0	3.5	3.0	10.0	2.3%	723.4	
13	1	38637+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	2.3%	723.4	
13	4	38637+75.00	LT	94.0	10.0	47.0	3.5	3.0	10.0	2.3%	723.4	
13	4	5138+25.00	LT	64.0	7.0	32.0	3.5	3.0	10.0	3.0%	482.3	
13	4	5138+75.00	LT	71.0	8.0	36.0	3.5	3.0	10.0	3.0%	482.3	
13	4	5139+25.00	LT	71.0	8.0	36.0	3.5	3.0	10.0	3.0%	482.3	
13	4	5139+75.00	LT	71.0	8.0	36.0	3.5	3.0	10.0	3.0%	482.3	
13	4	5140+25.00	LT	71.0	8.0	36.0	3.5	3.0	10.0	3.0%	482.3	
13	1	5140+75.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
13	1	5141+25.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
13	1	5141+75.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
13	1	5142+25.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	3.0%	482.3	
13	4	5143+00.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	
13	4	5143+75.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	
13	4	5144+50.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	
13	4	5145+25.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	
13	4	5146+00.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	
13	4	5146+75.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	
13	4	5147+50.00	LT	96.0	10.0	48.0	3.5	3.0	10.0	1.8%	723.4	

100-18
10-16-18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201





* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]

Basin No.	Type	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
		Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg.% Slope	Volume*	
				LF	LF	LF	FS:1	BS:1	FT	Ditch Grade	CF	
13	1	5148+25.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.8%	723.4	
13	1	5149+00.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.8%	723.4	
13	1	5149+75.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.8%	723.4	
13	1	5150+50.00	LT	23.0	3.0	12.0	3.5	3.0	10.0	1.8%	723.4	
13	1	18+75.00	LT	17.0	2.0	9.0	3.0	3.0	5.0	3.1%	303.1	
13	1	19+25.00	LT	17.0	2.0	9.0	3.0	3.0	5.0	3.1%	303.1	
13	1	19+75.00	LT	17.0	2.0	9.0	3.0	3.0	5.0	3.1%	303.1	
13	3	20+50.00	LT	17.0	2.0	9.0	3.0	3.0	5.0	2.4%	454.7	
13	1	38806+50.00	LT	22.0	3.0	11.0	3.0	3.0	5.0	4.0%	242.5	
13	1	38806+90.00	LT	22.0	3.0	11.0	3.0	3.0	5.0	4.0%	242.5	
13	1	38807+30.00	LT	22.0	3.0	11.0	3.0	3.0	5.0	4.0%	242.5	
					0.0	0.0						
					0.0	0.0						

100-19
04-19-16

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
1066+70.00		LT		40.0		I-80 WB Inlet Apron Protection
8470+96.00		LT		40.0		I-35 NB Inlet Apron Protection
8474+85.00		RT		40.0		I-35 NB Inlet Protection
8475+95.00		LT		40.0		I-35 NB Inlet Apron Protection
8504+37.00		RT		40.0		I-35 NB Inlet Apron Protection
8512+98.00		LT		40.0		I-35 NB Inlet Apron Protection
8518+00.00		LT		40.0		I-35 NB Inlet Apron Protection
8529+50.00		LT		40.0		I-35 NB Inlet Protection
38501+70.00		RT		40.0		Ramp A Inlet Apron Protection
32585+12.00		LT		40.0		Ramp B Inlet Apron Protection
32584+58.00		LT		40.0		Ramp B Inlet Apron Protection
32589+00.00		LT		40.0		Ramp B Inlet Apron Protection
38559+63.00		LT		20.0		Ramp G Inlet Apron Protection
38560+50.00		LT		20.0		Ramp G Inlet Apron Protection
38566+00.00		RT		40.0		Ramp G Inlet Apron Protection
38612+28.00		LT		40.0		Ramp G Inlet Apron Protection
38625+80.00		RT		40.0		Ramp G Inlet Apron Protection
38805+80.00		LT		40.0		NE 29th St. Inlet Apron Protection
38807+87.00		LT		40.0		NE 29th St. Inlet Apron Protection
20+72.00		LT		40.0		Chichaqua Valley Trail Inlet Apron Protection

100-22
04-21-15

ROLLED EROSION CONTROL

Refer to EC-101, EC-103, and EC-104.

Location				L	W	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103)	Special Ditch Control (EC-101)	Remarks
Road Identification	Begin Station	End Station	Side			Type 1	Type 2	Type 3	Type 4			
				FT	FT	Squares	Squares	Squares	Squares	Squares	Squares	
I-80 WB Survey	1065+00.00	1068+00.00	LT	300	16						48	
I-35 NB	8465+42.00	8466+22.00	RT	80	16						13	
I-35 NB	8470+65.00	8474+22.45	RT	357	16						57	
I-35 NB	8504+51.37	8505+14.43	RT	63	58					37		Bridge Abutment
I-35 NB	8504+52.56	8505+15.53	LT	63	41					26		Bridge Abutment
Ramp A	38510+20.00	38511+66.22	LT	146	16						23	
Ramp G	38611+66.00	38611+80.00	LT	14	16						2	
Ramp G	38508+50.00	38511+66.22	RT	316	16						51	
Ramp B	32574+22.46	32576+50.00	RT	228	16						36	
Ramp B	32590+00.00	32590+63.80	RT	64	45					29		Bridge Abutment
Ramp B	32590+00.00	32590+63.69	LT	64	37					24		Bridge Abutment
Ramp B	32592+18.20	32592+57.74	RT	40	42					17		Bridge Abutment
Ramp B	32591+85.00	32592+56.00	LT	71	27					19		Bridge Abutment
Ramp G	38559+03.17	38559+61.53	LT	58	47							
Ramp G	38558+95.23	38559+35.96	RT	41	11							
Ramp G	38560+23.16	38560+79.21	LT	56	43							
Ramp G	38560+31.37	38560+71.28	RT	40	15							
Ramp G	38631+07.13	38631+60.67	RT	54	39					21		Bridge Abutment
Ramp G	38631+10.29	38631+64.24	LT	54	47					25		Bridge Abutment
Ramp G	38632+92.87	38633+42.10	RT	49	52					25		Bridge Abutment
Ramp G	38632+96.78	38633+47.04	LT	50	51					26		Bridge Abutment

100-17
04-20-10

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
32575+89.00	32587+20.00	RT	1139.0	Ramp B ROW Line
32588+50.00	32590+37.00	RT	179.0	Ramp B ROW Line
32590+36.00	32590+90.00	BOTH	138.0	Ramp B Bridge Area
32592+10.00	32592+75.00	BOTH	240.0	Ramp B Bridge Area
38556+84.00	38559+15.00	LT	234.0	Ramp G Toe of Slope
38556+84.00	38559+15.00	LT	234.0	Ramp G On Slope
38560+20.00	38560+65.00	BOTH	170.0	Ramp G Bridge Area
38559+40.00	38559+63.00	BOTH	130.0	Ramp G Bridge Area
38552+86.00	38559+54.00	LT	590.0	Ramp G ROW Line
38560+69.00	38569+90.00	LT	944.0	Ramp G Toe of Slope
38560+89.00	38569+96.00	LT	927.0	Ramp G On Slope
38633+32.00	38637+77.87	LT	444.0	Ramp G Top of Slope
38633+52.00	38637+77.87	LT	424.0	Ramp G On Slope
38633+52.00	38637+77.87	LT	424.0	Ramp G Top of Slope
38633+12.00	38636+21.00	LT	306.0	Ramp G Entrance 29th
2018+02.00	2024+18.00	LT	642.0	I-235 ROW Line
2024+28.00	2025+35.00	LT	123.0	I-235 Near Outlet
5138+25.00	5140+43.00	LT	220.0	I-80 ROW Line
5142+25.00	5147+68.00	LT	560.0	I-80 ROW Line
5137+78.00	5143+17.00	LT	550.0	I-80 Top of Slope
5137+78.00	5150+75.00	LT	1315.0	I-80 On Slope
5137+78.00	5150+75.00	LT	1315.0	I-80 Toe of Slope

100-23
04-17-18

ROCK EROSION CONTROL

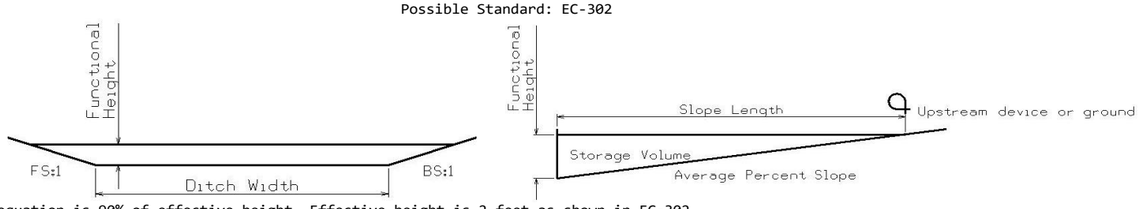
Refer to EC-301 and Detail 570-8

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1	Type 2	Type 3	Type 4	Type 5	Eng. Fabric	Class E Revetment	Erosion Stone	
			Lt./Rt.	FT	FT	Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection	SY	TON	TON	
I-80 WB Survey	1066+25.00	1066+50.00	LT	16	26.4			X			66.0	44.4		Temporary Flume
Ramp G	38611+80.00	38612+00.00	LT	20	32.6			X			96.0	68.5		
Ramp B	32590+45.00	32590+90.00	RT	10	44			X			70.8	44.2		

100-32
10-16-18

ROCK CHECK DAM

Possible Standard: EC-302



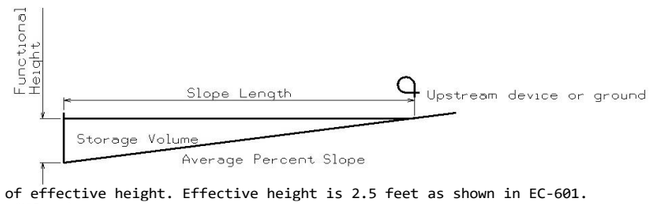
* The functional height used in the volume equation is 90% of effective height. Effective height is 2 feet as shown in EC-302.
* Volume equation: $[0.5*Spacing*(0.5*H^2*FS+DW*H+0.5*H^2*BS)]$

Basin No.	Location			Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Offset	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Volume*	
			FT	LF	Each	Each	FS:1	BS:1	FT		CF	
1	8466+55.00	RT	96.9	28.0	3	1	3.5	3.0	10.0	1.9%	1426.5	
1	8467+55.00	RT	89.5	28.0	3	1	3.5	3.0	10.0	1.9%	1426.5	
1	8468+55.00	RT	84.4	28.0	3	1	3.5	3.0	10.0	1.9%	1426.5	
1	8469+55.00	RT	82.8	28.0	3	1	3.5	3.0	10.0	1.9%	1426.5	
1	8471+25.00	LT	128.0	46.0	3	1	3.5	3.0	29.0	0.5%	12546.0	
1	8476+15.00	LT	242.5	23.0	3	1	3.0	2.0	10.0	3.6%	652.5	

100-33
10-16-18

TEMPORARY SEDIMENT CONTROL BASIN

Possible Standard: EC-601



* The functional height used in the volume equation is 95% of effective height. Effective height is 2.5 feet as shown in EC-601.
* Volume equation: $[(1/4(FS*H^2))+(DW*H)+(1/4*(BS*H^2))]*(H/Avg\%Slope)$

Basin No.	Location		Bid Items			Stormwater Storage Volume Summary					Remarks
	Station	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Average % Slope	Volume*	
			Each	Each	Each	FS:1	BS:1	FT		CF	
1	8470+75.00	RT	1	3	1	3.5	3.0	10.00	3.8%	1315.1	
1	8470+85.00	LT	1	3	1	3.5	3.0	32.00	2.8%	4000.7	
5	38566+15.00	RT	1	3	1	3.5	3.0	10.00	0.3%	19989.0	
5	38565+85.00	RT	1	3	1	3.5	3.0	10.00	2.6%	1922.0	

100-34
10-17-17

STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

Drainage Basin Location						Summary of Stormwater Storage							Remarks
Basin No.	Station to Station		Side	Discharge Point		Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Best Management Practice	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	
				Station	Side	Acres	Acres	Acres		CF	CF	Yes/No	
1	1057+35.00	32587+75.00	BOTH	1066+00.00	RT	16.4	16.4	0.0	Silt Fence for Ditch Check (EC-201)	10297.4	59040.0	Yes	
									Silt Basin (EW-403)	16575.0			
									Rock Check Dam (EC-302)	18904.5			
									Temporary Sediment Control Basin (EC-601)	5315.8			
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	10042.7			
2	32584+76.00	32592+18.00	BOTH	32590+80.00	RT	5.0	5.0	0.0	Silt Fence for Ditch Check (EC-201)	2170.3	18000.0	Yes	
									Silt Basin (EW-403)	9568.8			
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	6318.1			
3	32591+05.00	32593+55.00	BOTH	32591+30.00	RT	1.0	1.0	0.0	Silt Fence for Shallow Ditch or No Ditch (EC-201)	2361.2	3600.0	Yes	
									Silt Basin (EW-403)	2600.0			
4	38566+15.00	38570+50.00	BOTH	38569+55.00	LT	1.7	1.7	0.0	Silt Basin (EW-403)	4087.5	6120.0	Yes	
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	3038.5			
5	38560+00.00	38570+00.00	BOTH	38560+50.00	LT	5.4	5.4	0.0	Silt Fence for Ditch Check (EC-201)	9308.3	19440.0	Yes	
									Silt Basin (EW-403)	3512.5			
									Temporary Sediment Control Basin (EC-601)	21911.0			
6	38557+72.00	38560+00.00	BOTH	38559+80.00	LT	0.8	0.8	0.0	Silt Fence for Ditch Check (EC-201)	439.6	2880.0	Yes	
									Silt Basin (EW-403)	2156.6			
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	771.7			
7	38554+62.00	38557+72.00	LT	38556+65.00	LT	1.1	1.1	0.0	Silt Basin (EW-403)	2662.5	3960.0	Yes	
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	1801.6			
8	2020+50.00	2026+00.00	LT	2024+25.00	LT	1.7	1.7	0.0	Silt Basin (EW-403)	6550.0	6120.0	Yes	
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	3630.5			
9	2017+96.00	2020+50.00	LT	2017+95.00	LT	0.6	0.6	0.0	Silt Fence for Ditch Check (EC-201)	2363.3	2160.0	Yes	
									Silt Basin (EW-403)	1300.0			
10	2092+30.00	2114+60.00	RT	2113+10.00	RT	6.3	6.3	0.0	Silt Fence for Ditch Check (EC-201)	21100.0	22680.0	Yes	
									Silt Basin (EW-403)	14287.5			
11	8517+00.00	8530+05.00	BOTH	8519+50.00	RT	6.4	6.4	0.0	Silt Fence for Ditch Check (EC-201)	28936.6	23040.0	Yes	
									Silt Basin (EW-403)	29287.5			
12	38487+76.00	38625+43.45	BOTH	38616+40.00	RT	24.3	24.3	0.0	Silt Fence for Ditch Check (EC-201)	49732.9	87480.0	Yes	
									Silt Basin (EW-403)	69750.0			
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	7837.1			
13	1119+65.00	1157+55.00	BOTH	1157+55.00	LT	10.5	10.5	0.0	Silt Fence for Ditch Check (EC-201)	31806.4	37800.0	Yes	
									Silt Basin (EW-403)	8767.5			
									Silt Fence for Shallow Ditch or No Ditch (EC-201)	8922.5			

POLLUTION PREVENTION PLAN

This project is regulated by the requirements of the Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 OR an Iowa Department of Natural Resources (DNR) National Pollutant Discharge Elimination System (NPDES) individual storm water permit. The Contractor shall carry out the terms and conditions of this permit and the Pollution Prevention Plan (PPP).

This Base PPP includes information on Roles and Responsibilities, Project Site Description, Controls, Maintenance Procedures, Inspection Requirements, Non-Storm Water Controls, Potential Sources of Off Right-of-Way Pollution, and Definitions. This plan references other documents rather than repeating the information contained in the documents. A copy of this Base Pollution Prevention Plan, amended as needed during construction, will be readily available for review.

All contractors shall conduct their operations in a manner that controls pollutants, minimizes erosion, and prevents sediments from entering waters of the state and leaving the highway right-of-way. The Contractor shall be responsible for compliance and implementation of the PPP for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

I. ROLES AND RESPONSIBILITES

A. Designer:
1. Prepares Base PPP included in the project plan.
2. Prepares Notice of Intent (NOI) submitted to Iowa DNR.
3. Is signature authority on the Base PPP. If consultant designed, signature from Contracting Authority is also required.

B. Contractor:
1. Signs a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP. All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Designates a Water Pollution Control Manager (WPCM), who has the duties and responsibilities as defined in Section 2602 of the Standard Specifications.
3. Submits an Erosion Control Implementation Plan (ECIP) and ECIP updates according to Section 2602 of the Standard Specifications.
4. Installs and maintains appropriate controls. This work may be subcontracted as documented through Subcontractor Request Forms (Form 830231).
5. Supervises and implements good housekeeping practices according to Paragraph III, C, 2.
6. Conducts joint required inspections of the site with inspection staff. When Contractor is not mobilized on site, Contractor may delegate this responsibility to a trained or certified subcontractor. Contracting Authority also may waive joint inspection requirement during winter shutdown. In both circumstances, WPCM (or trained or certified delegate from the Contractor) is still responsible to review and sign inspection reports.
7. Complies with training and certification requirements of Section 2602 of the Standard Specifications.
8. Submits amended PPP site map according to Section 2602 of the Standard Specifications.

C. Subcontractors:
1. Sign a co-permittee certification statement adhering to the requirements of the NPDES permit and this PPP if: responsible for sediment or erosion controls; involved in land disturbing activities; or peroming work that is a source of potential pollution as defined in this PPP. Subcontracted work items are identified in Subcontractor Request Forms (Form 830231). All co-permittees are legally required under the Clean Water Act and the Iowa Administrative Code to ensure compliance with the terms and conditions of this PPP.
2. Implement good housekeeping practices according to Paragraph III, C, 2.

D. RCE/Project Engineer:
1. Is Project Storm Water Manager.
2. On projects where DOT is the Contracting Authority, is current with erosion control training or certification.
3. Takes actions necessary to ensure compliance with storm water requirements including, where appropriate, issuing stop work orders, and directing additional inspections at construction project sites that are experiencing problems with achieving permit compliance.
4. Orders the taking of measures to cease, correct, prevent, or minimize the consequences of non-compliance with the storm water requirements of the Applicable Permit.
5. Supervises all work necessary to meet storm water requirements at the Project, including work performed by contractors and subcontractors.
6. Requires employees, contractors, and subcontractors to take appropriate responsive action to comply with storm water requirements, including requiring any such person to cease or correct a violation of storm water requirements, and to order or recommend such other actions as necessary to meet storm water requirements.
7. Is familiar with the Project PPP and storm water site map.
8. On projects where DOT is Contracting Authority, is responsible for periodically monitoring inspection reports to determine whether deficiencies identified in inspection reports were adequately and timely addressed, and if not, has the authority and responsibility to direct immediate actions to correct the deficiencies.
9. Is the point of contact for the Project for regulatory officials, Inspector, contractors, and subcontractors regarding storm water requirements.
10. Is signature authority on Notice of Discontinuation.
11. Maintains an up-to-date record of contractors, subcontractors, and subcontracted work items through Subcontractor Request Forms (Form 830231).
12. Makes information to determine permit compliance available to the DNR upon their request.

E. Inspector:
1. Updates PPP through fieldbook entries and storm water site inspection reports if there is a change in design, construction, operation, or maintenance which has a significant effect on the discharge of pollutants from the project.
2. Makes information to determine permit compliance available to the DNR upon their request.
3. Conducts joint required inspections of the site with the contractor/subcontractor.
4. Completes an inspection report after each inspection.
5. Is signature authority on storm water inspection reports.

II. PROJECT SITE DESCRIPTION

A. This Pollution Prevention Plan (PPP) is for the construction of a *Describe Type of Facility*.

B. This PPP covers approximately *Provide # Of Acres* acres with an estimated *Provide # of Acres* acres being disturbed. The portion of the PPP covered by this contract has *Provide # of Acres* acres disturbed.

C. The PPP is located in an area of *Provide # of Types Of Soil Association* soil association (*Provide Soil Association Type or* *Types*). The estimated weighted average runoff coefficient number for this PPP after completion will be *Provide runoff coefficient Number*.

D. Storm Water Site Map is located in the R sheets. Proposed slopes are shown in cross sections, details, or standard road plans. Supplemental information is located in the Tabulations in the C or CE sheets.

E. The base storm water site map is amended by contract modifications and progress payments (fieldbook entries) of completed erosion control work. Also, due to project phasing, erosion and sediment controls shown on project plans may not be installed until needed, based on site conditions. For example, silt fence ditch checks will typically not be installed until the ditch has been installed. Installed locations may also be modified from tabulation locations by field staff. Installed locations will be documented by fieldbook entries and amended PPP site map.

F. Runoff from this work will flow into *List Outlets for Runoff*.

110-12
10-20-20

POLLUTION PREVENTION PLAN

III. CONTROLS

A. The Contractor's ECIP specified in Article 2602.03 of the Standard Specifications for accomplishment of storm water controls should clearly describe the intended sequence of major activities, and for each activity define the control measure and the timing during the construction process that the measure will be implemented.

B. Preserve vegetation in areas not needed for construction.

C. Sections 2601 and 2602 of the Standard Specifications define requirements to implement erosion and sediment control measures. Actual quantities used and installed locations may vary from the Base PPP and amendment of the plan will be documented via fieldbook entries, amended PPP site map, or by contract modification. Additional erosion and sediment control items may be required as determined by the inspector and/or contractor during storm water site inspections. If the work involved is not applicable to any contract items, the work will be paid for according to Article 1109.03 paragraph B of the Standard Specifications.

1. EROSION AND SEDIMENT CONTROLS

a. Stabilization Practices
1) Site plans will ensure that existing vegetation or natural buffers are preserved where attainable and disturbed portions of the site will be stabilized.
2) Initialize stabilization of disturbed areas immediately after clearing, grading, excavating, or other earth disturbing activities have:
a) Permanently ceased on any portion of the site, or
b) Temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.
3) Staged permanent and/or temporary stabilizing seeding and mulching shall be completed as the disturbed areas are completed. Incomplete areas shall be stabilized according to paragraph III, C, 1, a, 2, b above.
4) Permanent and Temporary Stabilization practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation (105-4) in the C or R sheets.
5) Preservation of existing vegetation within right-of-way or easements will act as vegetative buffer strips.
6) Preservation of topsoil: Bid items to be used for this project are located in the Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets. Additional information may be found in the Tabulations in the C or T Tabulation sheets, or is referenced in Section 2105 of the Standard Specifications.

b. Structural Practices
1) Structural practices will be implemented to divert flows from exposed soils and detain or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Additionally, structural practices may include: silt basins that provide 3600 cubic feet of storage per acre drained or equivalent sediment controls, outlet structures that withdraw water from surface when discharging basins, and controls to direct storm water to vegetated areas.
2) Structural practices to be used for this project are located in the storm water site map, Estimated Project Quantities (100-0A, 100-1A, or 100-1C), and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the devices to be used on this project can be found on the B or R sheets or are referenced in the Standard Road Plans Tabulation (105-4) located in the C or R sheets.

c. Storm Water Management
Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. This may include velocity dissipation devices at discharge locations and along length of outfall channel as necessary to provide a non-erosion velocity flow from structure to water course. If included with this project, these items are located in the storm water site map and Estimated Project Quantities (100-0A, 100-1A, or 100-1C) and Estimate Reference Information (100-4A) located in the C or R sheets, as well as all other item specific Tabulations. Typical drawings detailing construction of the practices to be used on this project are referenced in the Standard Road Plans Tabulation. The installation of these devices may be subject to Section 404 of the Clean Water Act.

2. OTHER CONTROLS
Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.
a. Vehicle Entrances and Exits - Construct and maintain entrances and exits to prevent tracking of sediments onto roadways.
b. Material Delivery, Storage and Use - Implement practices to prevent discharge of construction materials during delivery, storage, and use.
c. Stockpile Management - Install controls to reduce or eliminate pollution of storm water from stockpiles of soil and paving.
d. Waste Disposal - Do not discharge any materials, including building materials, into waters of the state, except as authorized by a Section 404 permit.
e. Spill Prevention and Control - Implement chemical spill and leak prevention and response procedures to contain and clean up spills and prevent material discharges to the storm drain system and waters of the state.
f. Concrete Residuals and Washout Wastes - Waste shall not be discharged to a surface water and is not allowed to adversely affect a water of the state. Designate temporary concrete washout facilities for rinsing out concrete trucks. Provide directions to truck drivers where designated washout facilities are located. Designated washout areas should be located at least 50 feet away from storm drains, streams or other water bodies. Care should be taken to ensure these facilities do not overflow during storm events.
g. Concrete Grooving/Grinding Slurry – Do not discharge slurry to a waterbody or storm drain. Slurry may be applied on foreslopes or removed from the project.
h. Vehicle and Equipment Storage and Maintenance Areas - Perform on site fueling and maintenance in accordance with all environment laws such as proper storage of onsite fuels and proper disposal of used engine oil or other fluids on site. Employ washing practices that prevent contamination of surface and ground water from wash water. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge.
i. Litter Management - Ensure employees properly dispose of litter. Minimize exposure of trash if exposure to precipitation or storm water would result in a discharge of pollutants.
j. Dewatering – Properly treat water to remove suspended sediment before it re-enters a waterbody or discharges off-site. Measures are also to be taken to prevent scour erosion at dewatering discharge point.

3. APPROVED STATE OR LOCAL PLANS
During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

POLLUTION PREVENTION PLAN

IV. MAINTENANCE PROCEDURES

The Contractor is required to maintain all temporary erosion and sediment control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. This shall begin when the features have lost 50% of their capacity.

V. INSPECTION REQUIREMENTS

A. Inspections shall be made jointly by the Contractor and the Contracting Authority's inspector at least once every seven calendar days. Storm water site inspections will include:
   1. Date of the inspection.
   2. Summary of the scope of the inspection.
   3. Name and qualifications of the personnel making the inspection.
   5. Review of erosion and sediment control measures within disturbed areas for the effectiveness in preventing impacts to receiving waters.
   6. Major observations related to the implementation of the PPP.
   7. Identification of corrective actions required to maintain or modify erosion and sediment control measures.

B. Include storm water site inspection reports in the Amended PPP. Incorporate any additional erosion and sediment control measures determined as a result of the inspection. Immediately begin corrective actions on all deficiencies found within 3 calendar days of the inspection and complete within 7 calendar days following the inspection. If it is determined that making the corrections less than 72 hours after the inspection is impracticable, it should be documented why it is impracticable and indicate an estimated date by which the corrections will be made.

VI. NON-STORM WATER DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains) and slope drains. The velocity of the discharge from these features may be controlled by the use of headwalls or blocks, Class A stone, erosion stone or other appropriate materials. This also includes uncontaminated groundwater from dewatering operations, which will be controlled as discussed in Section III of the PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION

Silts, sediment, and other forms of pollution may be transported onto highway right-of-way (ROW) as a result of a storm event. Potential sources of pollution located outside highway ROW are beyond the control of this PPP. Pollution within highway ROW will be conveyed and controlled per this PPP.

VIII. DEFINITIONS

A. Base PPP - Initial Pollution Prevention Plan.
B. Amended PPP - Base PPP amended during construction. May include Plan Revisions or Contract Modifications for new items, storm water site inspection reports, fieldbook entries made by the inspector, amended PPP site map by the Contractor, ECIP, NOI, co-permittee certifications, and Subcontractor Request Forms. Items amending the PPP are stored electronically and are readily available upon request.
C. Fieldbook Entries – This contains the inspector’s daily diary and bid item postings.
D. Controls - Methods, practices, or measures to minimize or prevent erosion, control sedimentation, control storm water, or minimize contaminants from other types of waste or materials. Also called Best Management Practices (BMPs).
E. Signature Authority - Representative authorized to sign various storm water documents.

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____
Signature

_____
Printed or Typed Name

_____
Signature

_____

LINE STYLE LEGEND OF EROSION CONTROL SHEETS

- Silt Fence
- 9 Perimeter and Slope Sediment Control Device (9")
- 12 Perimeter and Slope Sediment Control Device (12")
- 20 Perimeter and Slope Sediment Control Device (20")
- Open-Throat Curb Intake Sediment Filter
- Concentrated Flow
- Sheet Flow

PLAN VIEW COLOR LEGEND OF EROSION CONTROL 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
Black	(0)	Permanent Erosion Control Features
Blaze Orange	(222)	Temporary Erosion Control Features

SHADING	Design Color No.		Transparency
Citron	(234)	Mulching, All Types	50%
Light Brown	(238)	Special Ditch Control, Wood Excelsior Mat	0%

CELL LEGEND OF EROSION CONTROL SHEETS

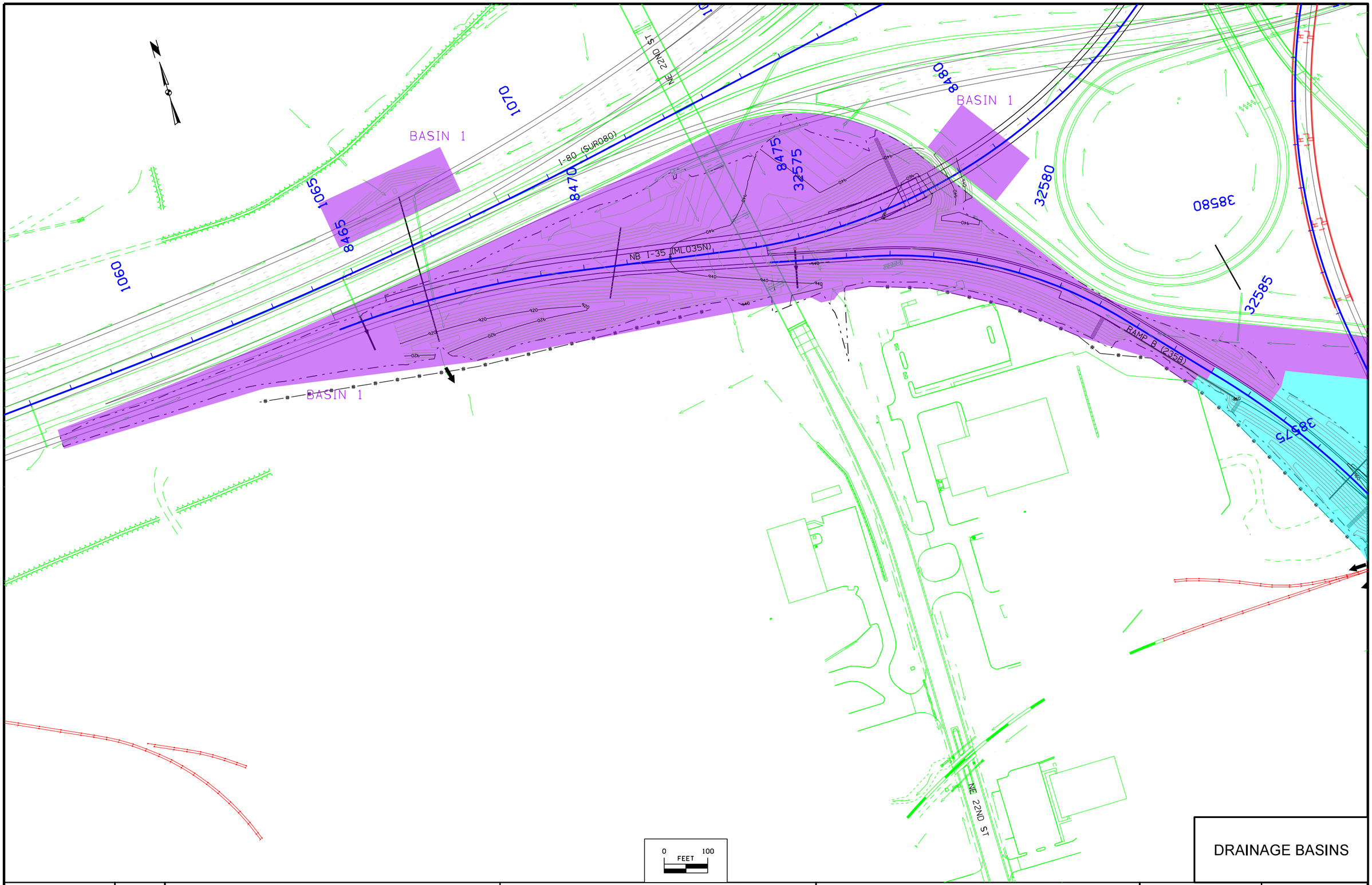
- Temporary Sediment Control basin
- Erosion Control for Circular Intake or Manhole Well
- Erosion Control for Rectangular Intake or Manhole Well
- Grate Intake Sediment Filter Bag
- Silt Basin
- Silt Fence Tail
- Stormwater Drainage Basin Discharge Point

PATTERN LEGEND OF EROSION CONTROL SHEETS

- Seeding and Fertilizing
- R Seeding and Fertilizing (Rural)
- U Seeding and Fertilizing (Urban)
- N Native Grass Seeding
- ST Salt Tolerant Seeding
- WL Wetland Grass Seeding
- WF Wildflower Seeding
- SOD Sodding
- 01 Turf Reinforcement Mat Type 1
- 02 Turf Reinforcement Mat Type 2
- 03 Turf Reinforcement Mat Type 3
- 04 Turf Reinforcement Mat Type 4
- S Slope Protection, Wood Excelsior Mat
- TM Transition Mat
- P Rock Features, Permanent
- T Rock Features, Temporary

EROSION CONTROL LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES R)



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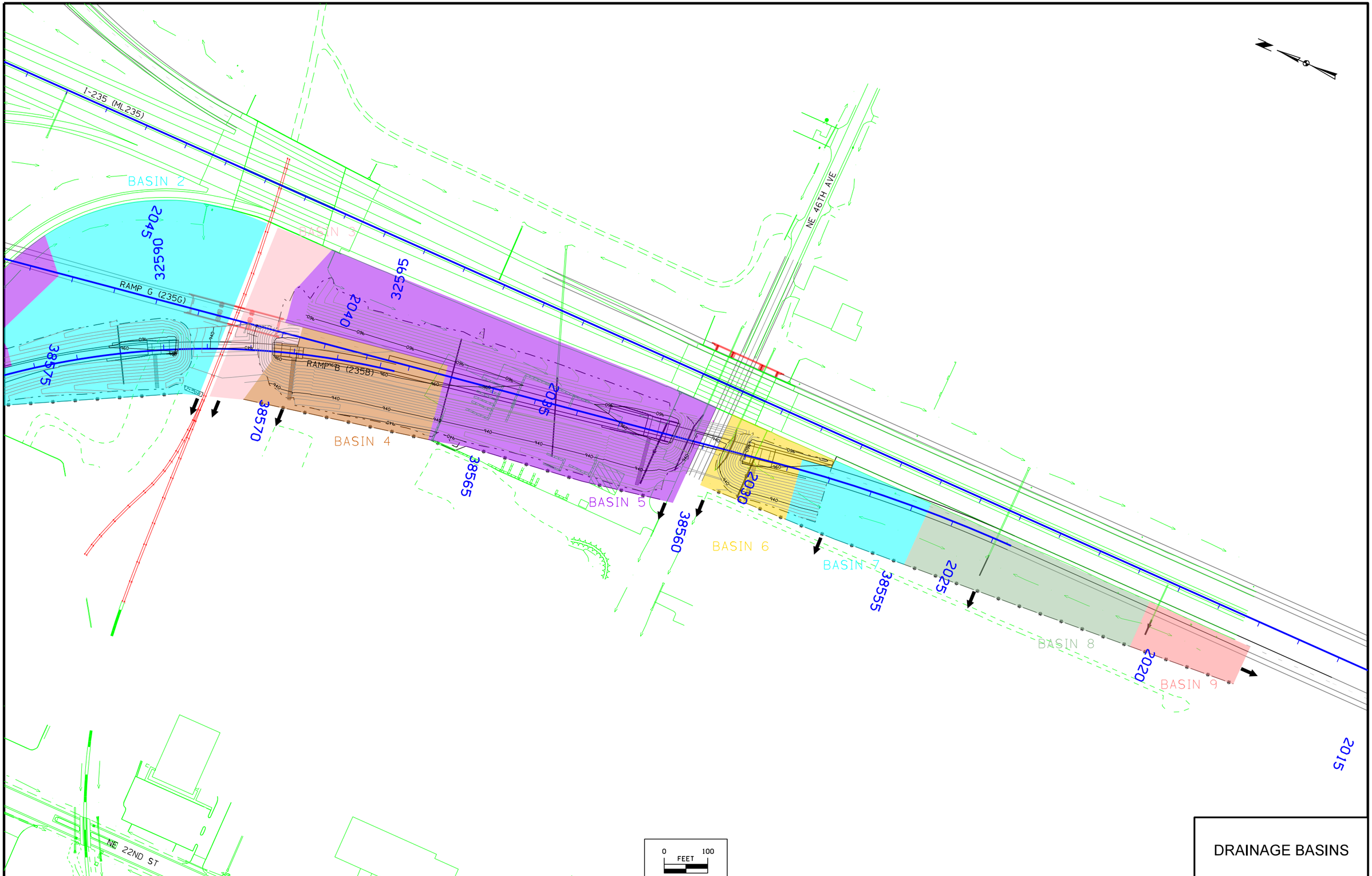

DRAINAGE BASINS

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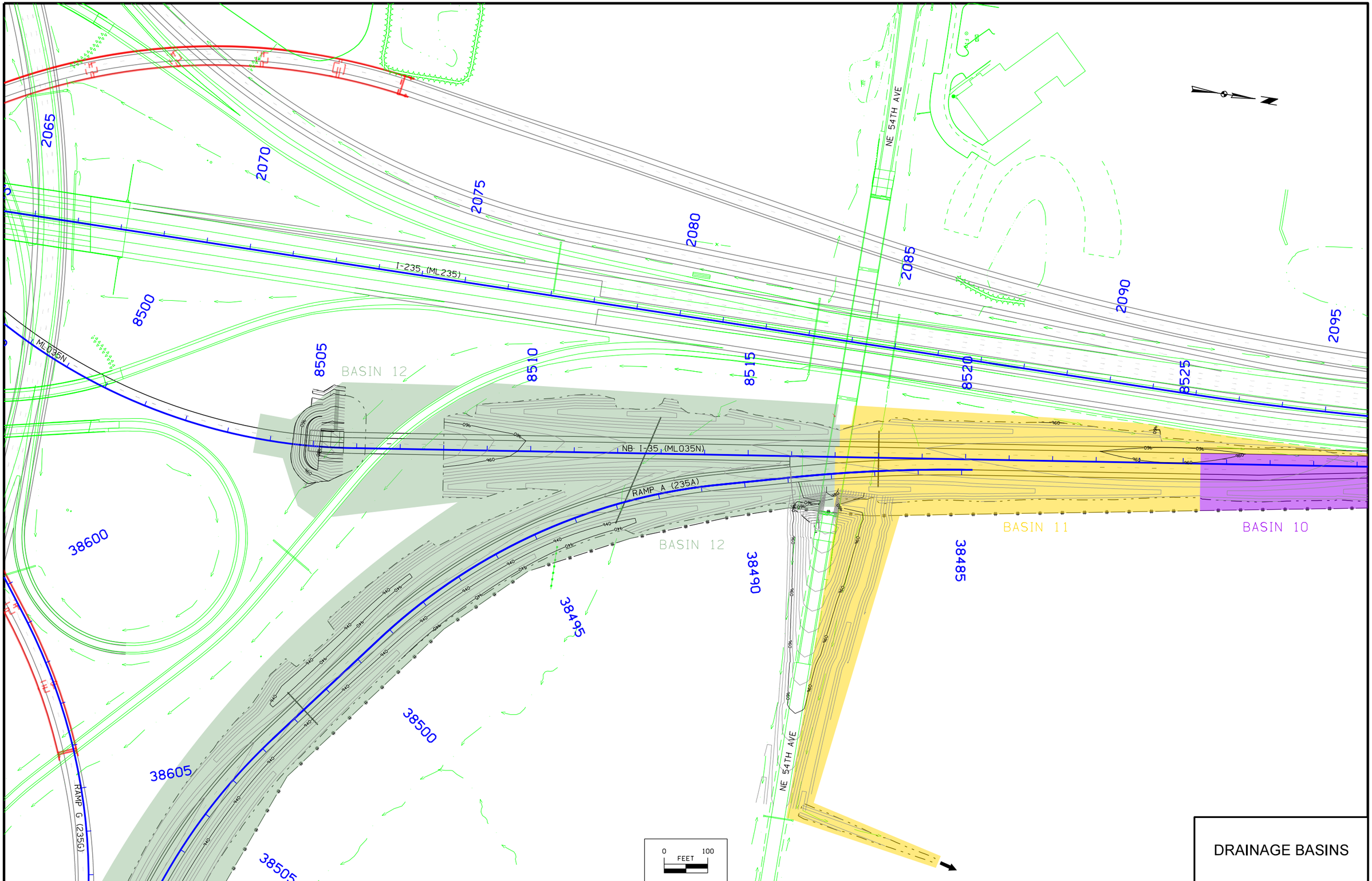

DRAINAGE BASINS

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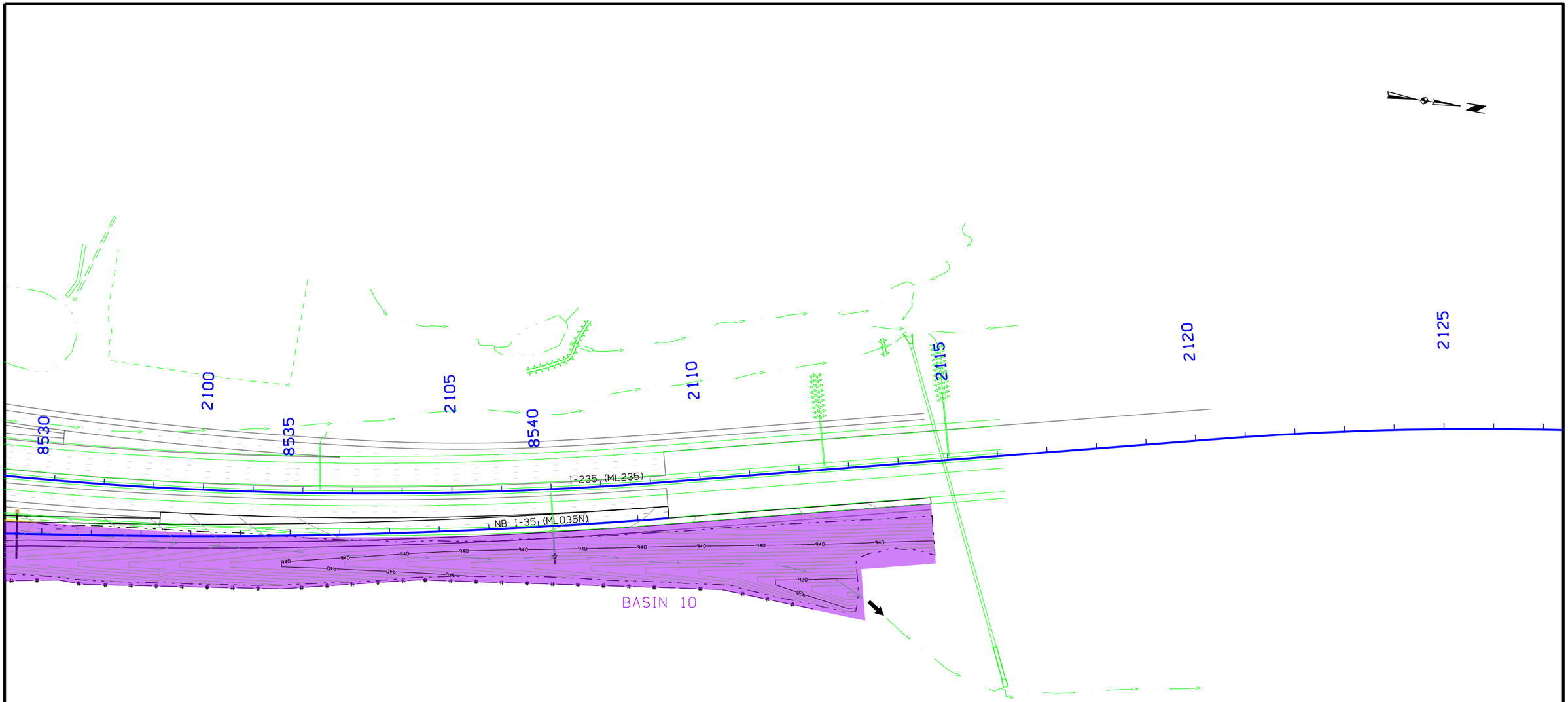

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FEET

DRAINAGE BASINS

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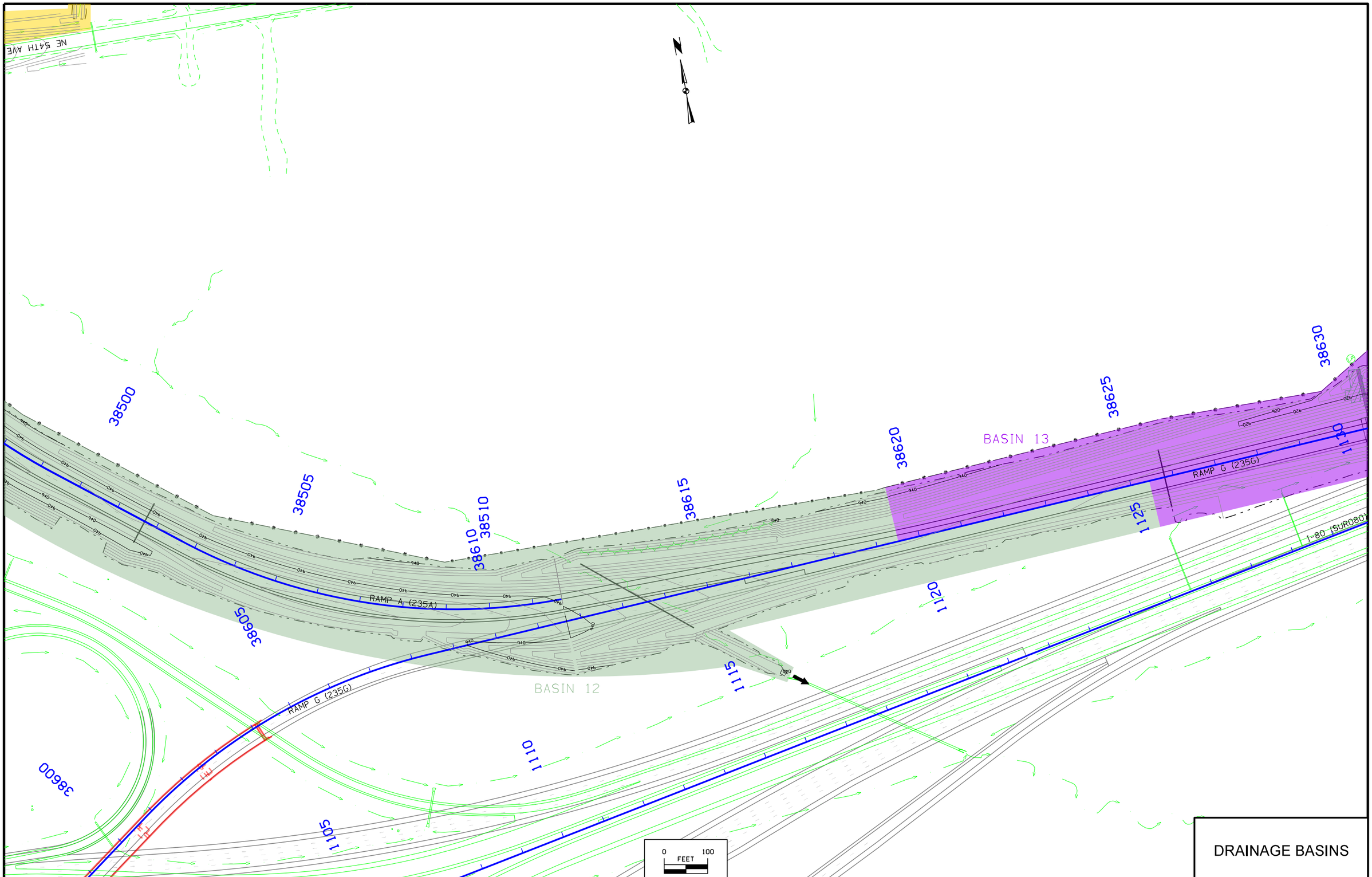

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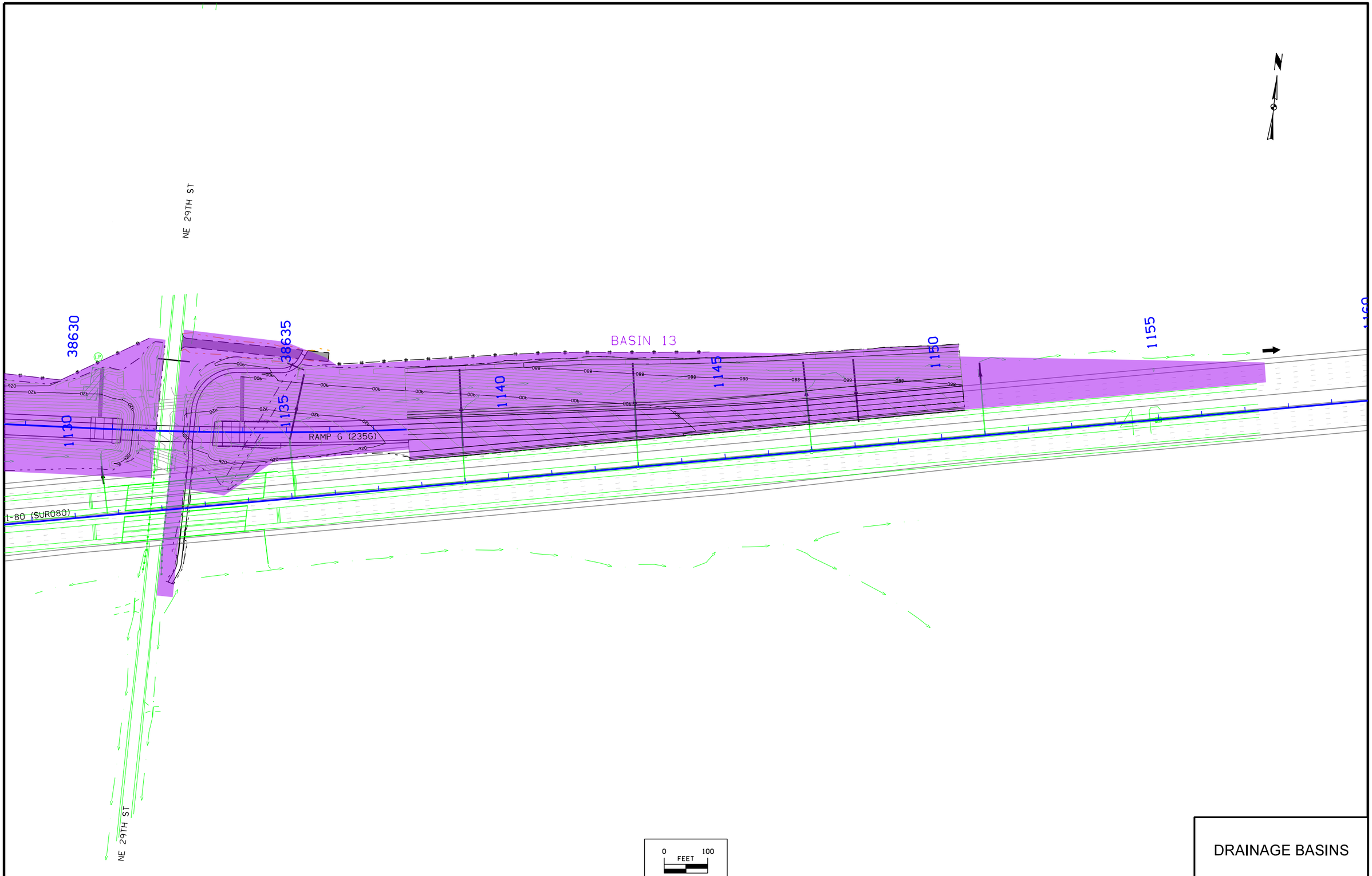

DRAINAGE BASINS

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SAYLOR TWP.
T-79-N R-24W
SEC. 13

DELAWARE TWP.
T-79-N R-23W
SEC. 18

SAYLOR TWP.
T-79-N R-24W
SEC. 13

SIGN

FUTURE WB I-80

SIGN SIGN

SIGN SIGN BRIDGE

WESTBOUND I-80

SUR080 B

FUTURE EB I-80

SIGN

EASTBOUND I-80

SIGN

SIGN

SIGN

3.5:1

3:1

8465

6:1

3.5:1

3:1

NB I-35 (ML035N)

3.5:1

6:1

4%

3:1

8475

Billboard

SAYLOR TWP.
T-79-N R-24W
SEC. 13

0 FEET 50

DELAWARE TWP.
T-79-N R-23W
SEC. 18

I-35 NB & RAMP B
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.8

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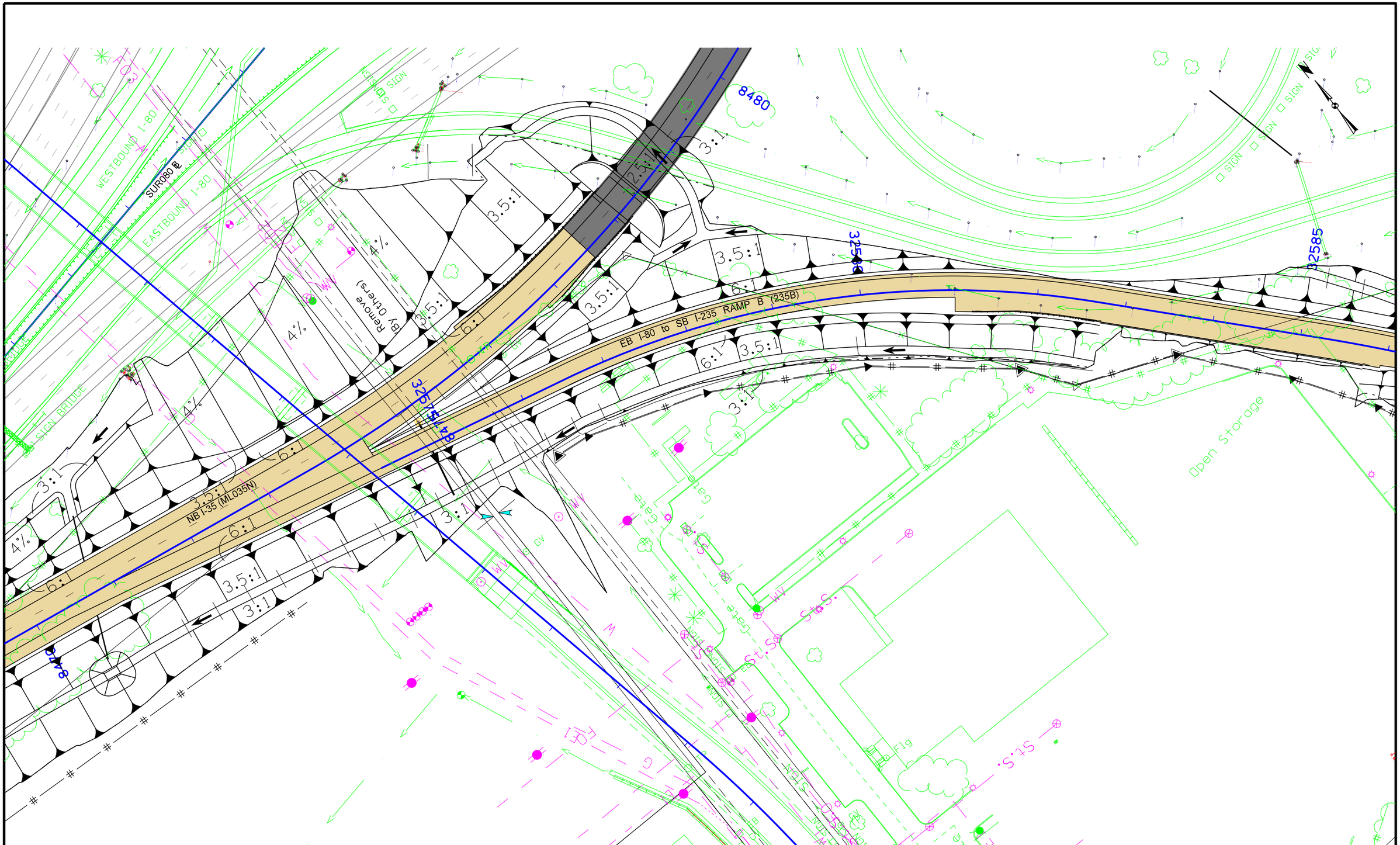

I-35 NB & RAMP B
EROSION CONTROL

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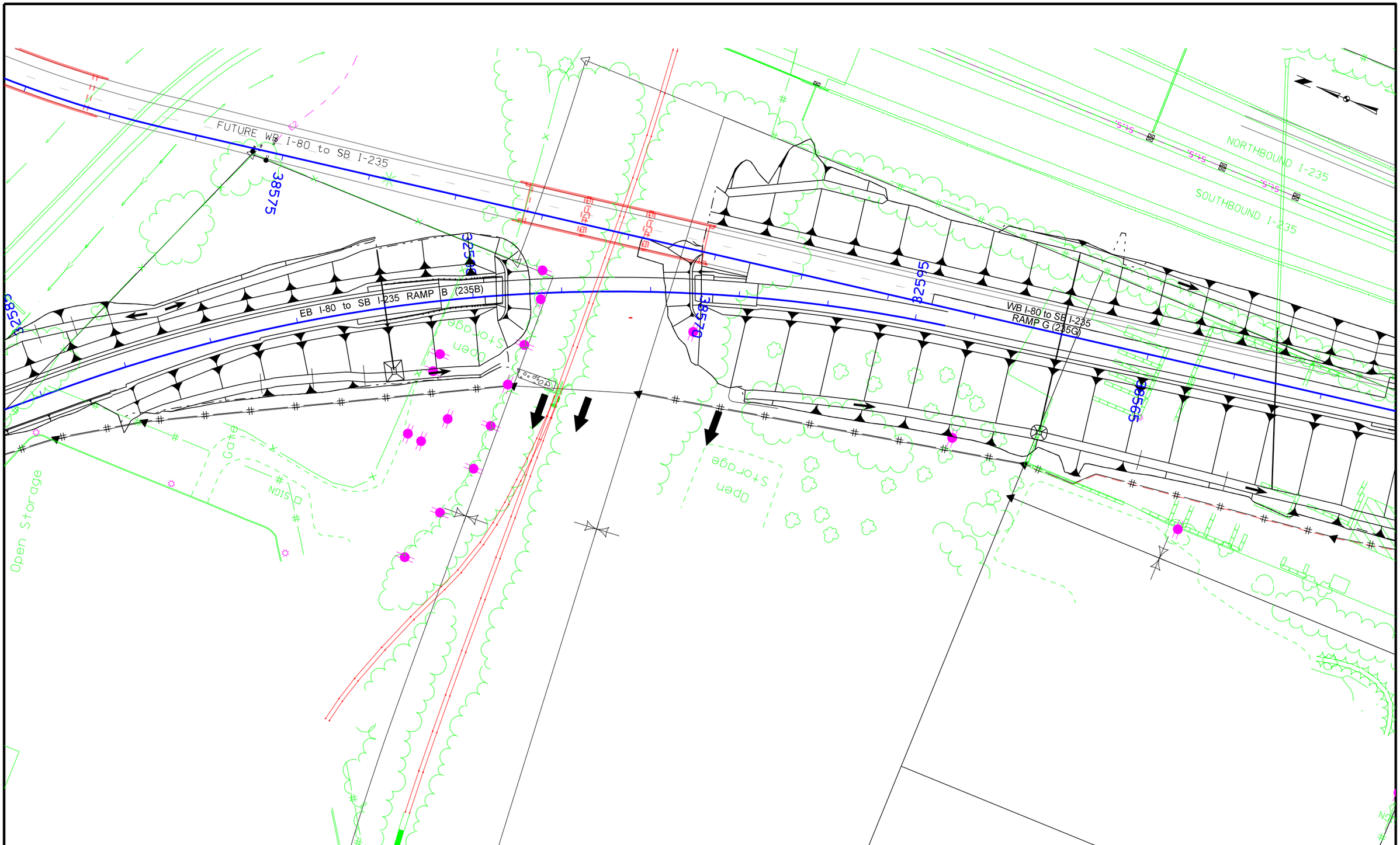

RAMP B & G
EROSION CONTROL

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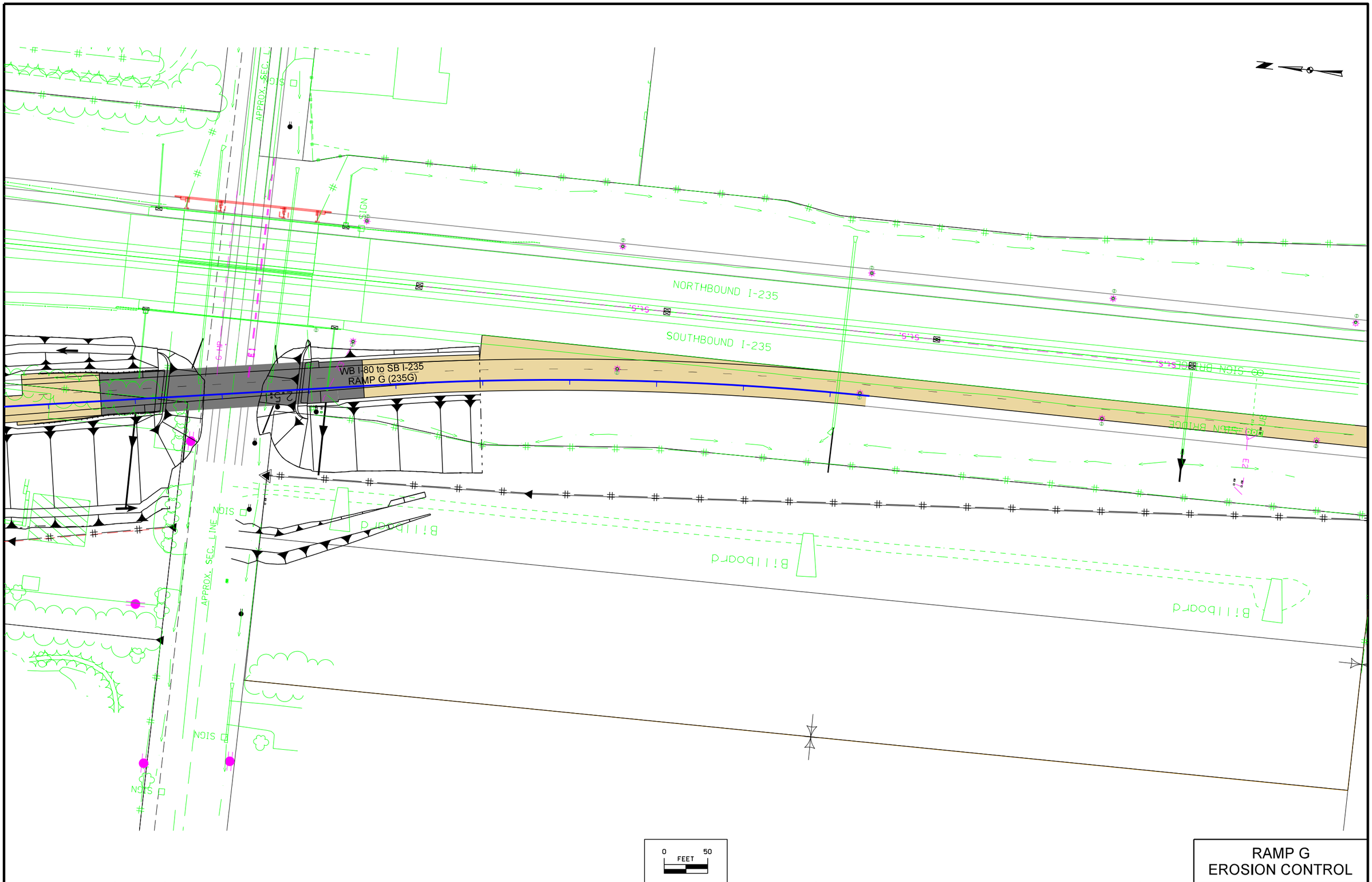

RAMP G
EROSION CONTROL

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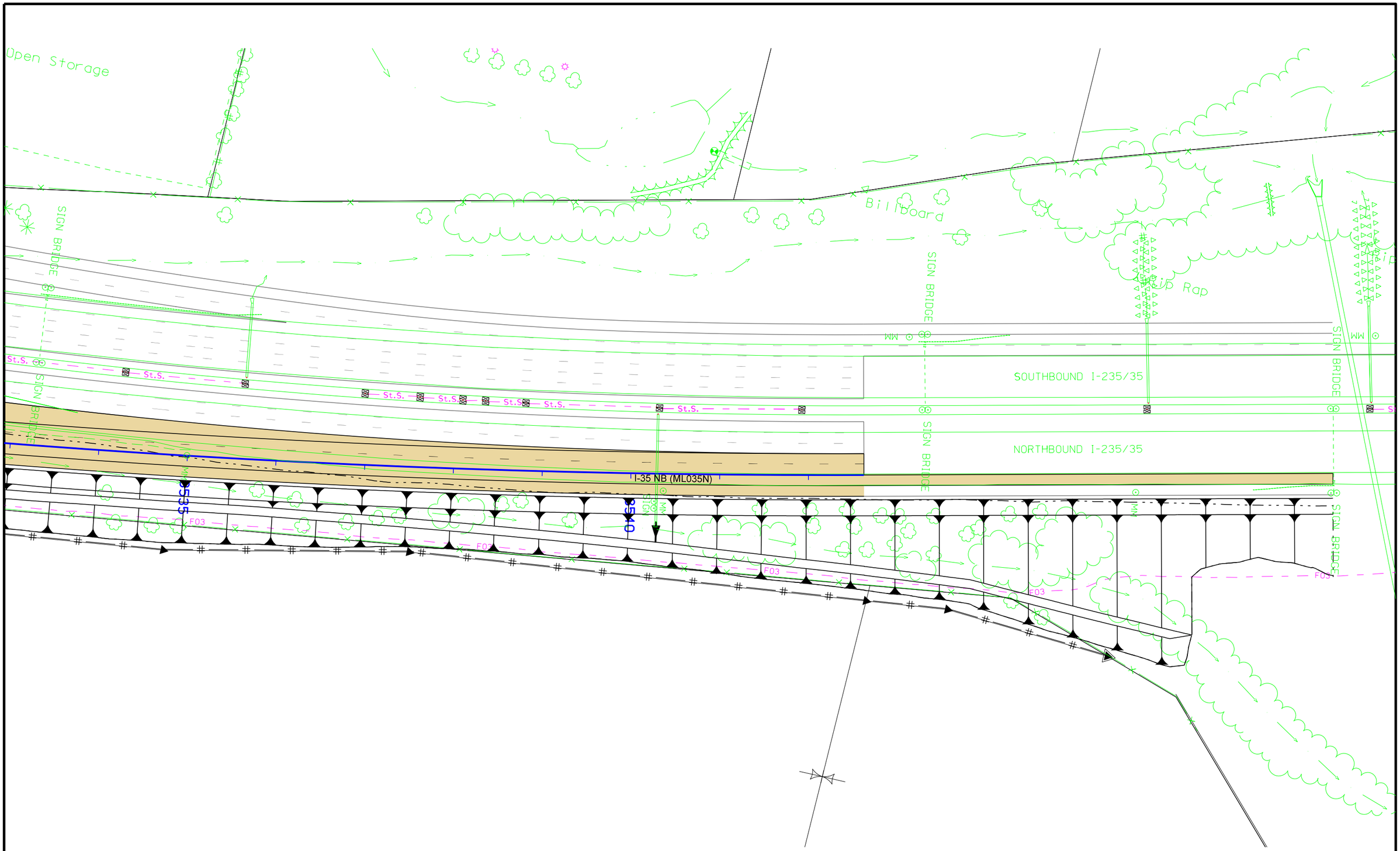

I-235
EROSION CONTROL

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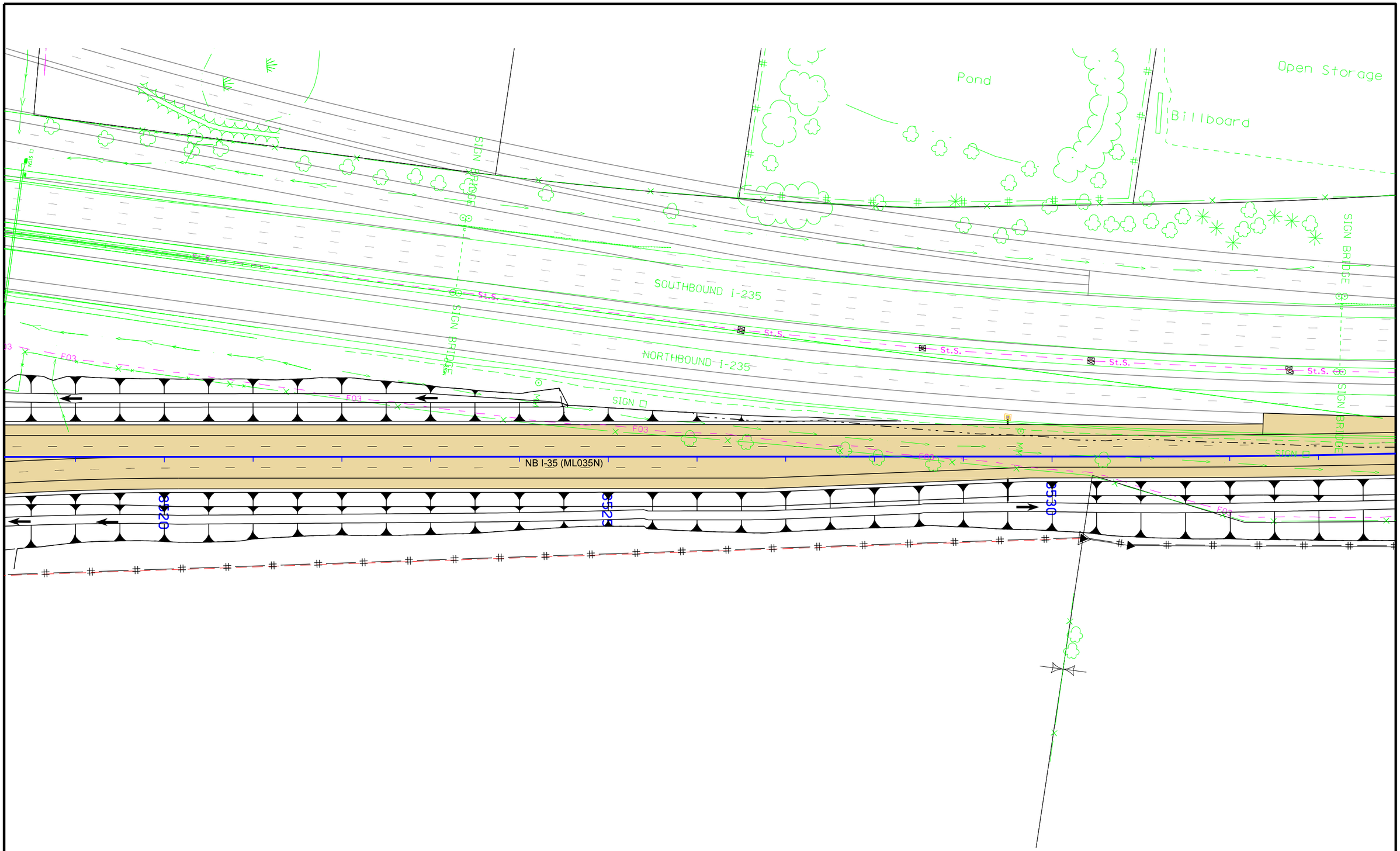

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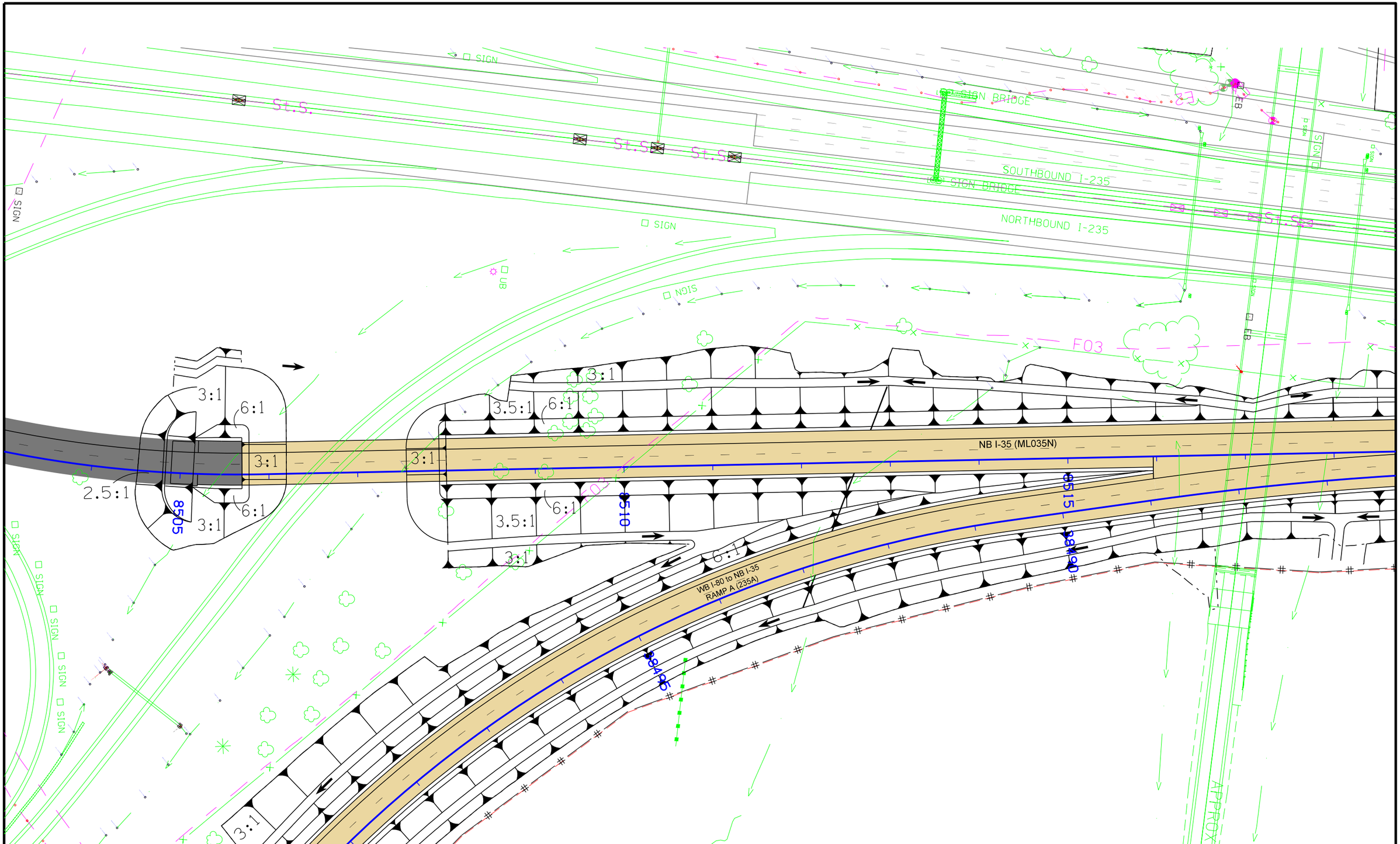
I-35 NB
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.13

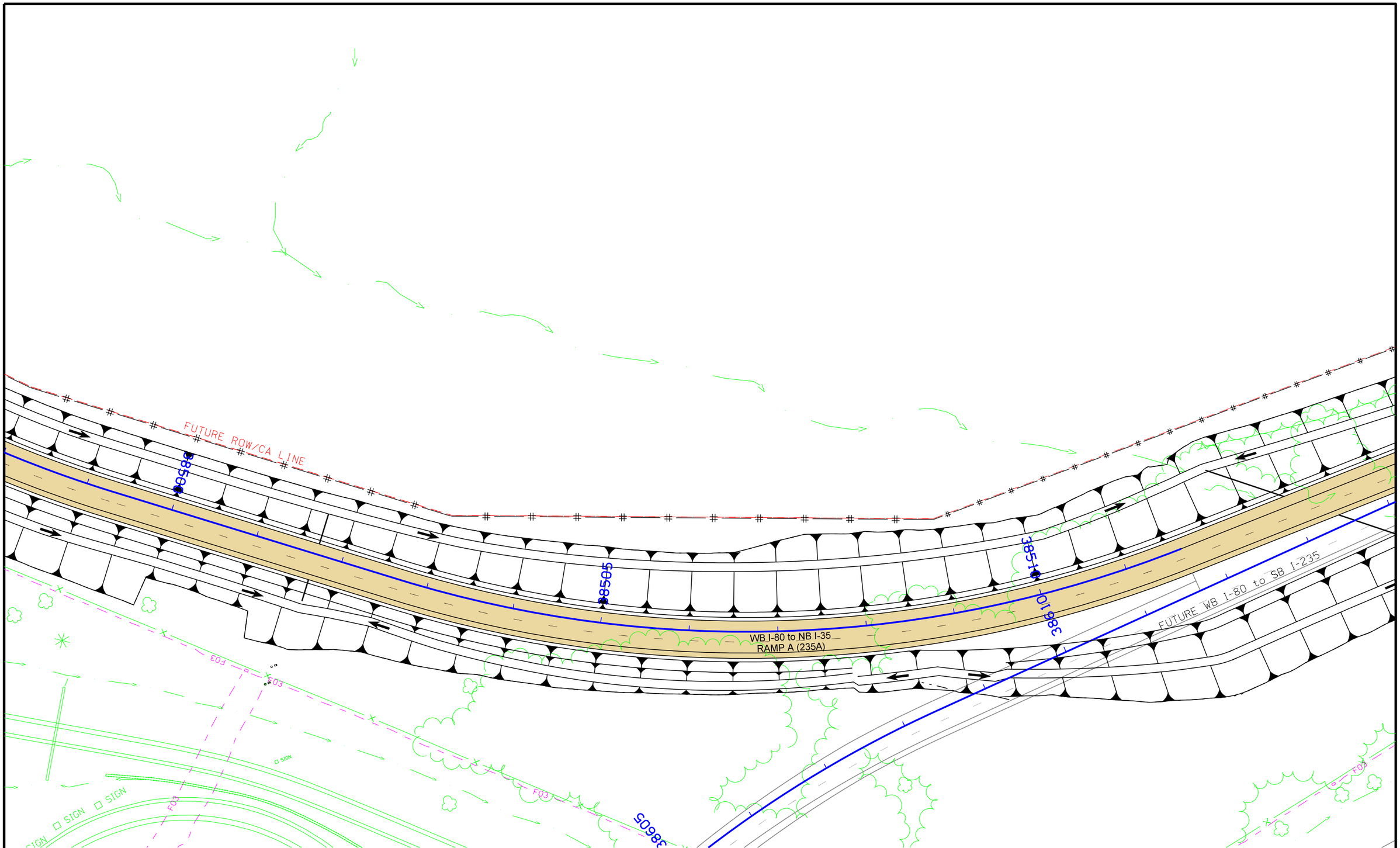
9:14:39 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194RR02.sht



I-35 NB & RAMP A
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.14

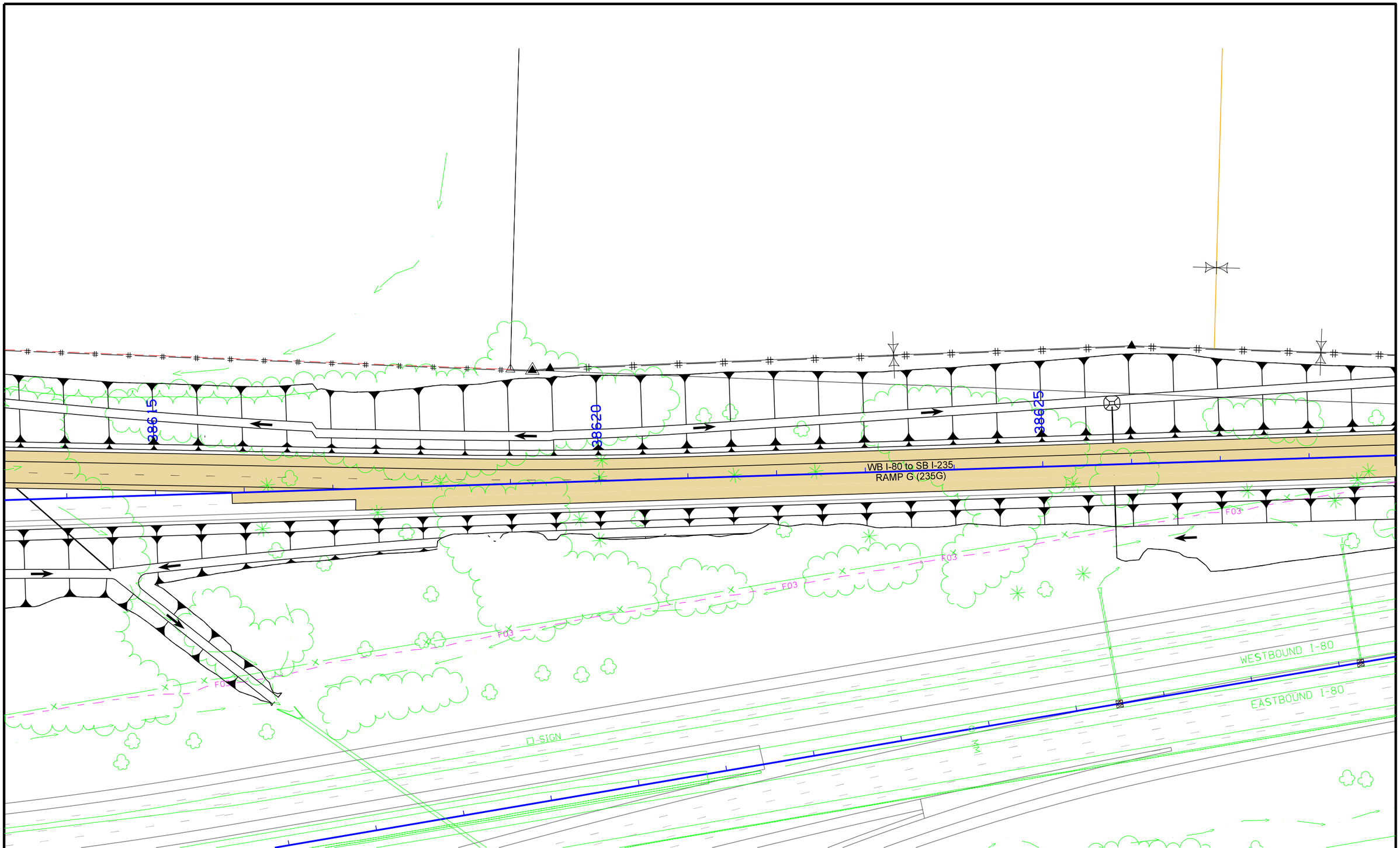
9:14:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194RR02.sht



RAMP A & G
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.15

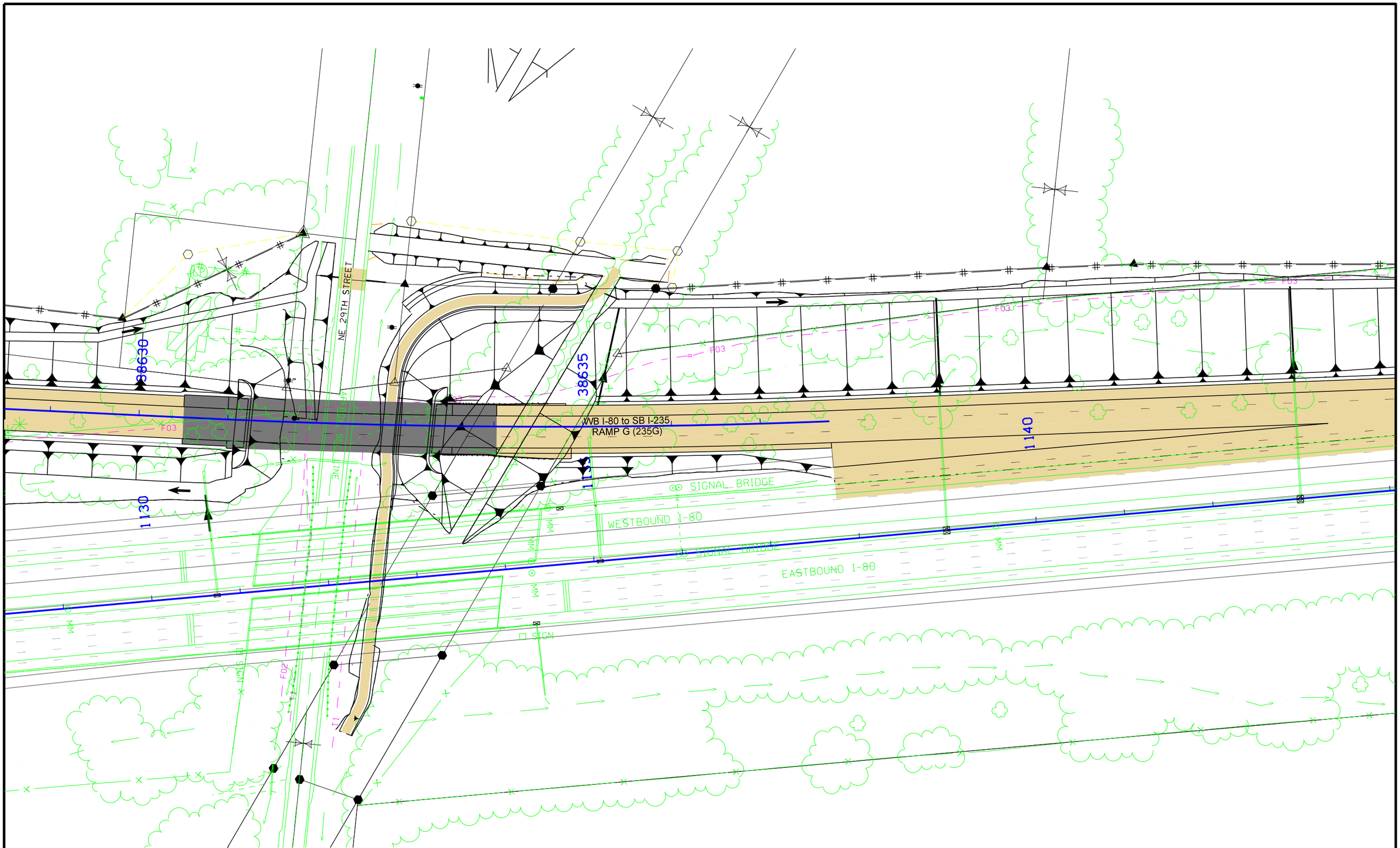
9:14:59 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194RR02.sht



RAMP G
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.16

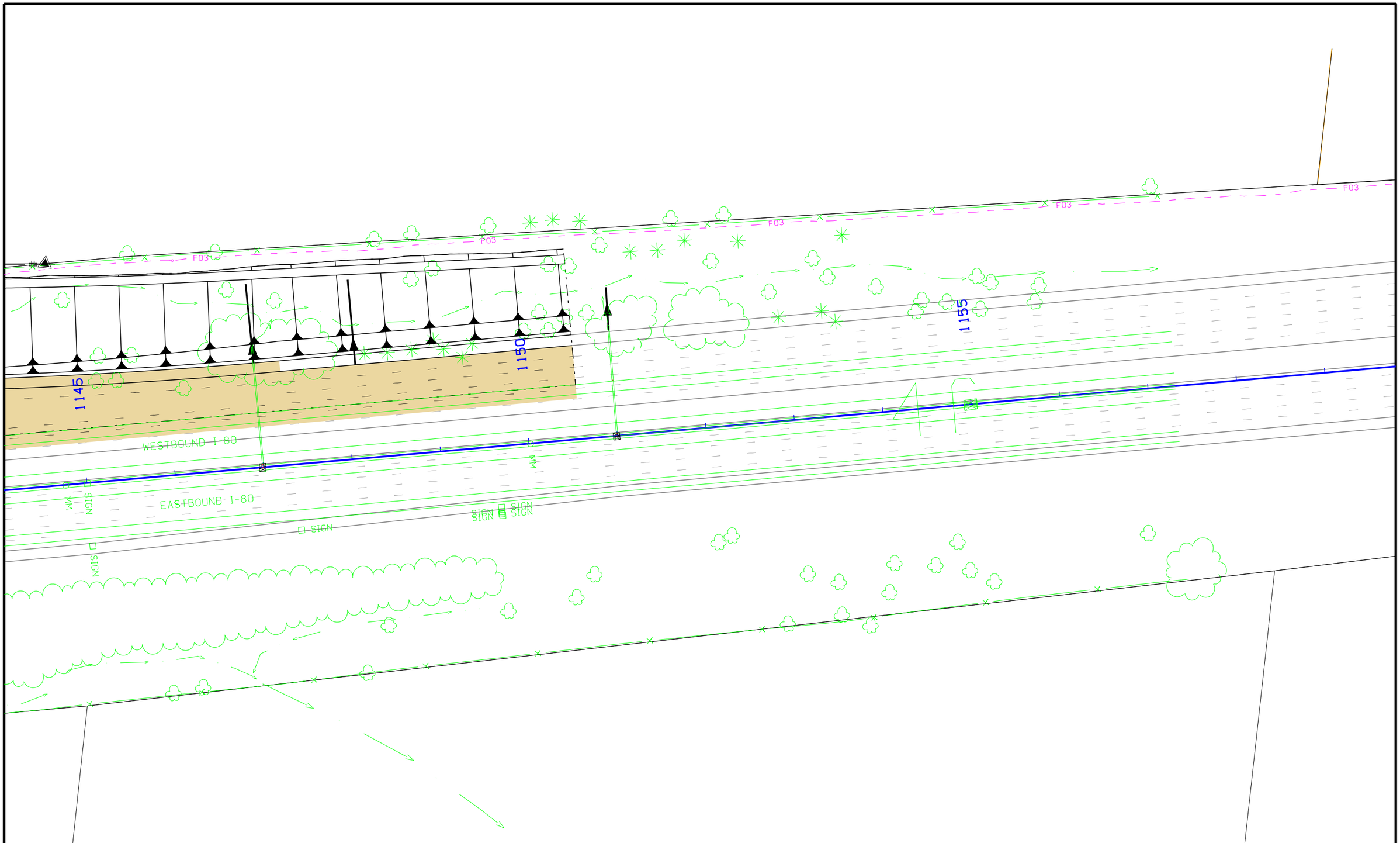
9:15:07 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194RR02.sht



RAMP G & I-80
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.17

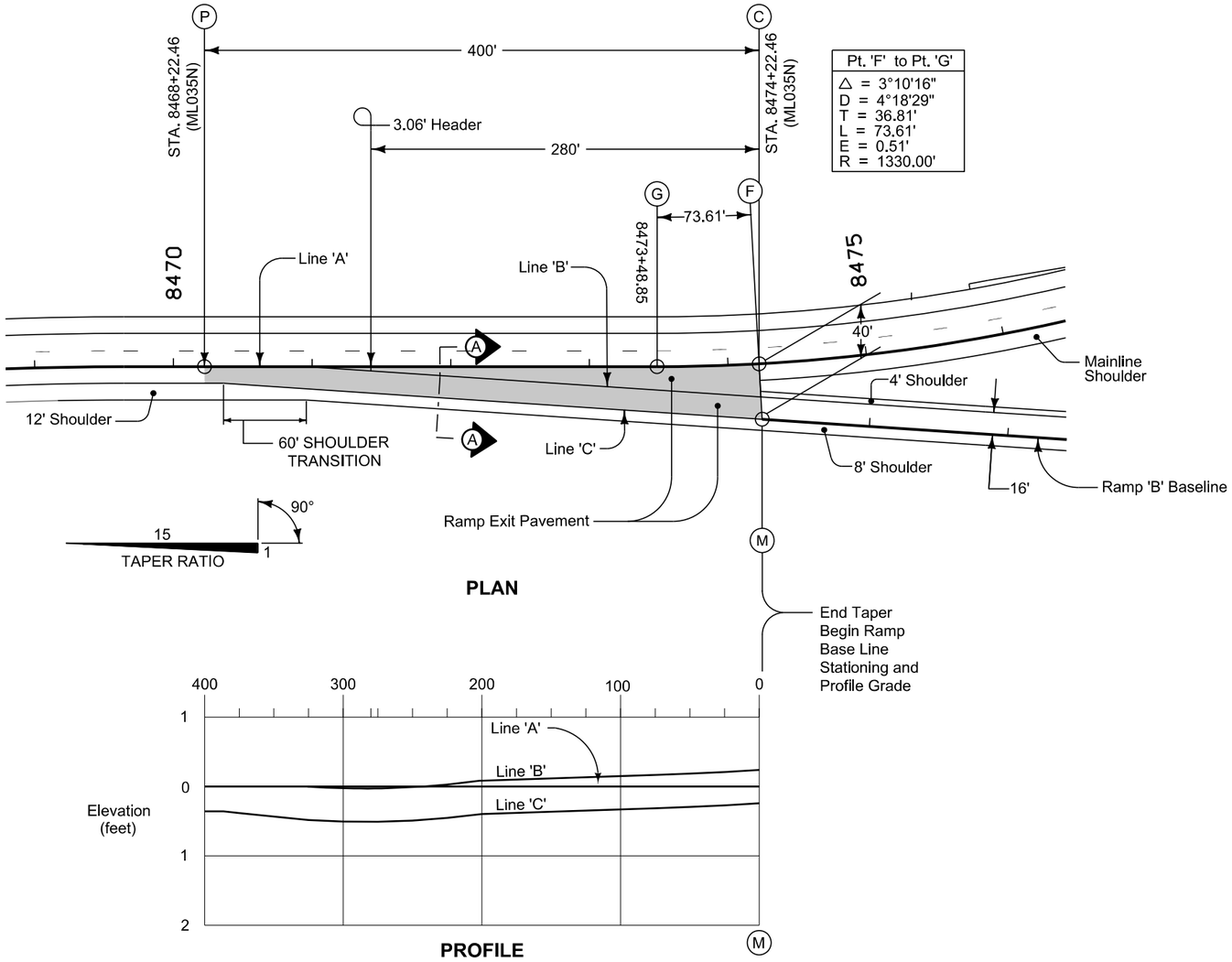
9:15:16 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194RR02.sht



I-80
EROSION CONTROL

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER RR.18

9:15:25 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194RR02.sht



PLAN

PROFILE

Pt. 'F' to Pt. 'G'
△ = 3°10'16"
D = 4°18'29"
T = 36.81'
L = 73.61'
E = 0.51'
R = 1330.00'

Refer to detail project plans for mainline and ramp alignment and grade data.

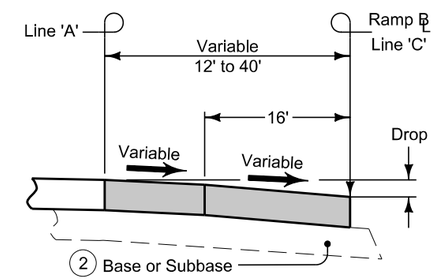
Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 1097 square yards.

This design is based on 60 mph design speed at e max = 6%.

(1) For header construction details at the beginning of taper see Typical 7101.

(2) Construct subbase for ramp exit pavement the same thickness as mainline subbase.



SECTION A-A

(C)

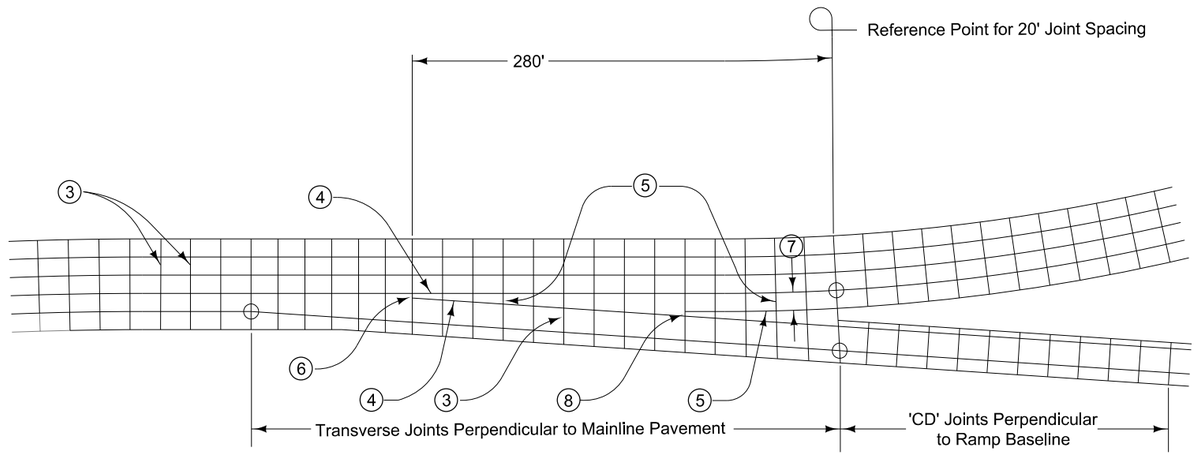
TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																		
DISTANCE FROM POINT (C) ALONG LINE 'A' (Ft.)		400	375	350	325	300	280	250	225	200	175	150	125	100	75	50	25	0
From Line 'A' To Line 'B'	OFFSET (Ft.)						3.06	5.05	6.72	8.39	10.05	11.72	13.39	15.05	16.72	18.62	21.00	23.88
	SLOPE (%)						0.09	0.05	-0.20	← Constant -1.0% Slope →								
	DROP (Ft.)						0.03	0.01	-0.03	-0.08	-0.10	-0.12	-0.13	-0.15	-0.17	-0.18	-0.21	-0.24
From Line 'B' To Line 'C'	OFFSET (Ft.)						← Constant 16' Offset →											
	SLOPE (%)						← Constant 2.0% Slope →											
	DROP (Ft.)						0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
From Line 'A' To Line 'C'	OFFSET (Ft.)	12.00	12.76	14.42	16.09	17.76												
	SLOPE (%)	← Constant 2.0% Slope →																
	DROP (Ft.)	0.24	0.26	0.29	0.32	0.35	0.35	0.33	0.29	0.24	0.22	0.20	0.19	.017	0.15	0.14	0.11	0.08

(M)

ML035NB
RAMP B - EXIT

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.1

9:15:45 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U01.sht



16' EXIT RAMP

③ 'CD' Joints at 20' spacing.

④ 'BT-2' joint for existing pavement
or 'KT-2' for new pavement .

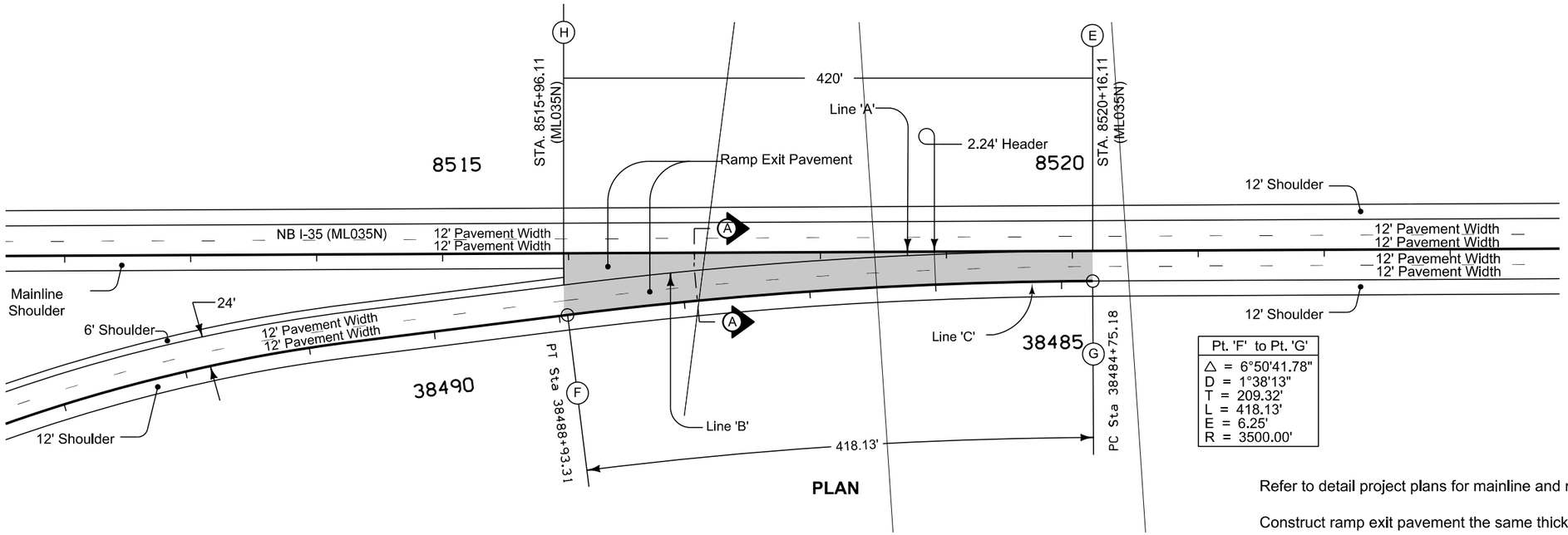
⑤ 'C' Joint.

⑥ 'B' Joint. 2' minimum. 4' maximum.

⑦ 10' minimum or equal to mainline shoulder width.

⑧ 'B' or 'C' Joint. 2' minimum. 4' maximum.

ML035NB
RAMP B - EXIT



Pt. 'F' to Pt. 'G'
△ = 6°50'41.78"
D = 1°38'13"
T = 209.32'
L = 418.13'
E = 6.25'
R = 3500.00'

PLAN

Refer to detail project plans for mainline and ramp alignment and grade data.

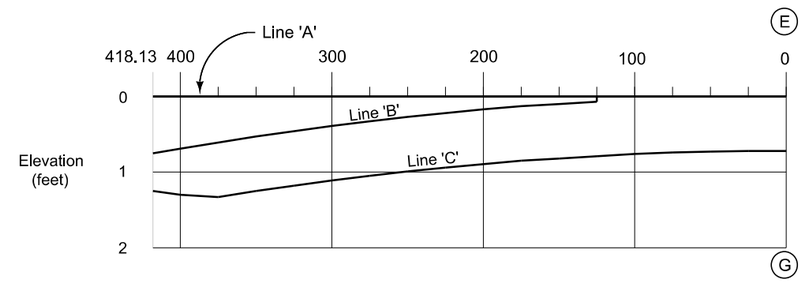
Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 1515 square yards.

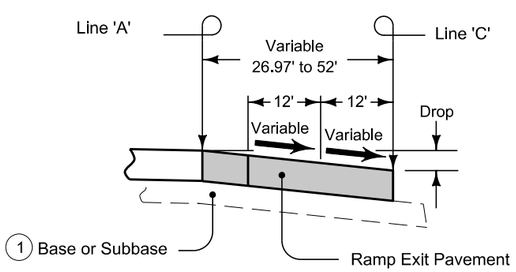
This design is based on 60 mph design speed at e max = 6%.

(1) For header construction details at the end of taper see Typical 7101.

(2) Construct subbase for ramp entrance pavement the same thickness as mainline subbase.



PROFILE



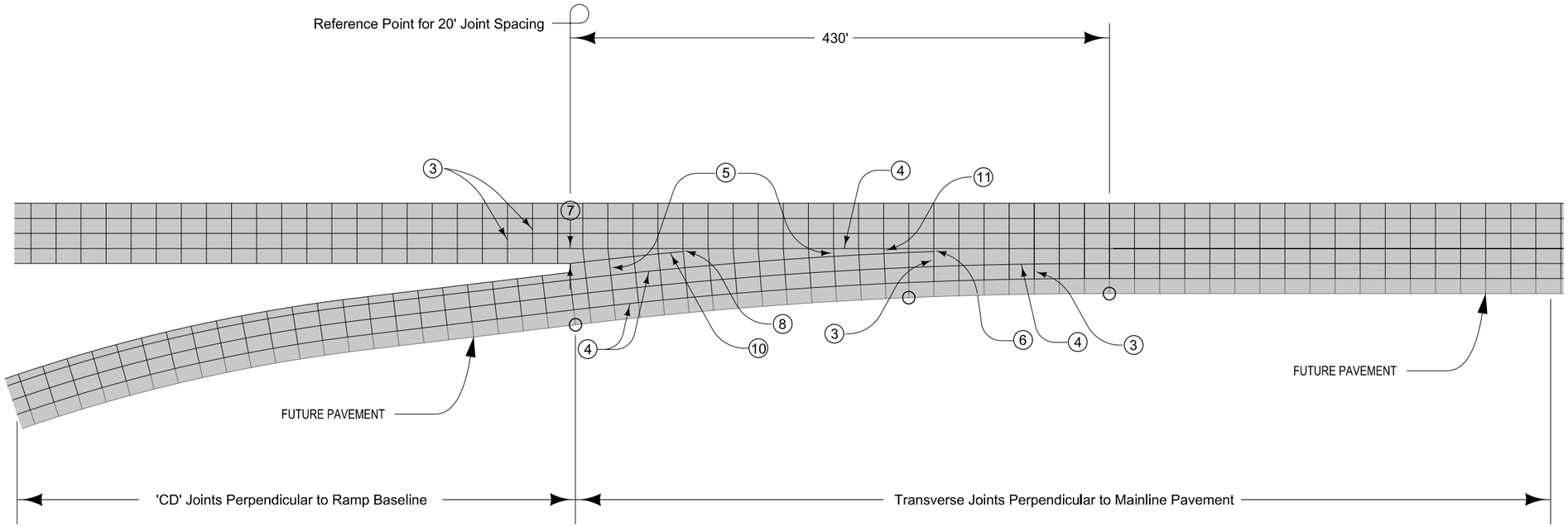
SECTION A-A

H E

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER																			
Dist. From Pt. Ⓔ Along ML035NB B(Ft.) E		420	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
From Line 'A' To Line 'B'	Offset (Ft.)	25.11	22.97	20.19	17.59	15.17	12.92	10.86	8.97	7.27	5.74	4.39	3.22	2.24					
	Slope (%)	← Constant 4.0% Slope →																	
	Drop (Ft.)	1.00	0.92	0.81	0.70	0.61	0.52	0.43	0.36	0.29	0.23	0.18	0.13	0.09					
From Line 'B' To Line 'C'	Offset (Ft.)	← Constant 24.0' Offset →																	
	Slope (%)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00					
	Drop (Ft.)	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96					
From Line 'A' To Line 'C'	Offset (Ft.)														25.43	24.80	24.35	24.00	24.00
	Slope (%)														4.00	4.00	4.00	3.50	3.00
	Drop (Ft.)	1.96	1.88	1.77	1.66	1.57	1.48	1.39	1.32	1.25	1.19	1.14	1.09	1.05	1.02	0.99	0.97	0.84	0.72
Distance From Point Ⓖ Along Line 'C' (Ft.)		418.13	400.00	375.00	350.00	325.00	300.00	275.00	250.00	225.00	200.00	175.00	150.00	125.00	100.00	75.00	50.00	25.00	0.00

F G

ML035NB
RAMP A - ENTRANCE



16' ENTRANCE RAMP

③ 'CD' Joints at 20' spacing.

④ 'BT-2' joint for existing pavement or 'KT-2' for new pavement .

⑤ 'C' Joint.

⑥ 'B' Joint. 2' minimum. 4' maximum.

⑦ 10' minimum or equal to mainline shoulder width.

⑧ 'B' or 'C' Joint. 2' minimum. 4' maximum.

⑨ 'L-2' Joint

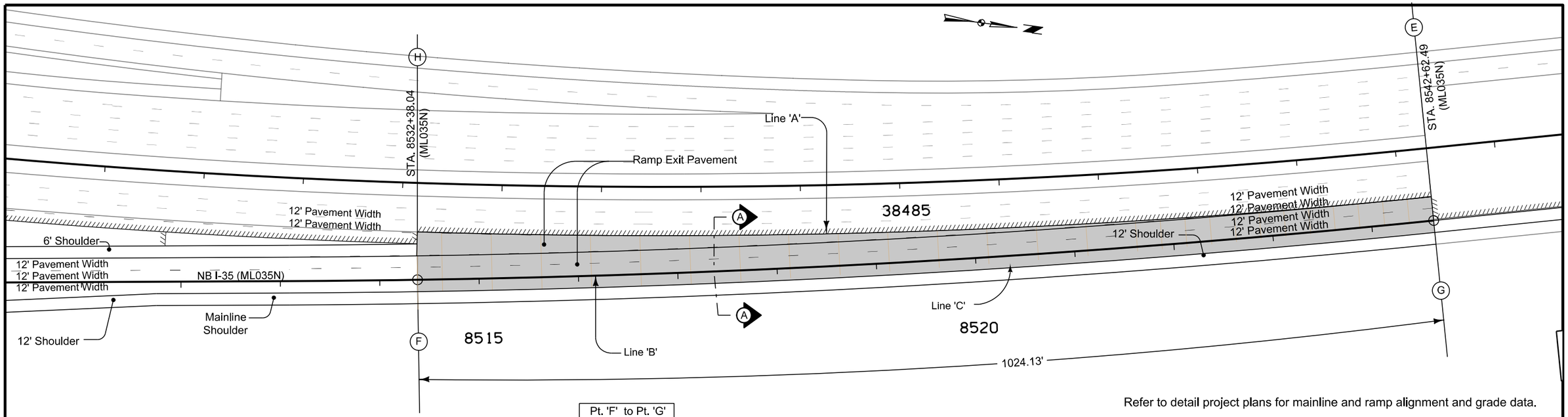
⑩ 'C' joint parallel to ramp baseline

⑪ Construct transverse joints on entrance ramp taper perpendicular to tapered edge where gore area is greater than 4'

ML035NB
RAMP A - ENTRANCE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.4

9:16:37 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U01.sht



Pt. 'F' to Pt. 'G'
△ = 4°53'28.99"
D = 0°28'38"
T = 512.54'
L = 1024.13
E = 10.94'
R = 12,000.00'

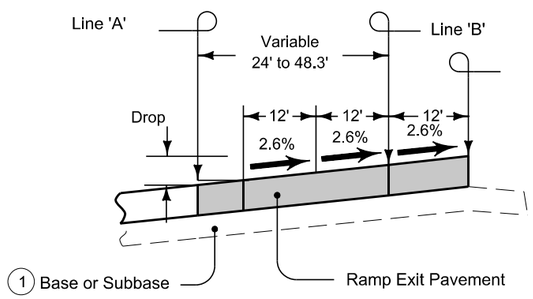
PLAN

Refer to detail project plans for mainline and ramp alignment and grade data.

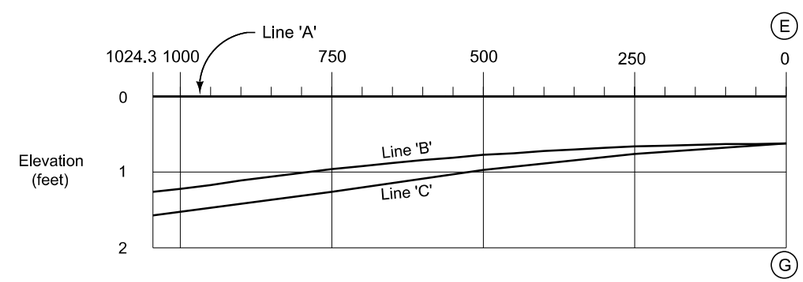
Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 4482 square yards.

For jointing layout, see Standard Road Plan PV-411.
This design is based on 60 mph design speed at e max = 6%.



SECTION A-A



PROFILE

1 For header construction details at the end of taper see Typical 7101.

2 Construct subbase for ramp entrance pavement the same thickness as mainline subbase.

H E

TABLE OF OFFSETS AND DROPS FOR 24' RAMP TAPER

Dist. From Pt. E Along ML035NB ℄ (Ft.)		1024.3	1000	950	900	850	800	750	700	650	600	550	500	450	400	350	300	275	250	225	200	175	150	125	100	75	50	25	0
From Line 'A' To Line 'B'	Offset (Ft.)	48.30	47.05	44.82	42.67	40.71	38.80	37.01	35.33	33.77	32.32	30.99	29.78	28.68	27.69	26.83	26.07	25.74	25.44	25.17	24.92	24.70	24.52	24.36	24.22	24.13	24.05	24.00	24.00
	Slope (%)	← Constant 2.6% Slope →																											
	Drop (Ft.)	1.26	1.22	1.17	1.11	1.06	1.01	0.96	0.92	0.88	0.84	0.81	0.77	0.75	0.72	0.70	0.68	0.67	0.66	0.65	0.65	0.64	0.64	0.63	0.63	0.63	0.63	0.62	0.62
From Line 'B' To Line 'C'	Offset (Ft.)	← Constant 12.0' Offset →						11.49	10.72	9.95	9.18	8.41	7.64	6.88	6.11	5.34	4.57	4.18	3.80	3.41	3.03	2.65	2.26	1.88	1.49	1.11	0.72	0.33	0.00
	Slope (%)	← Constant 2.6% Slope →																											
	Drop (Ft.)	0.31	0.31	0.31	0.31	0.31	0.31	0.30	0.28	0.26	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.11	0.10	0.09	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.01	0.00
From Line 'A' To Line 'C'	Offset (Ft.)																												
	Slope (%)	← Constant 2.6% Slope →																											
	Drop (Ft.)	1.57	1.53	1.48	1.42	1.37	1.32	1.26	1.20	1.14	1.08	1.03	0.97	0.93	0.88	0.84	0.80	0.78	0.76	0.74	0.73	0.71	0.70	0.68	0.67	0.66	0.65	0.63	0.62
Distance From Point G Along Line 'C' (Ft.)		1024.3	1000	950	900	850	800	750	700	650	600	550	500	450	400	350	300	275	250	225	200	175	150	125	100	75	50	25	0

F G

ML235
ML035NB - ENTRANCE

Refer to detail project plans for mainline and ramp alignment and grade data.

Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 3065 square yards.

For jointing layout, see Standard Road Plan PV-410.

This design is based on 60 mph design speed at e max = 6%.

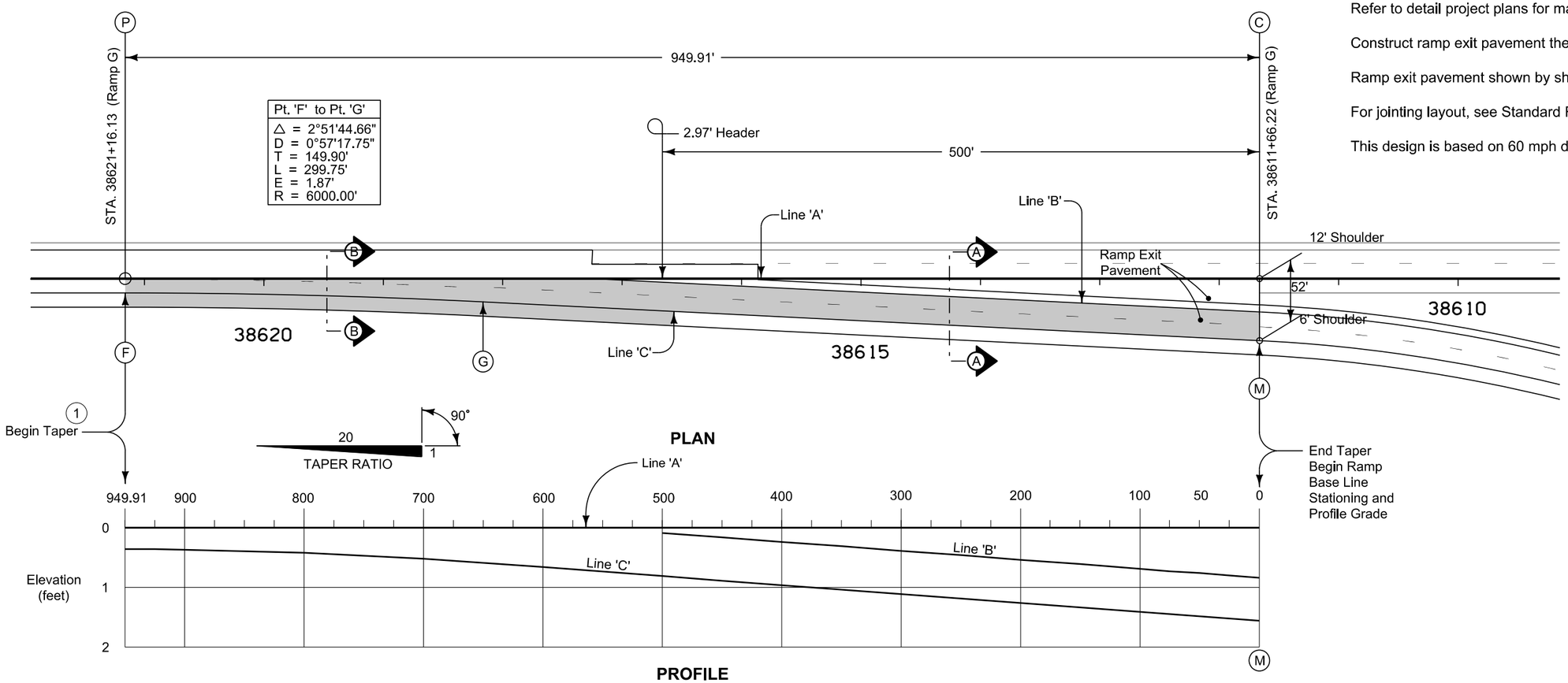
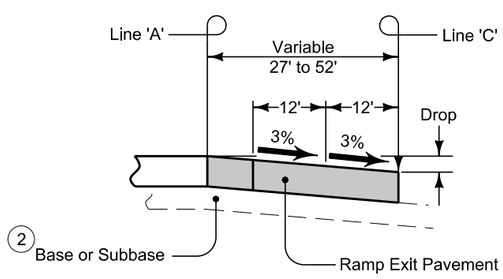
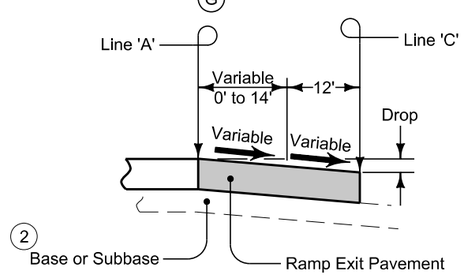


TABLE OF OFFSETS AND DROPS FOR 24' RAMP TAPER

DISTANCE FROM POINT (C) ALONG LINE 'A' (Ft.)		949.91	925	900	875	850	825	800	775	750	725	700	675	650	625	600	575	550	525	500	475	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
From Line 'A' To Line 'B'	OFFSET (Ft.)																			2.97	4.22	5.47	6.72	7.97	9.22	10.47	11.72	12.97	14.22	15.47	16.72	17.97	19.22	20.47	21.72	22.97	24.22	25.47	26.72	27.97
	SLOPE (%)																			← Constant 3.0% Slope →																				
	DROP (Ft.)																			0.09	0.13	0.16	0.20	0.24	0.28	0.31	0.35	0.39	0.43	0.47	0.50	0.54	0.58	0.61	0.65	0.69	0.73	0.76	0.80	0.84
From Line 'B' To Line 'C'	OFFSET (Ft.)																			← Constant 24' Offset →																				
	SLOPE (%)																			← Constant 3.0% Slope →																		3.00	3.01	3.78
	DROP (Ft.)																			0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.91
From Line 'A' To Line 'C'	OFFSET (Ft.)	12.00	12.05	12.21	12.47	12.83	13.30	13.87	14.55	15.33	16.22	17.21	18.30	19.50	20.75	22.00	23.25	24.50	25.75																					
	SLOPE (%)	← Constant 3.0% Slope →																																						
	DROP (Ft.)	0.36	0.36	0.37	0.37	0.38	0.40	0.42	0.44	0.46	0.49	0.52	0.55	0.59	0.62	0.66	0.70	0.74	0.77	0.81	0.85	0.88	0.92	0.96	1.00	1.03	107	1.11	1.15	1.19	1.22	1.26	1.30	1.33	1.37	1.41	1.45	1.48	1.52	1.75



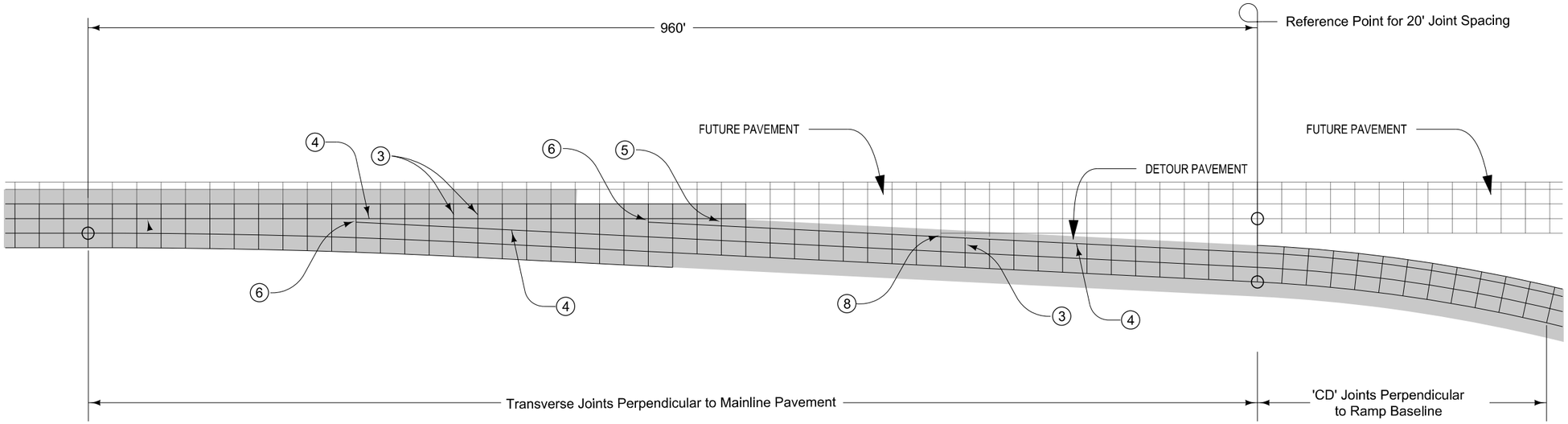
SECTION A-A



SECTION B-B

1. For header construction details at the beginning of taper see Typical 7101.
2. Construct subbase for ramp exit pavement the same thickness as mainline subbase.

RAMP G
WESTBOUND
RAMP A - EXIT



16' EXIT RAMP

(3) 'CD' Joints at 20' spacing.

(4) 'BT-2' joint for existing pavement
or 'KT-2' for new pavement .

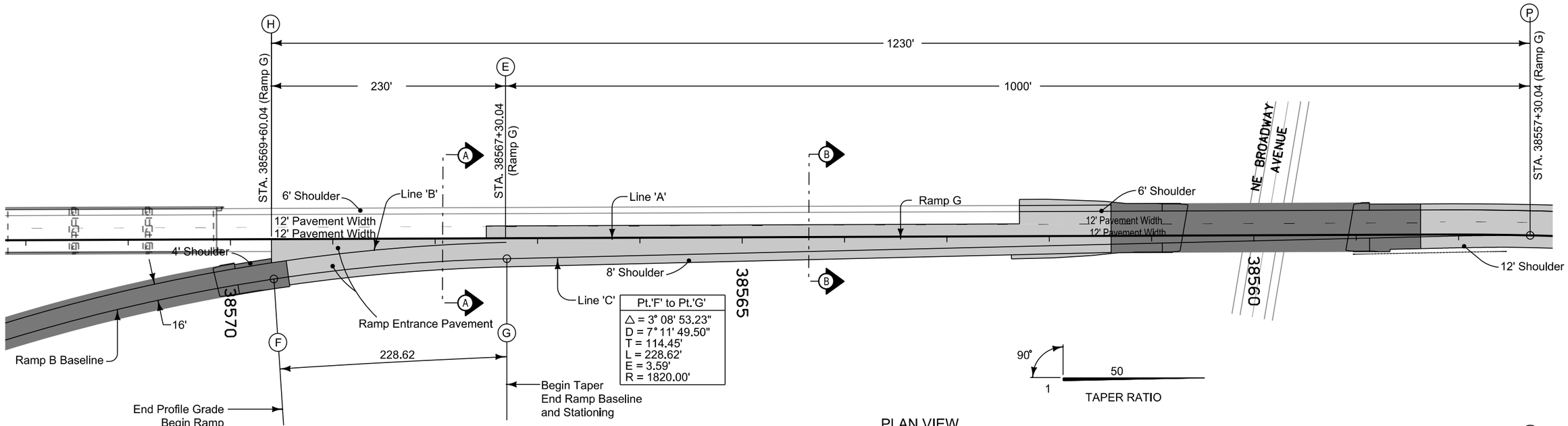
(5) 'C' Joint.

(6) 'B' Joint. 2' minimum. 4' maximum.

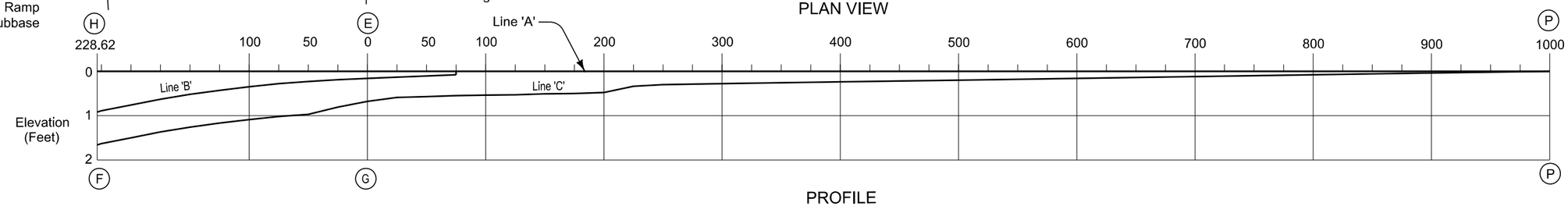
(7) 10' minimum or equal to mainline shoulder width.

(8) 'B' or 'C' Joint. 2' minimum. 4' maximum.

RAMP G
WESTBOUND
RAMP A - EXIT



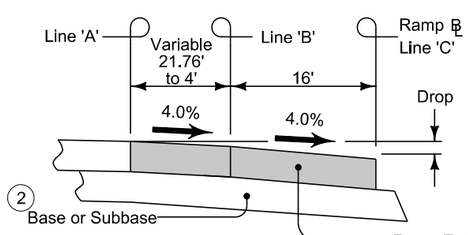
PLAN VIEW



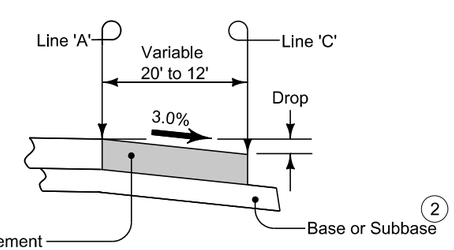
PROFILE

TABLE OF OFFSETS AND DROPS FOR 16' RAMP

Dist. From Pt. (E) Along Ramp G ℄ (Ft.)		230	225	200	175	150	125	100	75	50	25	0	25	50	75	100	125	150	175	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	850	900	950	1000
From Line 'A' To Line 'B'	Offset (Ft.)	23.06	22.34	18.92	15.85	13.12	10.74	8.71	7.02	5.67	4.66	4.00																												
	Slope (%)	← Constant Slope 4.00% →																																						
	Drop (Ft.)	0.92	0.89	0.76	0.63	0.52	0.43	0.35	0.28	0.23	0.19	0.16																												
From Line 'B' To Line 'C'	Offset (Ft.)	← Constant Offset 16.00' →																																						
	Slope (%)	← Constant Slope 4.60% →									3.90	3.22																												
	Drop (Ft.)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.62	0.52																												
From Line 'A' To Line 'C'	Offset (Ft.)											20.00	19.50	19.00	18.50	18.00	17.50	17.00	16.50	16.00	15.50	15.00	14.50	14.00	13.50	13.00	12.50	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	0.00
	Slope (%)											3.22	← Constant Slope 3.00% →								2.22	← Constant Slope 2.00% →																		
	Drop (Ft.)	1.66	1.64	1.50	1.38	1.27	1.17	1.09	1.02	0.97	0.81	0.68	0.59	0.57	0.55	0.54	0.53	0.51	0.50	0.48	0.34	0.30	0.29	0.28	0.27	0.26	0.25	0.24	0.22	0.20	0.18	0.16	0.14	0.12	0.10	0.08	0.06	0.04	0.02	0.00
Distance From Point (G) Along Line 'C' (Ft.)		228.62	225.91	200.67	176.76	150.33	125.21	100.13	75.07	50.03	25.01	0																												



SECTION A-A



SECTION B-B

Refer to detail project plans for mainline and ramp alignment and grade data.

Construct ramp exit pavement the same thickness as mainline pavement.

Ramp exit pavement shown by shaded area is 1800 square yards.

For jointing layout, see Standard Road Plan PV-411.

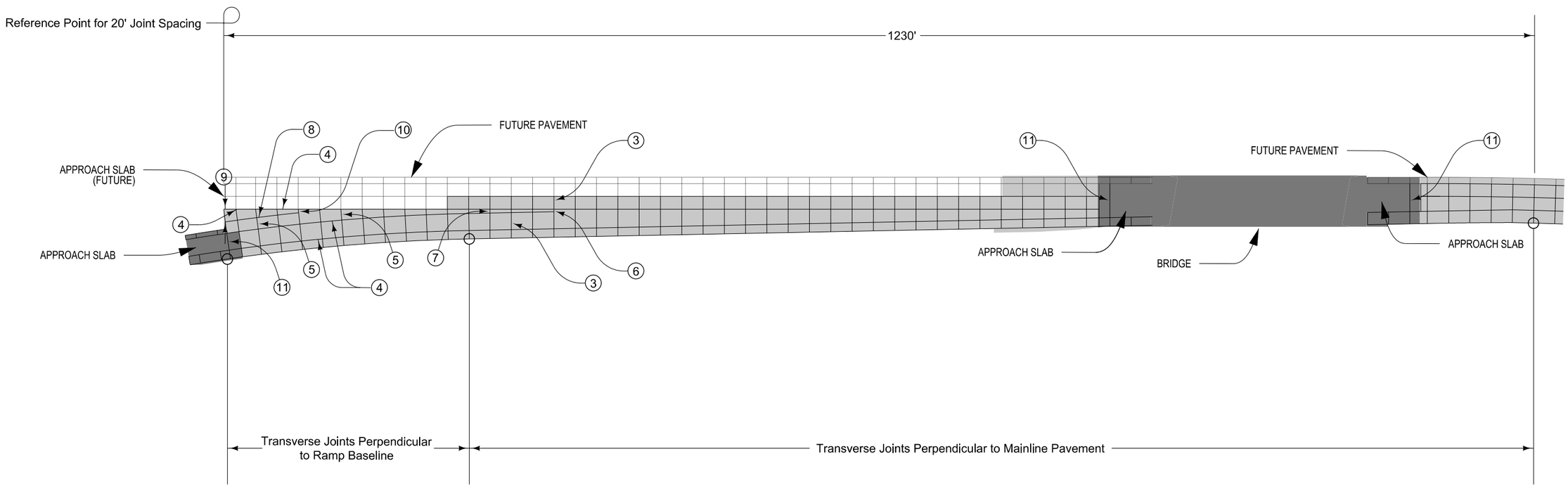
This design is based on 60 mph design speed at e max = 6%.

(1) For header construction details at the end of taper see Typical 7101.

(2) Construct subbase for ramp entrance pavement the same thickness as mainline subbase.

RAMP G
RAMP B - ENTRANCE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.8



16' ENTRANCE RAMP

(3) 'CD' Joints at 20' spacing.

(4) 'BT-2' or 'KT-2' Joint.

(5) 'C' Joint.

(6) 'B' Joint. 2' minimum, 4' maximum.

(7) Construct transverse joints on the entrance ramp taper perpendicular to the tapered edge where the gore area is greater than 4 feet.

(8) 'C' Joint parallel to ramp baseline.

(9) 10' minimum, or equal to mainline shoulder width.

(10) 'B' or 'C' Joint. 2' minimum. 4' maximum.

(11) 'EF' Joint

RAMP G
RAMP B - ENTRANCE

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.9

9:18:22 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U01.sht

Refer to detail project plans for mainline and ramp alignment and grade data.

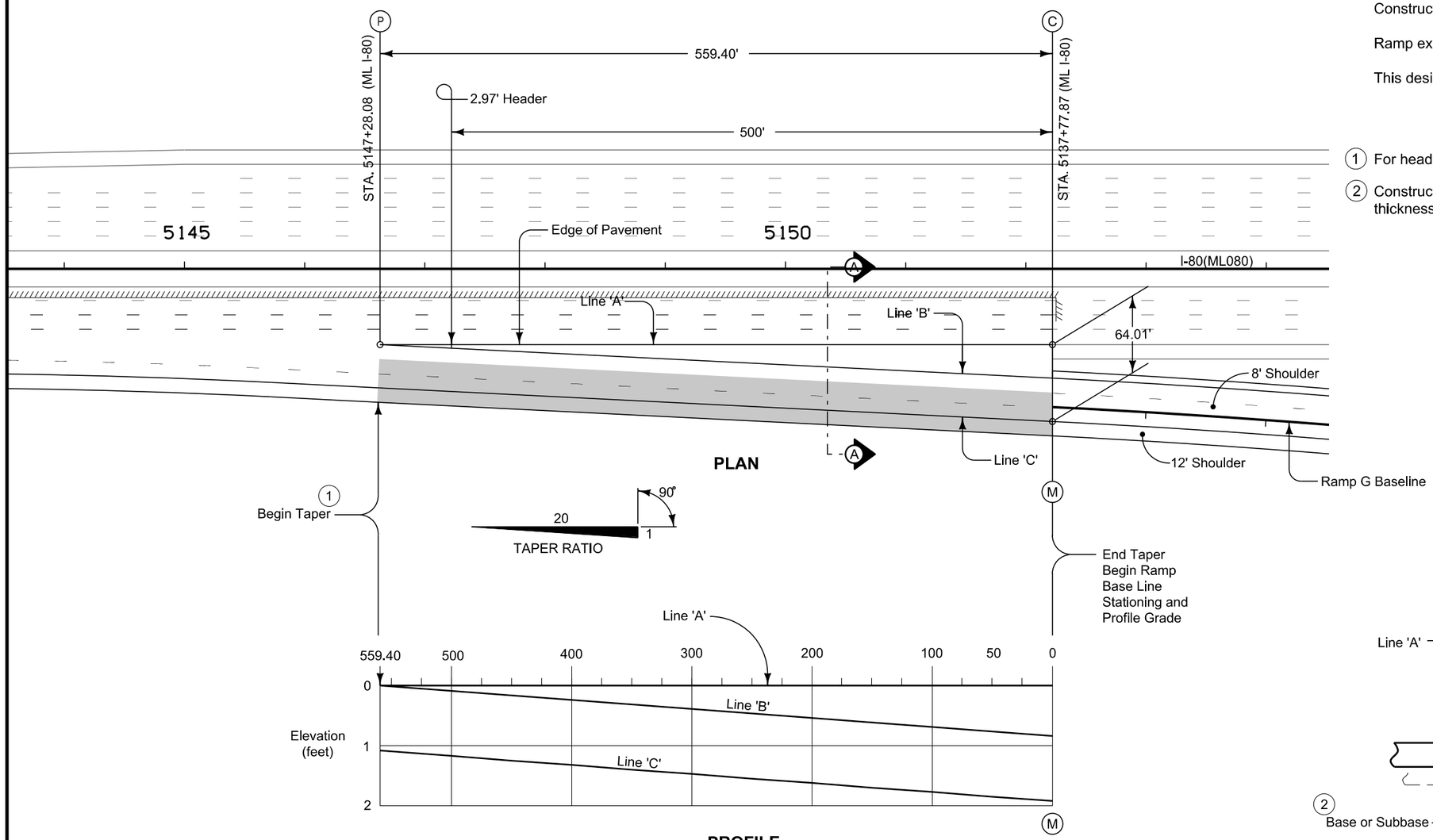
Construct ramp exit pavement the same thickness as mainline pavement.

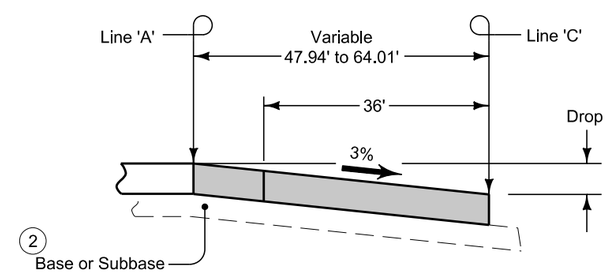
Ramp exit pavement shown by shaded area is 2247 square yards..

This design is based on 60 mph design speed at e max = 6%.

(1) For header construction details at the beginning of taper see Typical 7101.

(2) Construct subbase for ramp exit pavement the same thickness as mainline subbase.





SECTION A-A

C

	TABLE OF OFFSETS AND DROPS FOR 36' RAMP TAPER																						
DISTANCE (Ft.)	559.40	525	500	475	450	425	400	375	350	325	300	275	250	225	200	175	150	125	100	75	50	25	0
OFFSET (Ft.)	35.96	37.76	39.01	40.26	41.51	42.76	44.01	45.26	46.51	47.76	49.01	50.26	51.51	52.76	54.01	55.26	56.51	57.76	59.01	60.26	61.51	62.76	64.01
SLOPE (%)	← Constant Slope 3.00% →																						
DROP (Ft.)	1.08	1.13	1.17	1.21	1.25	1.28	1.32	1.36	1.40	1.43	1.47	1.51	1.55	1.58	1.62	1.66	1.70	1.73	1.77	1.81	1.85	1.88	1.92

M

MAINLINE I-80
WESTBOUND
RAMP A & G - EXIT

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.10

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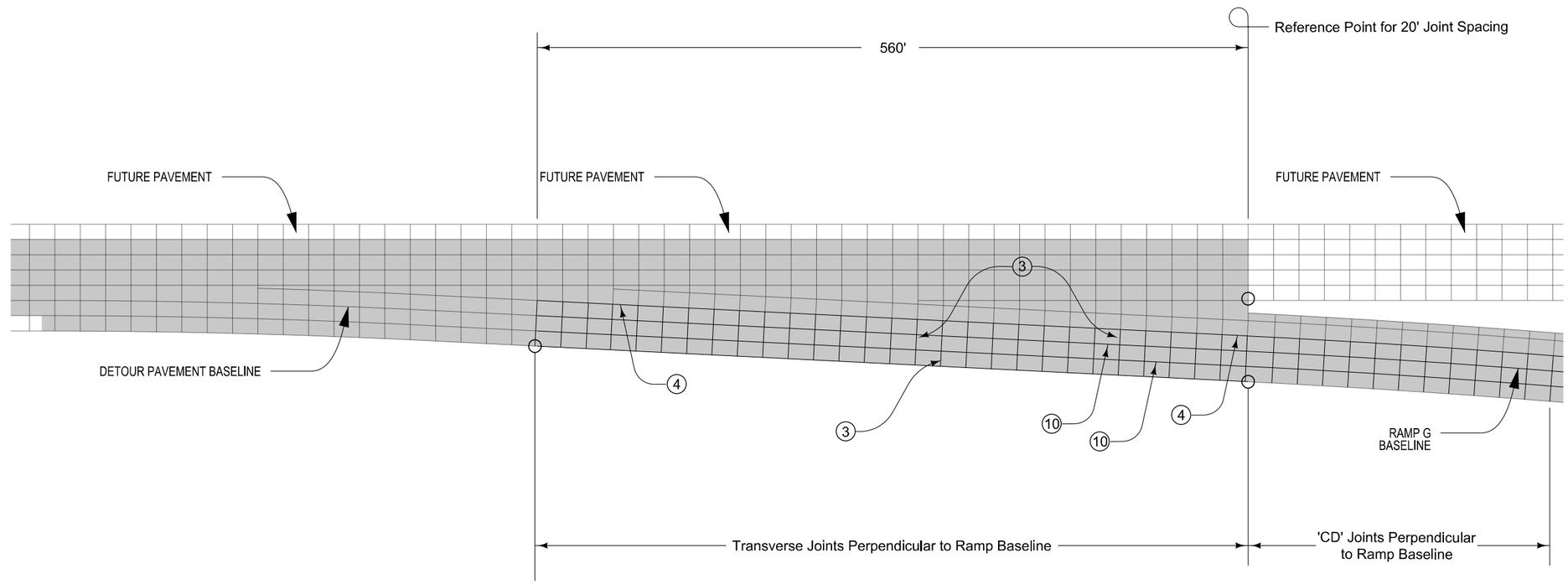


16' EXIT RAMP

③ 'CD' Joints at 20' spacing.

④ 'BT-2' joint for existing pavement or 'KT-2' for new pavement .

⑤ 'C' Joint.

⑥ 'B' Joint. 2' minimum. 4' maximum.

⑦ 10' minimum or equal to mainline shoulder width.

⑧ 'B' or 'C' Joint. 2' minimum. 4' maximum.

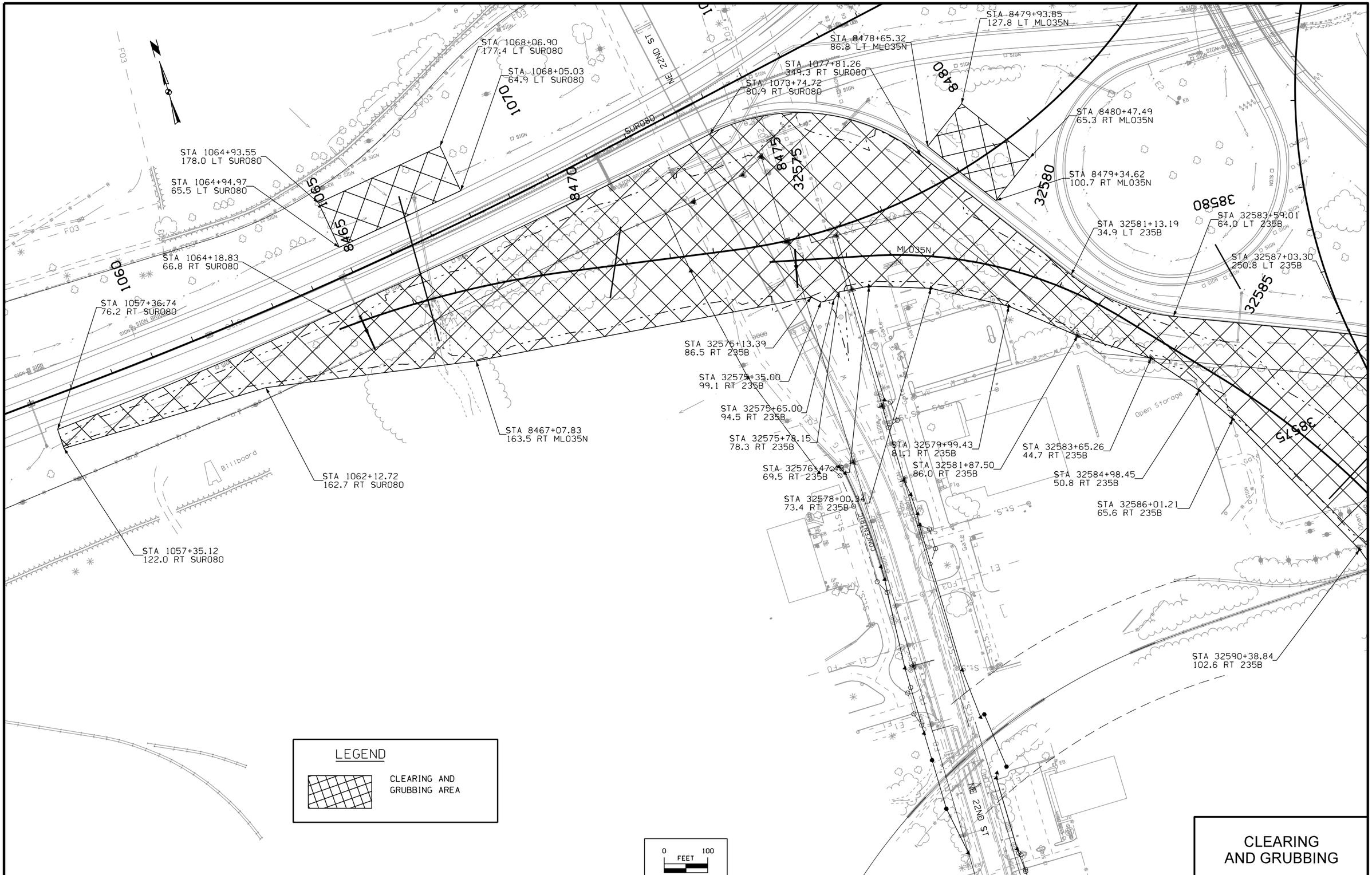
⑨ Construct transverse joints on the exit ramp taper perpendicular to tapered edge

⑩ 'L-2' Joint

MAINLINE I-80
WESTBOUND
RAMP A & G - EXIT

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.11

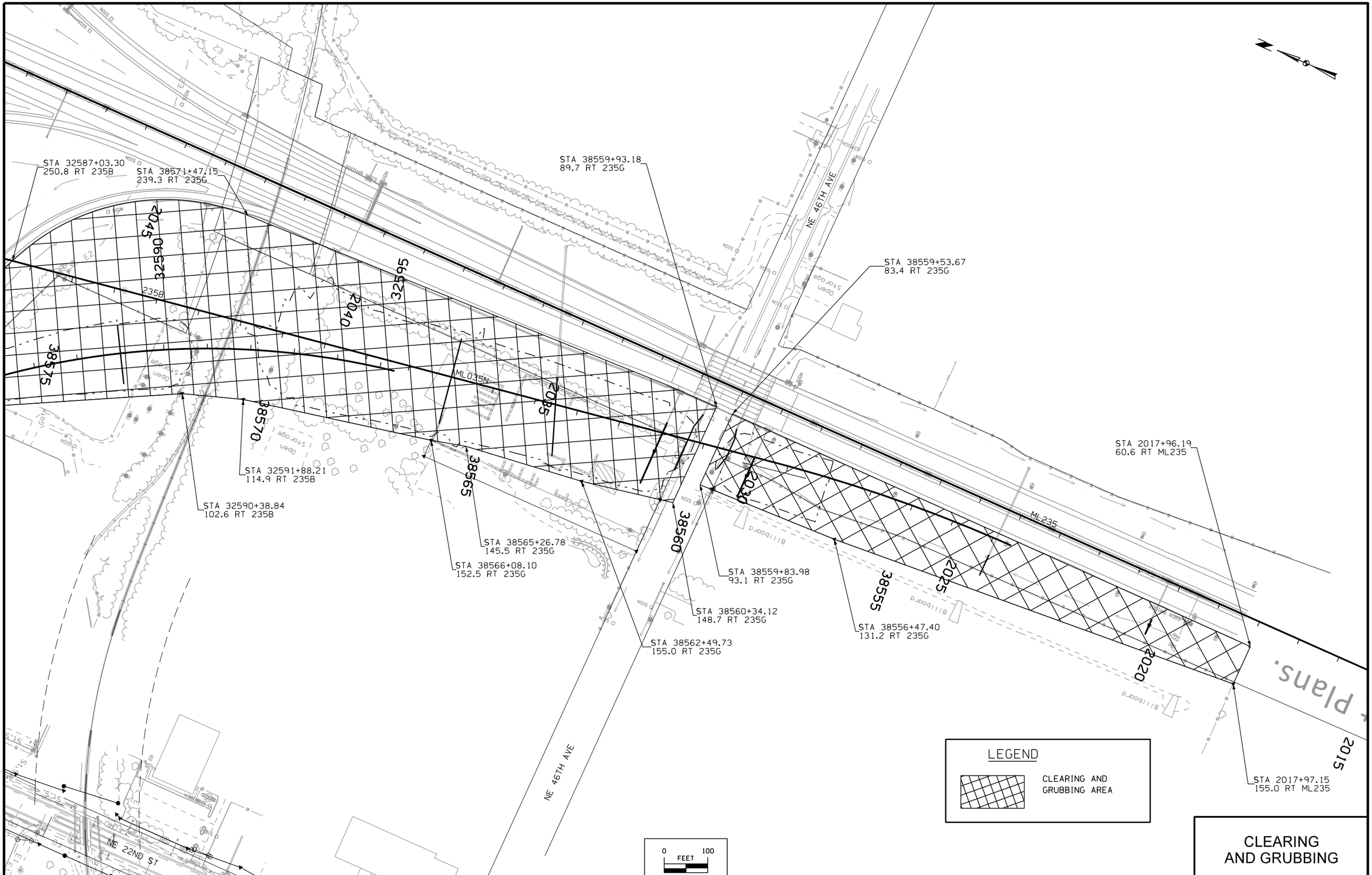
9:18:59 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U01.sht



CLEARING
AND GRUBBING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.12

9:19:26 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u02.sht



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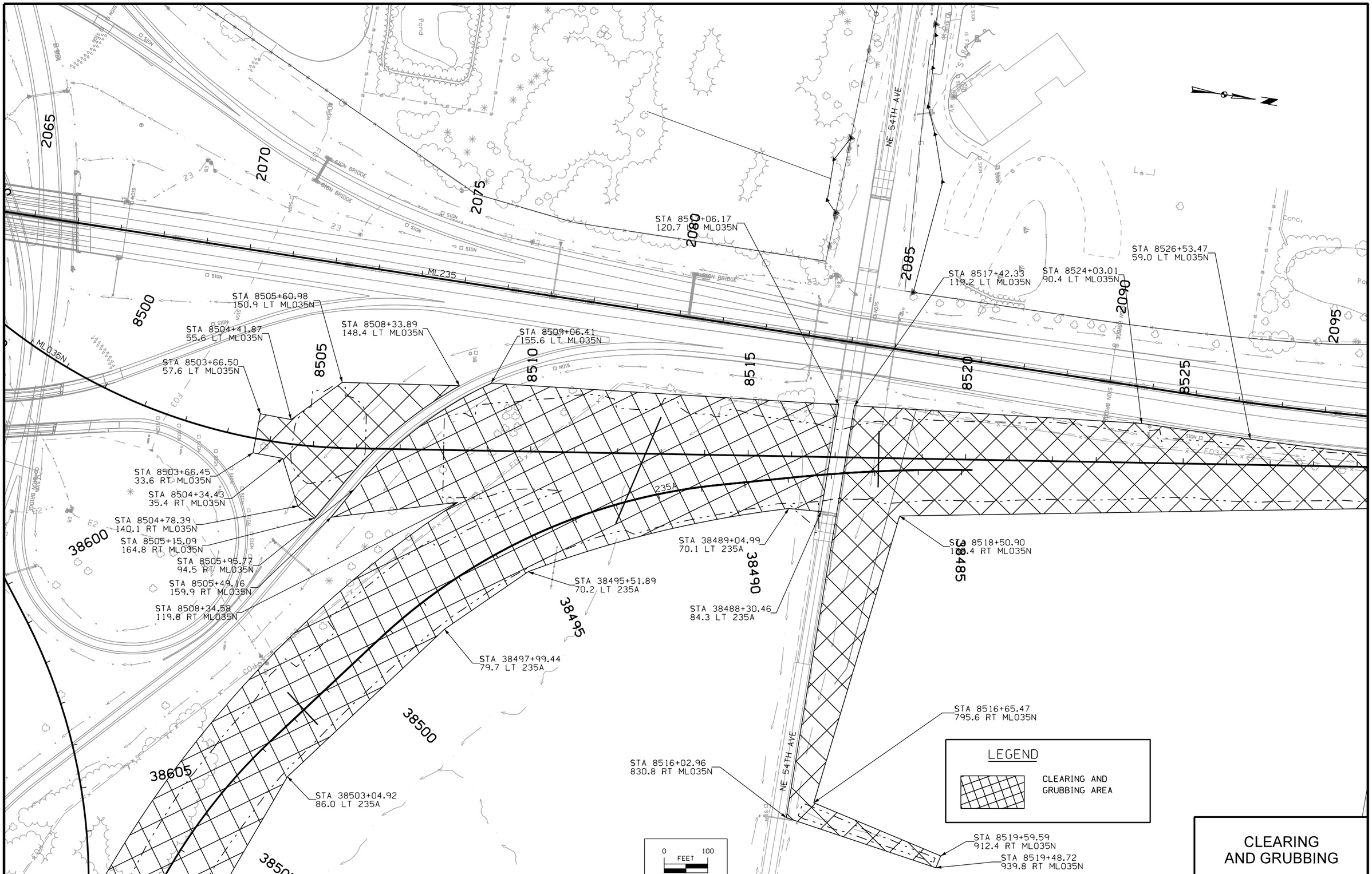

CLEARING AND GRUBBING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.14

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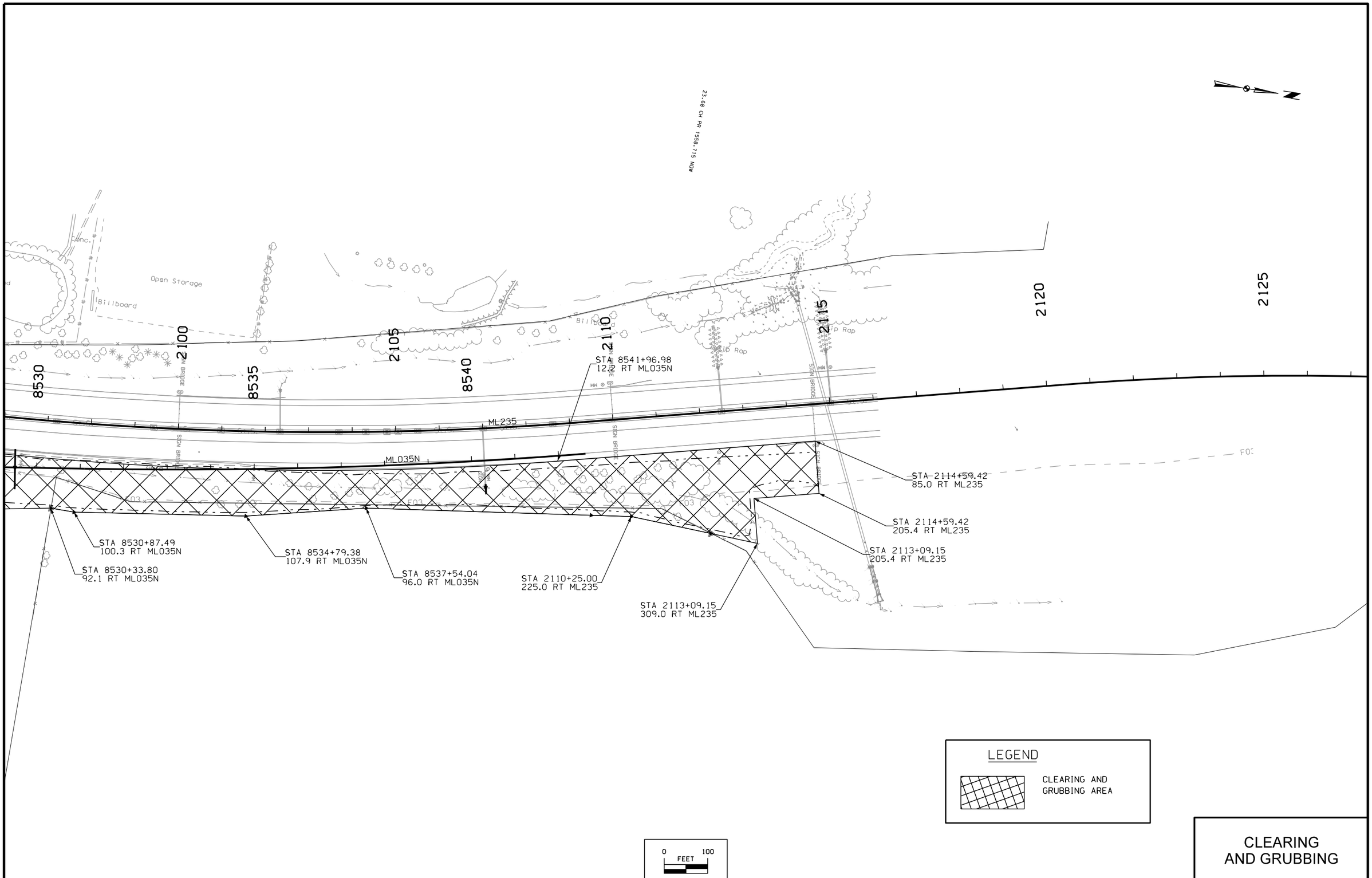

CLEARING
AND GRUBBING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.15

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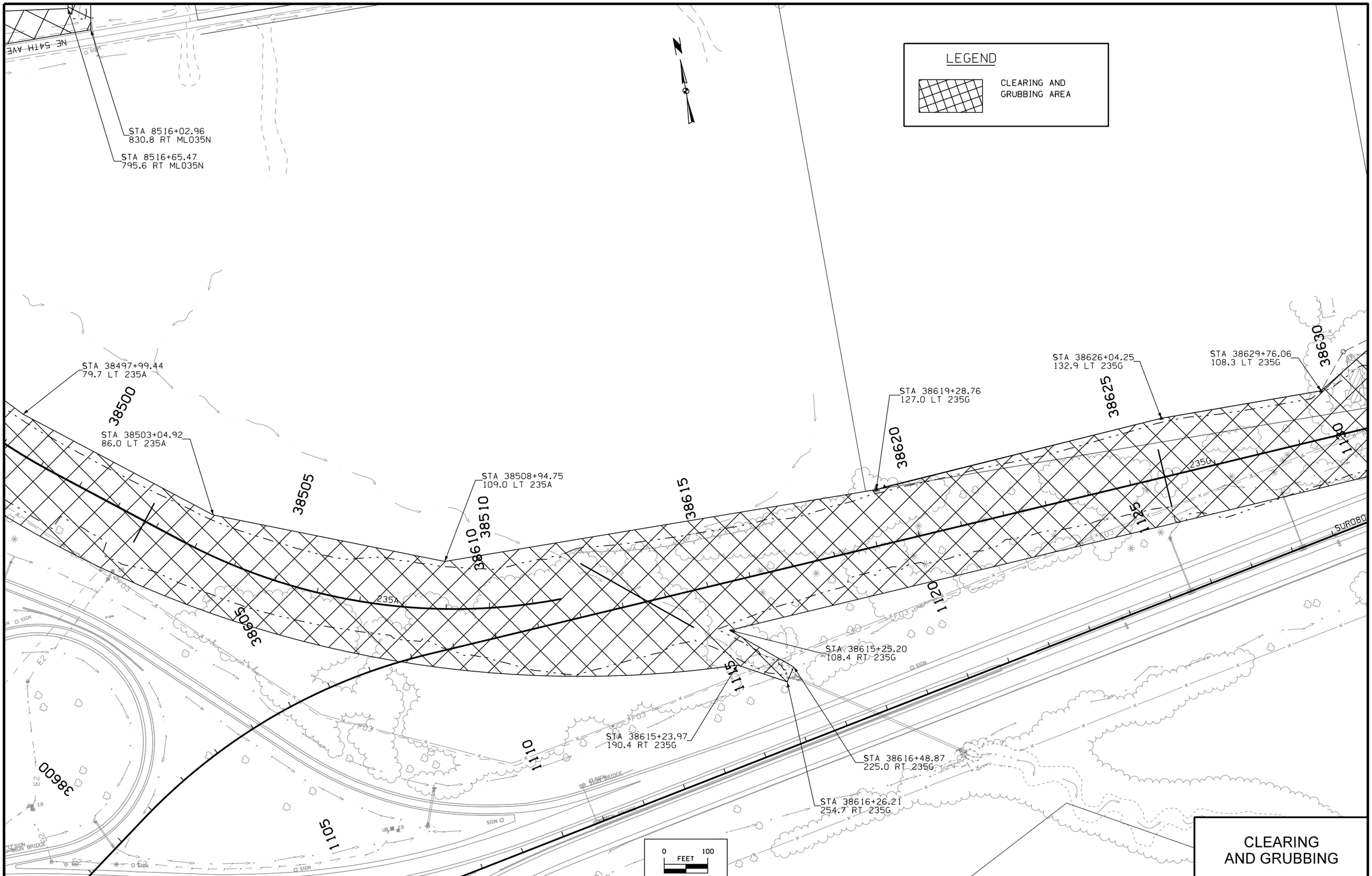

CLEARING AND GRUBBING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.16

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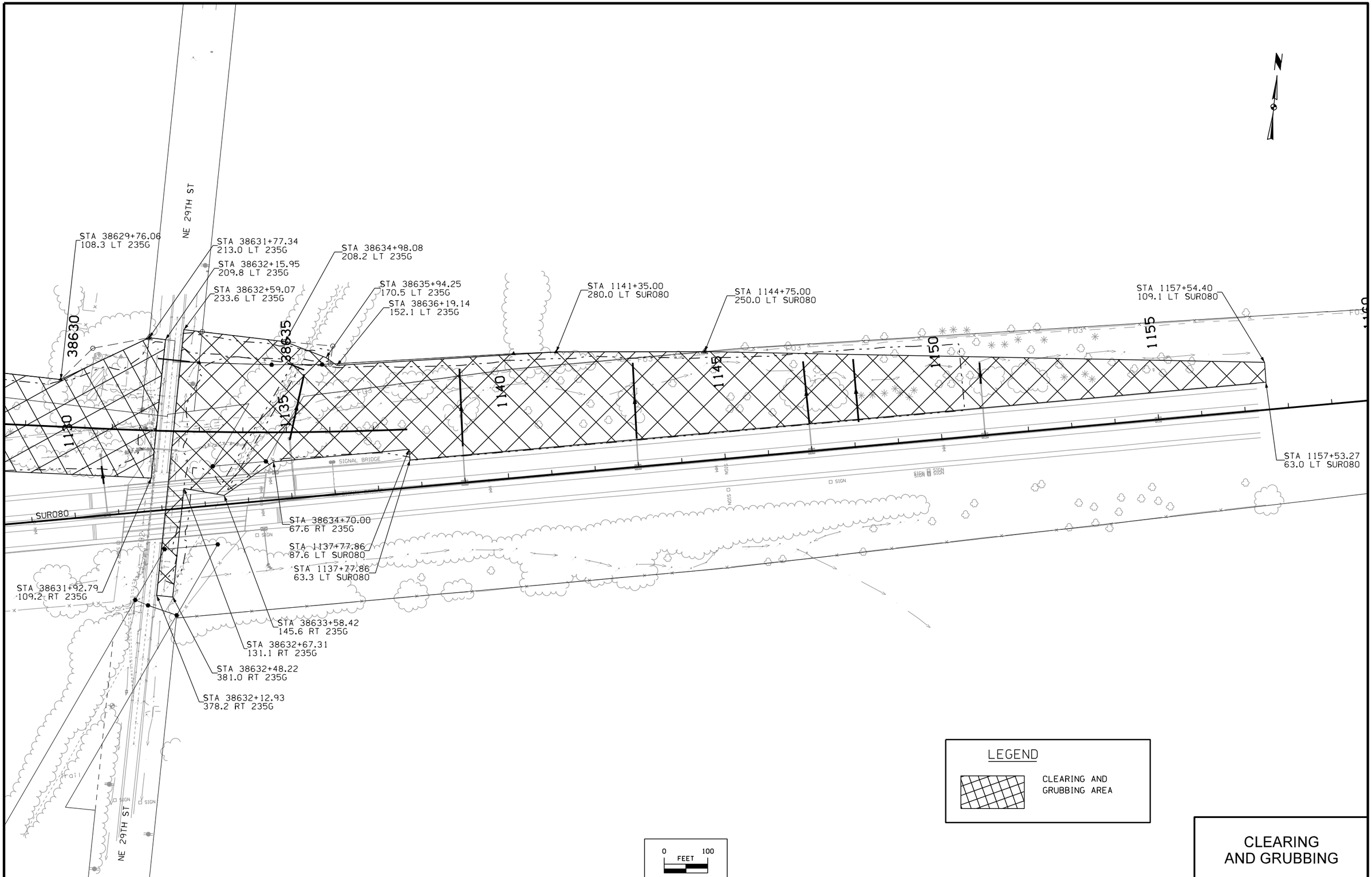

CLEARING
AND GRUBBING

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.17

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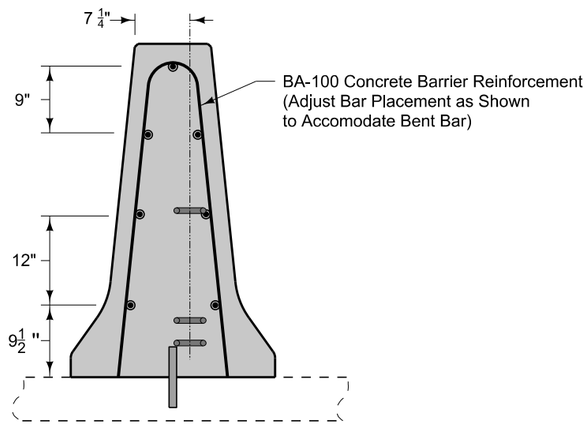
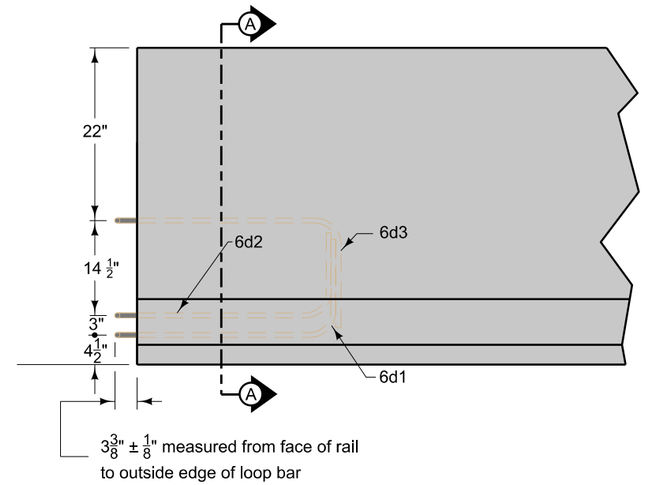


SECTION A-A
Bent Bar Placement



ELEVATION

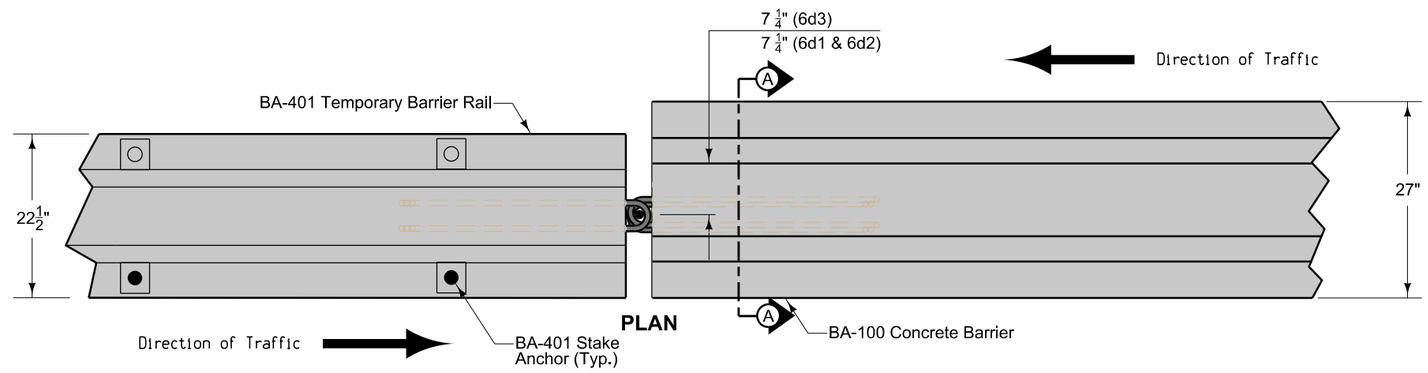
For loop bars 6d1, 6d2, and 6d3, use 3/4" smooth steel bars with a minimum yield strength of 60 ksi, a tensile strength of not less than 1.25 times the yield strength but a minimum of 80 ksi, a minimum 14% elongation in 8 inches, and passing a 180 degree bend test using a 2 3/4" pin bend diameter.

Install loops within 1/8" of the plan dimensions.

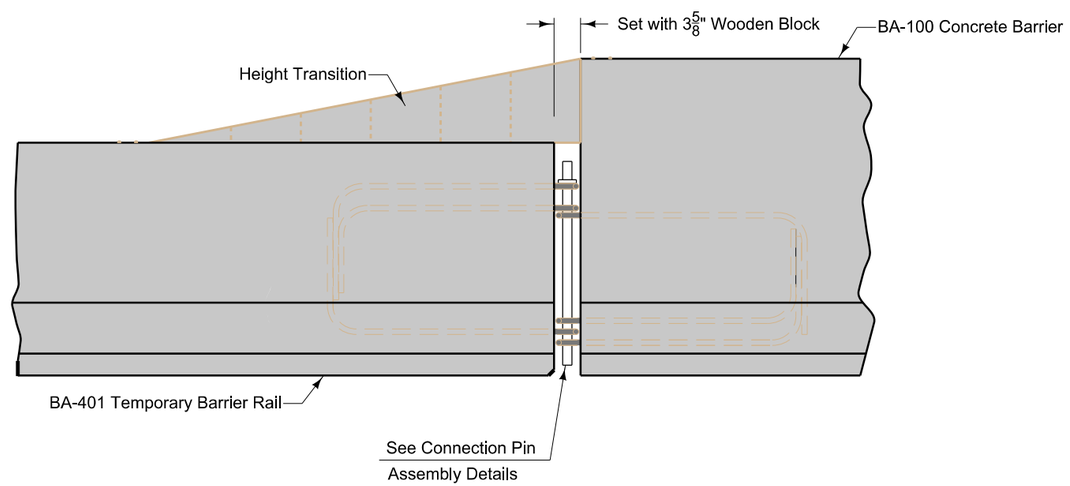
Use Grade 60, ASTM A615 for all other reinforcements. Do not lift or move using loop bars 6d1, 6d2 or 6d3.

Provide for an approved monitoring schedule with a person on call and available 24 hours a day, each day of the week, to realign barrier which has been struck. Initiate service within one hour of notification of need.

For BA-401 anchorage requirements, refer to detail "Freestading to Anchored Temporary Barrier Rail Connection".



PLAN

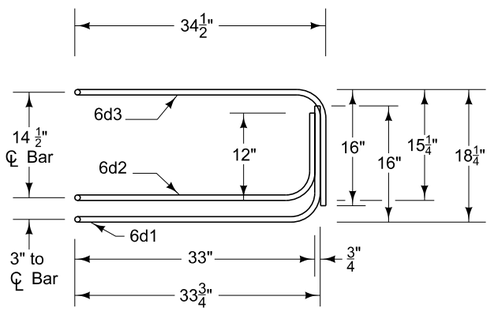


BARRIER CONNECTION
(Elevation)

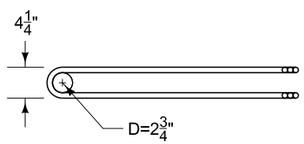
Possible Contract Item:
Temporary to Permanent Barrier Connection

Possible Tabulation:
108-38

TBR CONNECTION
(FOR NEW BA-100 44" CONCRETE BARRIER)
SHEET 1 OF 2

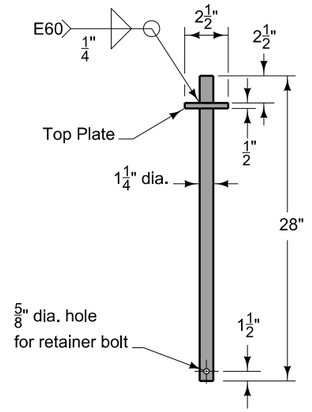


Elevation

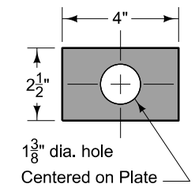


Plan
6d1, 6d2, 6d3

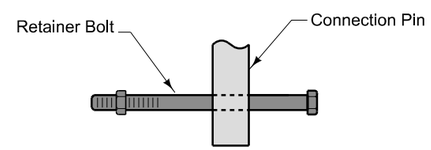
BENT BAR DETAILS
(Dimensions are out to out of bars unless otherwise noted.)



CONNECTION PIN
(A36 Steel - 10.9 lbs. each)



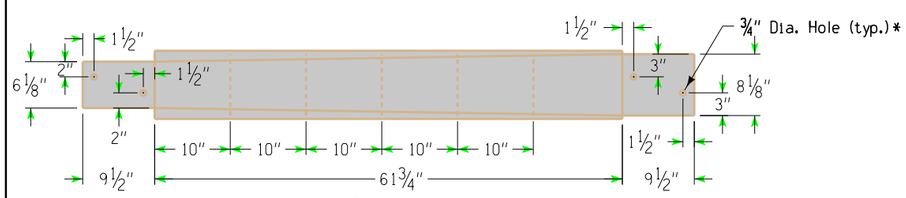
1/2" Top Plate



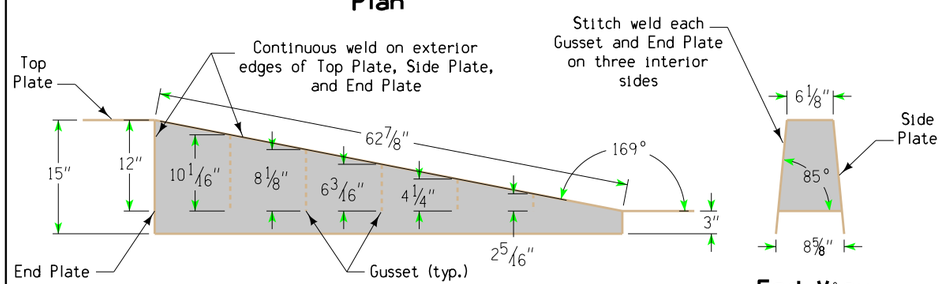
RETAINER BOLT & NUT
1/2" dia. bolt & nut
(ASTM A490, Grade 8)

CONNECTION PIN ASSEMBLY

REINFORCING A615 Gr. 60 - LOOP ASSEMBLY					
Bar	Bar Size	Shape	No. of Bars	Length Ft.	Weight Lbs.
6d1	6	┌──	1	8'-5"	12.7
6d2	6	┌──	1	7'-7"	11.4
6d3	6	┌──	1	8'-6"	12.8



Plan



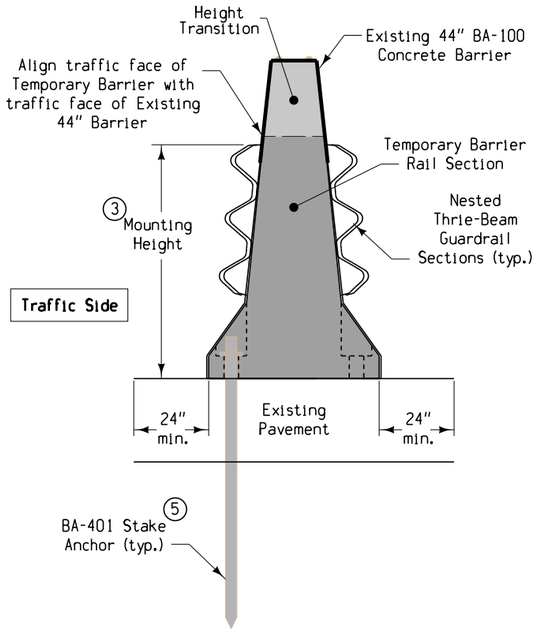
Elevation

End View

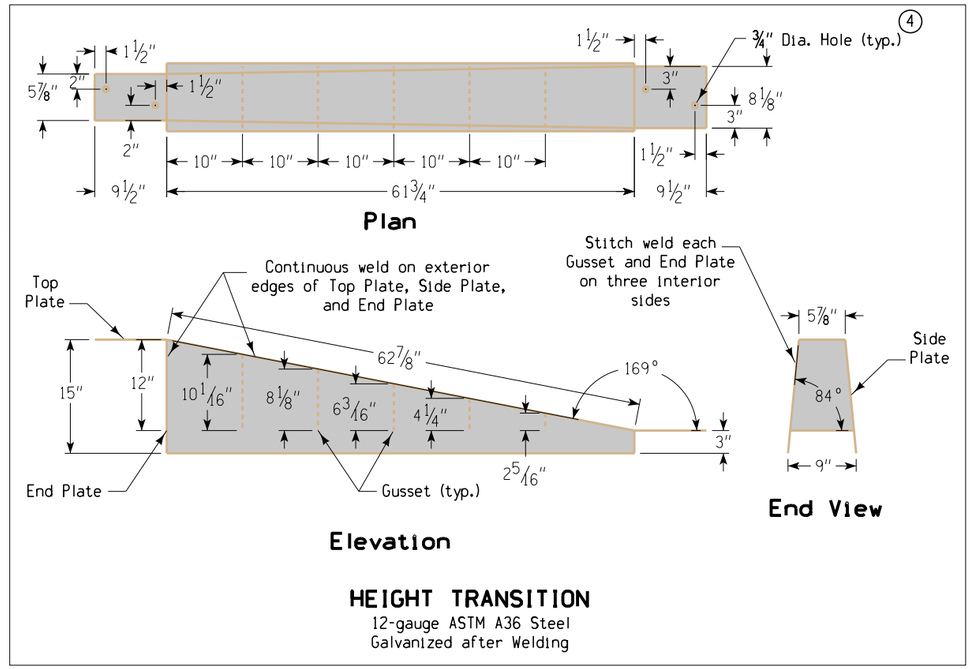
HEIGHT TRANSITION
12-gauge ASTM A36 Steel
Galvanized after Welding

*Install anchor bolts to secure Height Transition to barriers. Ensure a minimum embedment depth of 4".

TBR CONNECTION
(FOR NEW BA-100 44" CONCRETE BARRIER)
SHEET 2 OF 2



SECTION A-A



HEIGHT TRANSITION
12-gauge ASTM A36 Steel
Galvanized after Welding

Install temporary barrier rail on a flat, level surface.

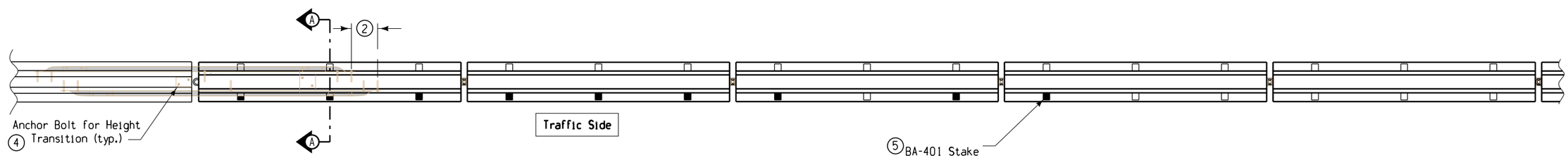
Upon removal of Temporary to Permanent Barrier Connection, use non-shrink grout complying with Materials I.M. 491.13 to fill any holes that were drilled in permanent median barrier.

Contract Item: Temporary to Permanent Barrier Connection

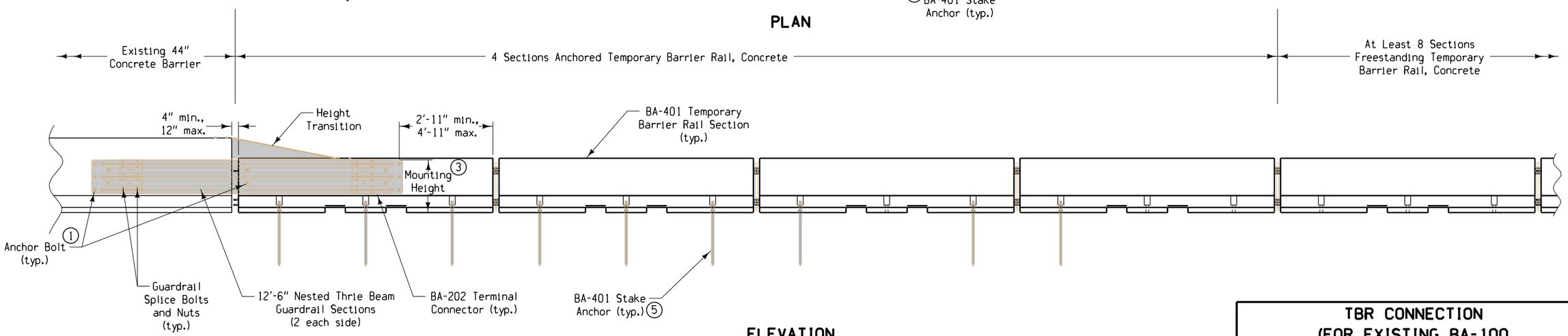
Item includes:
- 4 - 12'-6" Thrie Beam Guardrail Sections
- 4 - BA-202 Terminal Connectors
- 1 - Height Transition
- 48 - ⅝" dia. Guardrail Splice Bolts and Nuts
- 24 - ¾" dia. Rail Anchor Bolts: Powers Fasteners Wedge-Bolt Anchor OR Red Head Large Diameter Tapcon OR Simpson Titen HD Screw Anchor
- 4 - ⅝" dia. Height Transition Anchor Bolts: Powers Fasteners Wedge-Bolt Anchor OR Red Head Large Diameter Tapcon OR Simpson Titen HD Screw Anchor

The number of Temporary to Permanent Barrier Connections will be counted. The Contractor will be paid the contract unit price for each Temporary to Permanent Barrier Connection measured as provided above.

1. Install five (5) Rail Anchor Bolts in each Terminal Connector as shown. Install two (2) Rail Anchor Blots through the center slots of each Thrie Beam Guardrail Section. Ensure a minimum embedment depth of 6". Drill pilot holes with a core bit. Avoid drilling through reinforcing steel within temporary barrier rail sections.
2. Shift opposite side thrie-beam sections 16" upstream or downstream in order to prevent anchor bolt interference.
3. 32" mounting height preferred. 30" minimum.
4. Install anchor bolts to secure Height Transition to barriers. Ensure a minimum embedment depth of 4".
5. Each connection requires nine (9) BA-401 stake anchors as shown. Use of the strap anchor is not allowed.



PLAN

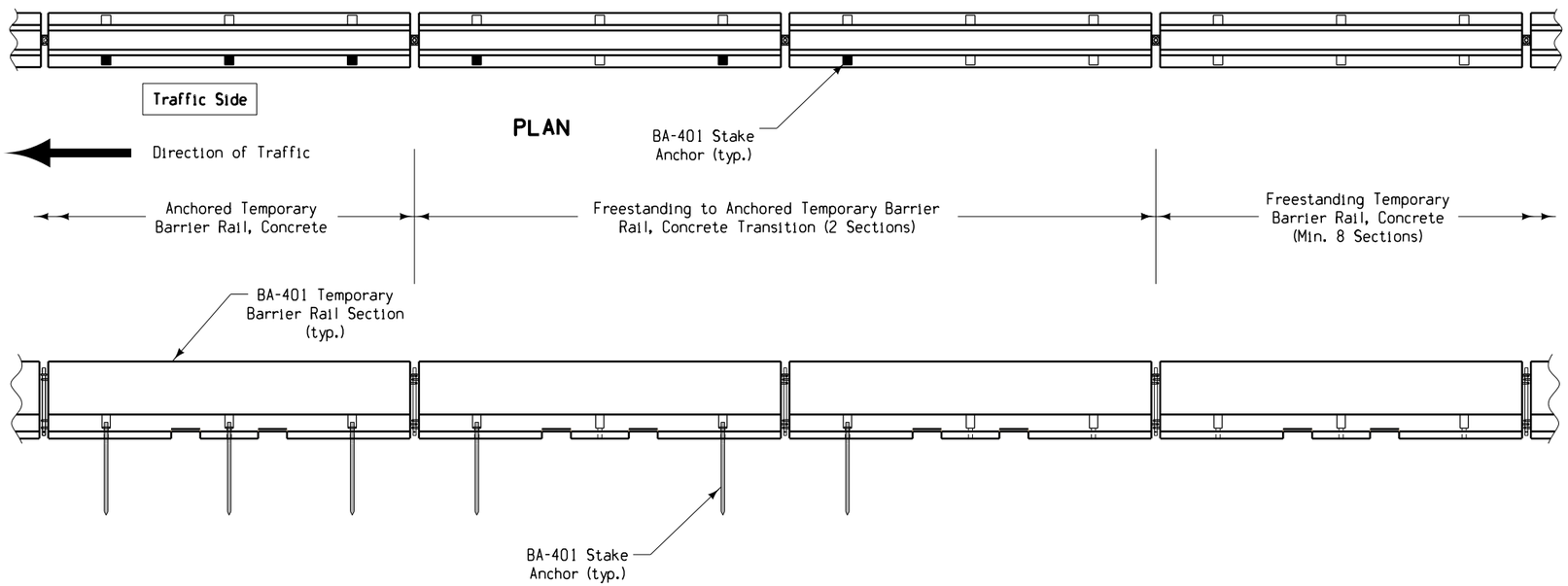


ELEVATION

TBR CONNECTION (FOR EXISTING BA-100 44" CONCRETE BARRIER)

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.20

Freestanding to Anchored Temporary Barrier Rail Connection Shall be Considered Incidental to the Temporary Barrier Rail, Concrete Item.



Freestanding to Anchored Temporary Barrier Rail Connection

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.21

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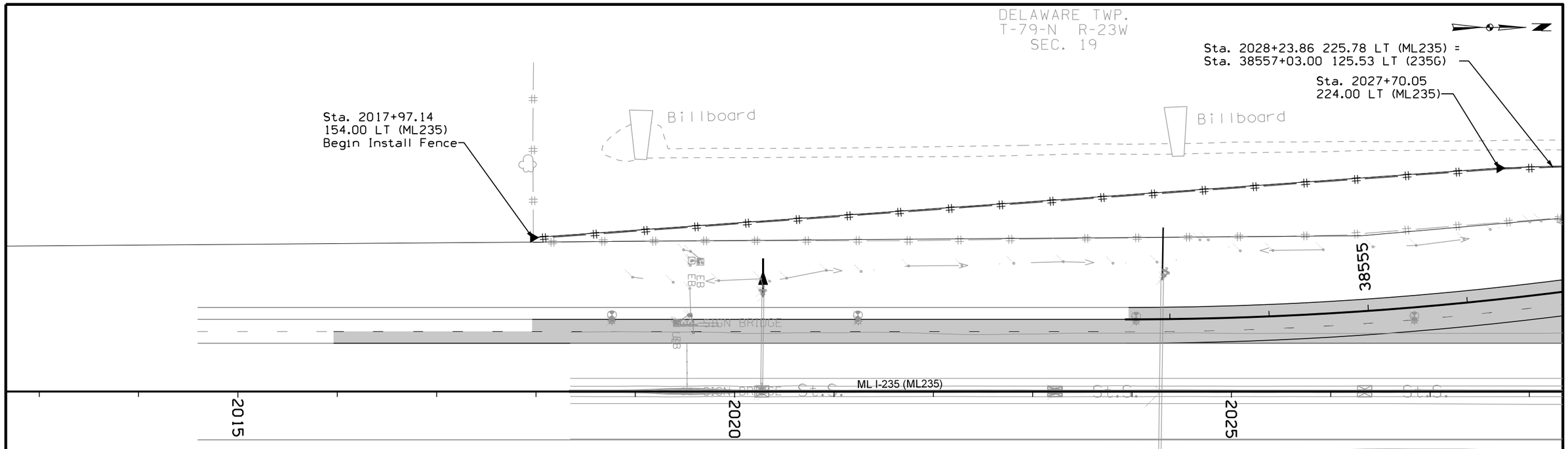
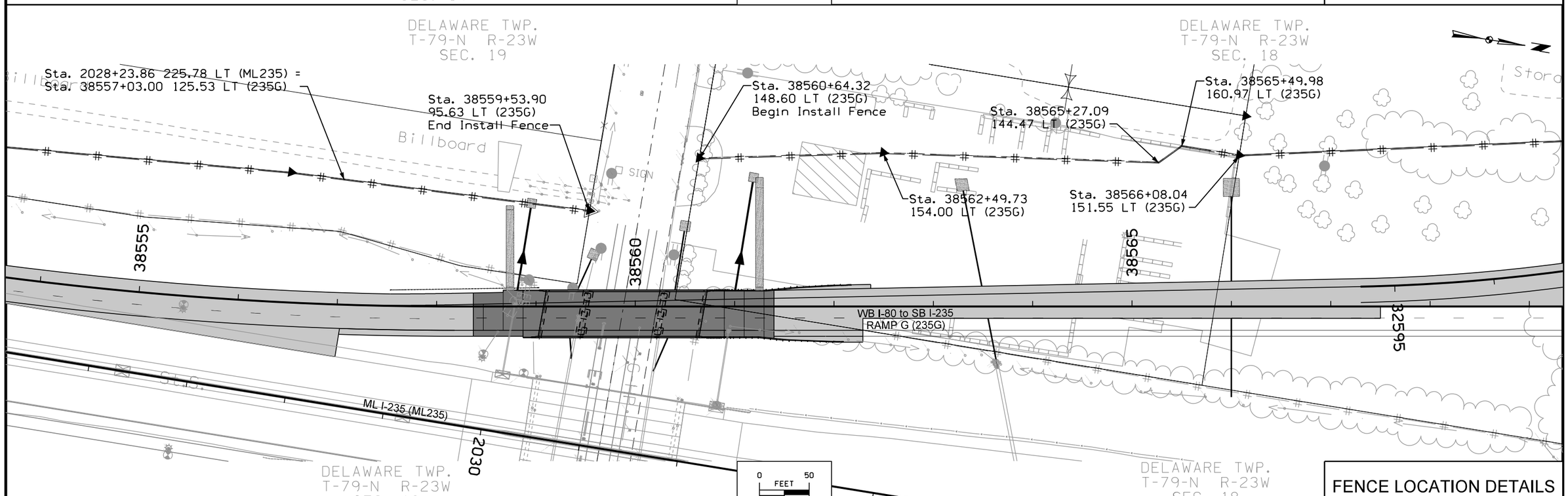


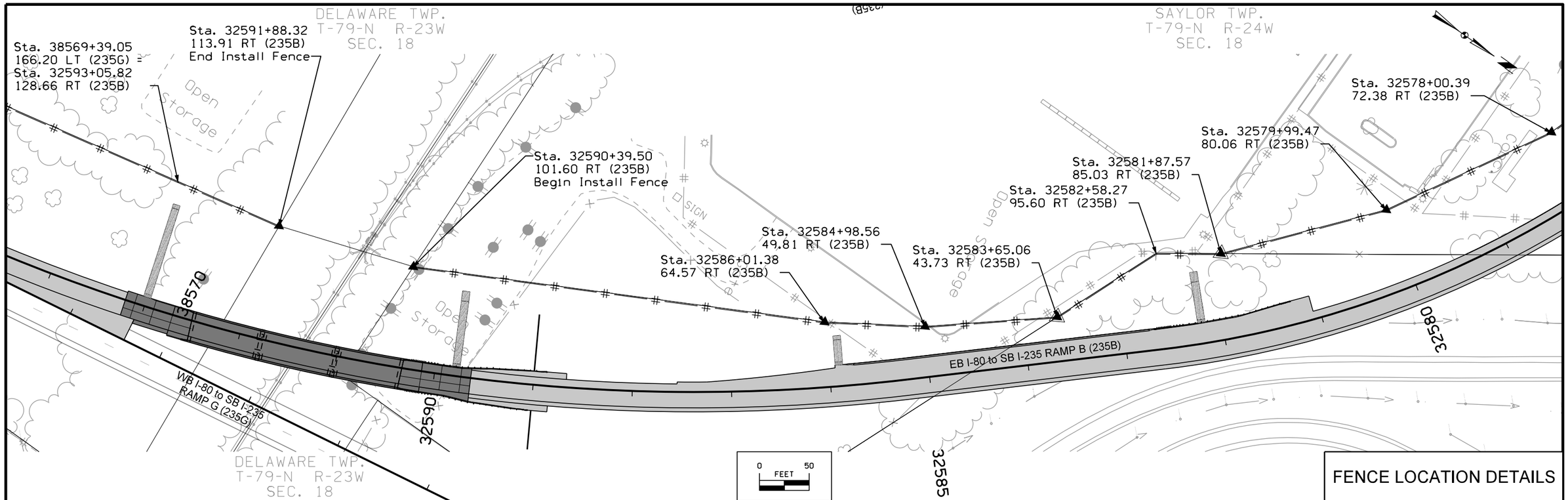
FENCE LOCATION DETAILS



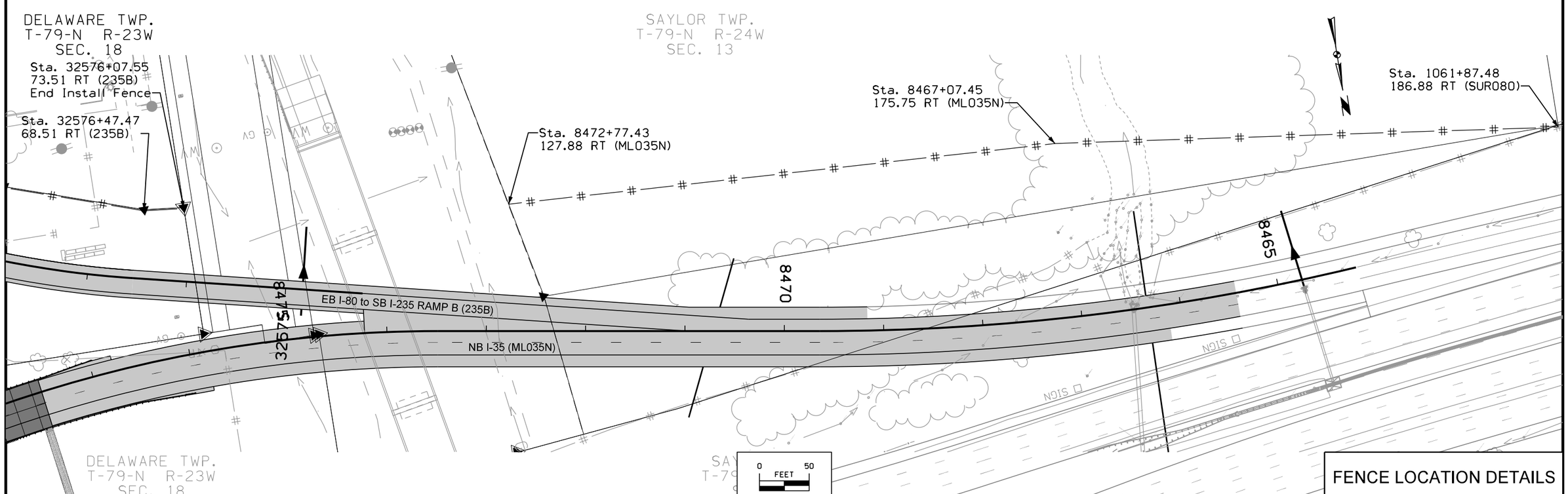
FENCE LOCATION DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.22

9:20:32 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u03.sht



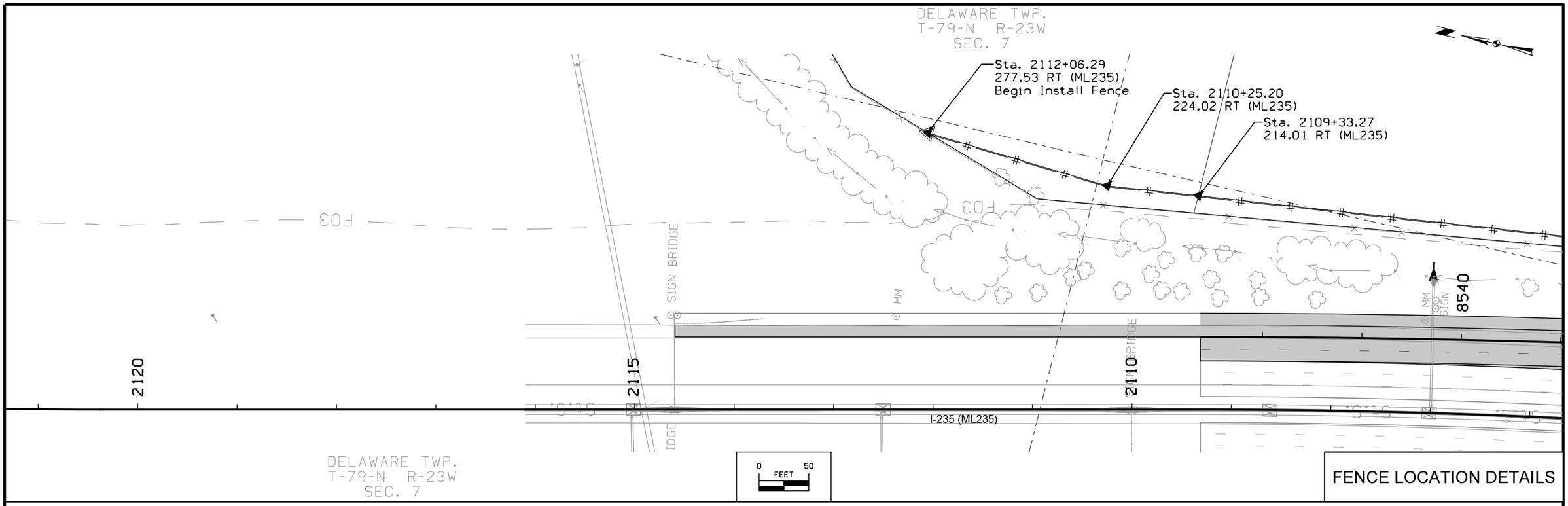
FENCE LOCATION DETAILS



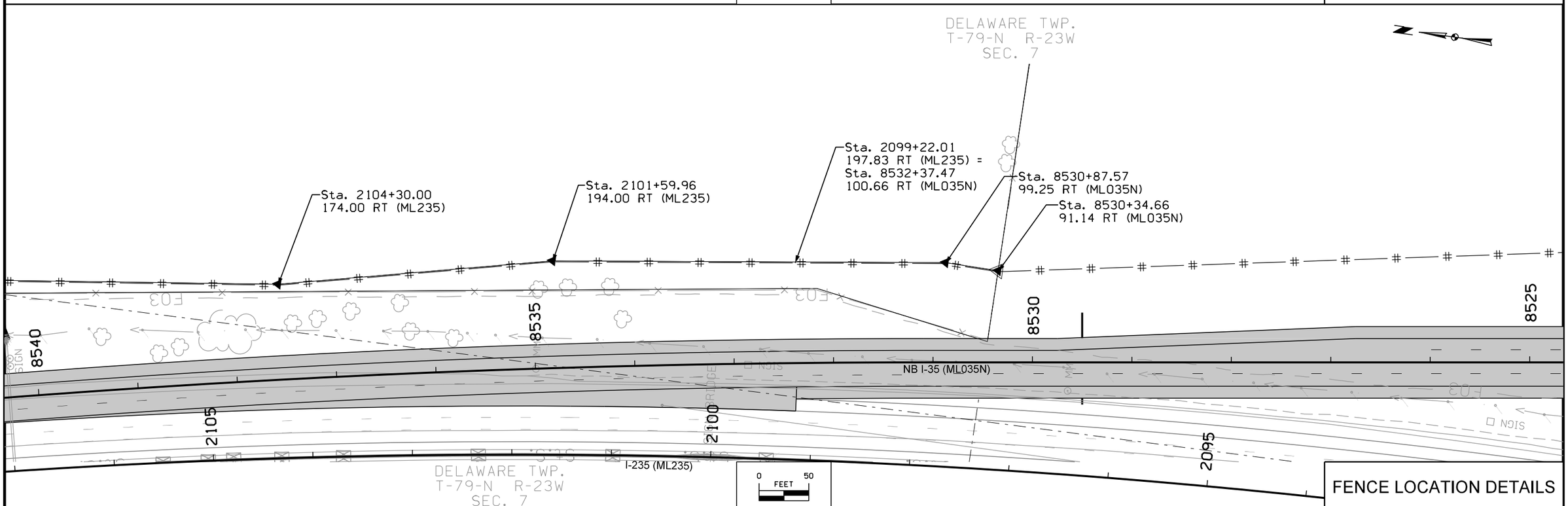
FENCE LOCATION DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.23

9:20:42 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u03.sht



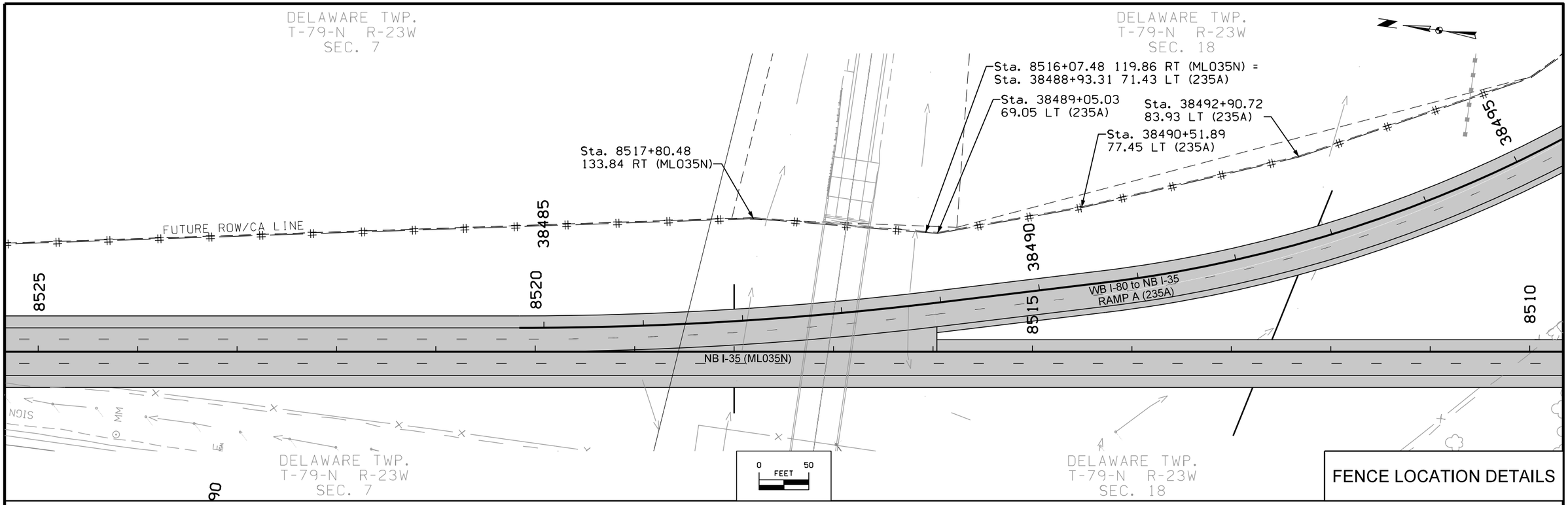
FENCE LOCATION DETAILS



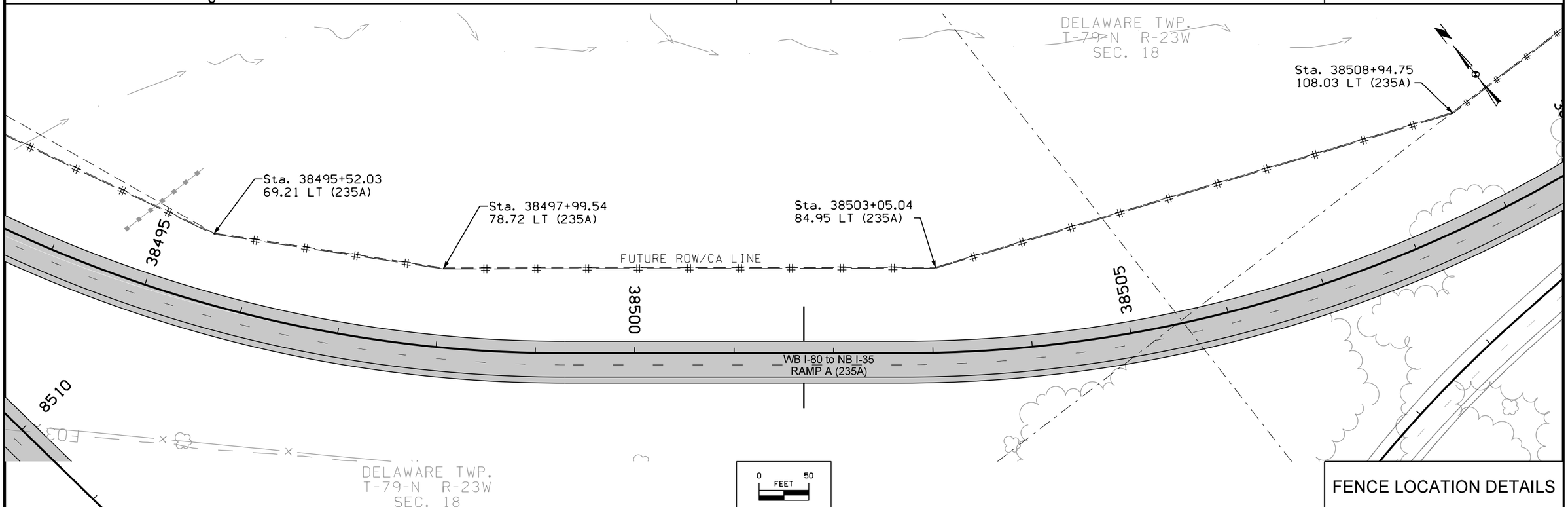
FENCE LOCATION DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.24

9:20:52 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u03.sht



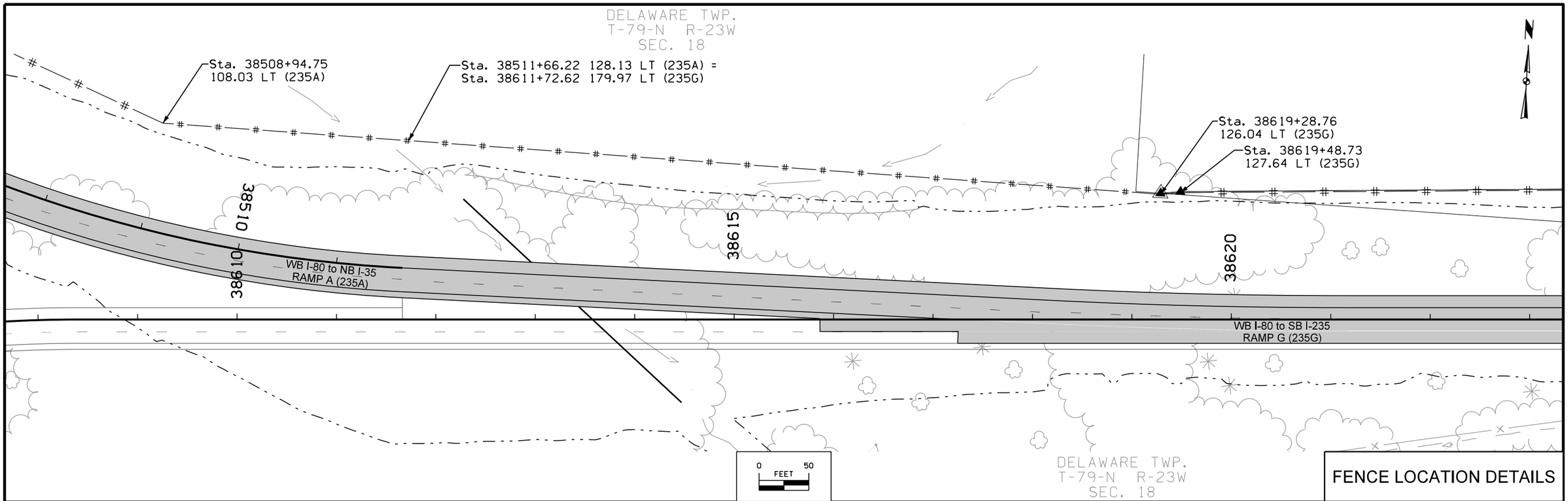
FENCE LOCATION DETAILS



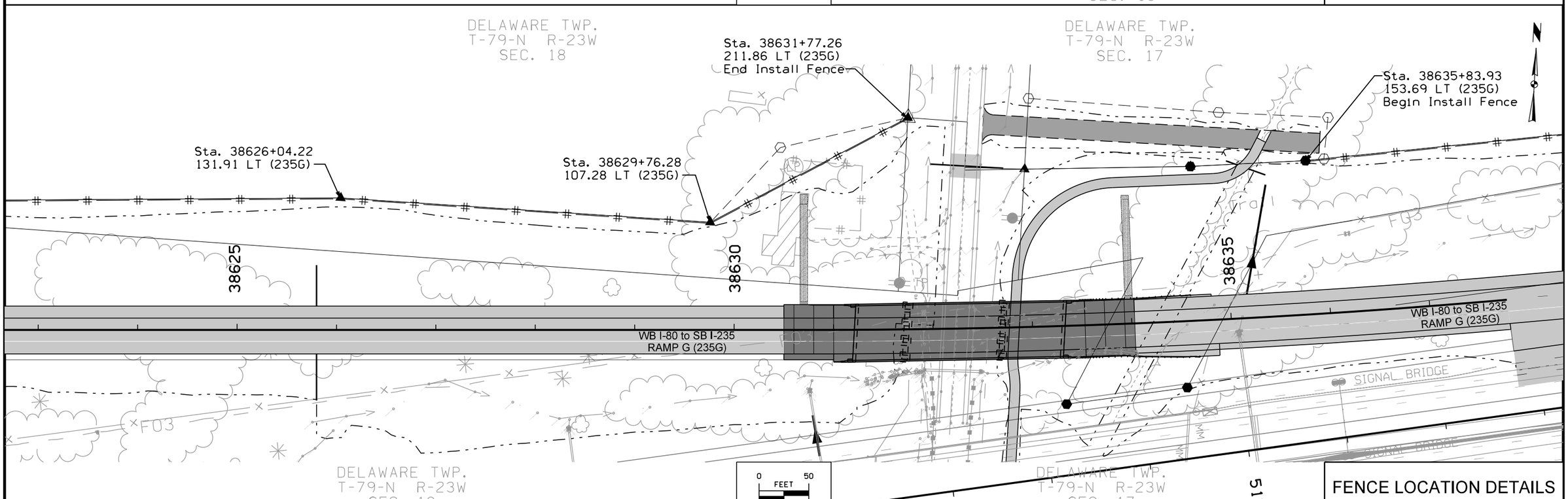
FENCE LOCATION DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.25

9:21:00 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u03.sht



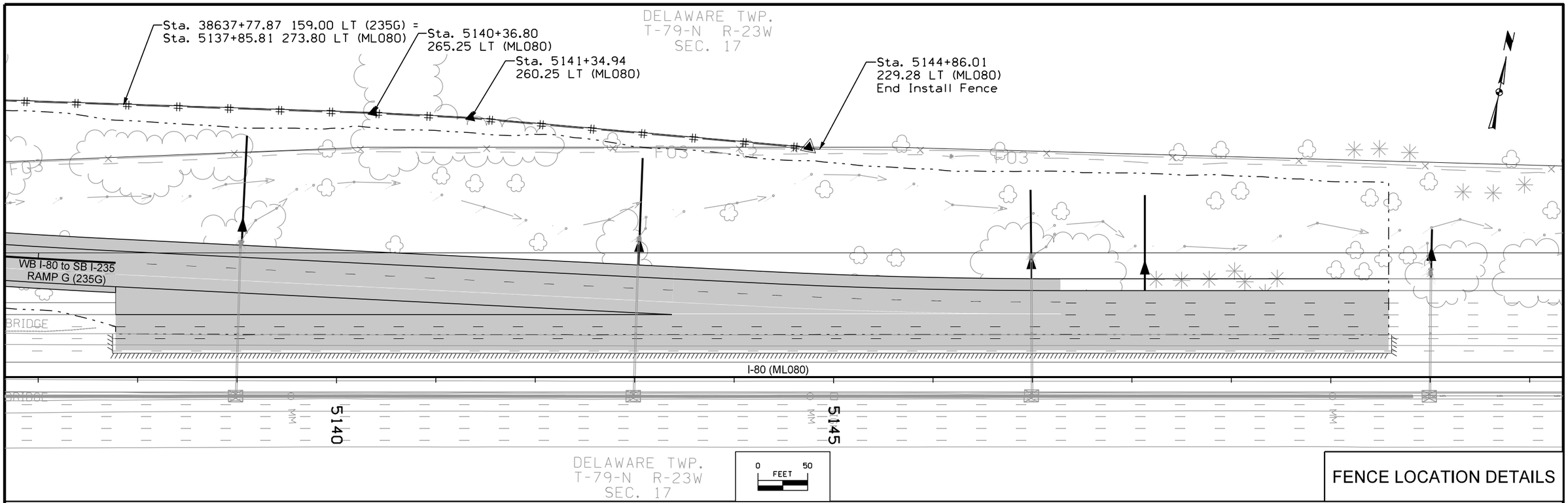
FENCE LOCATION DETAILS



FENCE LOCATION DETAILS

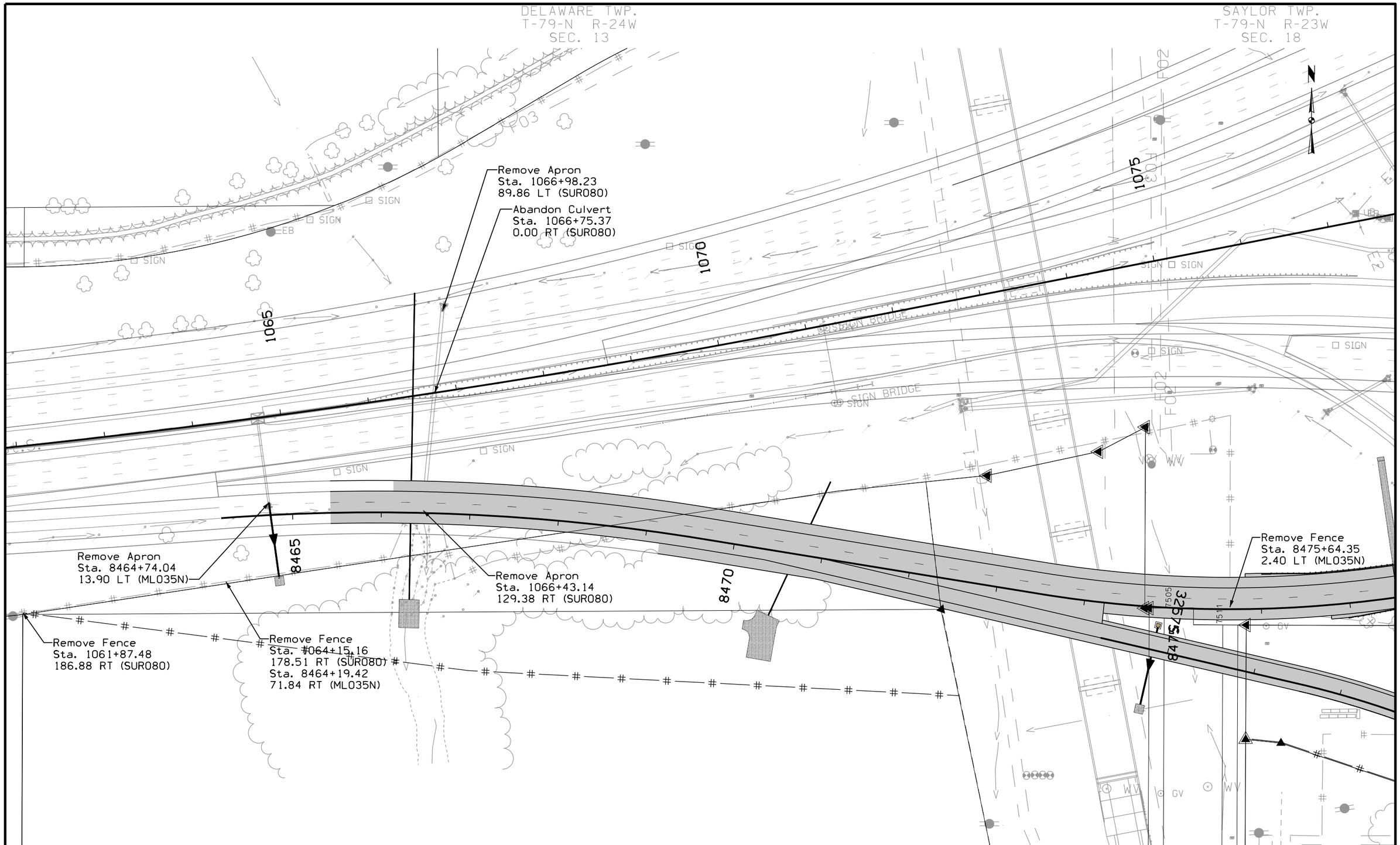
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.26

9:21:09 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u03.sht



FENCE LOCATION DETAILS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.27



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.28

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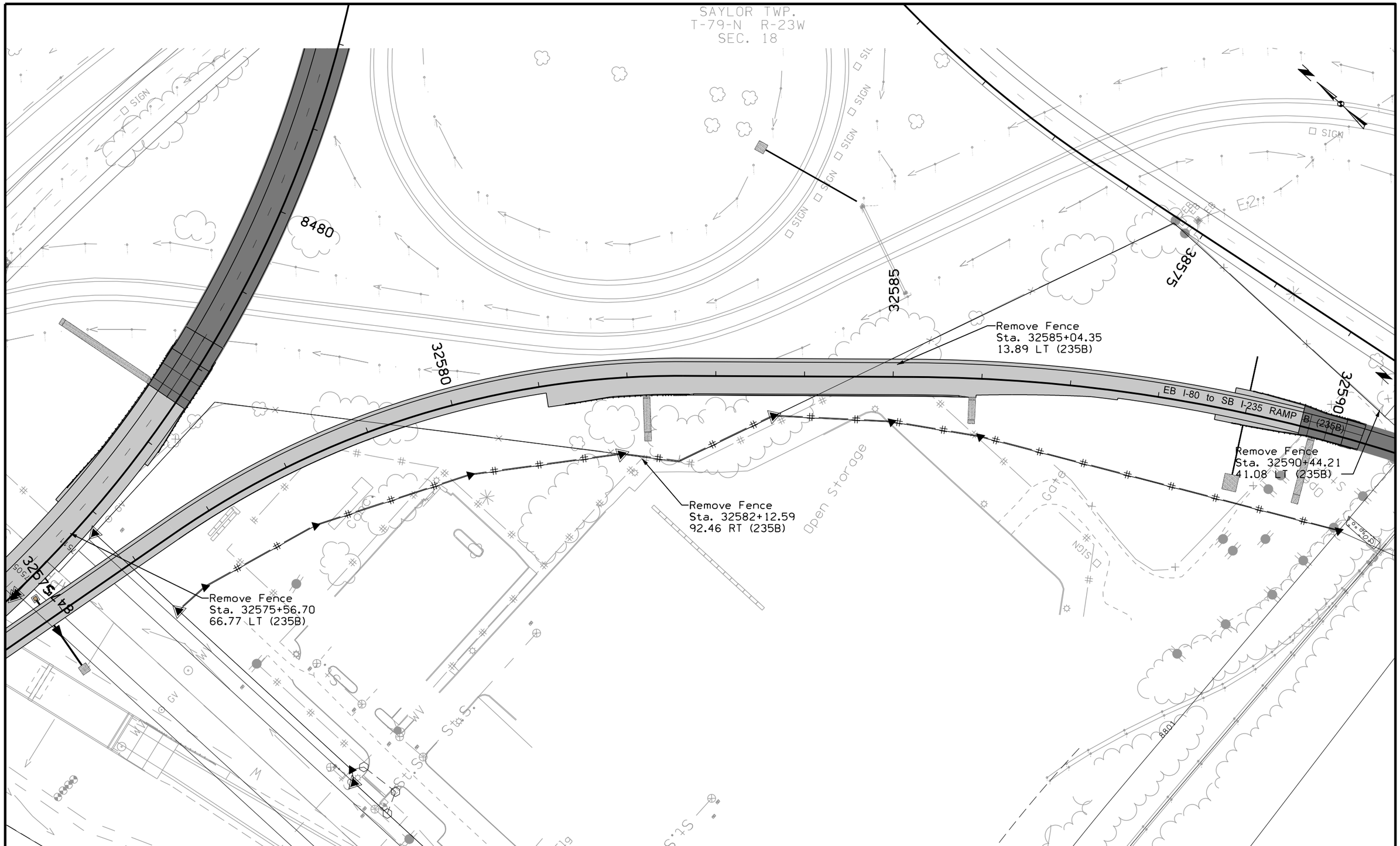
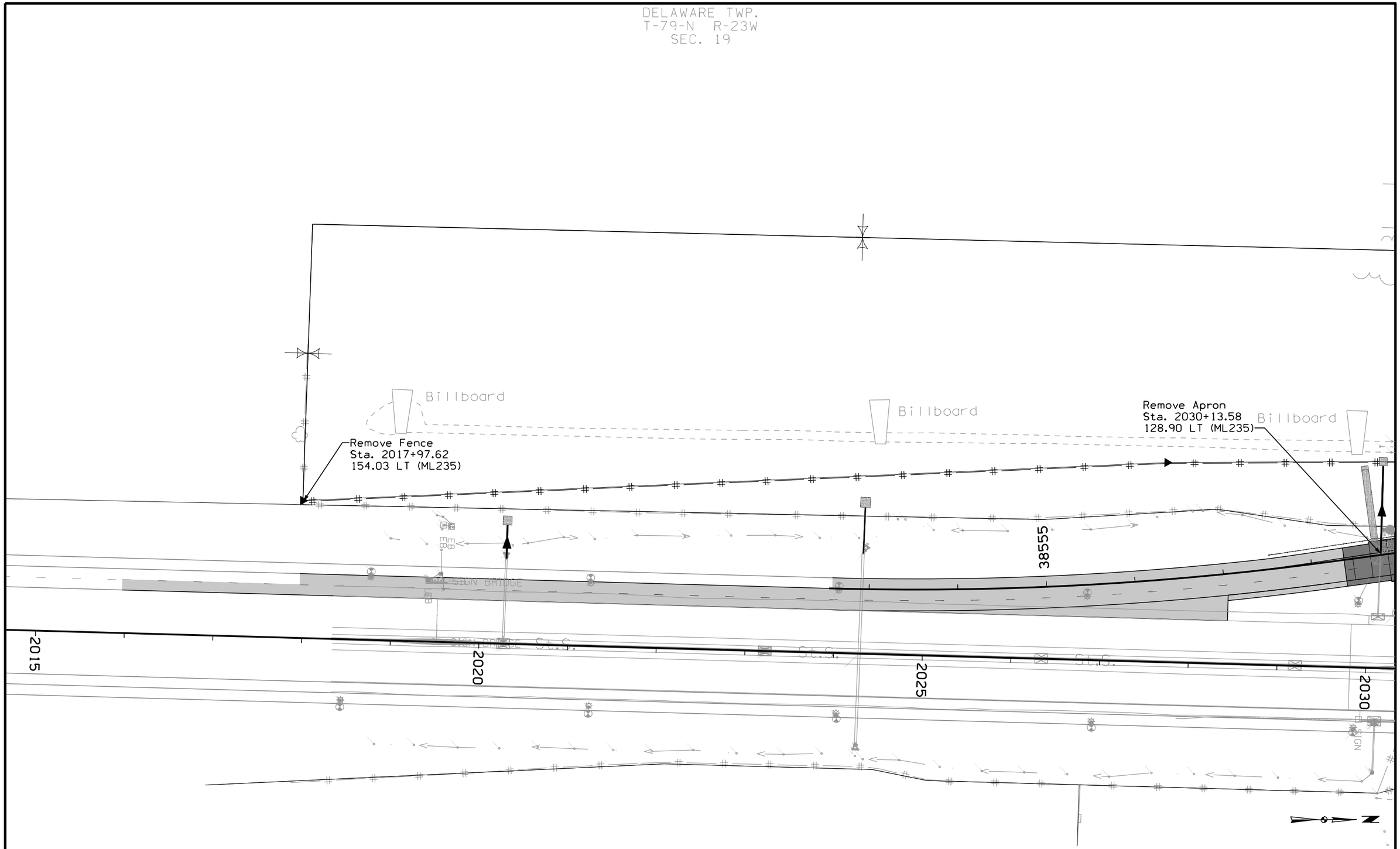


STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.29

9:21:39 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht

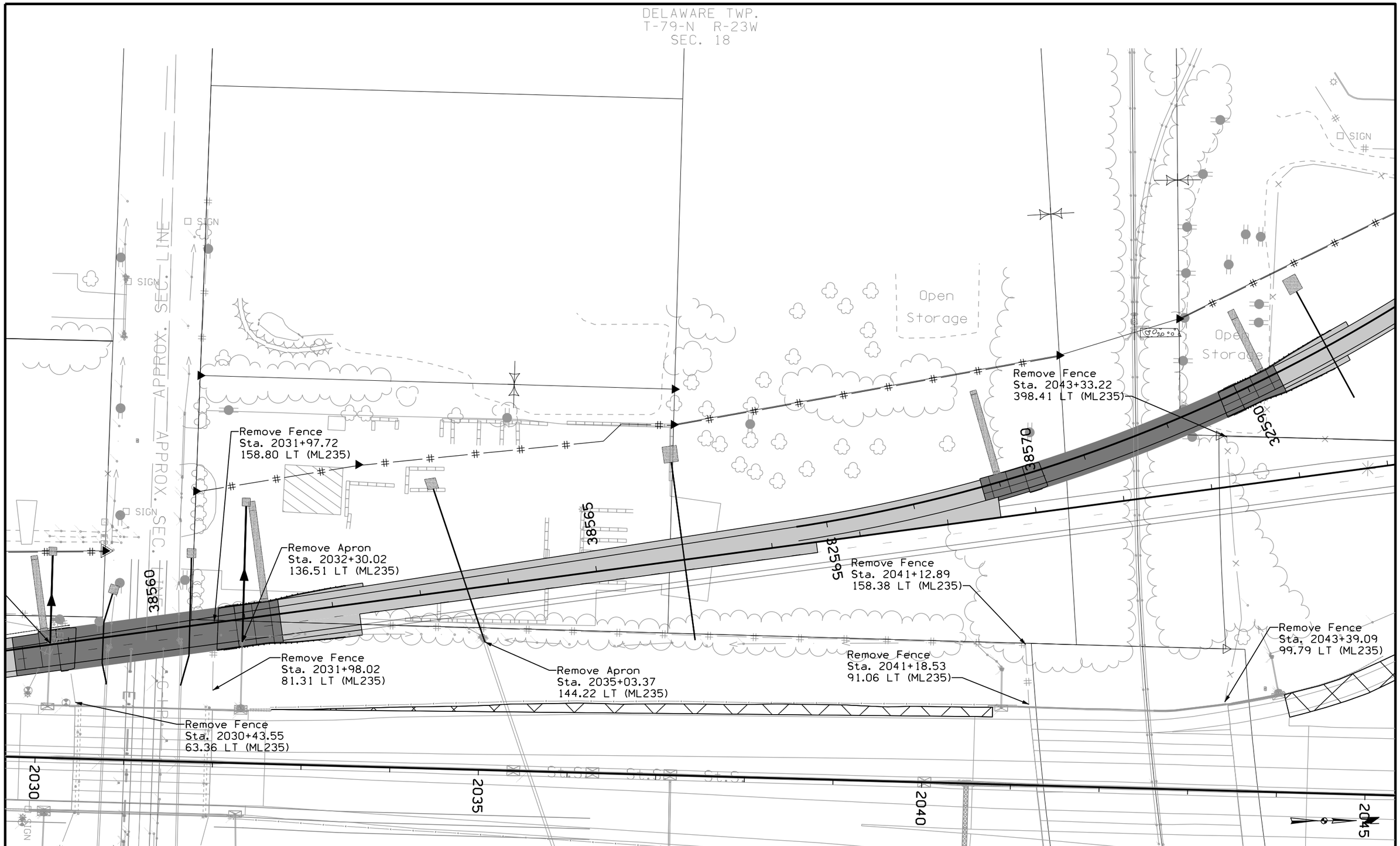
DELAWARE TWP.
T-79-N R-23W
SEC. 19



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.30

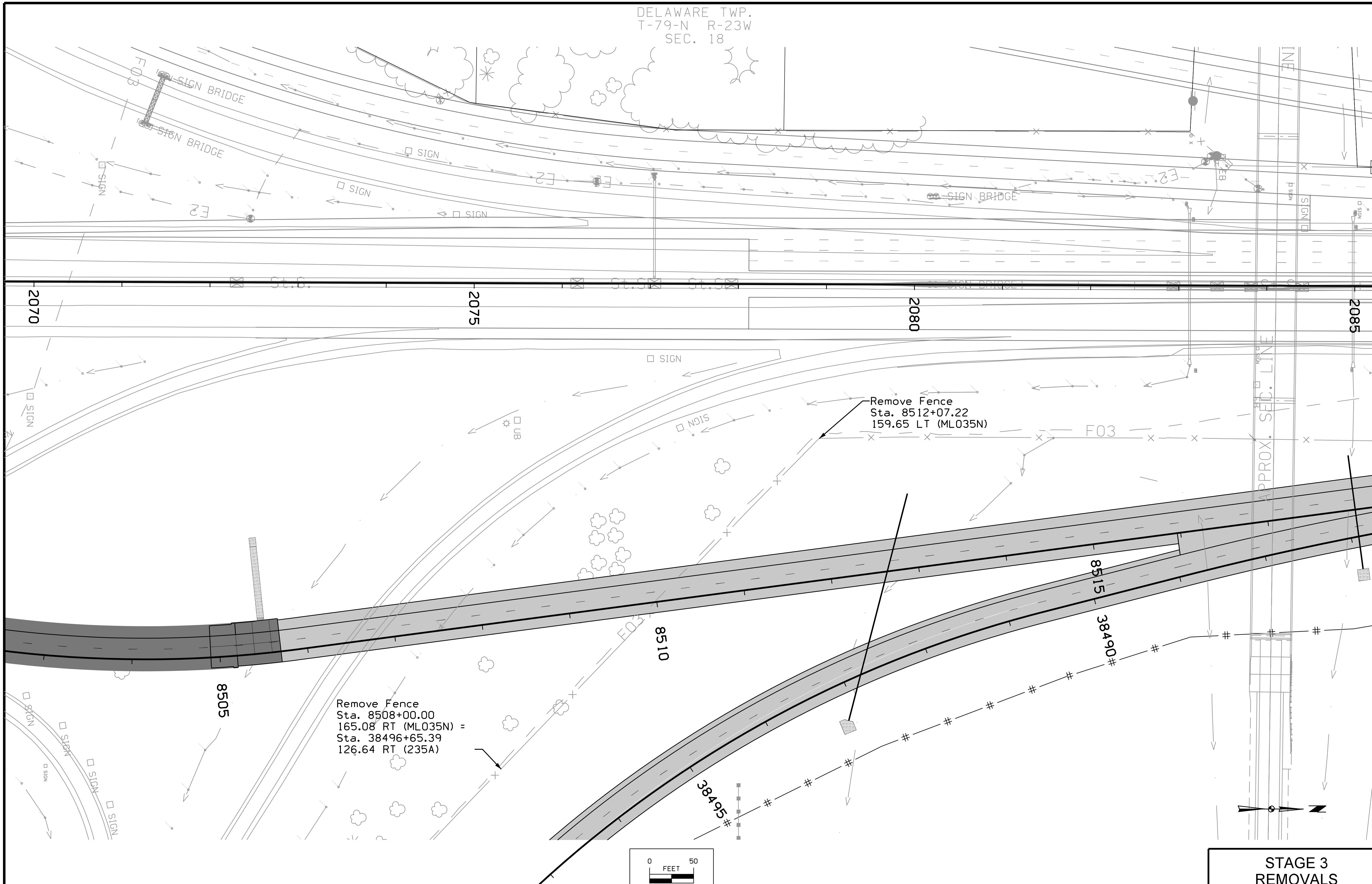
9:21:49 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.31

9:21:59 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.32

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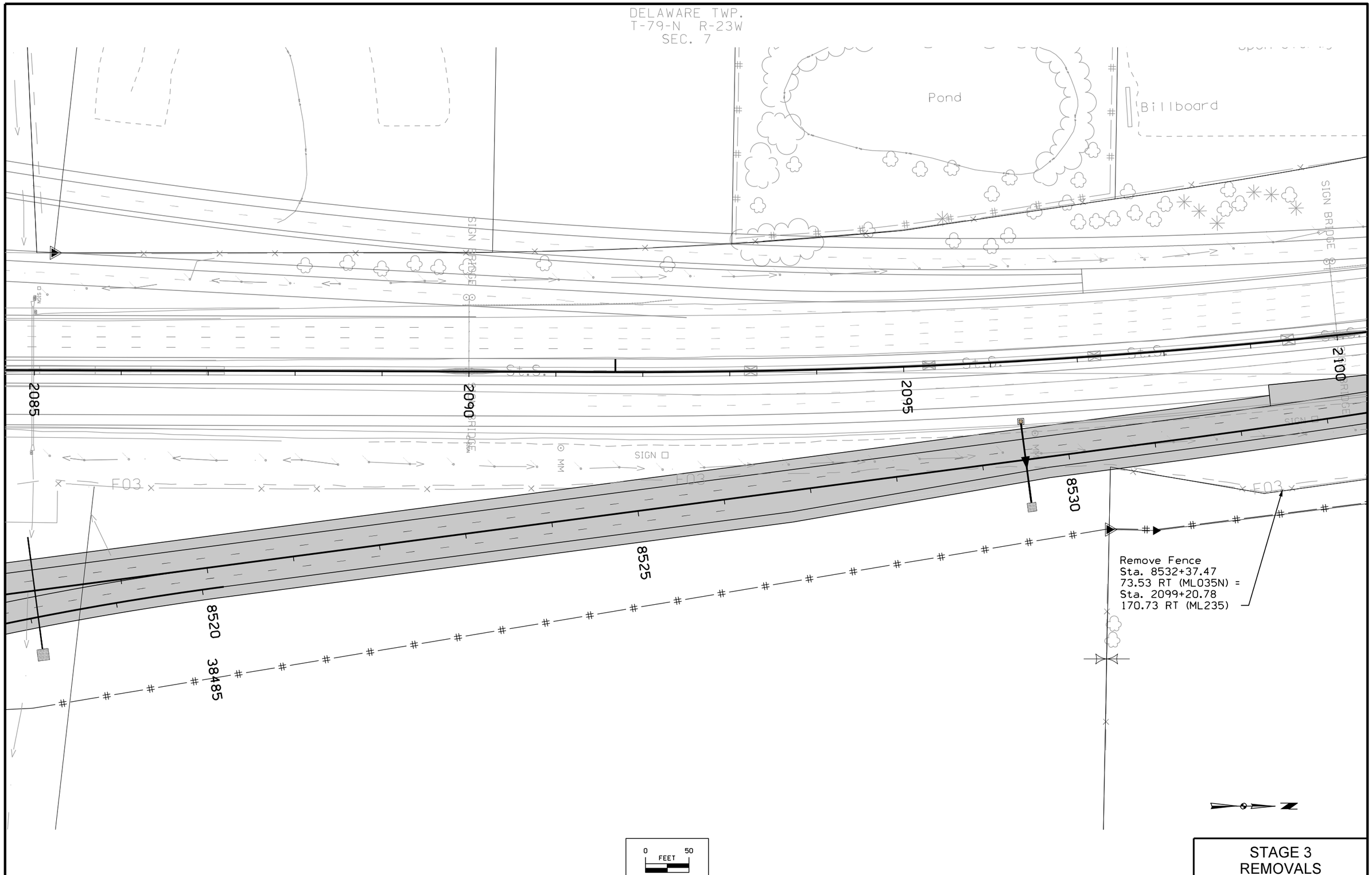
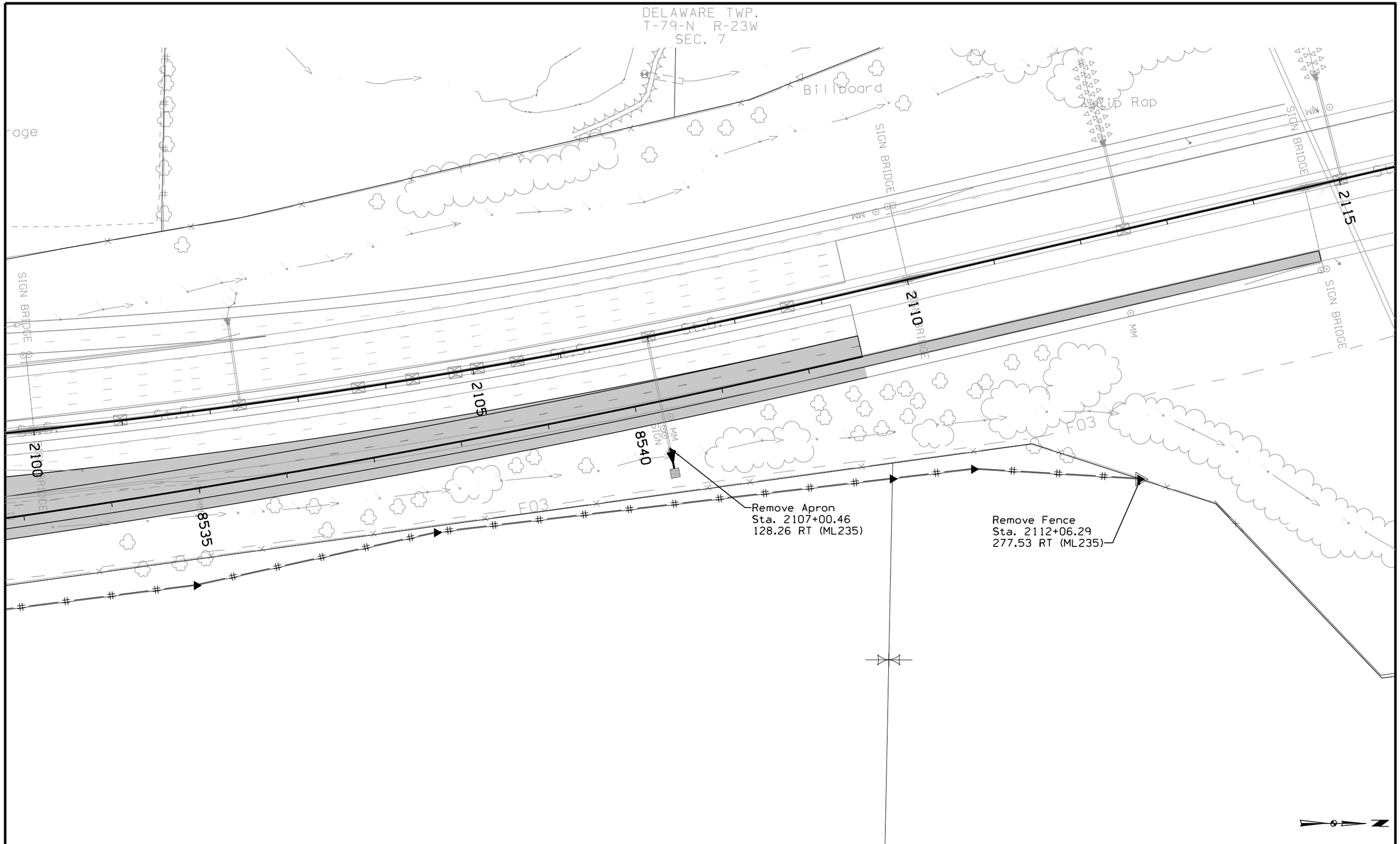


STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.33

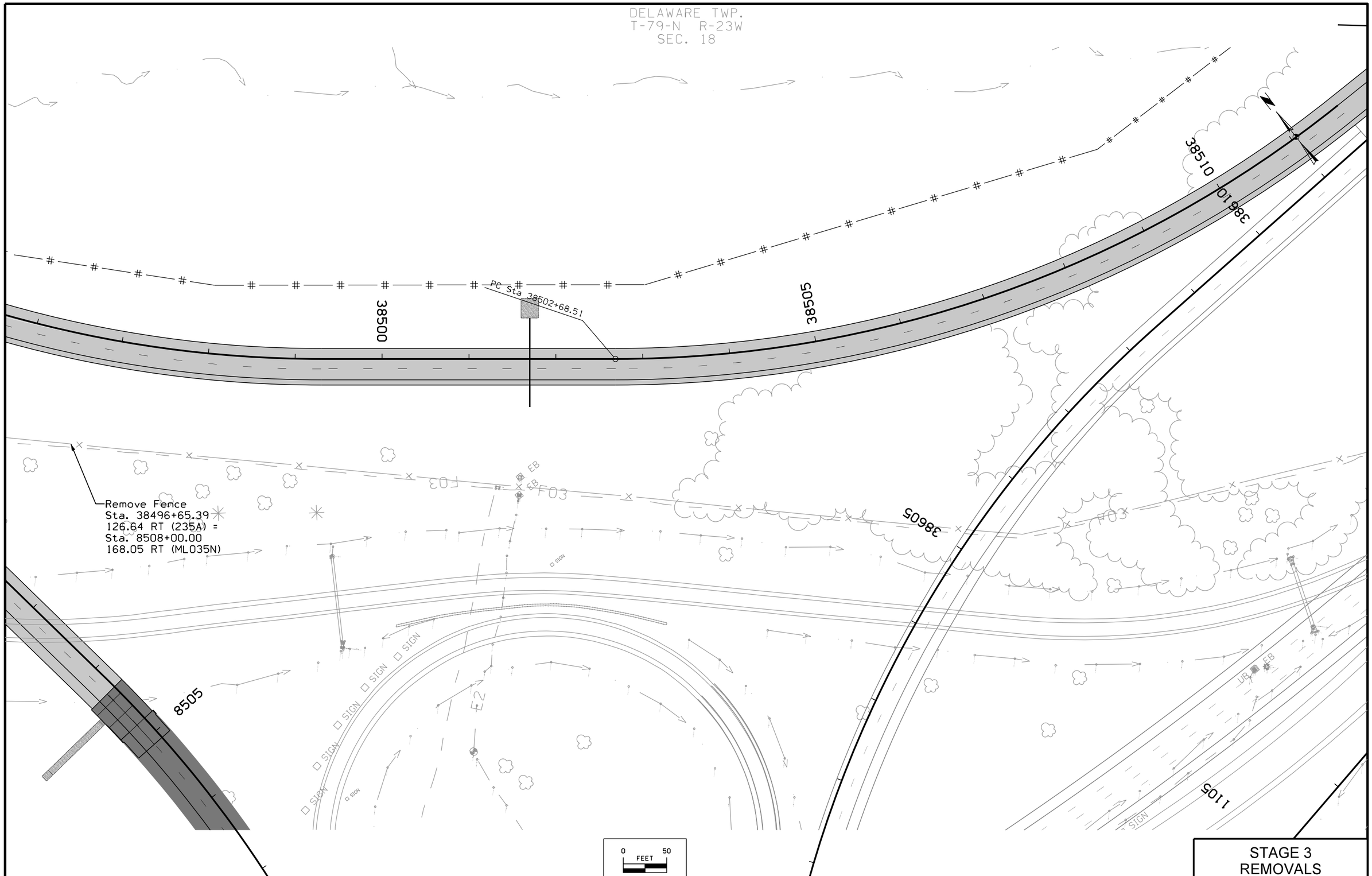
9:22:19 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.34

9:22:47 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.35

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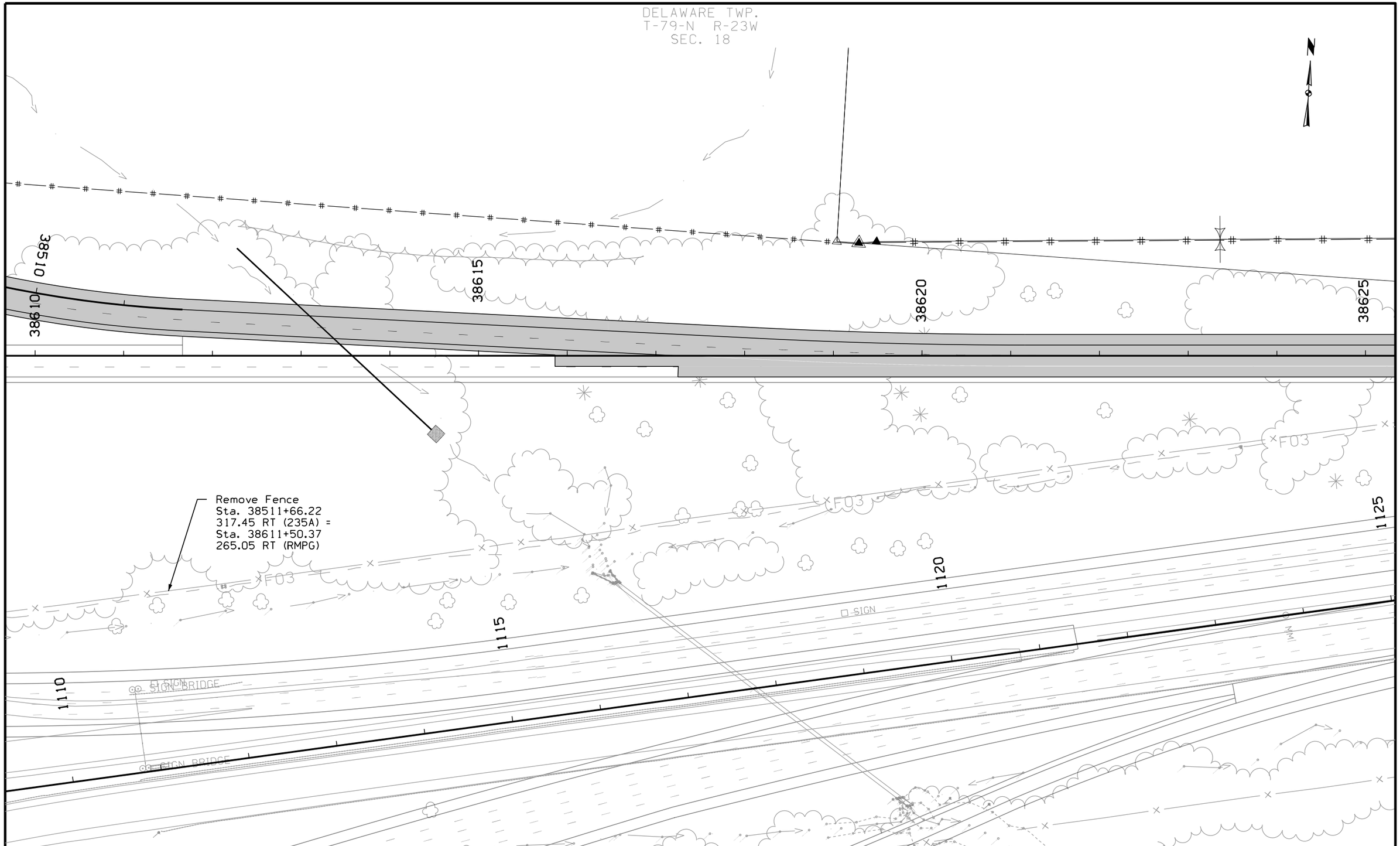
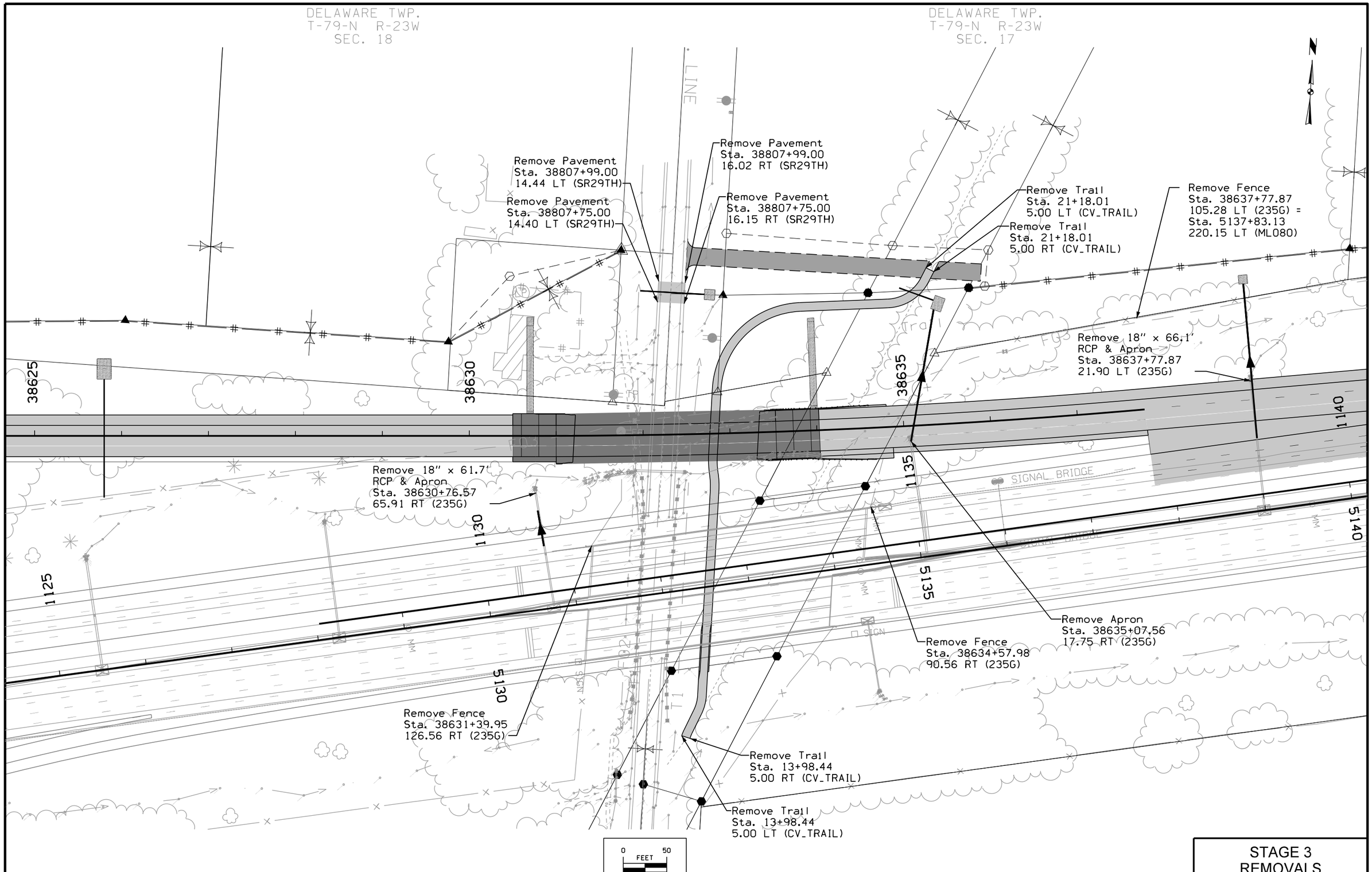


STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.36

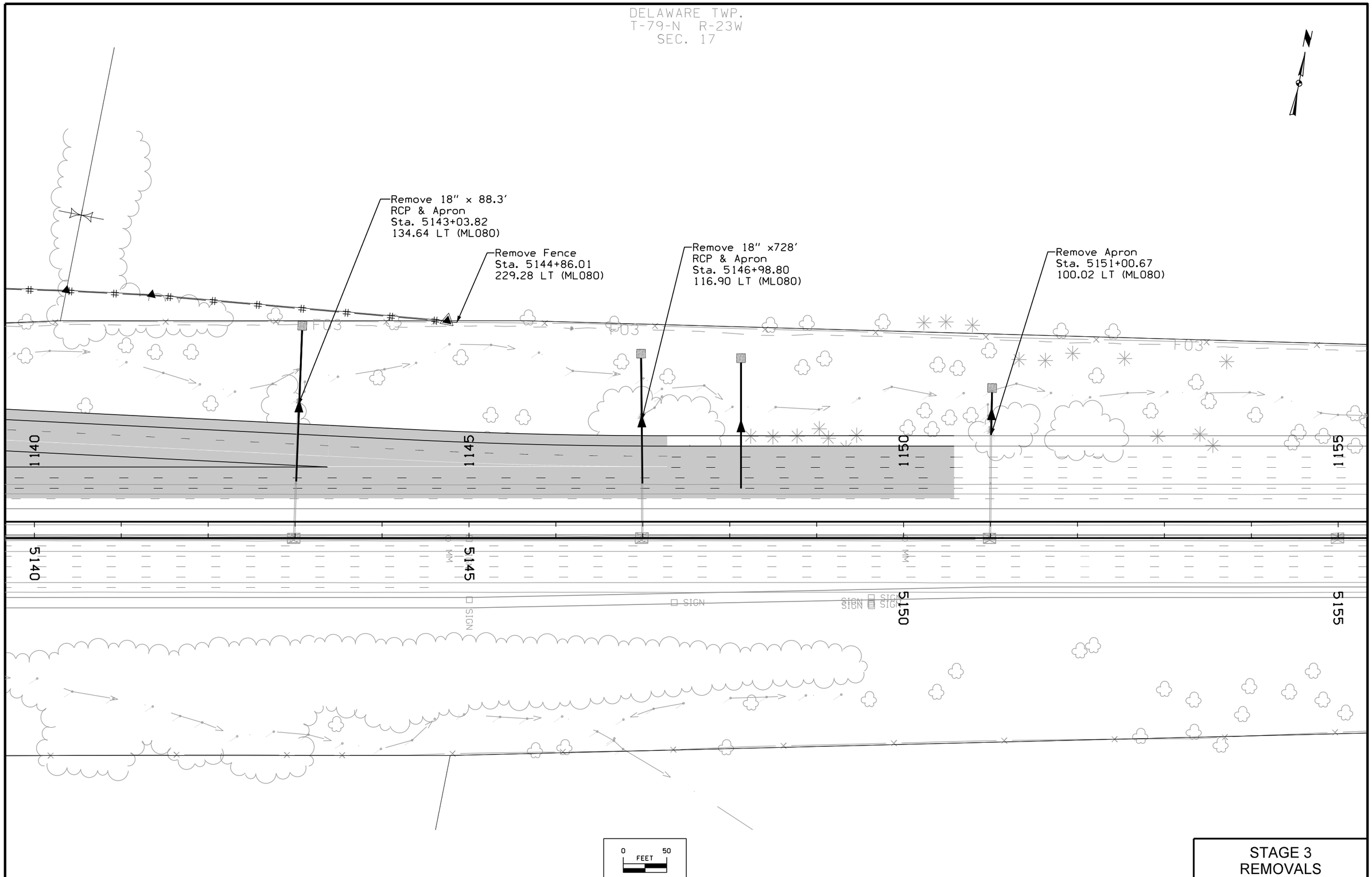
9:23:06 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.37

9:23:15 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194u04.sht



STAGE 3
REMOVALS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.38

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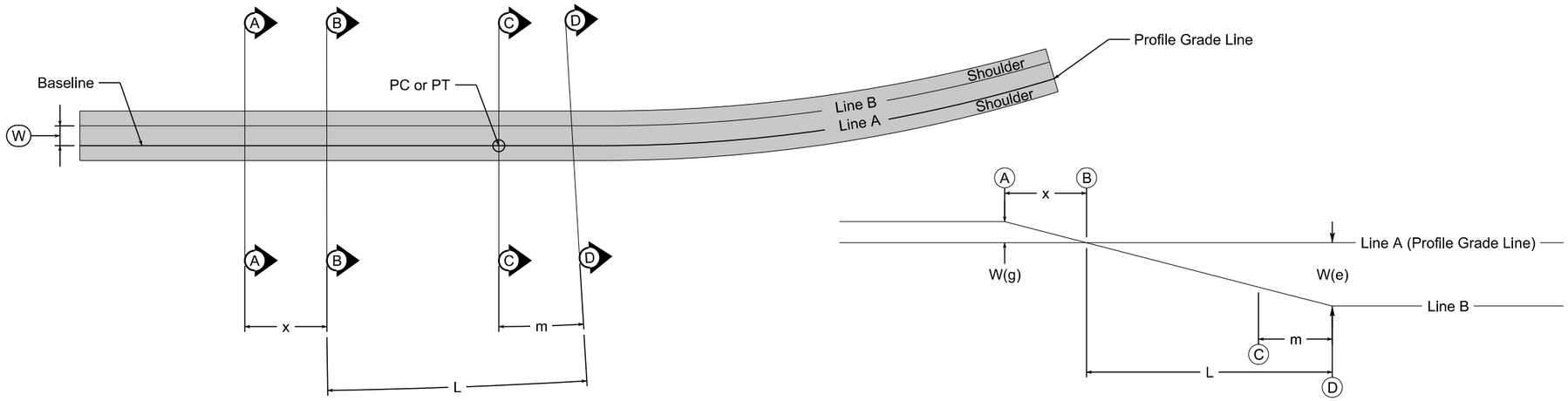


DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

CASE A
TRANSITION DETAILS - TANGENT TO CURVE
WHEN NORMAL CROSS SLOPE IS IN THE OPPOSITE DIRECTION AS SUPERELEVATION

Refer to specific curve data contained in project plans for tangent runout length (x), runoff length (L) and full superelevation (e).

Place 90% of full superelevation at the P.C. and P.T.

Place 10% of the runoff length within the curve.

Unless otherwise specified, all lengths are measured along the baseline.

Smooth curves should be established at the time of construction at sections A-D along the profile edge of lines A and B.

Axis of rotation coincides with profile grade location.

m = 10% of Runoff Length (L)

Ⓦ = Pavement Width

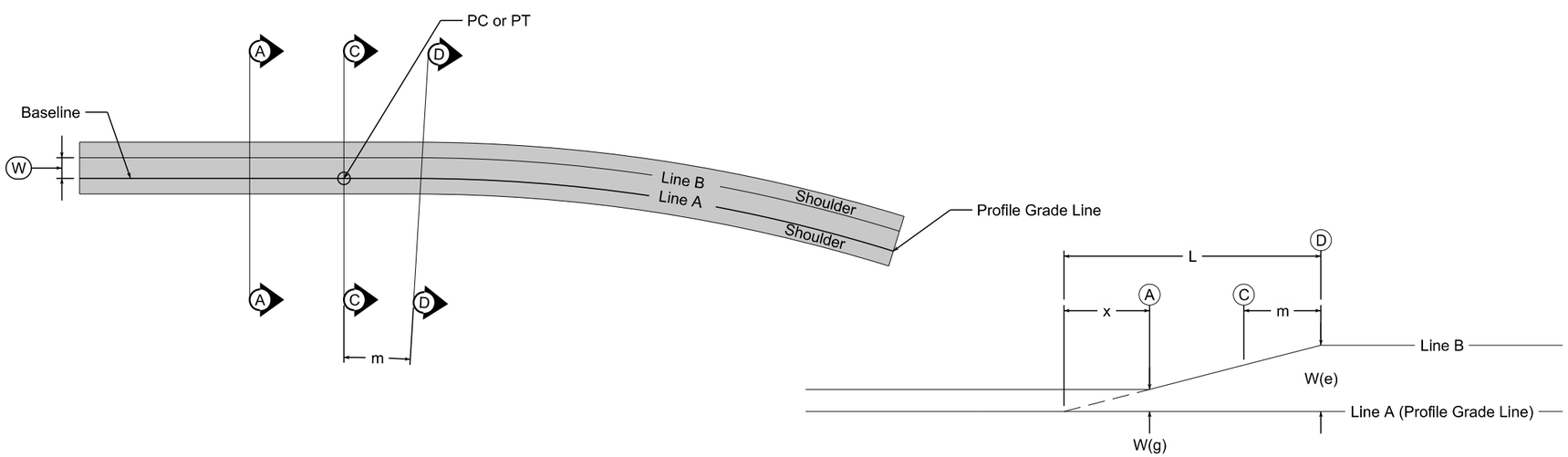
g = Normal Cross Slope (2%)

L = Distance to Change Cross Slope from 0% to e

e = Superelevation Rate

x = Distance to Change Cross Slope from 0% to 2%

s = Normal Shoulder Slope



DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

CASE B
TRANSITION DETAILS - TANGENT TO CURVE
WHEN NORMAL CROSS SLOPE IS IN THE SAME DIRECTION AS SUPERELEVATION

Possible Tabulation:
101-18

MODIFIED	REVISION 2	04-21-20
STANDARD ROAD PLAN	**PV-303**	
	SHEET 1 of 3	

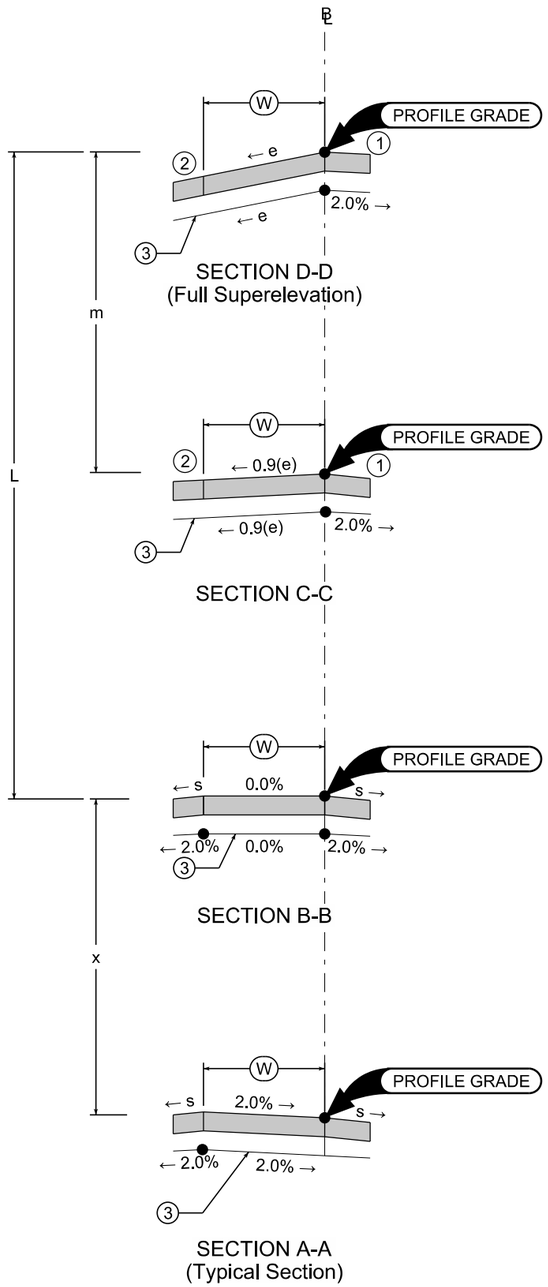
REVISIONS: Modified "m" distance to 10% of Runoff Length.

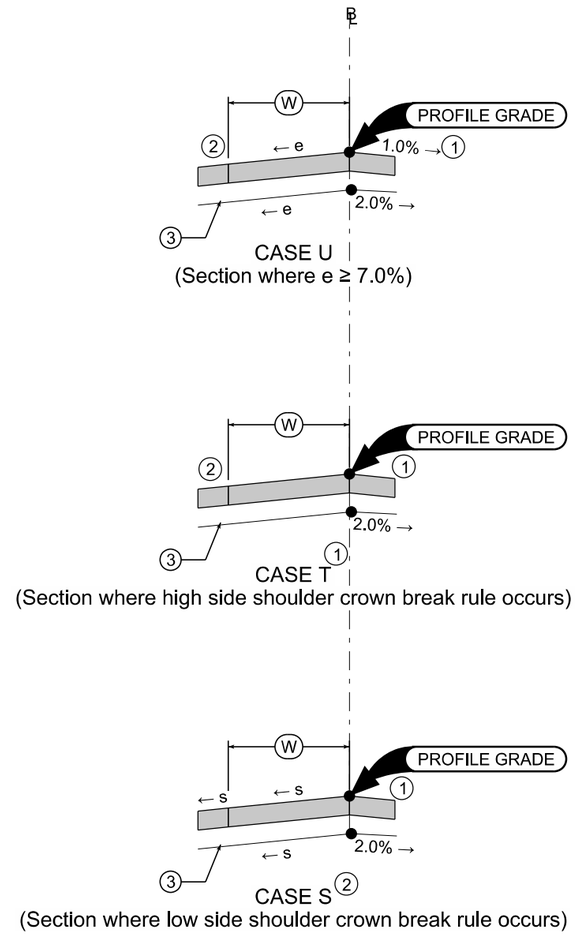
APPROVED BY DESIGN METHODS ENGINEER

SUPERELEVATION DETAILS
RAMPS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.39

9:23:32 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U05.sht





1. High Side Shoulder: Maintain normal shoulder cross slope (s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.
2. Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.
3. Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

SECTION WHERE SHOULDER SLOPE TRANSITION BEGINS

CASE A

MODIFIED STANDARD ROAD PLAN

REVISION	
2	04-21-20

PV-303

SHEET 2 of 3

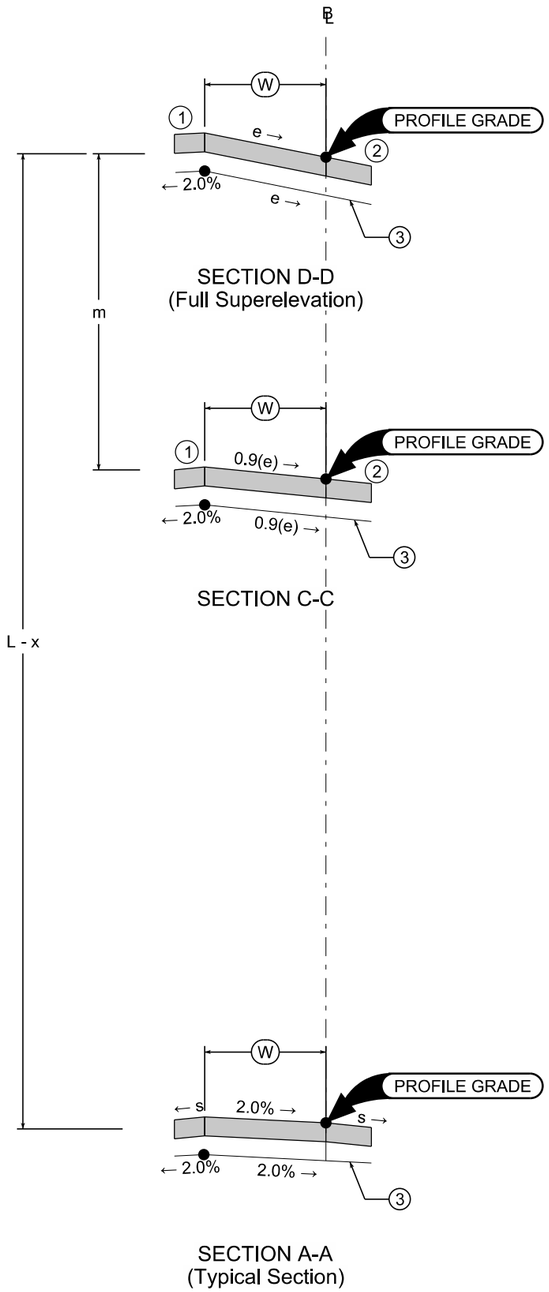
REVISIONS: Modified "m" distance to 10% of Runoff Length.

APPROVED BY DESIGN METHODS ENGINEER

SUPERELEVATION DETAILS RAMPS

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.40

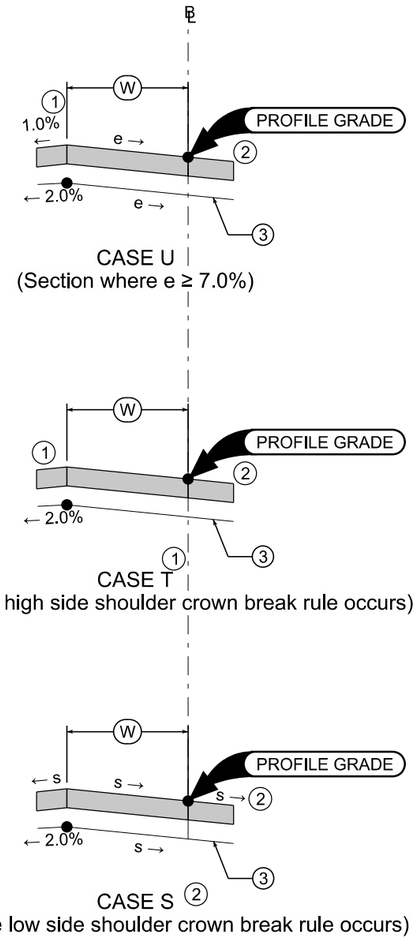
9:23:32 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U05.sht



SECTION D-D
(Full Superelevation)

SECTION C-C

SECTION A-A
(Typical Section)



CASE U
(Section where e ≥ 7.0%)

CASE T
(Section where high side shoulder crown break rule occurs)

CASE S ②
(Section where low side shoulder crown break rule occurs)

SECTION WHERE SHOULDER SLOPE TRANSITION BEGINS

CASE B

① High Side Shoulder: Maintain normal shoulder cross slope (s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.

② Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

③ Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

MODIFIED

STANDARD ROAD PLAN

REVISION	
2	04-21-20

PV-303

SHEET 3 of 3

REVISIONS: Modified "m" distance to 10% of Runoff Length.

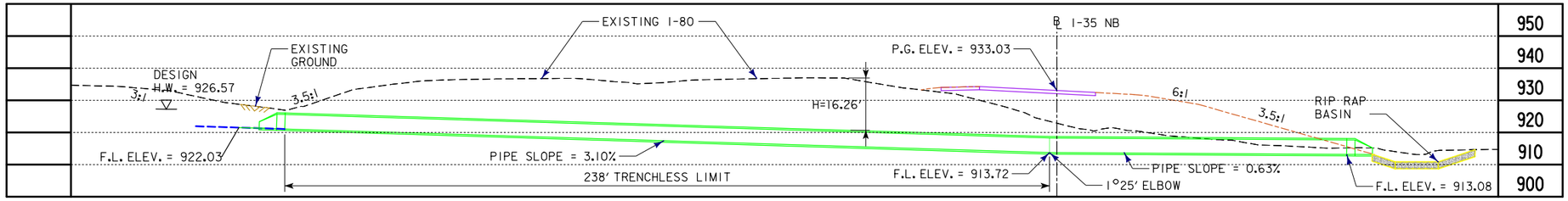
APPROVED BY DESIGN METHODS ENGINEER

SUPERELEVATION DETAILS
RAMPS

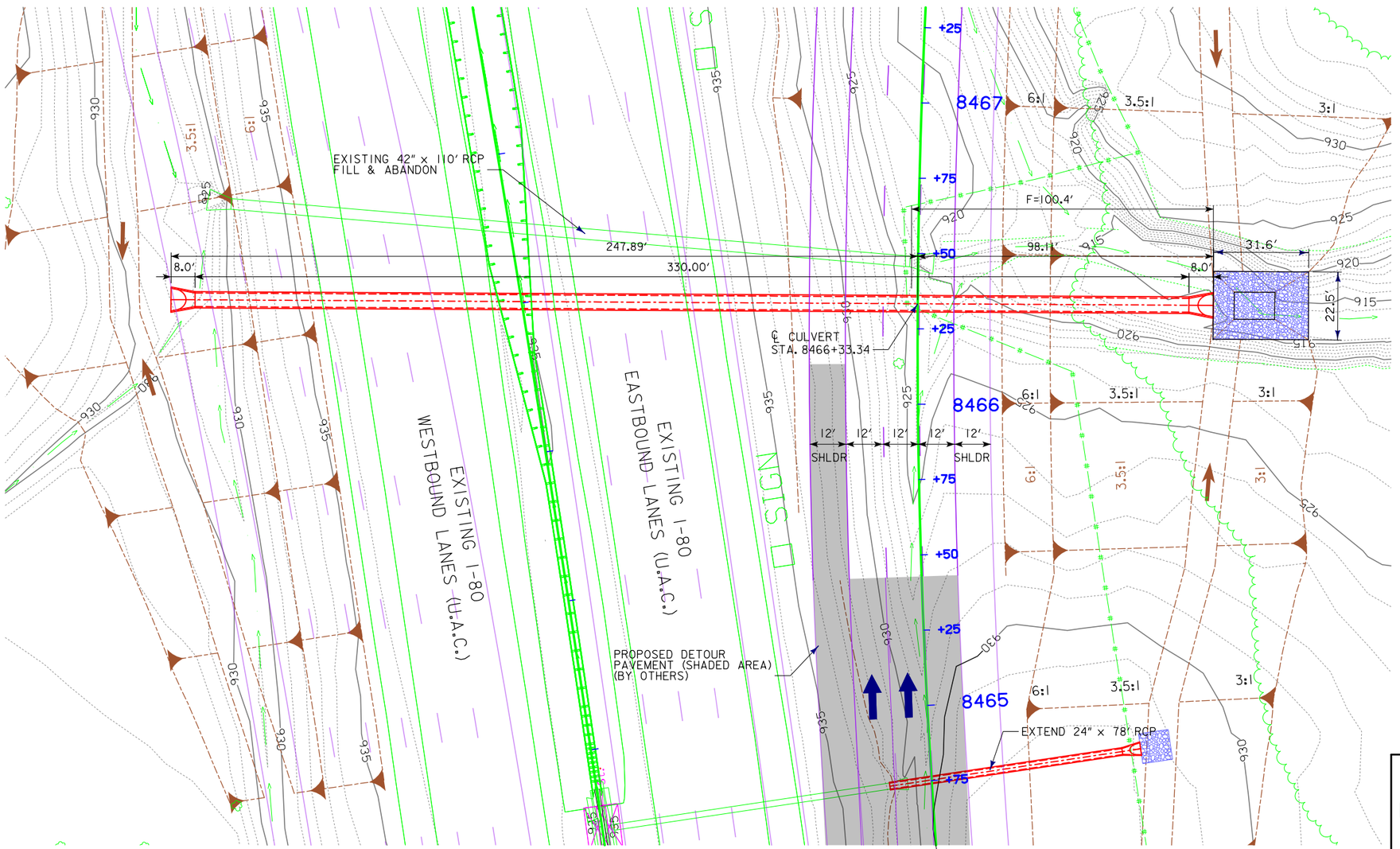
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER U.41

9:23:33 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194U05.sht

BENCH MARK NO. 128, ELEV. 933.868, STA. 8478+62.35, 6457.91' RT., FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

I-35 TRAFFIC ESTIMATE

2012 AADT	75,200	V.P.D.
2050 AADT	125,800	V.P.D.
2050 DHV	13,000	V.P.H.
TRUCKS	14	%
TOTAL DESIGN ESALs	-	

LOCATION

US 35 NORTHBOUND
T-79 N R-24 W
SECTION 13
SAYLOR TOWNSHIP
POLK COUNTY
LATITUDE 41.6506°' N
LONGITUDE 93.5847° W

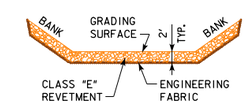
HYDRAULIC DATA

DRAINAGE AREA = 57 ACRES - ROLLING
Q_{50} = 98 CFS
HW ELEV. = 926.57

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	75	104	40
TOTALS	75	104	72

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR A 0° SKEW RT. AHD.

54 in. x 330 ft (TRENCHLESS) REINFORCED CONCRETE PIPE (3000D)

PLAT PLAN

STA. 8466+33.34 (℄ ML35N) NOVEMBER 2016

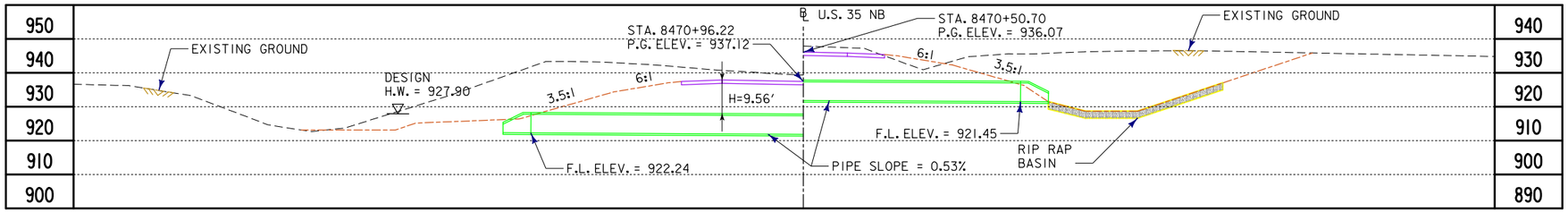
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

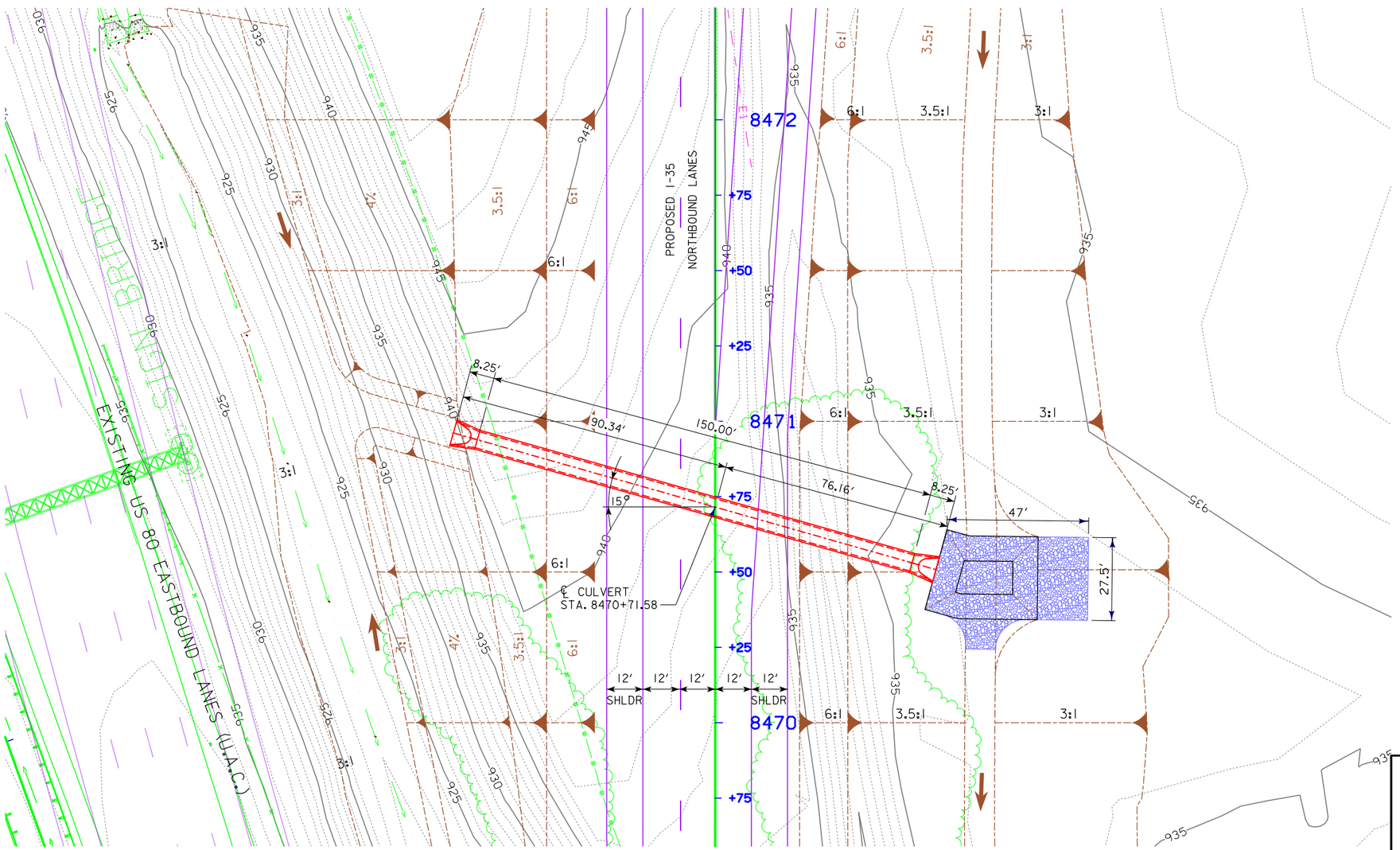
DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER V.2

BENCH MARK NO. 128, ELEV. 933.868, STA. 8478+62.35, 6457.91' RT., FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION AT CULVERT INVERTS



PLAT PLAN

0 ENGLISH 40
SCALE IN FEET

I-35 TRAFFIC ESTIMATE

2012	AADT	75,200	V.P.D.
2050	AADT	125,800	V.P.D.
2050	DHV	13,000	V.P.H.
TRUCKS		14	%
TOTAL DESIGN ESALs		-	

LOCATION

US 35 NORTHBOUND
T-79 N R-24 W
SECTION 13
SAYLOR TOWNSHIP
POLK COUNTY
LATITUDE 41.6506° N
LONGITUDE 93.5833° W

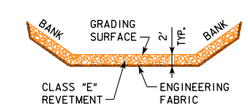
HYDRAULIC DATA

DRAINAGE AREA = 117.6 ACRES - ROLLING
Q_{50} = 166 CFS
HW ELEV. = 927.90

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	161	208	216
TOTALS	161	208	216

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR A 15° SKEW LT. AHD.

66" X 150'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 8470+71.58 (℄ ML35N) NOVEMBER 2016

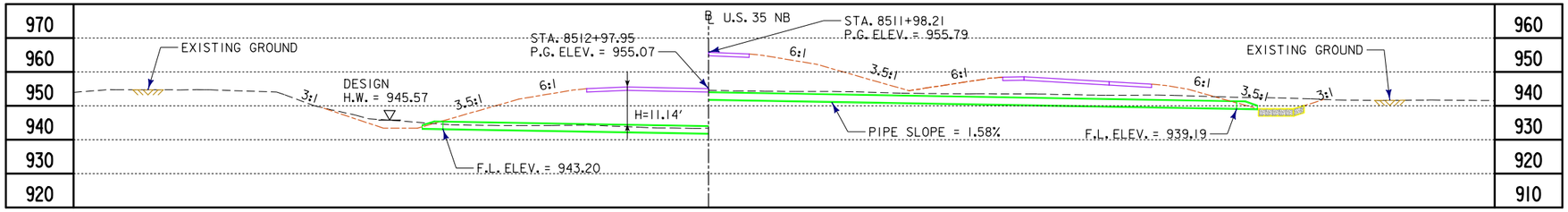
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

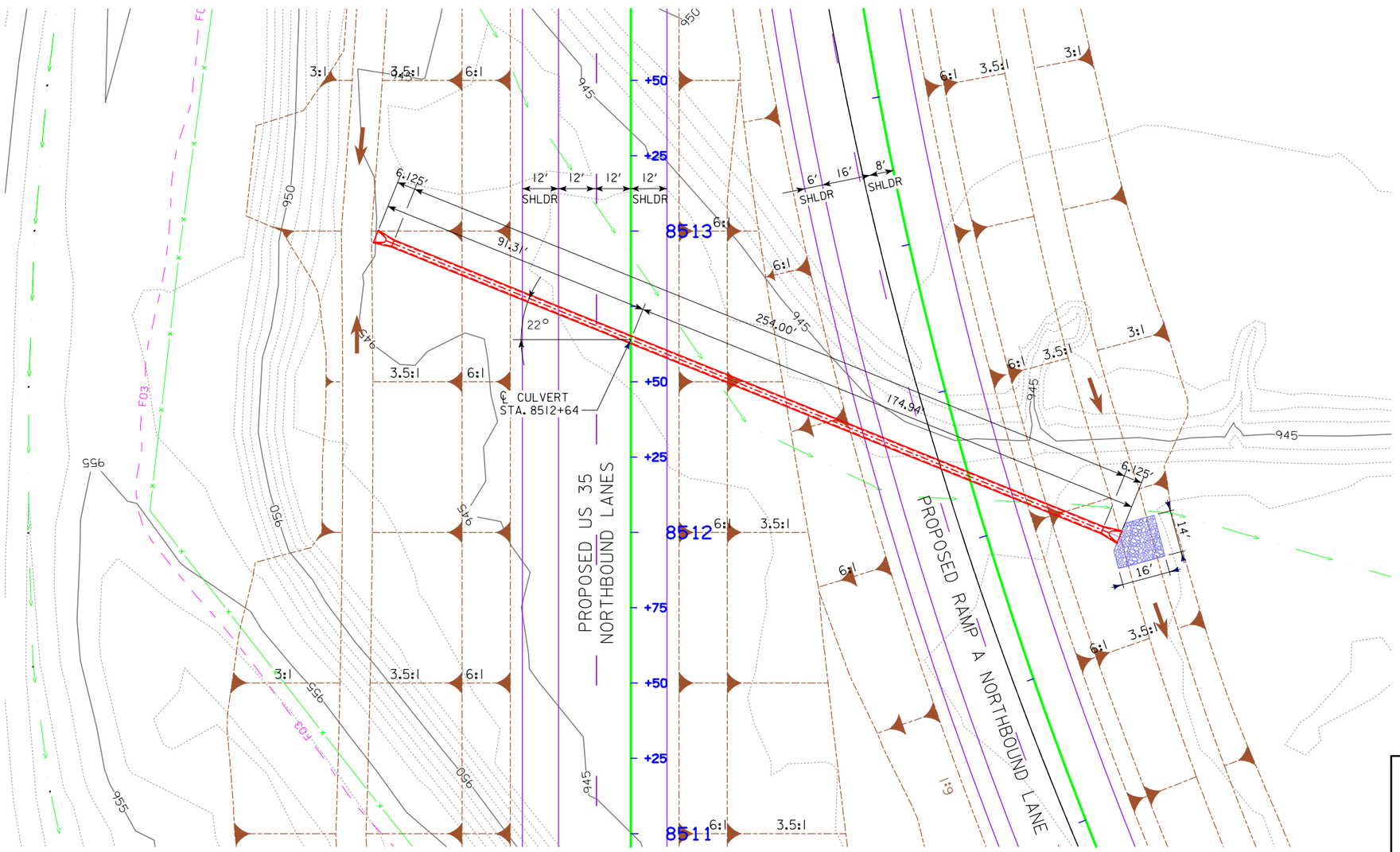
DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.3

BENCH MARK NO. 128, ELEV. 937.86 NO. STA. 8478+62.35, 6457.91' RT., FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION AT CULVERT INVERTS



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

I-35 TRAFFIC ESTIMATE

2012 AADT	75,200	V.P.D.
2050 AADT	125,800	V.P.D.
2050 DHV	13,000	V.P.H.
TRUCKS	14	%
TOTAL DESIGN ESALs	-	

LOCATION

US 35 NORTHBOUND
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6575° N
LONGITUDE 93.5744° W

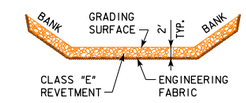
HYDRAULIC DATA

DRAINAGE AREA = 5.6 ACRES - ROLLING
Q_{50} = 16 CFS
HW ELEV. = 945.57

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	21	35	15
TOTALS	21	35	15

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR A 22° SKEW LT. AHD.

24" X 254'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 8512+64 (℄ ML35N) NOVEMBER 2016

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM Iowa DOT/HDR | POLK COUNTY | PROJECT NUMBER IM-035-3(194)87--13-77 | SHEET NUMBER V.4

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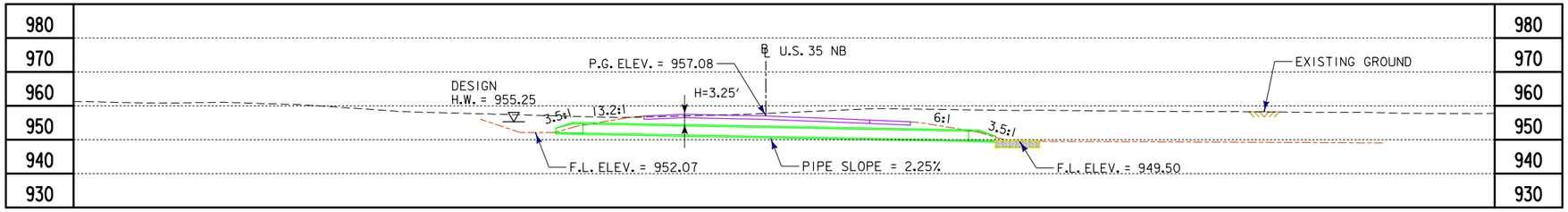
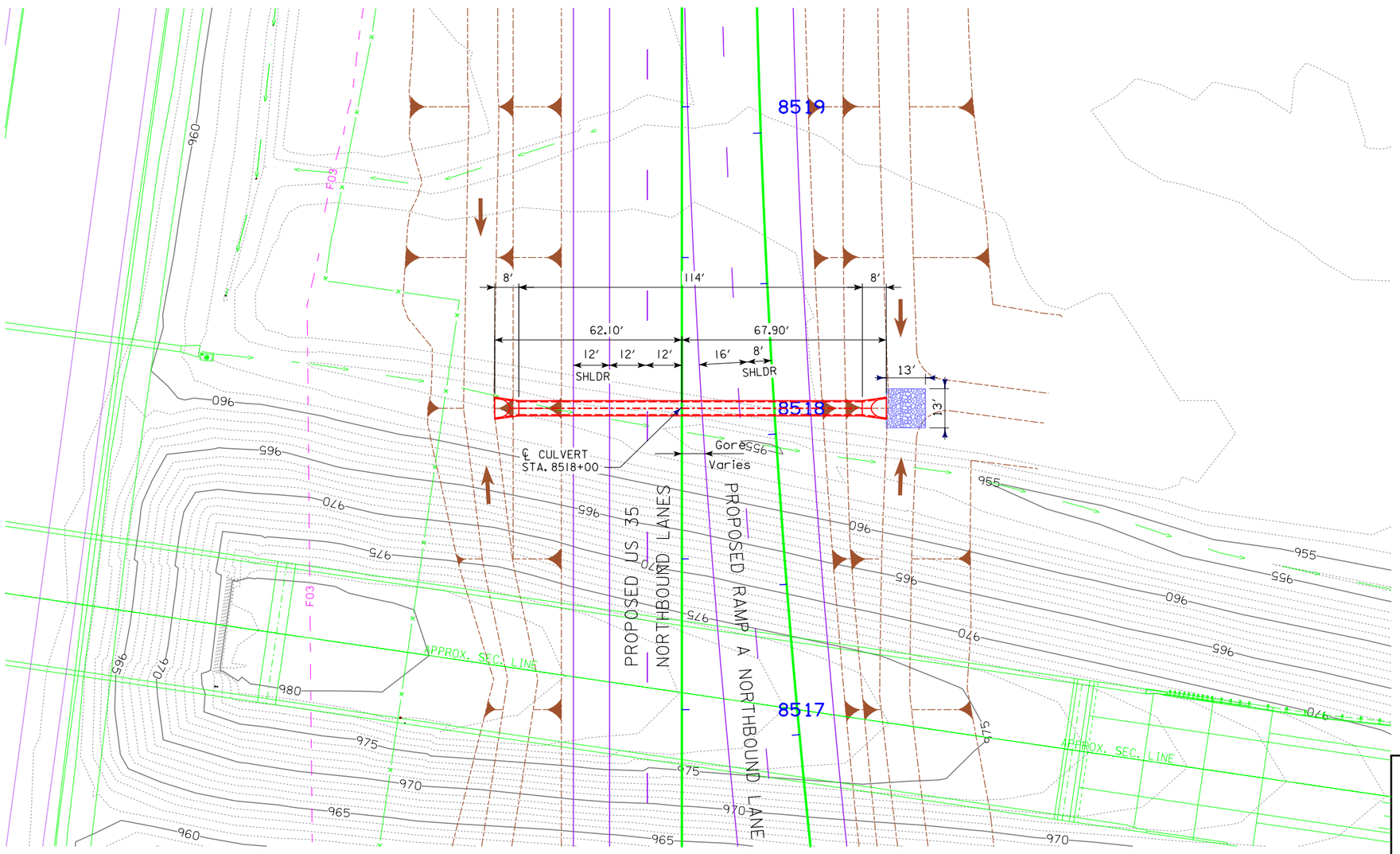
BENCH MARK NO. 128, ELEV. 933.868, STA. 8478+62.35, 6457.91' RT., FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

I-35 TRAFFIC ESTIMATE

2012 AADT	75,200	V.P.D.
2050 AADT	125,800	V.P.D.
2050 DHV	13,000	V.P.H.
TRUCKS	14	%
TOTAL DESIGN ESALs	-	

LOCATION

US 35 NORTHBOUND
T-79 N R-23 W
SECTION 17
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6589° N
LONGITUDE 93.5747° W

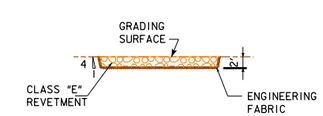
HYDRAULIC DATA

DRAINAGE AREA = 25.3 ACRES - ROLLING
Q_{50} = 52 CFS
HW ELEV. = 955.25

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	18	31	13
TOTALS	18	31	13

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL.E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

52" X 32" X 114'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 8518+00 (℄ ML35N) NOVEMBER 2016

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.5

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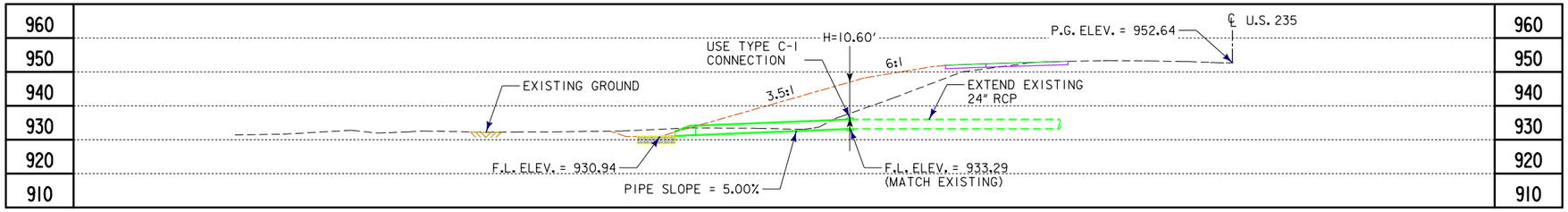
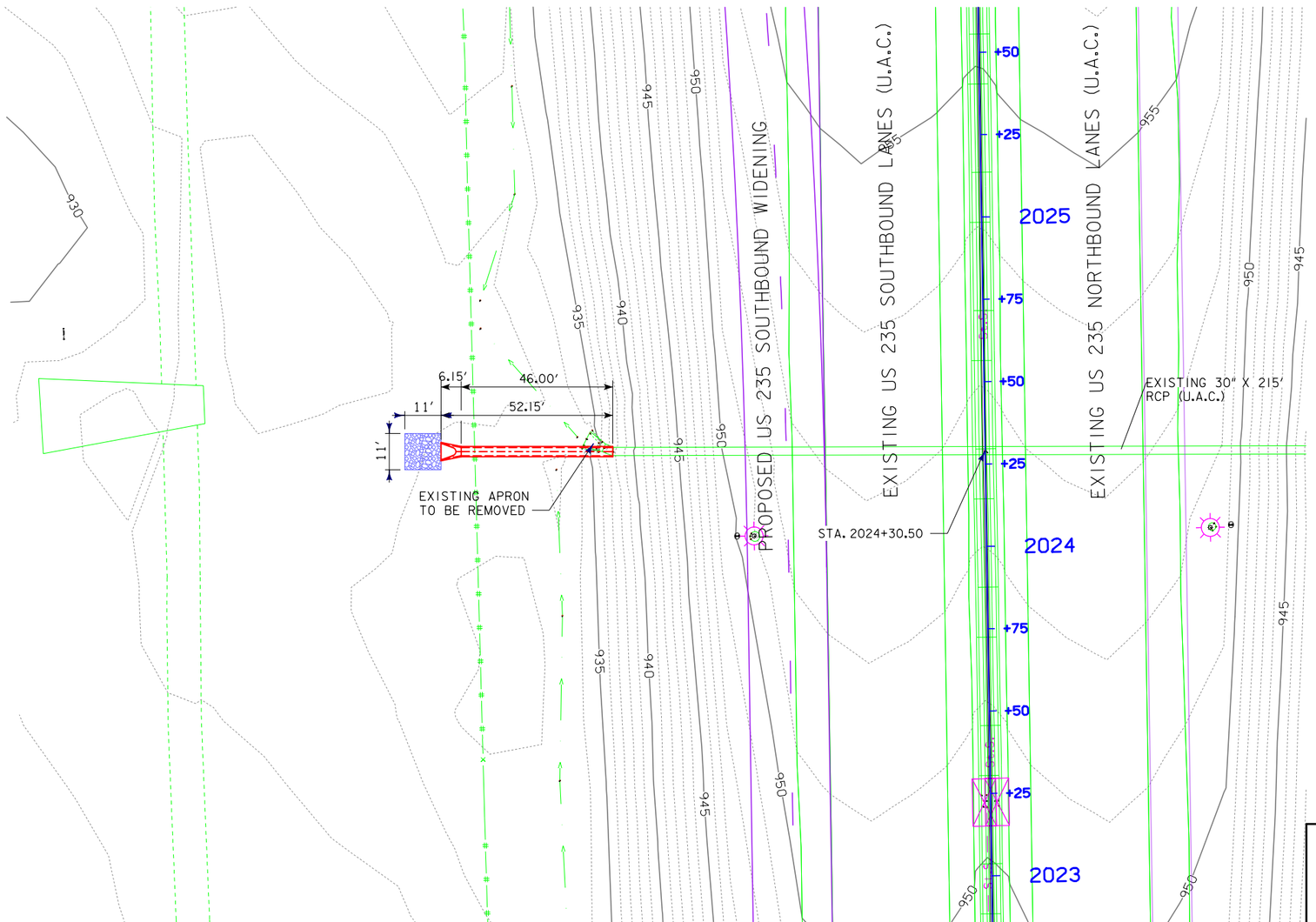
BENCH MARK NO. 128, ELEV. 933.868, STA. 1990+51.45, 161.67' RT., FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	13,900	V.P.D.
2050 AADT	18,500	V.P.D.
2050 DHV	2,750	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALs	-	

LOCATION

US 235
T-79 N R-23 W
SECTION 19
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6422° N
LONGITUDE 93.5761° W

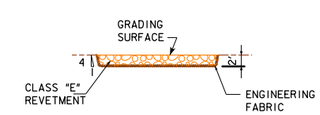
HYDRAULIC DATA

DRAINAGE AREA = 7.9 ACRES - ROLLING
Q_{50} = 35 CFS

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	13	24	9
TOTALS	13	24	9

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

30" X 46'
REINFORCED CONCRETE PIPE CULVERT EXTENSION LEFT
PLAT PLAN

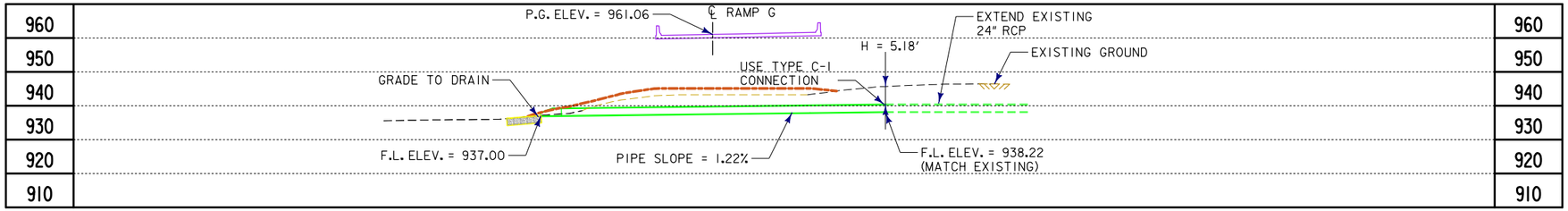
STA. 2024+30.50 (℄ ML235) NOVEMBER 2016

POLK COUNTY

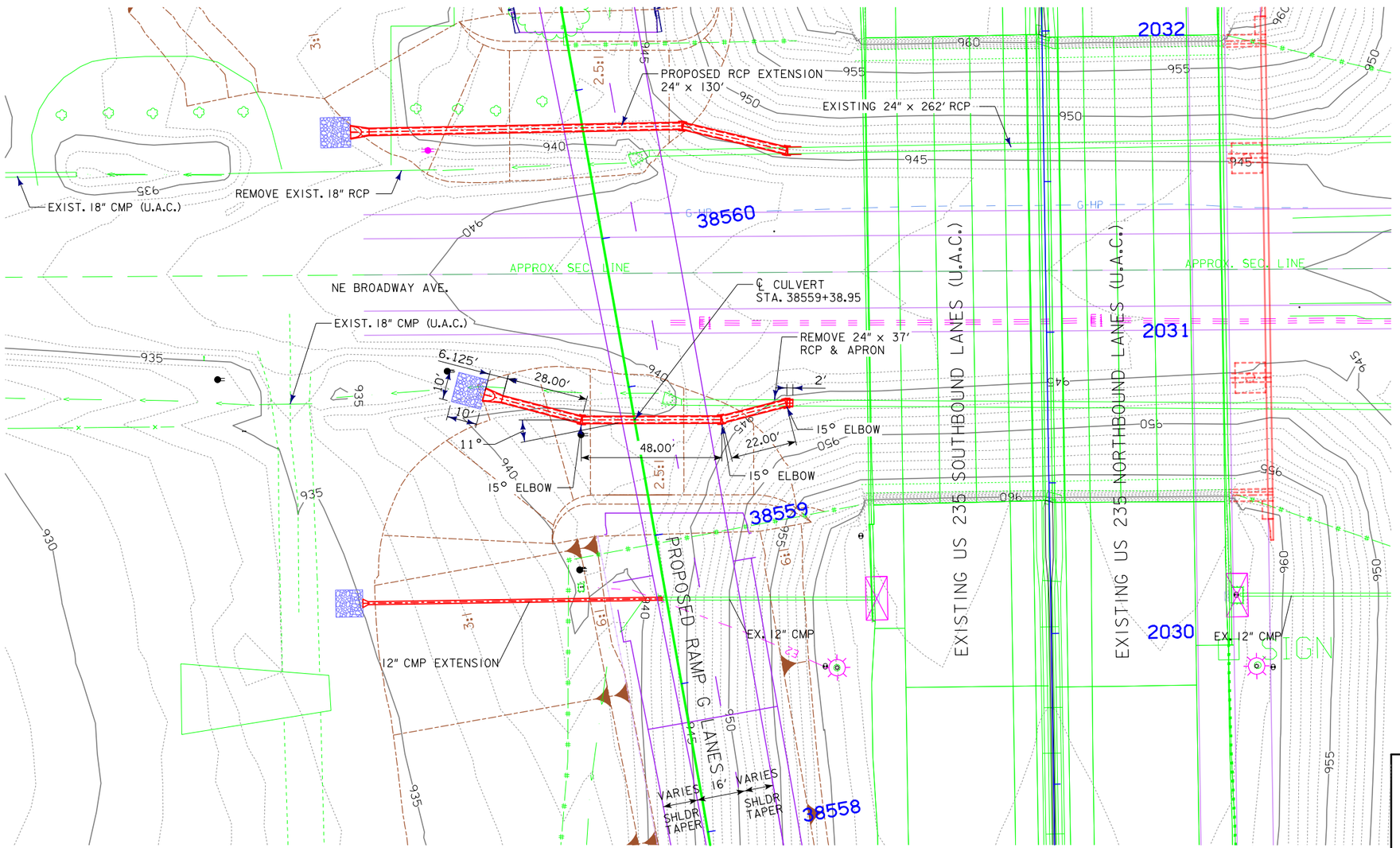
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	13,900	V.P.D.
2050 AADT	18,500	V.P.D.
2050 DHV	2,750	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALs	-	

LOCATION

RAMP G
T-79 N R-23 W
SECTION 19
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6439° N
LONGITUDE 93.5761° W

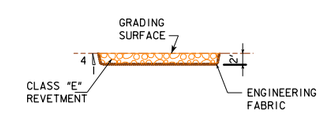
HYDRAULIC DATA

DRAINAGE AREA = 3.0 ACRES - ROLLING
Q_{50} = 10 CFS

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	11	20	8
TOTALS	11	20	8

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 11° SKEW LT. AHD.

24" X 100' REINFORCED CONCRETE PIPE CULVERT EXTENSION LEFT

PLAT PLAN

STA. 38559+38.95 (℄ Ramp G) NOVEMBER 2016

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.7

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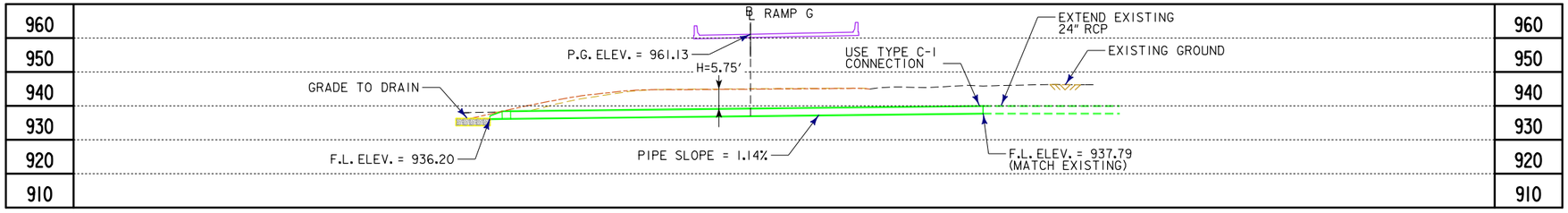
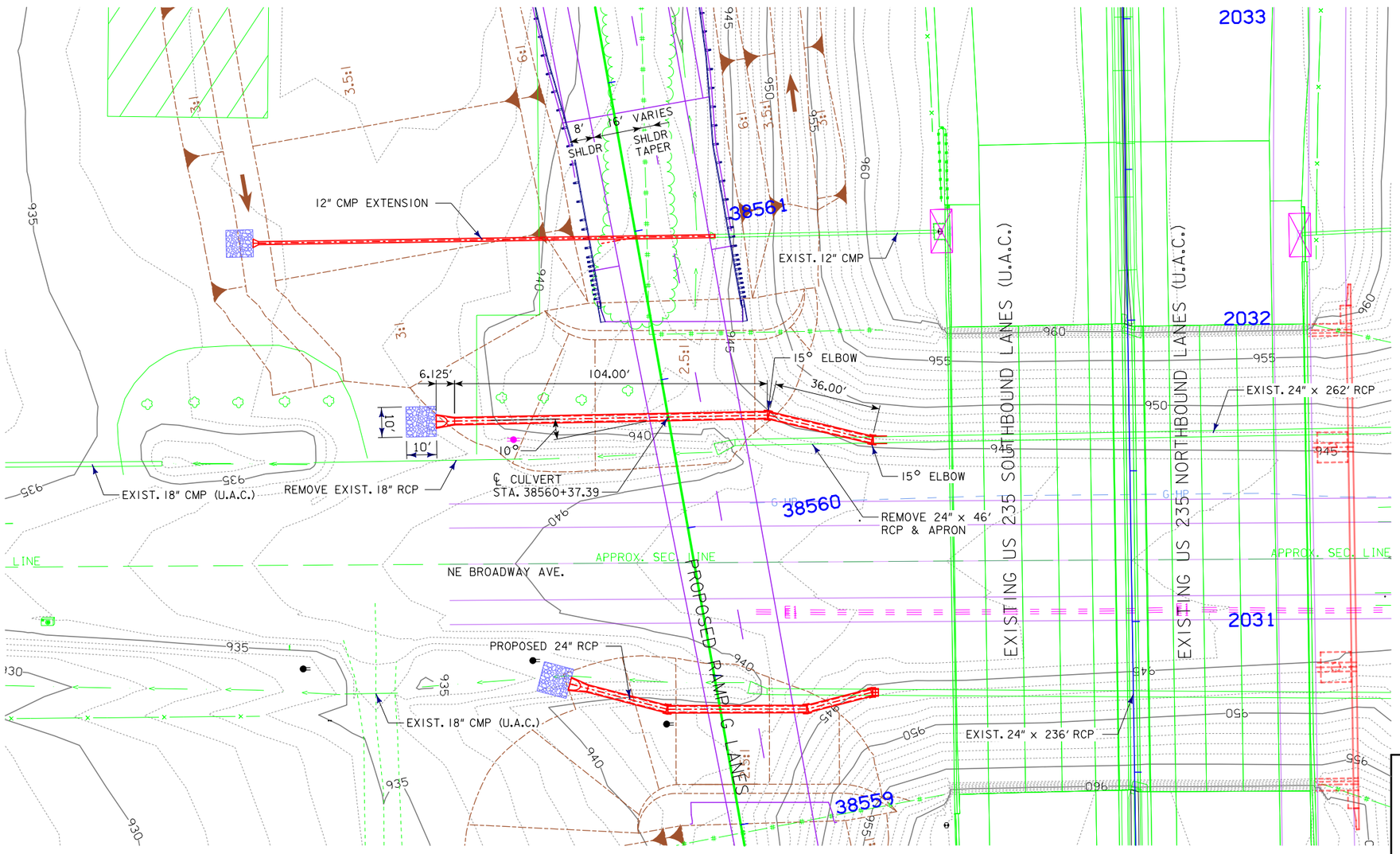
BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	13,900	V.P.D.
2050 AADT	18,500	V.P.D.
2050 DHV	2,750	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALs	--	

LOCATION

RAMP G
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6442° N
LONGITUDE 93.5761° W

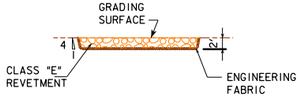
HYDRAULIC DATA

DRAINAGE AREA = 4.0 ACRES - ROLLING
Q_{50} = 12 CFS

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	11	20	8
TOTALS	11	20	8

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 10° SKEW LT. AHD.

24" X 140' REINFORCED CONCRETE PIPE CULVERT EXTENSION LEFT PLAT PLAN

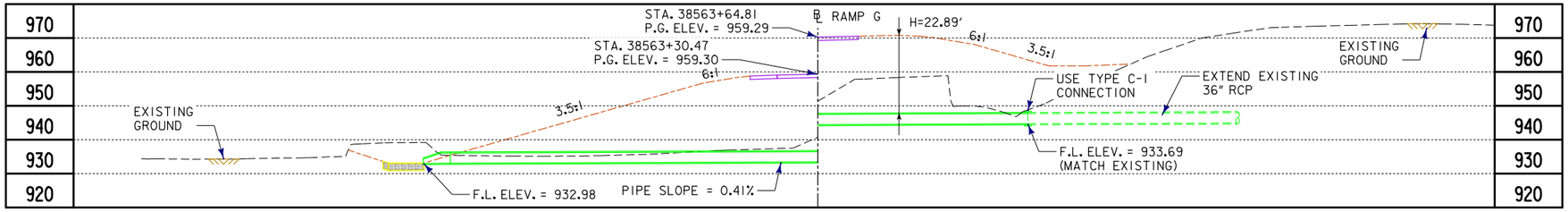
STA. 38560+37.39 (℄ Ramp G) NOVEMBER 2016

POLK COUNTY

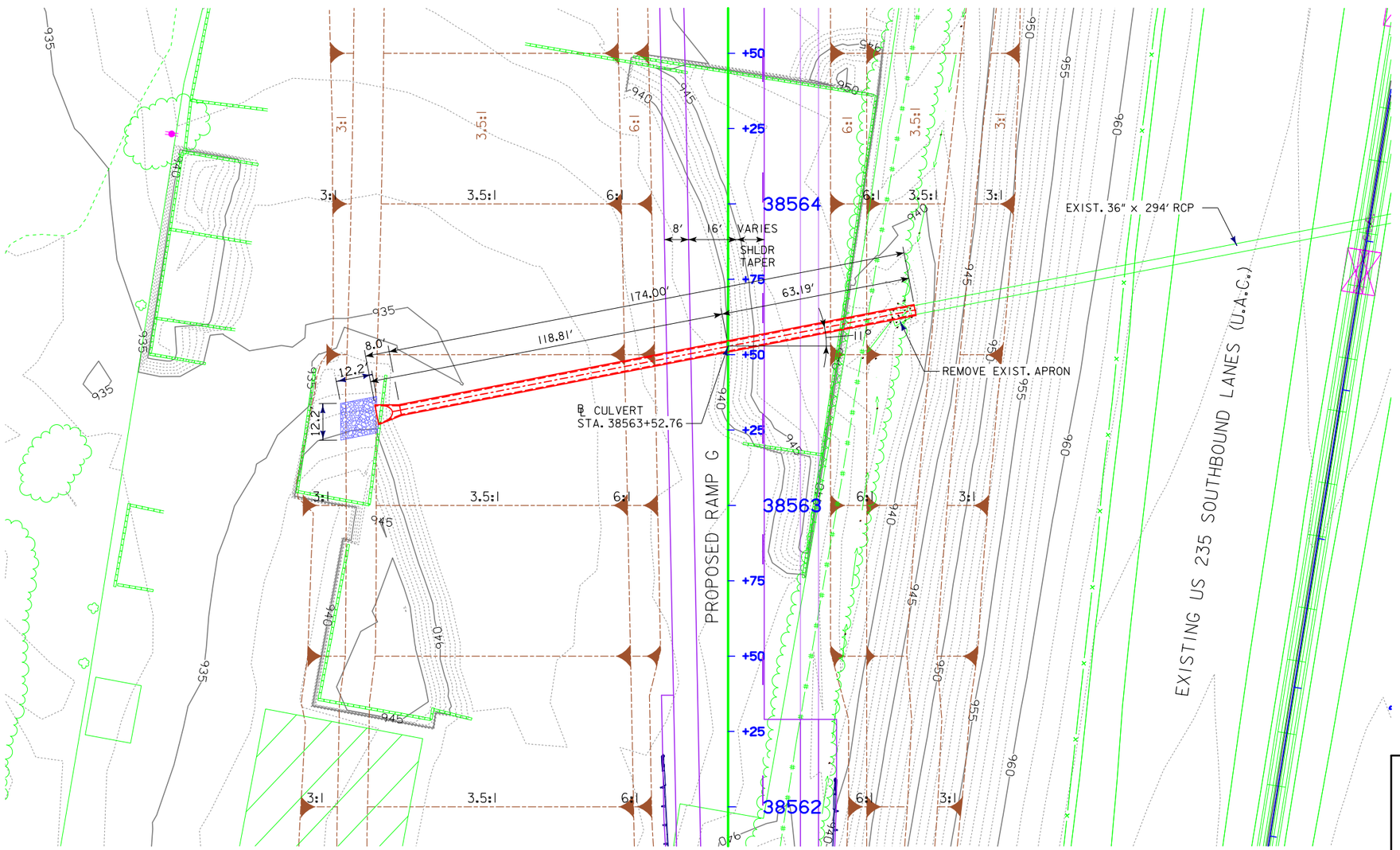
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG AT CULVERT INVERTS



PLAT PLAN

TRAFFIC ESTIMATE

2012 AADT	13,900	V.P.D.
2050 AADT	18,500	V.P.D.
2050 DHV	2,750	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALs	--	

LOCATION

RAMP G
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6450° N
LONGITUDE 93.5764° W

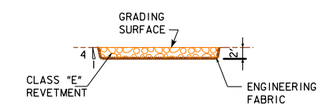
HYDRAULIC DATA

DRAINAGE AREA = 16.0 ACRES - ROLLING
Q_{50} = 37 CFS

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	16	28	11
TOTALS	16	28	11

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 11° SKEW RT. AHD.

36" X 174'
REINFORCED CONCRETE PIPE (3000D) CULVERT EXTENSION LEFT
PLAT PLAN

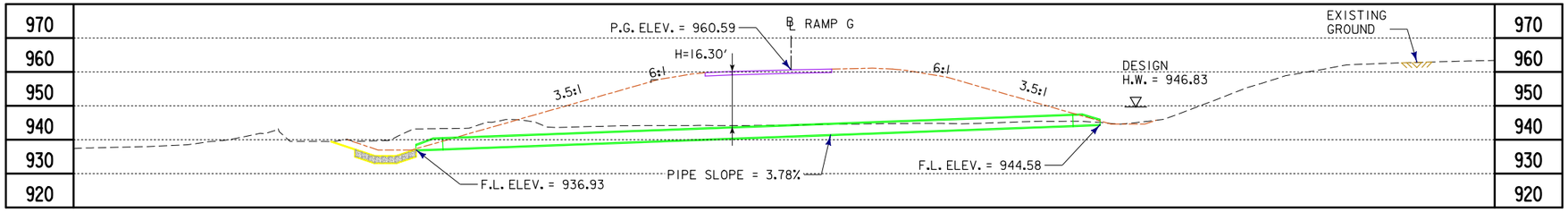
STA. 38563+52.76 (℄ Ramp G) NOVEMBER 2016

POLK COUNTY

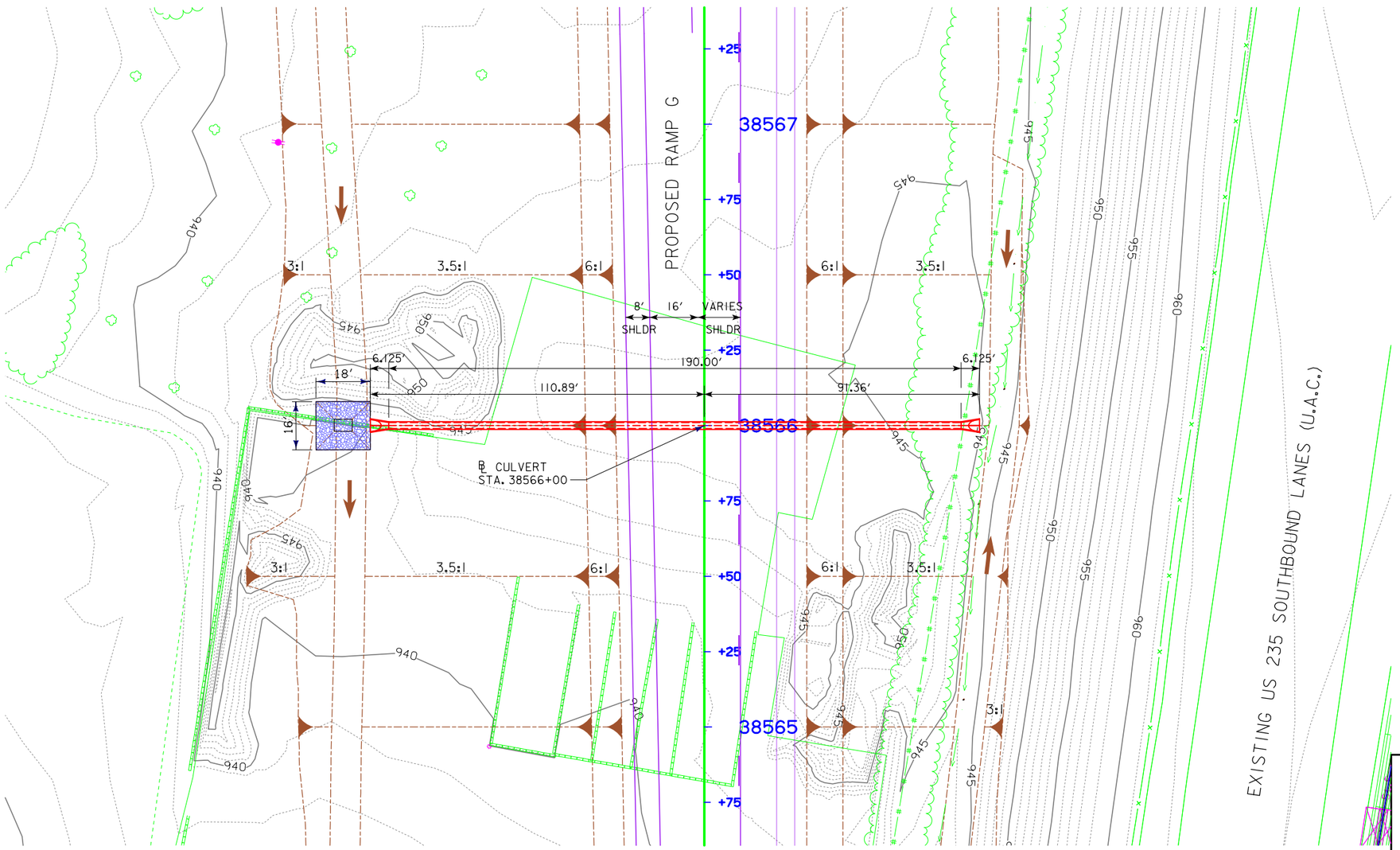
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	13,900	V.P.D.
2050 AADT	18,500	V.P.D.
2050 DHV	2,750	V.P.H.
TRUCKS	11	%
TOTAL DESIGN ESALs	-	

LOCATION

RAMP G
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6458° N
LONGITUDE 93.5767° W

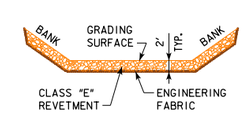
HYDRAULIC DATA

DRAINAGE AREA = 5.0 ACRES - ROLLING
Q_{50} = 15 CFS
HW ELEV. = 946.83

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	30.2	47	27
TOTALS	30.2	47	27

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

24" X 190'
REINFORCED CONCRETE PIPE (3000D)
PLAT PLAN

STA. 38566+00 (℄ Ramp G) NOVEMBER 2016

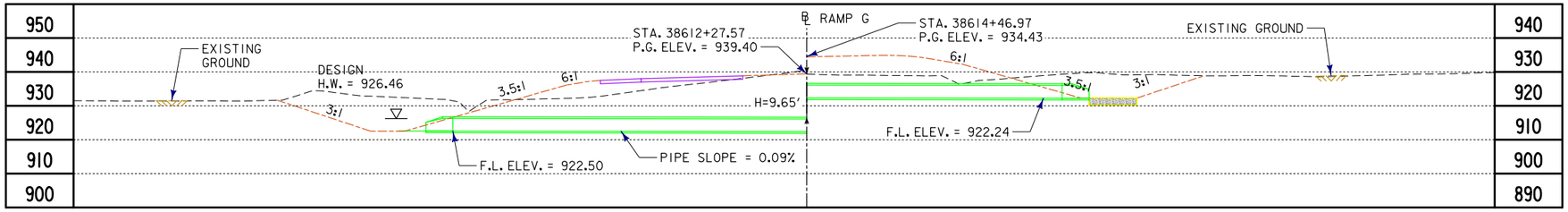
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

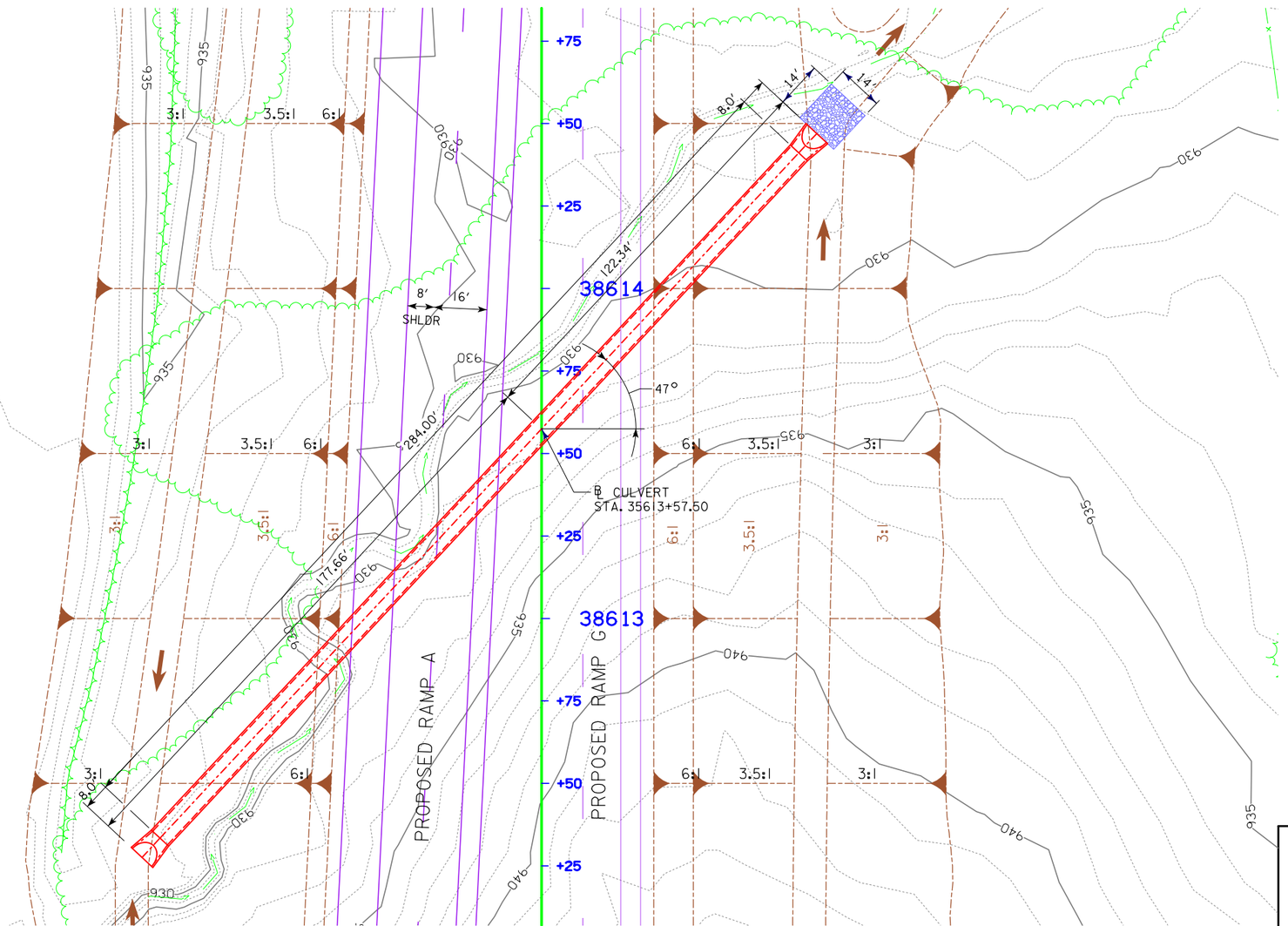
DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.10

BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG AT CULVERT INVERTS



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	N/A	V.P.D.
2050 AADT	22,400	V.P.D.
2050 DHV	2,620	V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALs	-	

LOCATION

RAMP G
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6544° N
LONGITUDE 93.5678° W

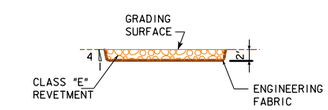
HYDRAULIC DATA

DRAINAGE AREA = 70.6 ACRES - ROLLING
Q_{50} = 115 CFS
HW ELEV. = 926.46

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	20.6	35	15
TOTALS	20.6	35	15

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 47° SKEW RT. AHD.

73" X 45" X 284'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 38613+57.50 (℄ Ramp G) NOVEMBER 2016

POLK COUNTY

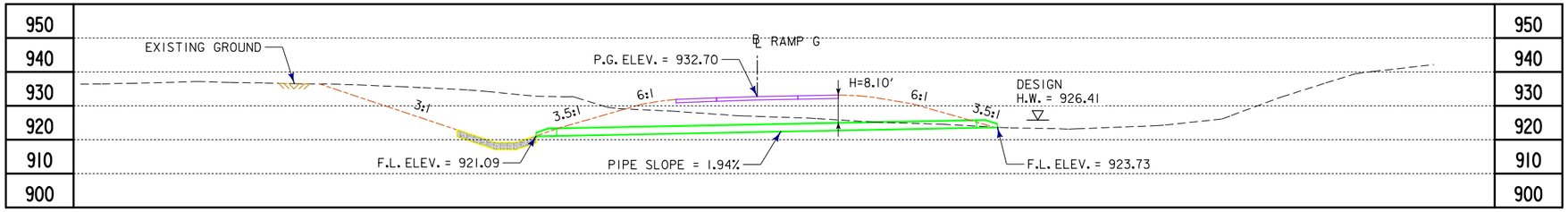
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

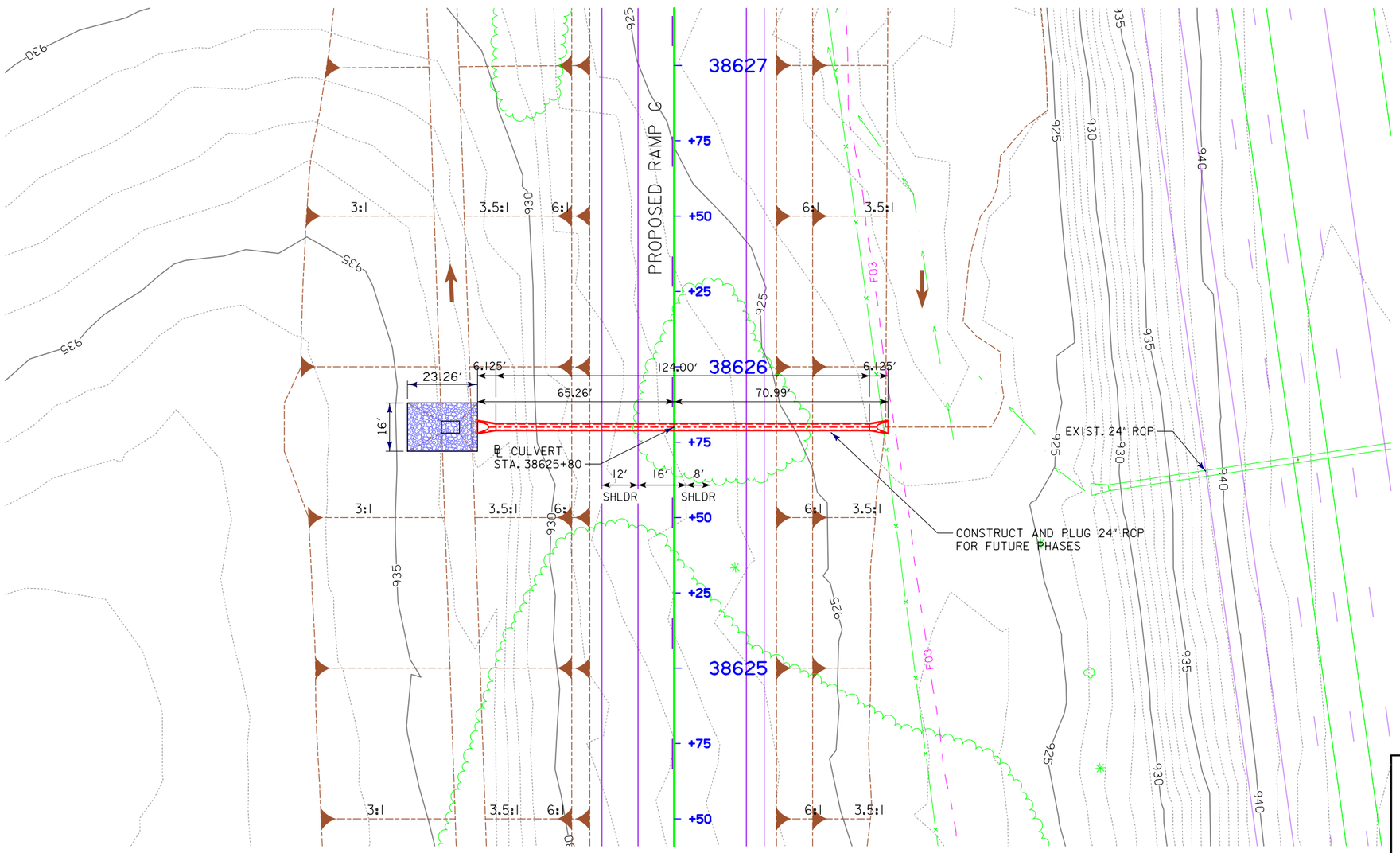
DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.11

10/18/2021 3:35:24 PM JWINKELM pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10195812\6.0_CAD_BIM\6.2_WIP\Bridge\77035194.str 77035194V11 11x17_pdf.pltcfg

BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	N/A	V.P.D.
2050 AADT	22,400	V.P.D.
2050 DHV	2,620	V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALs	-	

LOCATION

RAMP G
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6547° N
LONGITUDE 93.5633° W

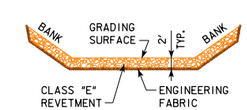
HYDRAULIC DATA

DRAINAGE AREA = 6.9 ACRES - ROLLING
Q_{50} = 19 CFS
HW ELEV. = 926.41

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	39	59	25
TOTALS	39	59	25

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

24" X 124'
REINFORCED CONCRETE PIPE
PLAT PLAN

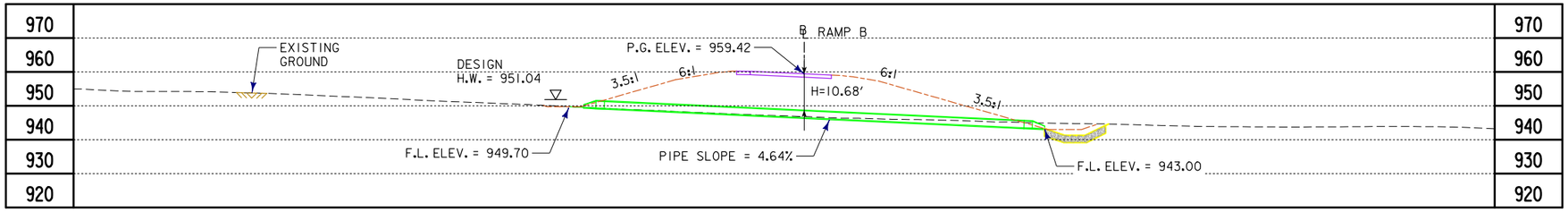
STA. 38625+80 (℄ Ramp G) NOVEMBER 2016

POLK COUNTY

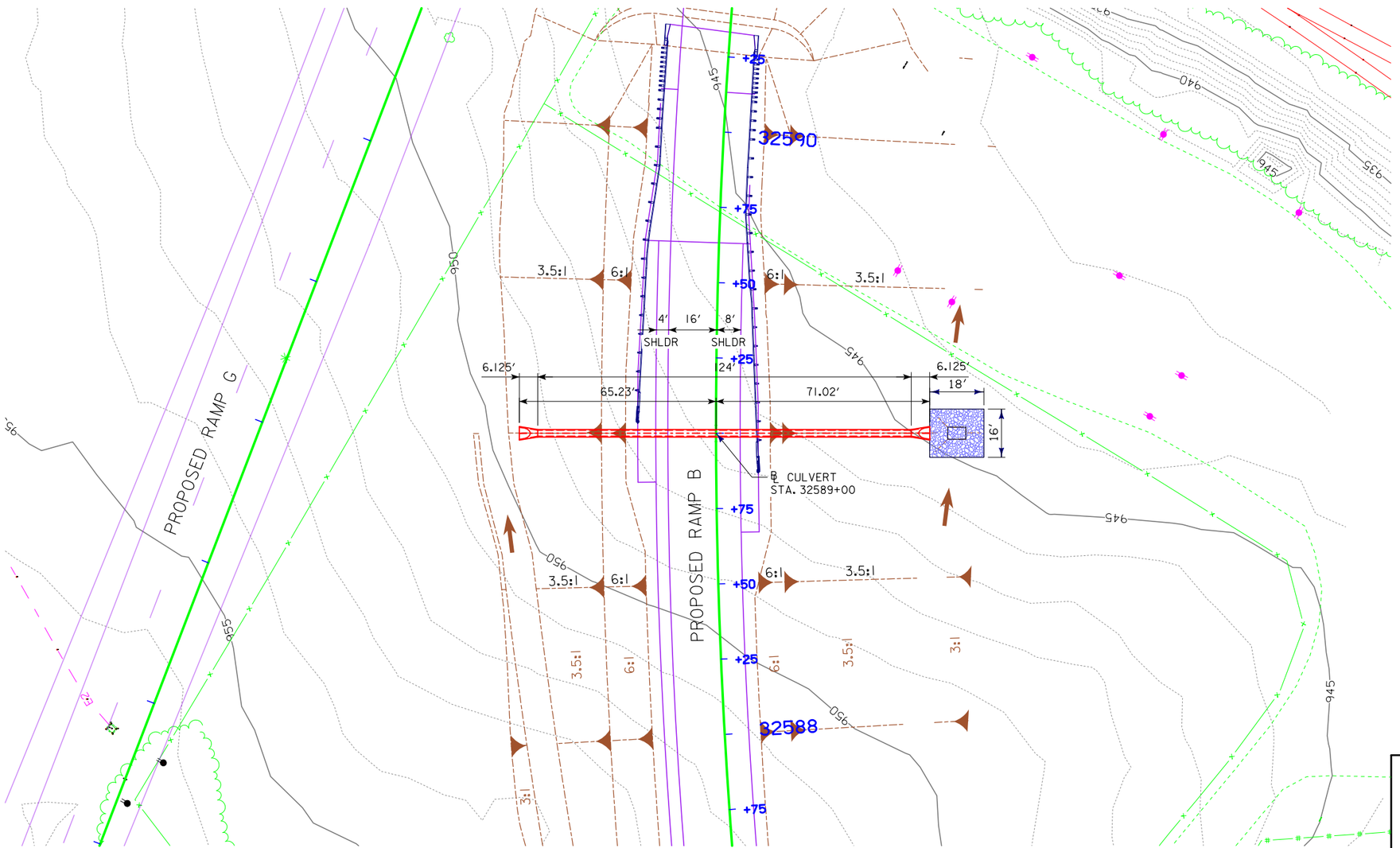
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

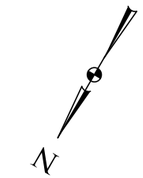
BENCH MARK NO. 100, ELEV. 904.541, N 601242.316, E 1613129.094, FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN



0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	N/A	V.P.D.
2050 AADT	6,400	V.P.D.
2050 DHV	1,040	V.P.H.
TRUCKS	13	%
TOTAL DESIGN ESALs	-	

LOCATION

EB I-80 TO SB I-235 - RAMP B
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6478° N
LONGITUDE 93.5775° W

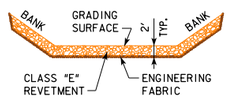
HYDRAULIC DATA

DRAINAGE AREA = 3.6 ACRES - ROLLING
Q_{50} =11 CFS
HW ELEV. = 951.04

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	30	47	27.4
TOTALS	30	47	27.4

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

24" X 124' REINFORCED CONCRETE PIPE PLAT PLAN

STA. 32589+00 (℄ Ramp B) NOVEMBER 2016

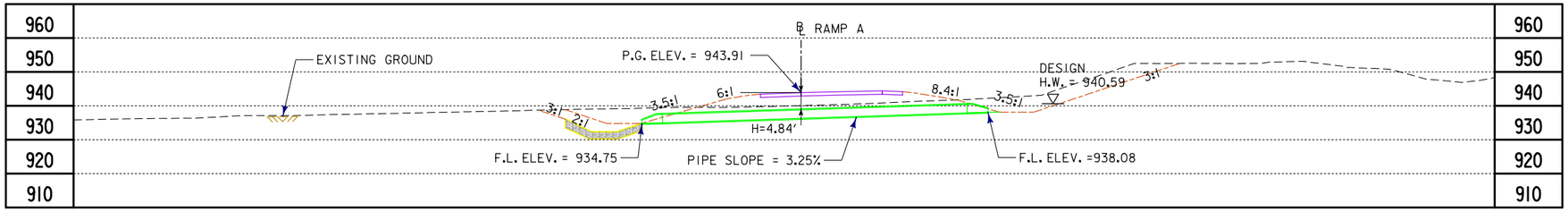
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

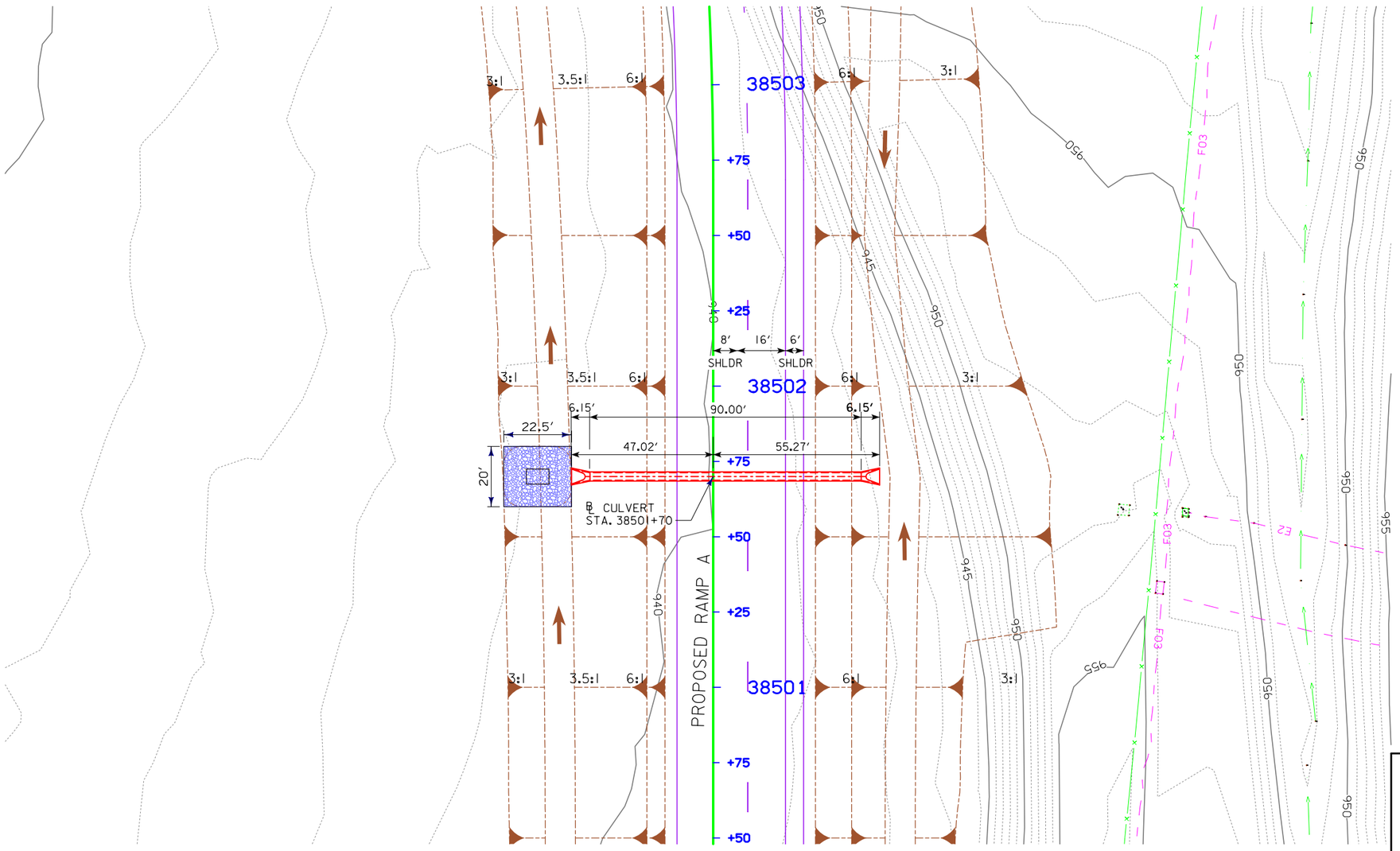
DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.13

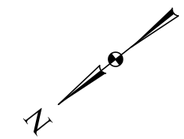
BENCH MARK NO. 128, ELEV. 933.868, STA. 38509+14.31, 8020.79' RT., FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN



0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	5,400	V.P.D.
2050 AADT	10,300	V.P.D.
2050 DHV	900	V.P.H.
TRUCKS	30	%
TOTAL DESIGN ESALs	-	

LOCATION

WB I-80 TO NB I-35 - RAMP A
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6556° N
LONGITUDE 93.5719° W

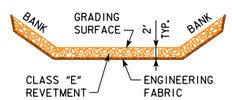
HYDRAULIC DATA

DRAINAGE AREA = 10.6 ACRES - ROLLING
Q_{50} = 27 CFS
HW ELEV. = 940.59

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	47.3	68.9	54.4
TOTALS	47.3	68.9	54.4

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

30" X 90'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 38501+70 (℄ Ramp A) NOVEMBER 2016

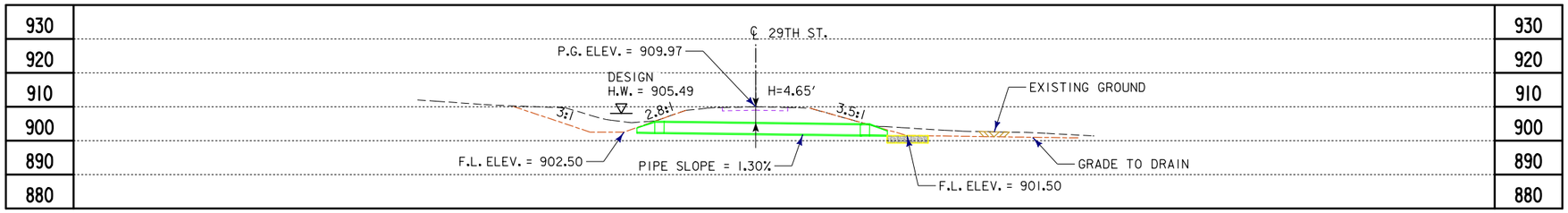
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

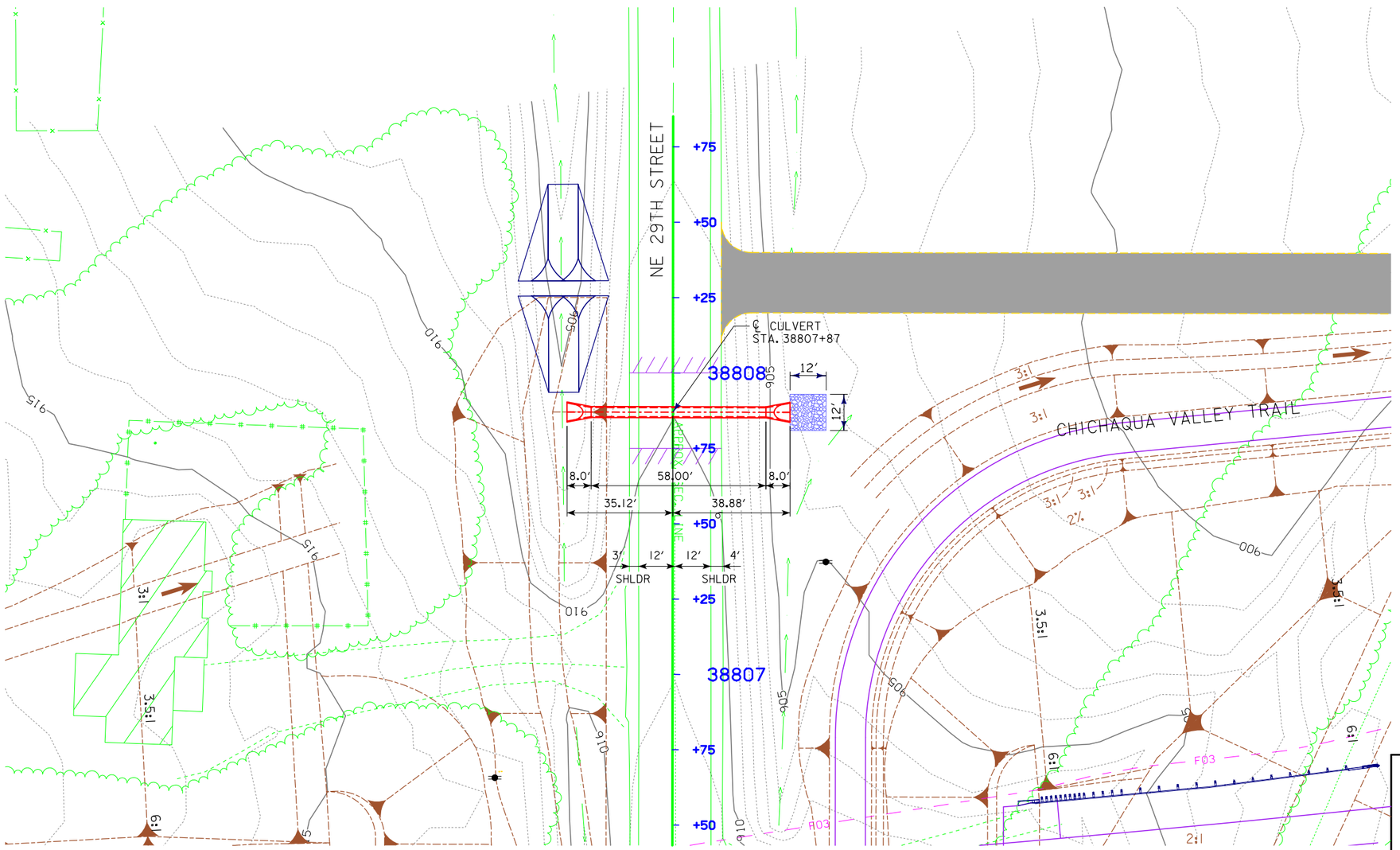
DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.14

BENCH MARK NO. 128, ELEV. 933.868, N 594971.978, E 1619970.2, FENO MONUMENT BTWN TOP OF BKSLP AND R.O.W. FENCE IN EAST R.O.W.



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	N/A	V.P.D.
2050 AADT	N/A	V.P.D.
2050 DHV	N/A	V.P.H.
TRUCKS	N/A	%
TOTAL DESIGN ESALs	-	

LOCATION

NE 29TH STREET
T-79 N R-23 W
SECTION 17-18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6553° N
LONGITUDE 93.5611° W

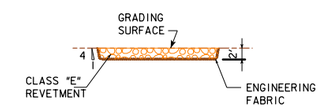
HYDRAULIC DATA

DRAINAGE AREA = 15.3 ACRES - ROLLING
Q_{50} = 35 CFS
HW ELEV. = 905.49

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	15.2	26.7	11
TOTALS	15.2	26.7	11

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

36" X 58'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 38807+87 (℄ SR29TH) NOVEMBER 2016

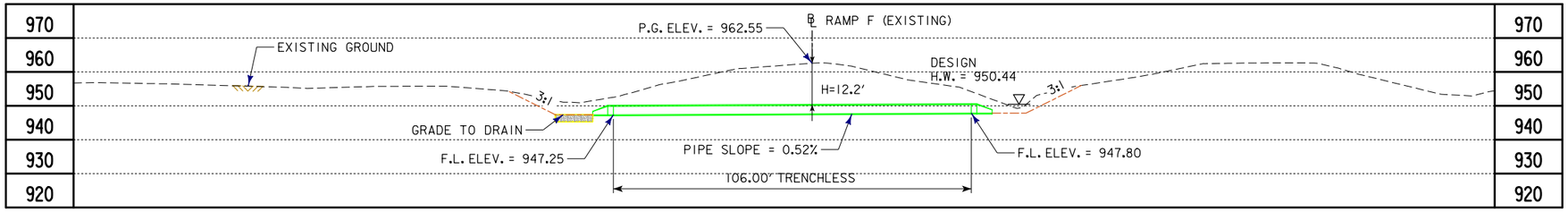
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

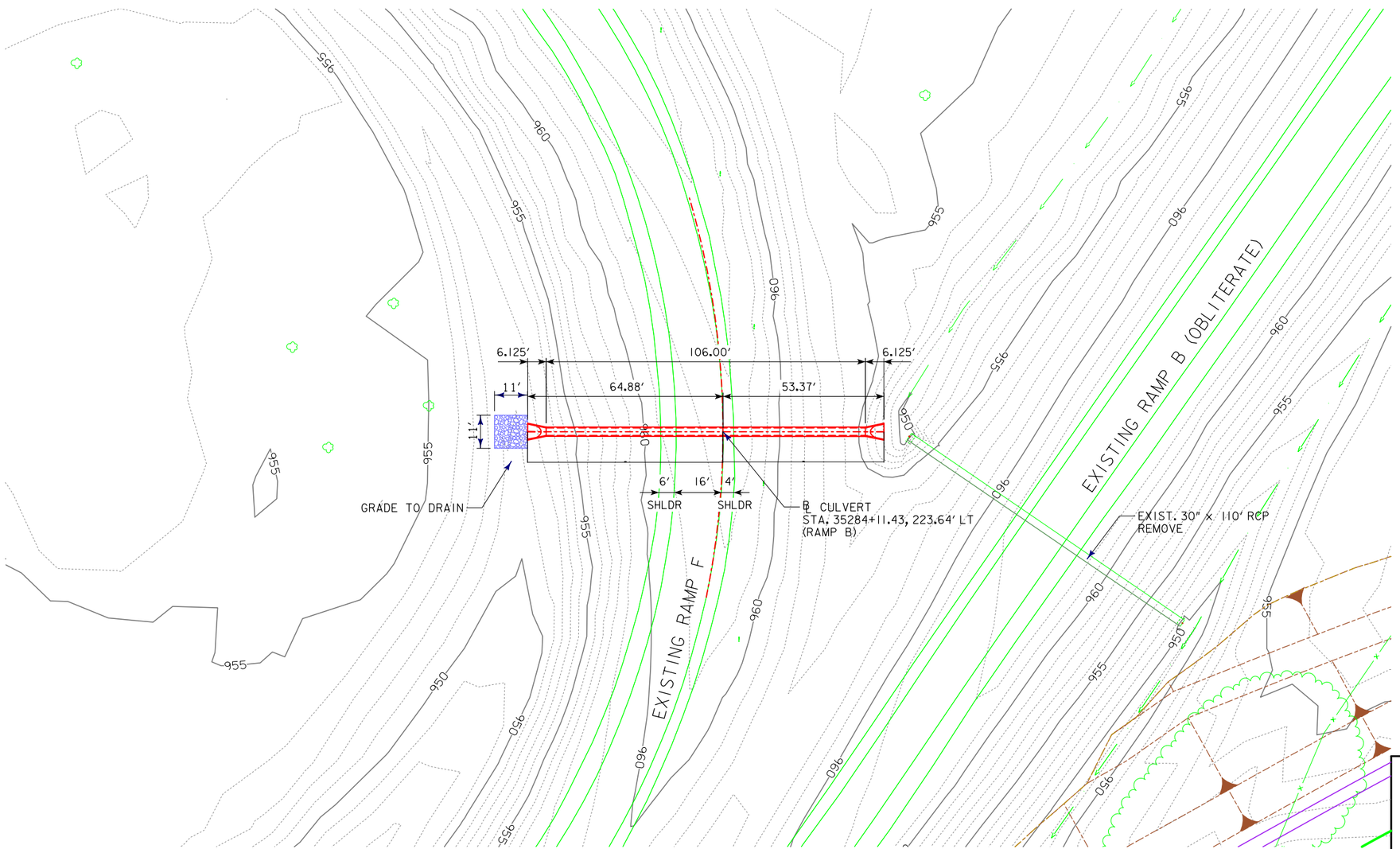
DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

DESIGN TEAM	Iowa DOT/HDR	POLK COUNTY	PROJECT NUMBER	IM-035-3(194)87--13-77	SHEET NUMBER	V.15

BENCH MARK NO. 100, ELEV. 904.541, N 601242.316, E 1613129.094, FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	6,600	V.P.D.
2050 AADT	-	V.P.D.
2050 DHV	-	V.P.H.
TRUCKS	29	%
TOTAL DESIGN ESALs	-	

LOCATION

SB I-35 TO EB I-80 - EXIST. LOOP RAMP F
T-79 N R-23 W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6492° N
LONGITUDE 93.5778° W

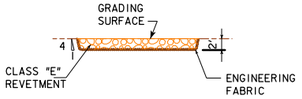
HYDRAULIC DATA

DRAINAGE AREA = 9.0 ACRES - ROLLING
Q_{50} = 24 CFS
HW ELEV. = 950.44

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	12.7	23.2	37
TOTALS	12.7	23.2	37

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



DESIGN FOR 0° SKEW LT. AHD.

30" X 106' (TRENCHLESS) REINFORCED CONCRETE PIPE PLAT PLAN

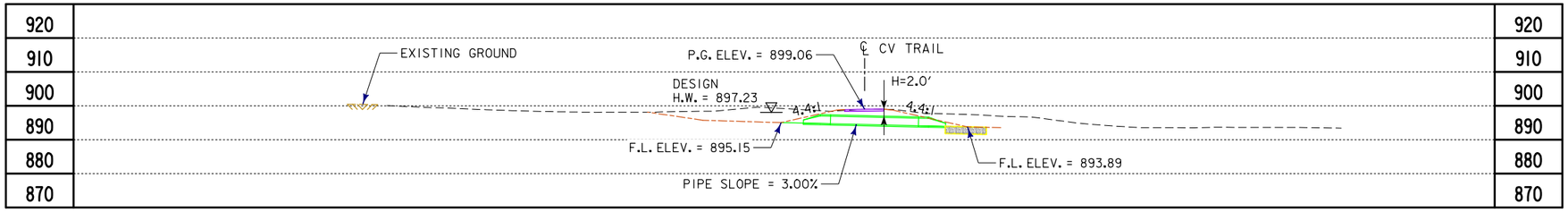
STA. 32584+11.43 (℄ Ramp B) NOVEMBER 2016

POLK COUNTY

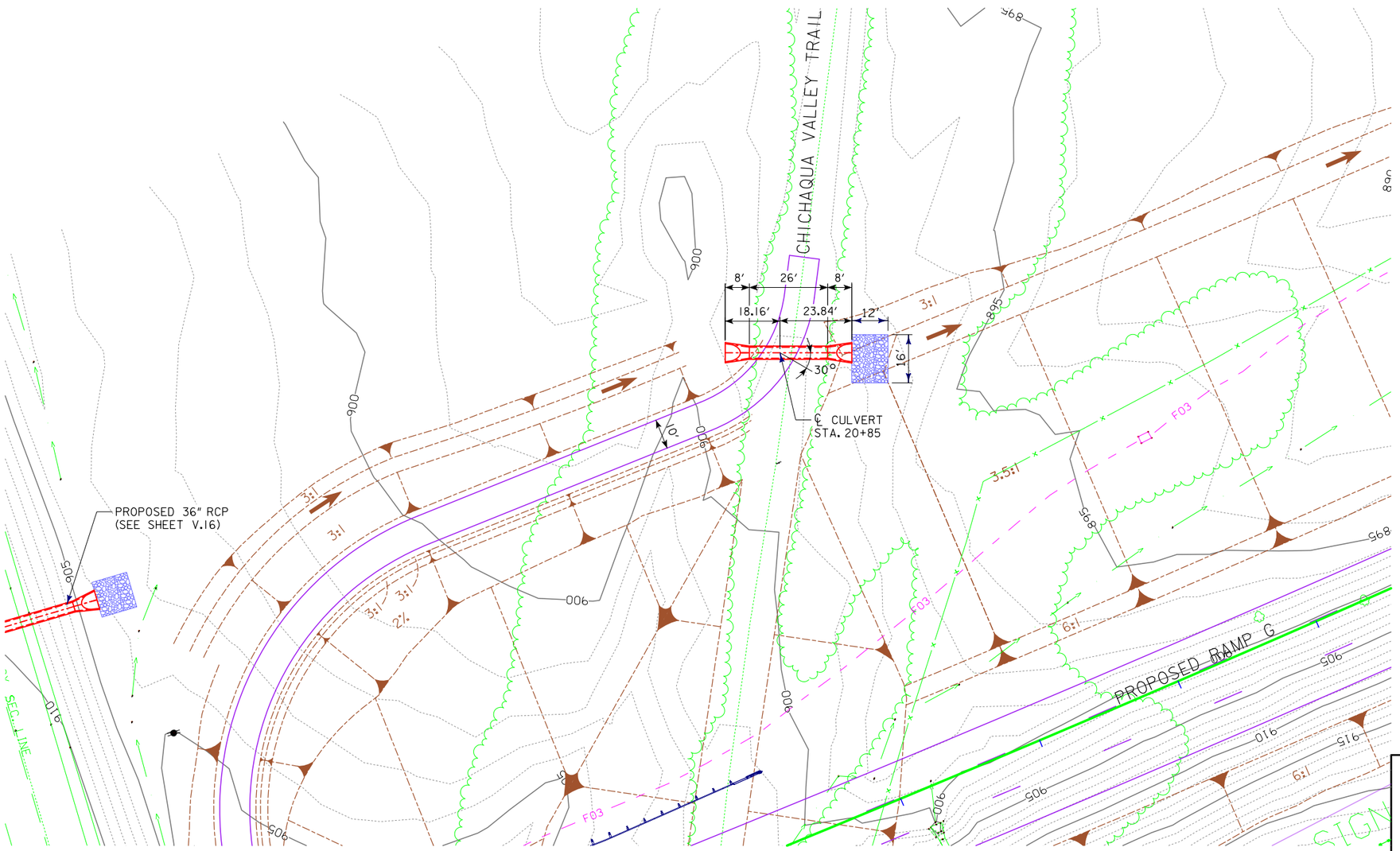
IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

BENCH MARK NO. 101, ELEV. 932.935, STA. 38606+52.11, 9727.41' LT., FENO MONUMENT



LONGITUDINAL SECTION ALONG ℄ CULVERT



PLAT PLAN

N

0 ENGLISH 40
SCALE IN FEET

TRAFFIC ESTIMATE

2012 AADT	N/A	V.P.D.
2050 AADT	N/A	V.P.D.
2050 DHV	N/A	V.P.H.
TRUCKS	N/A	%
TOTAL DESIGN ESALs	-	

LOCATION

CHICHAQUA VALLEY TRAIL
T-79 N R-23 W
SECTION 17
DELAWARE TOWNSHIP
POLK COUNTY
LATITUDE 41.6553° N
LONGITUDE 93.5606° W

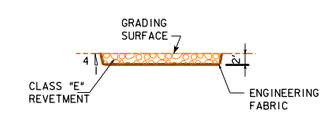
HYDRAULIC DATA

DRAINAGE AREA = 15.9 ACRES - ROLLING
Q_{10} = 26 CFS
HW ELEV. = 897.21

ESTIMATED REVETMENT QUANTITIES INCLUDED WITH ROAD PLANS

LOCATION	REVETMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	20.2	33.8	14.2
TOTALS	20.2	33.8	14.2

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE. QUANTITIES SHOWN FOR INFORMATION ONLY AND ARE INCIDENTAL TO CL. E REVETMENT PER EC-301.



PRELIMINARY

DESIGN FOR 30° SKEW RT. AHD.

44" X 27" X 26'
REINFORCED CONCRETE PIPE
PLAT PLAN

STA. 20+85 (℄ CV TRAIL) NOVEMBER 2016

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN SHEET NO. 1 OF 1 FILE NO. XXXXX DESIGN NO. ####

MSE RETAINING WALL CONSTRUCTION NOTES

RW SPECIAL

(1) The MSE Wall shall be designed for a 250 psf surcharge load to account for traffic live loads.

(2) The MSE Wall shall be designed to accommodate the sloped backfill as shown on the cross sections.

(3) The MSE wall shall be designed according to Iowa Department of Transportation standard specifications and AASHTO LRFD Bridge Design Specification.

(4) The permanent wall shall be designed for a minimum service life of 75 years.

(5) The minimum depth of embedment for the MSE wall is 4.0 feet.

(6) The length of the reinforcement strips (or mesh) will vary by wall station and shall be based on a minimum width to wall height ratio of 0.8 or 8 feet, whichever is greater.

(7) The Contractor is responsible for ensuring the stability of the 1:1 temporary excavation slope. The Contractor shall provide the Iowa DOT Resident Construction Engineer with supporting calculations if a slope other than 1:1 or temporary excavation support is needed.

(8) The panels for the MSE Wall shall be cast as per the MSE Wall Details on Sheet V.18.

(9) Two MSE Wall subdrains are required; one directly behind the wall panels and one at the back of the reinforced zone (see MSE Wall Details on Sheet V.19).

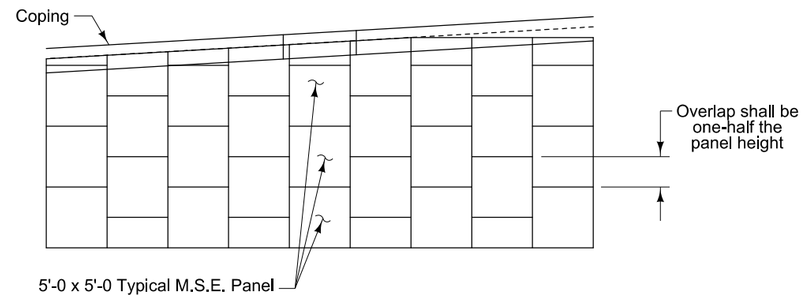
(10) For estimating purposes only, the following assumptions were used:
(a) The wall height at a given station is the distance between the top elevation of the leveling pad and the elevation of the top of coping of the MSE wall.
(b) The quantities of the granular backfill material and/or the excavation behind the wall were calculated based on the average end area between cross sections. The average end area was computed with the estimated wall heights and reinforcement lengths. These quantities may need to be adjusted if the required reinforcement length is greater than the estimated length, and/or if the footing elevation is adjusted.

(11) The Contractor shall notify the Engineer if rip rap, boulders, unsuitable soil or miscellaneous fill material is encountered at the bottom of the MSE wall footing excavation.

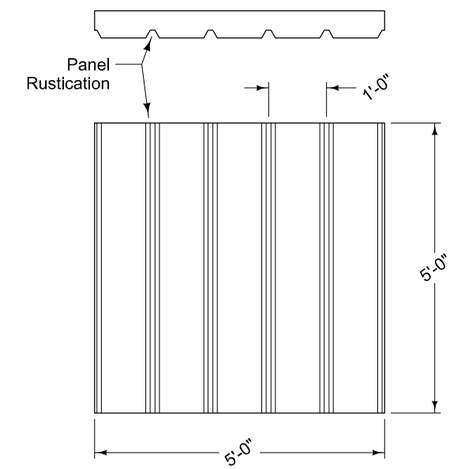
(12) The Contractor shall submit 7 copies of the design computations and 7 copies of the MSE Wall shop drawings at least 4 weeks prior to construction for review. The submittal with cover letter shall be sent to:

Soils Design Section
Iowa Department of Transportation
Attn: Steve Megivern, P.E.
800 Lincoln Way Ames, Iowa 50010

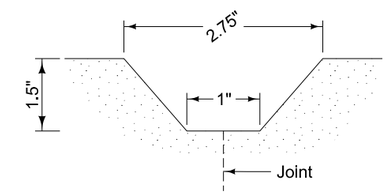
Only copies of the submittal cover letter shall be sent to the applicable office(s) of the Resident Construction Engineer (RCE) and District Materials Engineer (DME) for their information and documentation that the plans have been submitted. The Soils Design section will distribute final approved documents to the RCE and DME.



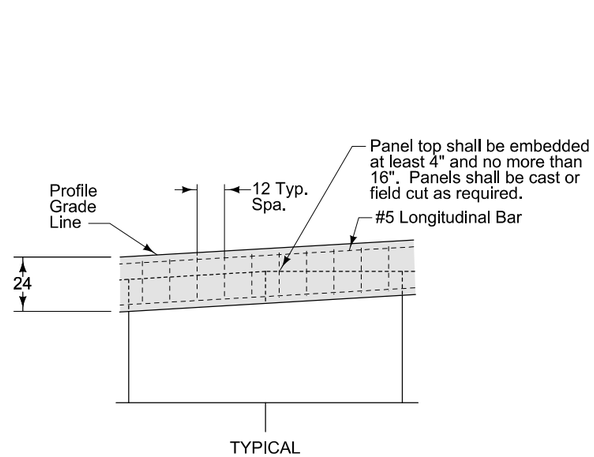
PANEL LAPPING DETAILS



PANEL DIMENSIONS

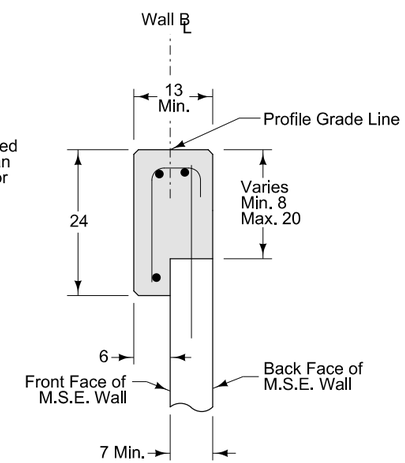


RUSTICATION DIMENSIONS

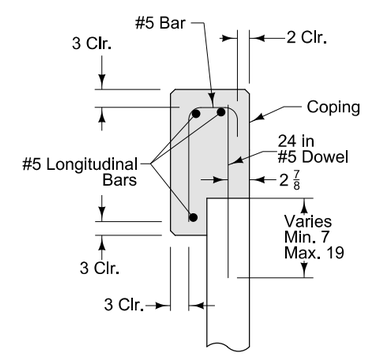


TYPICAL

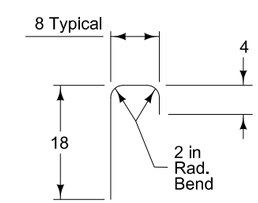
COPING ELEVATION



SECTION



REINFORCING



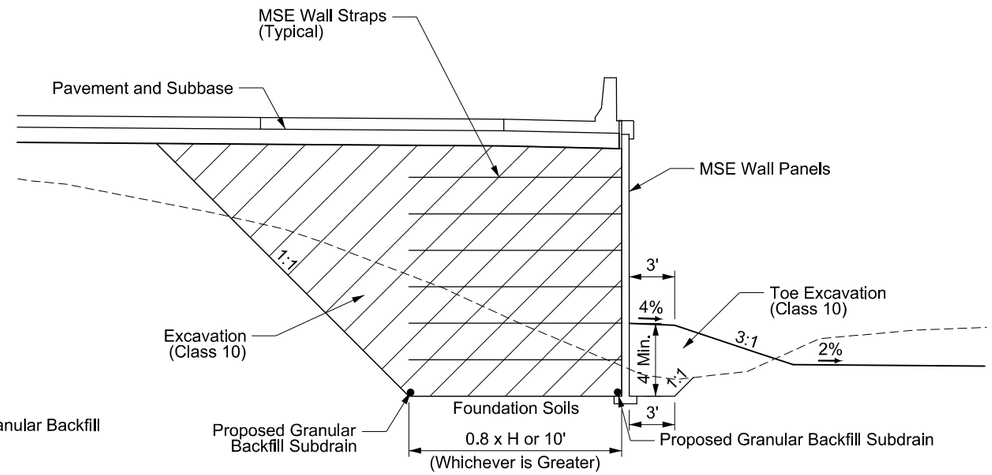
TYPICAL REINFORCING

TYPICAL M.S.E. COPING SECTION

COPING DETAILS

(Joints for the coping shall be designed to accommodate settlement in the MSE wall. This will be incidental to the design of the MSE wall.)

M.S.E. RETAINING WALL DETAILS (SHEET 1 OF 2)



LEGEND

Granular Backfill

NOTES

Refer to Q Sheets for additional details.

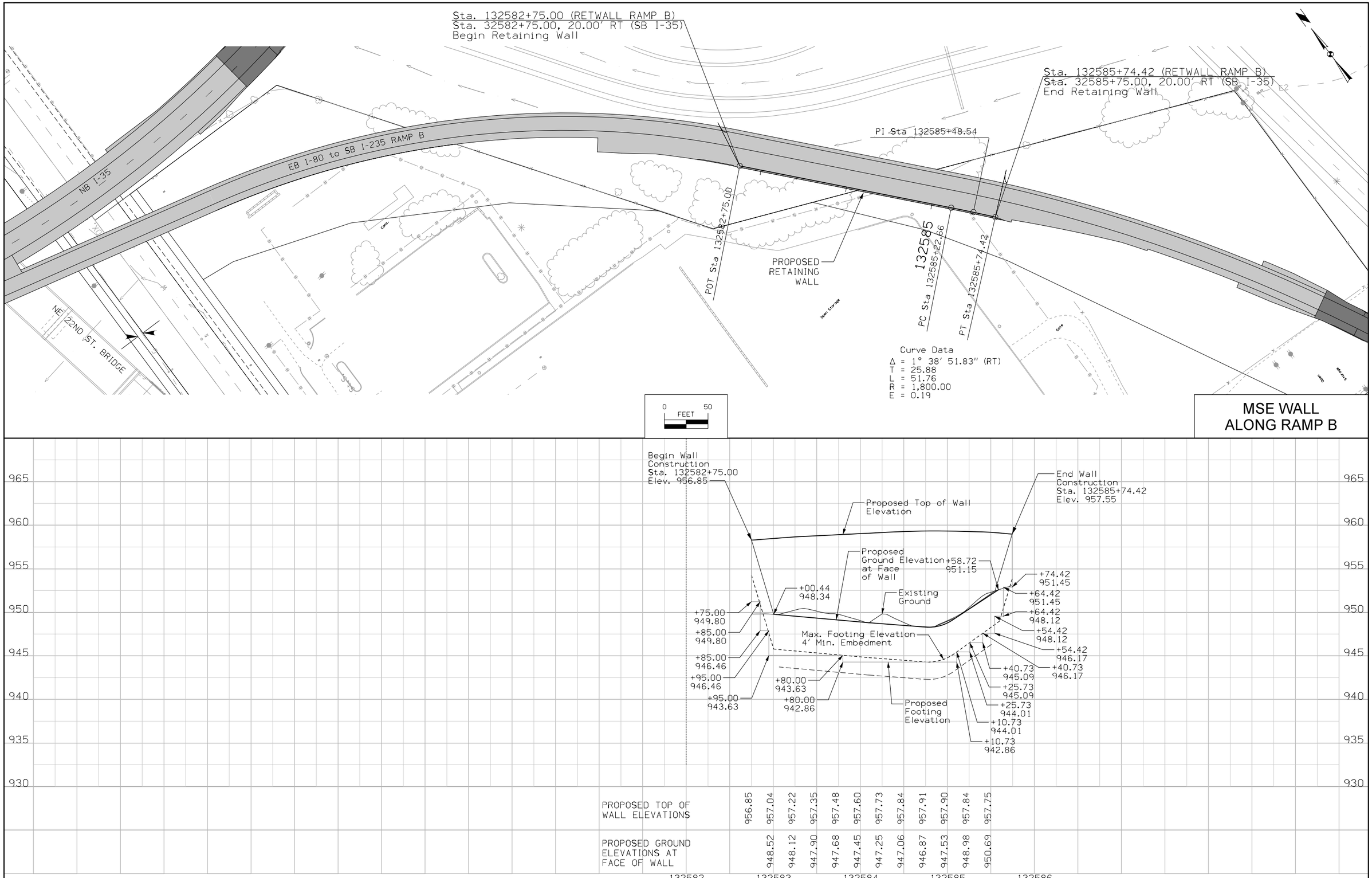
Class 10 Excavation included on T Sheets.

Granular Backfill must meet specification 2432.

Refer to Wall Plan and Profile Sheets for Bottom of Wall Elevations

TYPICAL MSE WALL BACKFILL

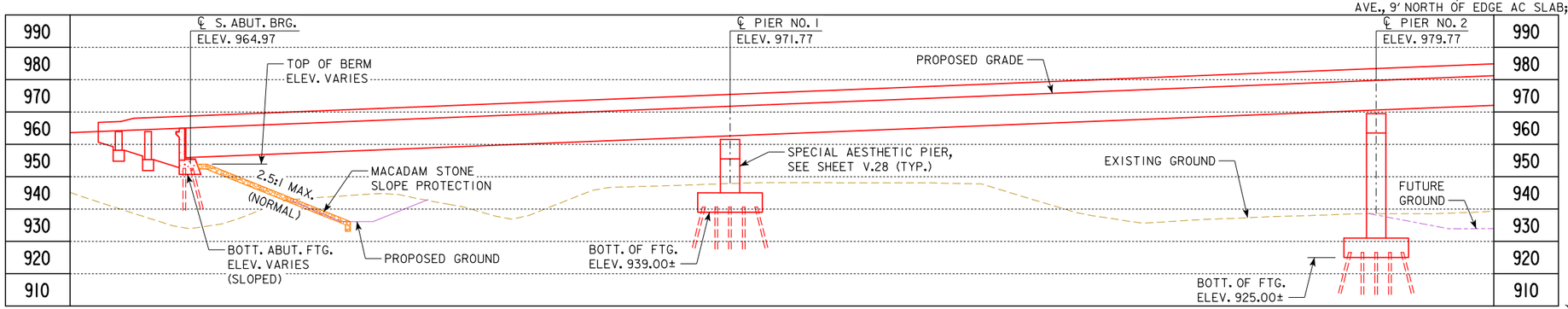
M.S.E. RETAINING WALL DETAILS (SHEET 2 OF 2)



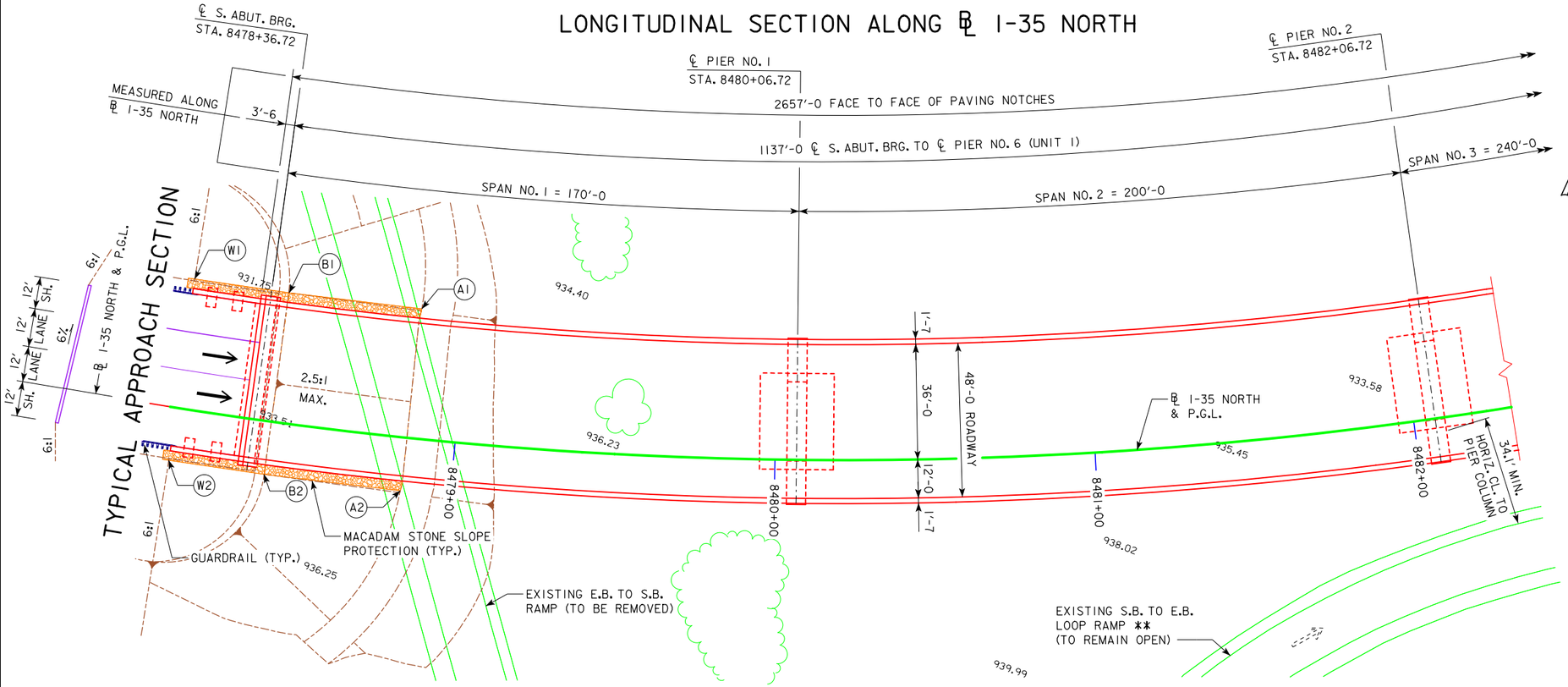
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER V.20

1:54:17 PM 10/18/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194V01.sht

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



LONGITUDINAL SECTION ALONG ℄ I-35 NORTH



SITUATION PLAN

LOCATION

I-35 NORTH OVER
I-80, I-235 & SYSTEM
INTERCHANGE RAMPS
T-79N R-23W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
FHWA NO. 700885
BRIDGE MAINT. NO. XXXXX
LATITUDE 41.652178°
LONGITUDE -93.576116°

TRAFFIC ESTIMATE

2012 AADT	12,300	V.P.D.
2050 AADT	15,800	V.P.D.
2050 DHV	1,990	V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALs	-	

NOTES:
ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
ALL DIMENSIONS ARE IN THE HORIZONTAL PLANE UNLESS NOTED OTHERWISE.
FOR VERTICAL PROFILE AND HORIZONTAL CURVE DATA, SEE SHEET V.28.
NON-STANDARD ABUTMENT WING-WALL.
TL-5 BRIDGE RAILING PROPOSED.
ADDITIONAL BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.
* MEASURED TO LOCAL TANGENTS
** EXISTING RAMP MOVEMENT TO BE REMOVED AFTER PROPOSED RAMP MOVEMENT CONSTRUCTED.

NOTES TO DESIGNERS:
MINIMUM HORIZONTAL CLEARANCE AND CLEAR ZONE FOR FUTURE EXPANSION:
I-80, I-35, I-235, I-35 NORTH (EB TO NB) &
I-35 SOUTH (SB TO WB) = 36' FROM LANE LINE
RAMP "G" (WB TO SB), RAMP "A" (WB TO NB),
RAMP "F" (SB TO EB), RAMP "D" (NB TO EB) &
RAMP "B" (EB TO SB) = 32' FROM LANE LINE
RAMP "E" (NB TO WB)
(OUTSIDE OF LOOP) = 22' FROM LANE LINE
(AT LOOP) = 16' FROM LANE LINE

HORIZONTAL CLEARANCES TO PIERS WERE BASED ON AN ASSUMED PIER WIDTH OF 6 FEET AND, WHERE APPLICABLE, THE SLOPING PIER COLUMN.
MINIMUM HORIZONTAL CLEARANCE TO PIER NOS. 2, 3, 4 AND 11 IS LESS THAN 30'. THEREFORE, DESIGN PIER NOS. 2, 3, 4 AND 11 FOR VEHICULAR COLLISION FORCE.
EXISTING ROADS LABELED "TO REMAIN OPEN" MAY BE BARRIER PROTECTED WITH THE FACE OF BARRIER AT THE BACK OF EXISTING SHOULDER.
SUBSTRUCTURE TO BE STUB TYPE ABUTMENTS AND AESTHETIC DELTA PIERS. AESTHETIC TREATMENTS TO BE ESTABLISHED BY IOWA DOT AESTHETICS BRIDGE SPECIALIST.
EXPANSION JOINTS AT SOUTH ABUTMENT, PIER NO. 9 AND NORTH ABUTMENT TO BE MODULAR JOINTS. EXPANSION JOINT AT PIER NO. 6 TO BE EITHER MODULAR OR FINGER JOINT.

BERM SLOPE LOCATION TABLE

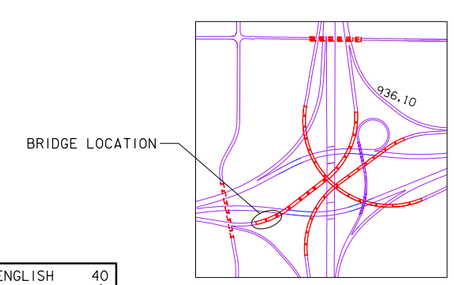
POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	8478+85.39	40.58' LT.	934.14	8504+44.31	40.58' LT.	953.71
A2	8478+84.51	16.58' RT.	936.84	8504+45.88	16.58' RT.	952.71
B1	8478+42.22	40.58' LT.	950.89	8504+81.22	40.58' LT.	963.95
B2	8478+42.22	16.58' RT.	953.96	8504+81.22	16.58' RT.	967.02
W1	8478+11.66	40.58' LT.	961.68	8505+12.40	40.58' LT.	974.68
W2	8478+12.50	16.58' RT.	964.64	8505+11.40	16.58' RT.	977.74

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

UTILITIES LEGEND:

- E2 - ELECTRIC - IDOT
-F03- FIBER OPTIC - ICN/IDOT (WINDSTREAM)

0 ENGLISH 40
SCALE IN FEET



INTERCHANGE KEY PLAN

PRELIMINARY

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

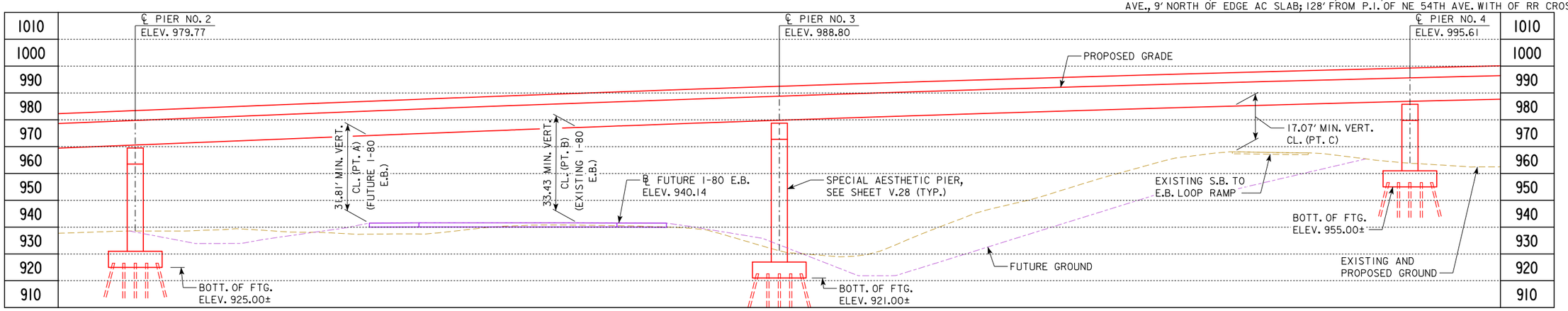
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

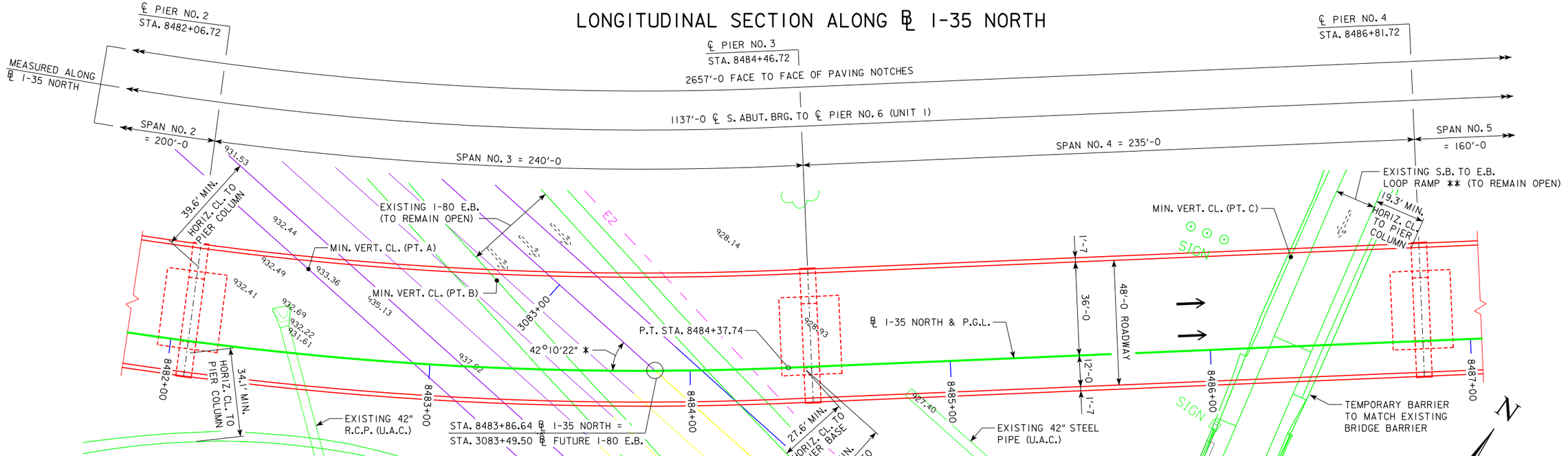
DESIGN SHEET NO. 1 OF 8 FILE NO. 31046 DESIGN NO. 1918

DESIGN TEAM HDR | POLK COUNTY | PROJECT NUMBER IM-035-3(195)87--13-77 | SHEET NUMBER V.21

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



LONGITUDINAL SECTION ALONG ℄ I-35 NORTH



MINIMUM VERTICAL CLEARANCE (PT. A)

OVERHEAD STATION = 8482+47.51, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 979.33
DEPTH OF SUPERSTRUCTURE = 8.50'
UNDERPASS STATION = 3082+21.33, 60.00' RT. (FUTURE I-80 E.B.)
UNDERPASS ELEVATION = 939.02
MINIMUM VERTICAL CLEARANCE = 31.81'

MINIMUM VERTICAL CLEARANCE (PT. B)

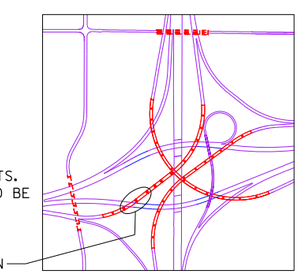
OVERHEAD STATION = 8483+23.32, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 982.32
DEPTH OF SUPERSTRUCTURE = 8.50'
UNDERPASS ELEVATION = 940.39 (EXISTING I-80 E.B.)
MINIMUM VERTICAL CLEARANCE = 33.43'

MINIMUM VERTICAL CLEARANCE (PT. C)

OVERHEAD STATION = 8486+32.45, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 993.67
DEPTH OF SUPERSTRUCTURE = 8.50'
EXISTING UNDERPASS ELEVATION = 968.10 (EXISTING S.B. TO E.B. LOOP RAMP)
MINIMUM VERTICAL CLEARANCE = 17.07'

NOTE:
* MEASURED TO LOCAL TANGENTS.
** EXISTING RAMP MOVEMENT TO BE REMOVED AFTER PROPOSED RAMP MOVEMENT CONSTRUCTED.

SITUATION PLAN



INTERCHANGE KEY PLAN

PRELIMINARY

0 ENGLISH 40
SCALE IN FEET

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

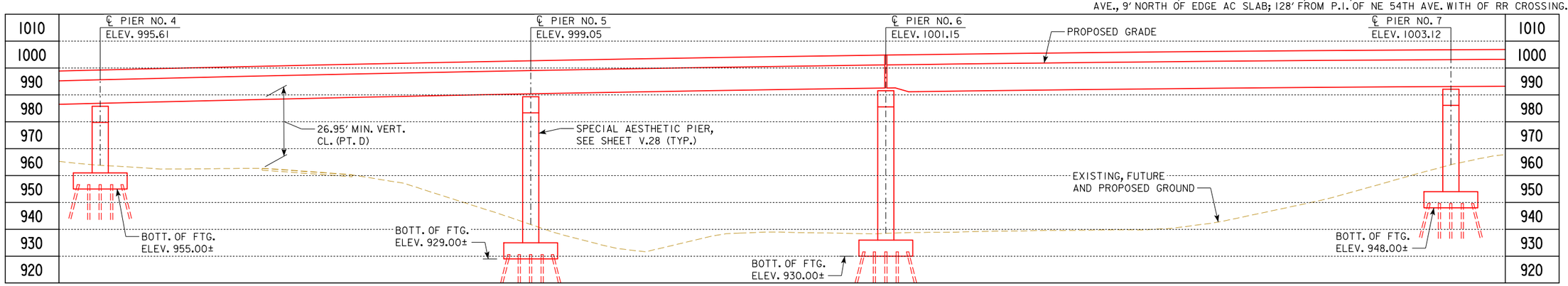
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

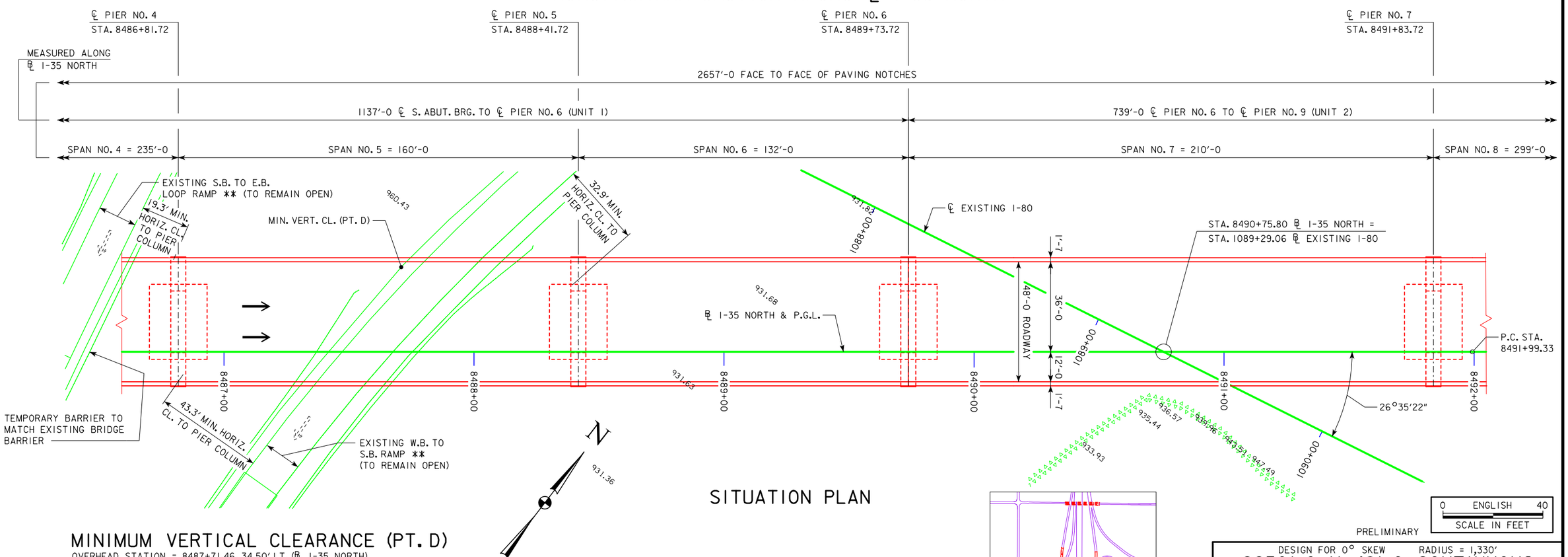
DESIGN SHEET NO. 2 OF 8 FILE NO. 31046 DESIGN NO. 1918

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(195)87--13-77	SHEET NUMBER V.22

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



LONGITUDINAL SECTION ALONG ℄ I-35 NORTH

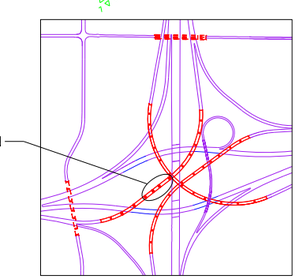


SITUATION PLAN

MINIMUM VERTICAL CLEARANCE (PT. D)

OVERHEAD STATION = 8487+71.46, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 996.97
DEPTH OF SUPERSTRUCTURE = 8.50'
EXISTING UNDERPASS ELEVATION = 961.52 (EXISTING W.B. TO S.B. RAMP)
MINIMUM VERTICAL CLEARANCE = 26.95'

NOTE:
** EXISTING RAMP MOVEMENT TO BE REMOVED AFTER PROPOSED RAMP MOVEMENT CONSTRUCTED.



INTERCHANGE KEY PLAN

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

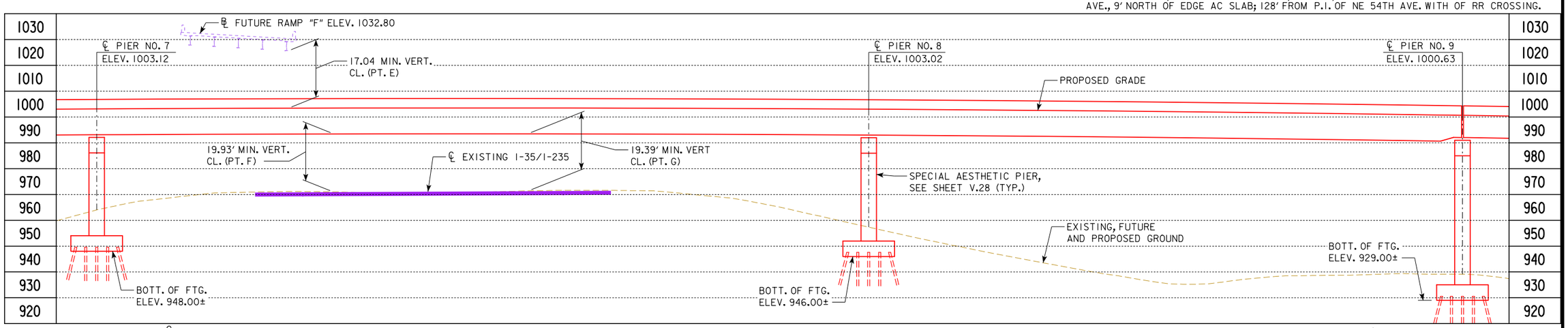
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

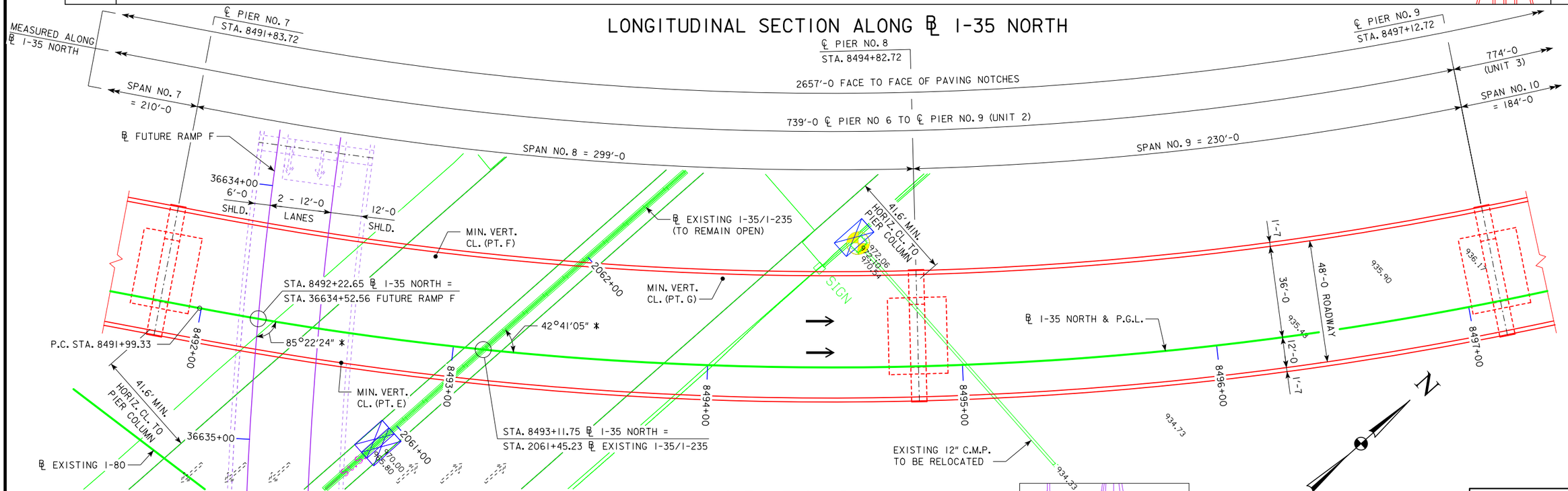
DESIGN SHEET NO. 3 OF 8 FILE NO. 31046 DESIGN NO. 1918

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(195)87--13-77	SHEET NUMBER V.23

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



LONGITUDINAL SECTION ALONG ℄ I-35 NORTH



SITUATION PLAN

NOTE:
* MEASURED TO LOCAL TANGENTS.

MINIMUM VERTICAL CLEARANCE (PT. E)

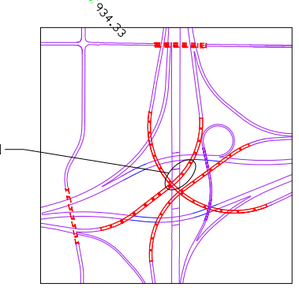
OVERHEAD STATION = 36634+67.28, 34.50' LT. (℄ FUTURE RAMP F)
OVERHEAD ELEVATION = 1031.13
DEPTH OF SUPERSTRUCTURE = 10.00'
UNDERPASS STATION = 8492+57.96, 12.00' RT. (℄ I-35 NORTH)
UNDERPASS ELEVATION = 1004.09
MINIMUM VERTICAL CLEARANCE = 17.04

MINIMUM VERTICAL CLEARANCE (PT. F)

OVERHEAD STATION = 8492+90.11, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 1001.40
DEPTH OF SUPERSTRUCTURE = 10.00'
UNDERPASS STATION = 2061+56.51, 39.00' LT. (℄ EXISTING I-35/I-235)
UNDERPASS ELEVATION = 971.47
MINIMUM VERTICAL CLEARANCE = 19.93'

MINIMUM VERTICAL CLEARANCE (PT. G)

OVERHEAD STATION = 8494+01.76, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 1001.31
DEPTH OF SUPERSTRUCTURE = 10.00'
UNDERPASS STATION = 2062+32.17, 39.00' RT. (℄ EXISTING I-35/I-235)
UNDERPASS ELEVATION = 971.92
MINIMUM VERTICAL CLEARANCE = 19.39'



INTERCHANGE KEY PLAN

PRELIMINARY

0 ENGLISH 40
SCALE IN FEET

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
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UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

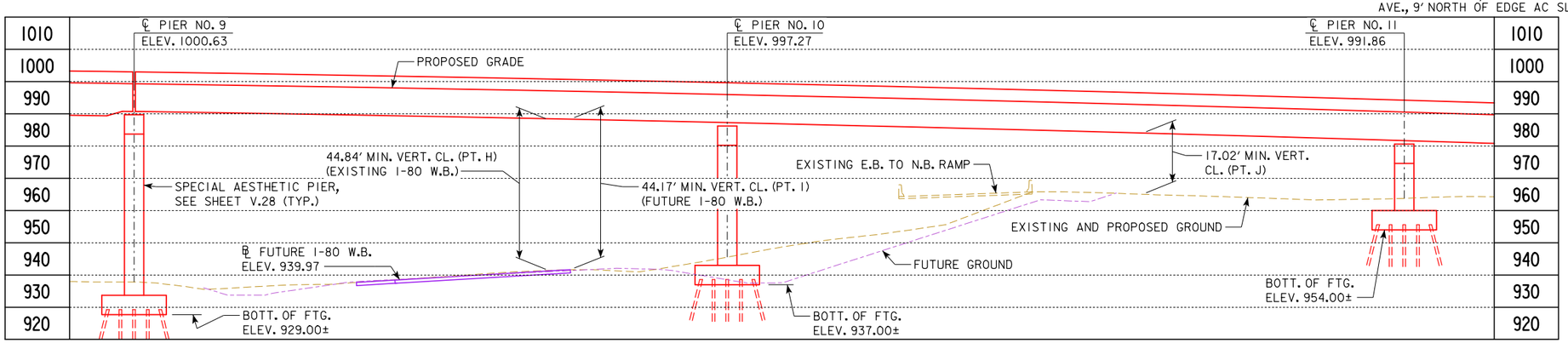
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 4 OF 8 FILE NO. 31046 DESIGN NO. 1918

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(195)87--13-77	SHEET NUMBER V.24

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



LONGITUDINAL SECTION ALONG ℄ I-35 NORTH

MINIMUM VERTICAL CLEARANCE (PT. H)

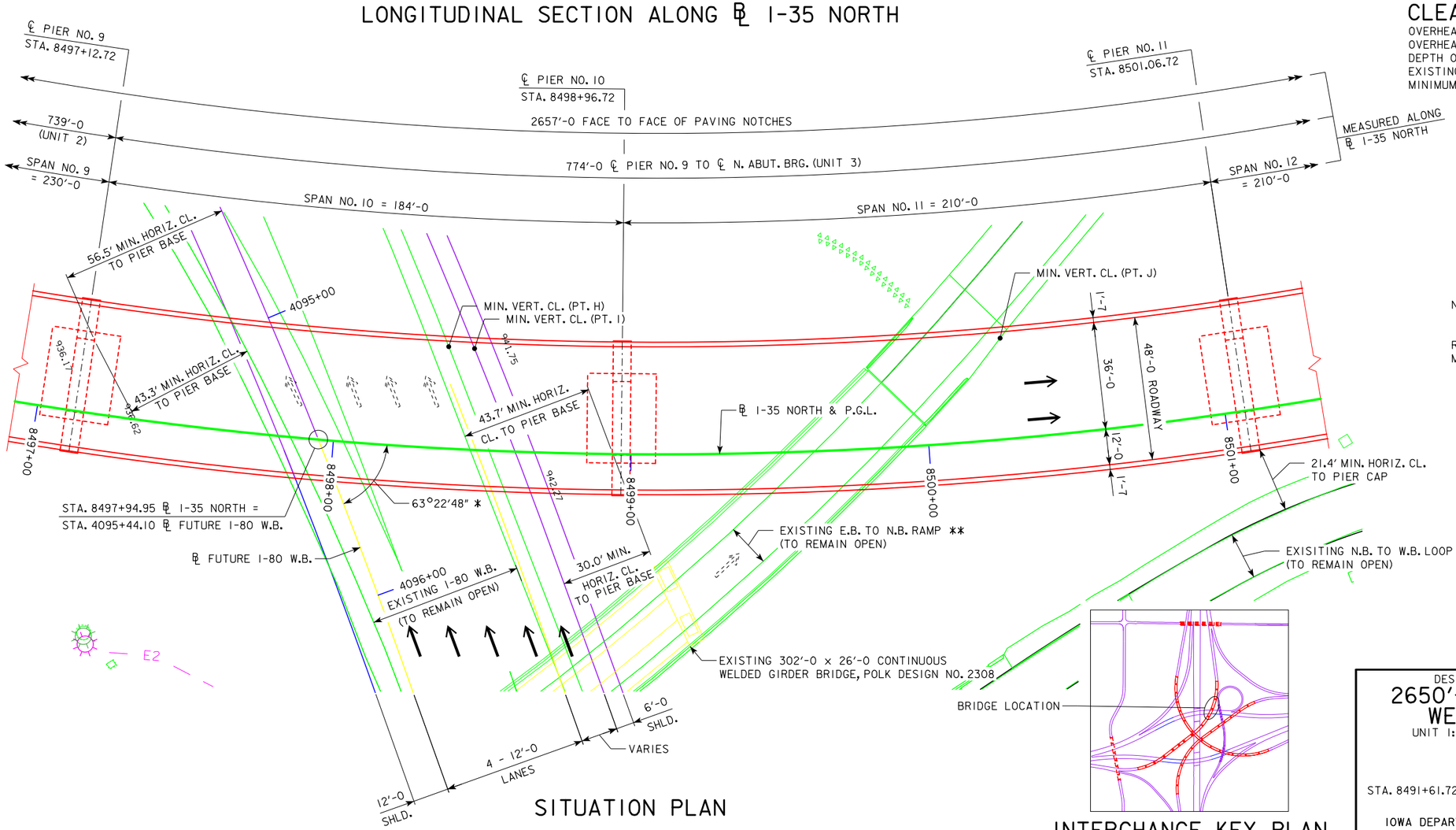
OVERHEAD STATION = 8498+36.78, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 996.44
DEPTH OF SUPERSTRUCTURE = 8.50'
UNDERPASS ELEVATION = 943.10 (EXISTING I-80 W.B.)
MINIMUM VERTICAL CLEARANCE = 44.84'

MINIMUM VERTICAL CLEARANCE (PT. I)

OVERHEAD STATION = 8498+45.60, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 996.26
DEPTH OF SUPERSTRUCTURE = 8.50'
UNDERPASS STATION = 4095+34.85, 60.00' LT.
(FUTURE I-80 W.B.)
UNDERPASS ELEVATION = 943.59
MINIMUM VERTICAL CLEARANCE = 44.17'

MINIMUM VERTICAL CLEARANCE (PT. J)

OVERHEAD STATION = 8500+27.51, 34.50' LT. (℄ I-35 NORTH)
OVERHEAD ELEVATION = 992.03
DEPTH OF SUPERSTRUCTURE = 8.50'
EXISTING UNDERPASS ELEVATION = 966.51
MINIMUM VERTICAL CLEARANCE = 17.02'



SITUATION PLAN

NOTES:
* MEASURED TO LOCAL TANGENTS.
** EXISTING RAMP MOVEMENT TO BE REMOVED AFTER PROPOSED RAMP MOVEMENT CONSTRUCTED.

INTERCHANGE KEY PLAN

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

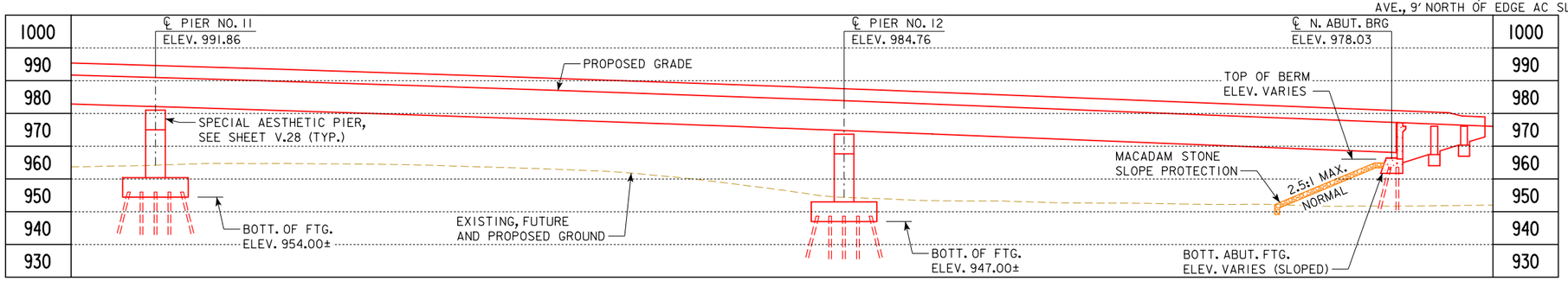
POLK COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 5 OF 8 FILE NO. 31046 DESIGN NO. 1918

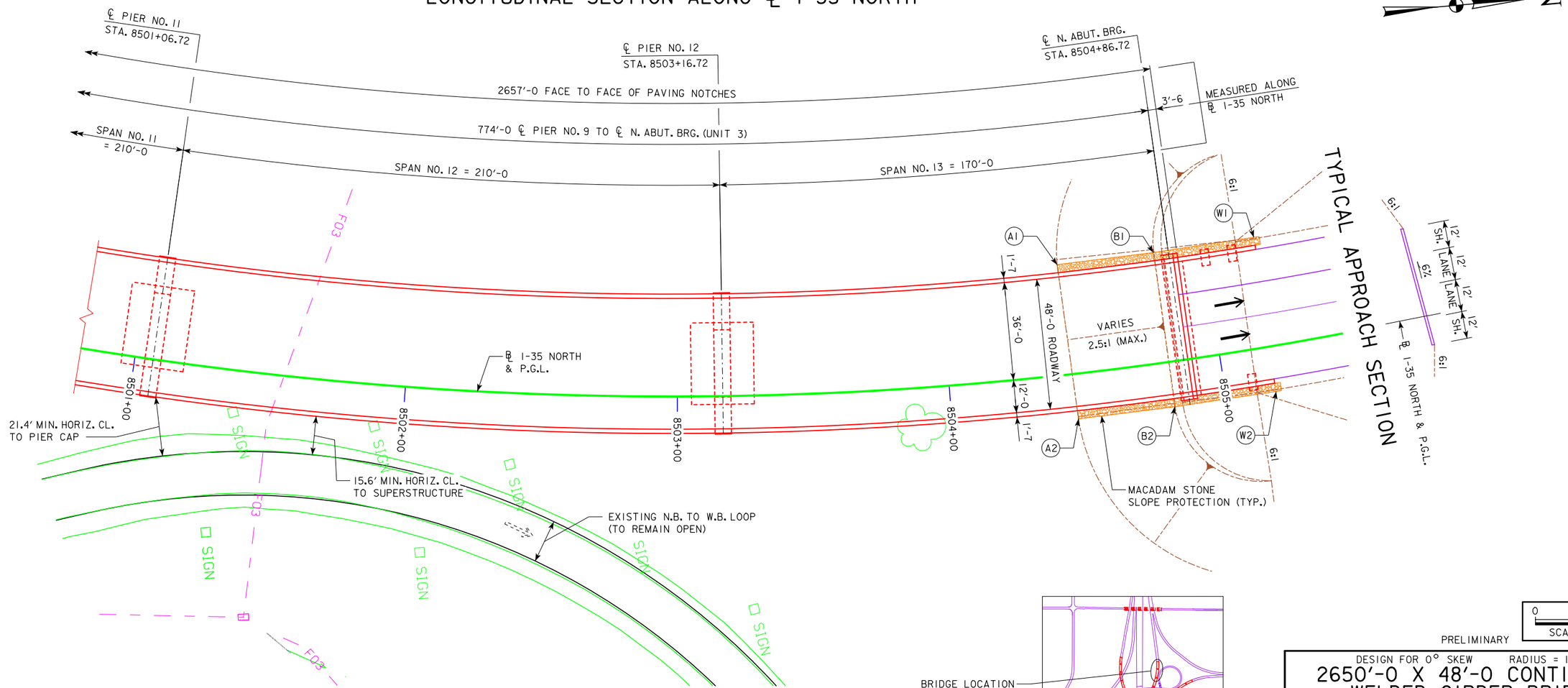
HDR

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(195)87--13-77	SHEET NUMBER V.25

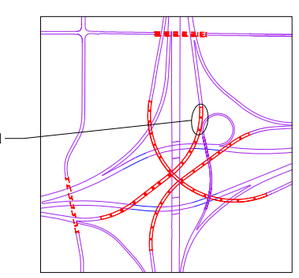
BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



LONGITUDINAL SECTION ALONG ℄ I-35 NORTH



SITUATION PLAN



INTERCHANGE KEY PLAN

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

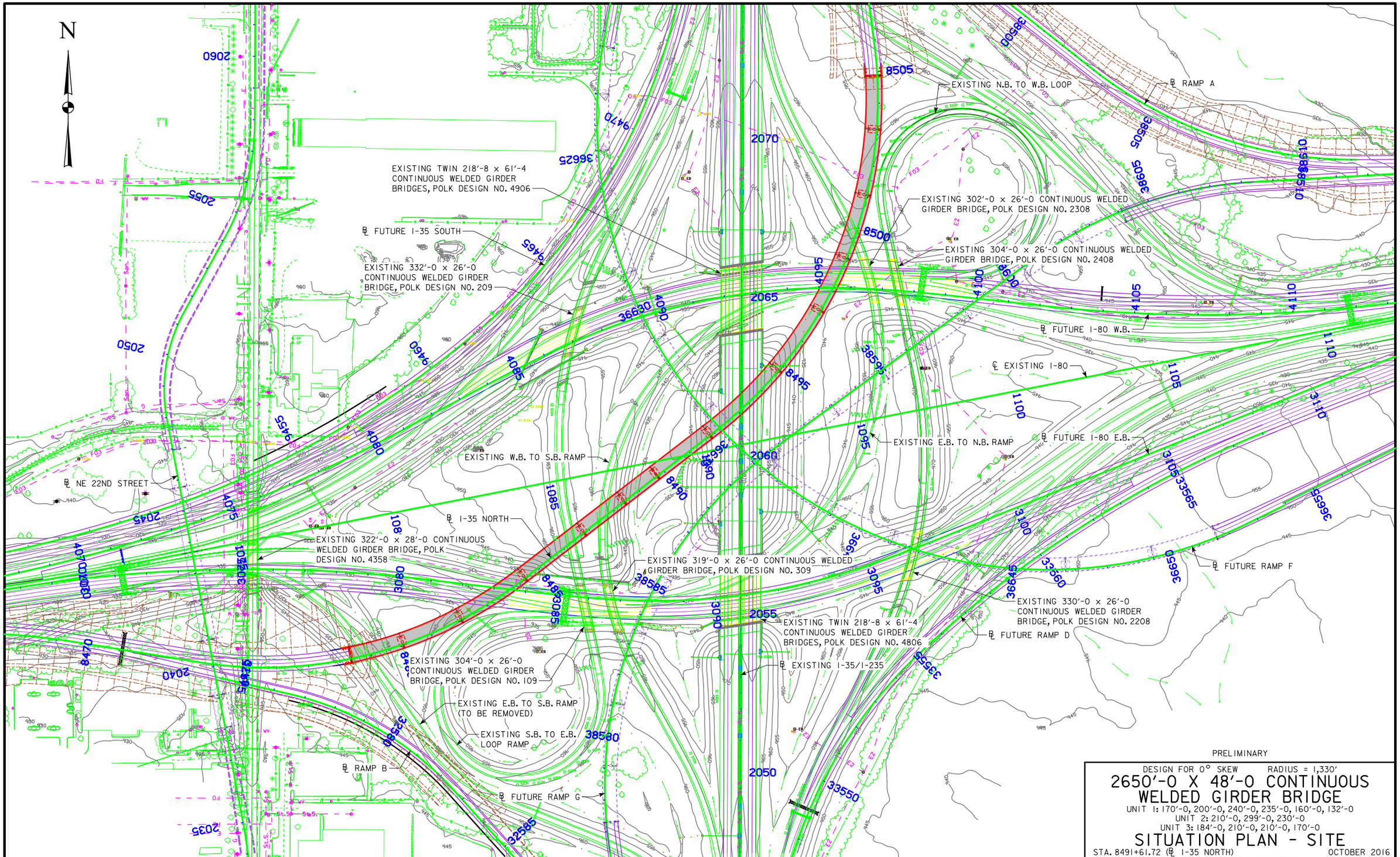
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 6 OF 8 FILE NO. 31046 DESIGN NO. 1918

HDR

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(195)87--13-77	SHEET NUMBER V.26



HDR

SITE PLAN

PRELIMINARY

DESIGN FOR 0° SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN - SITE

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

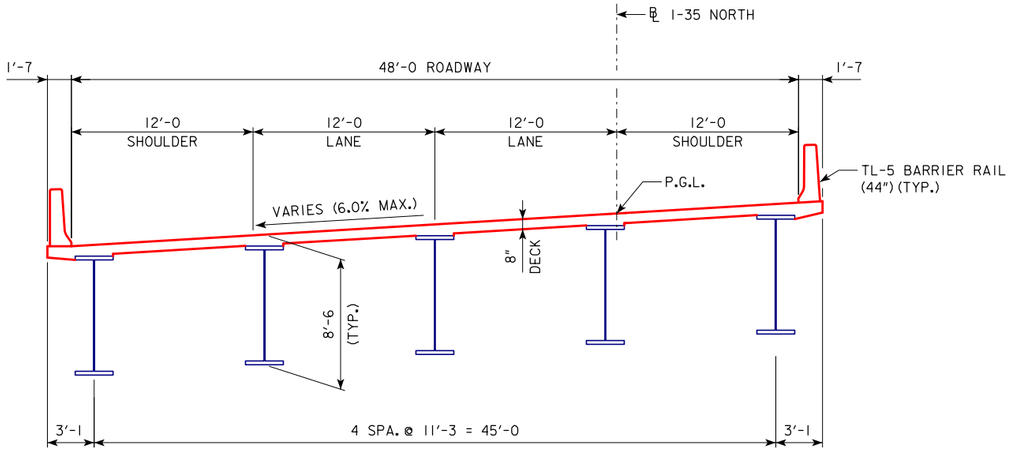
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

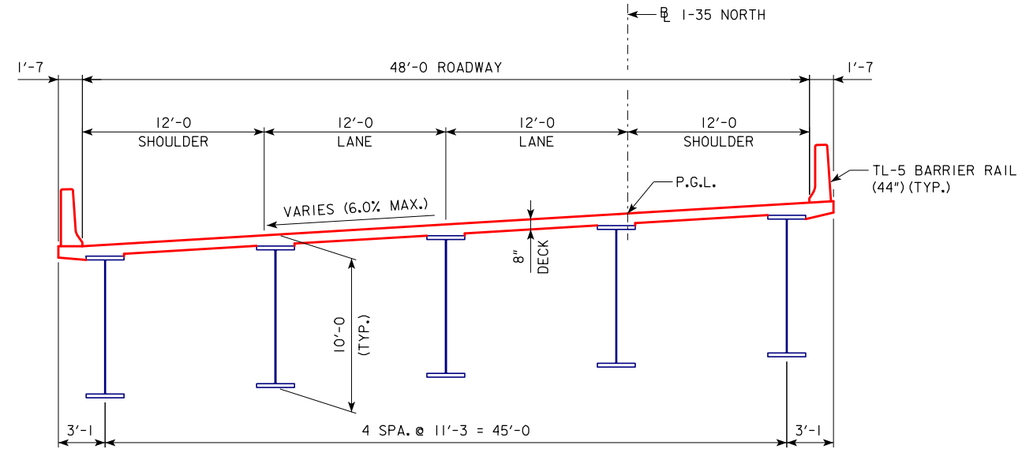
DESIGN SHEET NO. 7 OF 8 FILE NO. 31046 DESIGN NO. 1918

DESIGN TEAM HDR | POLK COUNTY | PROJECT NUMBER IM-035-3(195)87--13-77 | SHEET NUMBER V.27

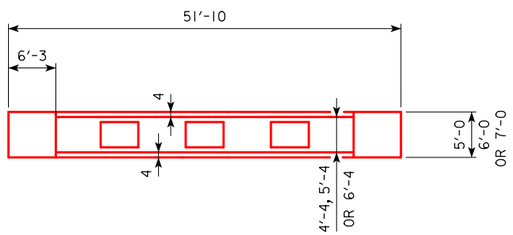
12/23/2016 11:09:05 AM CPODANY pw:\\PWAPPOMA001:NorthCentral_Omaha\Documents\001210\CON0079631\000000000237533\8.0_Deliverables\8.2_Work_in_Progress\Data_Out\161223_D5_Final\CADD\77035194.str TSL_77_1918_07 11x17c_pdf.pltcfg



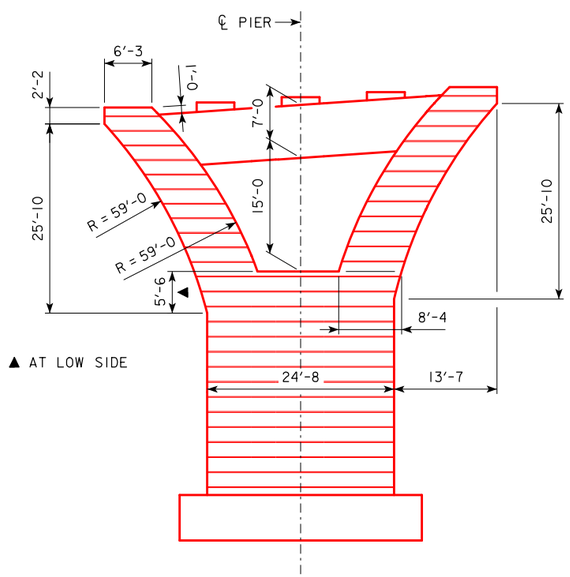
TYPICAL SECTION - UNITS 1 & 3



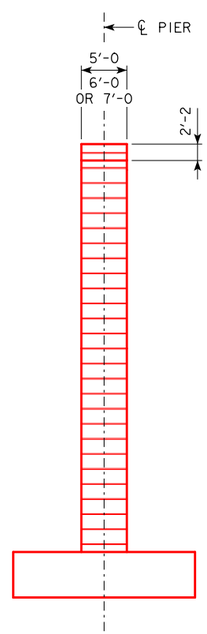
TYPICAL SECTION - UNIT 2



CAP PLAN

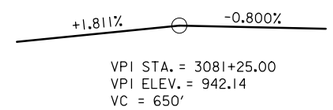


ELEVATION

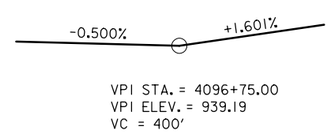


SIDE ELEVATION

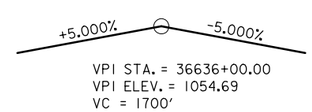
TYPICAL PIER DETAILS



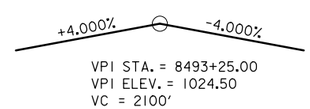
FUTURE I-80 E.B. PROPOSED GRADE



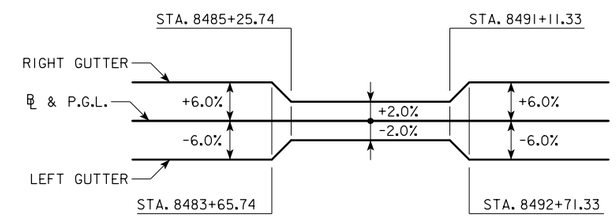
FUTURE I-80 W.B. PROPOSED GRADE



RAMP F PROPOSED GRADE



I-35 NORTH PROPOSED GRADE



I-35 NORTH
SUPERELEVATION DIAGRAM

℄ I-35 NORTH

PI STA. 8479+25.90	PI STA. 8499+65.23
Δ = 46°54'31.73" (LT.)	Δ = 59°52'18.89" (LT.)
T = 577.04'	T = 765.90'
L = 1088.89'	L = 1389.80'
E = 119.79'	E = 204.76'
R = 1330.00'	R = 1330.00'
PC STA. 8473+48.85	PC STA. 8491+99.33
PT STA. 8484+37.74	PT STA. 8505+89.13

PRELIMINARY

DESIGN FOR VARIABLE SKEW RADIUS = 1,330'

2650'-0 X 48'-0 CONTINUOUS WELDED GIRDER BRIDGE

UNIT 1: 170'-0, 200'-0, 240'-0, 235'-0, 160'-0, 132'-0
UNIT 2: 210'-0, 299'-0, 230'-0
UNIT 3: 184'-0, 210'-0, 210'-0, 170'-0

SITUATION PLAN - MISC.

STA. 8491+61.72 (℄ I-35 NORTH) OCTOBER 2016

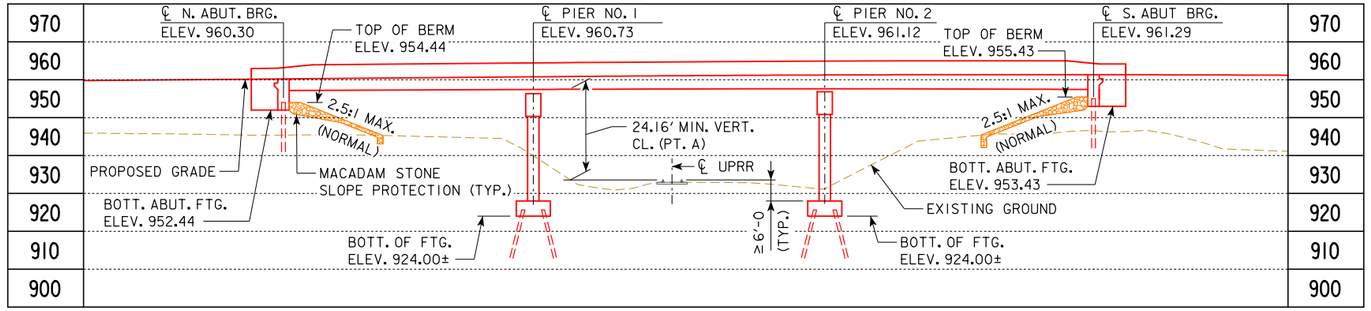
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 8 OF 8 FILE NO. 31046 DESIGN NO. 1918

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(195)87--13-77	SHEET NUMBER V.28

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.

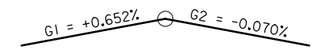


LONGITUDINAL SECTION ALONG ℄ RAMP B

BERM SLOPE LOCATION TABLE

POINTS	NORTH ABUTMENT			SOUTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	32590+63.59	24.58' LT.	945.10	32592+14.11	24.58' LT.	943.64
A2	32590+63.69	12.58' RT.	944.41	32592+15.59	12.58' RT.	944.58
B1	32590+40.59	24.58' LT.	954.44	32592+42.86	24.58' LT.	955.43
B2	32590+38.51	12.58' RT.	954.44	32592+44.94	12.58' RT.	955.43
W1	32590+27.56	24.58' LT.	961.05	32592+55.88	24.58' LT.	962.10
W2	32590+25.61	12.58' RT.	959.75	32592+57.84	12.58' RT.	960.81

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



VPI STA. = 32592+00.00
VPI ELEV. = 961.37
VC = 200'

RAMP B PROPOSED GRADE

℄ RAMP B CURVE DATA

PI STA. 32590+41.99
Δ = 31°51'07.08" (RT.)
T = 519.33'
L = 1,011.78'
E = 72.65'
R = 1,820.00'
PC STA. 32585+22.66
PT STA. 32595+34.44

MINIMUM VERTICAL CLEARANCE (PT. A)

OVERHEAD STATION = 32591+07.48, 6.08' RT. (℄ RAMP B)
OVERHEAD ELEVATION = 960.49
DEPTH OF SUPERSTRUCTURE = 3.83'
UNDERPASS ELEVATION = 932.50
PROVIDED MIN. VERTICAL CLEARANCE = 24.16'

LOCATION

RAMP B (E.B. TO S.B.)
OVER UPRR
T-79N R-23W
SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
FHWA NO. 700895
BRIDGE MAINT. NO. UNKNOWN
LATITUDE: 41.647150°
LONGITUDE: -93.577130°

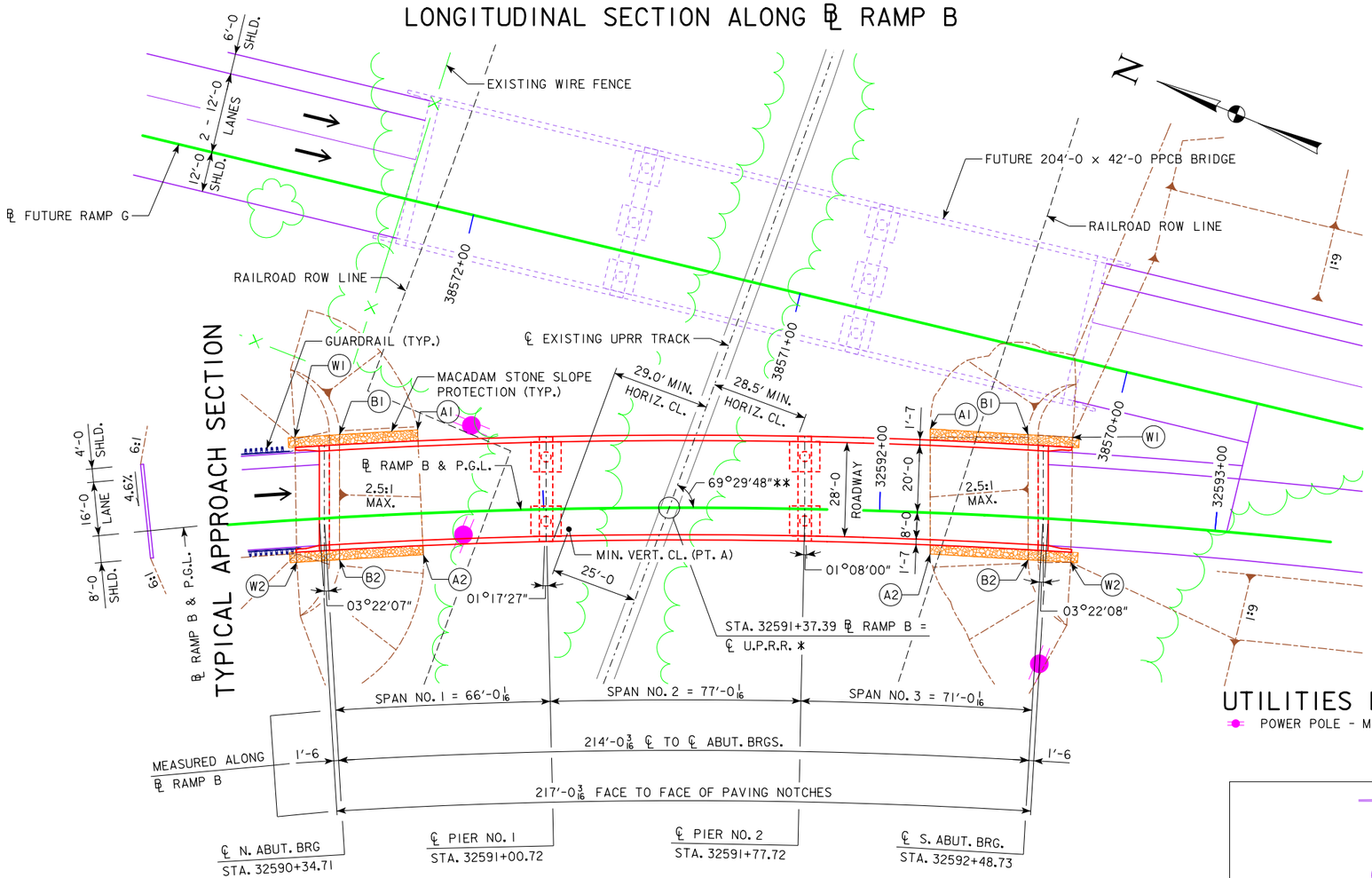
TRAFFIC ESTIMATE

2012 AADT	5200	V.P.D.
2050 AADT	6400	V.P.D.
2050 DHV	1030	V.P.H.
TRUCKS	13	%
TOTAL DESIGN ESALs	-	

NOTES:
ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
ALL DIMENSIONS ARE IN THE HORIZONTAL PLANE UNLESS NOTED OTHERWISE.
"BTB" BEAMS ARE CHORDED AT STANDARD BEAM SPAN LENGTHS OF 65', 75' AND 70'.
* MEASURED FROM PHOTOGRAMMETRY FILE, VERIFY DURING FINAL DESIGN.
** MEASURED TO LOCAL TANGENT OF ℄ RAMP B.
RAILROAD DITCHES ARE NOT WELL DEFINED, BUT GENERALLY FLOW WESTWARD.

NOTES TO DESIGNERS:
BRIDGE SUPERSTRUCTURE TO BE PPC "BTB" BEAMS. SUBSTRUCTURE TO BE INTEGRAL ABUTMENTS AND FRAME PIERS.
MINIMUM HORIZONTAL CLEARANCE TO PIERS EXCEEDS 25' AS DEFINED IN THE AREMA MANUAL FOR RAILWAY ENGINEERING, THEREFORE, HEAVY CONSTRUCTION IS NOT REQUIRED.
HORIZONTAL CLEARANCE TO PIER BASED ON ASSUMED CAP WIDTH OF 4'.
TL-5 BRIDGE RAILING PROPOSED.
BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.
VERIFY RAILROAD EQUATION POINTS DURING FINAL DESIGN.

PRELIMINARY

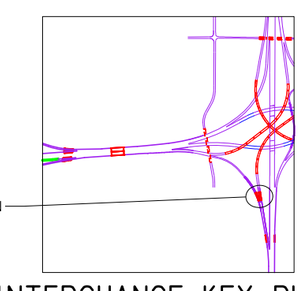


TYPICAL APPROACH SECTION

SITUATION PLAN

UTILITIES LEGEND:

POWER POLE - MIDAMERICAN



INTERCHANGE KEY PLAN

0 ENGLISH 40
SCALE IN FEET

DESIGN FOR VARIABLE SKEW RADIUS = 1,820'

214'-0 3/16 X 28'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

66'-0 1/16, 77'-0 1/16, 71'-0 1/16 SPANS

SITUATION PLAN

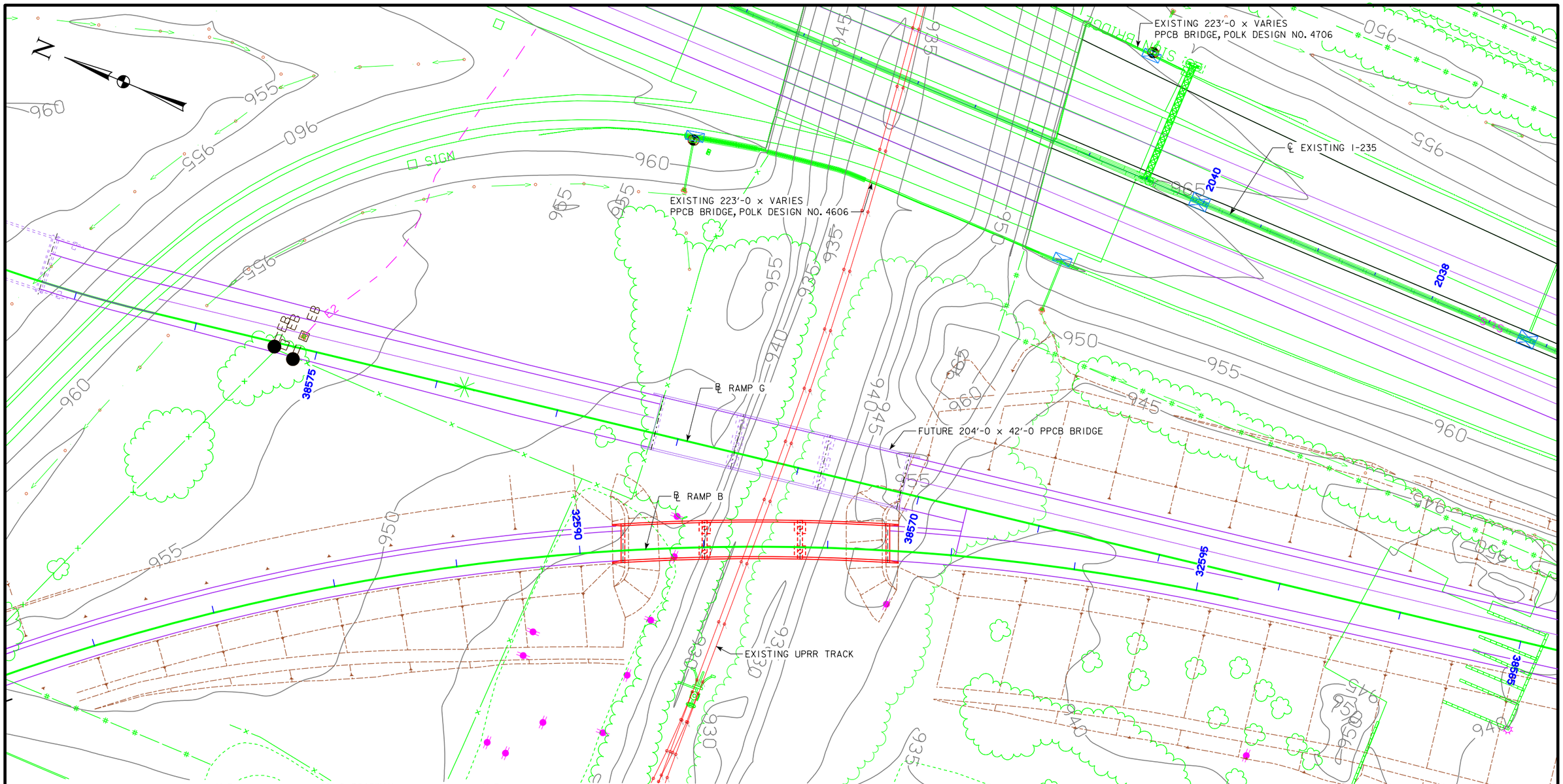
STA. 32591+41.72 (℄ RAMP B) OCTOBER 2016

POLK COUNTY

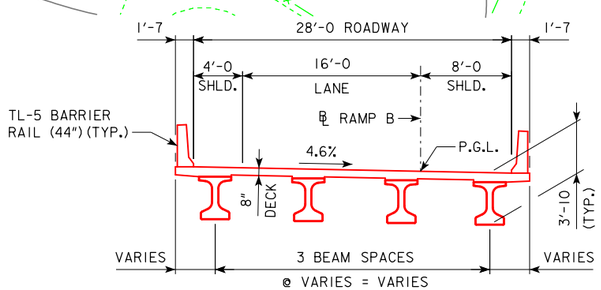
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 3 FILE NO. 31046 DESIGN NO. 2118

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(203)87--13-77	SHEET NUMBER V.29



SITE PLAN



TYPICAL SECTION

0 ENGLISH 80
SCALE IN FEET

PRELIMINARY

DESIGN FOR VARIABLE SKEW RADIUS = 1,820'

214'-0 3/16 X 28'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

66'-0 1/16, 77'-0 1/16, 71'-0 1/16 SPANS

SITUATION PLAN - SITE

STA. 32591+41.72 (℄ RAMP B) OCTOBER 2016

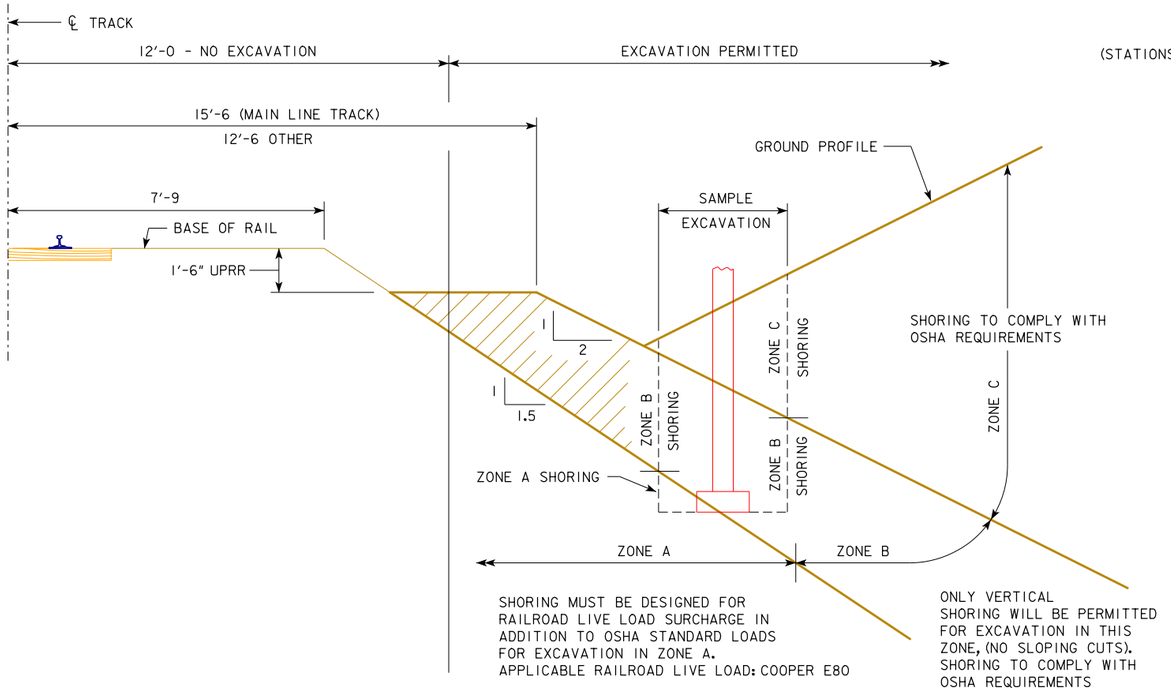
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 2 OF 3 FILE NO. 31046 DESIGN NO. 2118

DESIGN TEAM HDR POLK COUNTY PROJECT NUMBER IM-035-3(203)87--13-77 SHEET NUMBER V.30

12/23/2016 11:10:33 AM CPODANY pw:\\PWAPPOMA001:NorthCentral_Omaha\Documents\001210\CON0079631\000000000237533\8.0_Deliverables\8.2_Work_in_Progress\Data_Out\161223_D5_Final\CADD\77035194.str TSL_77_2118_02 11x17c_pdf.pltcfg



GENERAL EXCAVATION ZONES

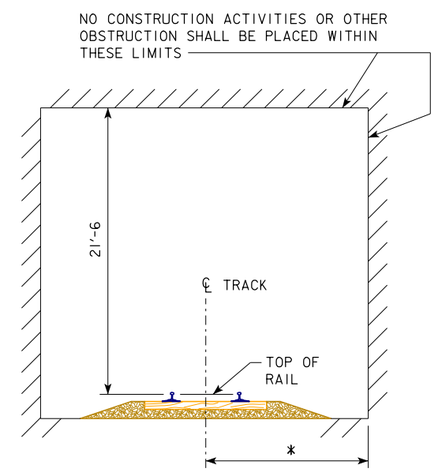
TOP OF RAIL ELEVATIONS

(STATIONS INCREASE WITH MILEPOST INCREASE. MILEPOSTS INCREASE TO THE EAST.)

MAIN LINE UPRR			
ALIGNMENT: LEFT RAIL		ALIGNMENT: RIGHT RAIL	
STATION	ELEVATION	STATION	ELEVATION
03+77.02	926.94	03+75.41	926.92
04+25.71	927.58	04+23.95	927.52
04+73.02	928.15	04+71.26	928.02
05+16.50	928.79	05+15.05	928.70
05+69.44	929.26	05+67.59	929.35
06+32.30	929.76	06+30.50	929.69
06+81.56	930.13	06+79.77	930.14
07+30.59	930.60	07+28.66	930.61
07+80.50	930.89	07+78.70	930.90
08+03.03	931.08	08+01.10	931.09
08+23.34	931.25	08+21.06	931.26
08+50.47	931.47	08+48.68	931.47
08+85.15	931.73	08+83.34	931.73
09+35.24	932.13	09+33.34	932.17
09+87.12	932.53	09+85.29	932.60
(1) 10+00.00	932.65	(2) 10+00.00	932.75
10+40.71	933.03	10+39.06	933.14
10+90.64	933.50	10+88.97	933.61
11+36.11	933.88	11+34.18	934.04
11+86.69	934.34	11+85.24	934.58
12+37.31	934.77	12+35.68	935.00
12+87.08	935.13	12+85.79	935.32
13+38.50	935.32	13+36.96	935.63
13+91.30	935.66	13+89.90	936.01
14+40.28	936.26	14+38.98	936.41
14+63.06	936.44	14+60.58	936.55

(1) EXISTING TRACK STA. 10+00 = STA. 32591+34.79 ℄ RAMP B

(2) EXISTING TRACK STA. 10+00 = STA. 32591+39.99 ℄ RAMP B



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

* 12'-0" FOR UPRR

RAILROAD GENERAL NOTES:

1. RAILROAD REVIEW AND APPROVAL OF SHORING, ERECTION, DEMOLITION, AND FALSEWORK IS REQUIRED. ALLOW A MINIMUM OF FOUR WEEKS FOR THE REVIEW AND APPROVAL OF EACH SUBMITTAL.
2. THE PROPOSED GRADE SEPARATION PROJECT SHALL NOT INCREASE THE QUANTITY AND/OR CHARACTERISTICS OF THE FLOW IN THE RAILROAD'S DITCHES AND/OR DRAINAGE STRUCTURES.
3. THE ELEVATION OF THE EXISTING TOP-OF-RAIL PROFILE SHALL BE VERIFIED BEFORE BEGINNING CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE RAILROAD PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR MUST SUBMIT A PROPOSED METHOD OF EROSION AND SEDIMENT CONTROL AND HAVE THE METHOD APPROVED BY THE RAILROAD.
5. ALL SHORING SYSTEMS THAT IMPACT THE RAILROAD'S OPERATIONS AND/OR SUPPORTS THE RAILROAD'S EMBANKMENT SHALL BE DESIGNED AND CONSTRUCTED PER CURRENT RAILROAD GUIDELINES FOR TEMPORARY SHORING.
6. ALL DEMOLITIONS WITHIN THE RAILROAD'S RIGHT-OF-WAY AND/OR DEMOLITION THAT MAY IMPACT THE RAILROAD'S TRACKS OR OPERATIONS SHALL BE IN COMPLIANCE WITH THE RAILROAD'S DEMOLITION GUIDELINES.
7. ERECTION OVER THE RAILROAD'S RIGHT-OF-WAY SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
8. ALL CONSTRUCTION PHASING THAT MAY IMPACT THE RAILROAD OPERATIONS SHALL BE DESIGNED TO CAUSE NO INTERRUPTION TO THE RAILROAD'S OPERATION, ENABLING THE TRACK(S) TO REMAIN OPEN TO TRAFFIC PER THE RAILROAD'S REQUIREMENTS.
9. FALSE-WORK CLEARANCES SHALL COMPLY WITH MINIMUM CONSTRUCTION CLEARANCES.
10. ALL PERMANENT CLEARANCES SHALL BE VERIFIED BEFORE PROJECT CLOSING.
11. FOR RAILROAD COORDINATION PLEASE REFER TO THE RAILROAD COORDINATION REQUIREMENTS AS PART OF SPECIAL PROVISIONS.

GENERAL SHORING NOTES:

1. ALL DIMENSIONS ARE MEASURED PERPENDICULAR TO TRACK.
2. PRIOR TO COMMENCING ANY WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE RAILROAD DETAILED PLANS INDICATING THE NATURE AND EXTENT OF THE TRACK PROTECTION SHORING PROPOSED. THE CONTRACTOR SHALL INSTALL THE TEMPORARY SHORING SYSTEM PER THE APPROVED PLANS. DESIGN OF THE TEMPORARY SHORING SYSTEM TO COMPLY WITH GUIDELINES FOR TEMPORARY SHORING.
3. FOR EXCAVATIONS WHICH ENCROACH INTO ZONE A OR B, SHORING PLANS SHALL BE ACCOMPANIED BY DESIGN CALCULATIONS. PLANS AND CALCULATIONS MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IOWA.

NOTE:
UPRR = UNION PACIFIC RAILROAD

PRELIMINARY

DESIGN FOR VARIABLE SKEW RADIUS = 1,820'

214'-0 3/16 X 28'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

66'-0 1/16, 77'-0 1/16, 71'-0 1/16 SPANS

UPRR SHORING DETAILS

STA. 32591+41.72 (℄ RAMP B) OCTOBER 2016

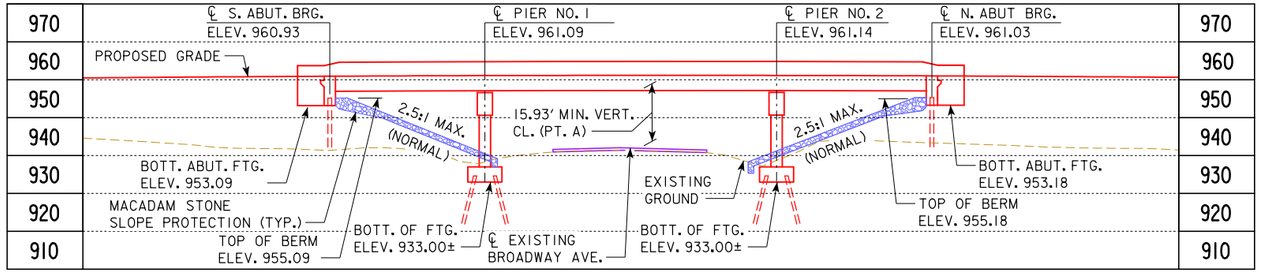
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 3 OF 3 FILE NO. 31046 DESIGN NO. 2118

REVISED 09-13 - RAILROAD CHANGED THE MINIMUM VERTICAL CONSTRUCTION CLEARANCE TO 21'-6. DISTANCE FROM MAINLINE TRACK TO EDGE OF EMBANKMENT CHANGED TO 15'-6.
ENGLISHMISCELLANEOUSBRIDGES.DGN - 1067 - THIS SHEET ISSUED 12-08.

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



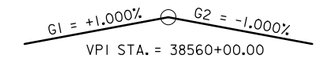
LONGITUDINAL SECTION ALONG ℄ RAMP G

LOCATION

RAMP G OVER
EXISTING BROADWAY AVE.
T-79N R-23W
SECTION 18 / SECTION 19
DELAWARE TOWNSHIP
POLK COUNTY
FHWA NO. 700890
BRIDGE MAINT. NO. UNKNOWN
LATITUDE: 41.644118°
LONGITUDE: -93.576225°

TRAFFIC ESTIMATE

2012	AADT	13900	V.P.D.
2050	AADT	18500	V.P.D.
2050	DHV	2750	V.P.H.
TRUCKS		10	%
TOTAL DESIGN ESALs		-	



VPI STA. = 38560+00.00
VPI ELEV. = 962.04
VC = 350'

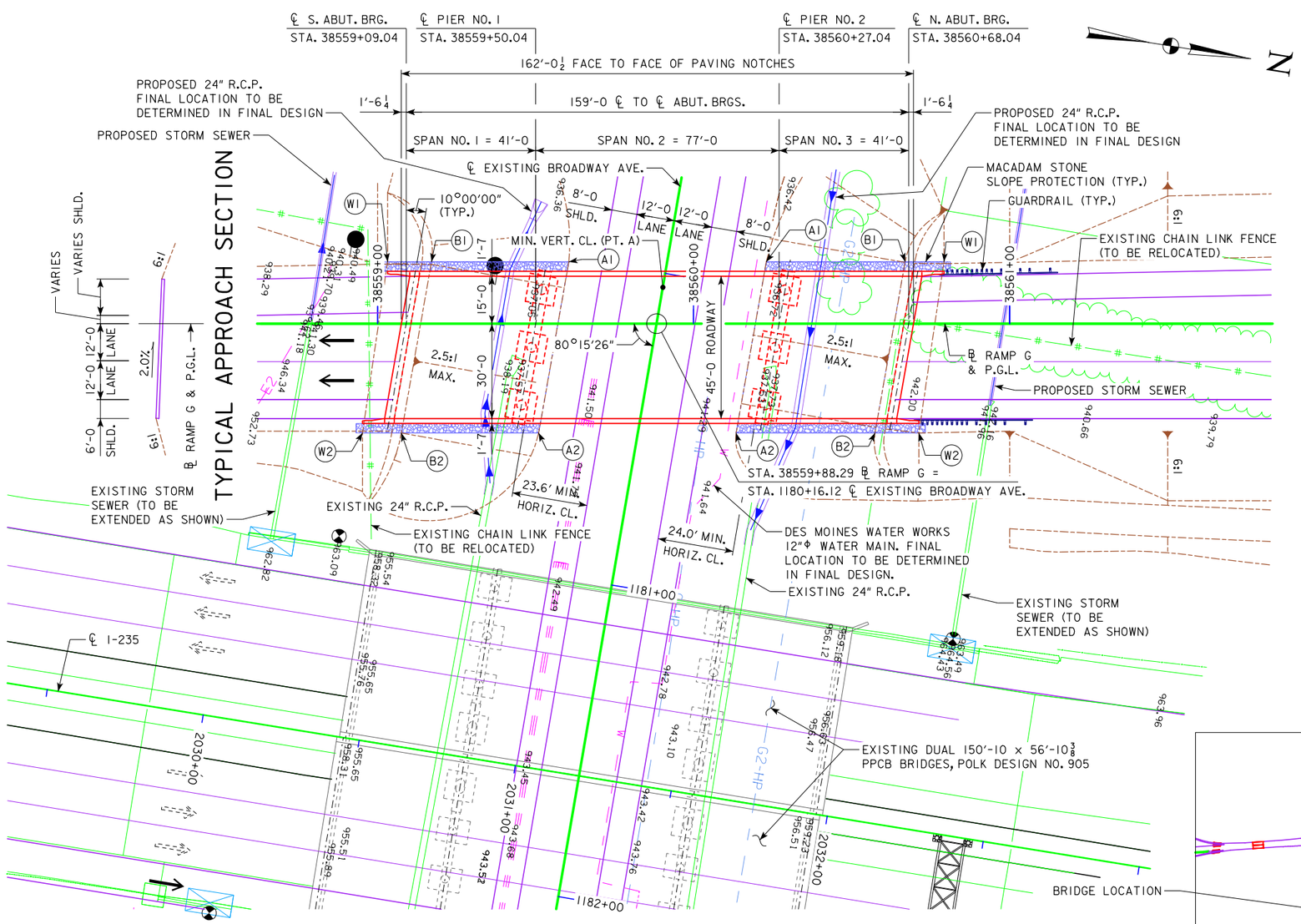
RAMP G PROPOSED GRADE

MINIMUM VERTICAL CLEARANCE (PT. A)

OVERHEAD STATION = 38559+90.54, 13.08' LT. (℄ RAMP G)
OVERHEAD ELEVATION = 960.90
DEPTH OF SUPERSTRUCTURE = 3.83'
UNDERPASS STATION = 1180+02.84, 0.00' (℄ EXISTING BROADWAY AVE.)
UNDERPASS ELEVATION = 941.14 (U.A.C.)
REQUIRED MIN. VERTICAL CLEARANCE = 15.00' (BASED ON EXISTING BROADWAY AVE.)
PROVIDED MIN. VERTICAL CLEARANCE = 15.93'

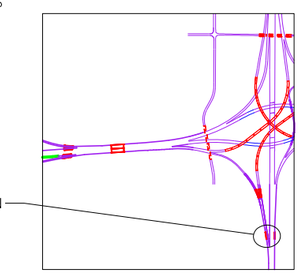
UTILITIES LEGEND:

- E1 — ELECTRIC - MIDAMERICAN
- E2 — ELECTRIC - IDOT
- G-HP — GAS LINE - MIDAMERICAN
- G-HP2 — GAS LINE - MIDAMERICAN
- POWER POLE - MIDAMERICAN
- W — CITY OF DES MOINES WATER WORKS



SITUATION PLAN

0 ENGLISH 40
SCALE IN FEET



INTERCHANGE KEY PLAN

BERM SLOPE LOCATION TABLE

POINTS	SOUTH ABUTMENT			NORTH ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	38559+60.52	19.58' LT.	937.85	38560+23.00	19.58' LT.	937.98
A2	38559+50.97	34.58' RT.	941.98	38560+13.45	34.58' RT.	941.52
B1	38559+17.07	19.58' LT.	955.09	38560+66.93	19.58' LT.	955.18
B2	38559+07.52	34.58' RT.	955.09	38560+57.38	34.58' RT.	955.18
W1	38559+03.17	19.58' LT.	960.48	38560+79.21	19.58' LT.	960.57
W2	38558+95.23	34.58' RT.	961.33	38560+71.28	34.58' RT.	961.50

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

NOTES:
ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
ALL DIMENSIONS ARE IN THE HORIZONTAL PLANE UNLESS NOTED OTHERWISE.

NOTES TO DESIGNERS:
BRIDGE SUPERSTRUCTURE TO BE PPC "BTB" BEAMS. SUBSTRUCTURE TO BE INTEGRAL ABUTMENTS AND FRAME PIERS.
MINIMUM HORIZONTAL CLEARANCE TO PIERS IS LESS THAN 30', THEREFORE, DESIGN PIERS FOR VEHICULAR COLLISION FORCE.
HORIZONTAL CLEARANCE TO PIER BASED ON ASSUMED CAP WIDTH OF 4'.
TL-5 BRIDGE RAILING PROPOSED.
BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.

PRELIMINARY

DESIGN FOR 10°00'00" SKEW (L.A.)

159'-0 X 45'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

41'-0, 77'-0, 41'-0 SPANS

SITUATION PLAN

STA. 38559+88.54 (℄ RAMP G) OCTOBER 2016

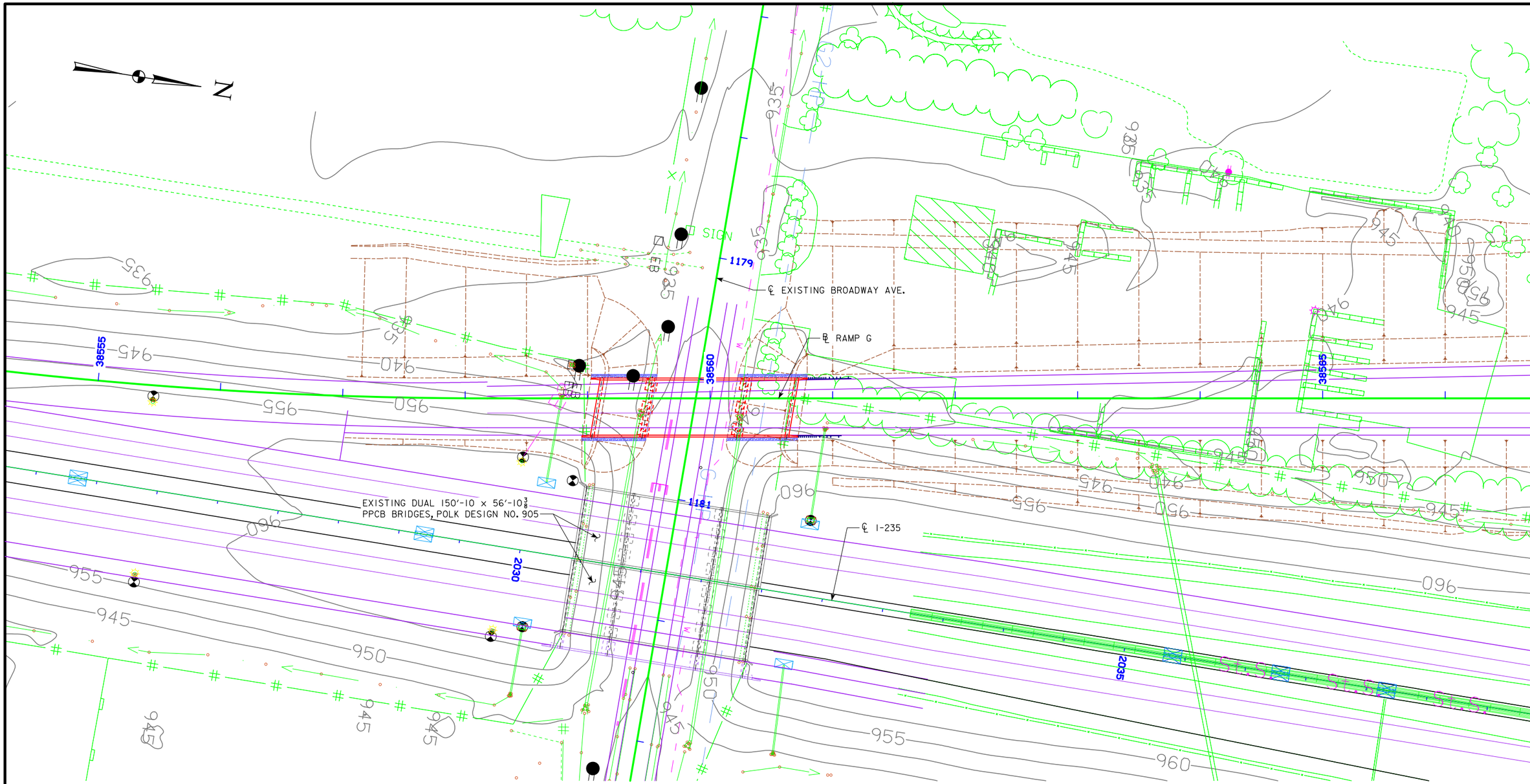
POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

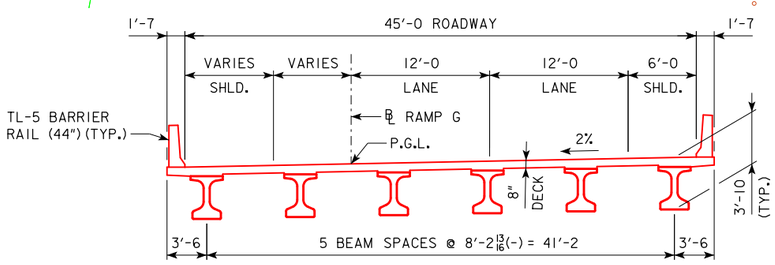
DESIGN SHEET NO. 1 OF 2 FILE NO. 31046 DESIGN NO. 2018

HDR

DESIGN TEAM HDR | POLK COUNTY | PROJECT NUMBER IM-035-3(196)87--13-77 | SHEET NUMBER V.32



SITE PLAN



TYPICAL SECTION

PRELIMINARY

DESIGN FOR 10°00'00" SKEW (L.A.)

159'-0 X 45'-0 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

41'-0, 77'-0, 41'-0 SPANS

SITUATION PLAN - SITE

STA. 38559+88.54 (℄ RAMP G) OCTOBER 2016

POLK COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

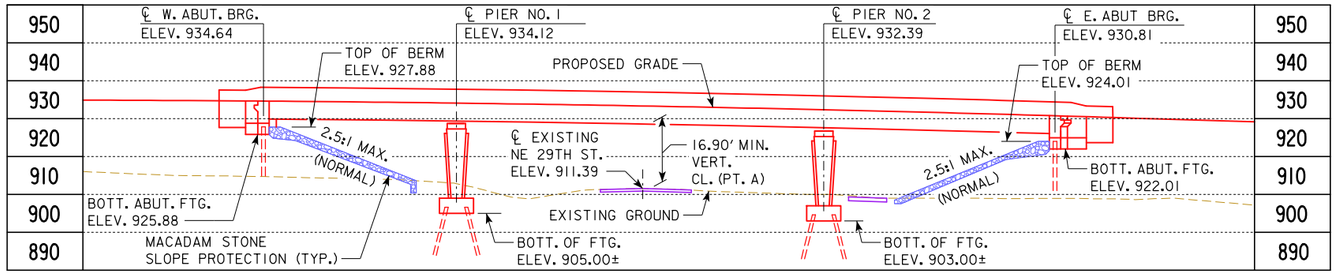
DESIGN SHEET NO. 2 OF 2 FILE NO. 31046 DESIGN NO. 2018

0 ENGLISH 80
SCALE IN FEET

HDR

DESIGN TEAM HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(196)87--13-77	SHEET NUMBER V.33

BENCH MARK NO. 26: NORTHING: 604283.735, EASTING: 1624489.540, ELEV. 886.700
FENO. MONUMENT, W/CAP STAMPED "026", 6" DEEP, IN THE NORTH ROW/SHOULDER OF NE 54TH AVE., 9' NORTH OF EDGE AC SLAB; 128' FROM P.I. OF NE 54TH AVE. WITH OF RR CROSSING.



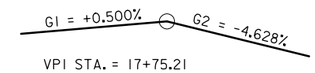
LONGITUDINAL SECTION ALONG ℄ RAMP G

LOCATION

RAMP G OVER
EXISTING NE 29TH ST.
T-79N R-23W
SECTION 17 / SECTION 18
DELAWARE TOWNSHIP
POLK COUNTY
FHWA NO. 700900
BRIDGE MAINT. NO. UNKNOWN
LATITUDE: 41.654763°
LONGITUDE: -93.561053°

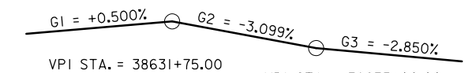
TRAFFIC ESTIMATE

2012 AADT	N/A	V.P.D.
2050 AADT	22400	V.P.D.
2050 DHV	2620	V.P.H.
TRUCKS	18	%
TOTAL DESIGN ESALs	-	



VPI STA. = 17+75.21
VPI ELEV. = 911.17
VC = 100'

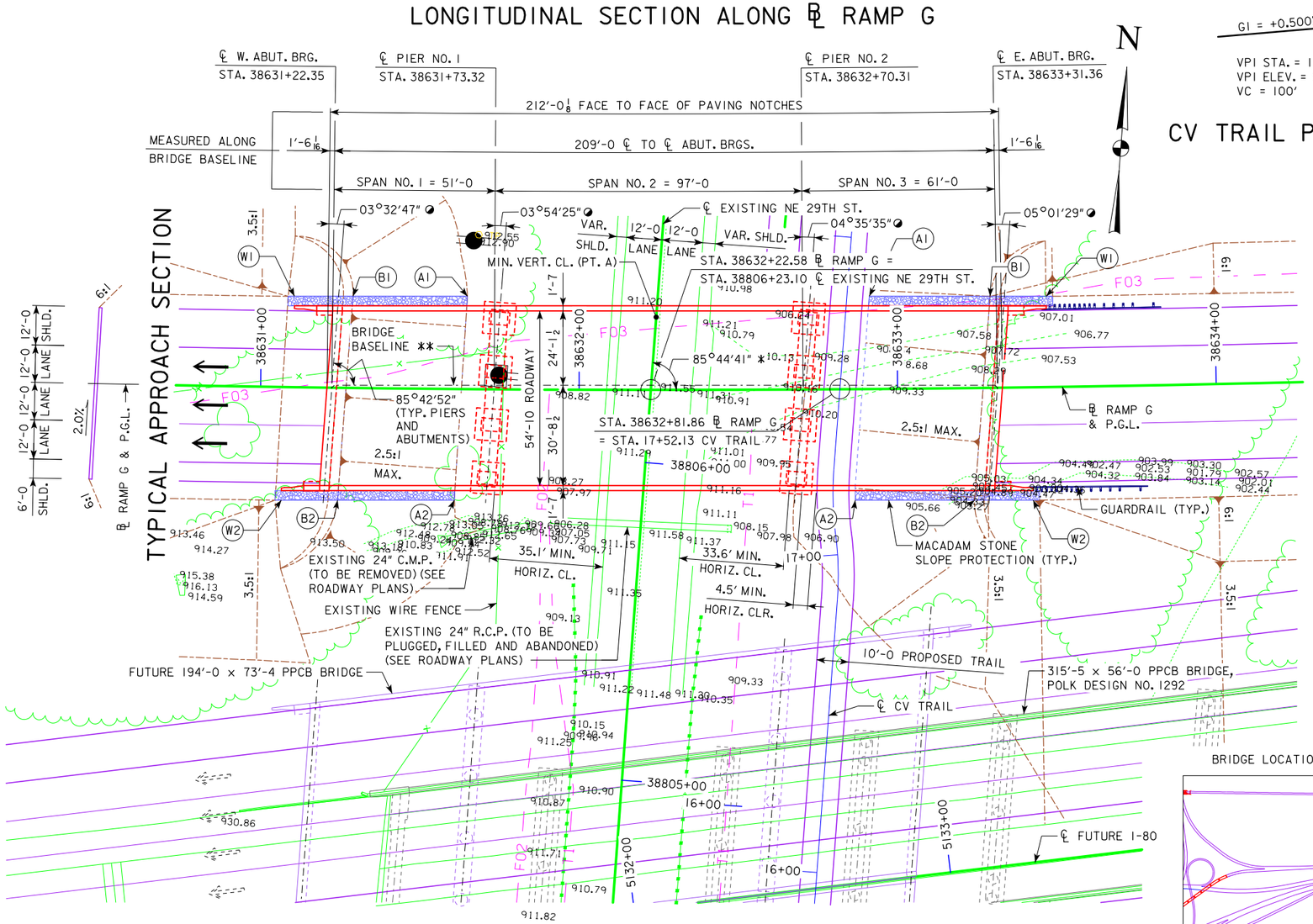
CV TRAIL PROPOSED GRADE



VPI STA. = 38631+75.00
VPI ELEV. = 935.67
VC = 350'

VPI STA. = 38635+00.00
VPI ELEV. = 925.60
VC = 300'

RAMP G PROPOSED GRADE



℄ RAMP G CURVE DATA

PI STA. 38634+27.39
Δ = 4°57'40.47" (LT.)
T = 350.91'
L = 701.38'
E = 7.60'
R = 8100.00'
PC STA. 38630+76.49
PT STA. 38637+77.87

CV TRAIL CURVE DATA

PI STA. 16+96.28	PI STA. 17+16.67
Δ = 11°40'45.25" (LT.)	Δ = 11°40'45.25" (RT.)
T = 10.23'	T = 10.23'
L = 20.38'	L = 20.38'
E = 0.52'	E = 0.52'
R = 100.00'	R = 100.00'
PC STA. 16+86.06	PC STA. 17+06.44
PT STA. 17+06.44	PT STA. 17+26.82

MINIMUM VERTICAL CLEARANCE (PT. A)

OVERHEAD STATION = 38632+24.28, 22.88' LT. (℄ RAMP G)
OVERHEAD ELEVATION = 932.87
DEPTH OF SUPERSTRUCTURE = 4.58'
UNDERPASS STATION = 38806+44.80, 0.00' (℄ EXISTING NE 29TH ST.)
UNDERPASS ELEVATION = 911.39 (U.A.C.)
PROVIDED MIN. VERTICAL CLEARANCE = 16.90'

NOTES:
ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
ALL DIMENSIONS ARE IN THE HORIZONTAL PLANE UNLESS NOTED OTHERWISE.
* MEASURED TO LOCAL TANGENT OF ℄ RAMP G.
◕ MEASURED PERPENDICULAR TO LOCAL TANGENT OF ℄ RAMP G.
FINAL ALIGNMENT SHOWN FOR CV TRAIL. FOR TEMPORARY TRAIL ALIGNMENT REFER TO ROAD PLANS.

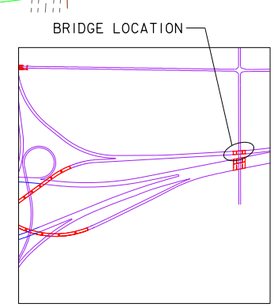
NOTES TO DESIGNERS:
BRIDGE SUPERSTRUCTURE TO BE PPCB "BTC" BEAMS. SUBSTRUCTURE TO BE INTEGRAL ABUTMENTS AND FRAME PIERS.
** BRIDGE BASELINE IS A CHORD LINE CONSTRUCTED FROM POINTS WHERE CENTERLINES OF BRIDGE ABUTMENT BEARINGS INTERSECT ℄ RAMP G.
MINIMUM HORIZONTAL CLEARANCE TO PIERS EXCEEDS 30', THEREFORE, PIERS ARE NOT REQUIRED TO BE DESIGNED FOR VEHICULAR COLLISION FORCE.
HORIZONTAL CLEARANCE TO PIER BASED ON ASSUMED CAP WIDTH OF 4'.
TL-5 BRIDGE RAILING PROPOSED.
BRIDGE AESTHETICS TO BE INCORPORATED DURING FINAL DESIGN.

UTILITIES LEGEND:

—T1— TELEPHONE - CENTURY LINK
—F02— FIBER OPTIC - CENTURY LINK
—F03— FIBER OPTIC - ICN/IDOT (WINDSTREAM)
POWER POLE - MIDAMERICAN

SITUATION PLAN

0 ENGLISH 40
SCALE IN FEET



INTERCHANGE KEY PLAN

PRELIMINARY

DESIGN FOR VARIABLE SKEW

209'-0 X 54'-10 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

51'-0, 97'-0, 61'-0 SPANS

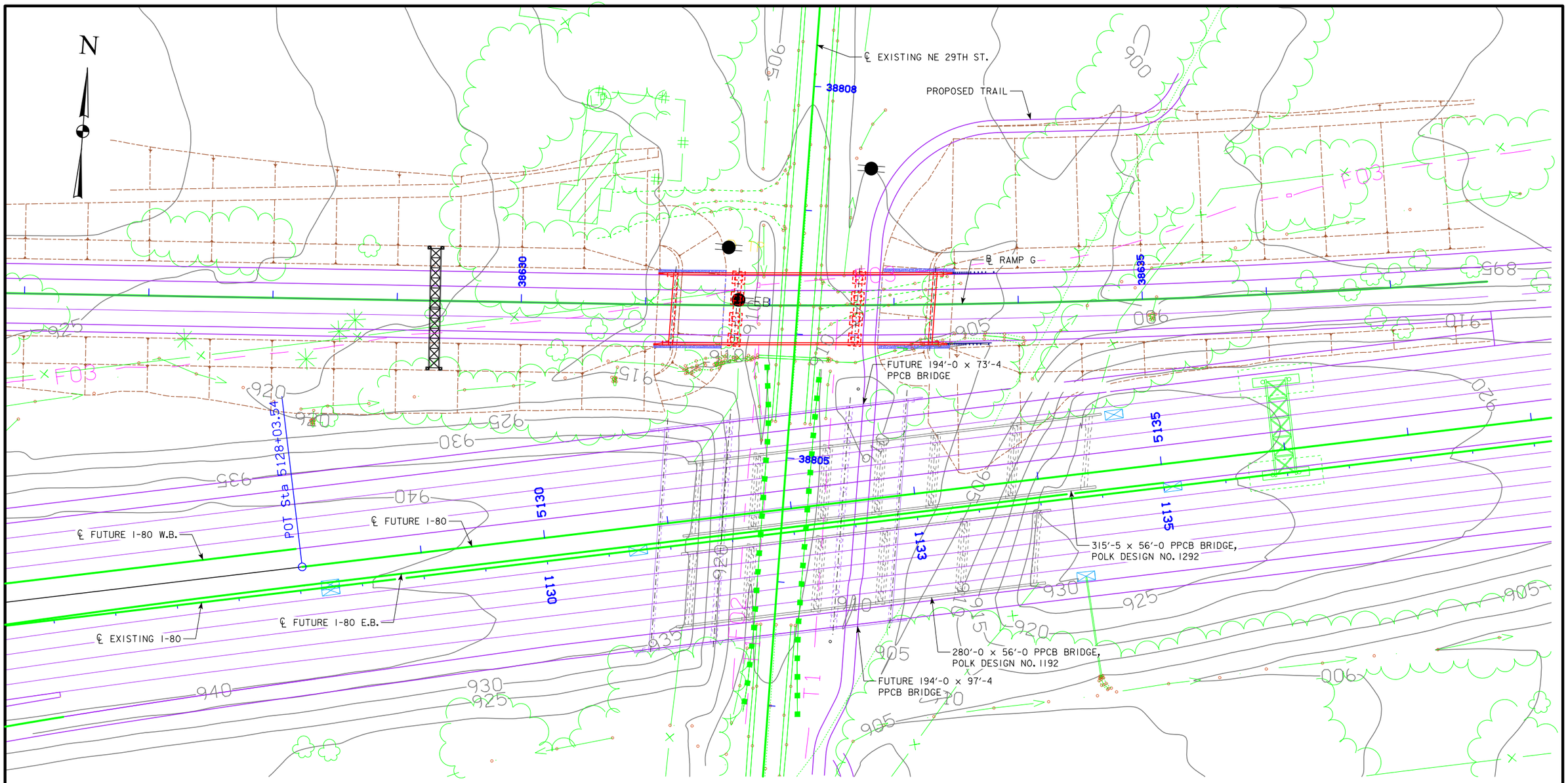
SITUATION PLAN

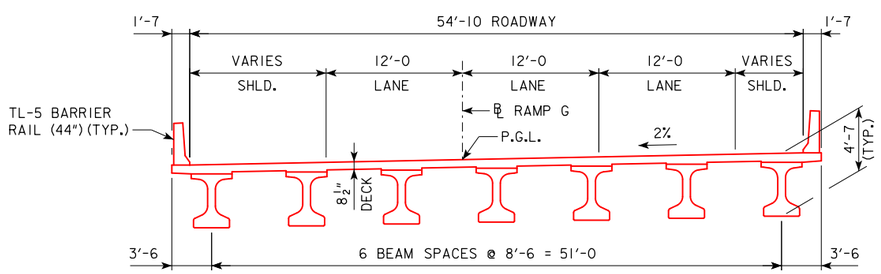
STA. 38632+26.85 (℄ RAMP G) APRIL 2021

POLK COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 1 OF 2 FILE NO. 31046 DESIGN NO. 2218





TYPICAL SECTION

SITE PLAN

BERM SLOPE LOCATION TABLE

POINTS	WEST ABUTMENT			EAST ABUTMENT		
	STATION	OFFSET	ELEV.	STATION	OFFSET	ELEV.
A1	38631+64.72	29.14' LT.	913.75	38632+91.30	29.13' LT.	910.25
A2	38631+61.08	34.89' RT.	913.47	38632+86.45	34.84' RT.	910.75
B1	38631+28.67	28.79' LT.	927.88	38633+29.36	28.74' LT.	924.01
B2	38631+24.66	35.28' RT.	927.88	38633+23.78	35.20' RT.	924.01
W1	38631+10.25	28.55' LT.	934.12	38633+47.09	28.49' LT.	929.74
W2	38631+07.07	35.51' RT.	935.27	38633+42.05	35.44' RT.	931.02

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE

PRELIMINARY

0 ENGLISH 80
SCALE IN FEET

DESIGN FOR VARIABLE SKEW

209'-0 X 54'-10 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

51'-0, 97'-0, 61'-0 SPANS

SITUATION PLAN - SITE

STA. 38632+26.85 (℄ RAMP G) APRIL 2021

POLK COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 2 OF 2 FILE NO. 31046 DESIGN NO. 2218

DESIGN TEAM HDR | POLK COUNTY | PROJECT NUMBER IM-080-4(70)139--13-77 | SHEET NUMBER V.35

4/8/2021 3:51:05 PM ESORENS pw:\\pwhdruscen01:HDR_US_Central_01\Documents\3047\10196490\6.0_CAD_BIM\6.2_WIP\TS&L\2218 Updated TS&L\77035194.str TSL_77_2218_02 11x17c_pdf.pltcfg

LINE STYLE LEGEND OF CROSS SECTION SHEETS (ROAD)

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

LINE STYLE LEGEND OF CROSS SECTION SHEETS (SOILS)

- TS — Topsoil (Class 10)
- SLOPE DRESSING — Slope Dressing Only
- CL 10 — Class 10 Materials
- SEL LO — Select Loams And Clay-Loams
- SEL SA — Select Sand
- UNS A — Unsuitable Type A Disposal
- UNS B — Unsuitable Type B Disposal
- UNS C — Unsuitable Type C Disposal
- SHALE — Shale
- WASTE — Waste
- B&W LS — Broken and Weathered Rock
- ROCK — Solid Rock
- BLDRS — Boulders

Note: All layer lines and descriptions identify layers above the line.

Note: Vertical or near vertical lines connecting soil layers at edges of cross sections are only for the purpose of calculating template quantities and do not depict soil stratification.

SYMBOL LEGEND OF CROSS SECTION SHEETS

Existing ROW — Existing Right-of-Way Limit

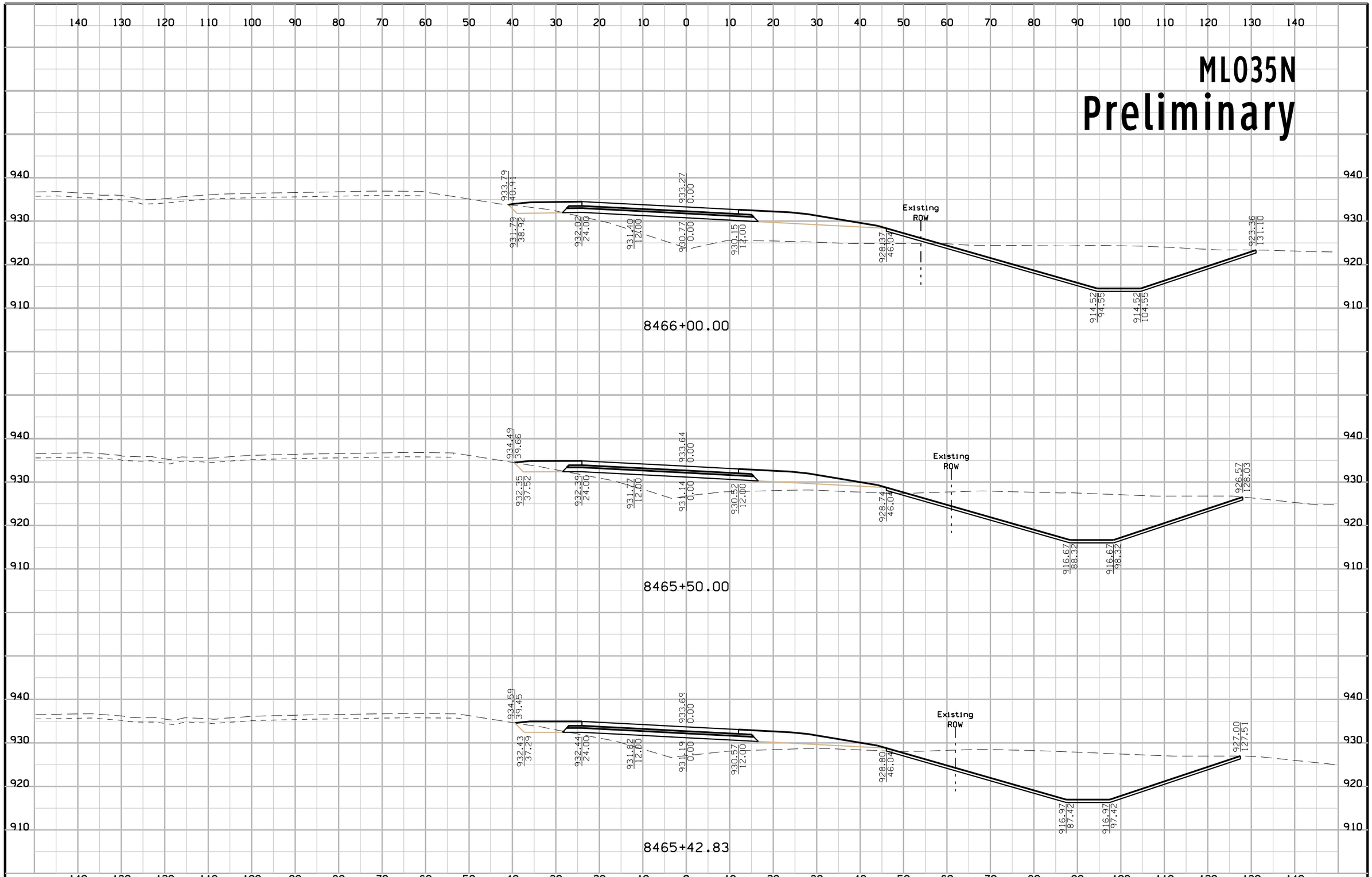
Proposed ROW — Proposed Right-of-Way Limit

Temporary ROW — Temporary Right-of-Way Limit

CROSS SECTION LEGEND AND SYMBOL INFORMATION SHEET

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

ML035N
Preliminary



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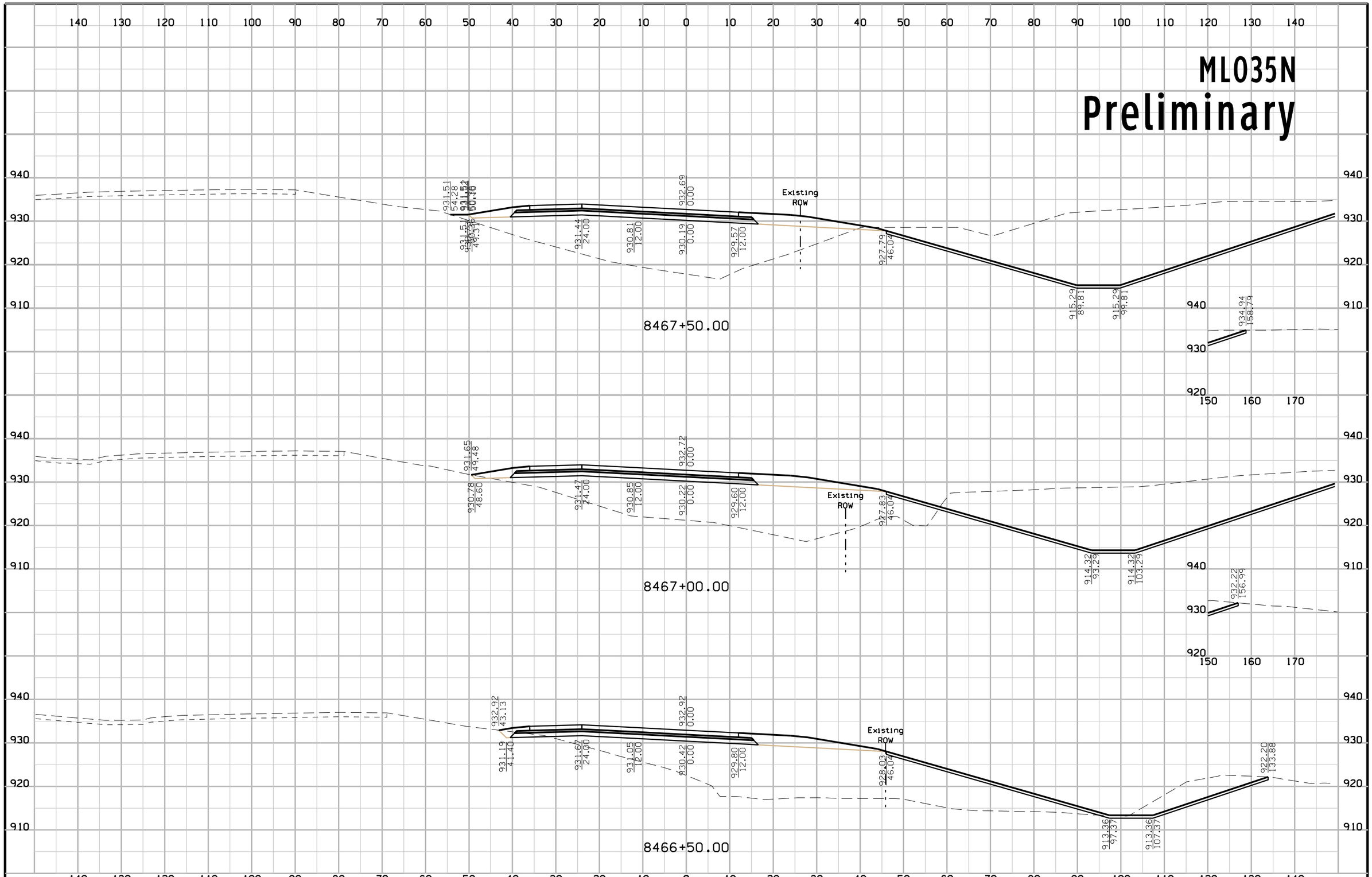
ML035N
Preliminary



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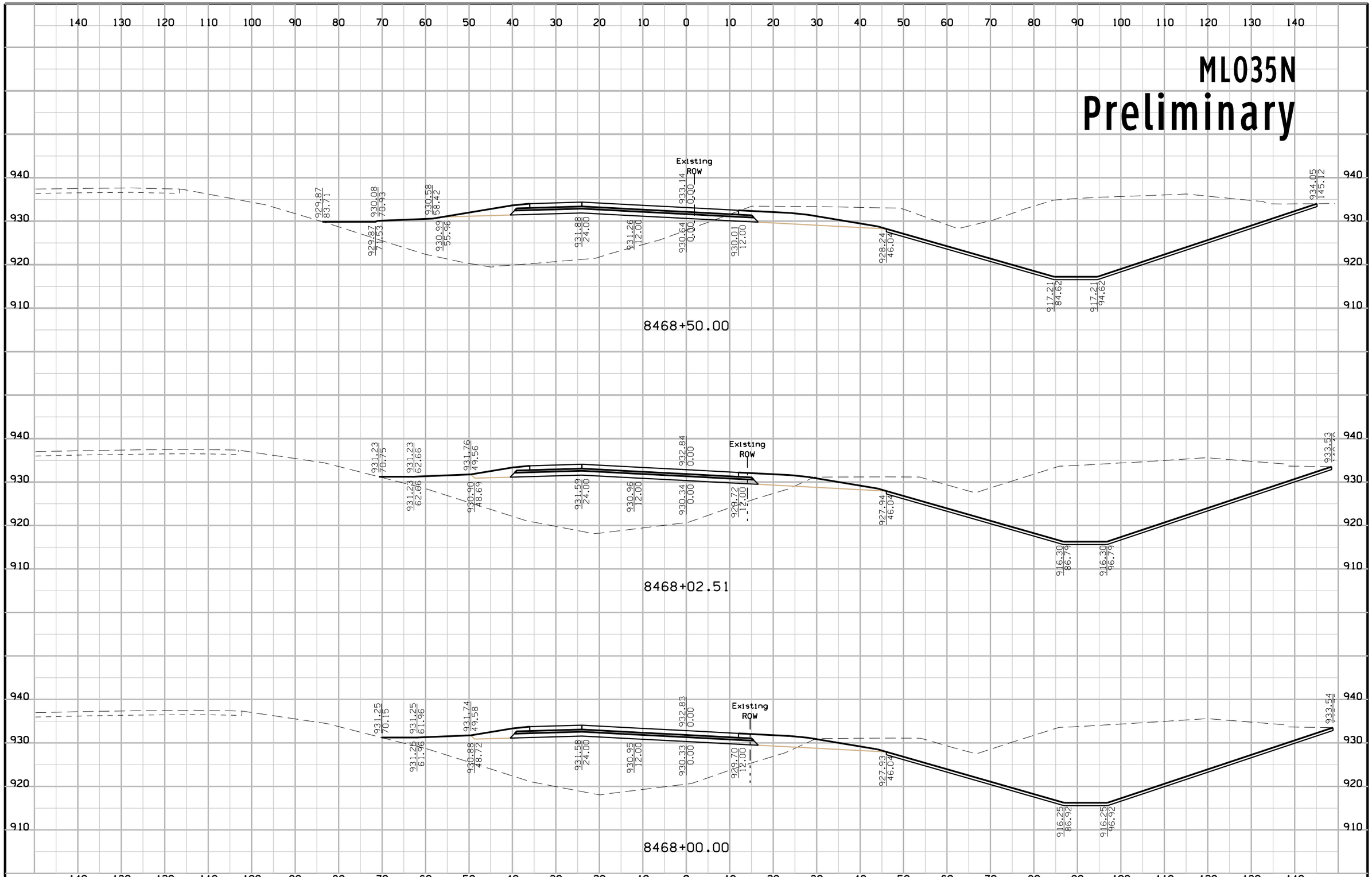
ML035N
Preliminary



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ML035N
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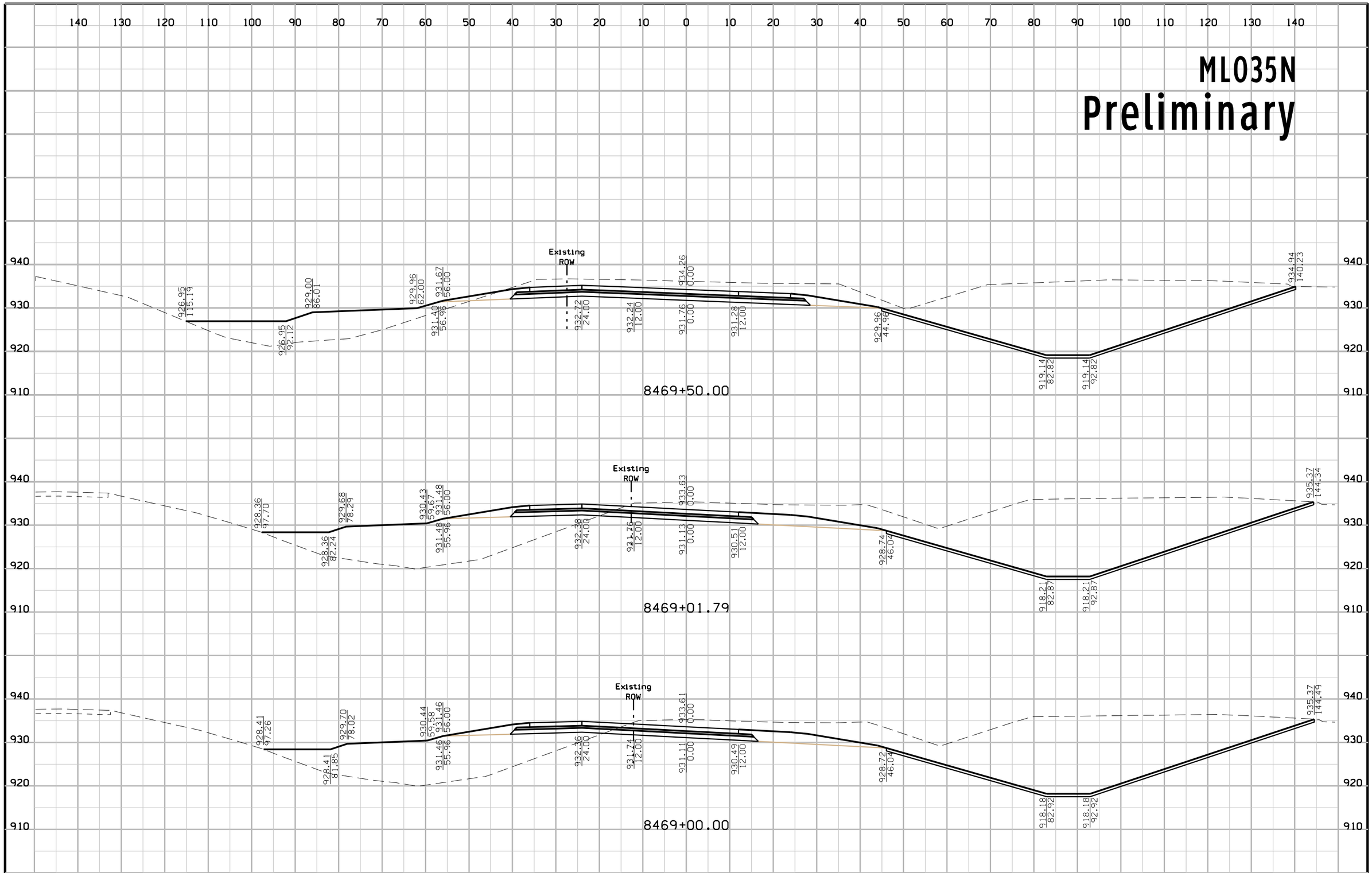

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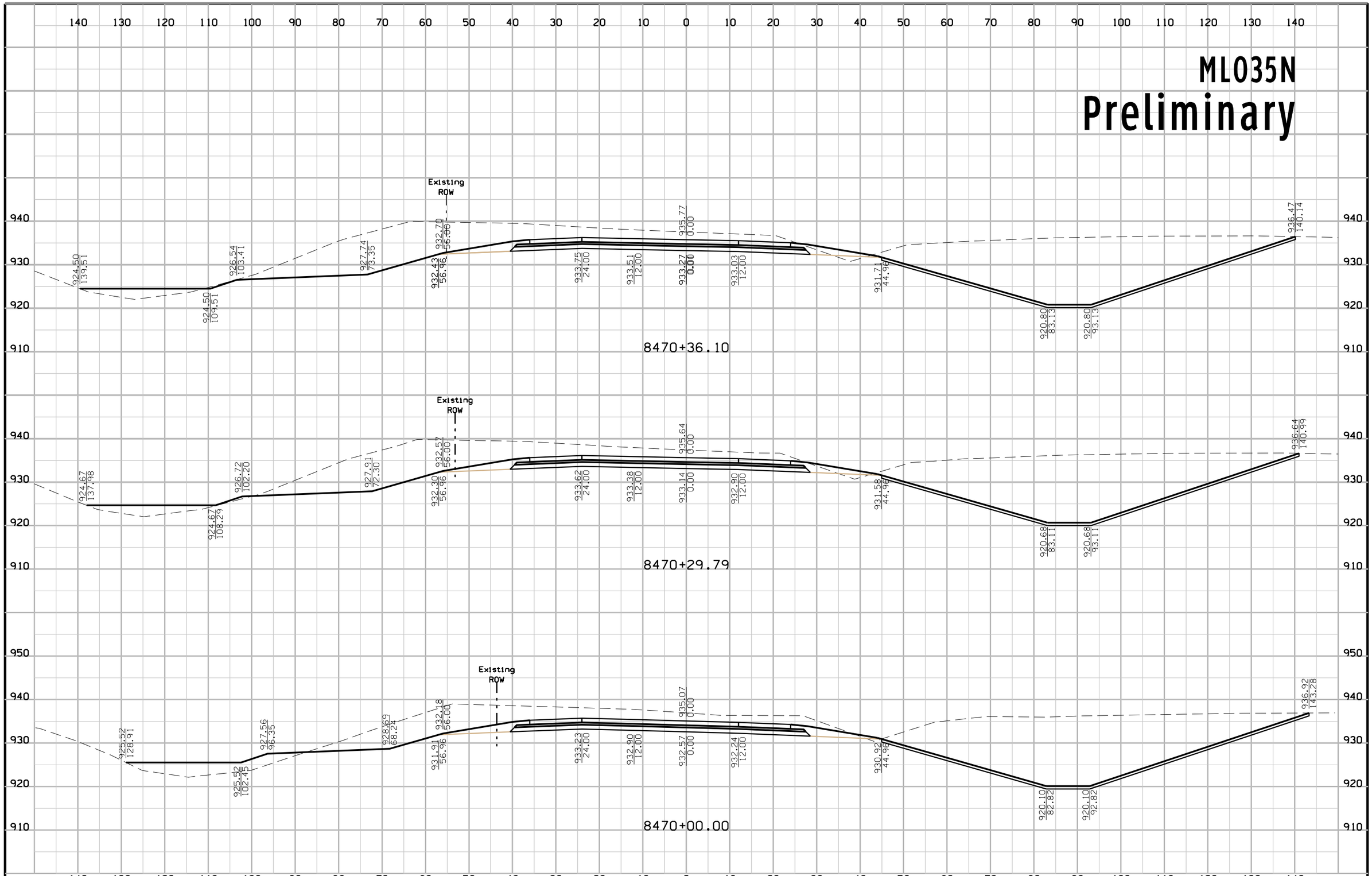
ML035N
Preliminary



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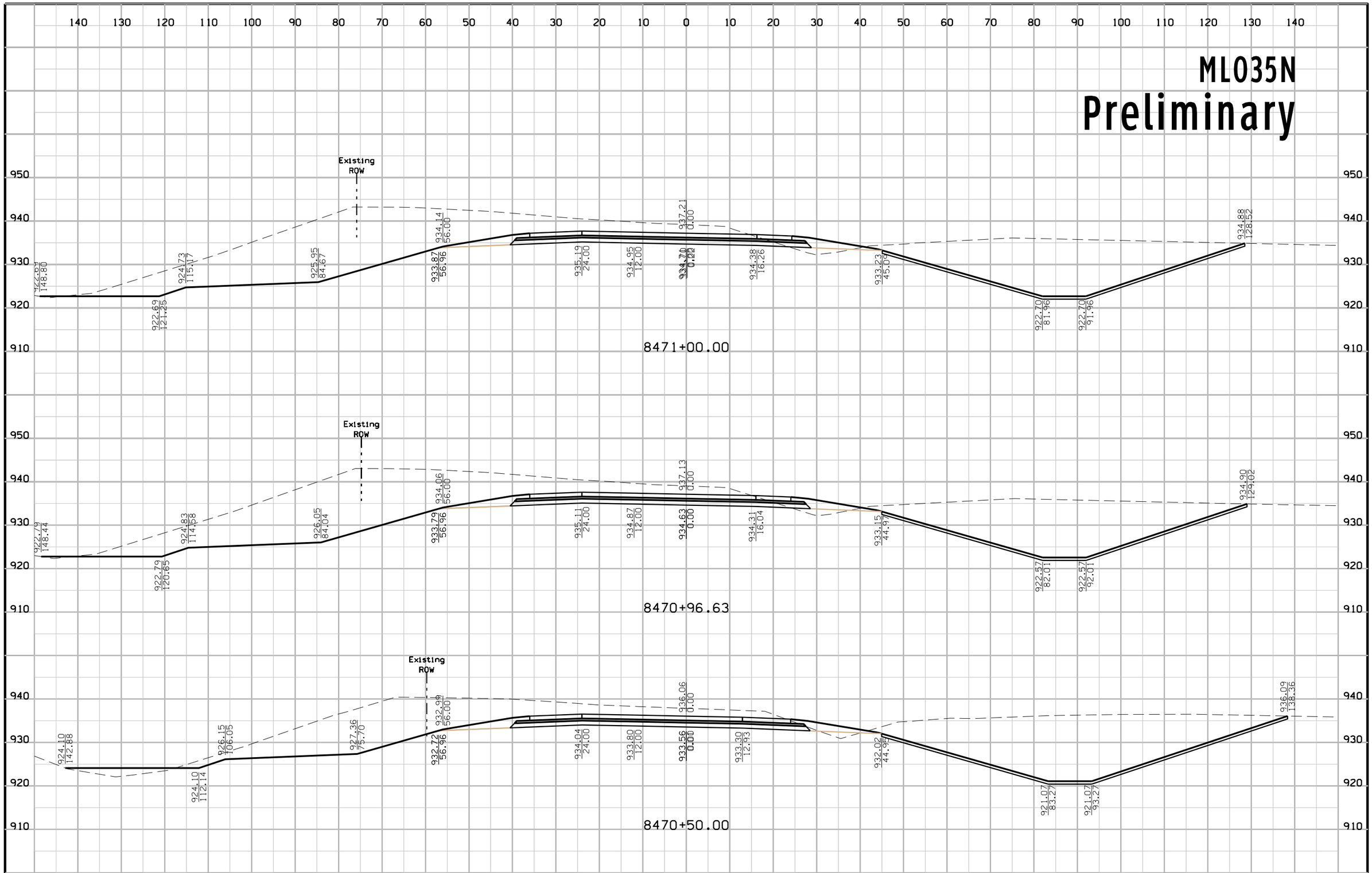
ML035N
Preliminary



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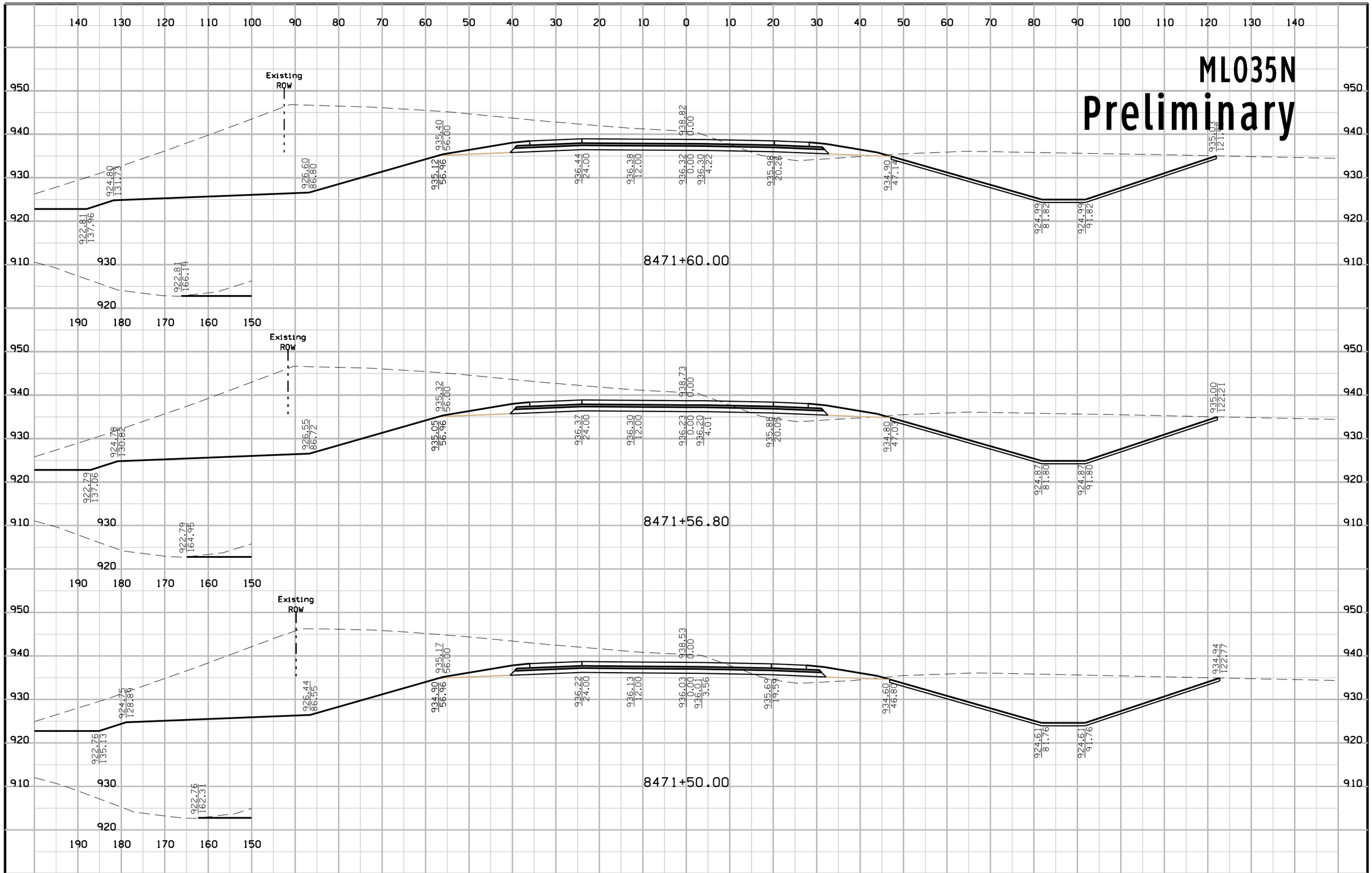
ML035N
Preliminary



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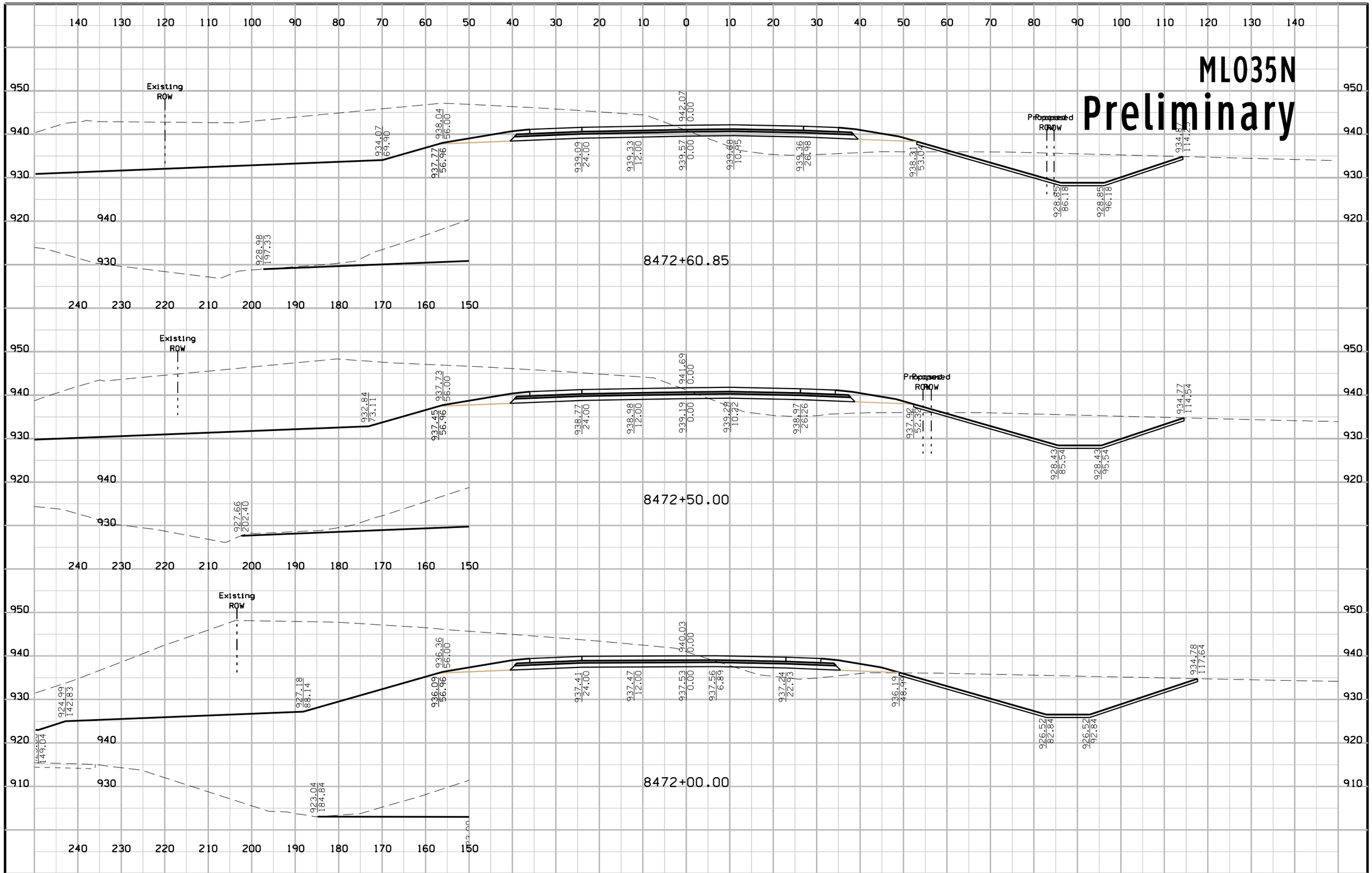

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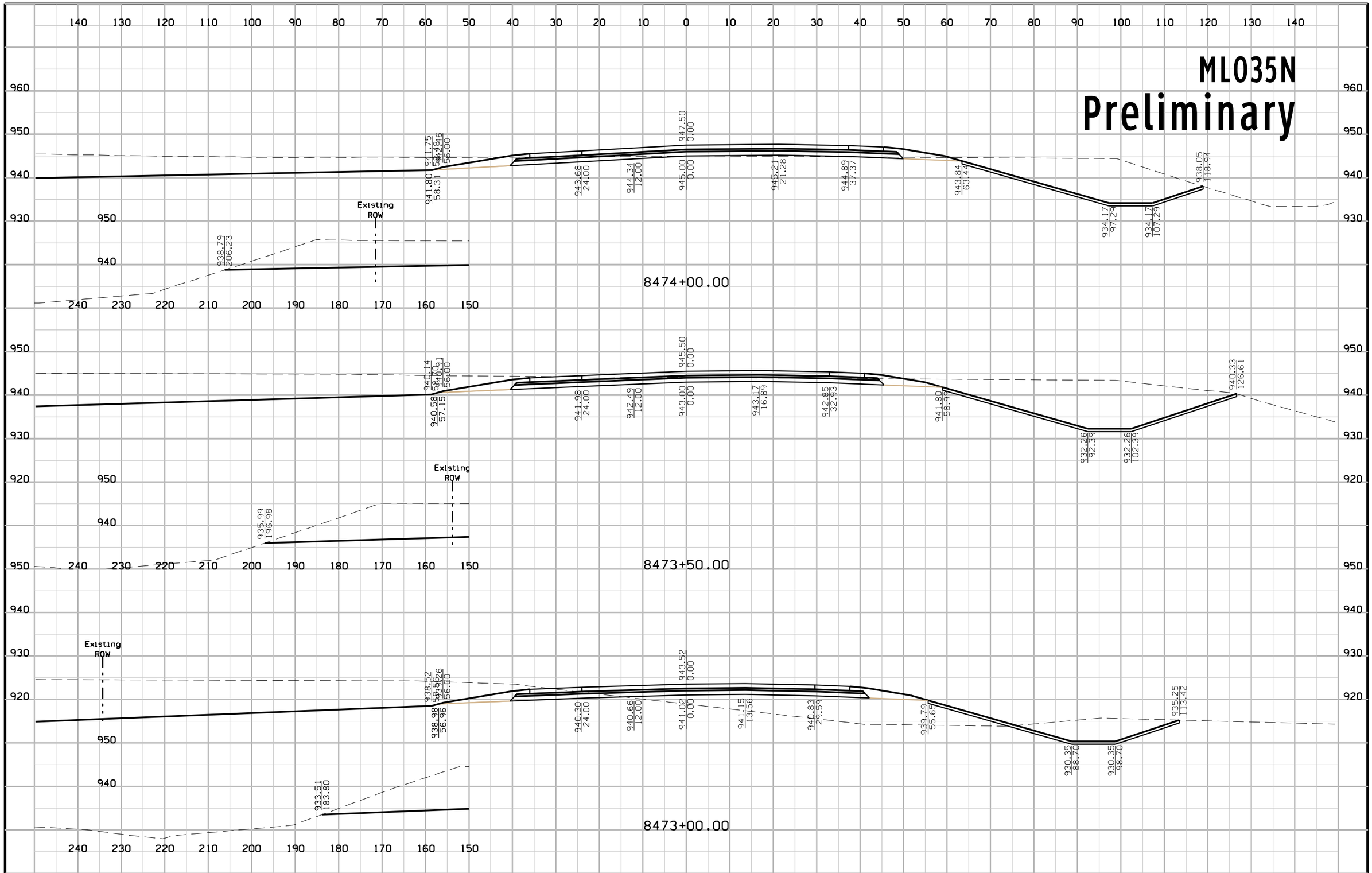

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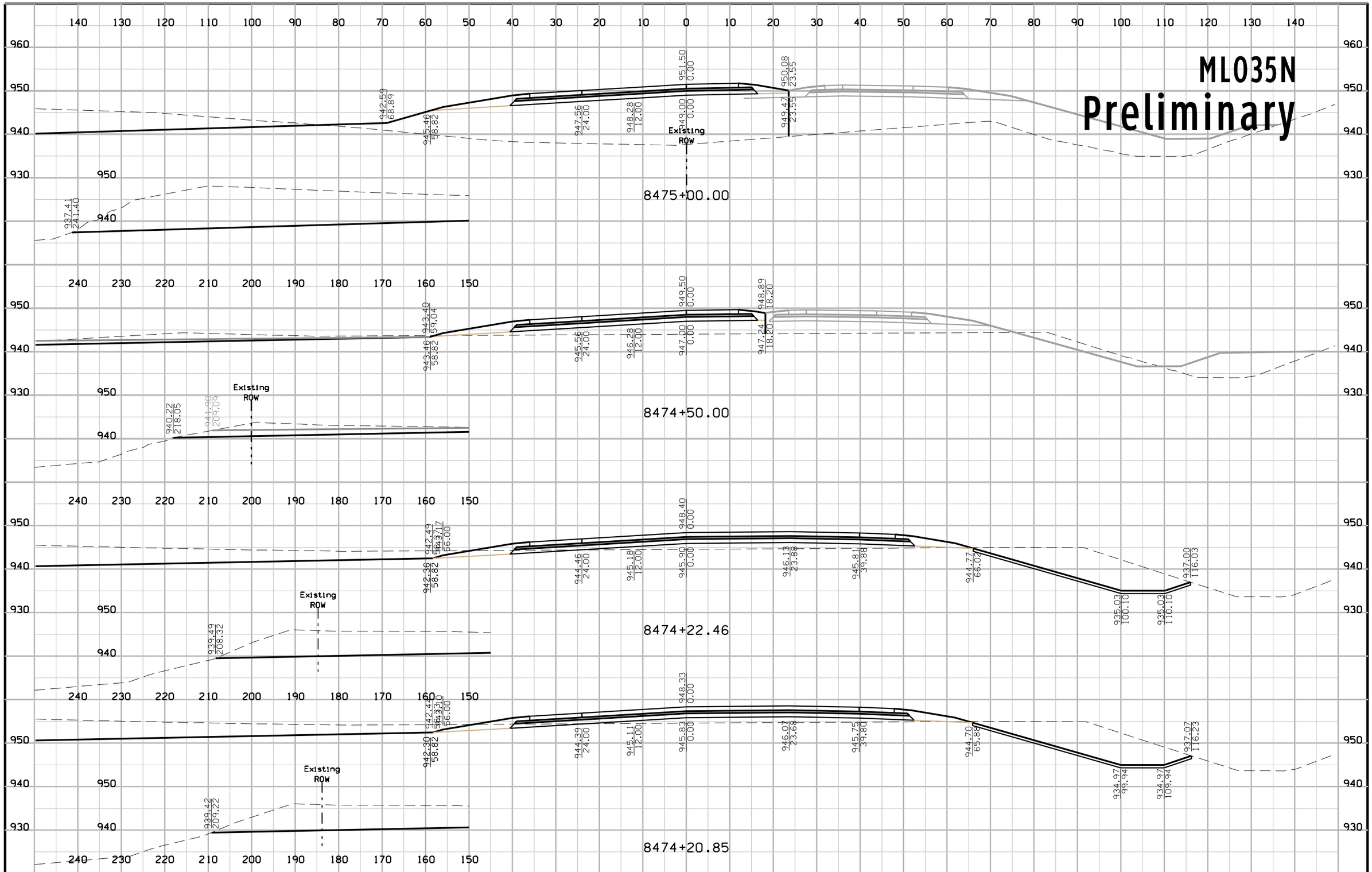

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.11

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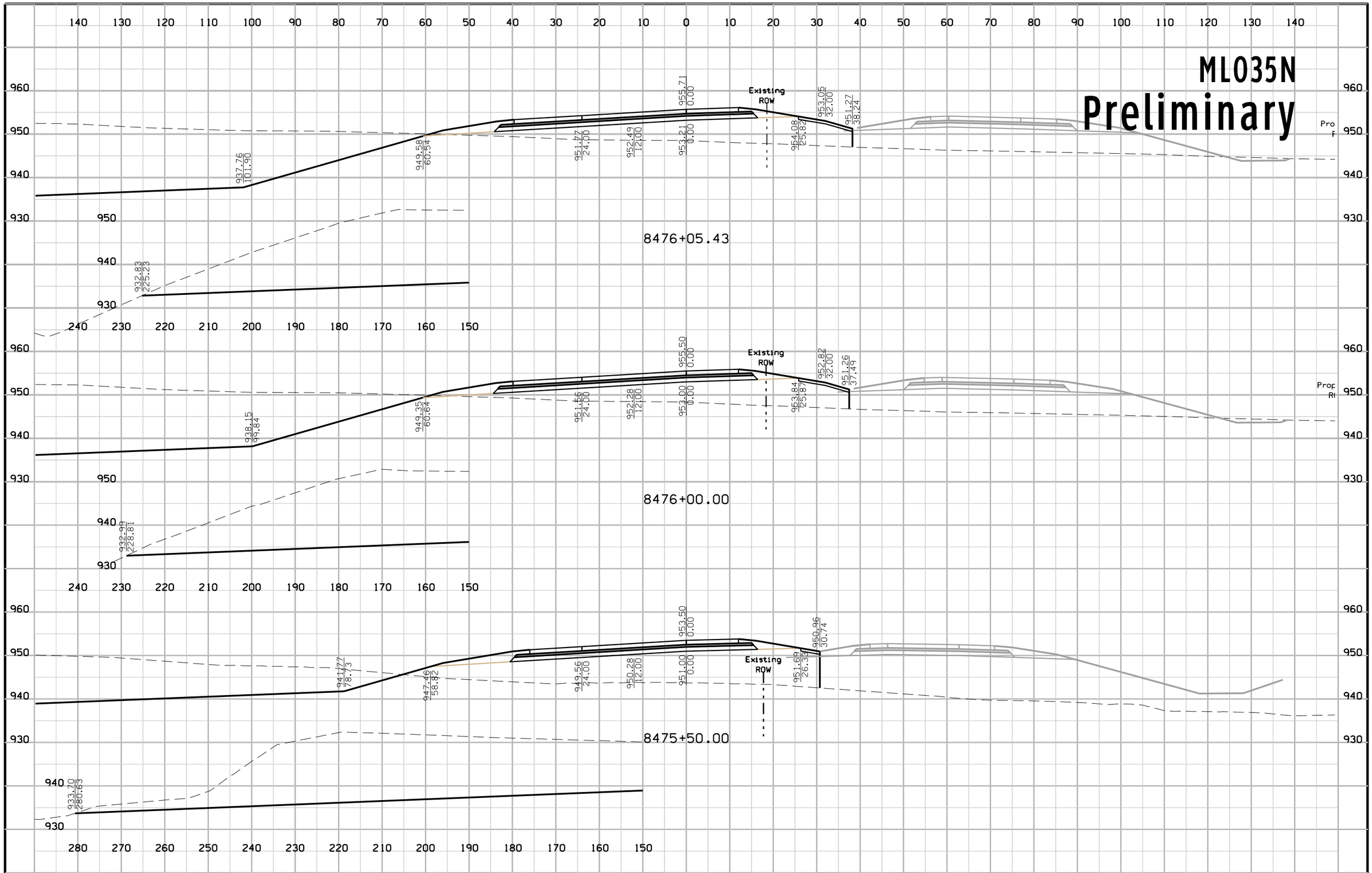

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.12

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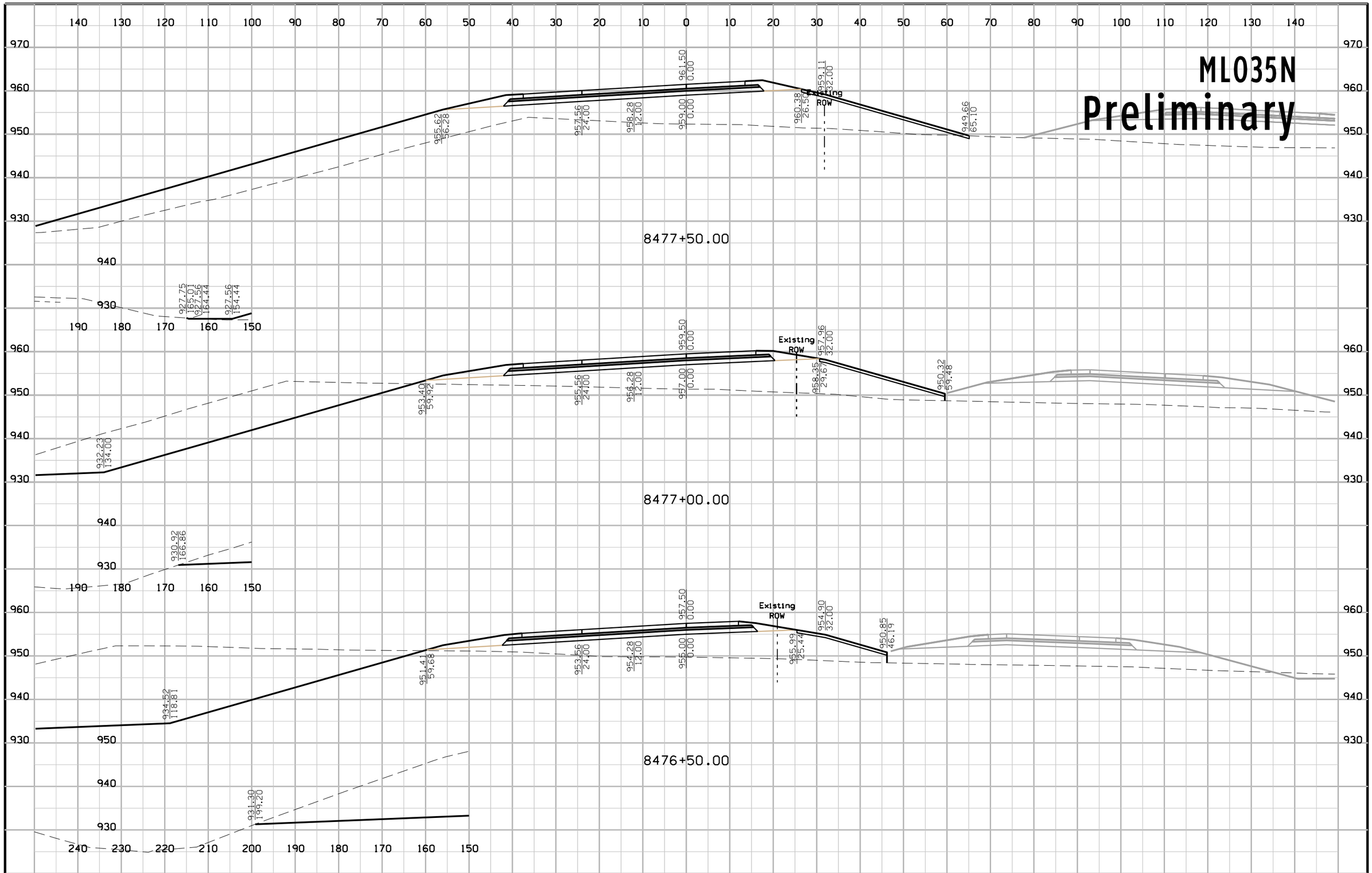

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.13

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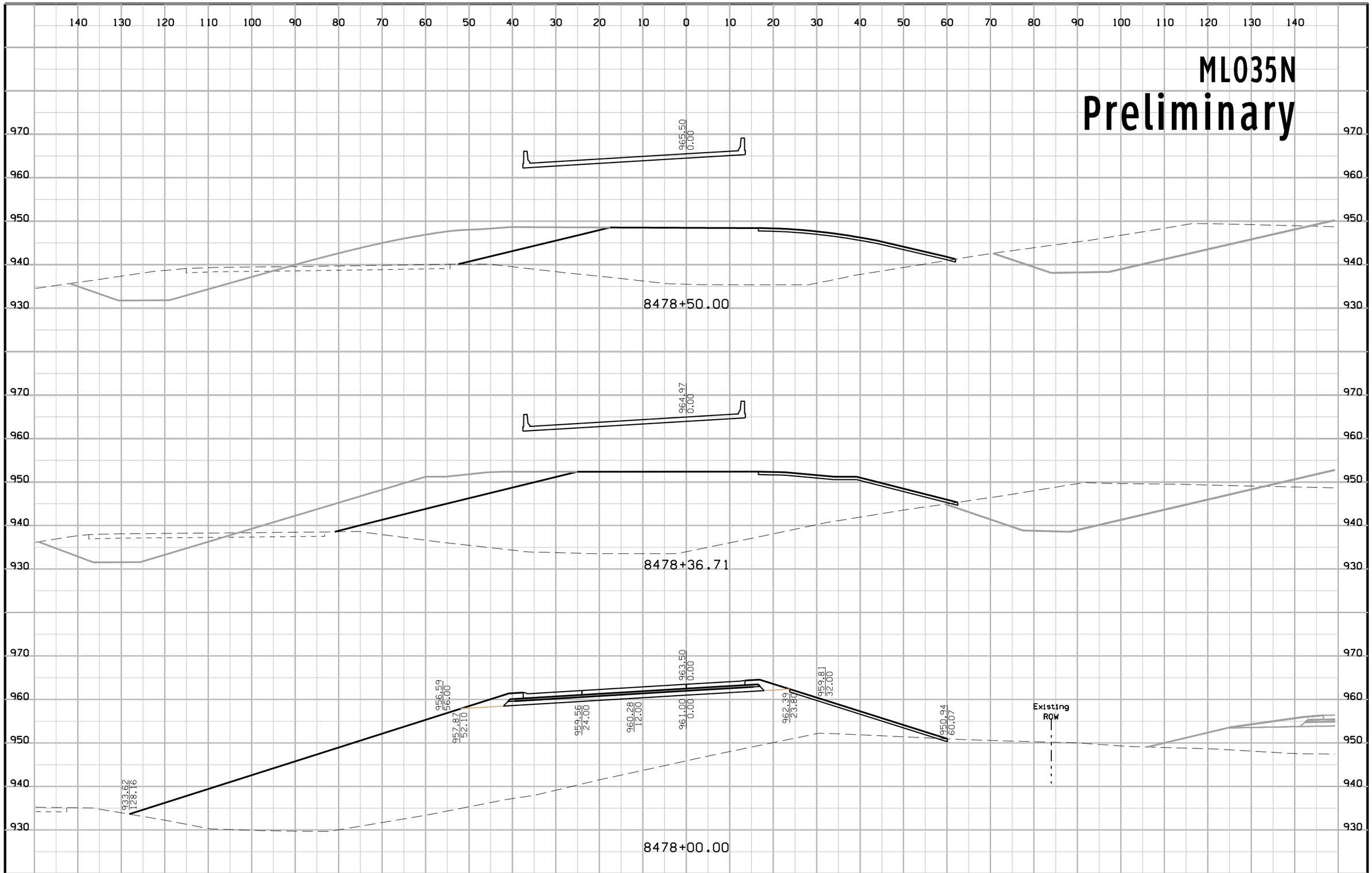

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.14

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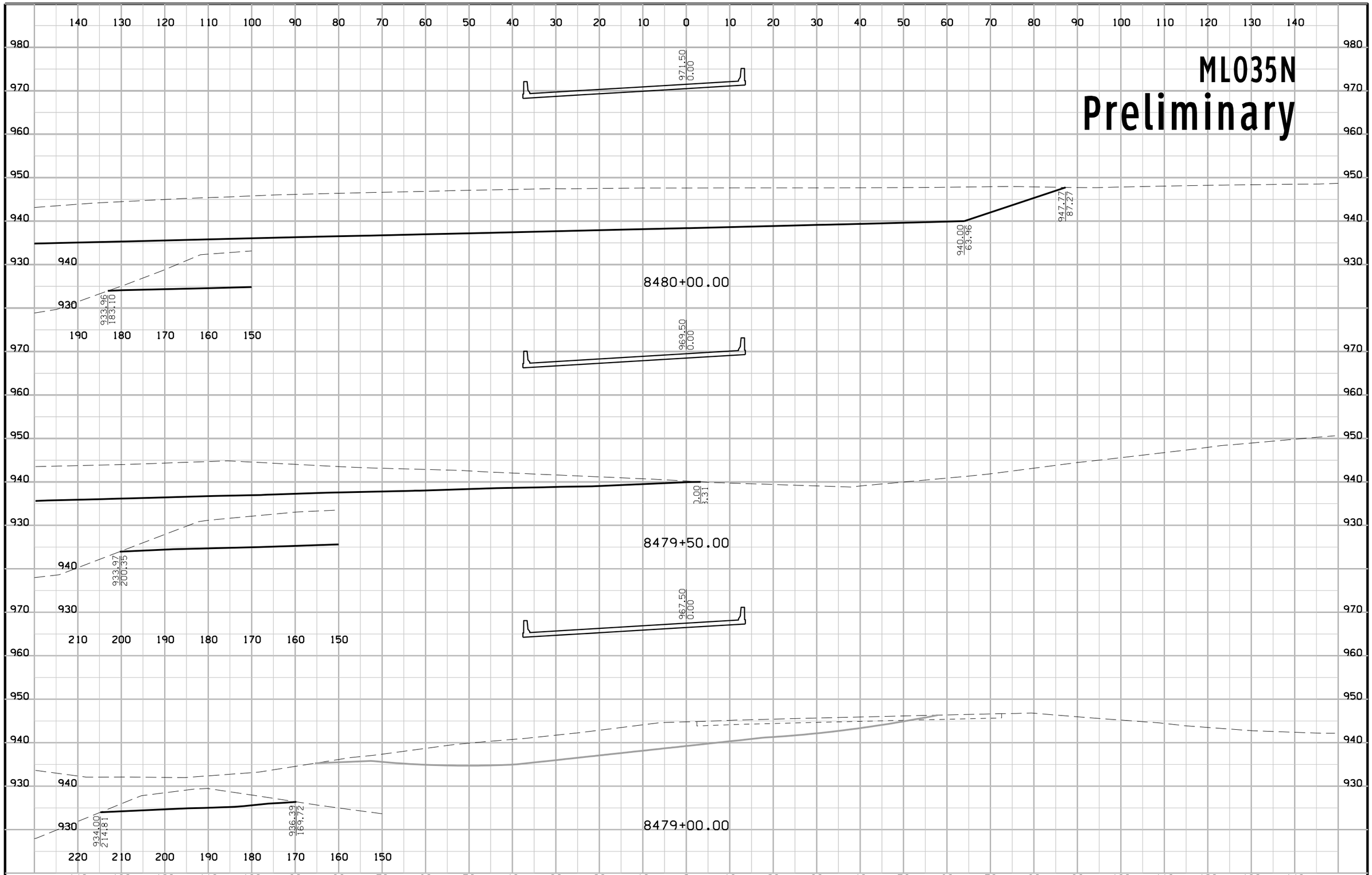
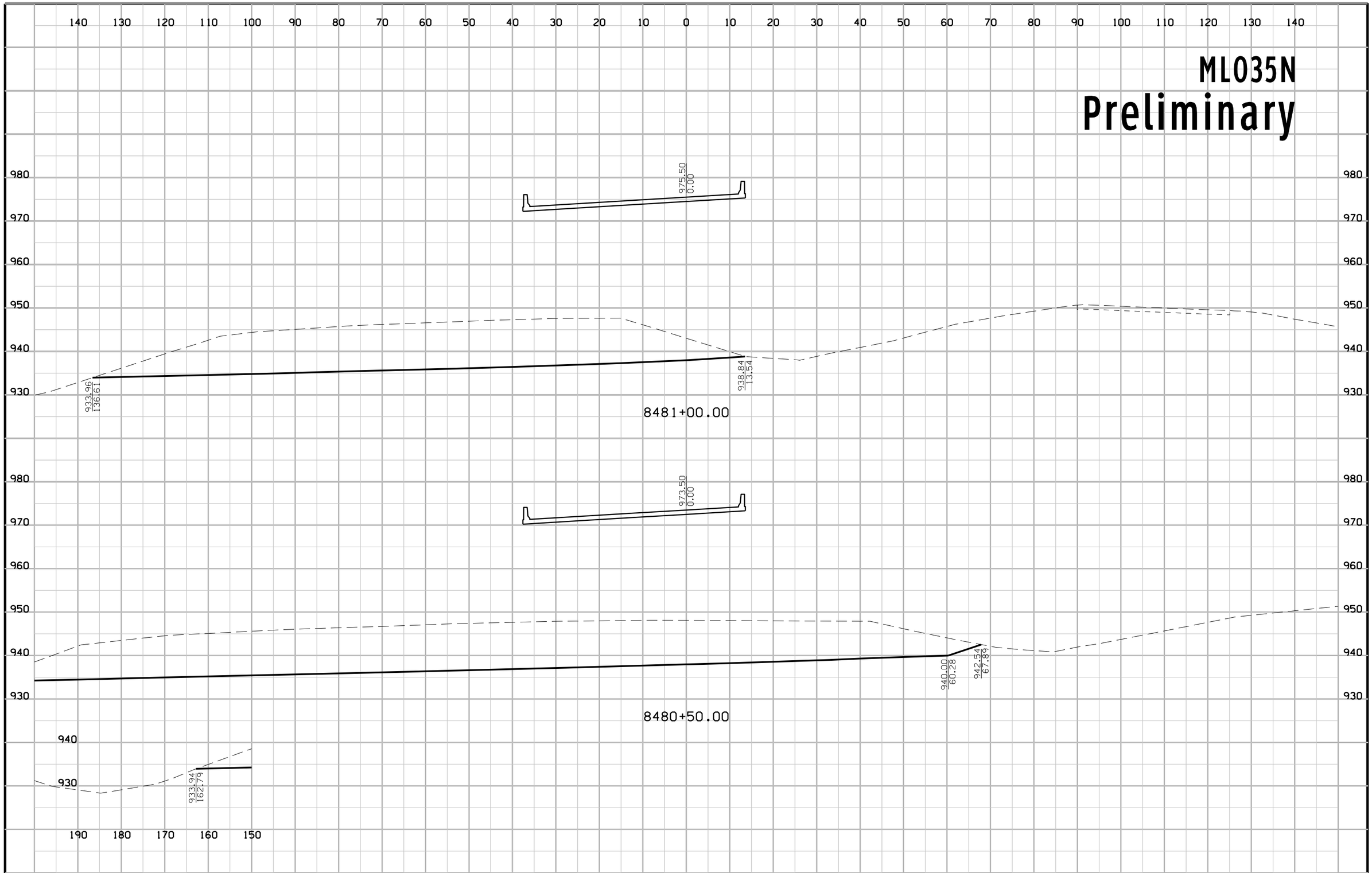


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.15

8:23:44 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

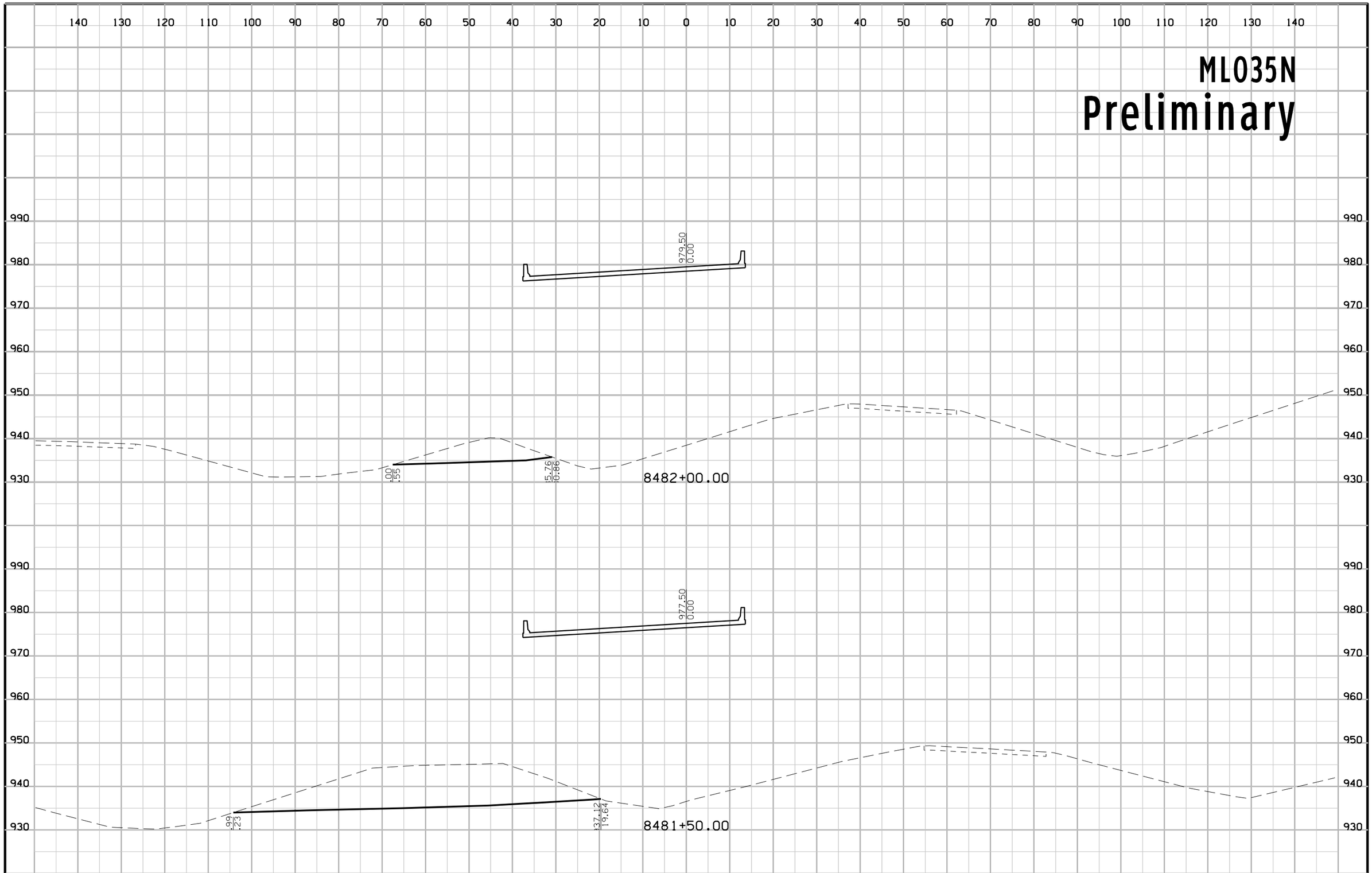
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.16

8:23:45 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

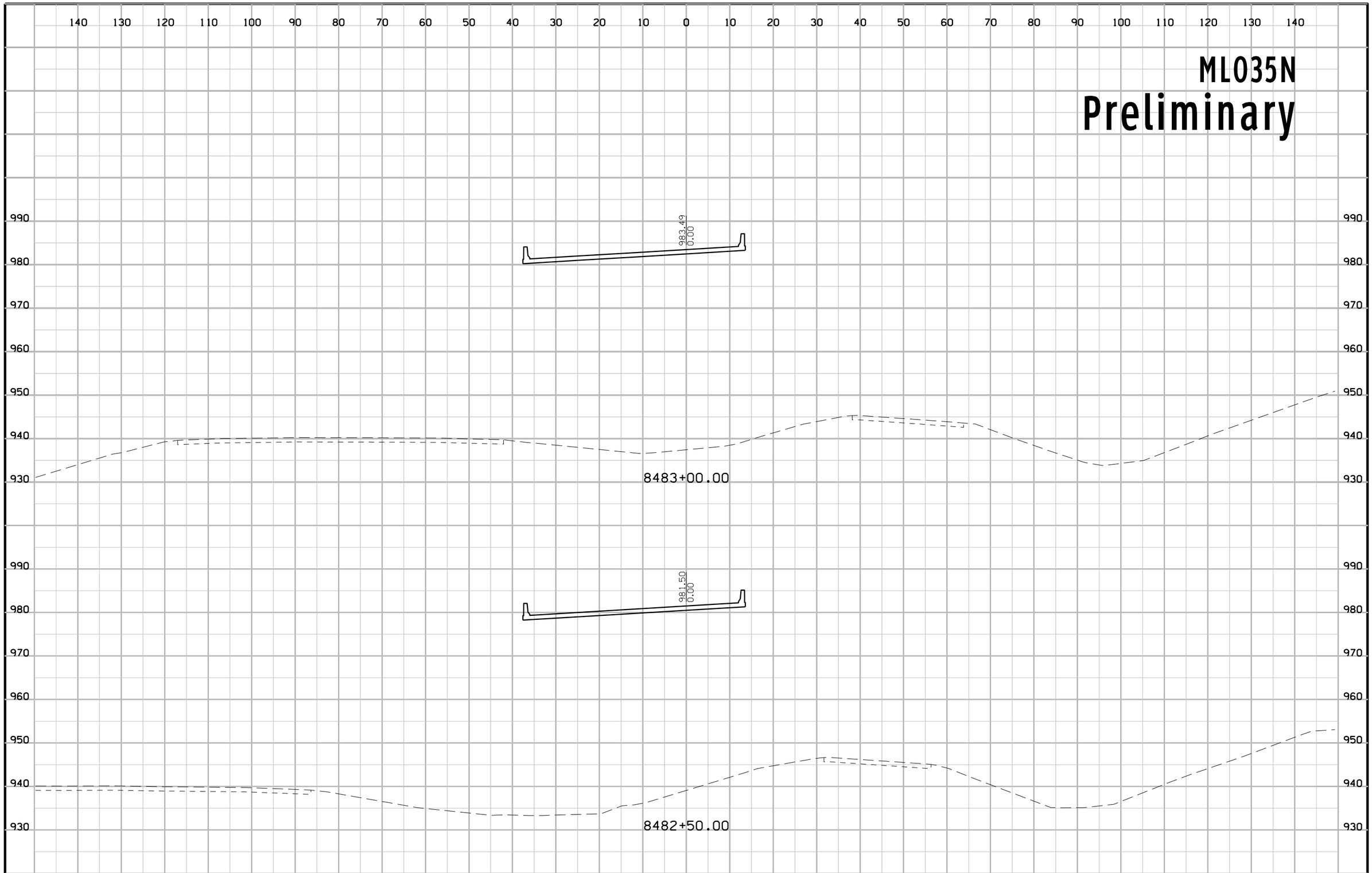
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.17

8:23:47 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

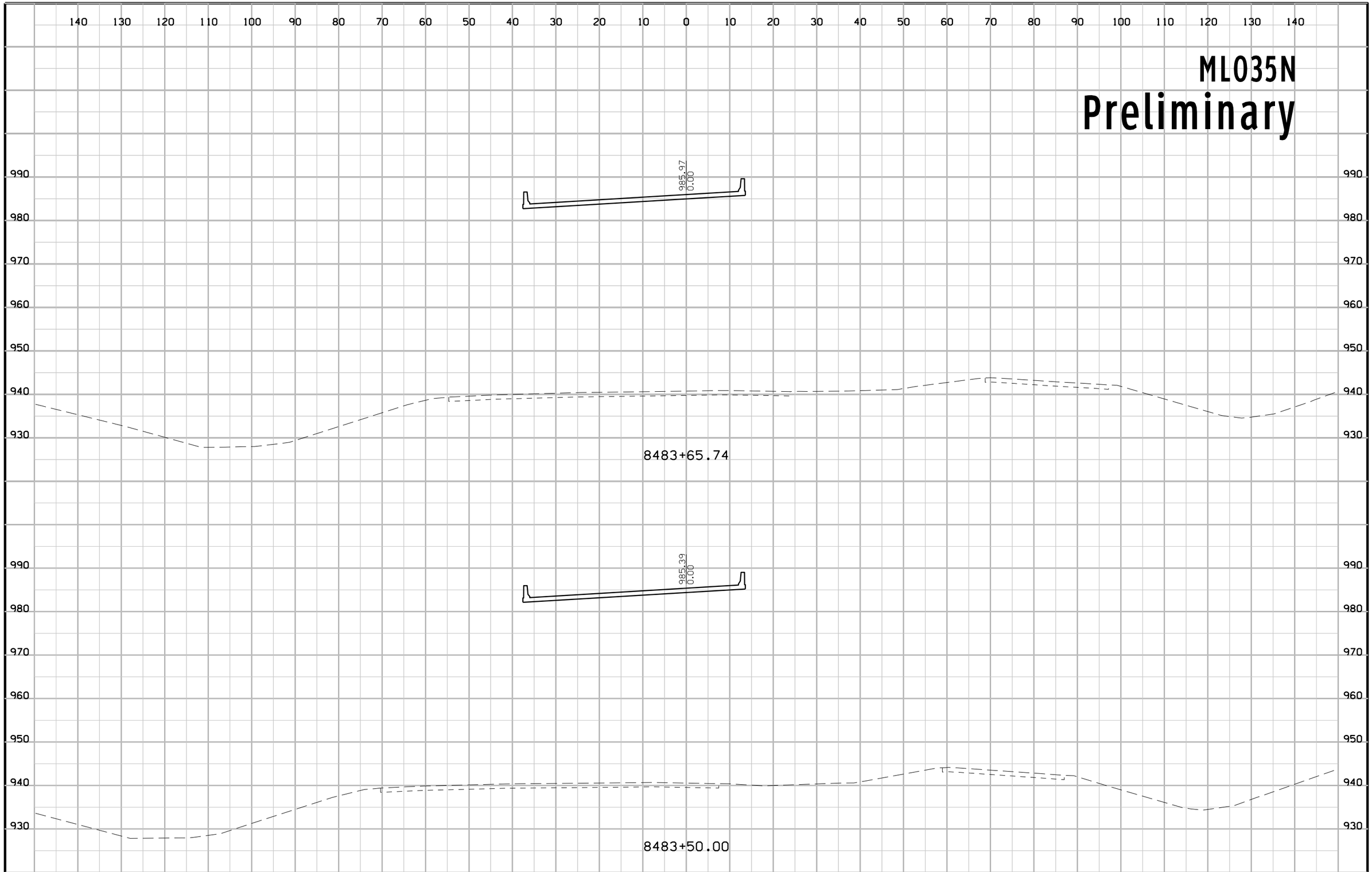
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.18

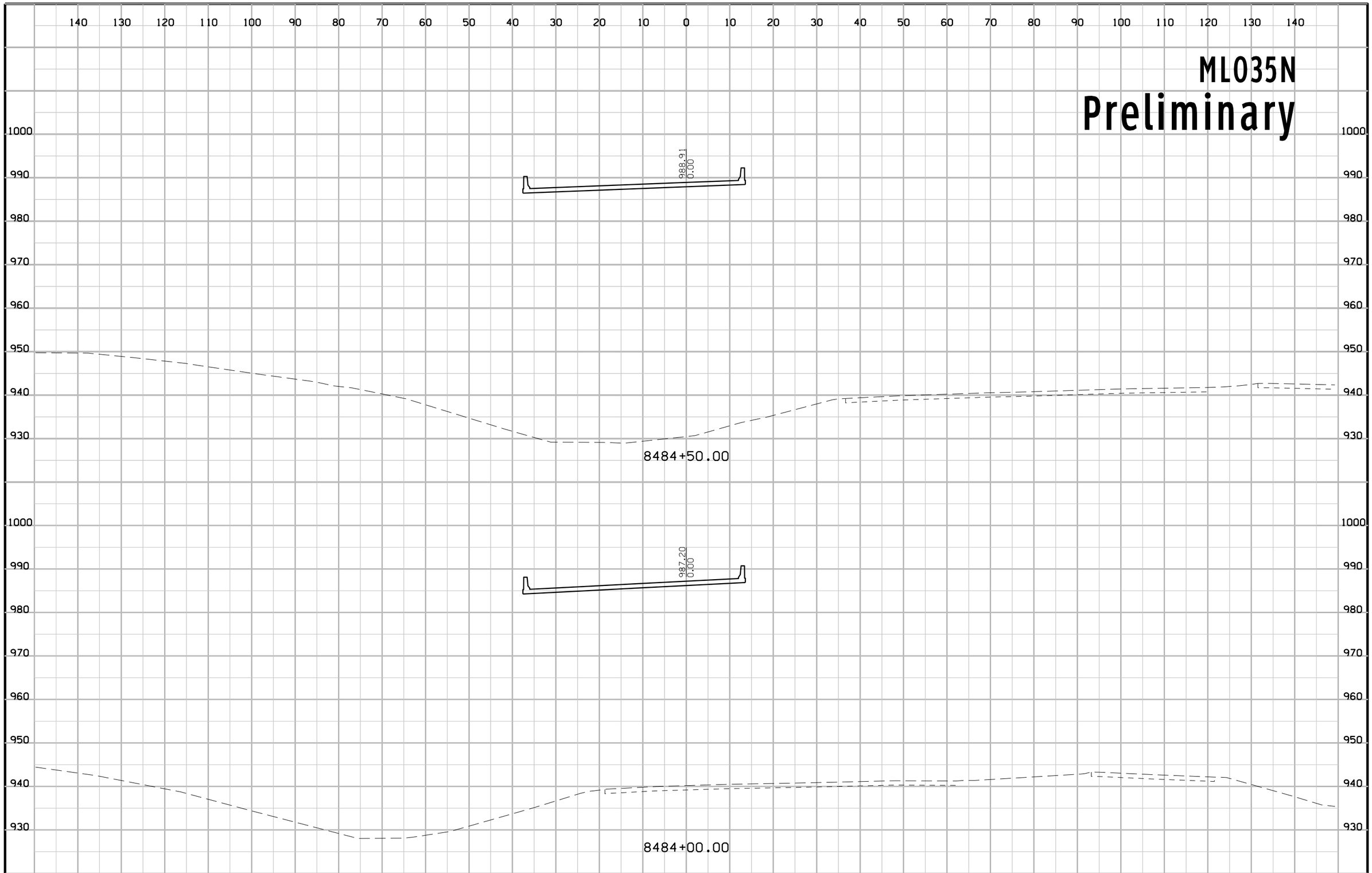
8:23:48 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.19

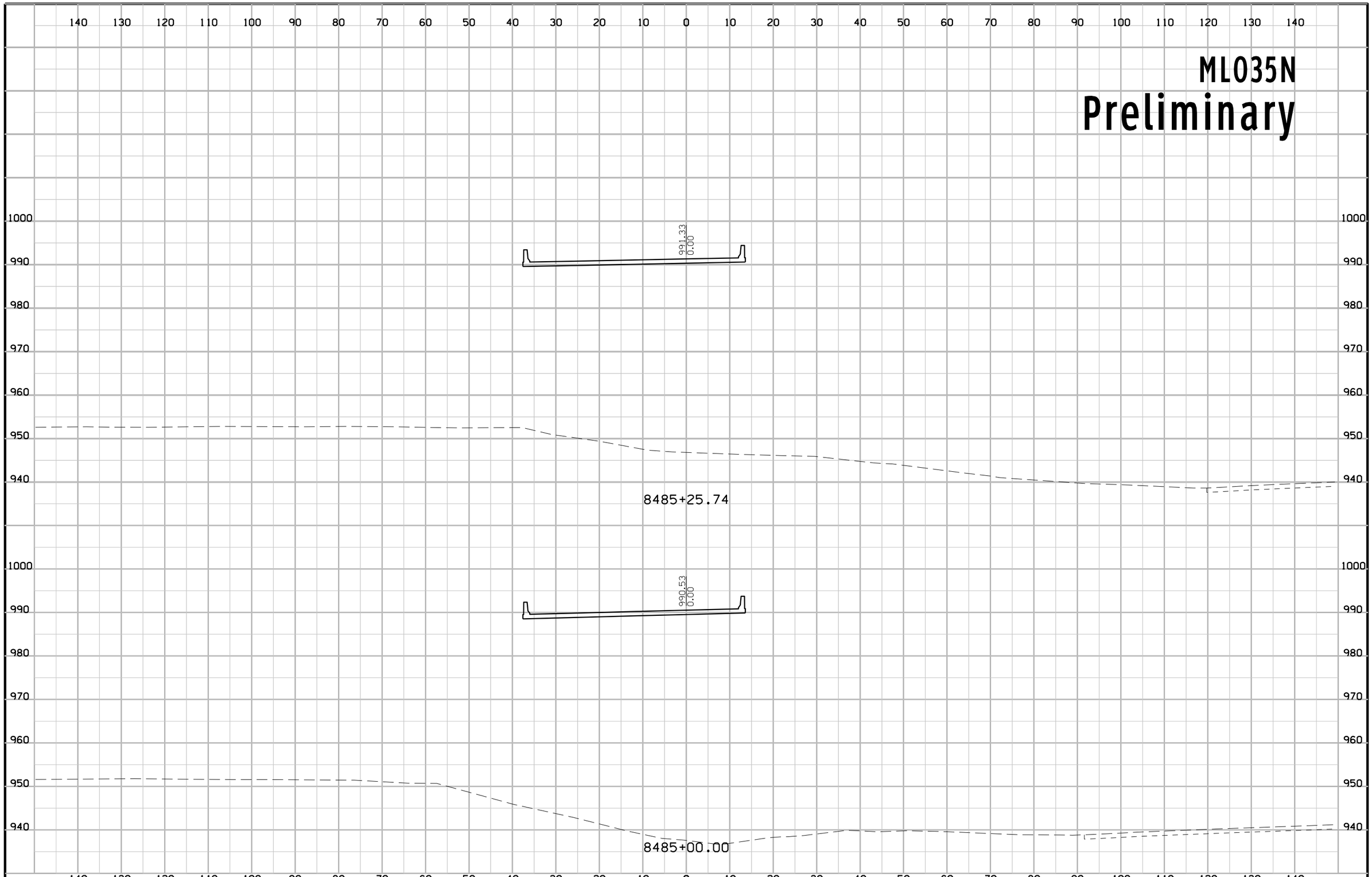
8:23:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.20

8:23:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.21

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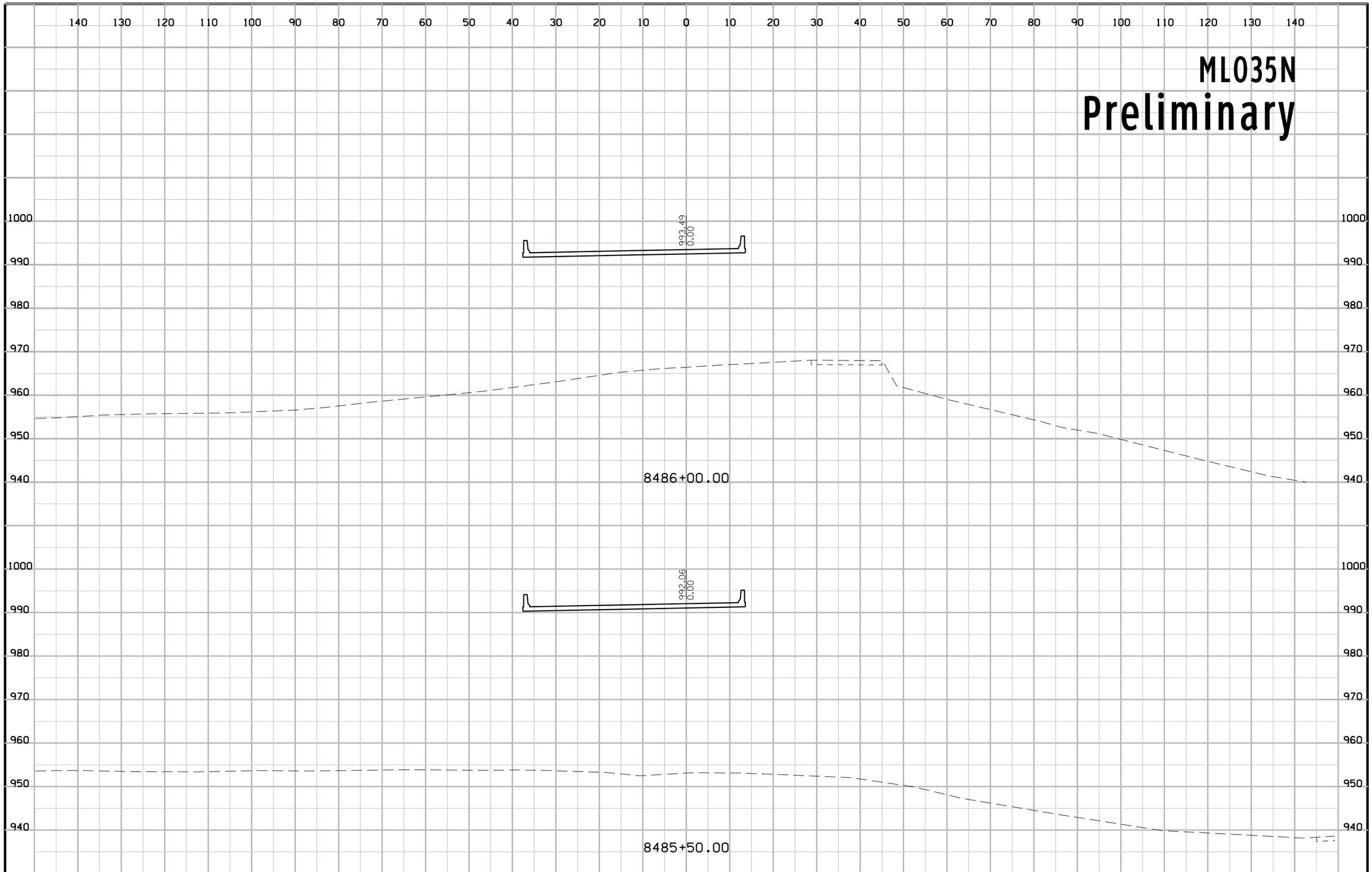
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.22

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ML035N
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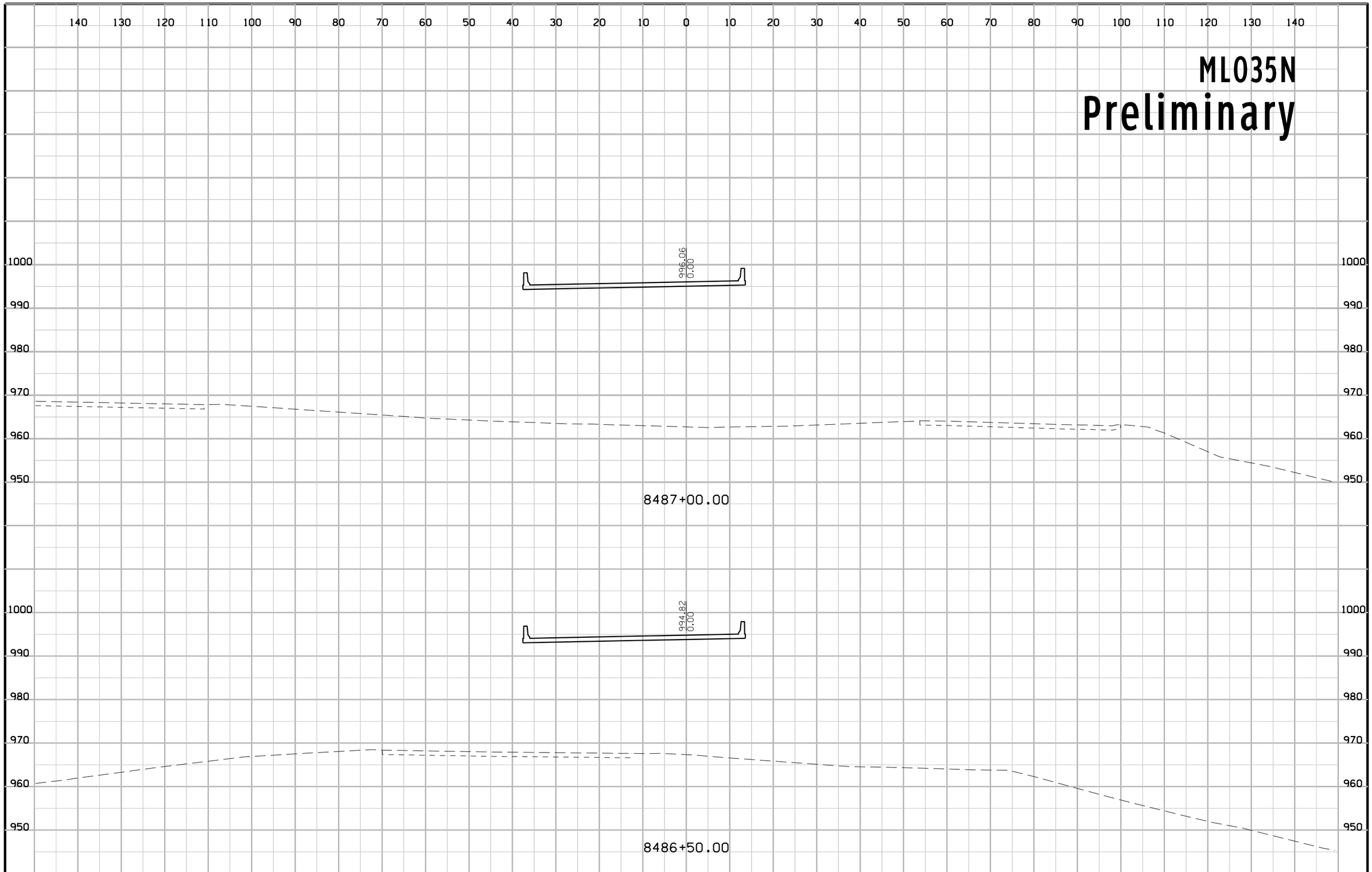

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.23

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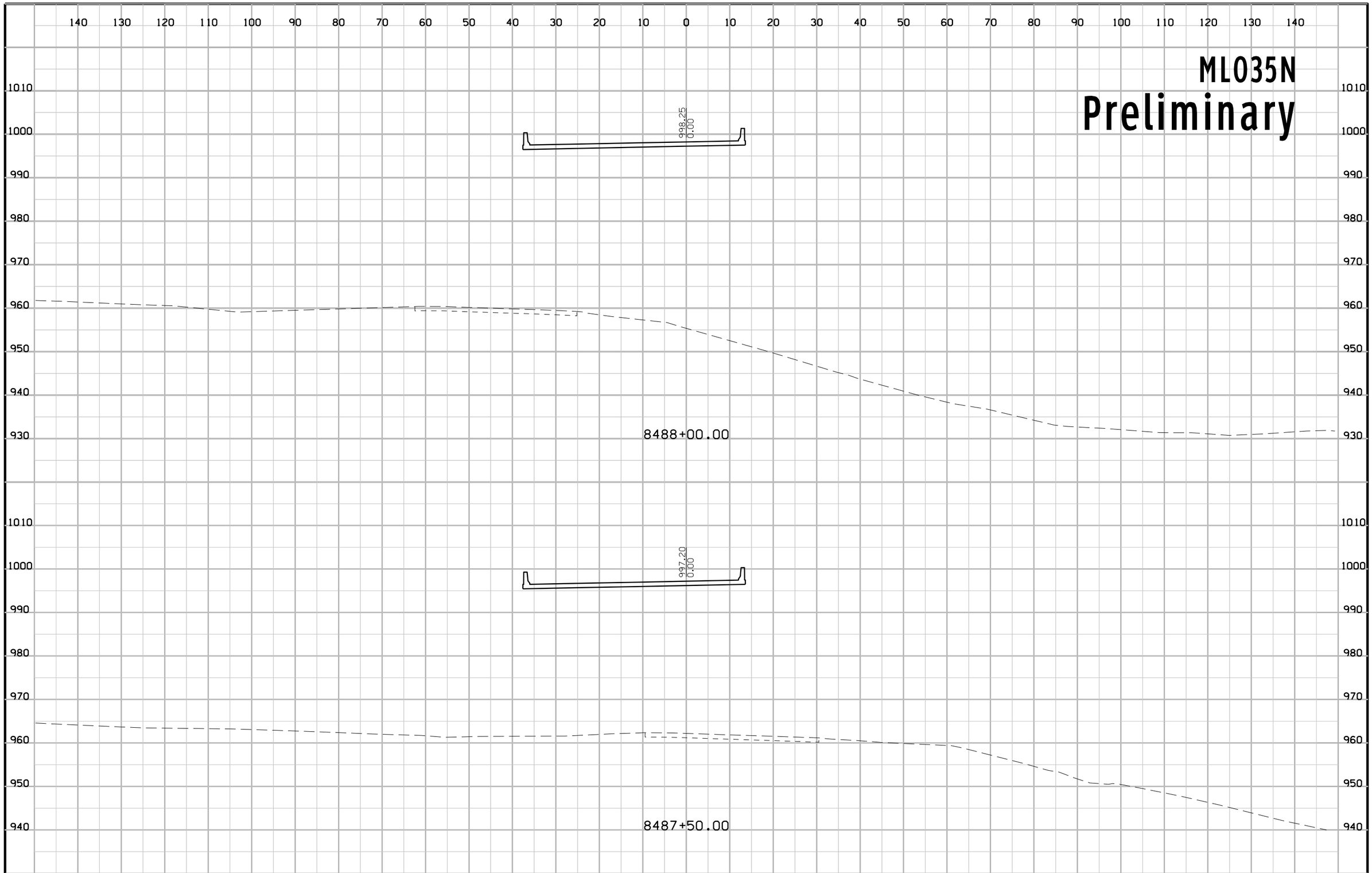

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.24

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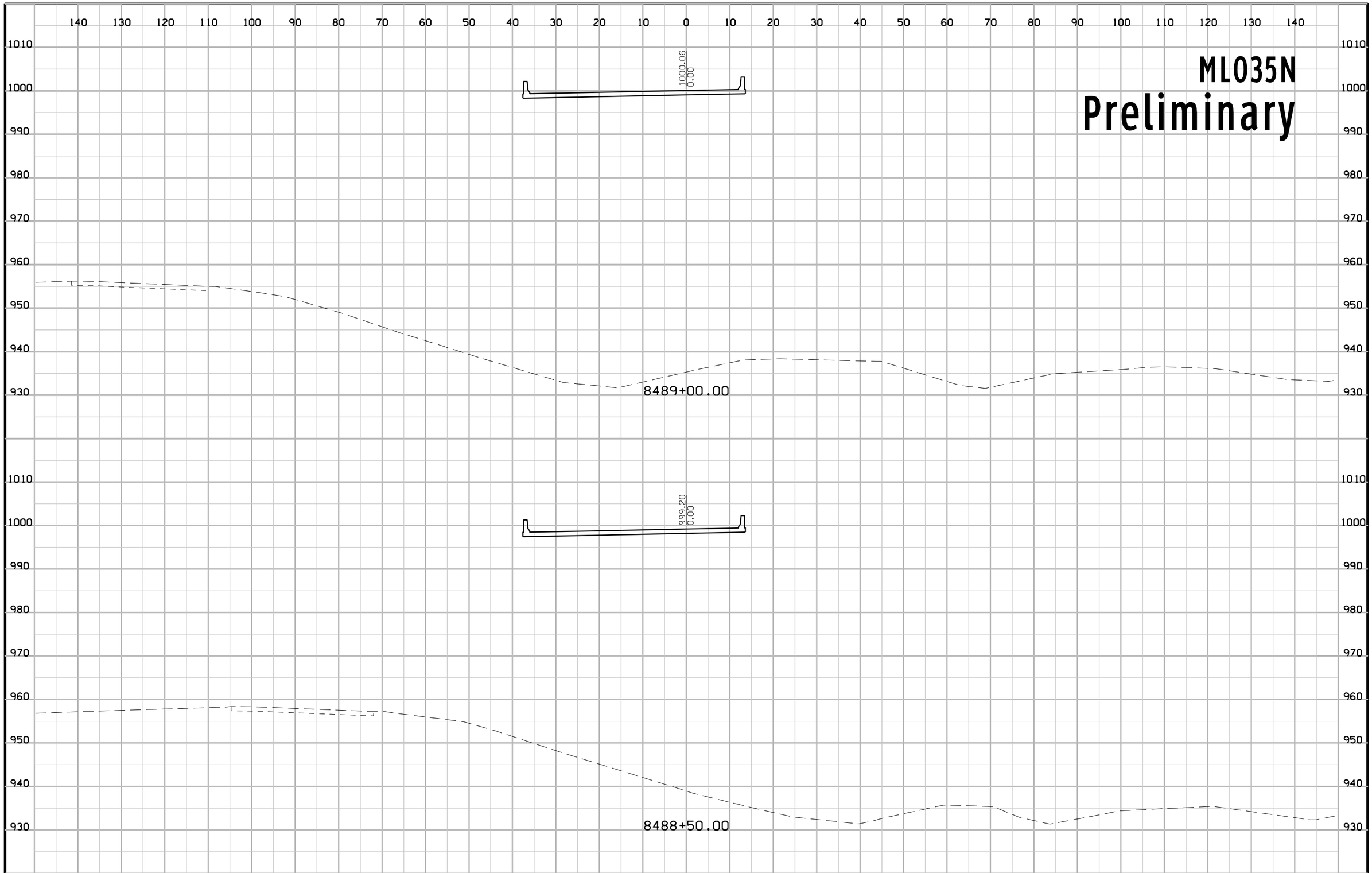
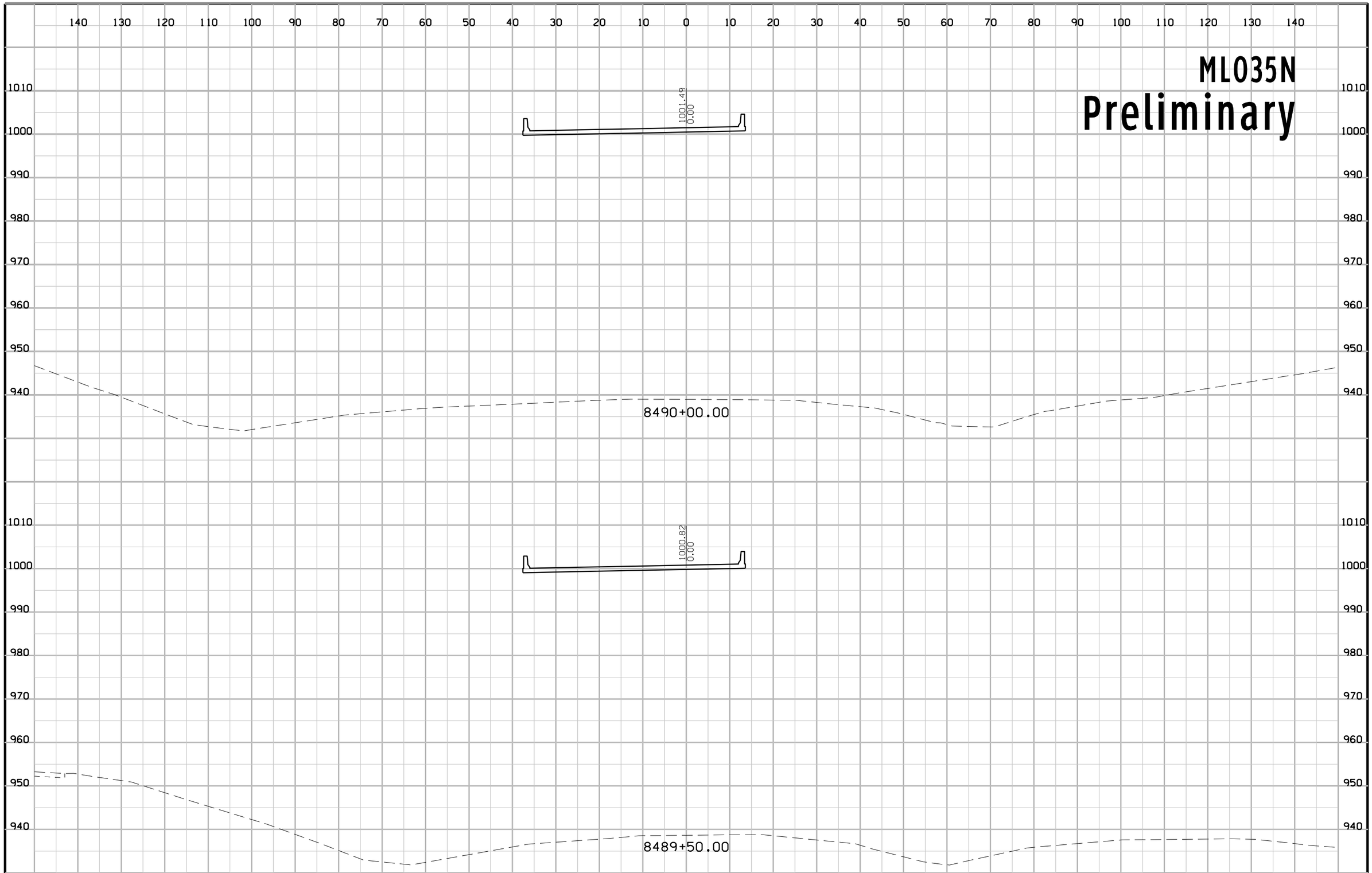


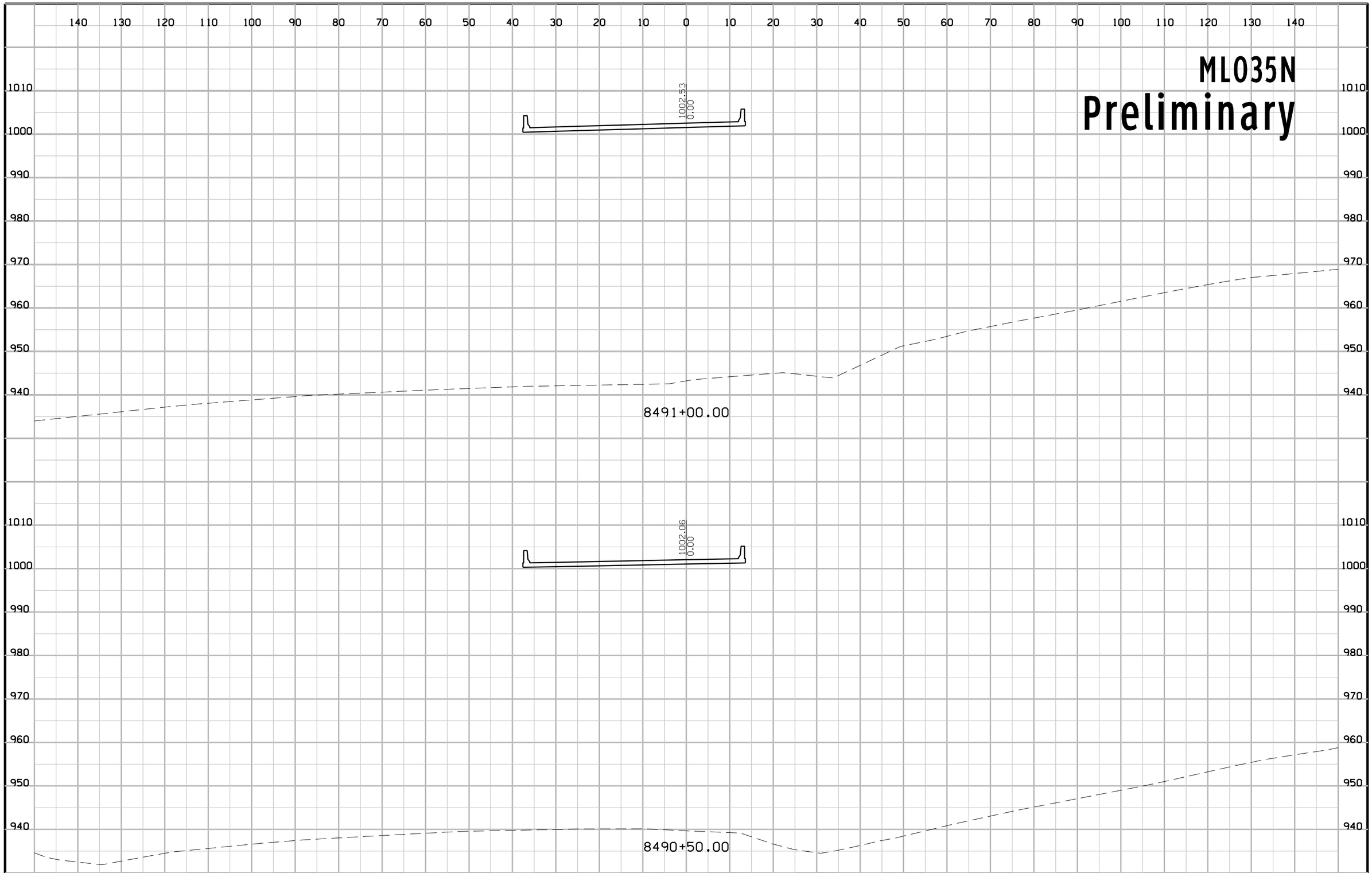
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.25

8:23:58 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



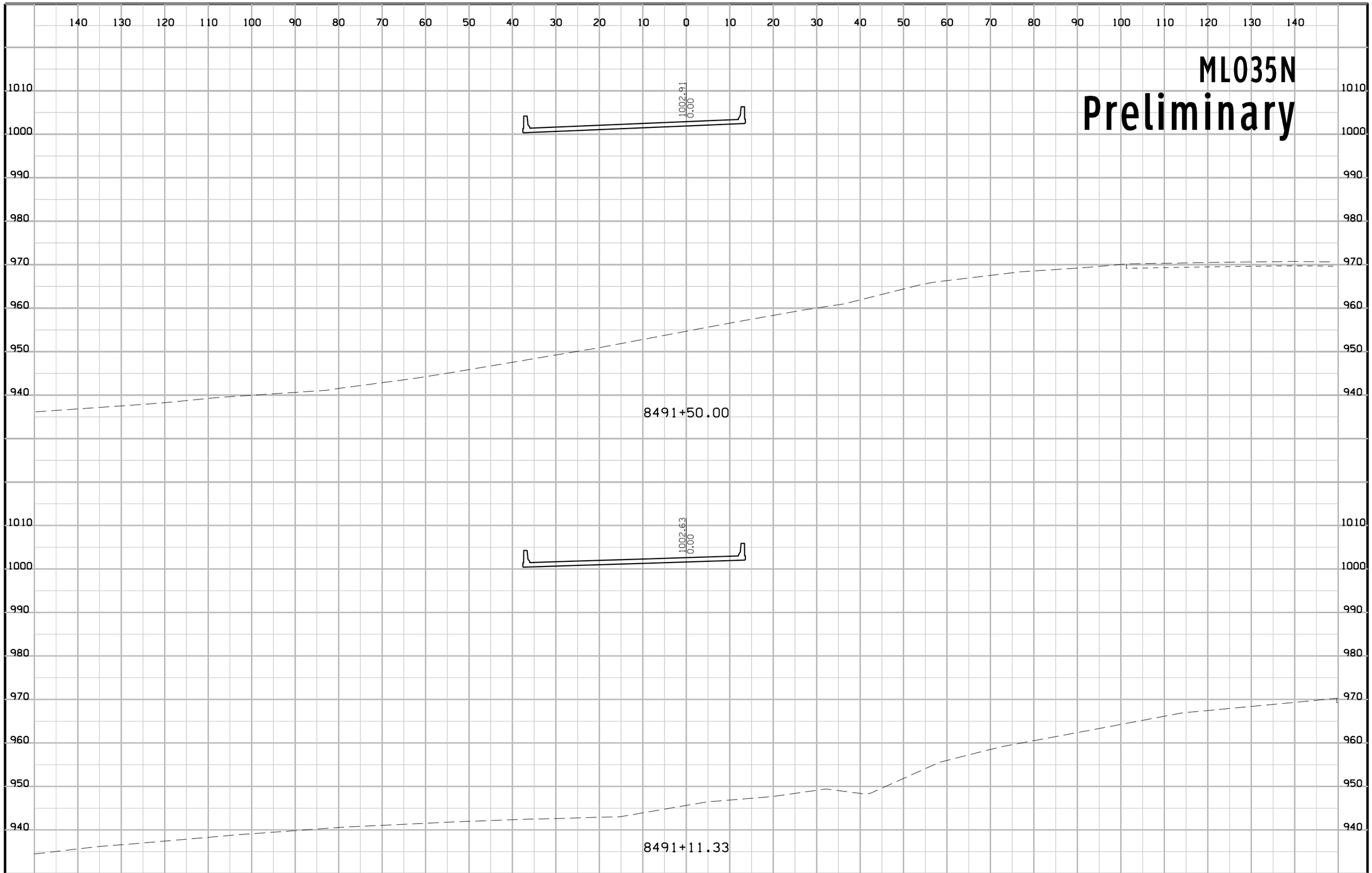
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.26

8:23:59 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



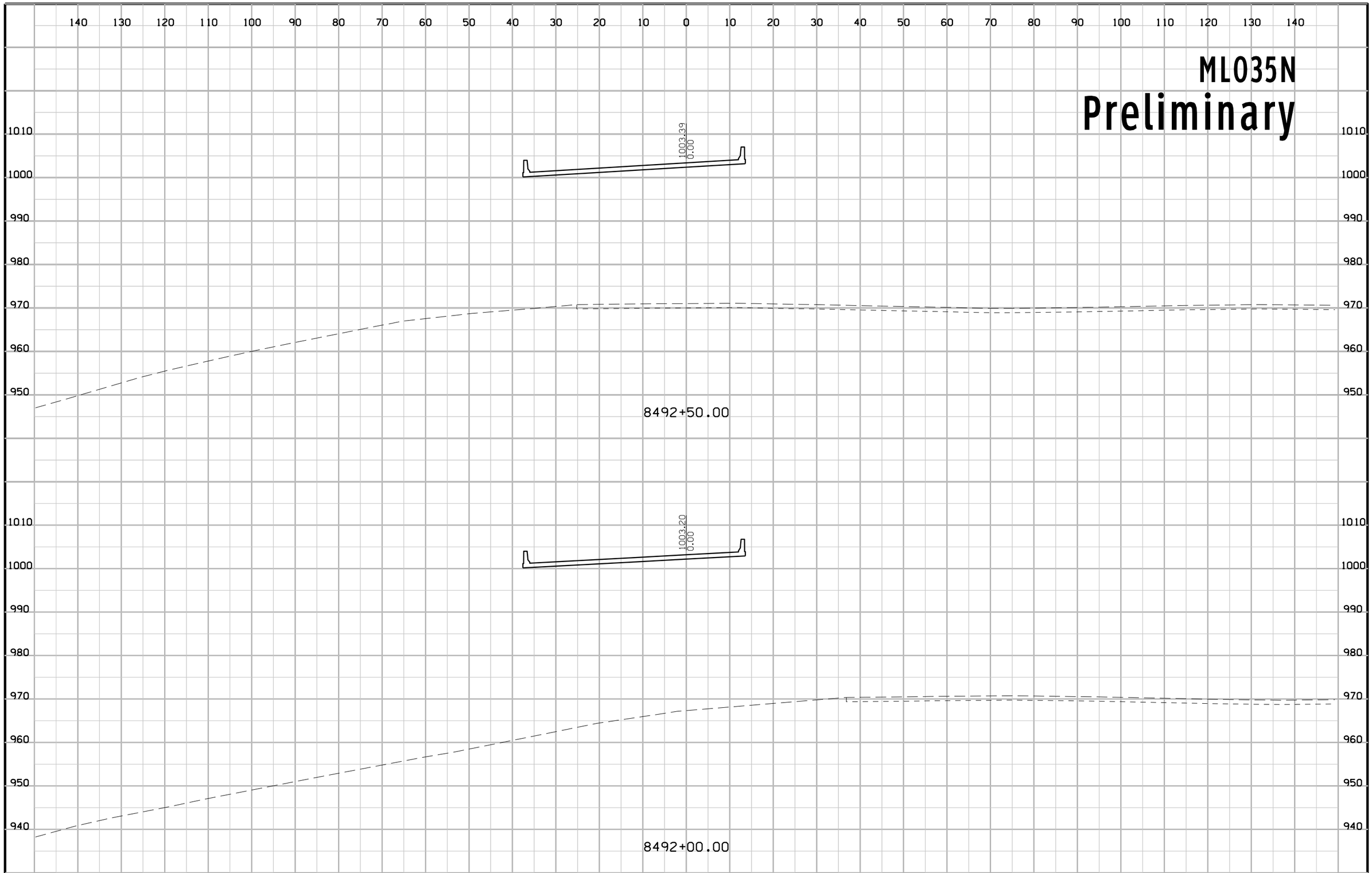
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.27

8:24:00 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.28

8:24:02 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.29

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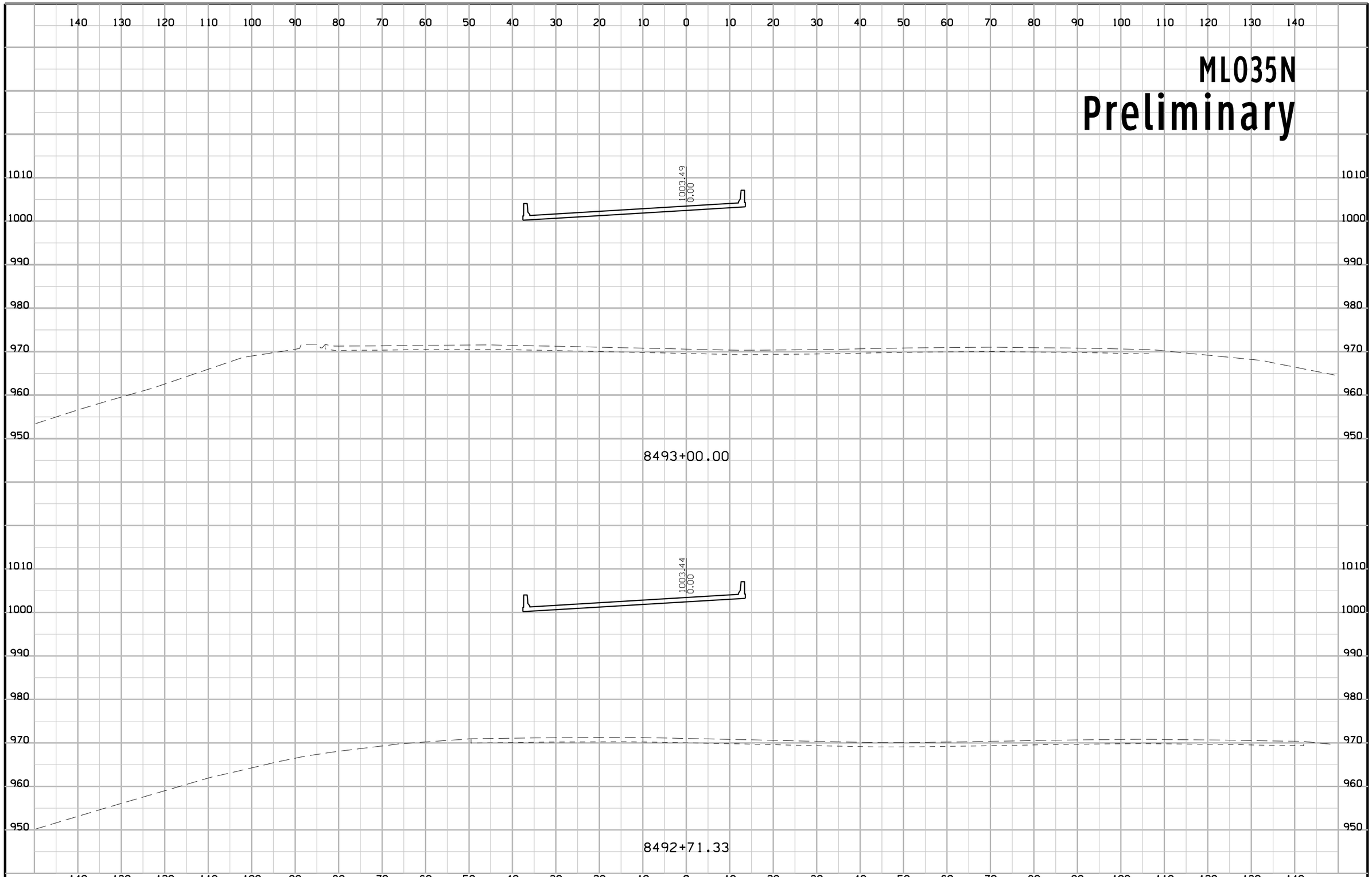
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.30

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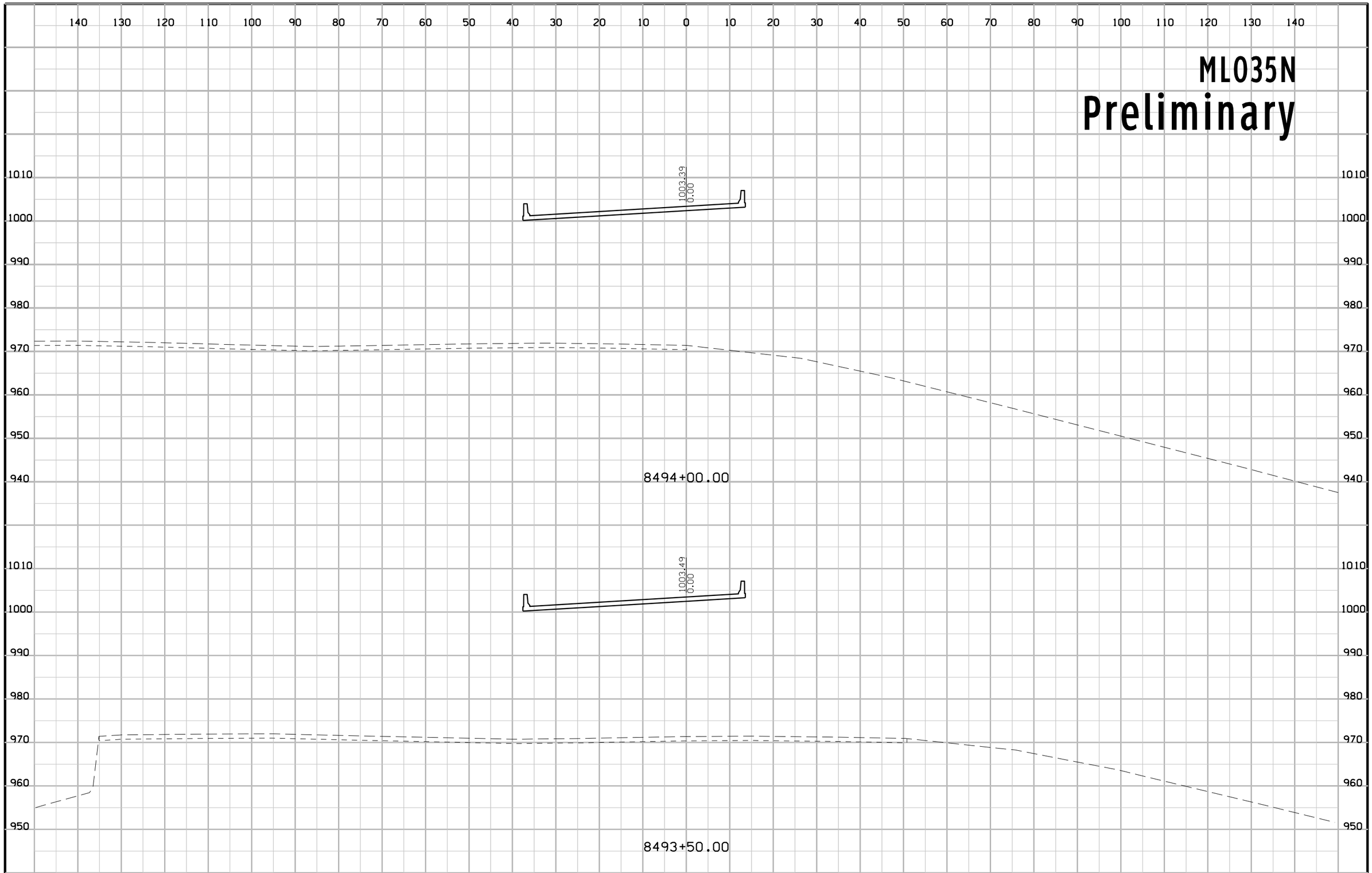
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.31

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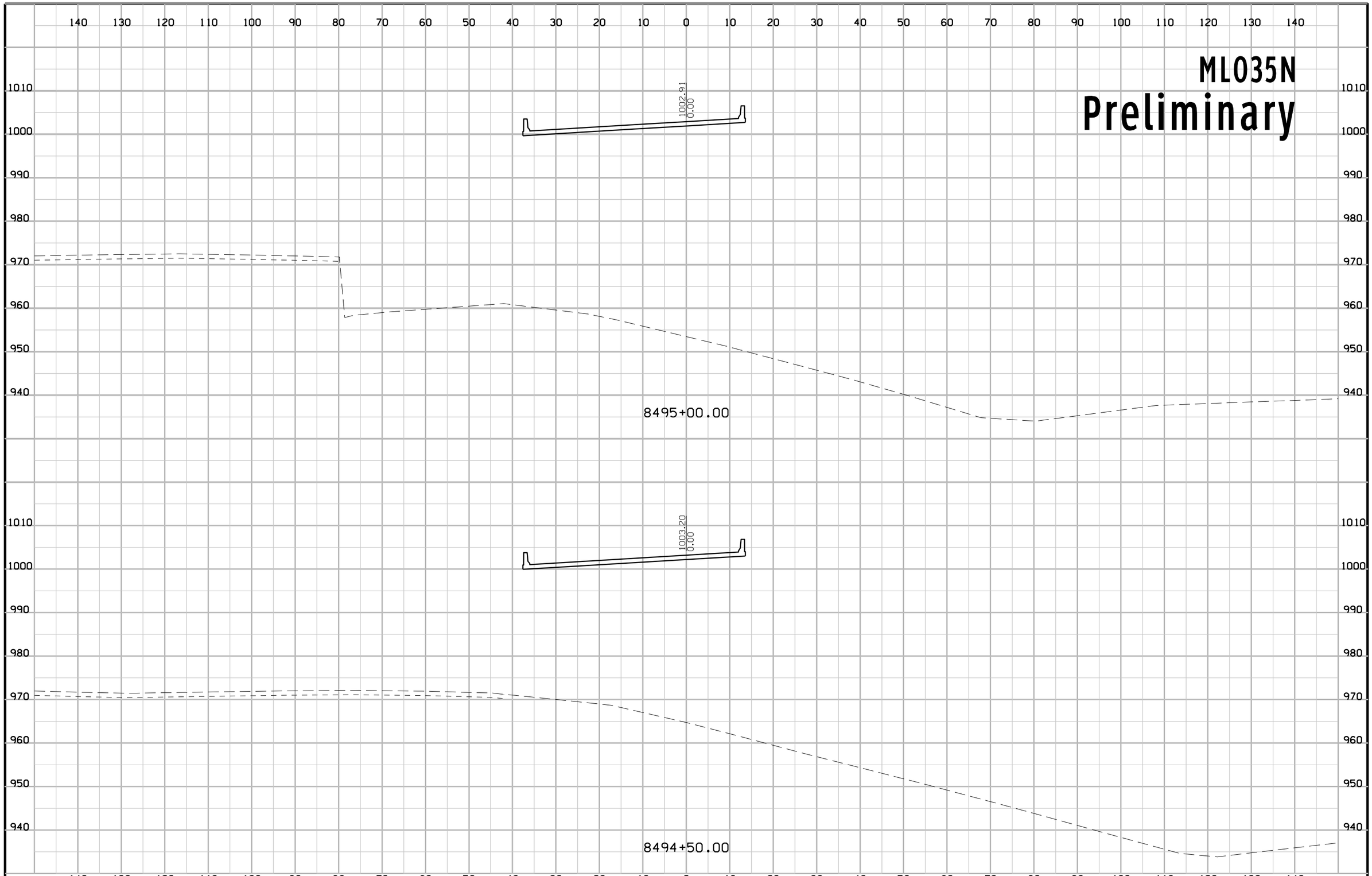

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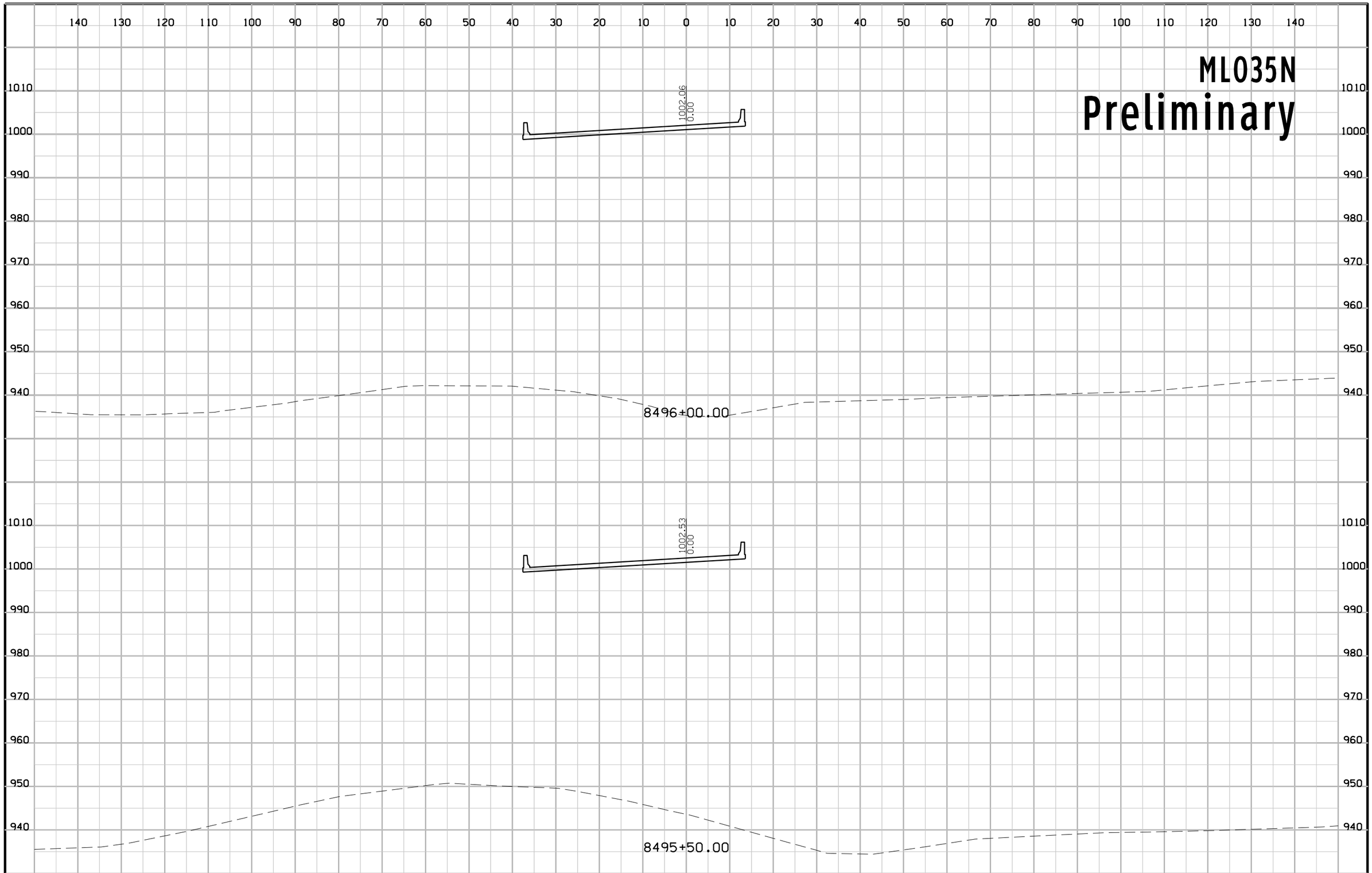
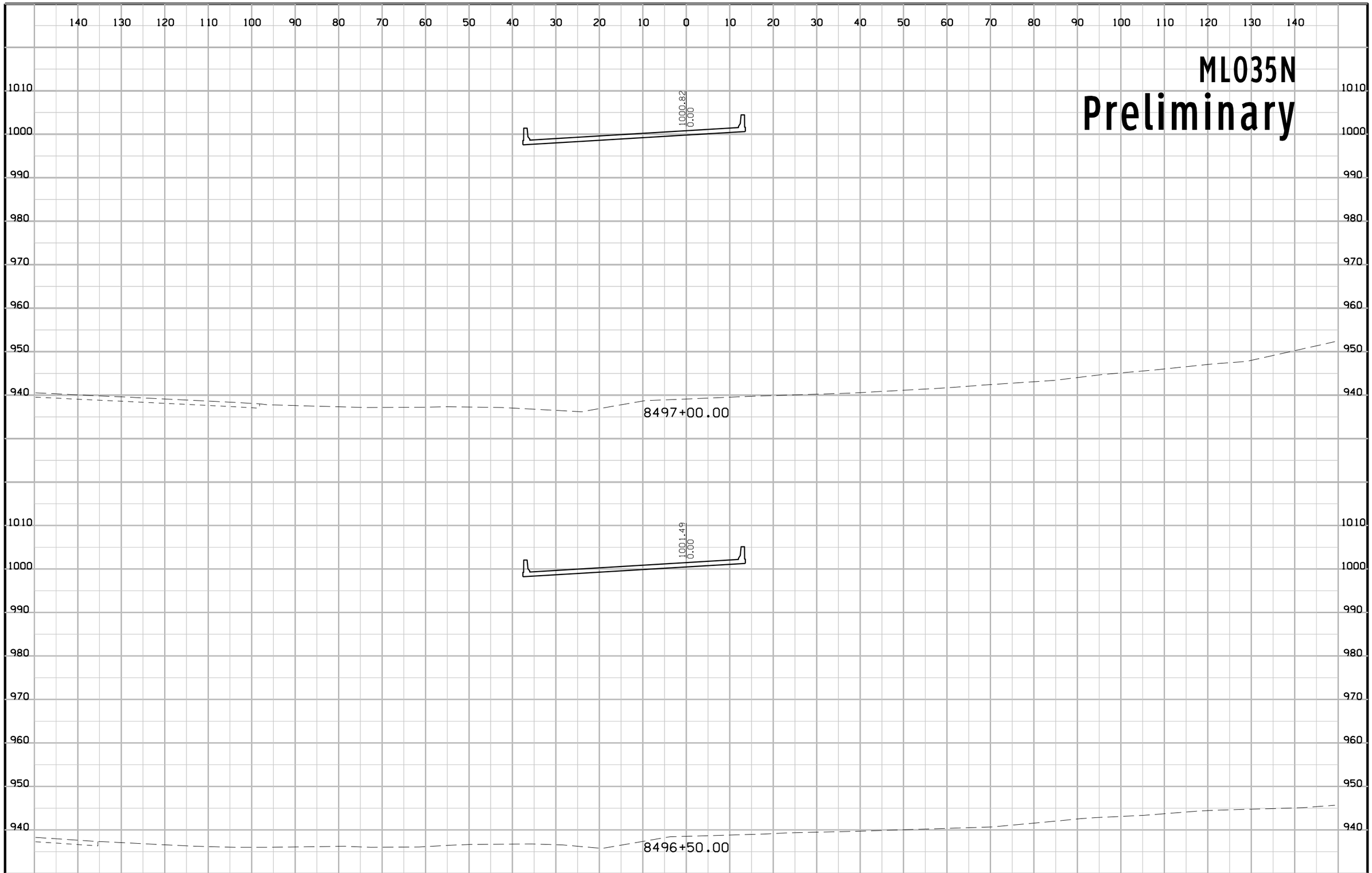


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.33

8:24:25 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.34

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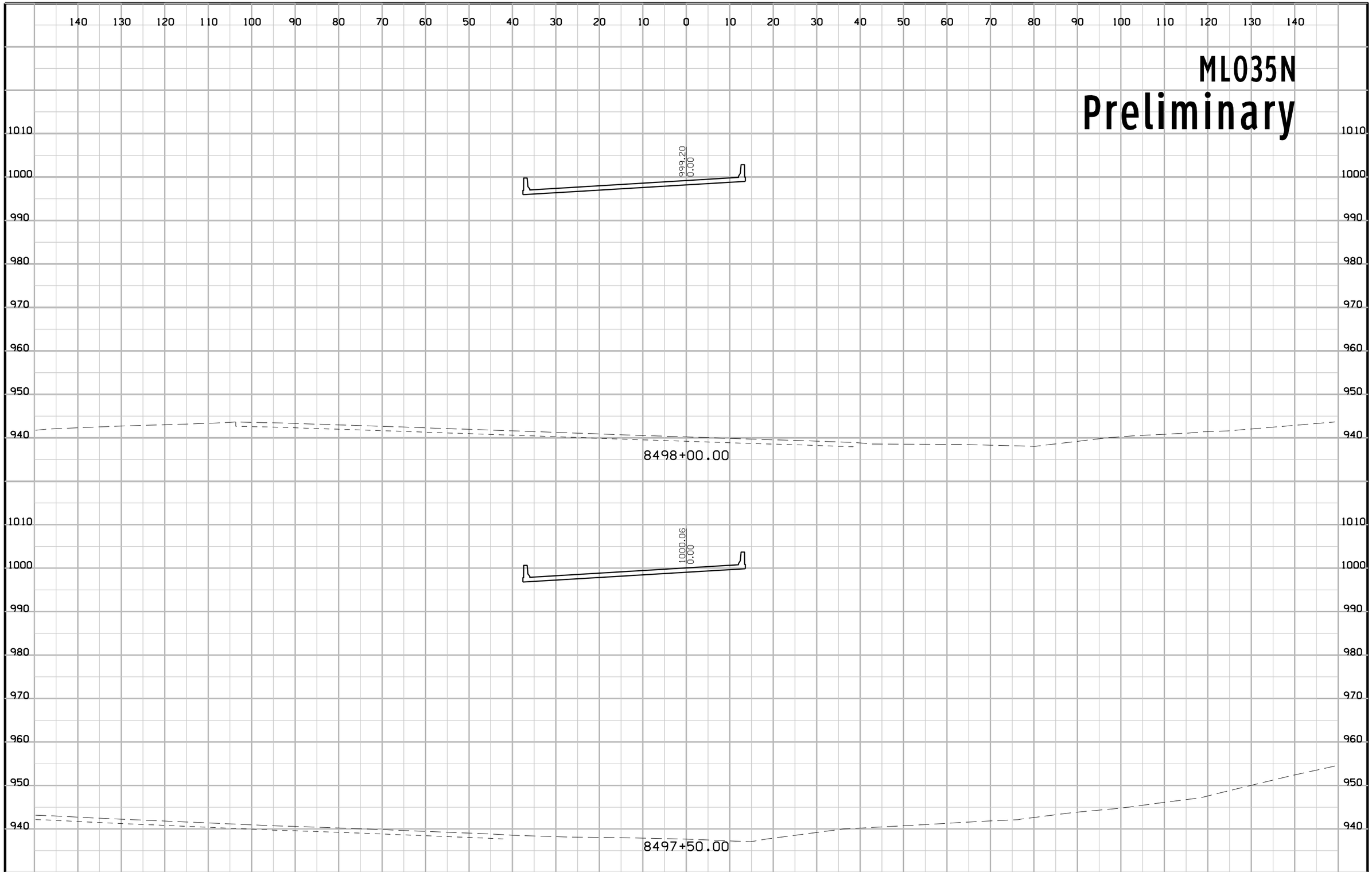
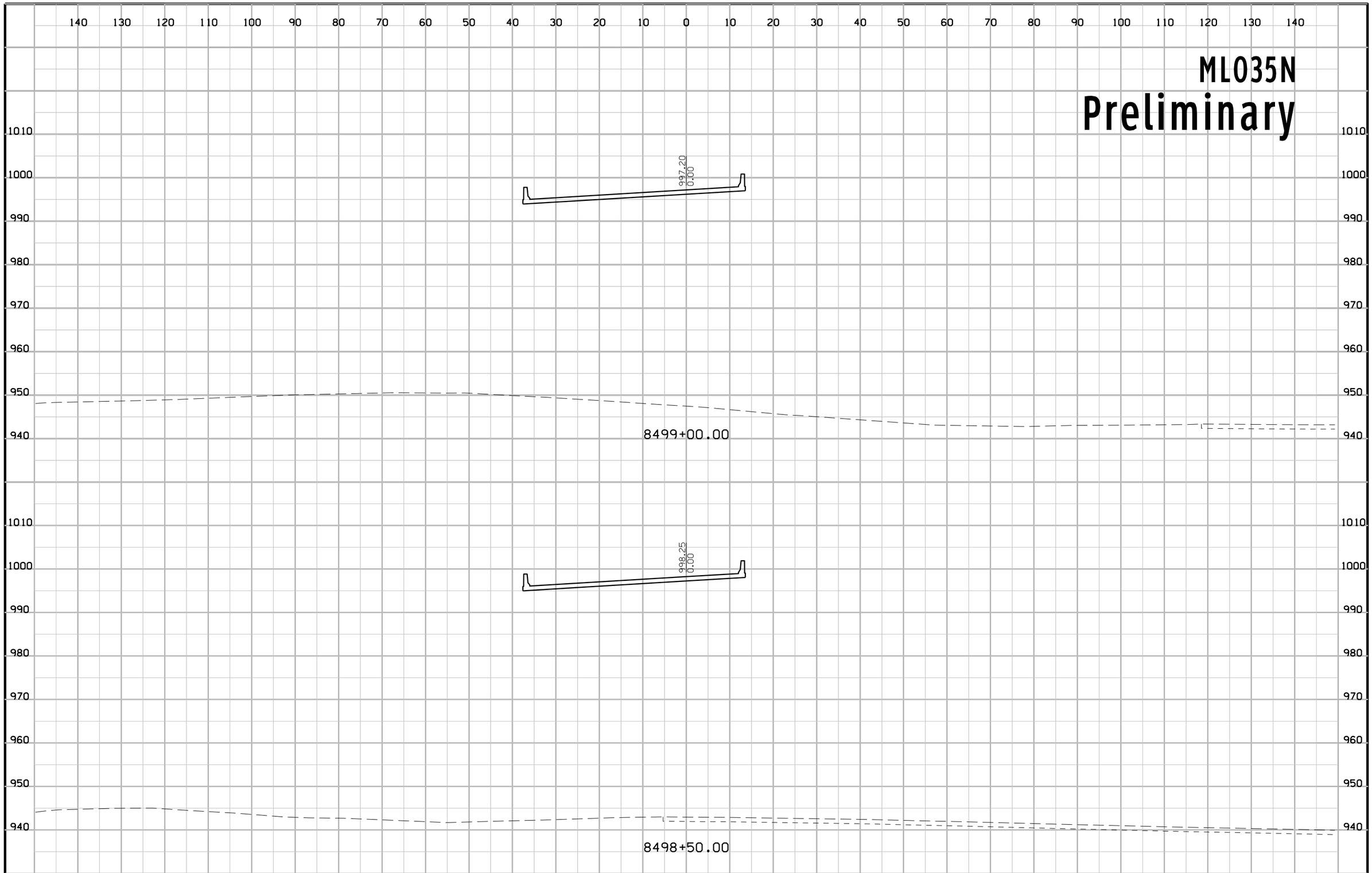
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.35

8:24:28 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.36

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ML035N
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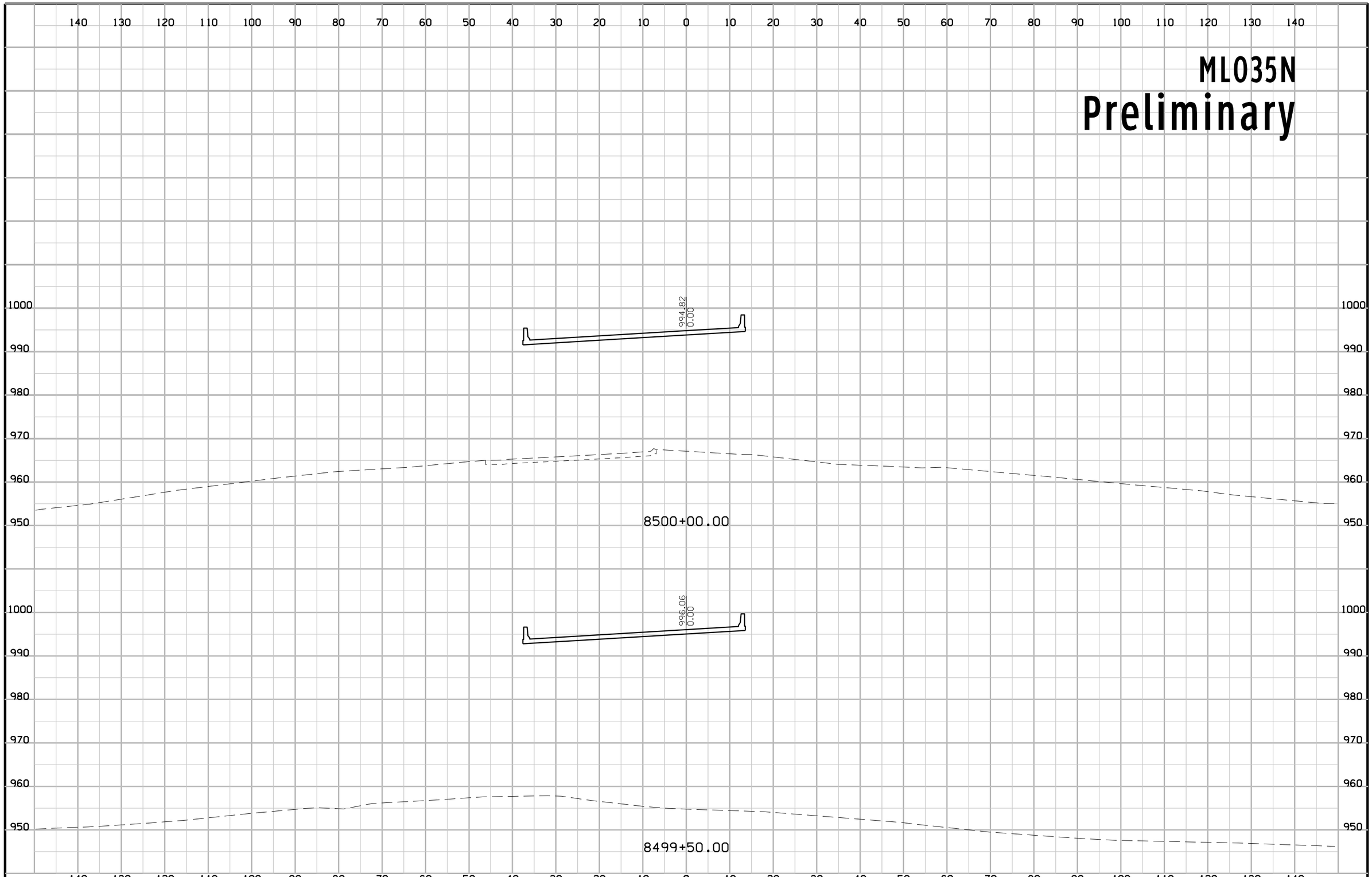

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.37

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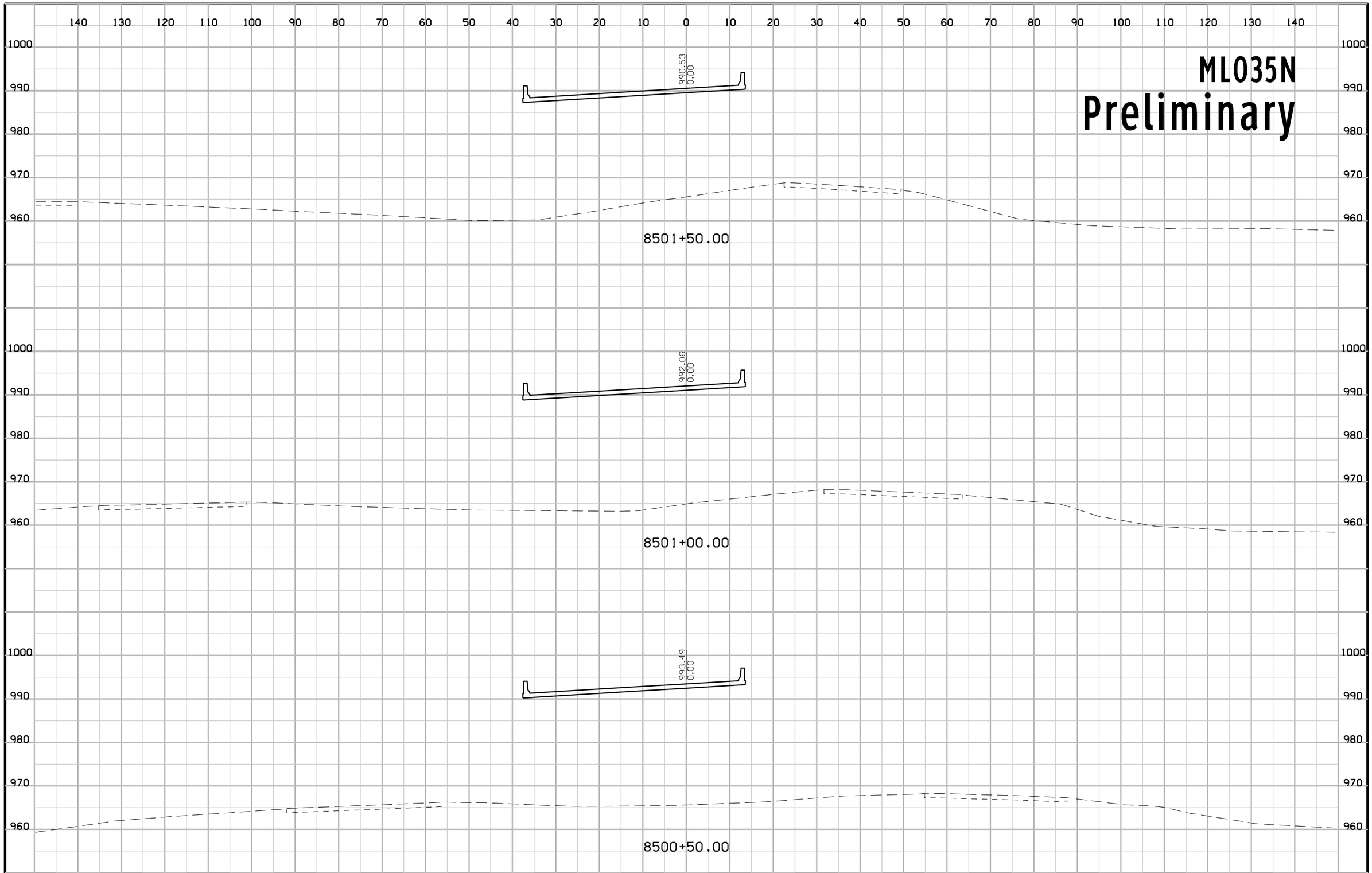
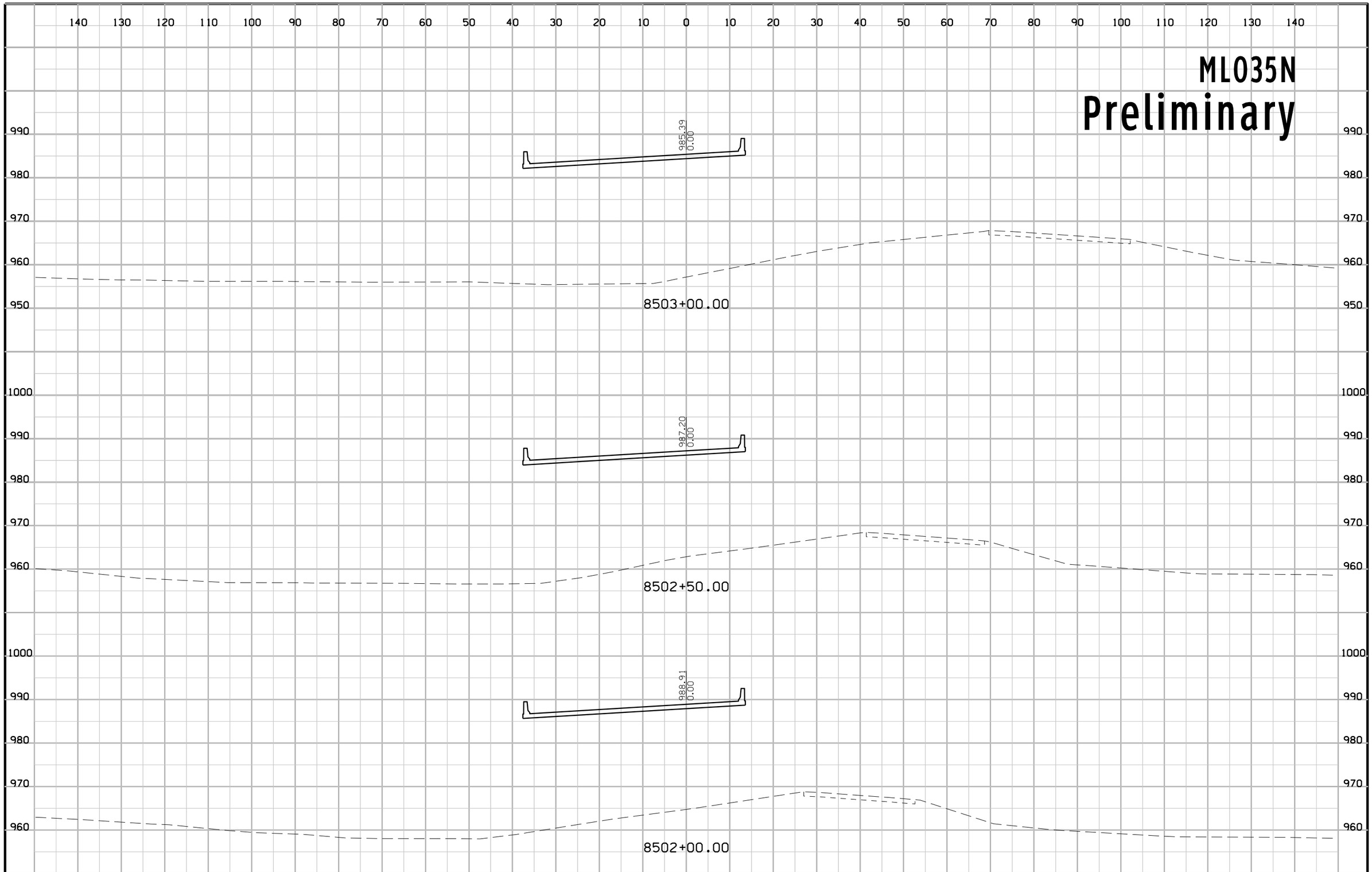


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.38

8:24:32 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.39

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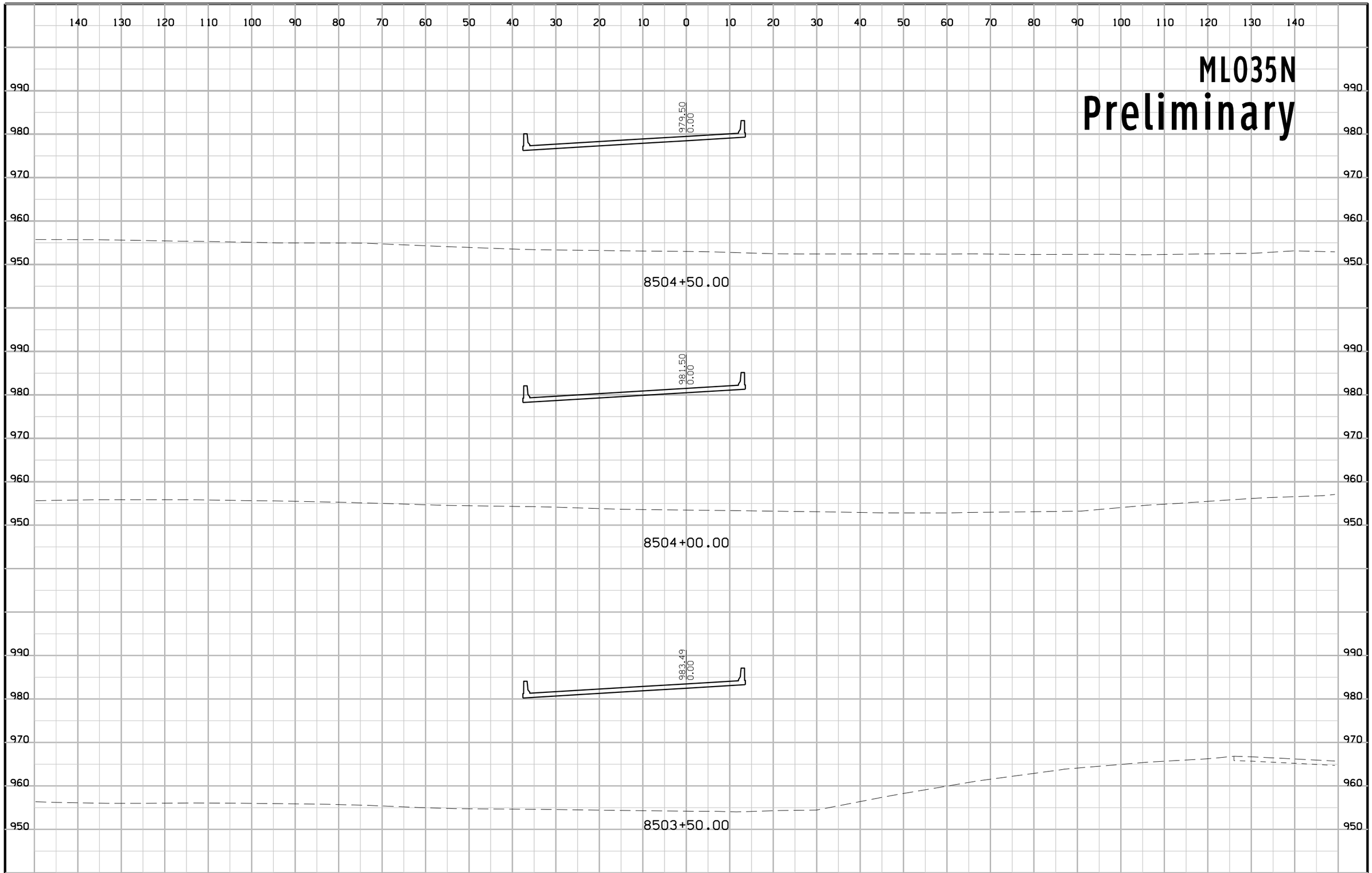
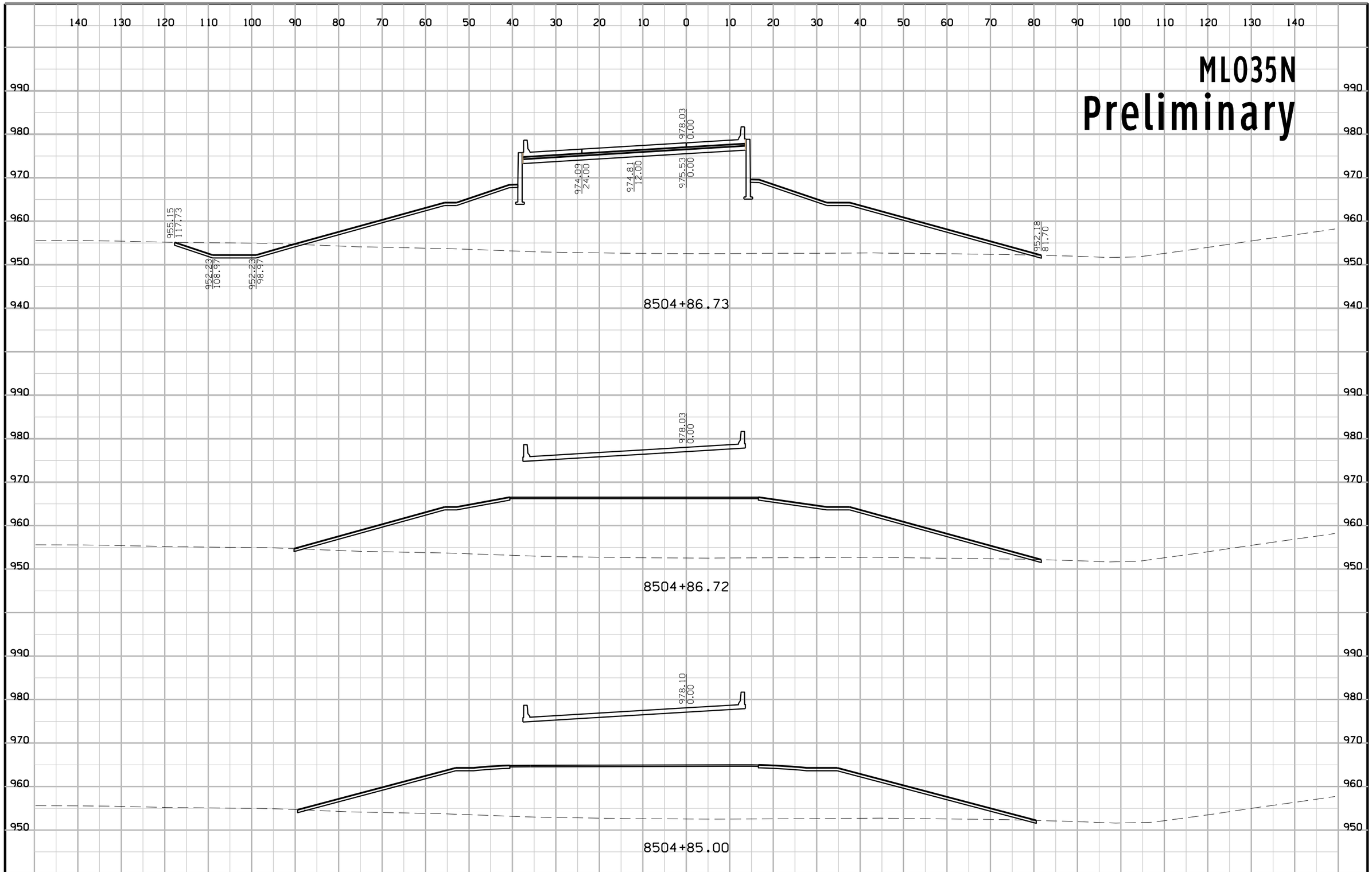


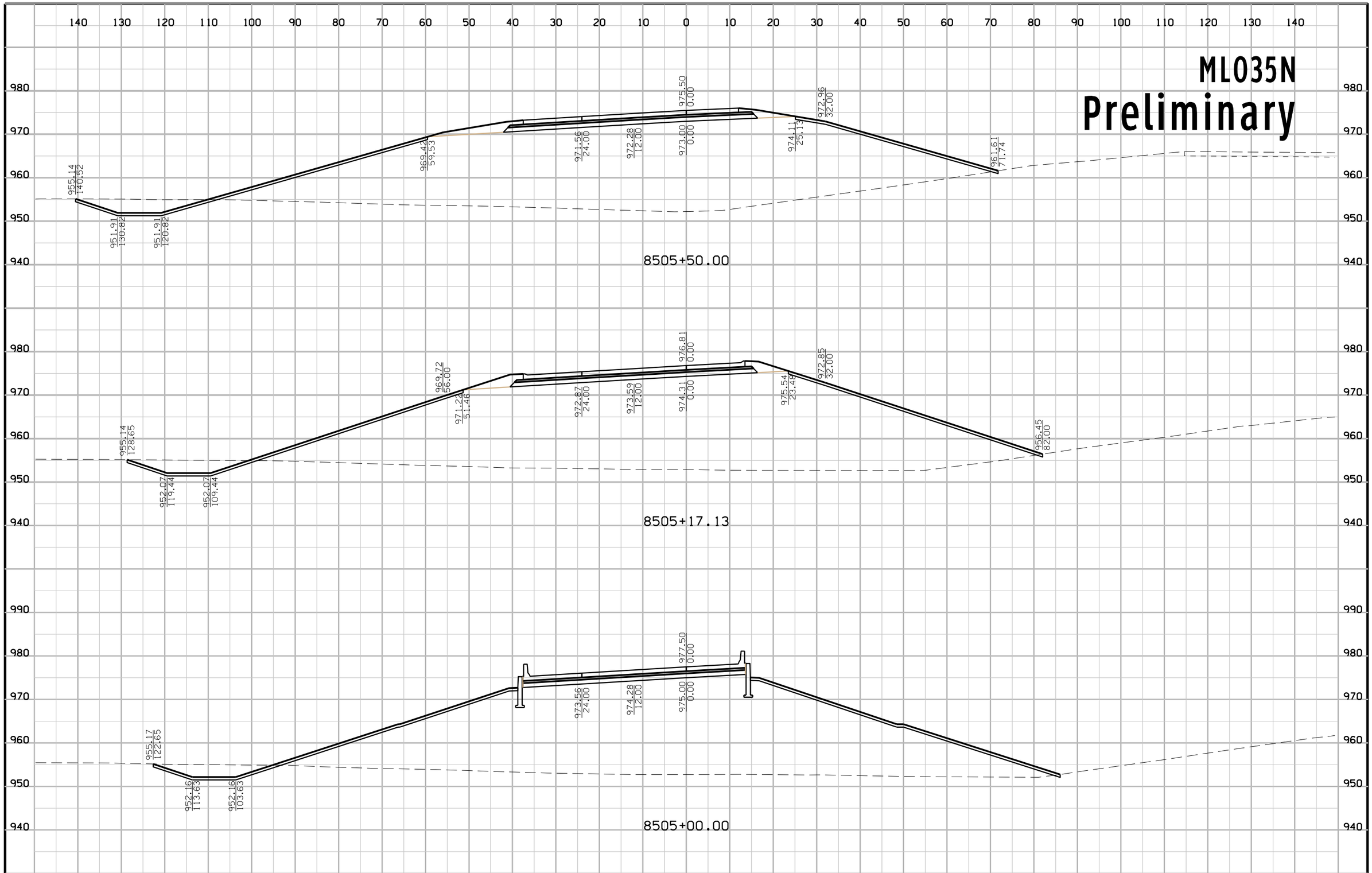
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.40

8:24:35 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.41

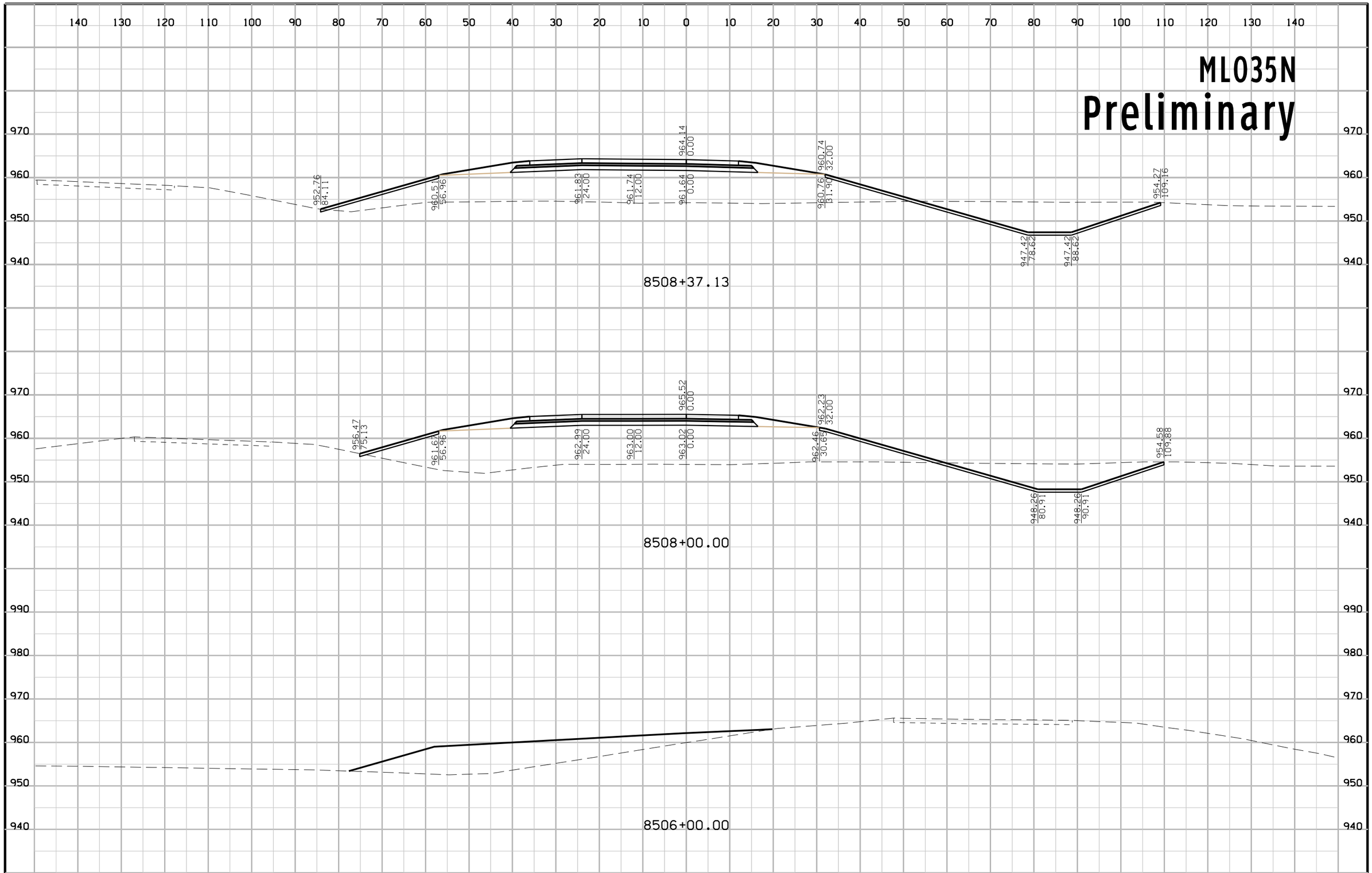
8:24:36 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.42

8:24:38 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

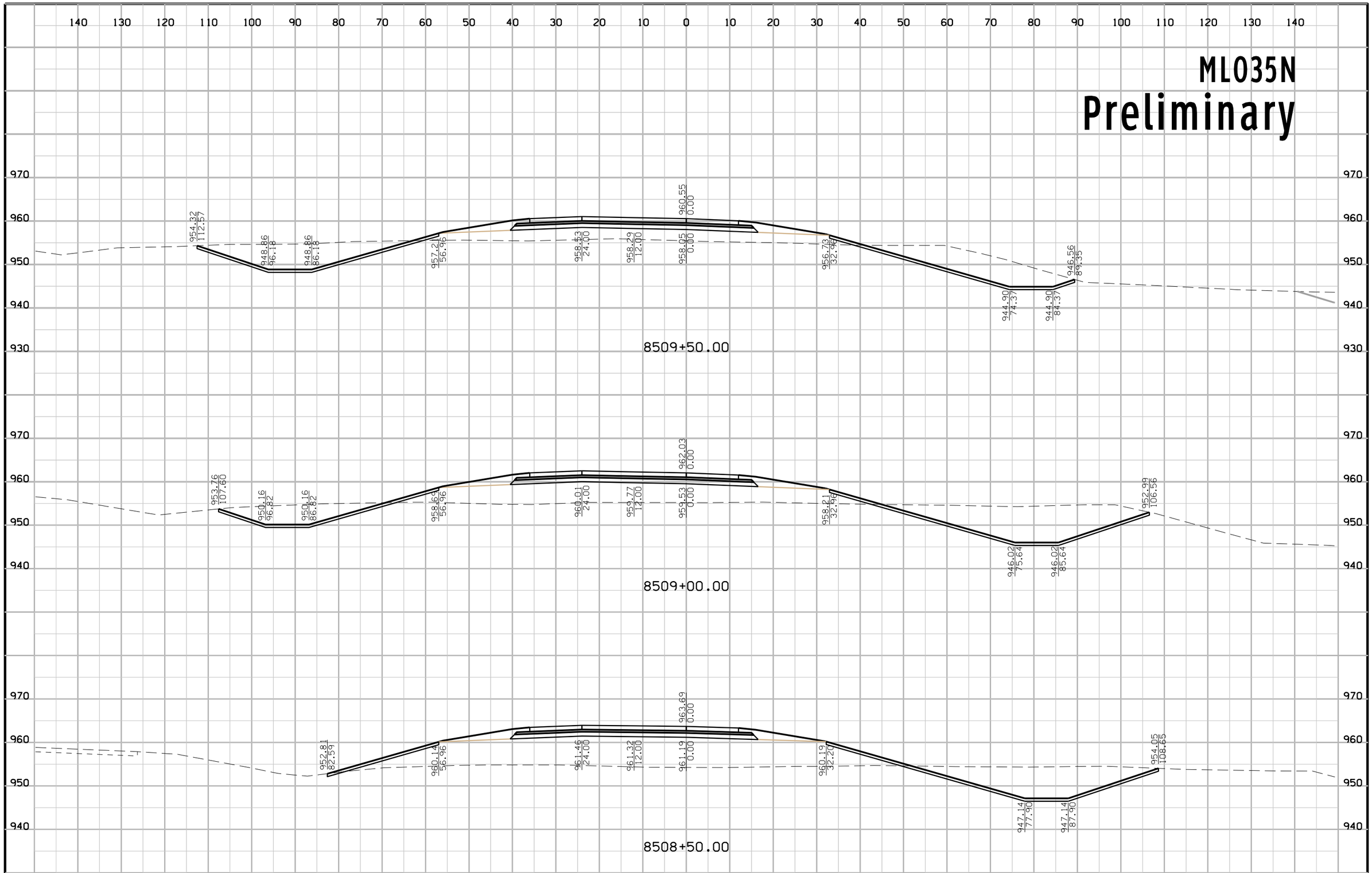
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.43

8:24:39 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.44

8:24:41 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
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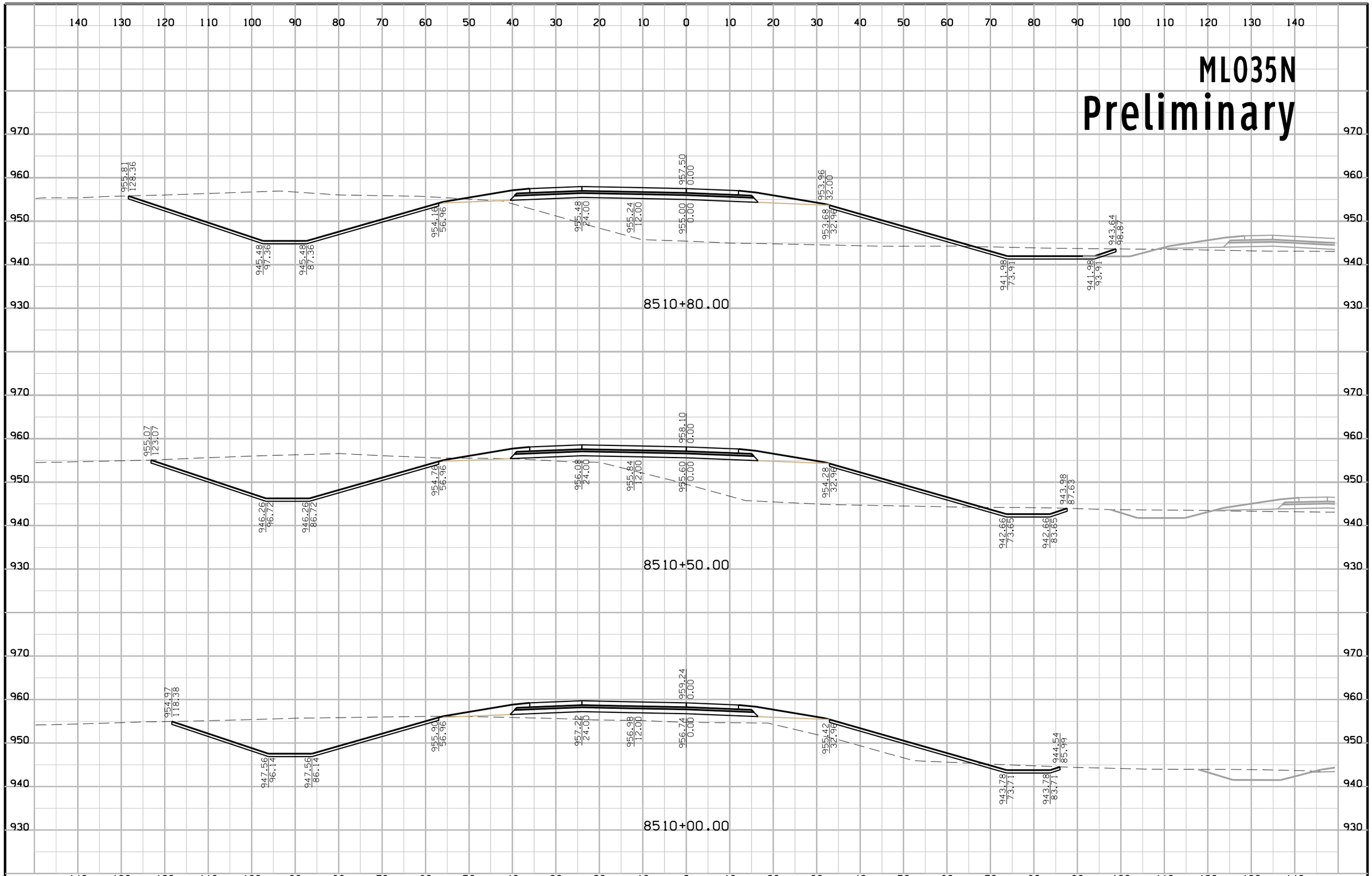
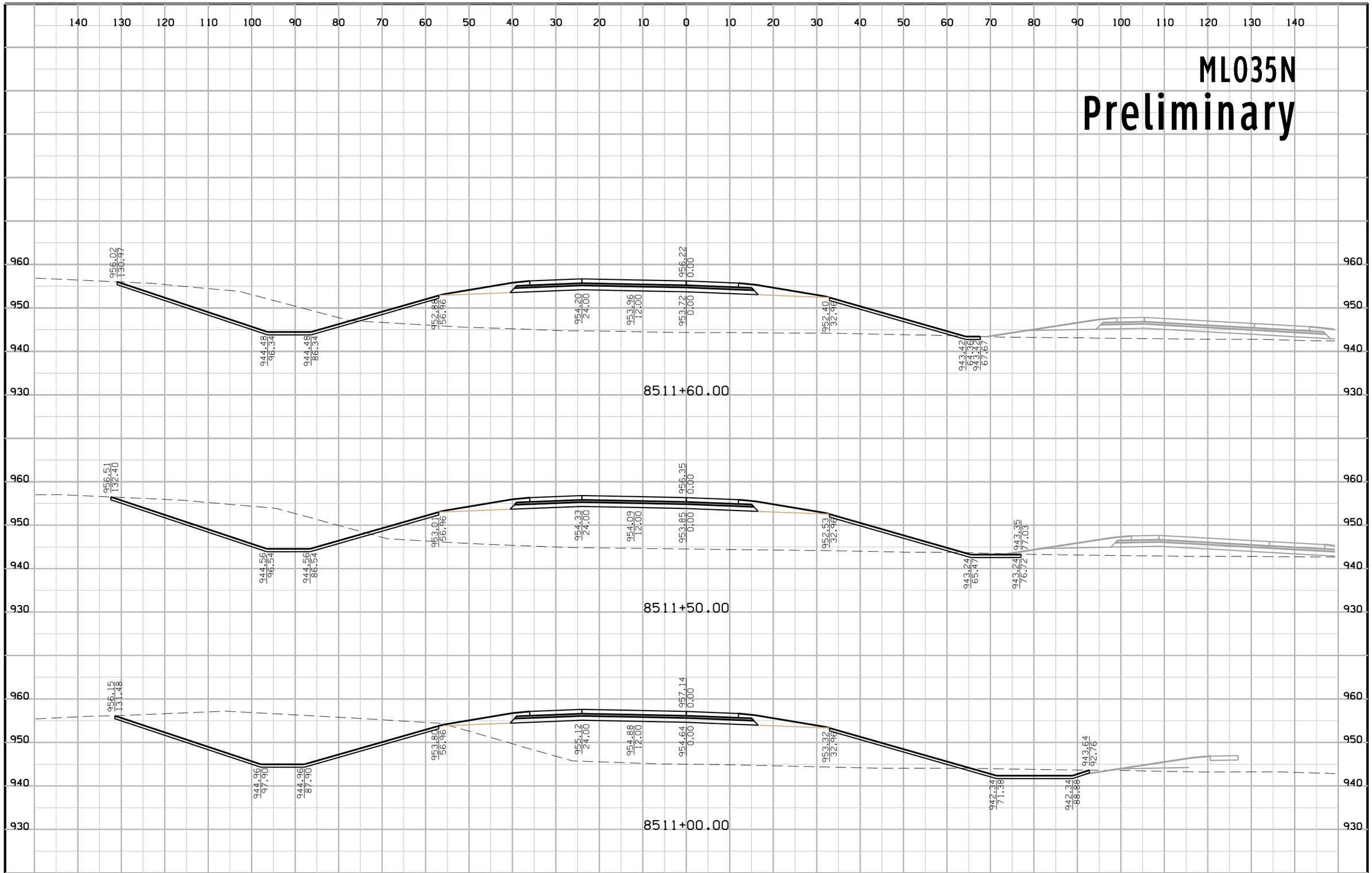


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.45

8:24:42 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

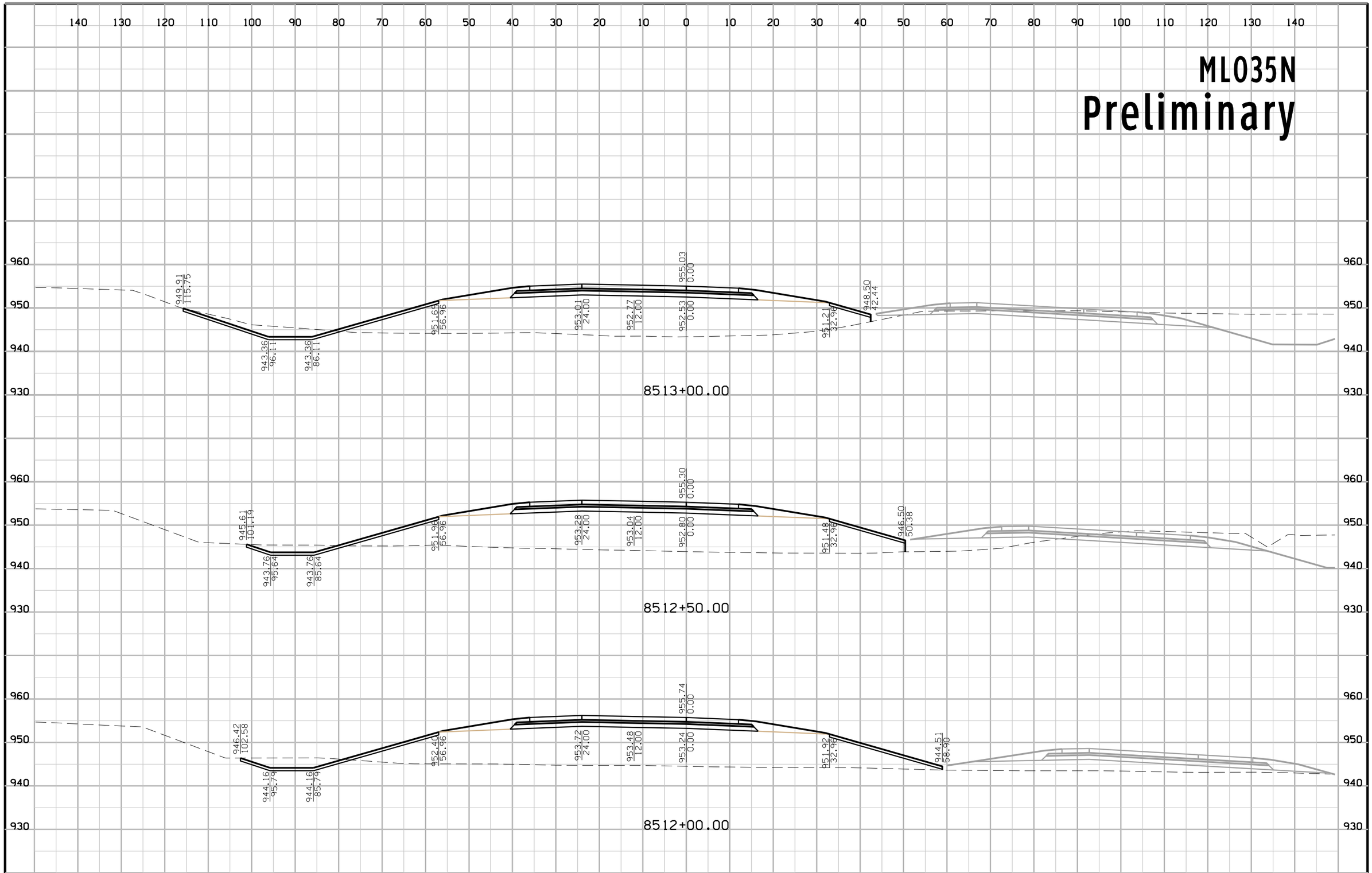
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.46

8:24:44 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

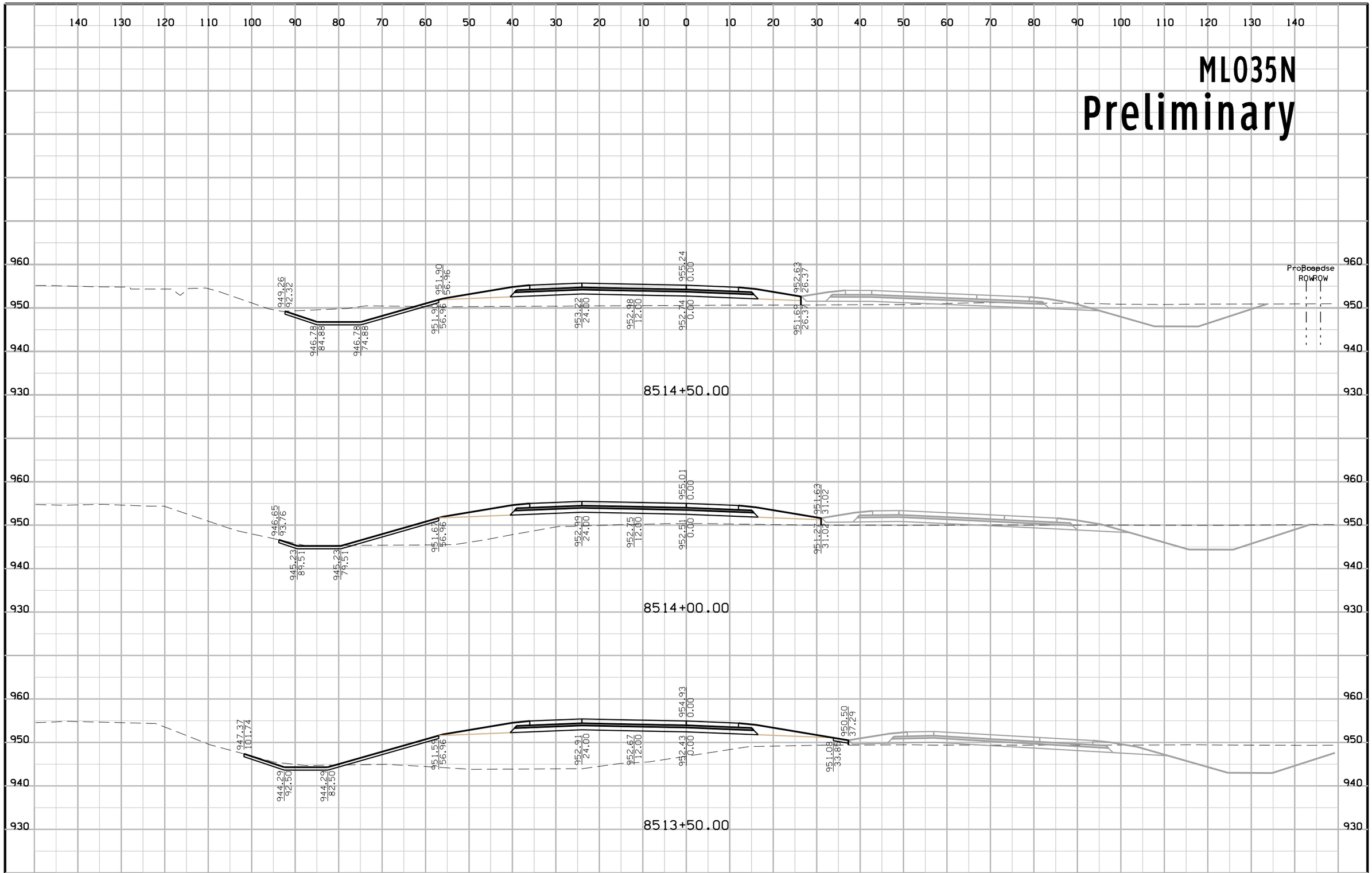
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.47

8:24:45 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

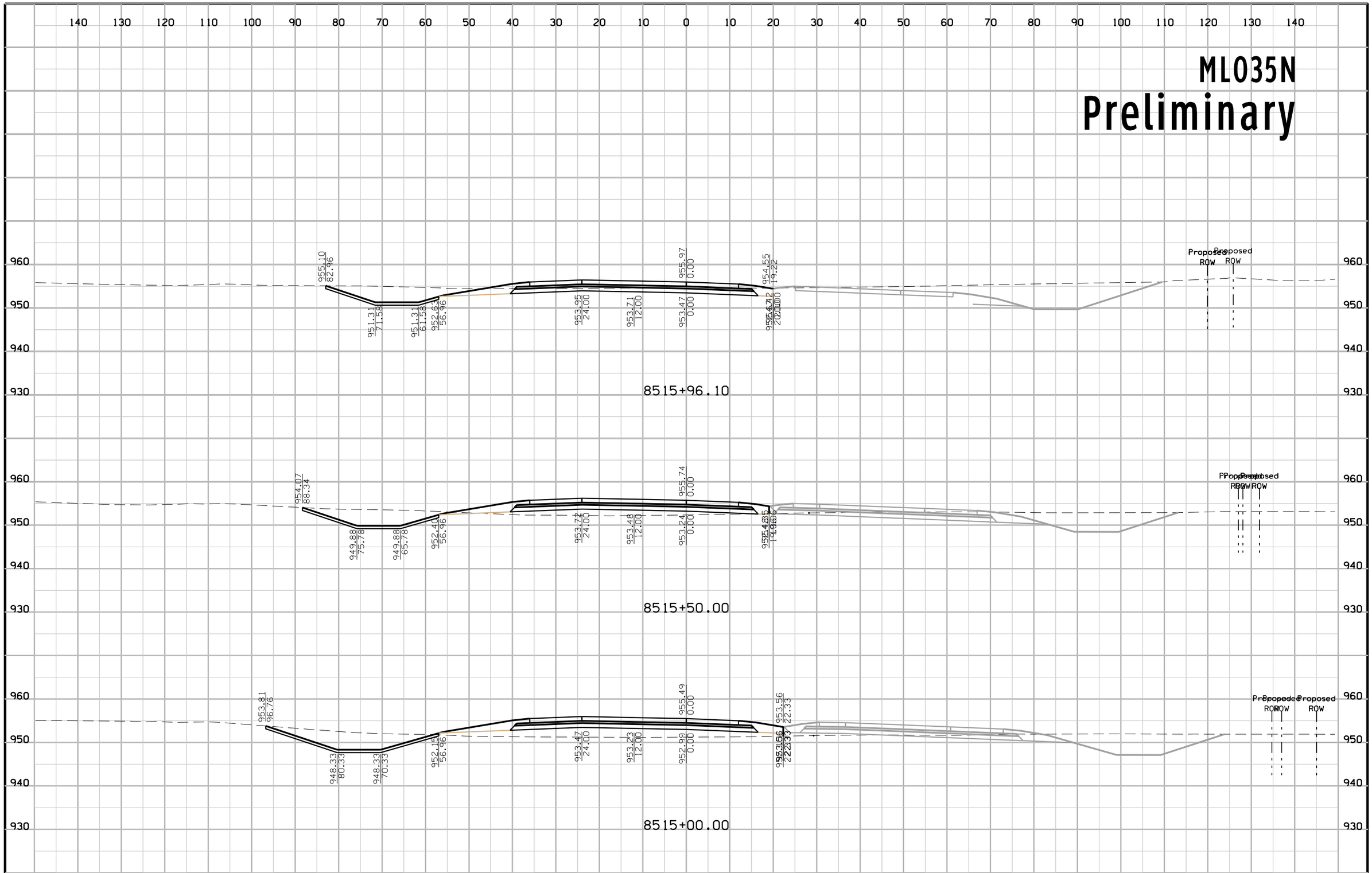
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.48

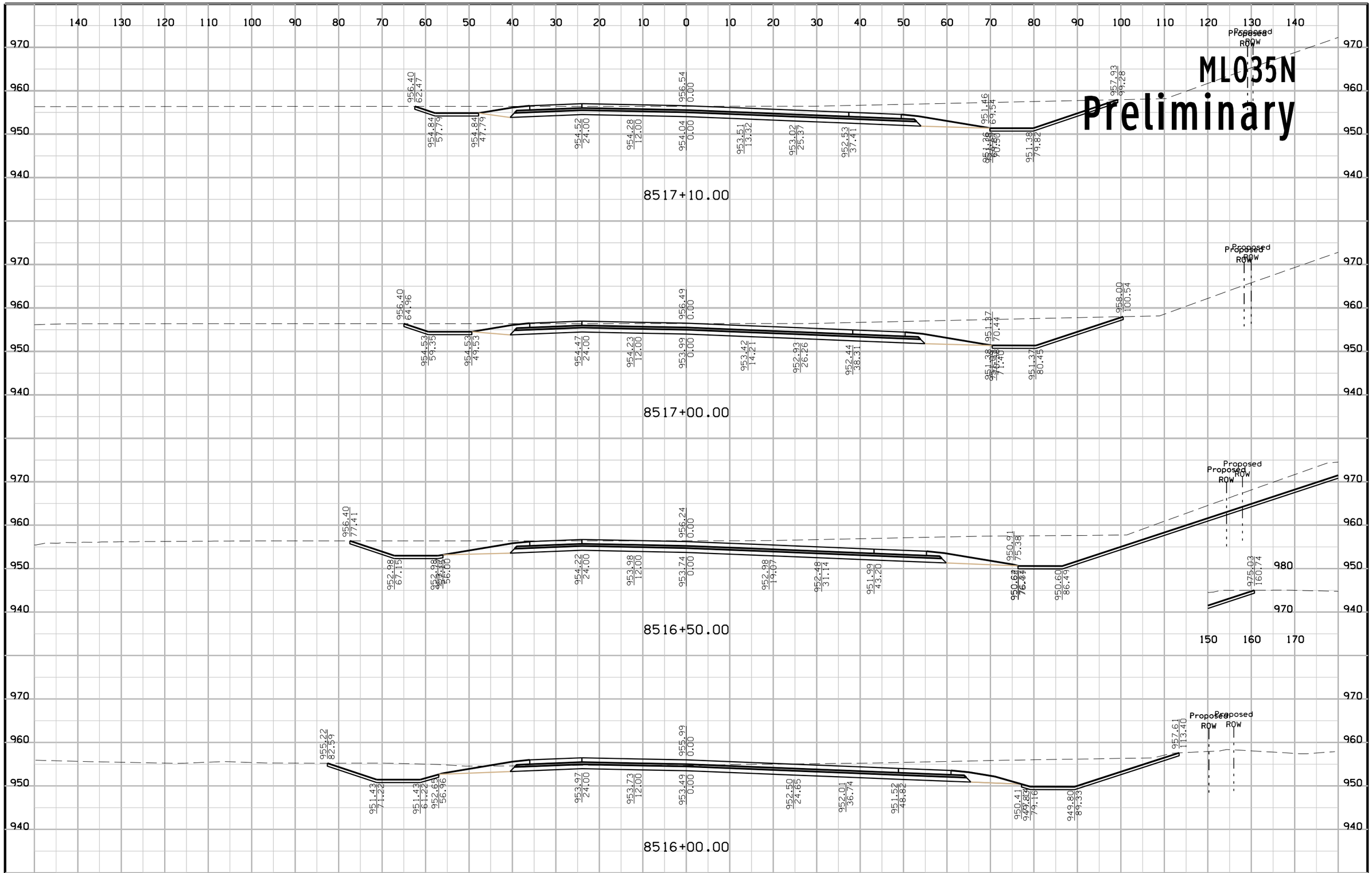
8:24:46 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
Preliminary



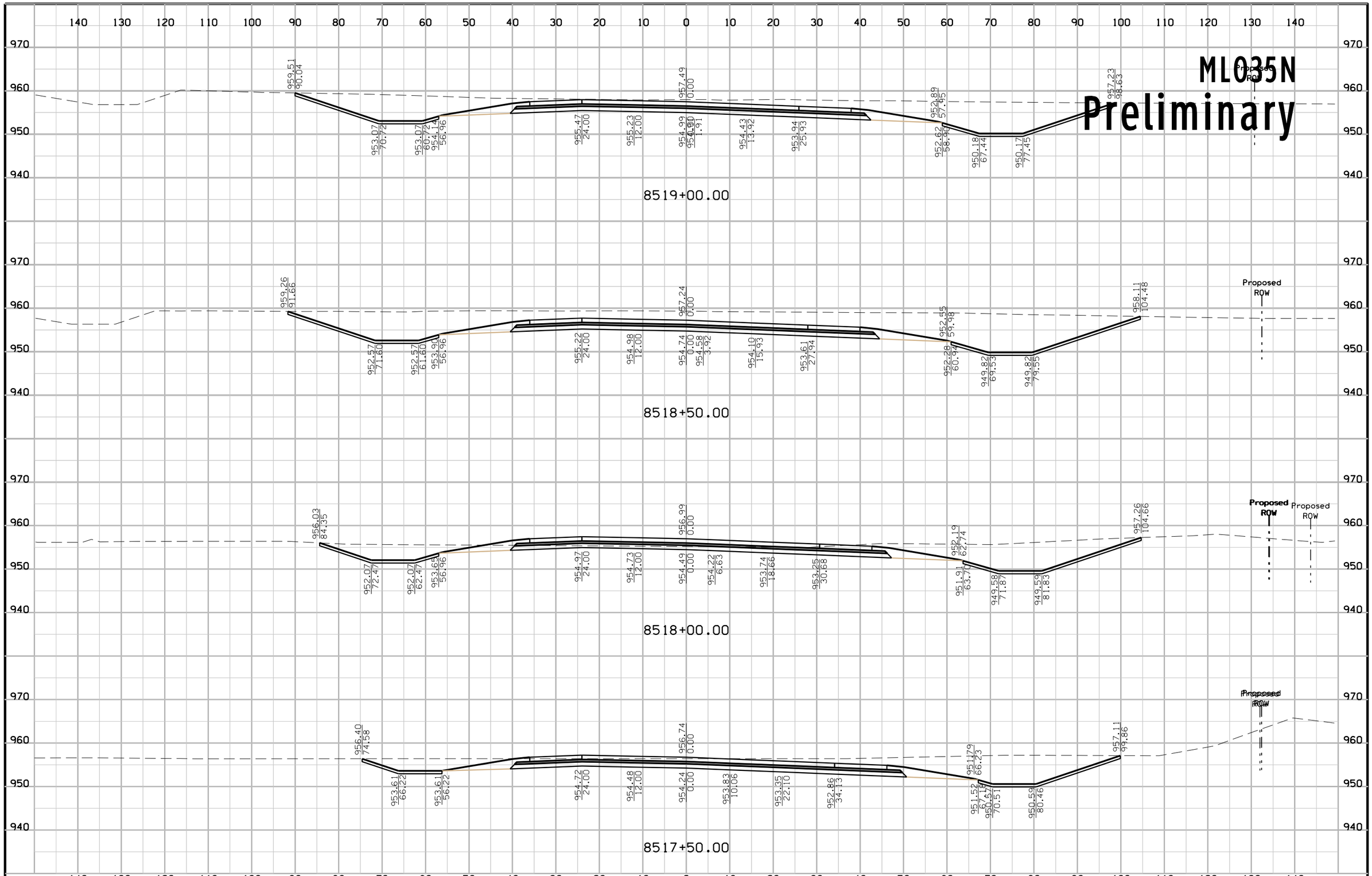
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.49

8:24:48 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



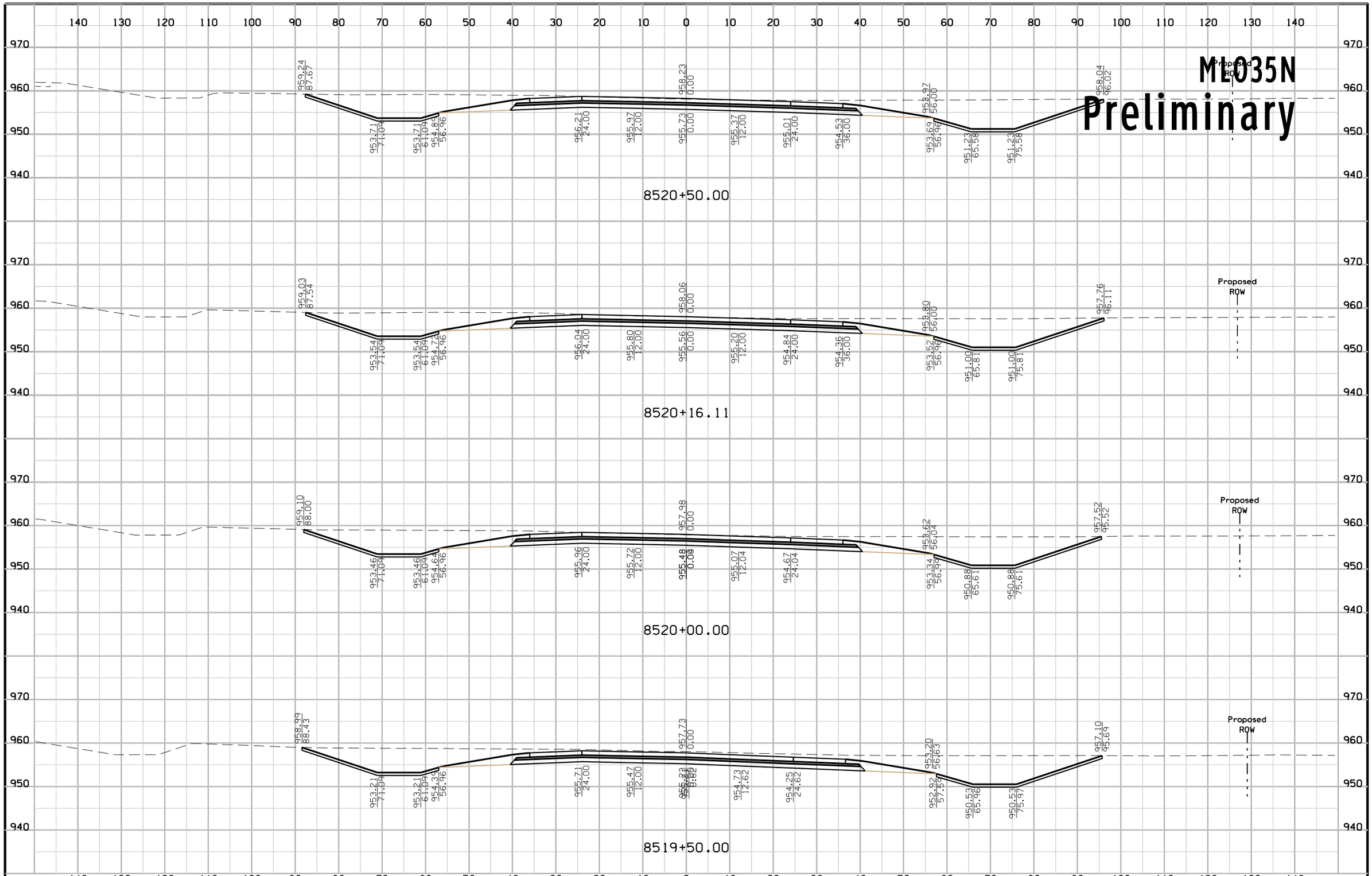
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.50

8:24:49 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



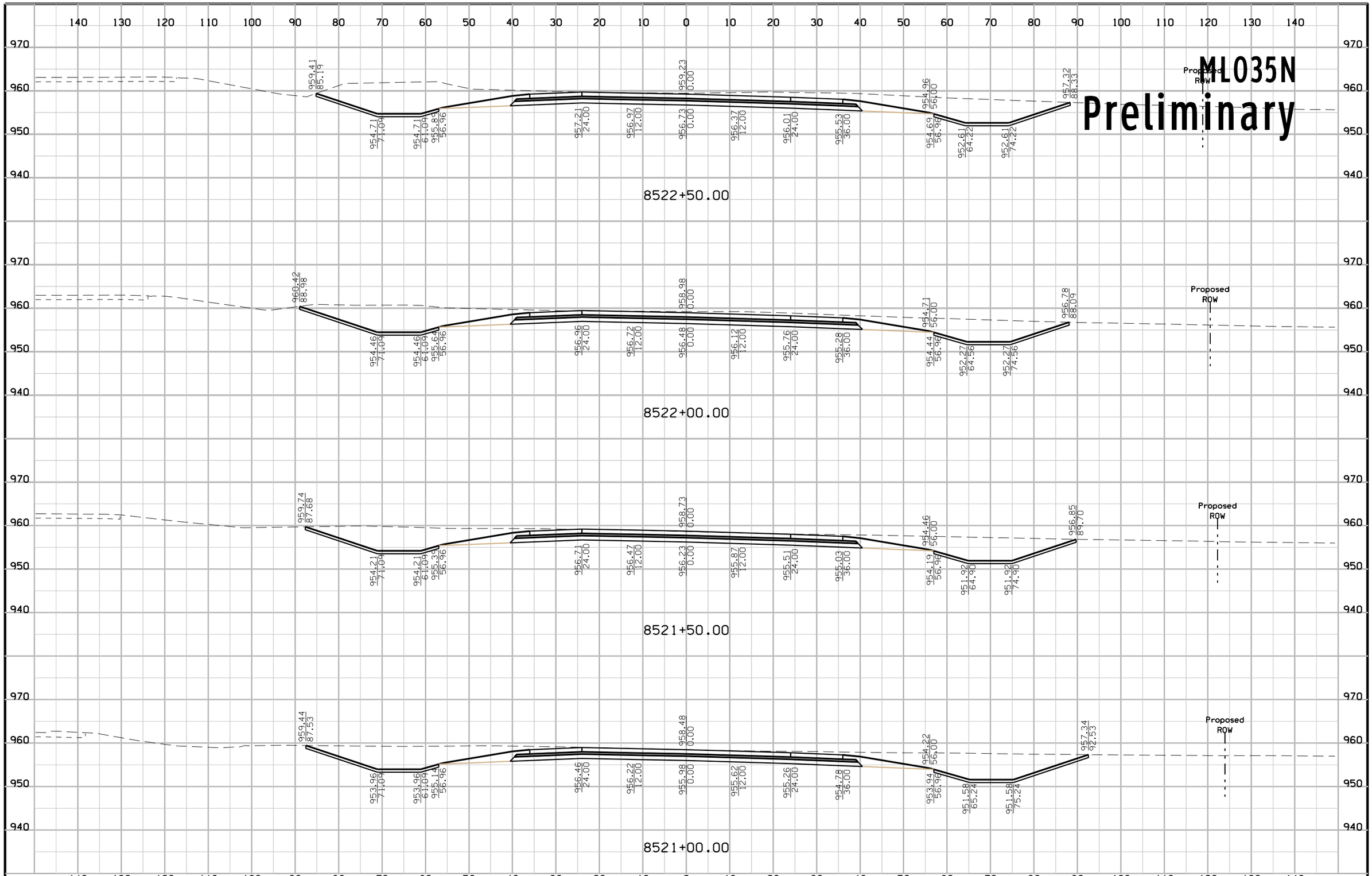
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.51

8:24:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



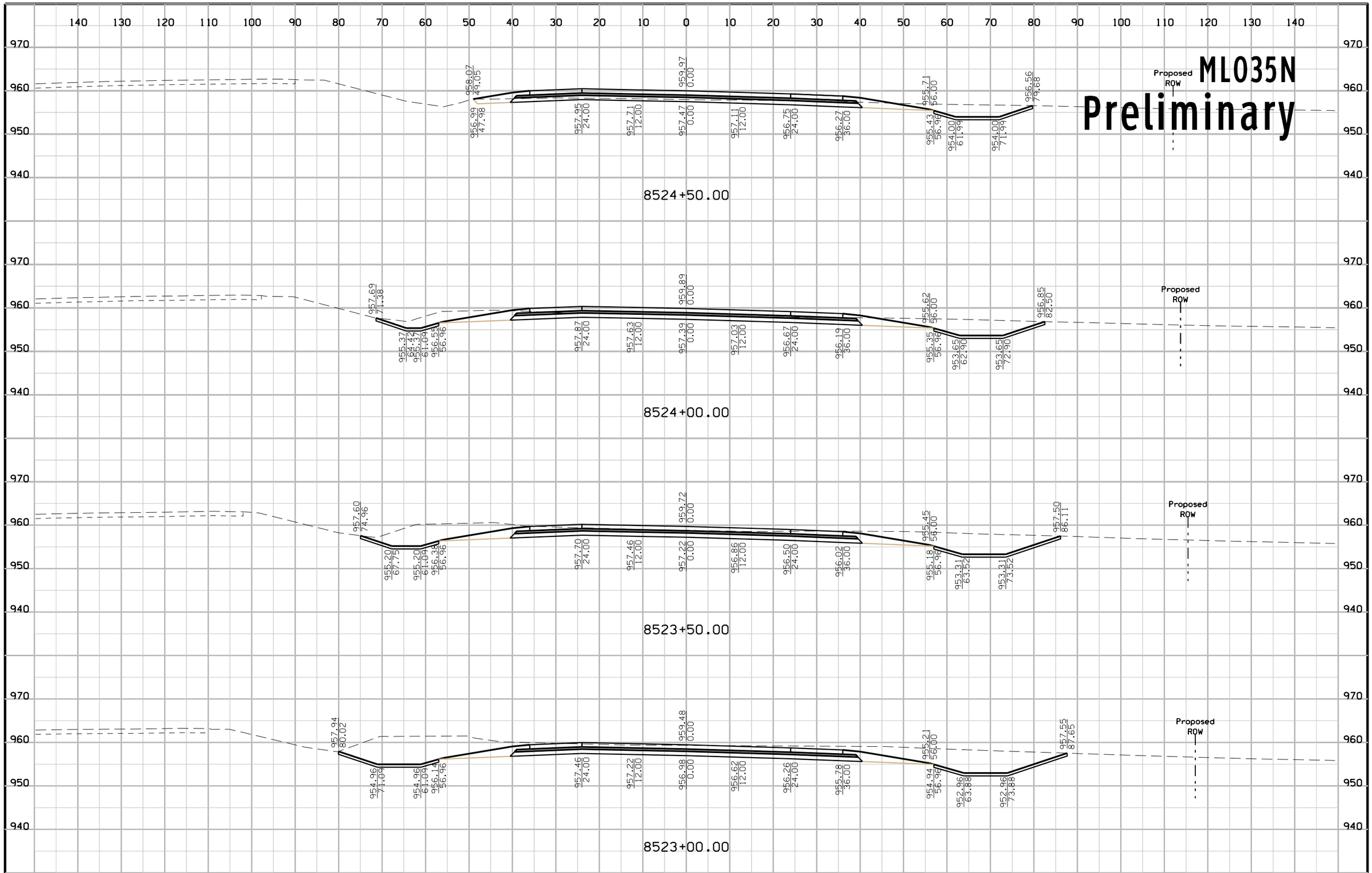
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.52

8:24:52 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



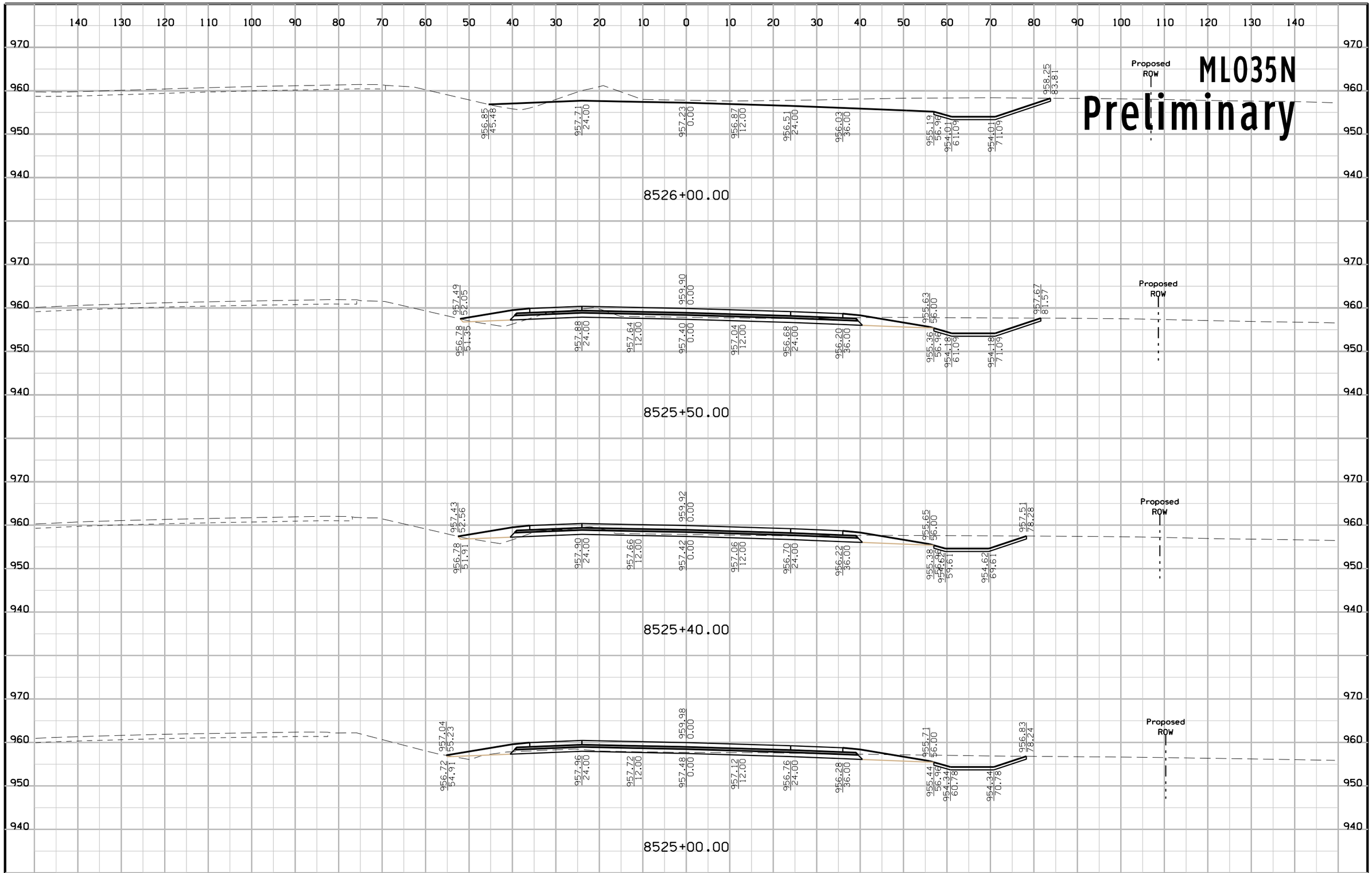
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.53

8:24:54 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



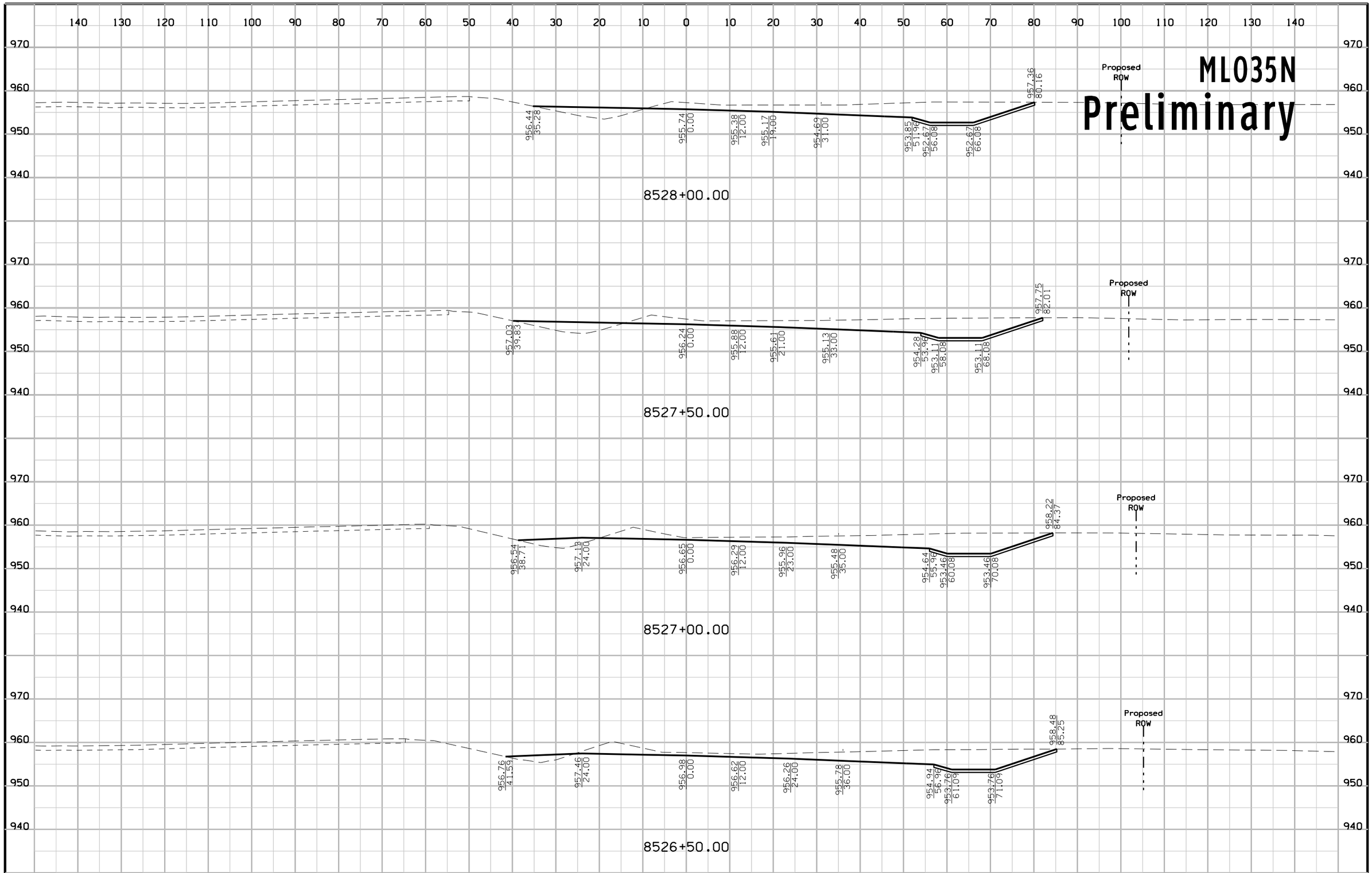
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.54

8:24:55 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



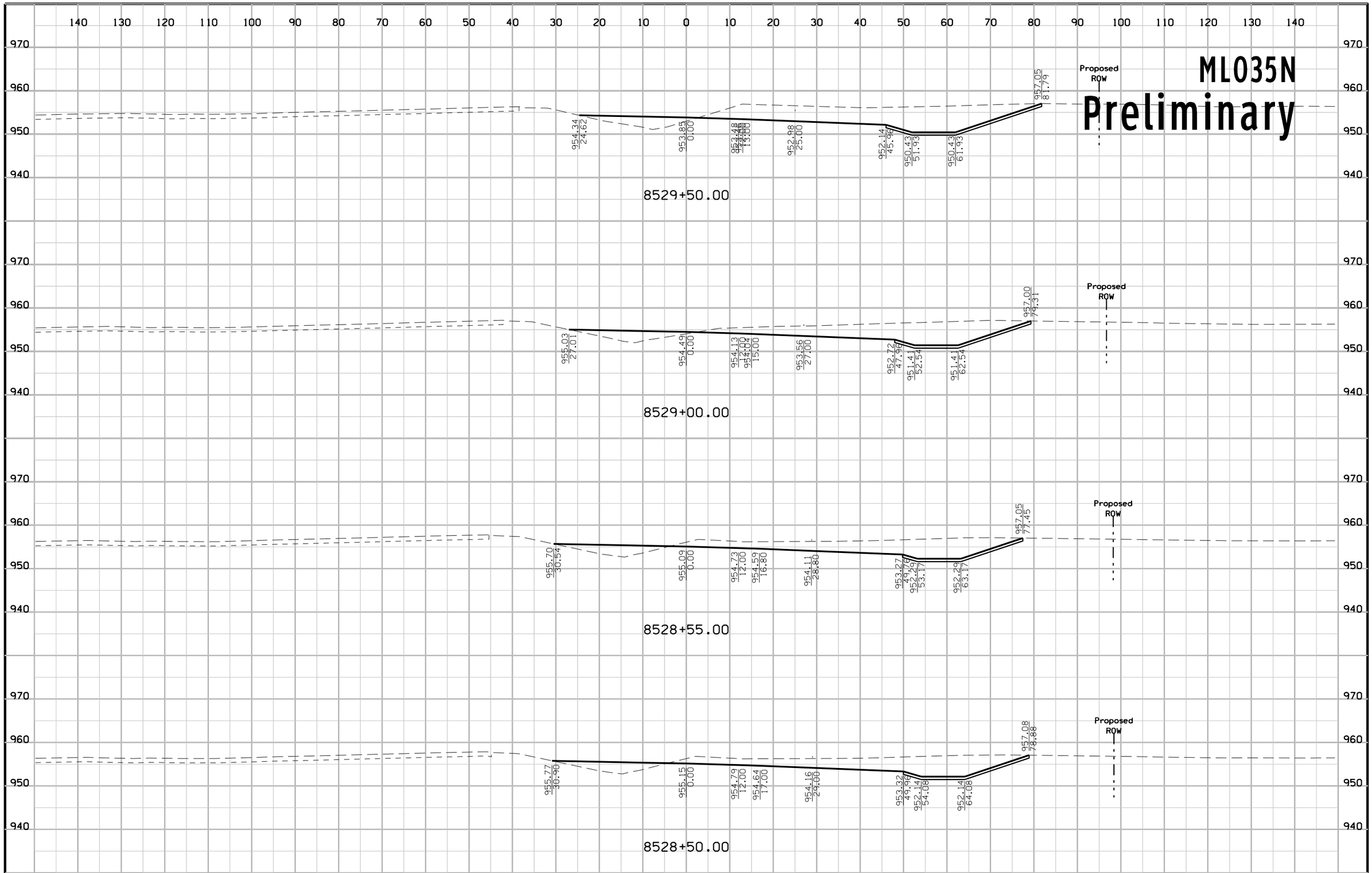
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.55

8:24:57 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



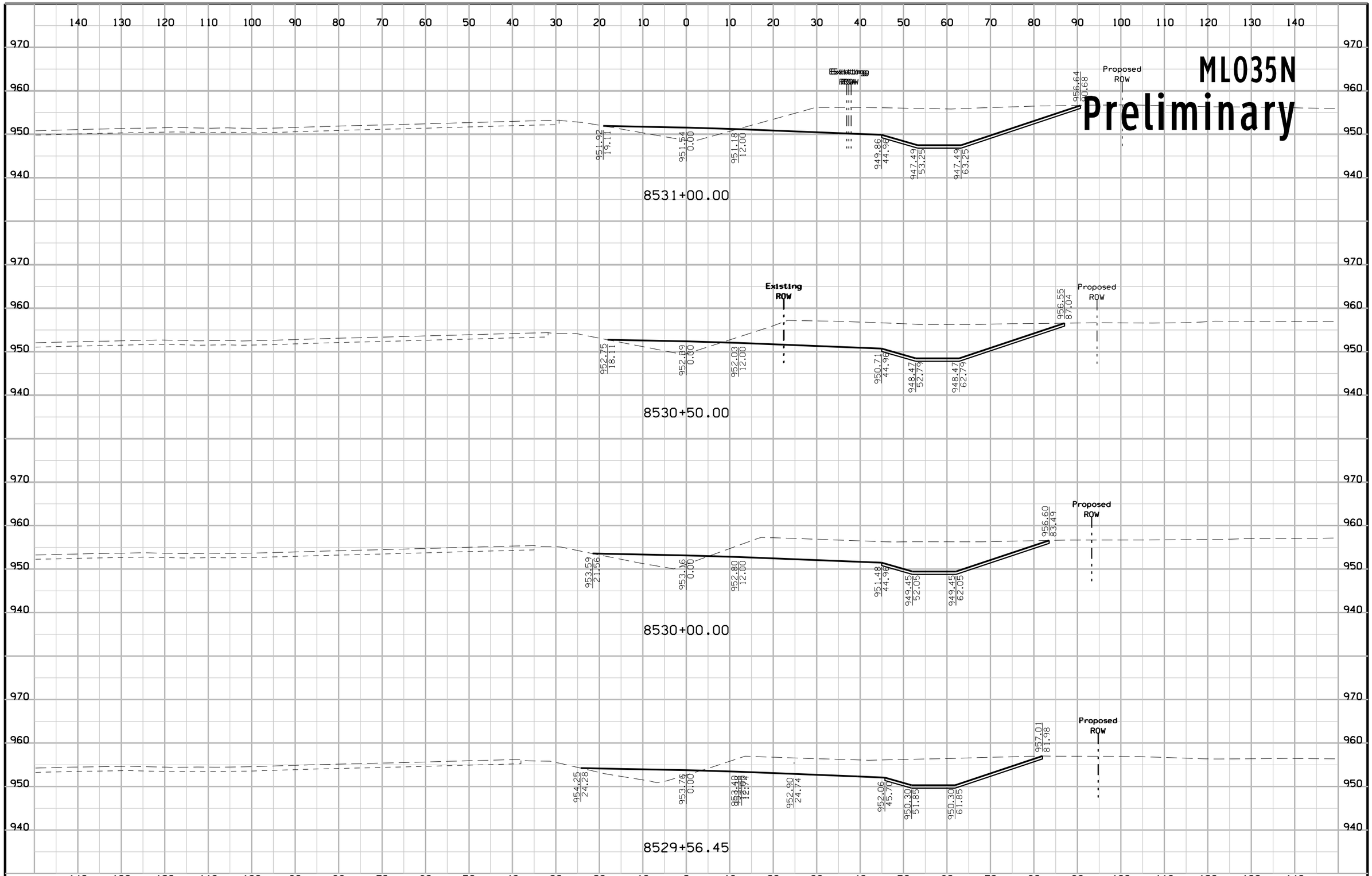
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.56

8:24:58 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.57

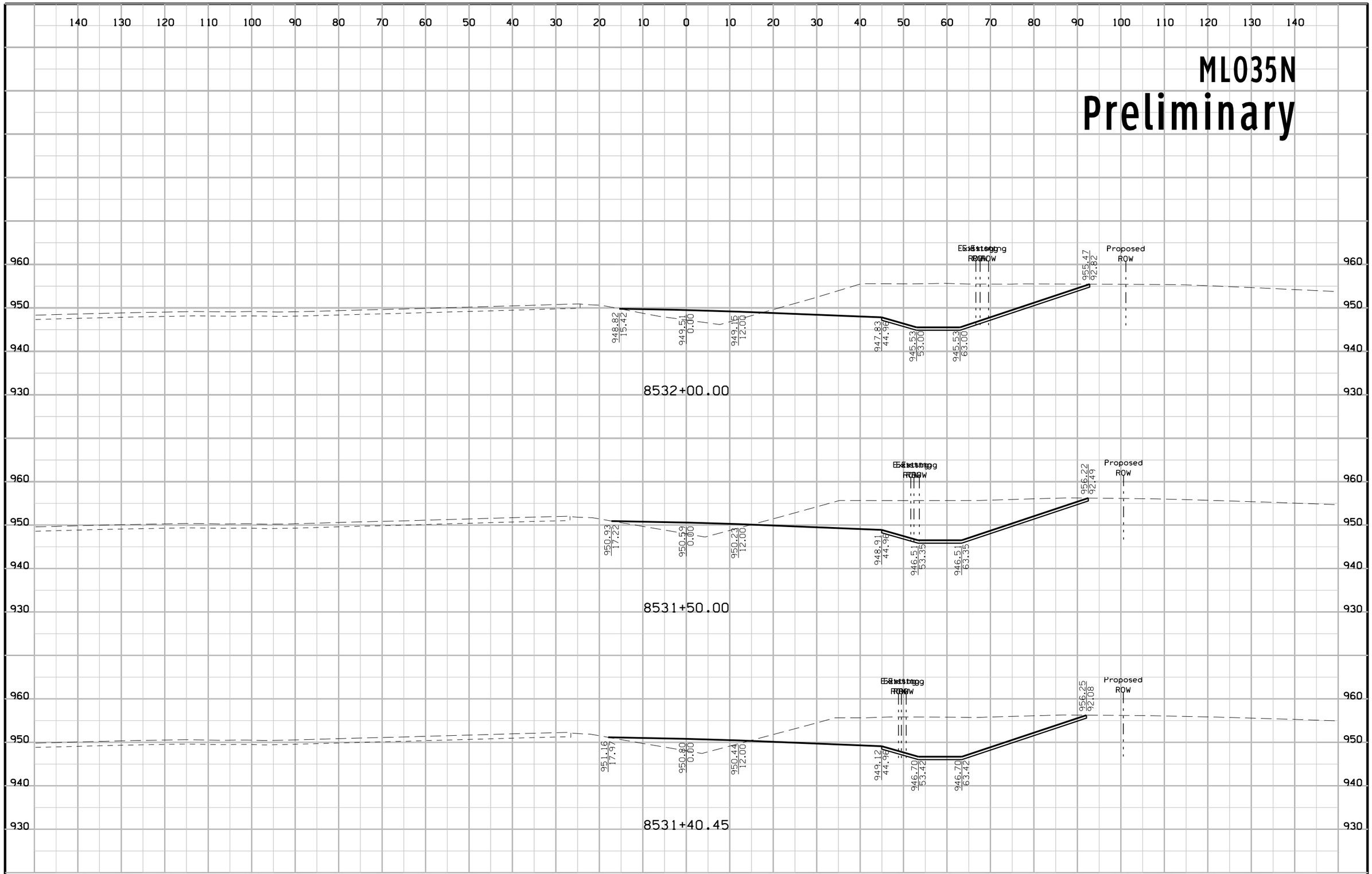
8:25:00 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.58

8:25:01 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

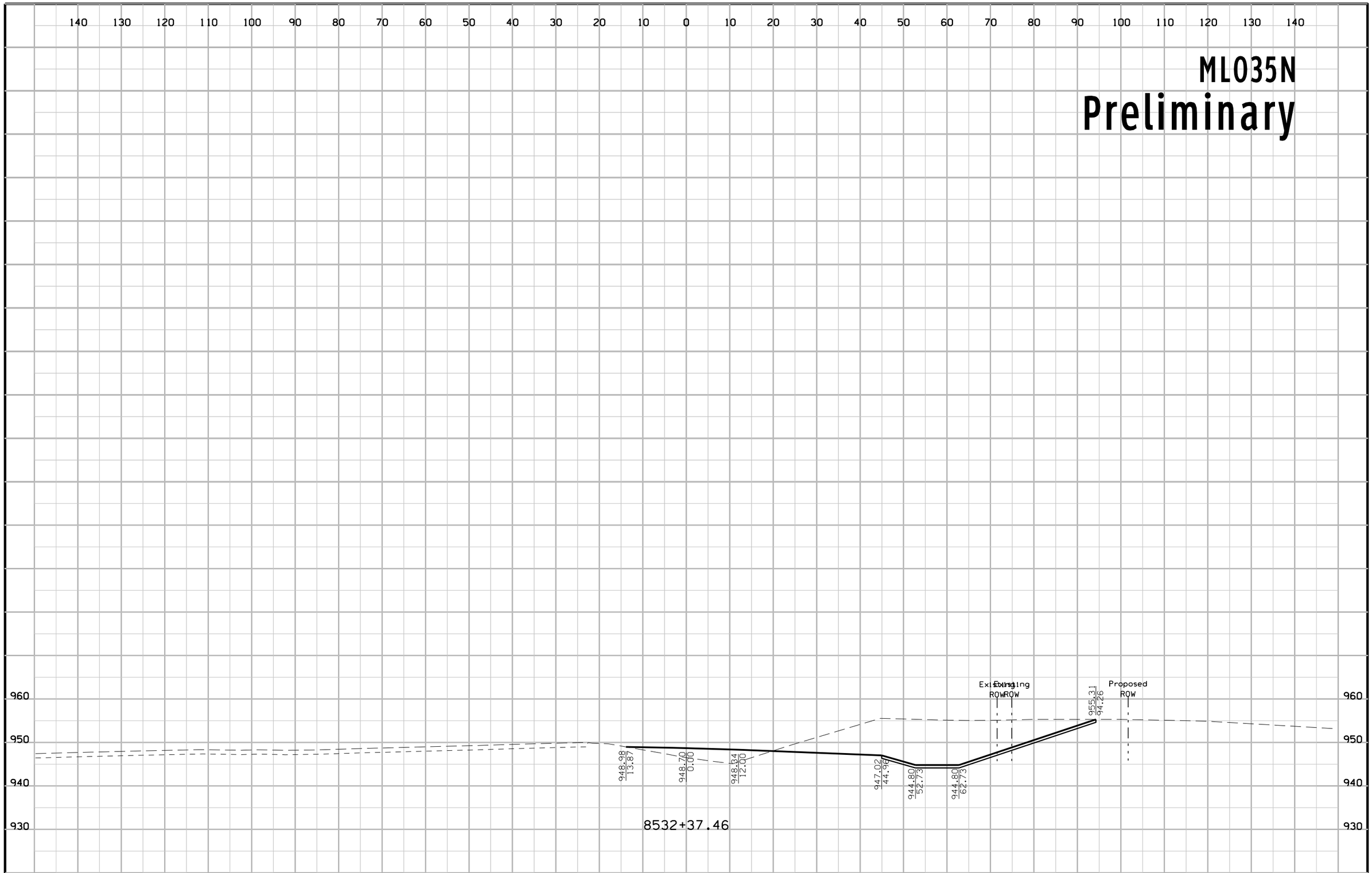
ML035N
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.59

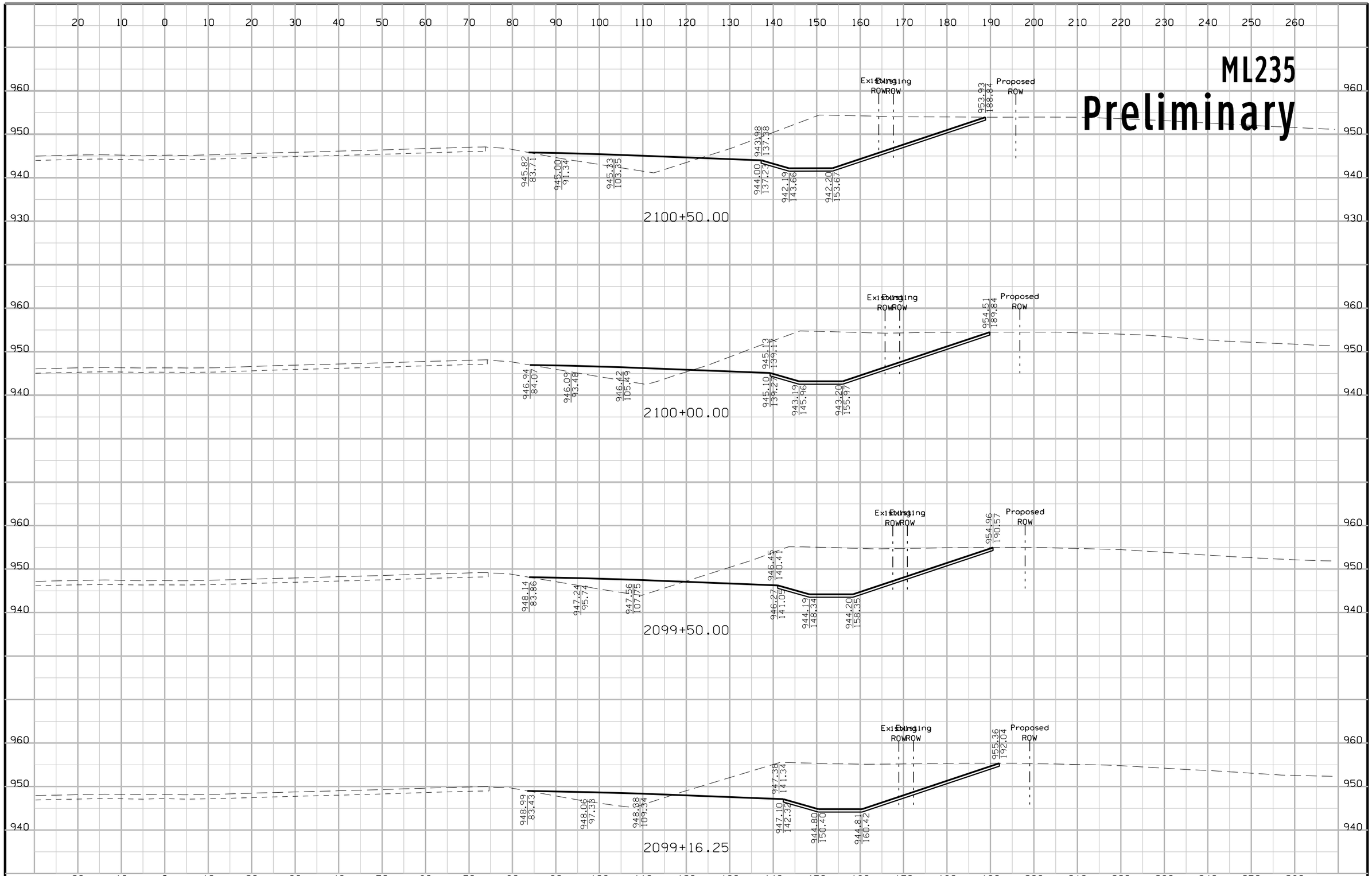
8:25:03 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML035N
Preliminary



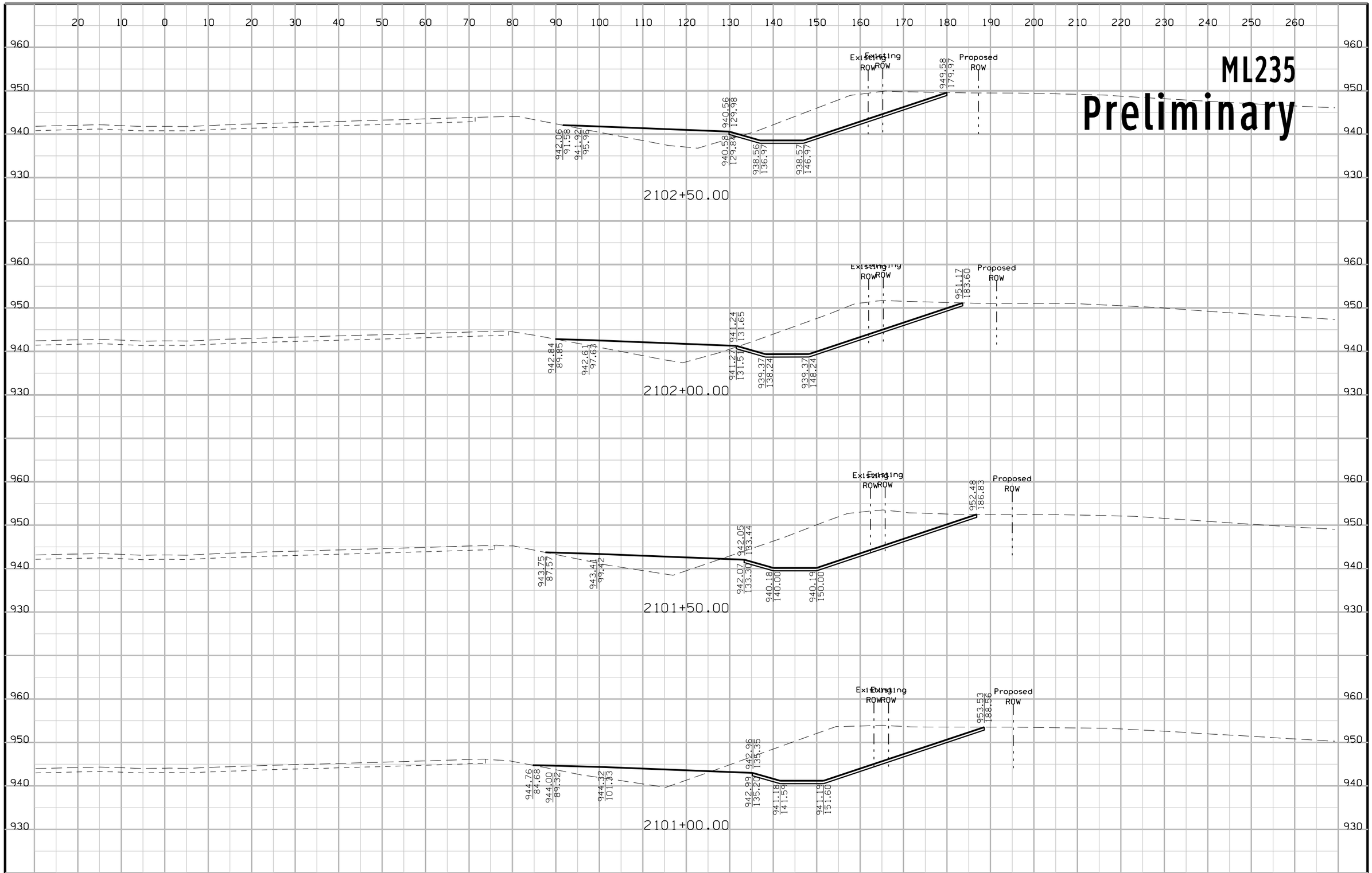
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.60

8:25:04 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.61

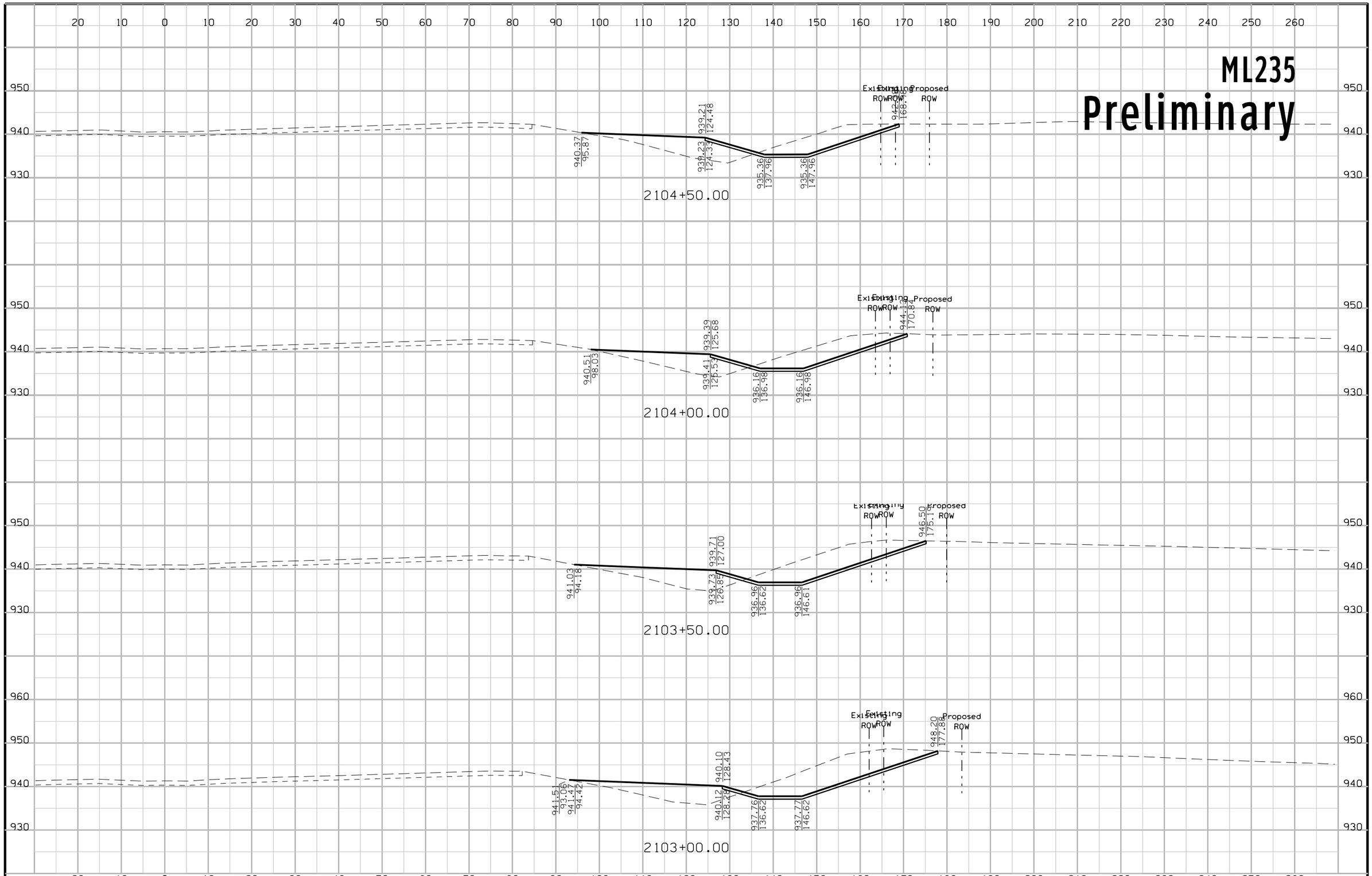
8:25:06 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.62

8:25:07 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

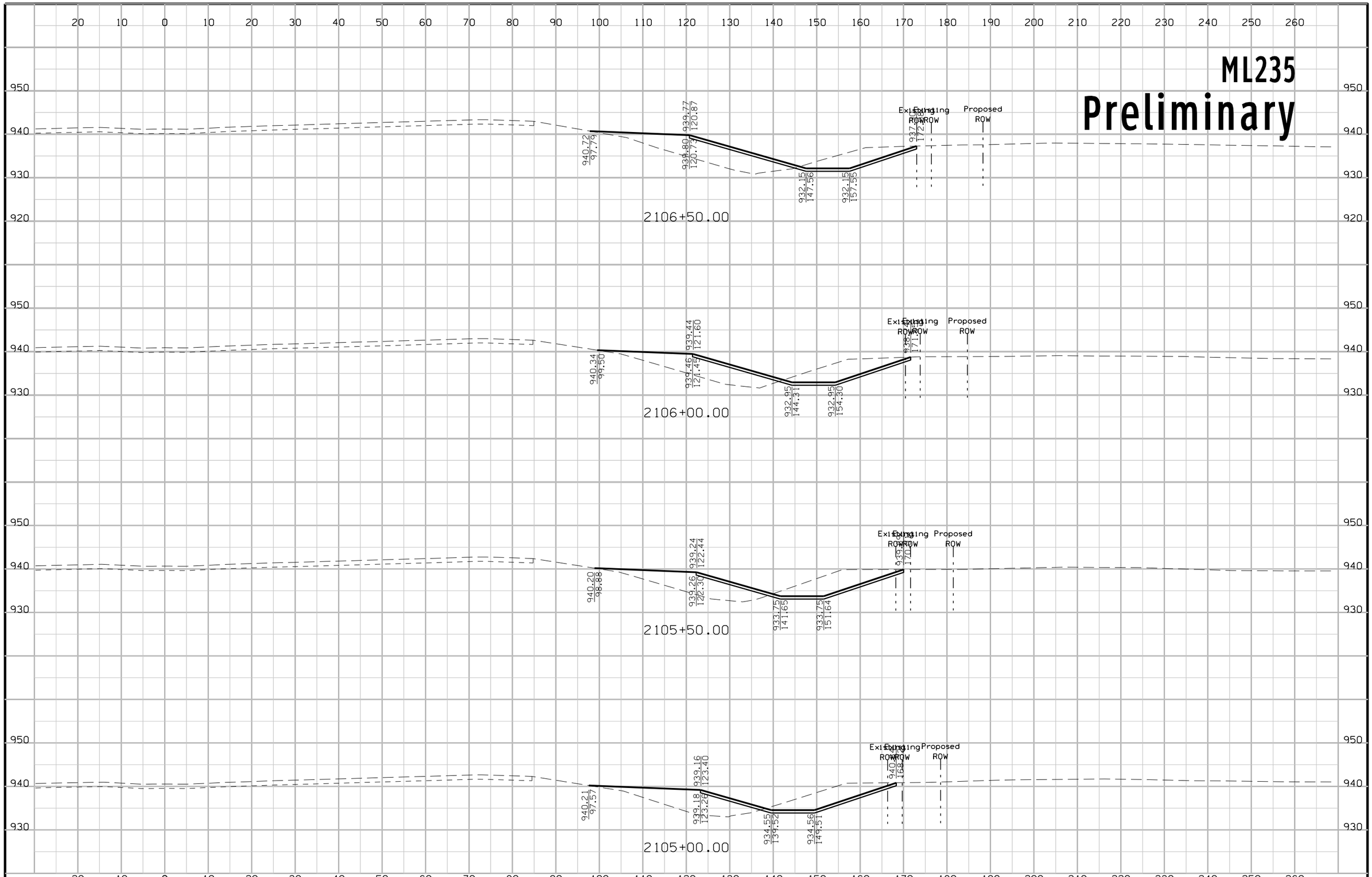
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.63

8:25:08 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

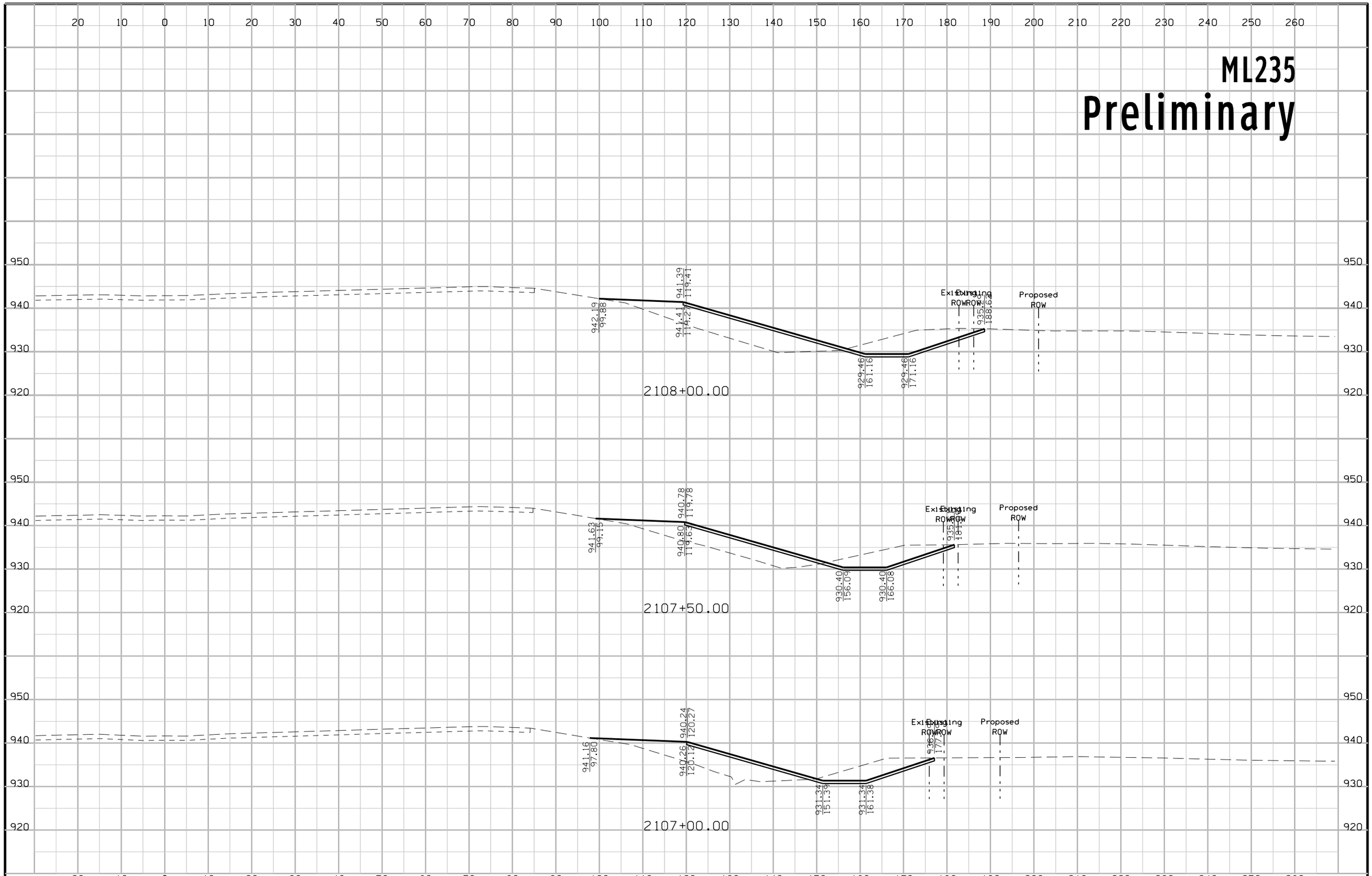
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.64

8:25:10 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

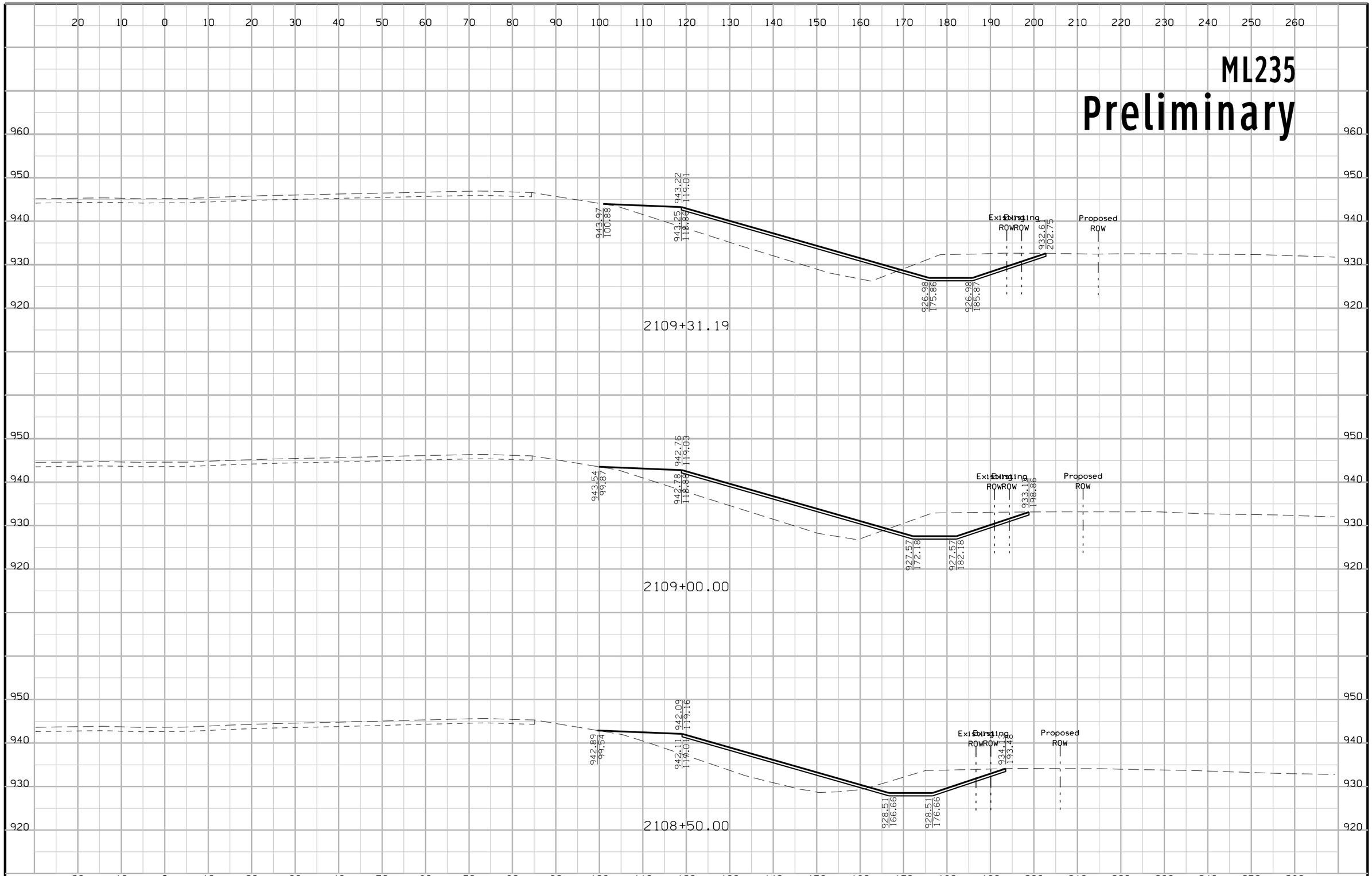
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.65

8:25:11 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

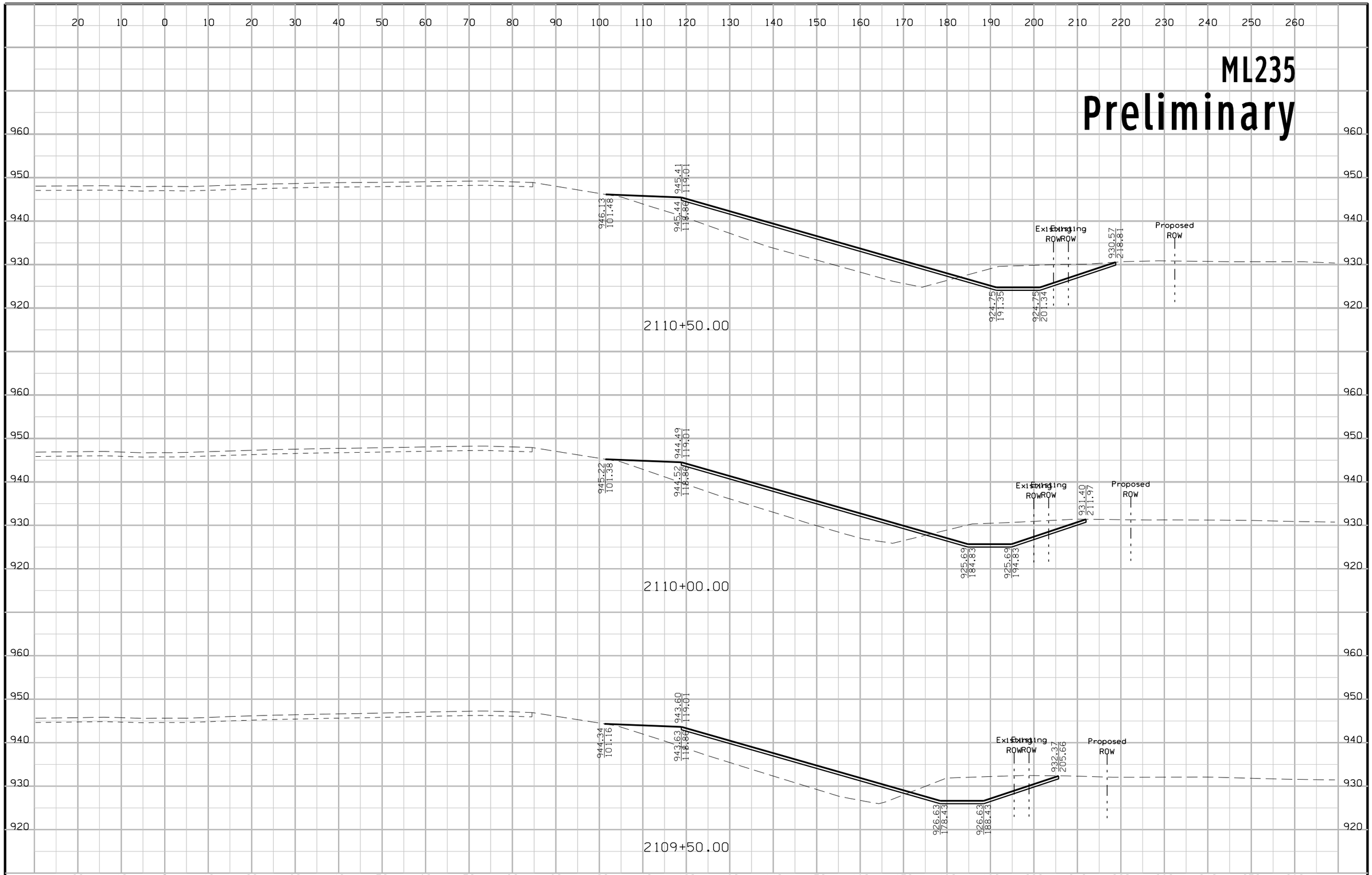
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.66

8:25:13 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

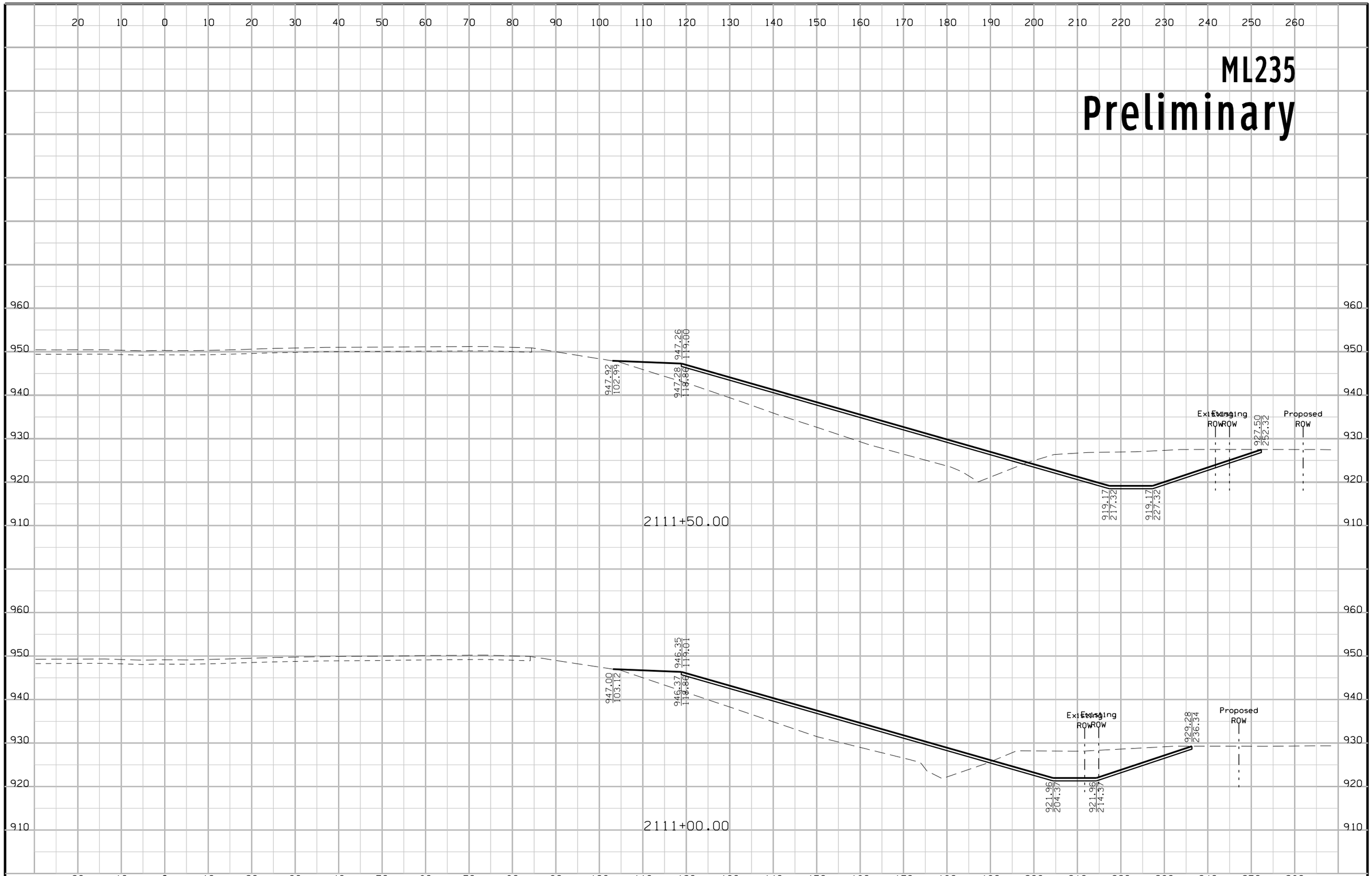
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.67

8:25:14 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

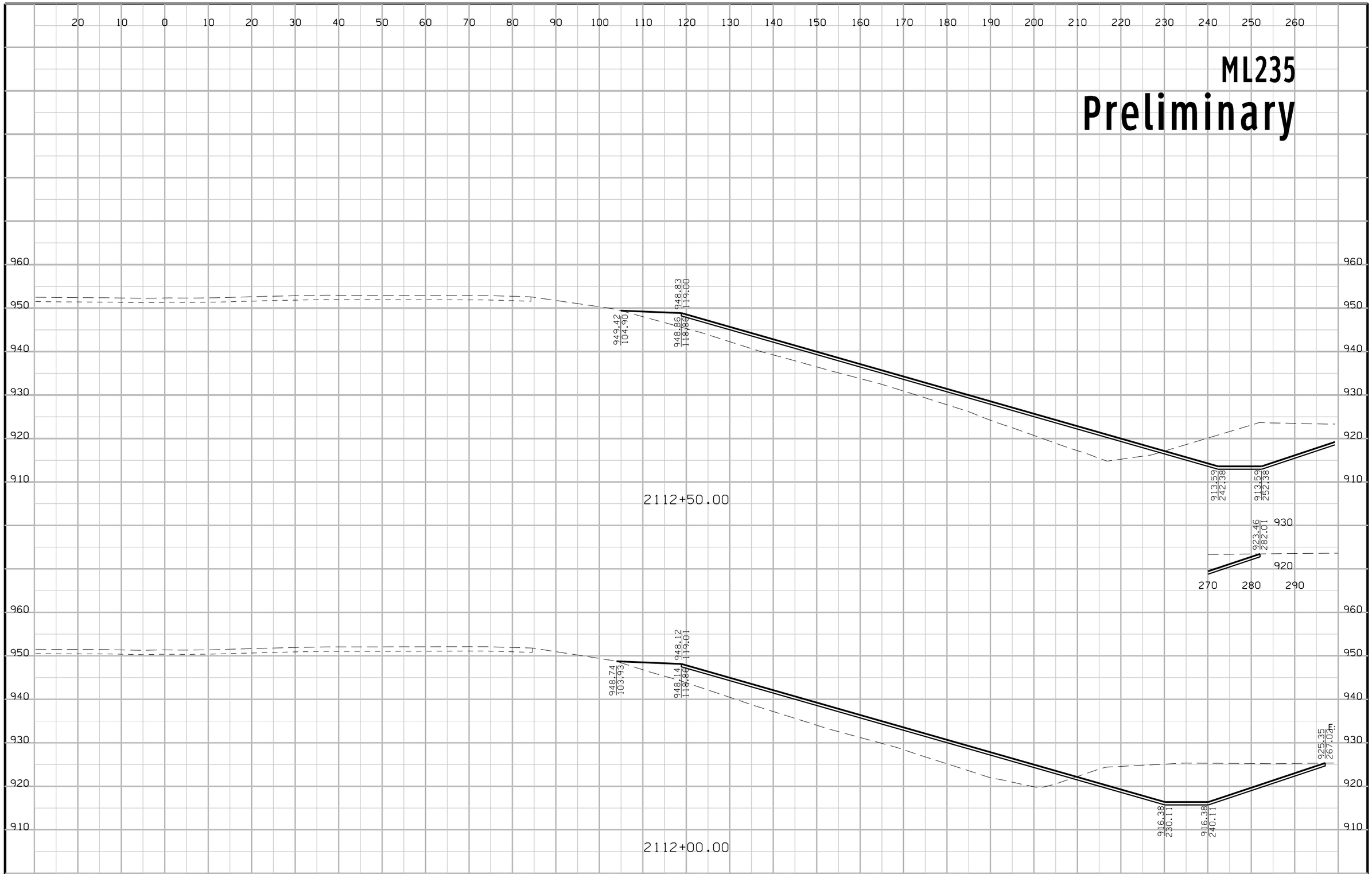
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.68

8:25:15 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

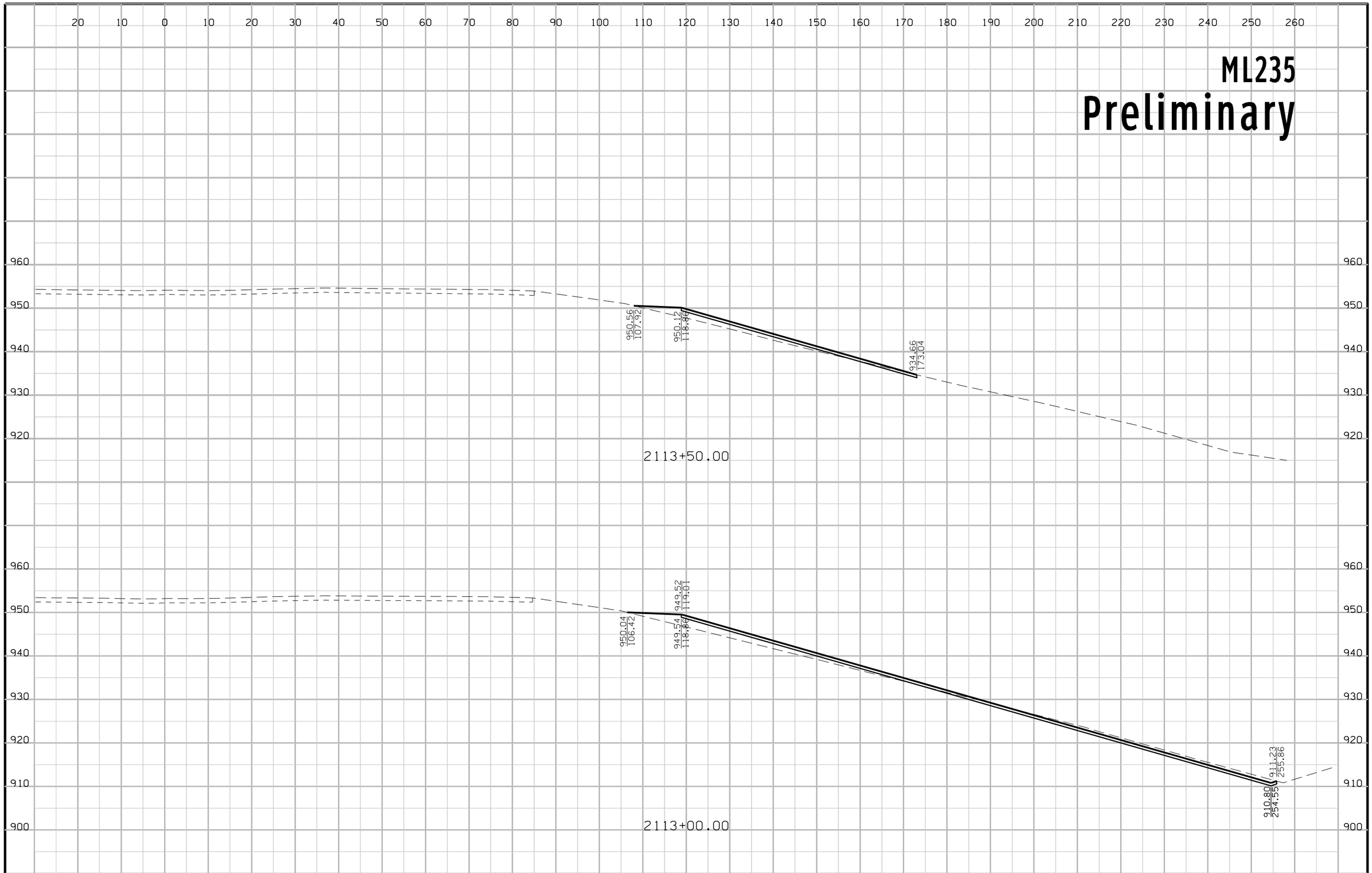
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.69

8:25:17 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

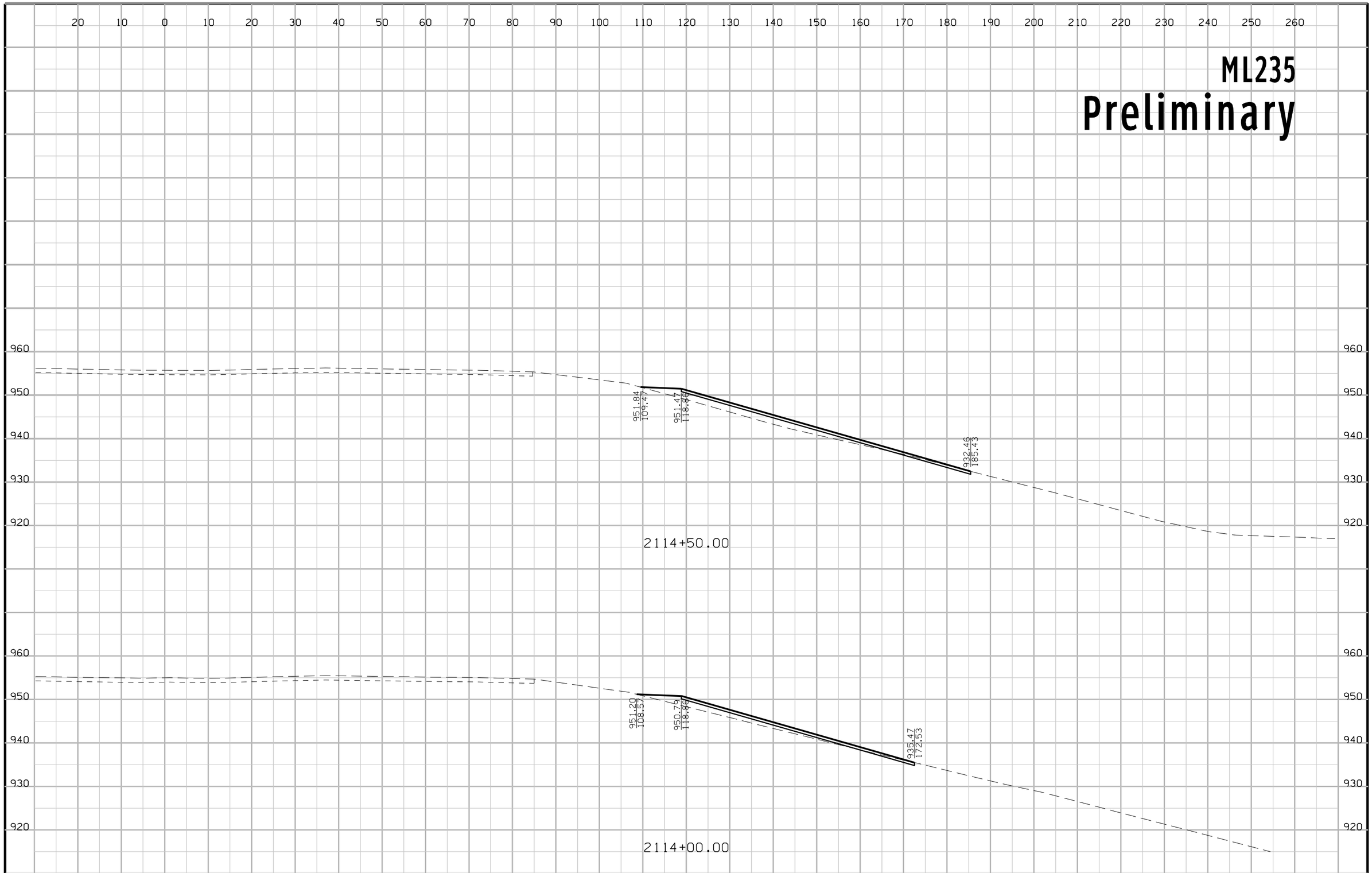
ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.70

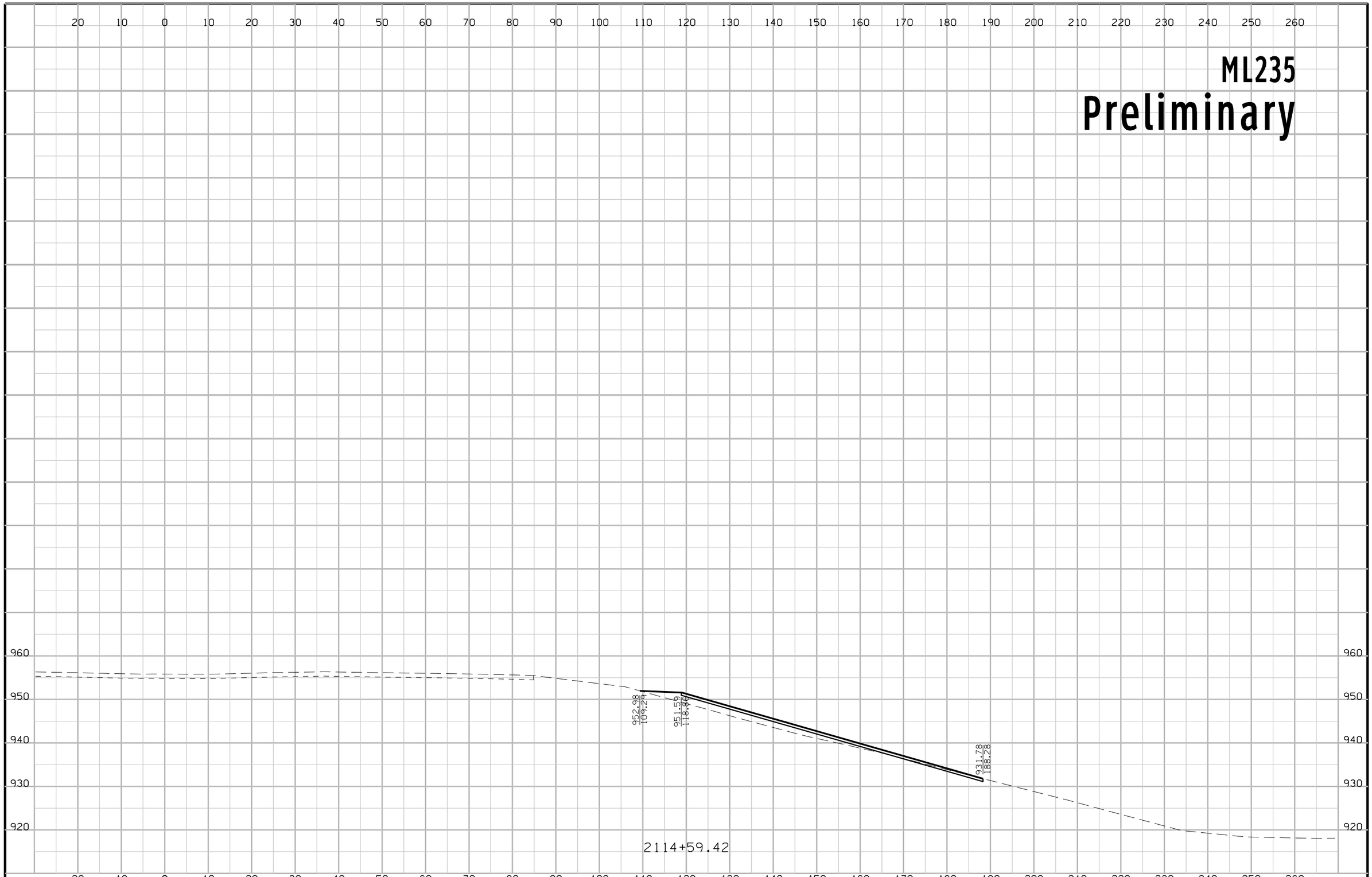
8:25:18 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML235
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.71

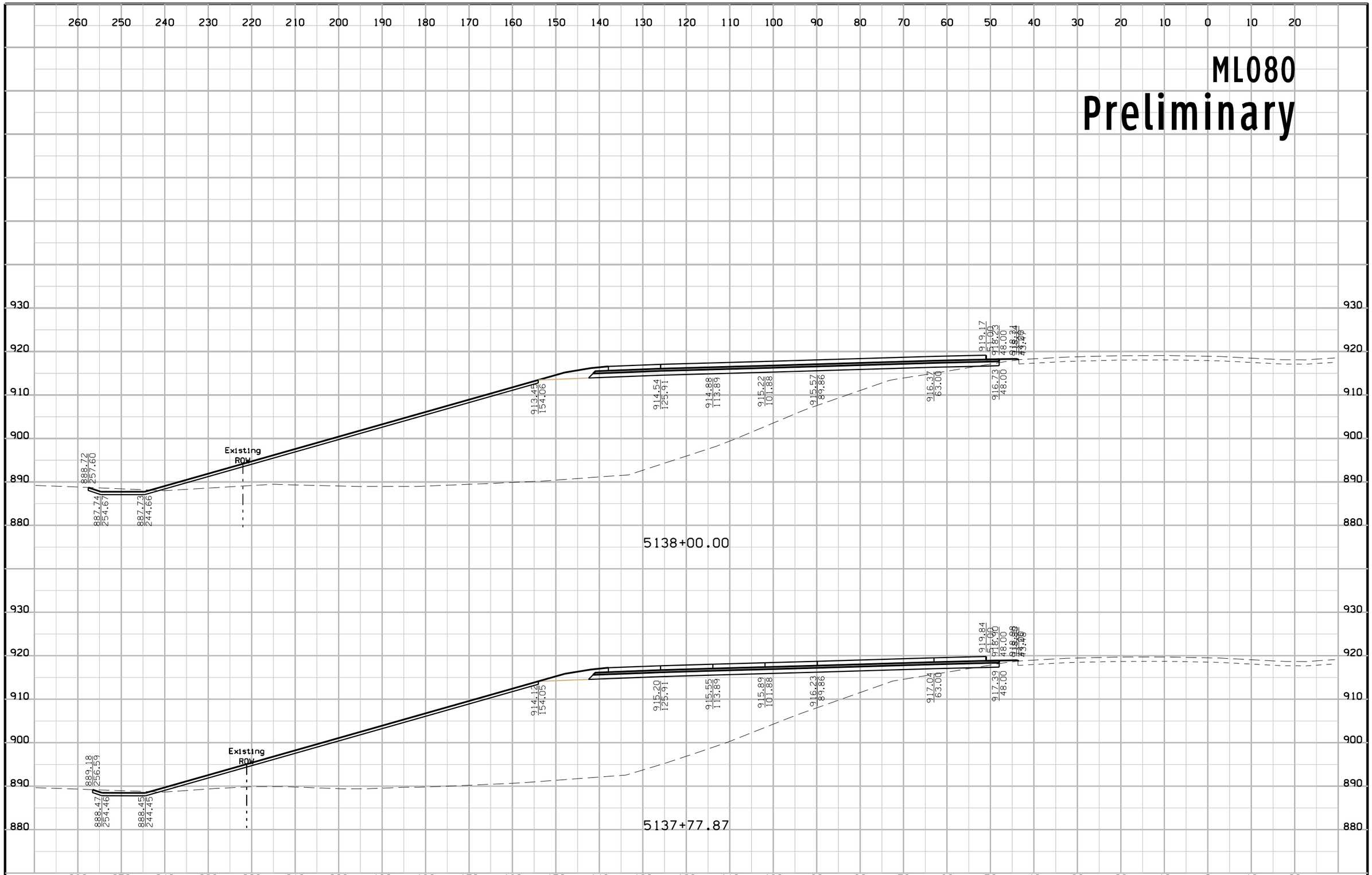
8:25:19 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.72

8:25:21 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

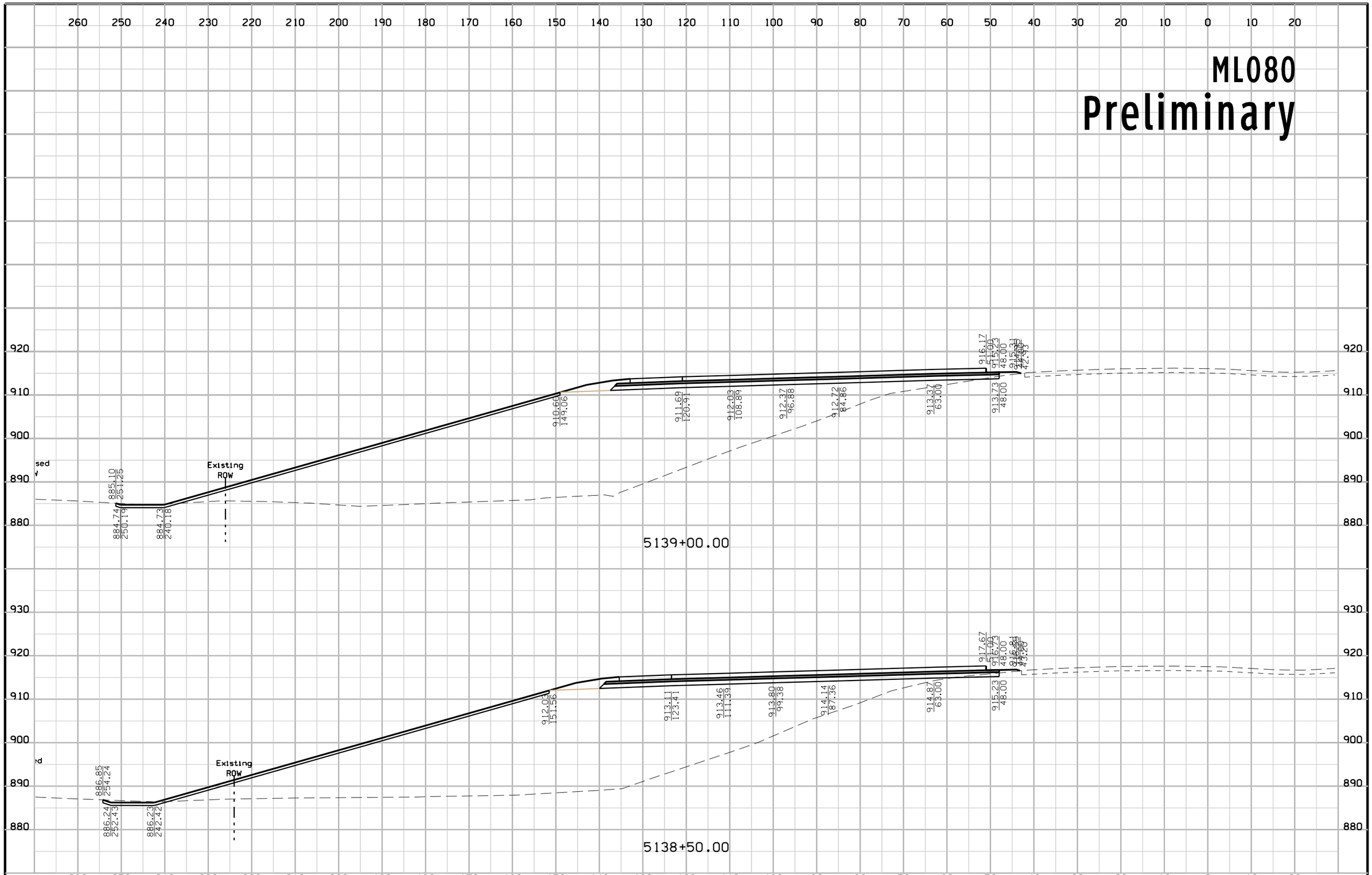
ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.73

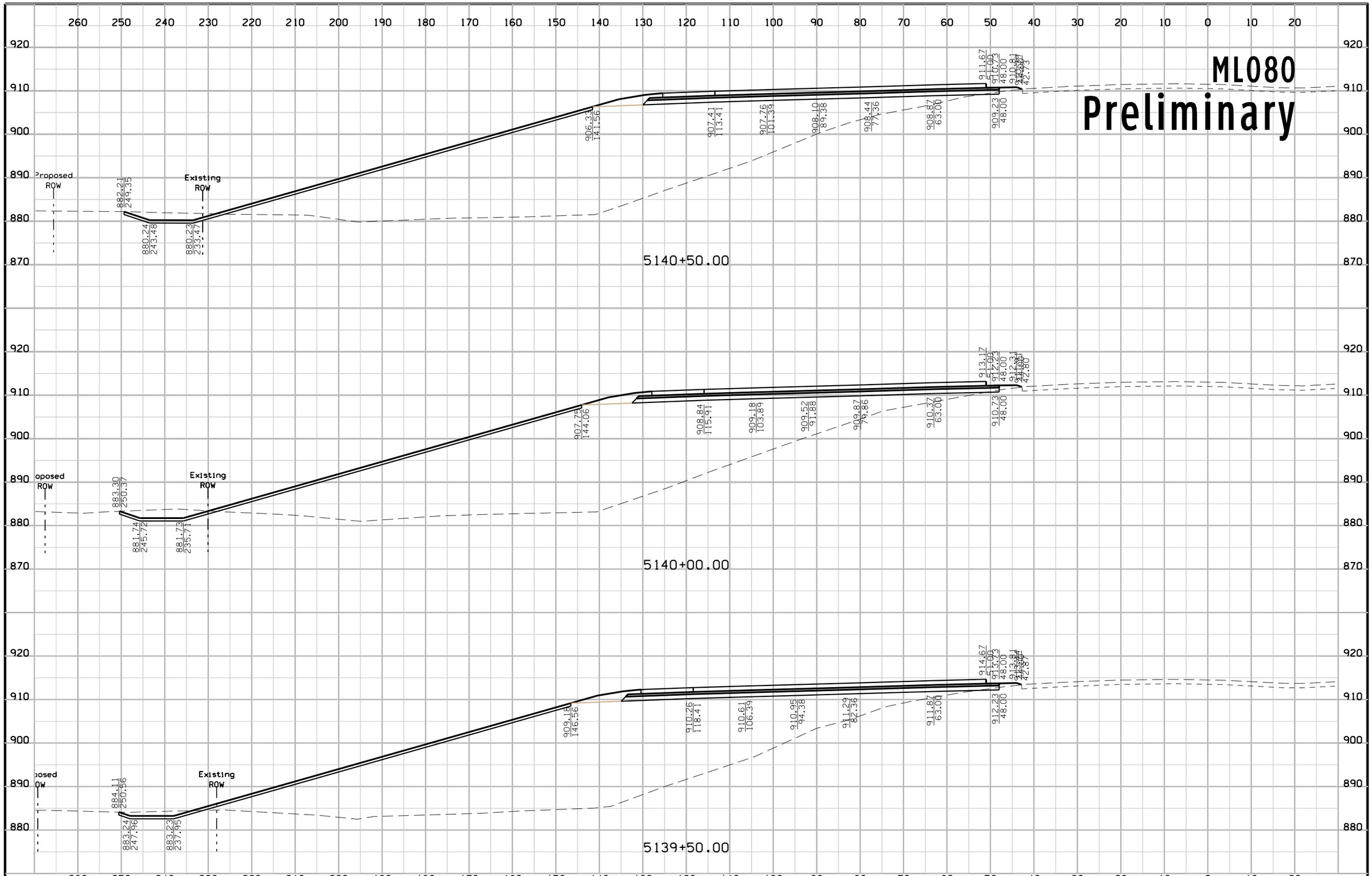
8:25:22 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.74

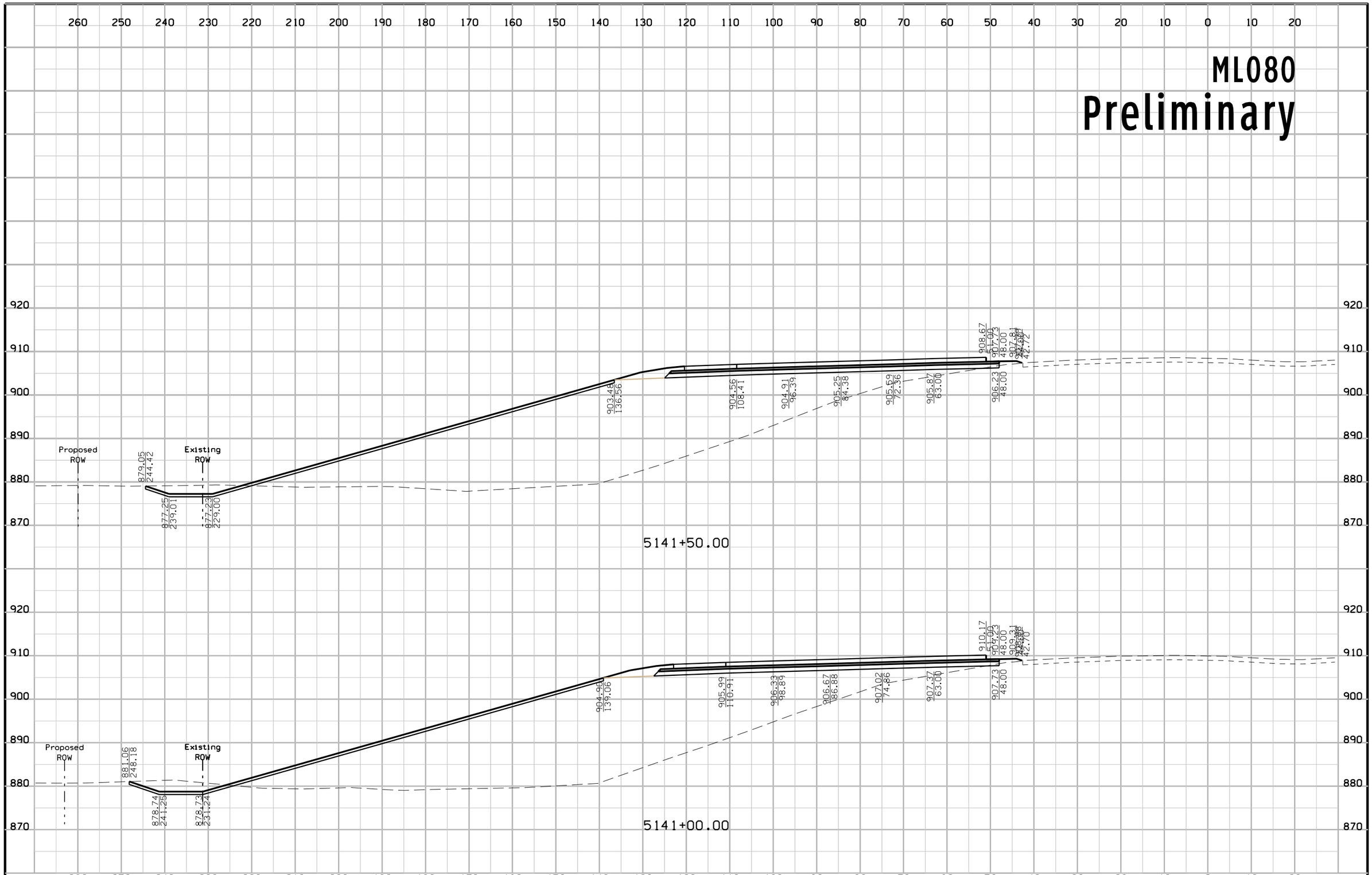
8:25:24 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.75

8:25:25 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

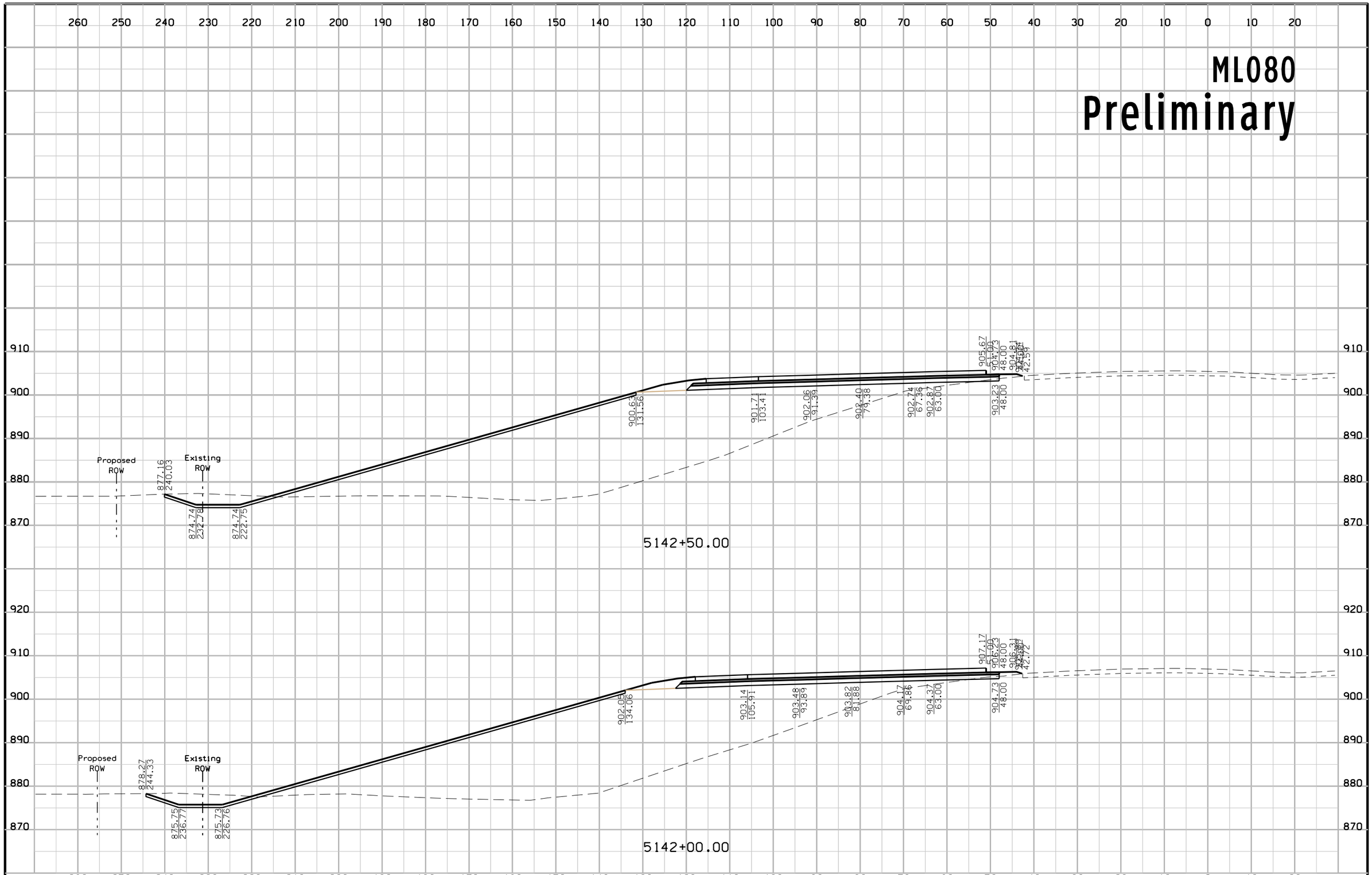
ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.76

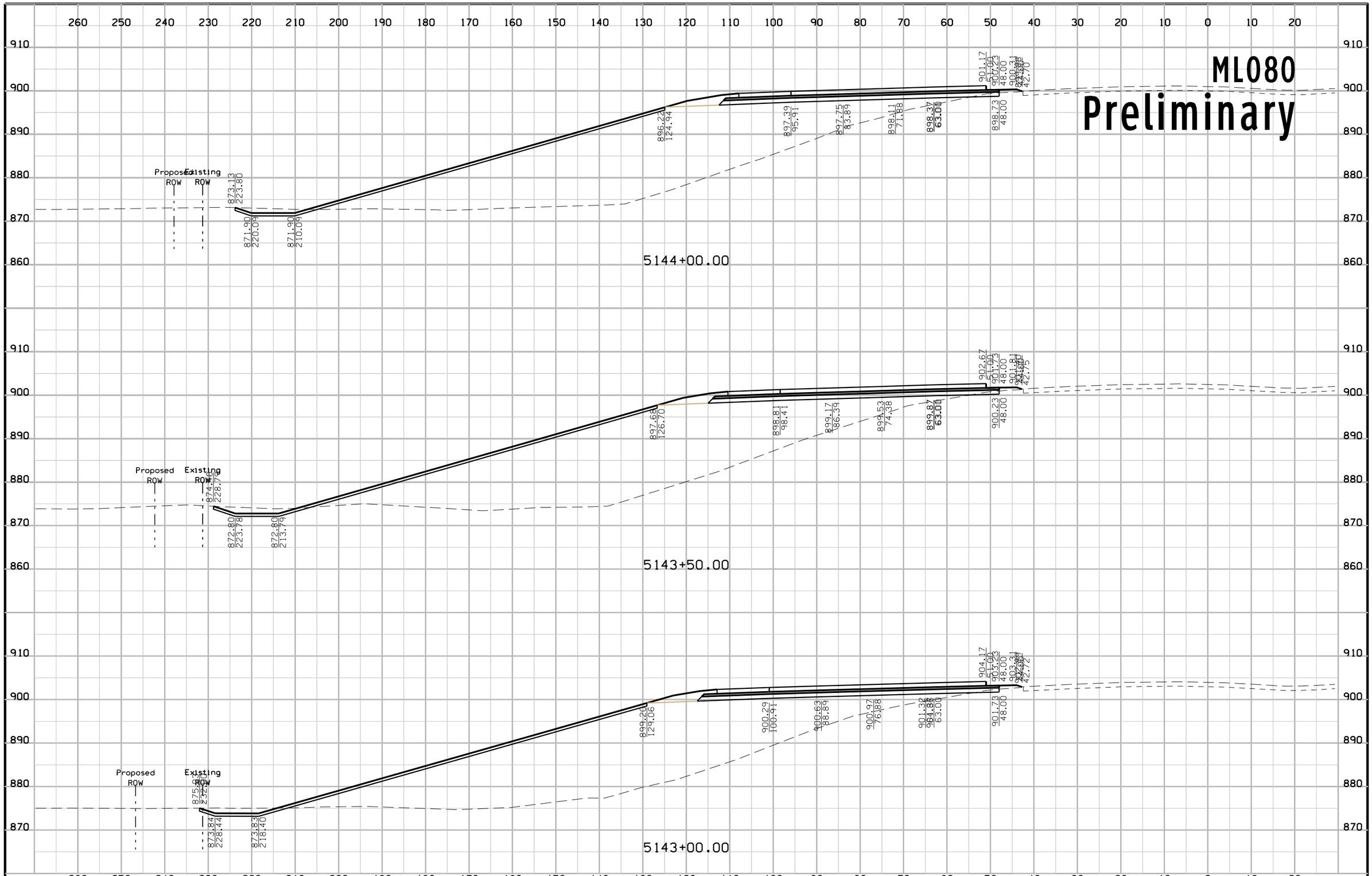
8:25:27 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.77

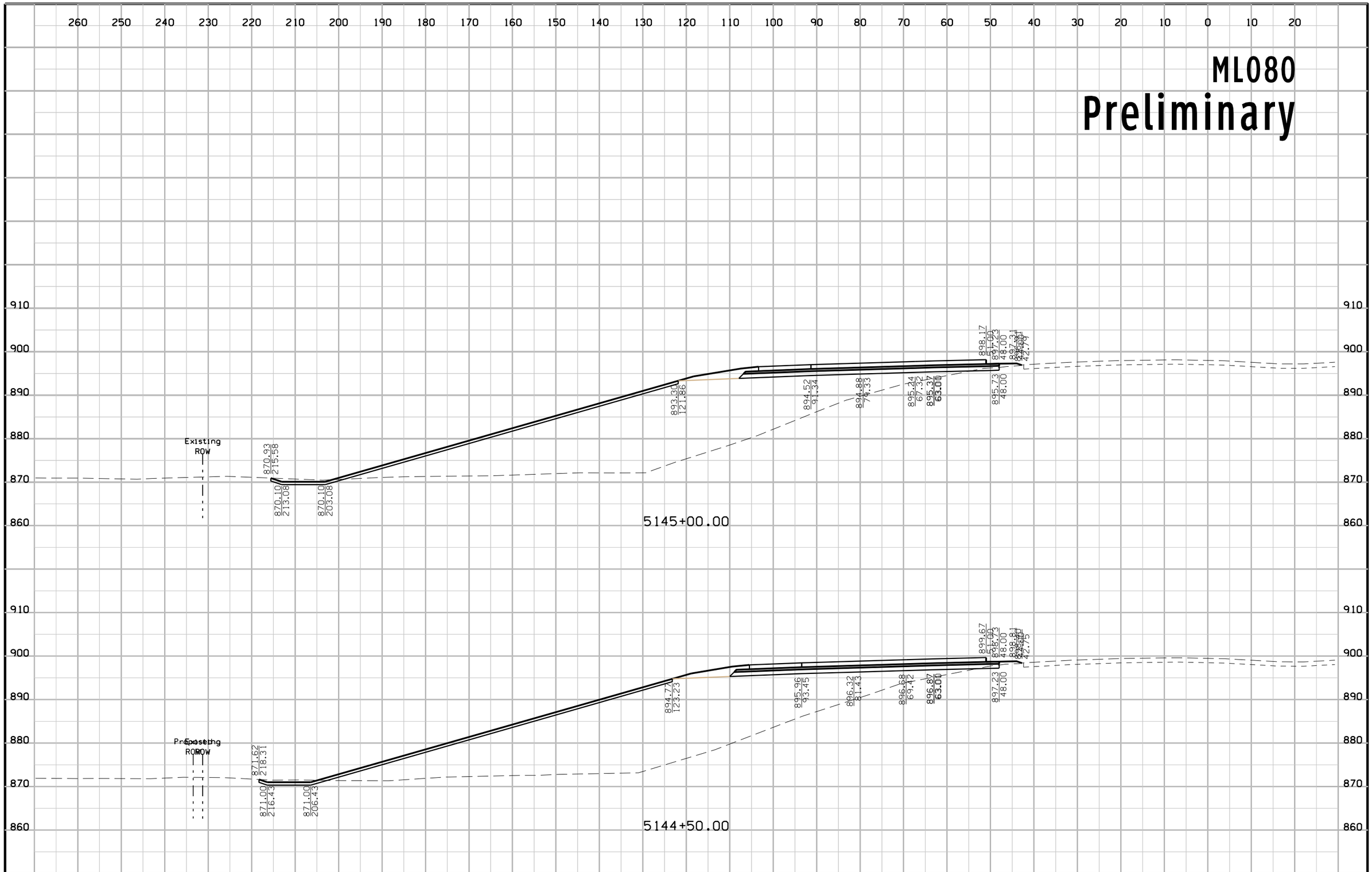
8:25:28 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.78

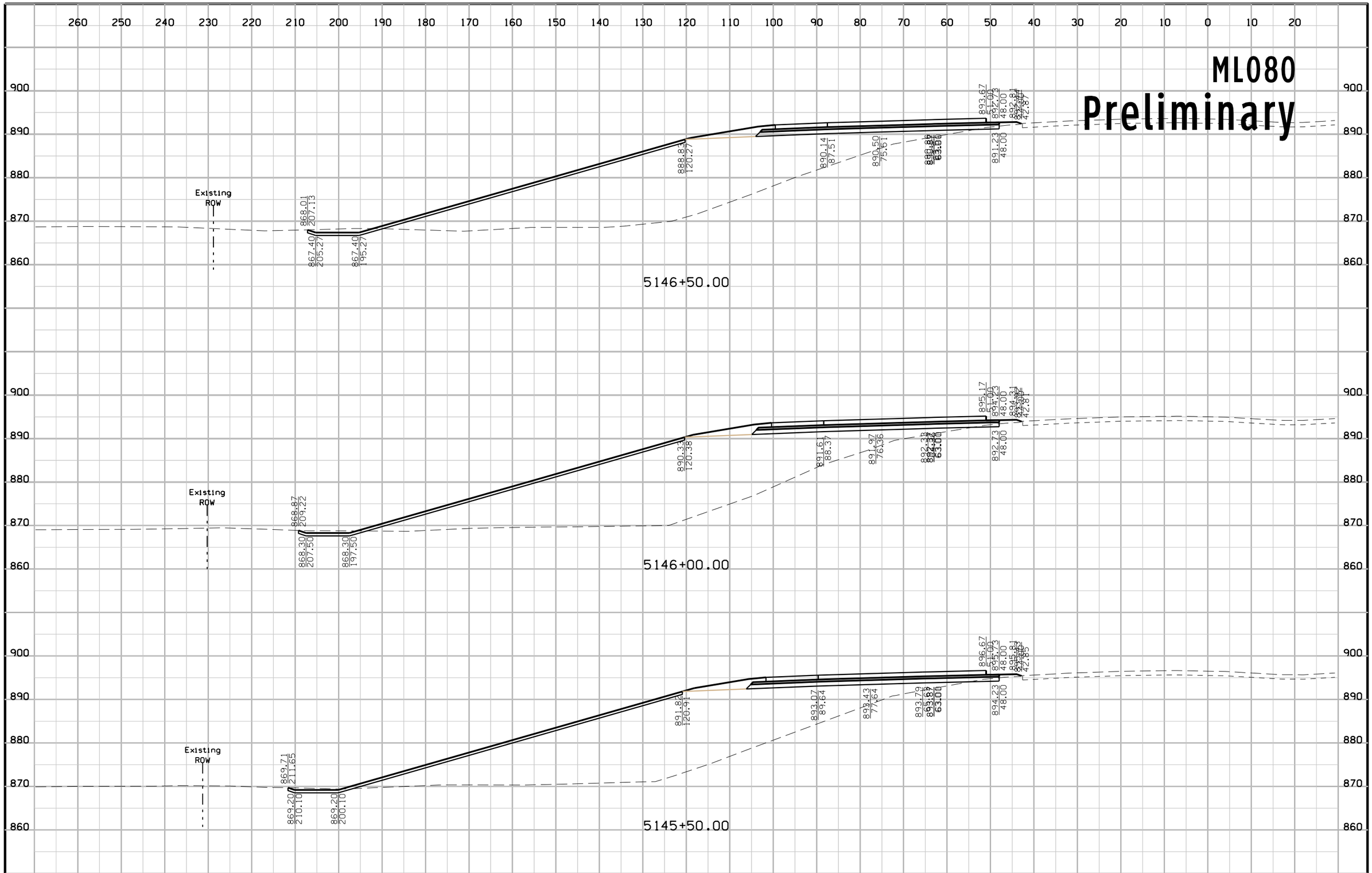
8:25:29 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.79

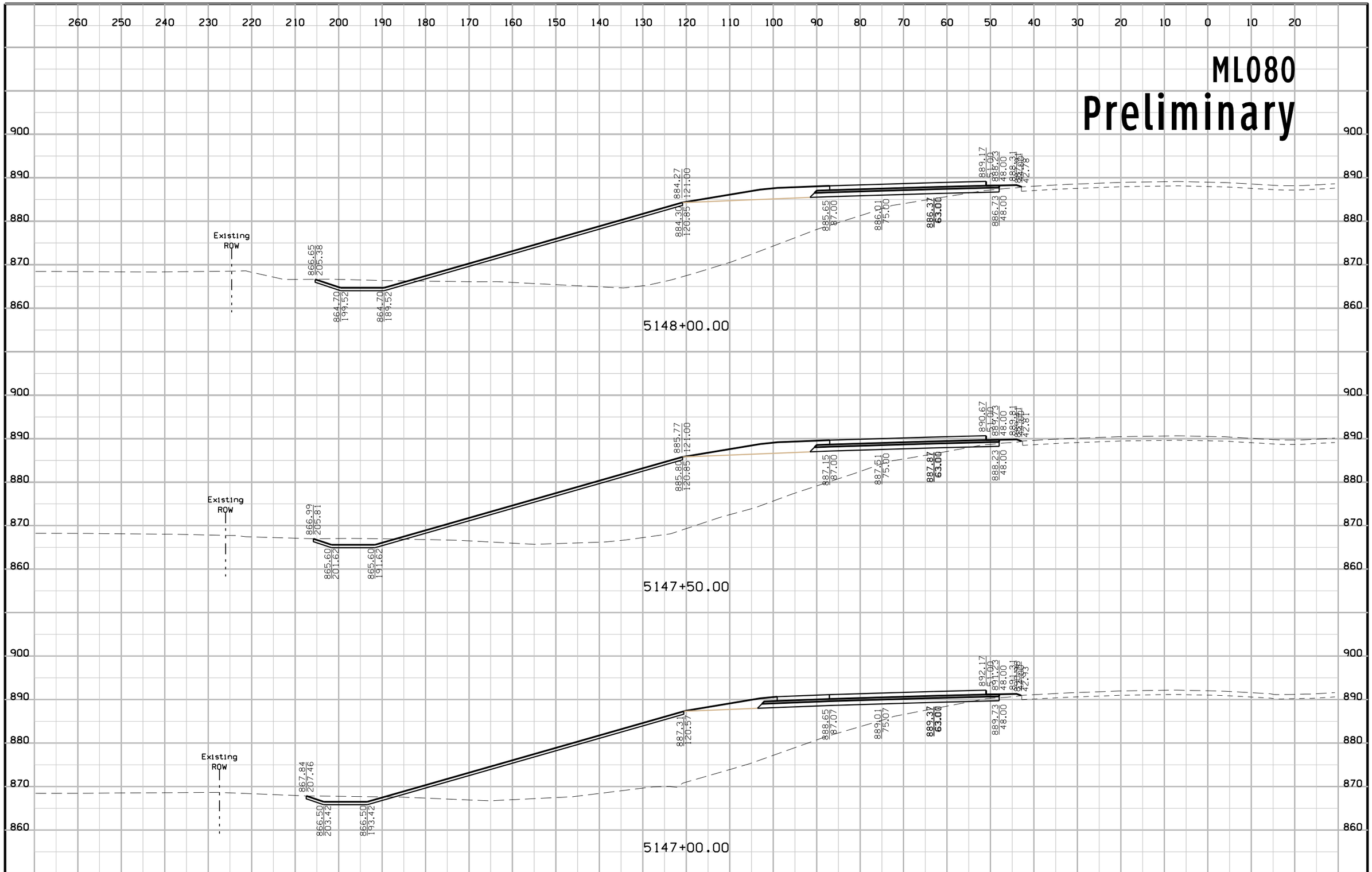
8:25:31 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.80

8:25:32 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

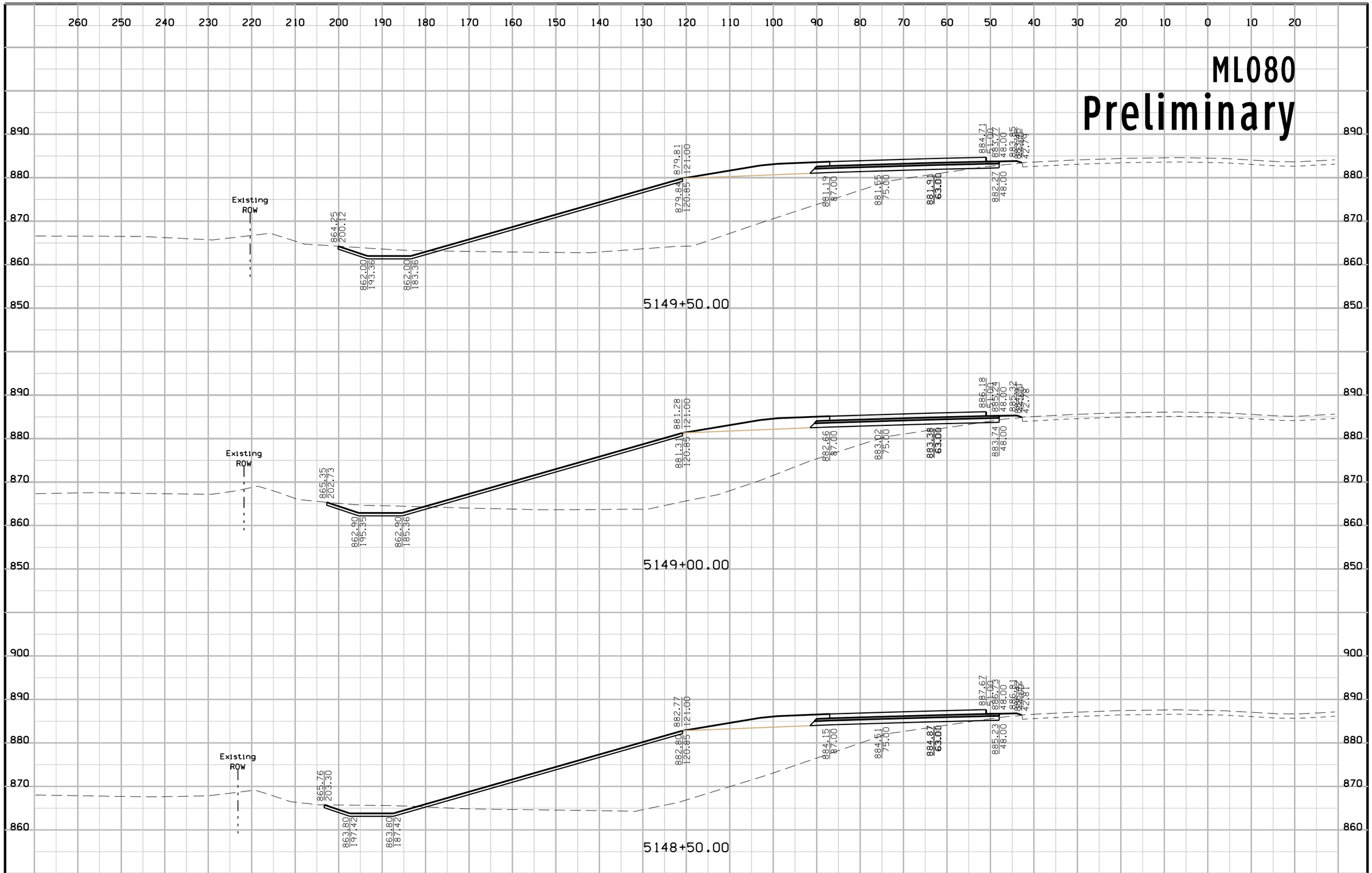
ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.81

8:25:33 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

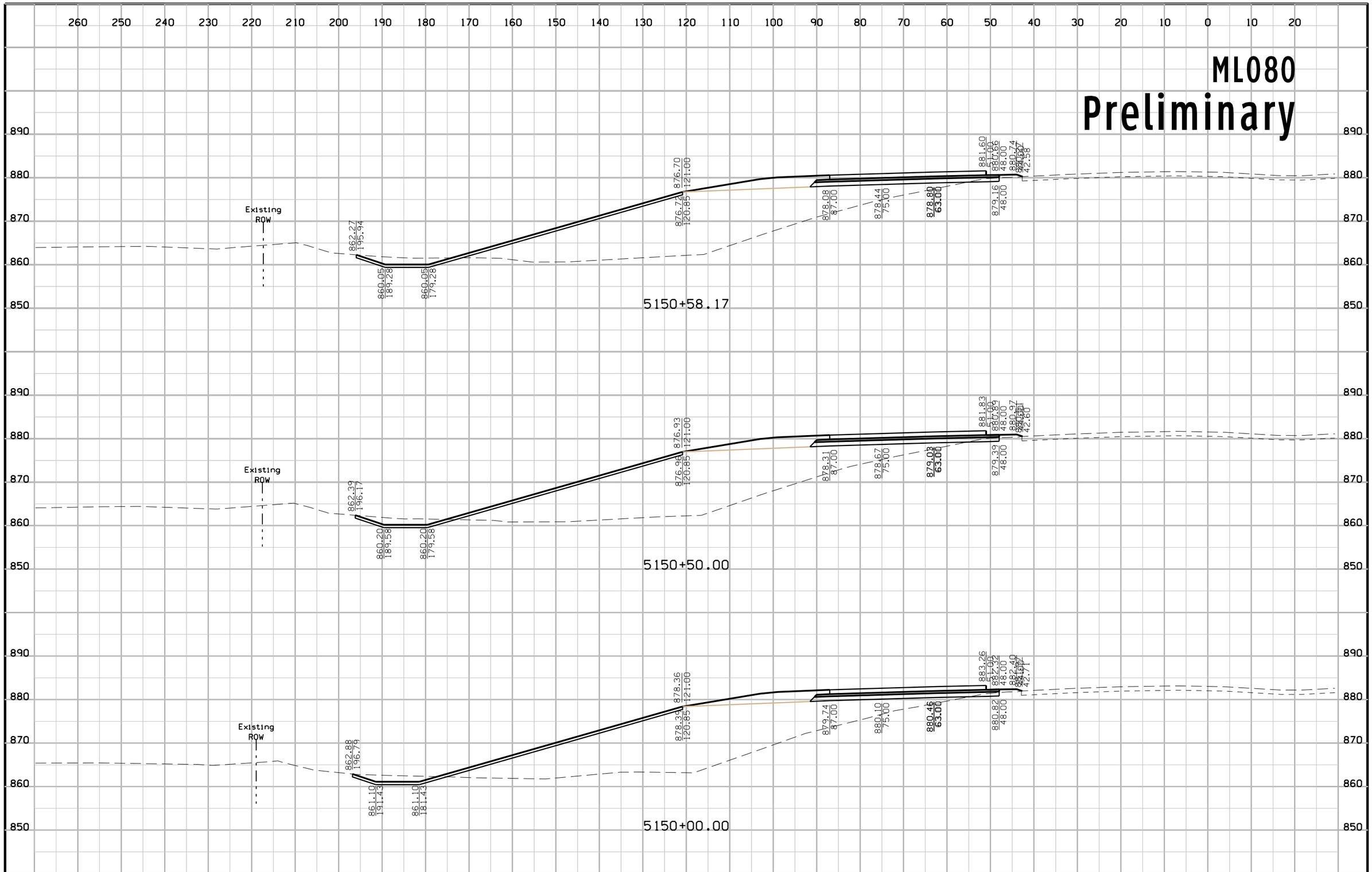
ML080
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.82

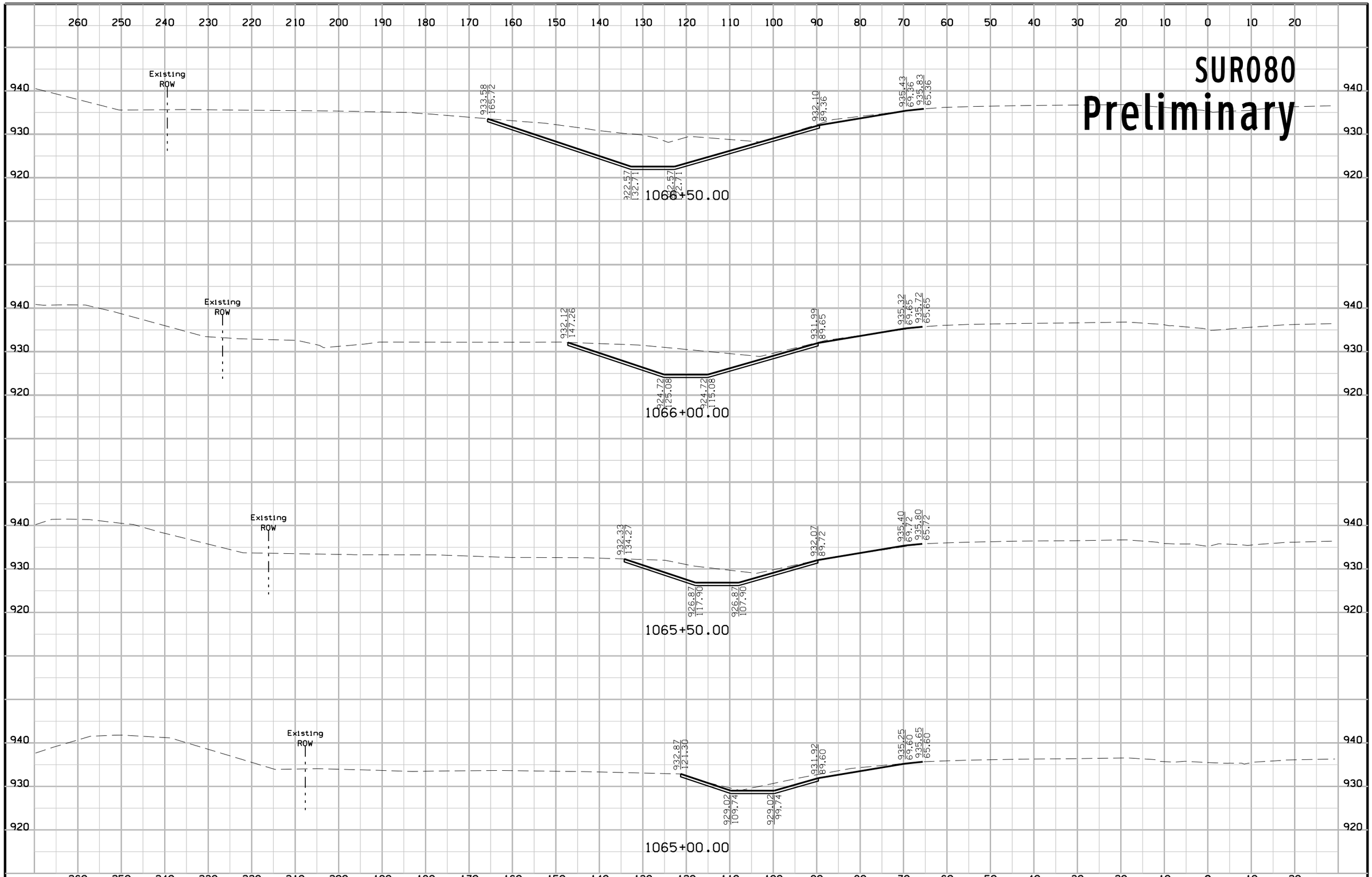
8:25:35 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

ML080
Preliminary



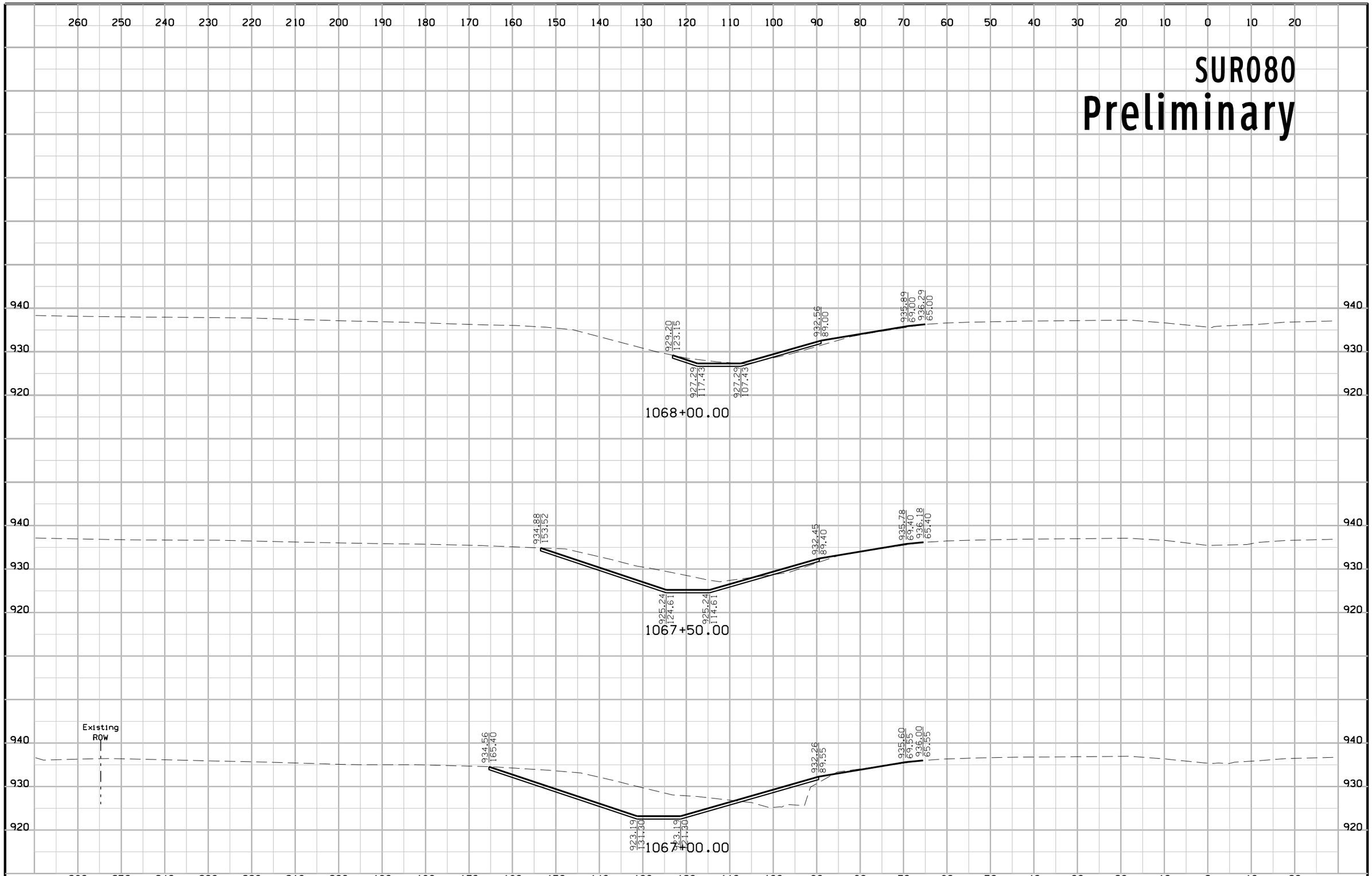
FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.83

8:25:36 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.84

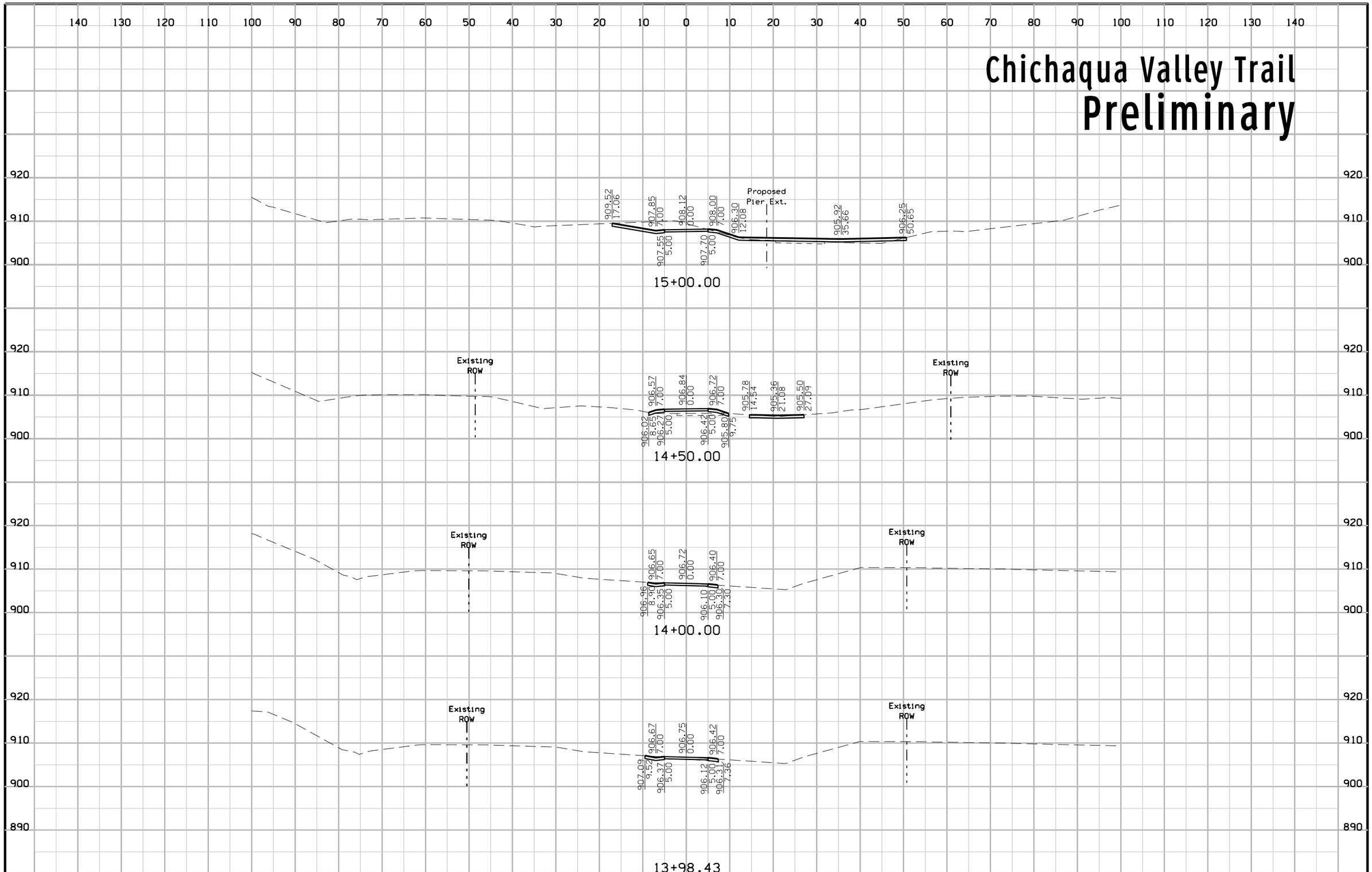
8:25:38 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER W.85

8:25:39 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194W02.sht

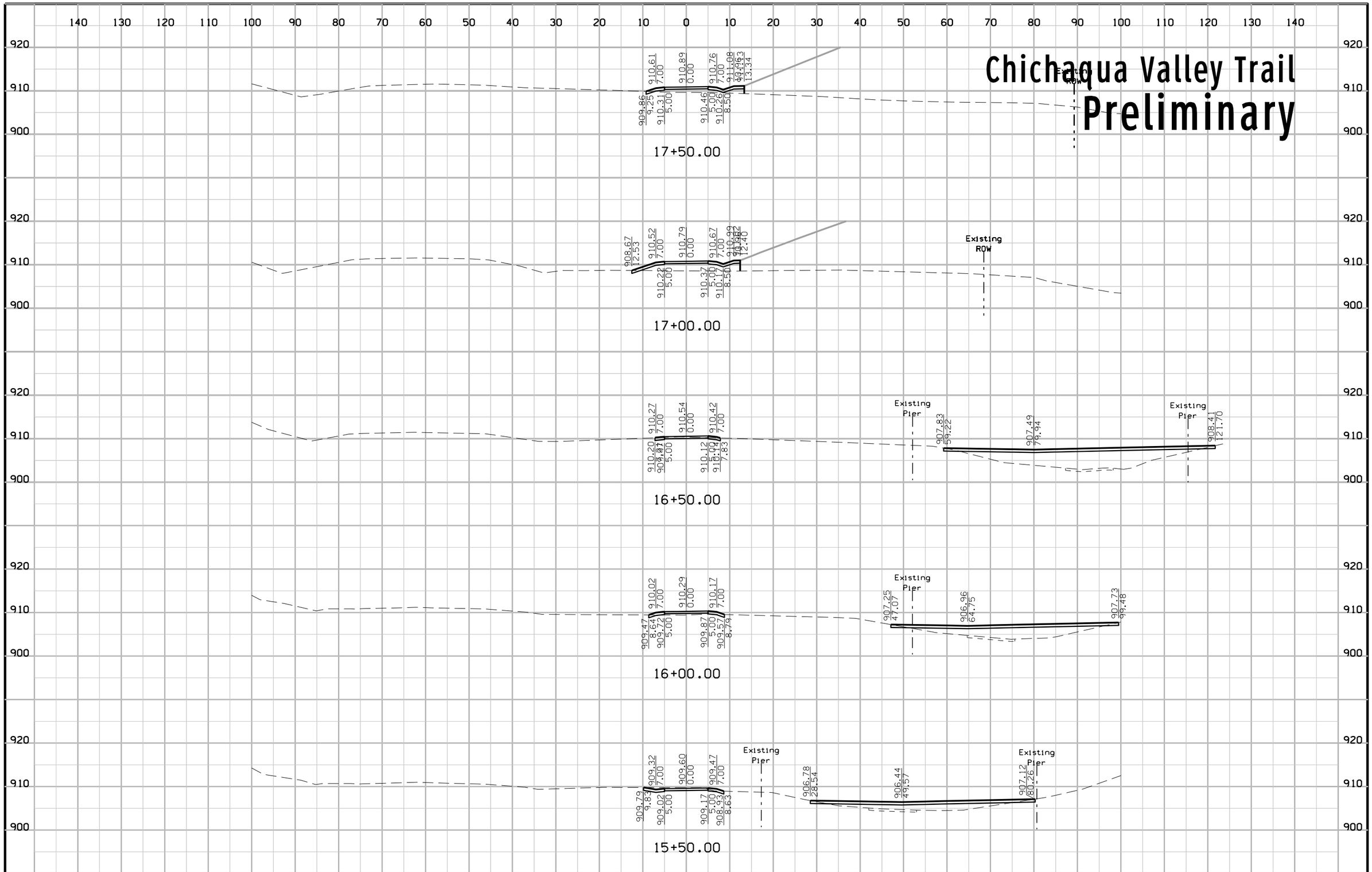
Chichaqua Valley Trail
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.1

8:25:48 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

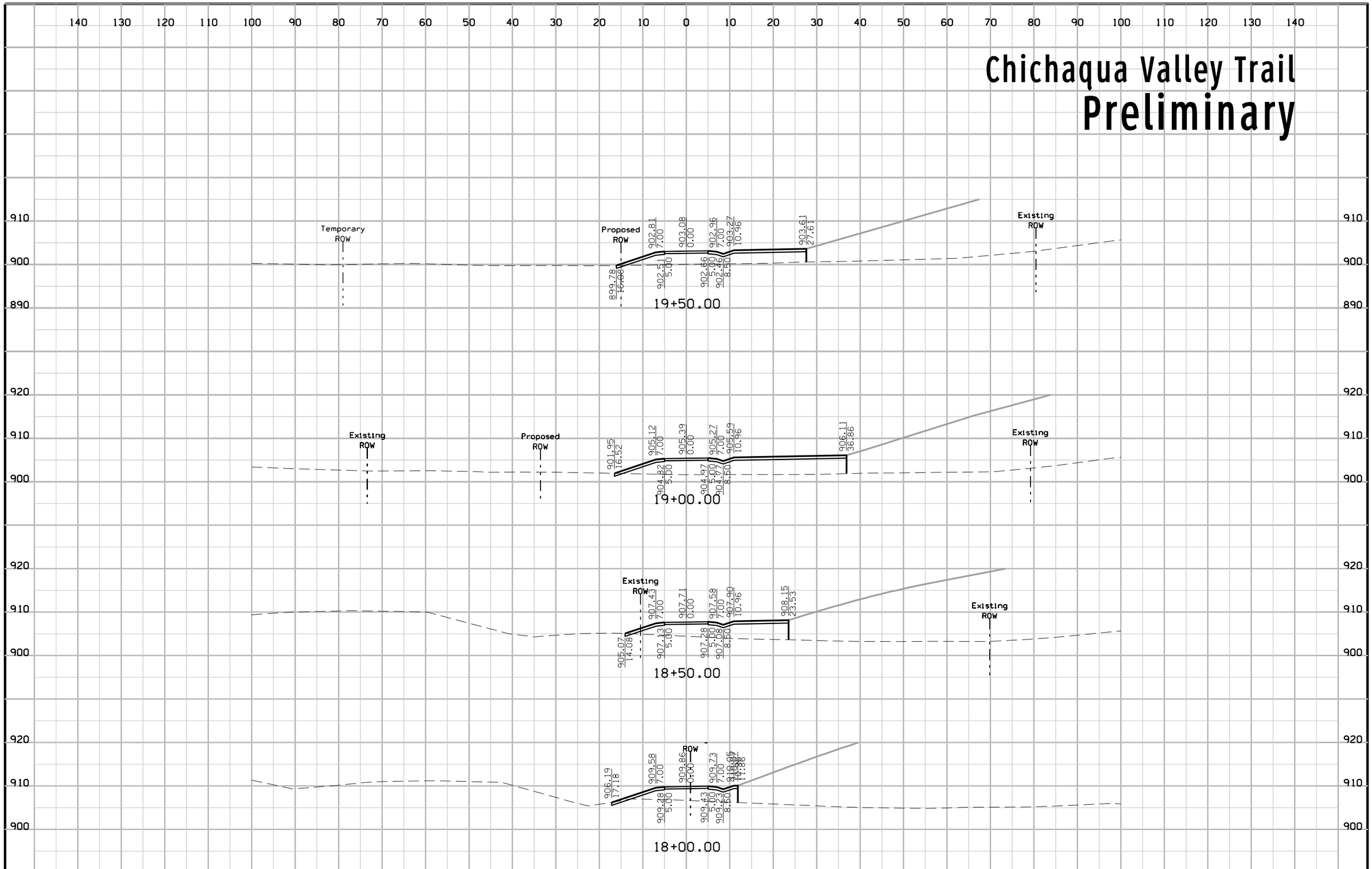
Chichaqua Valley Trail
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.2

8:25:48 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

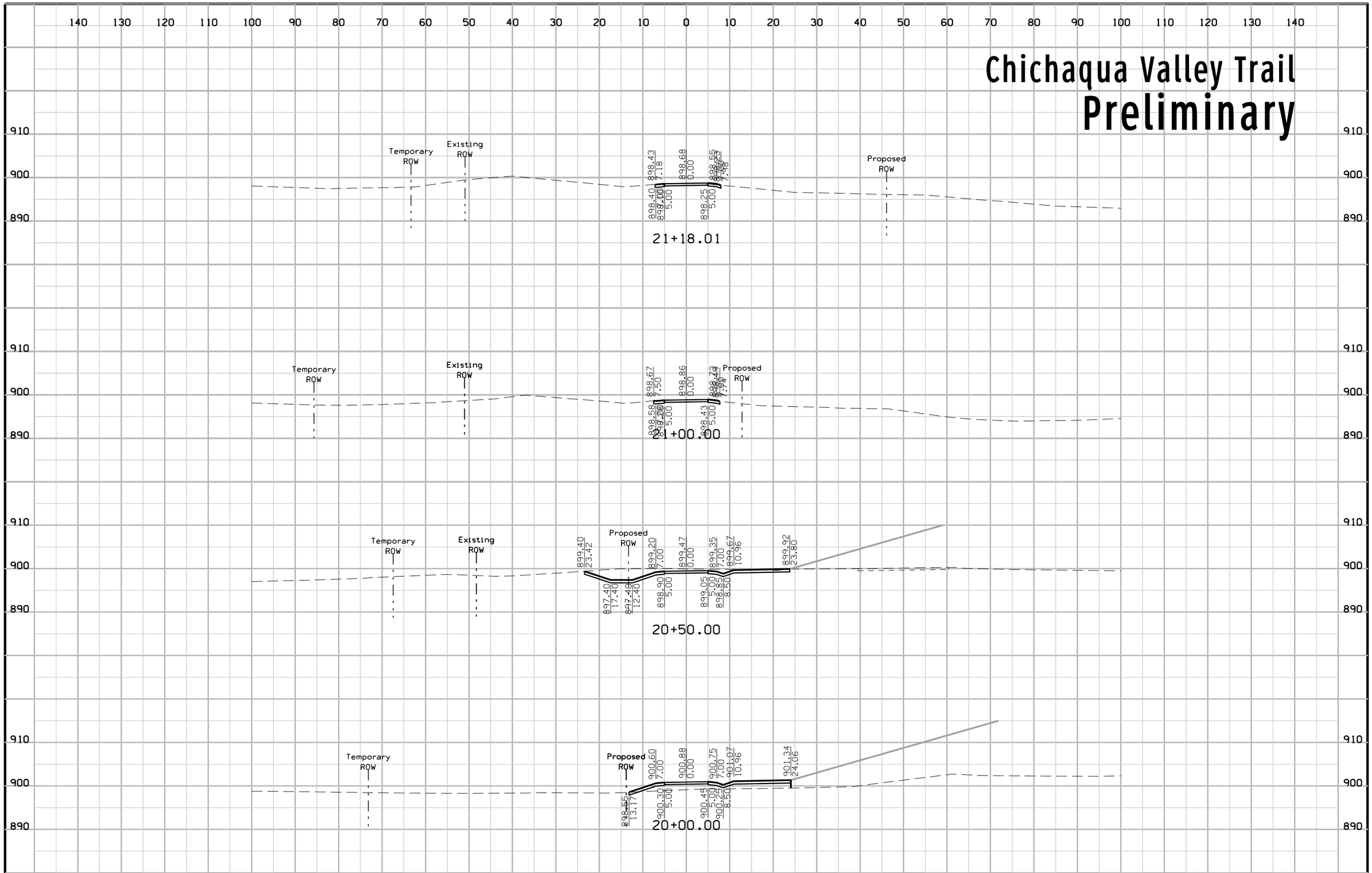
Chichaqua Valley Trail
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.3

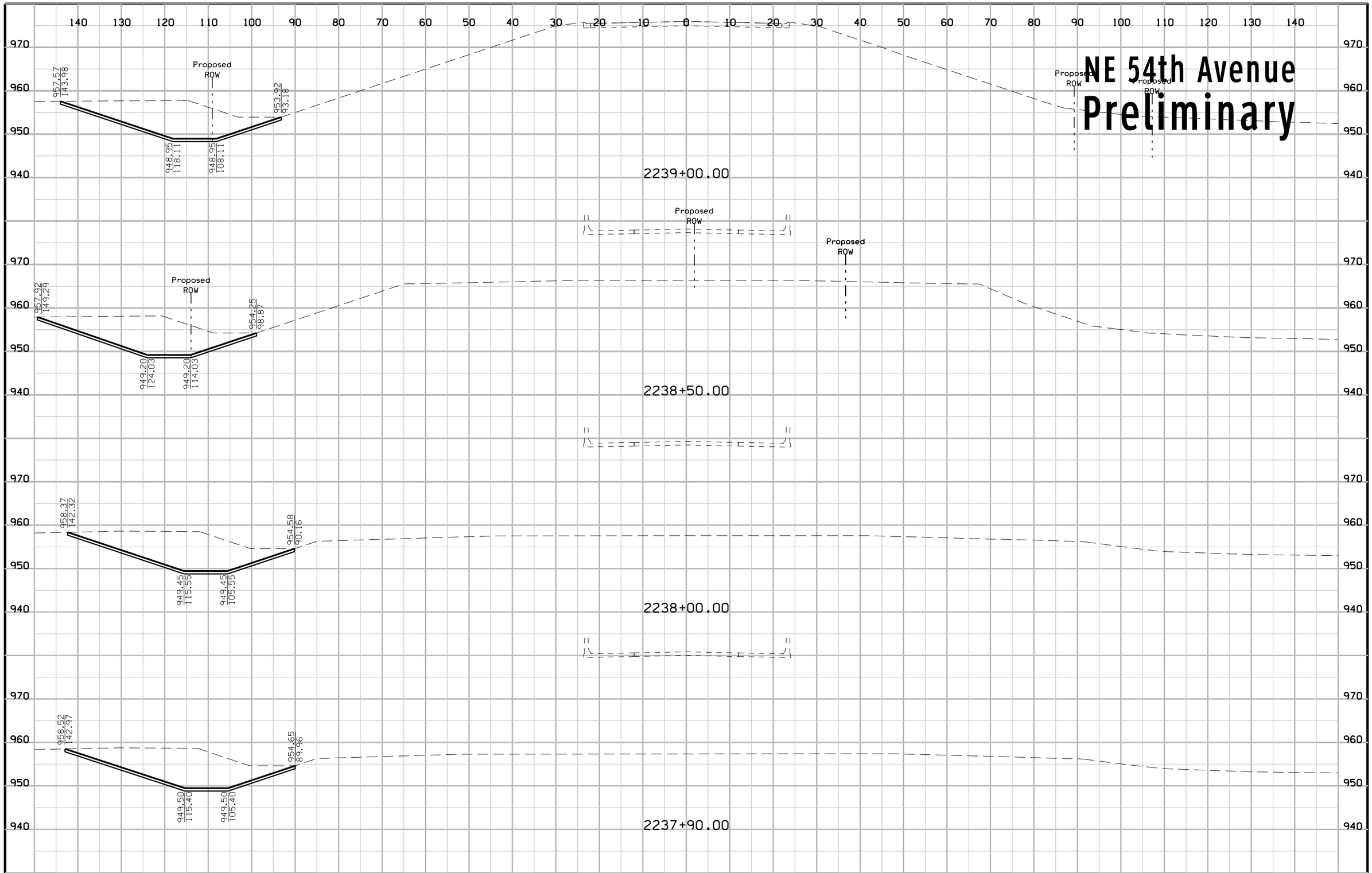
8:25:49 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

Chichaqua Valley Trail
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.4

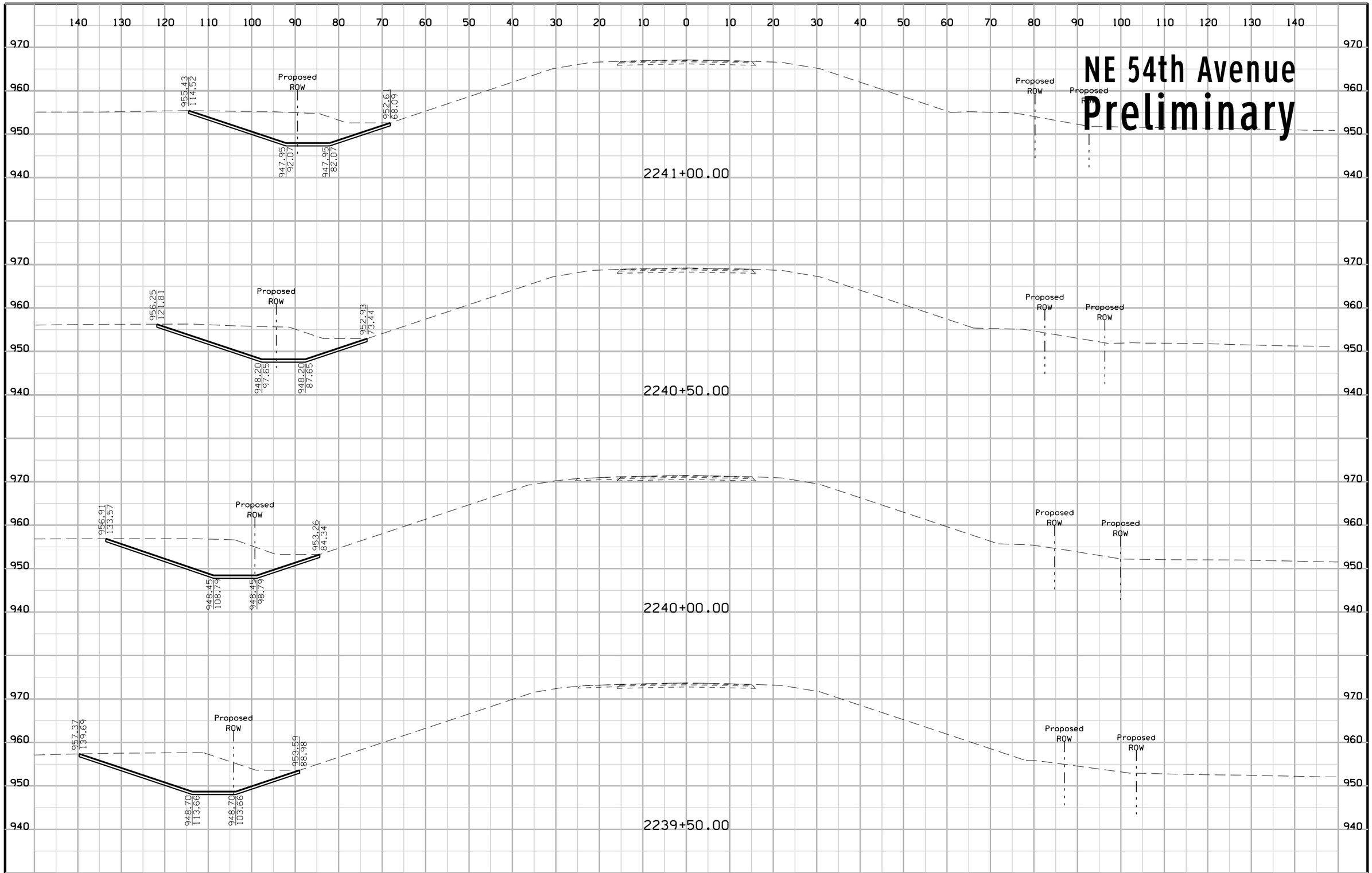
8:25:49 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.5

8:25:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

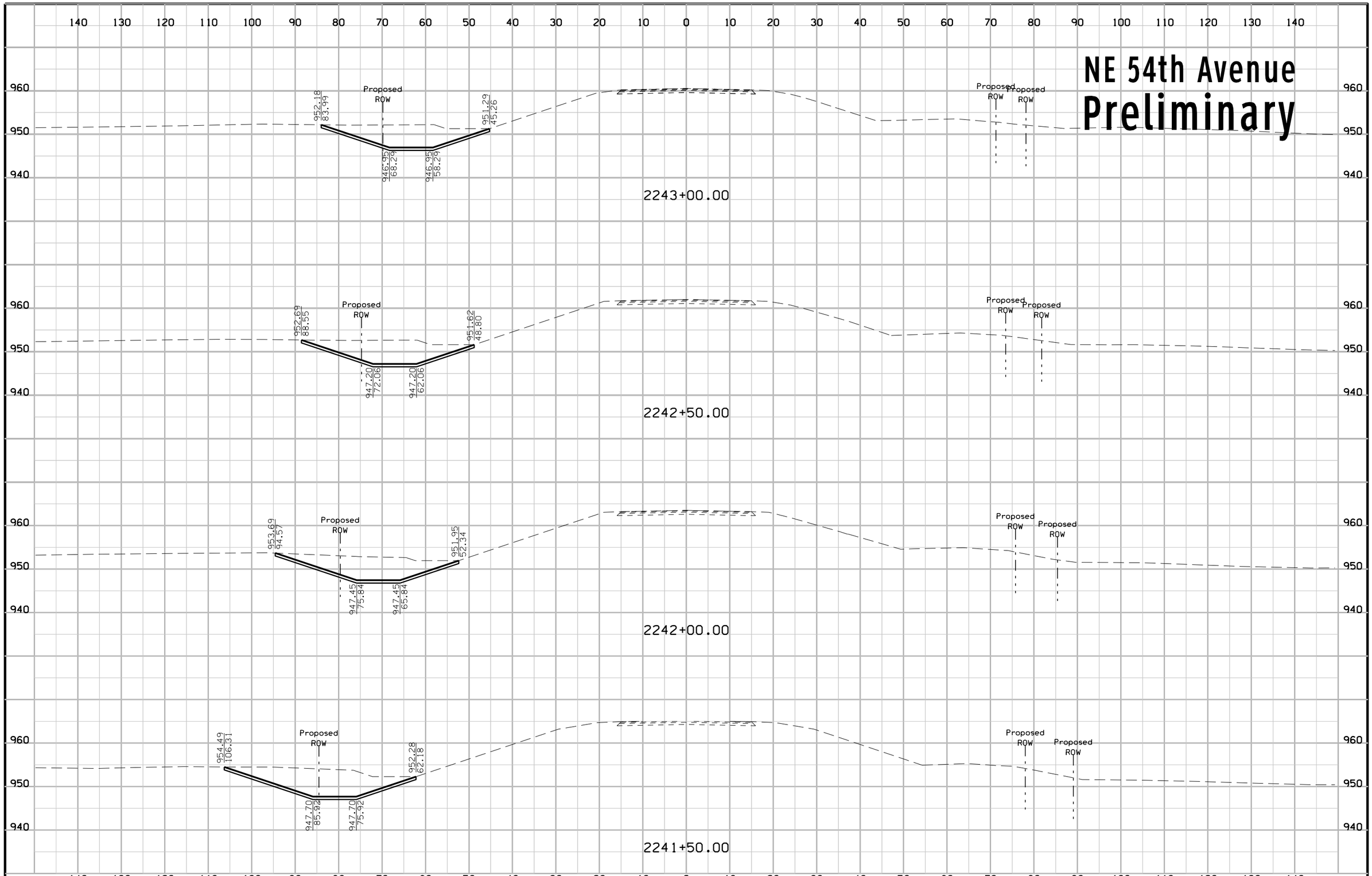
NE 54th Avenue
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.6

8:25:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

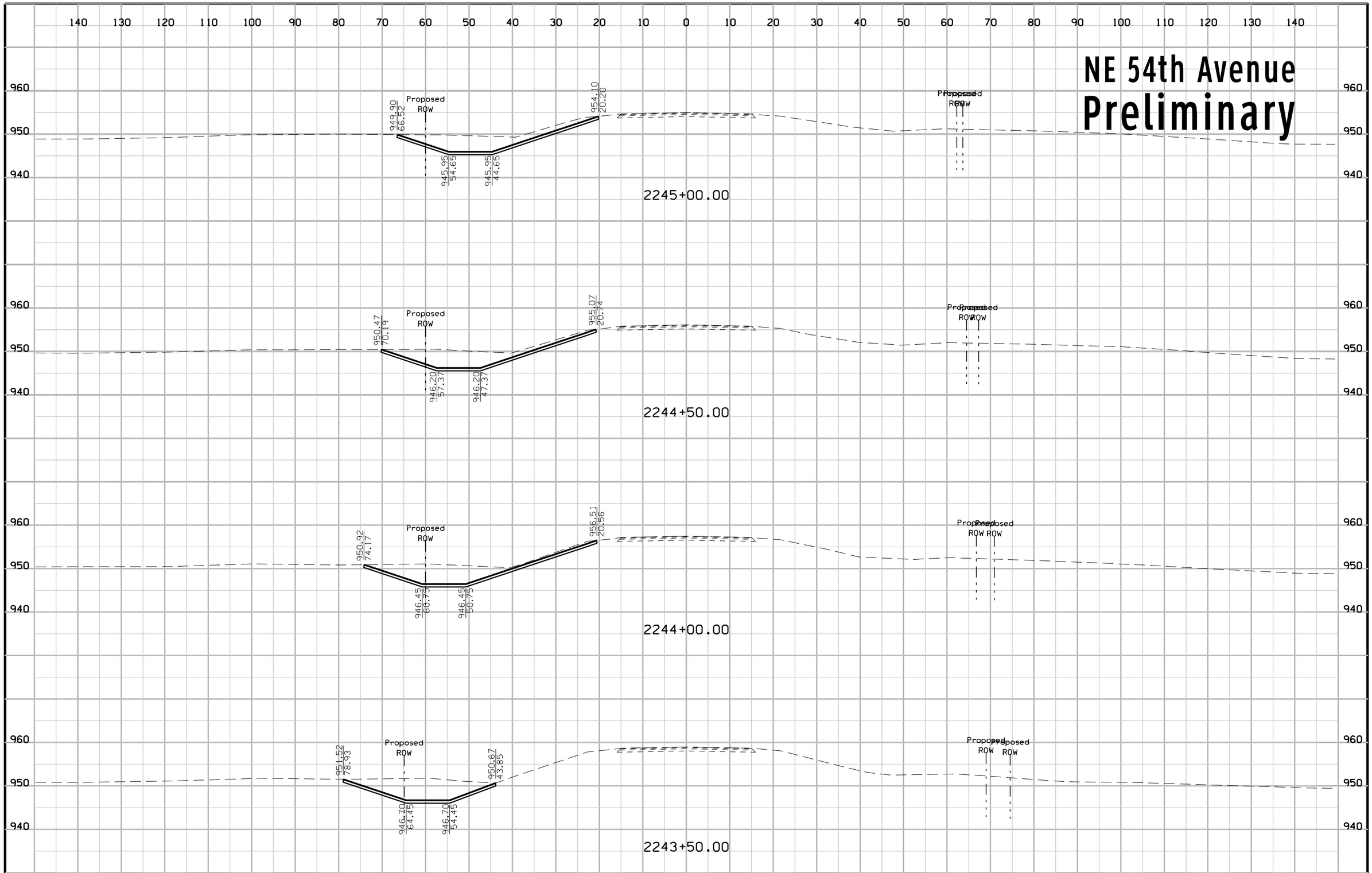
NE 54th Avenue
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.7

8:25:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

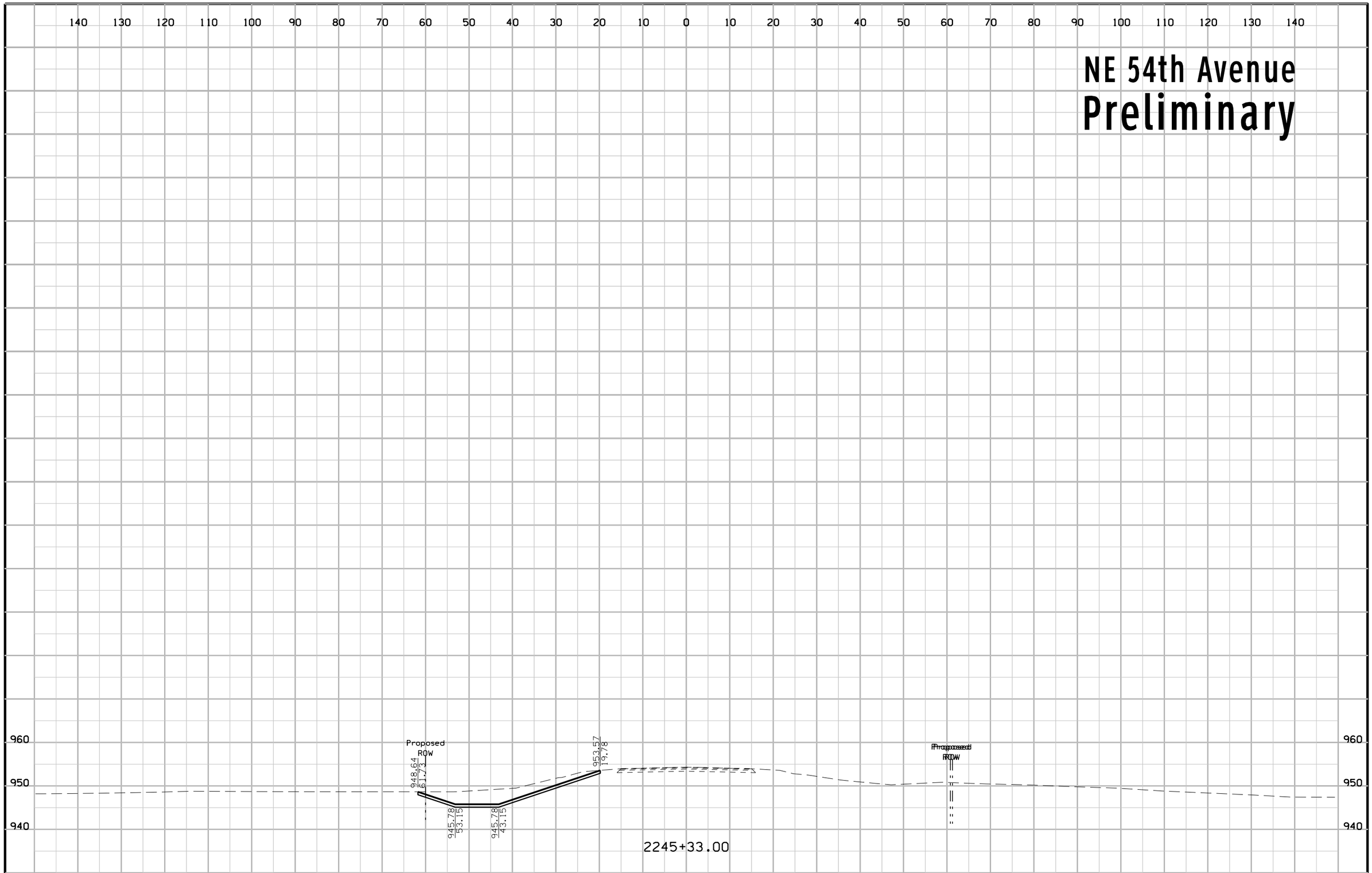
NE 54th Avenue
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.8

8:25:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

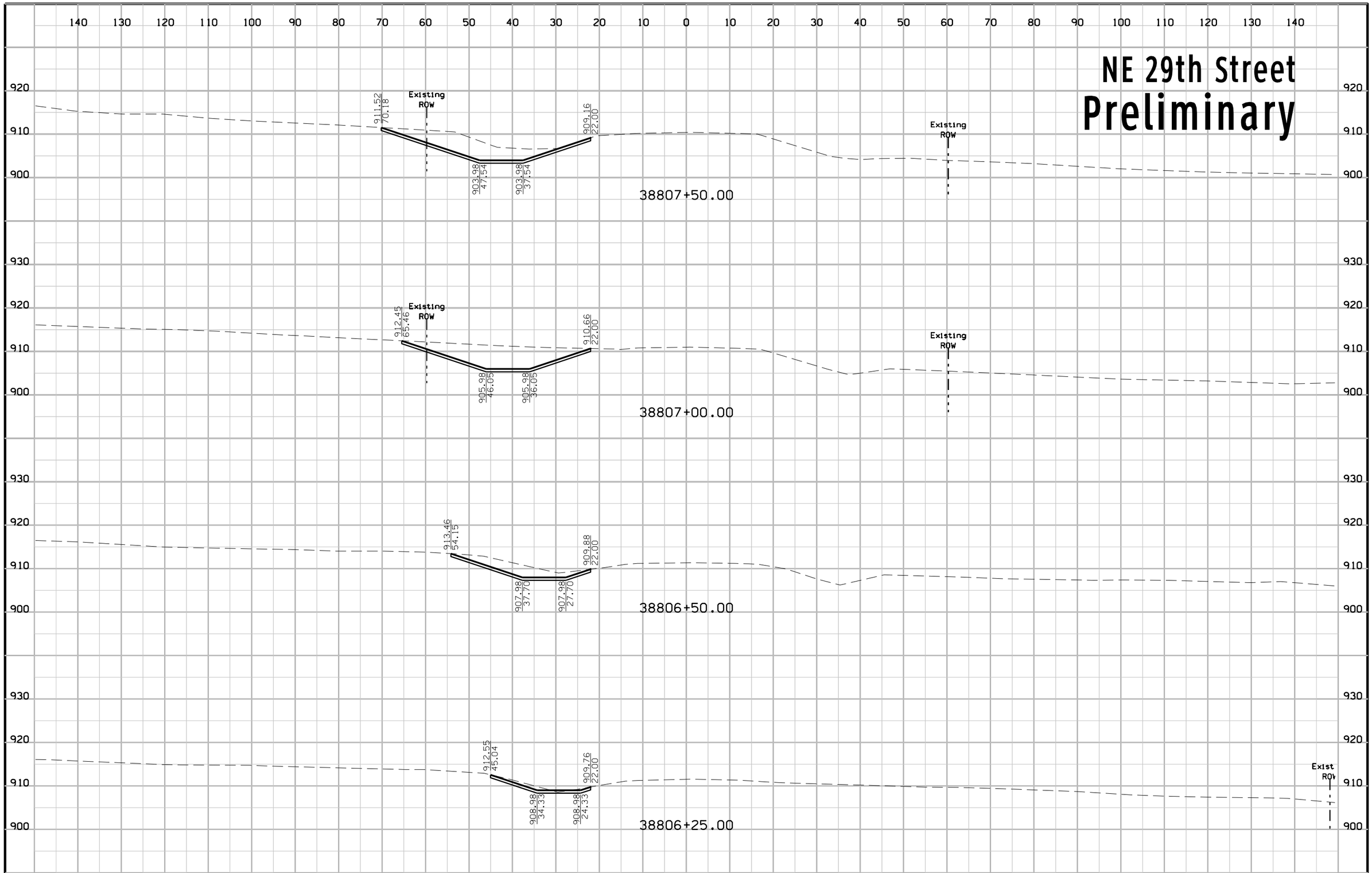
NE 54th Avenue
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.9

8:25:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

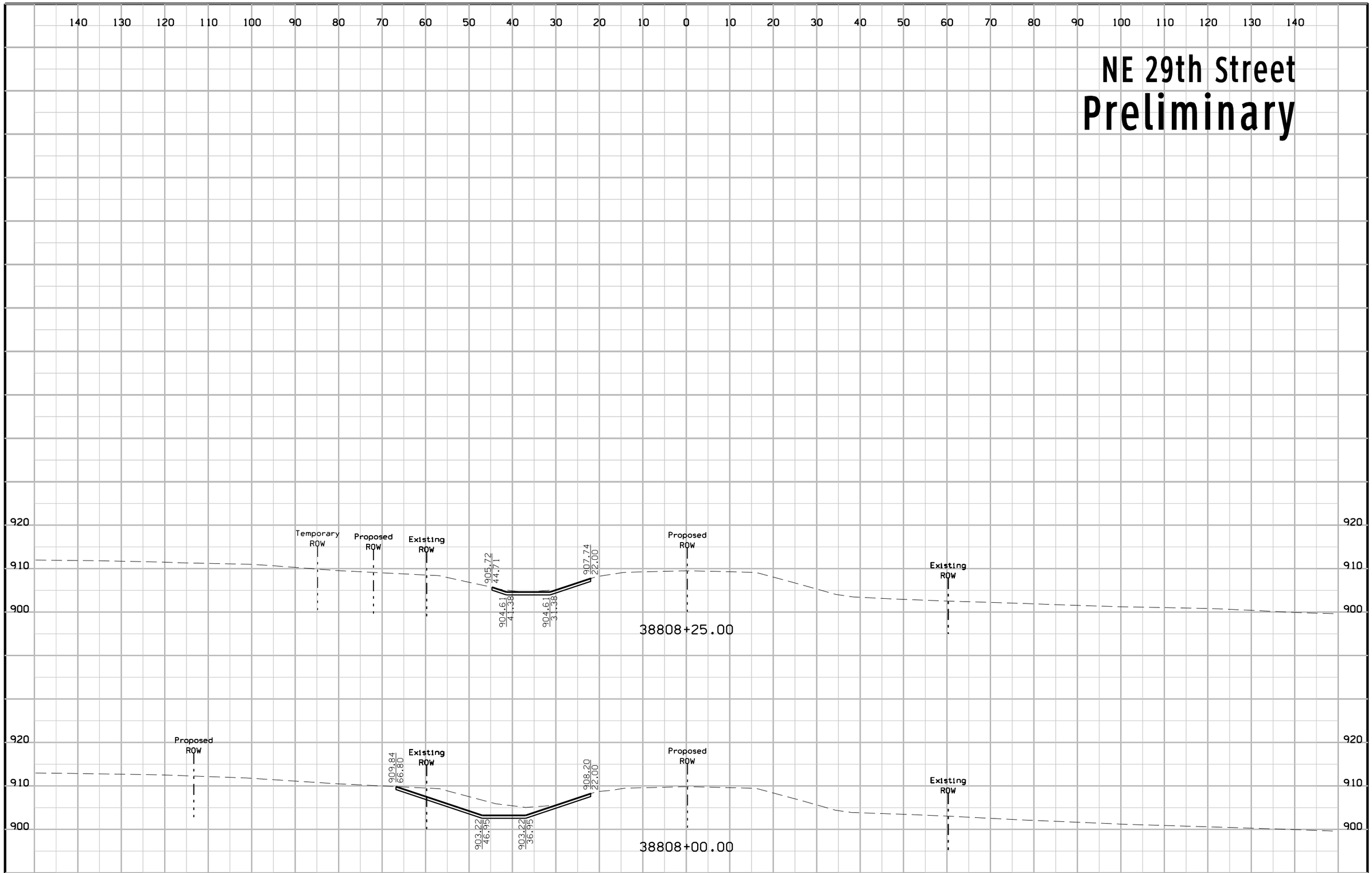
NE 29th Street
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.10

8:25:52 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

NE 29th Street
Preliminary

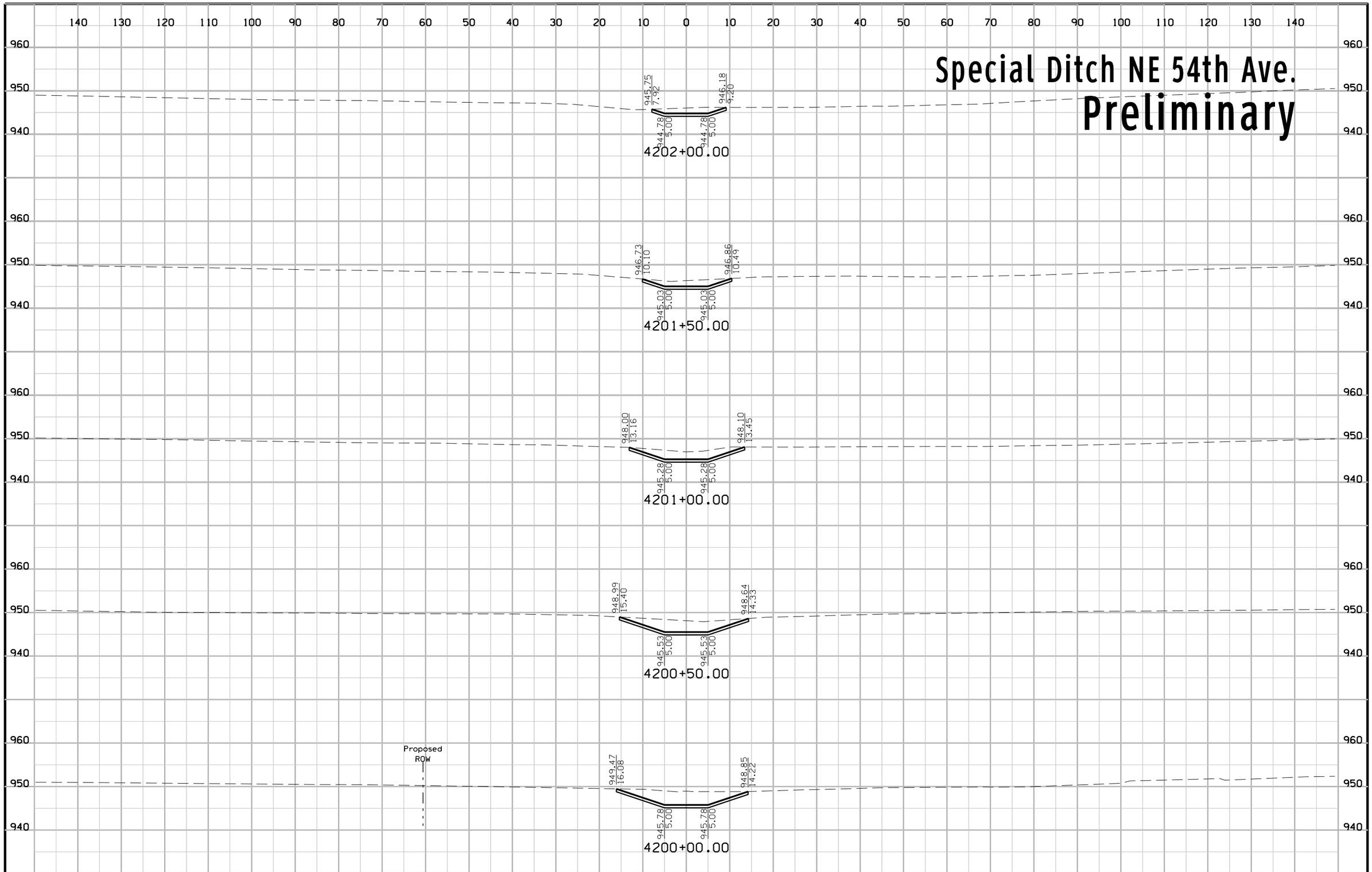


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.11

8:25:52 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

Special Ditch NE 54th Ave.

Preliminary

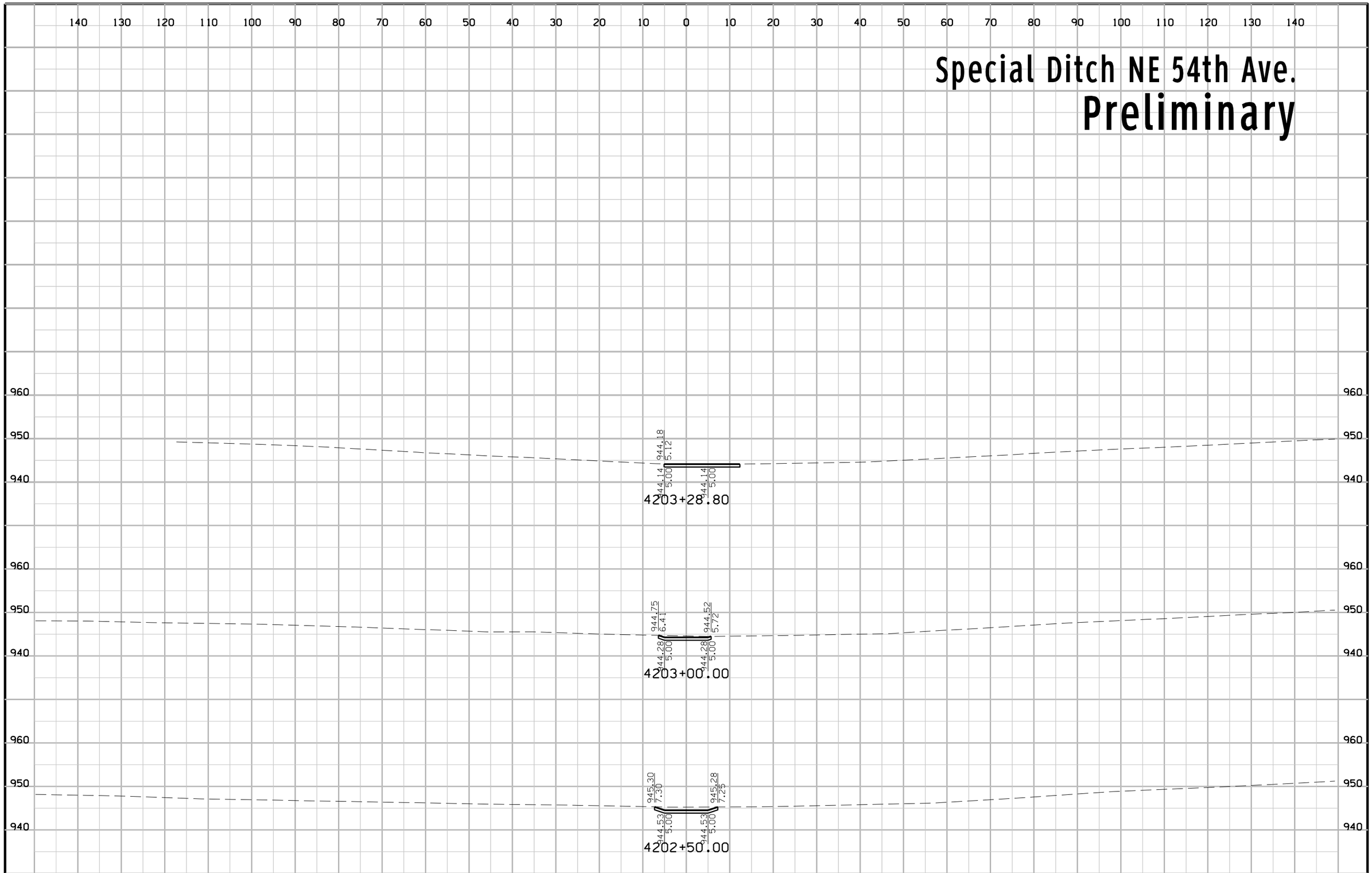


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.12

8:25:53 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

Special Ditch NE 54th Ave.

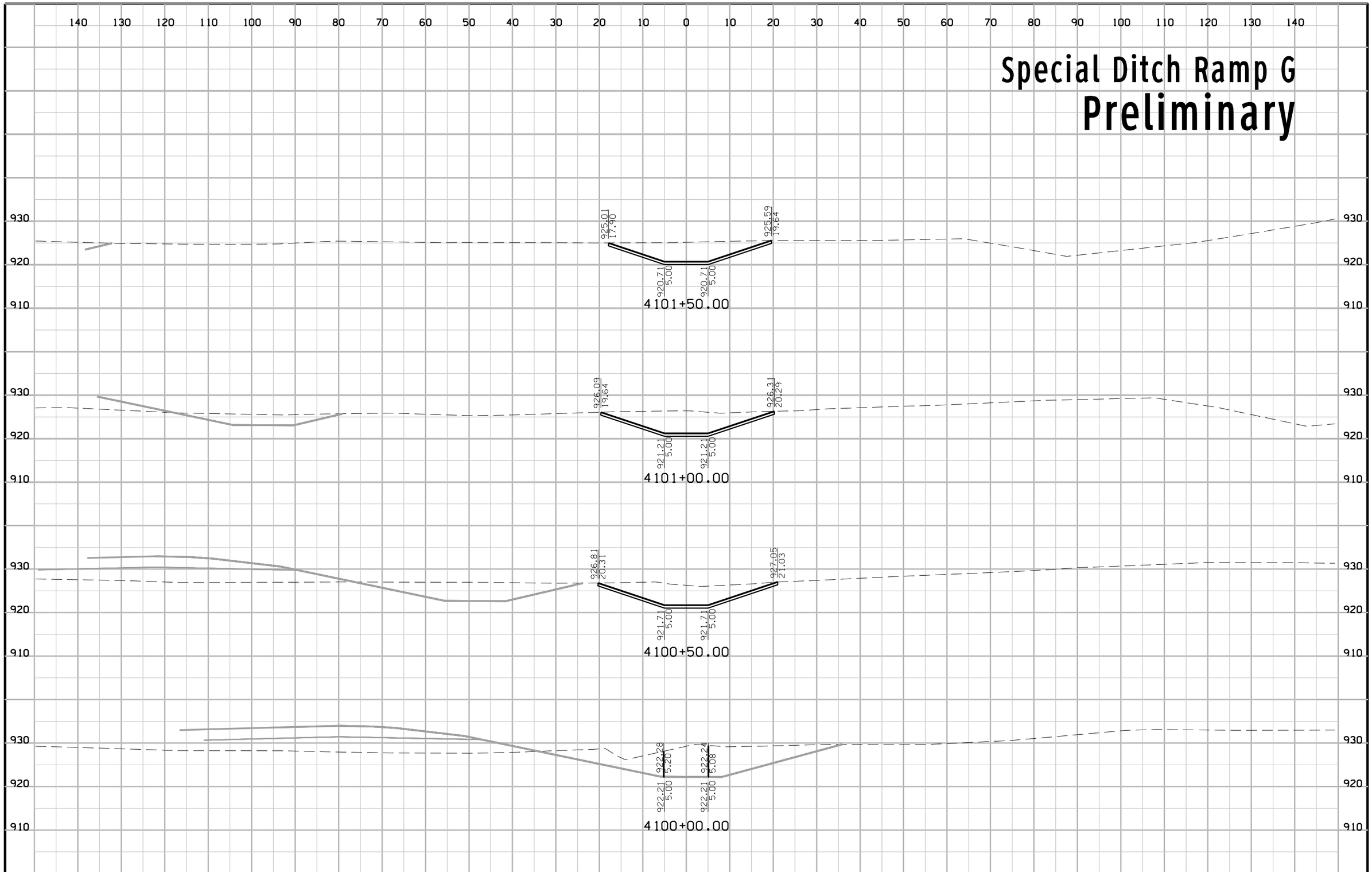
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.13

8:25:53 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

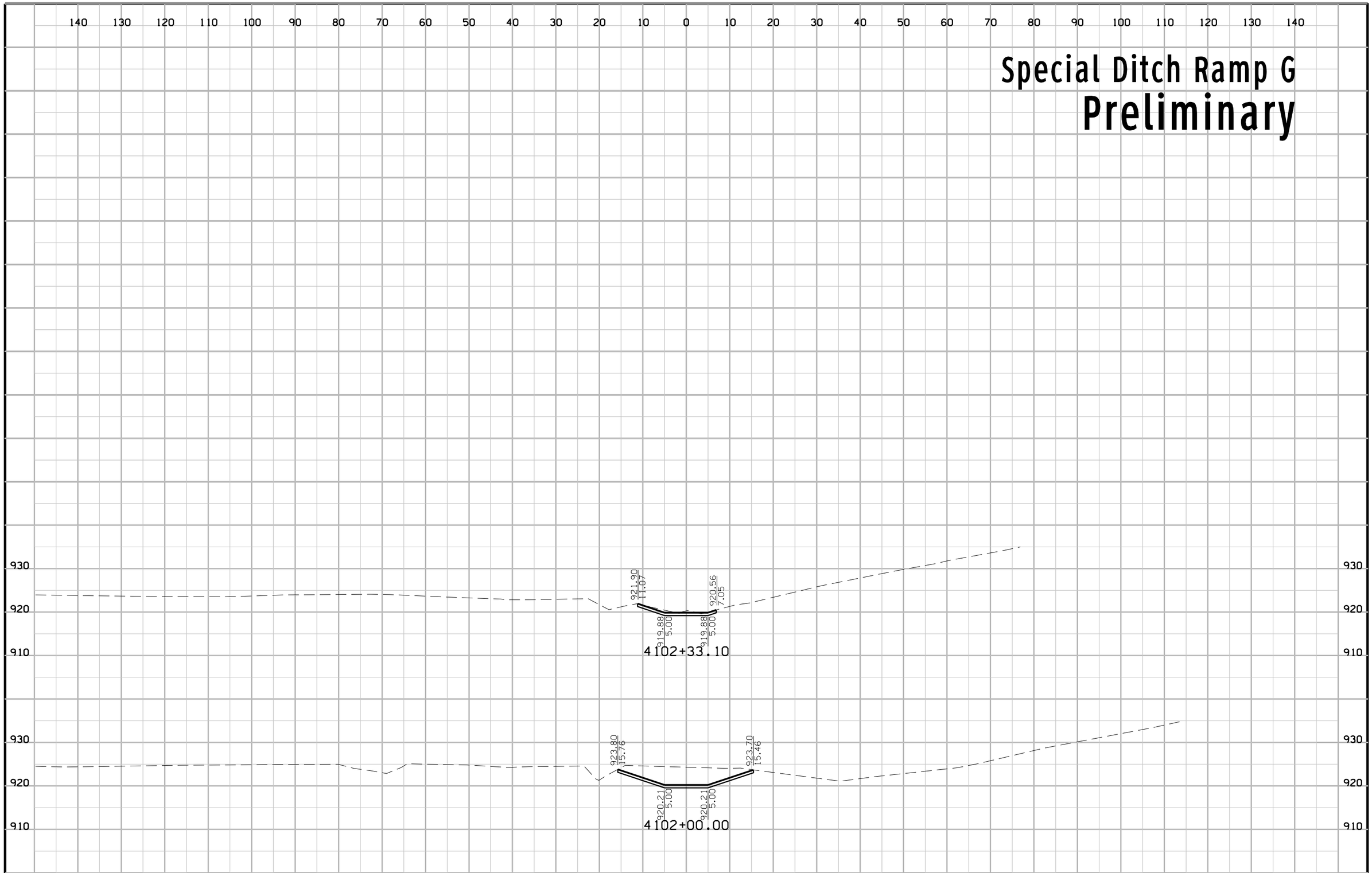
Special Ditch Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.14

8:26:10 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

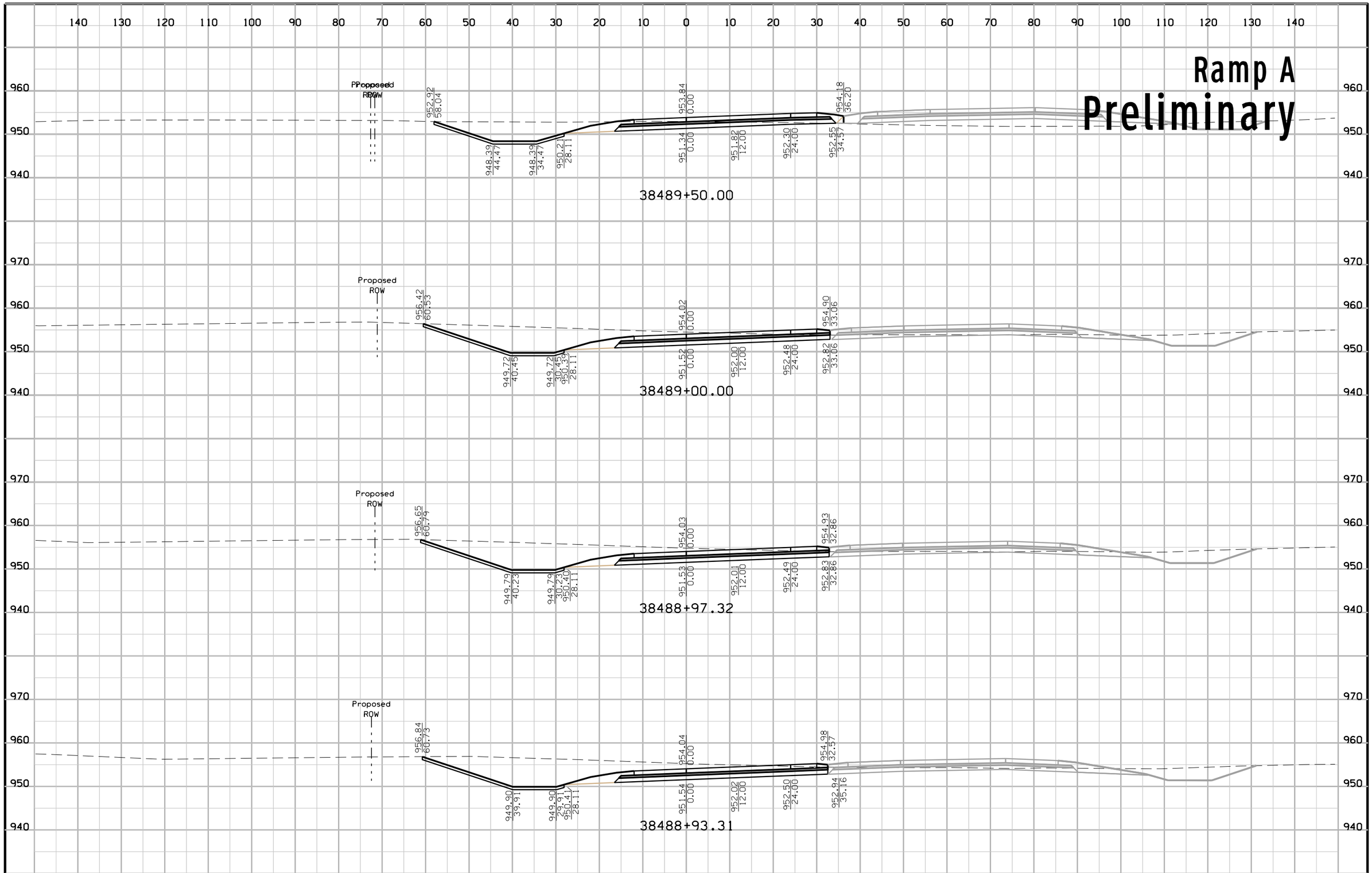
Special Ditch Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER X.15

8:26:10 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194X01.sht

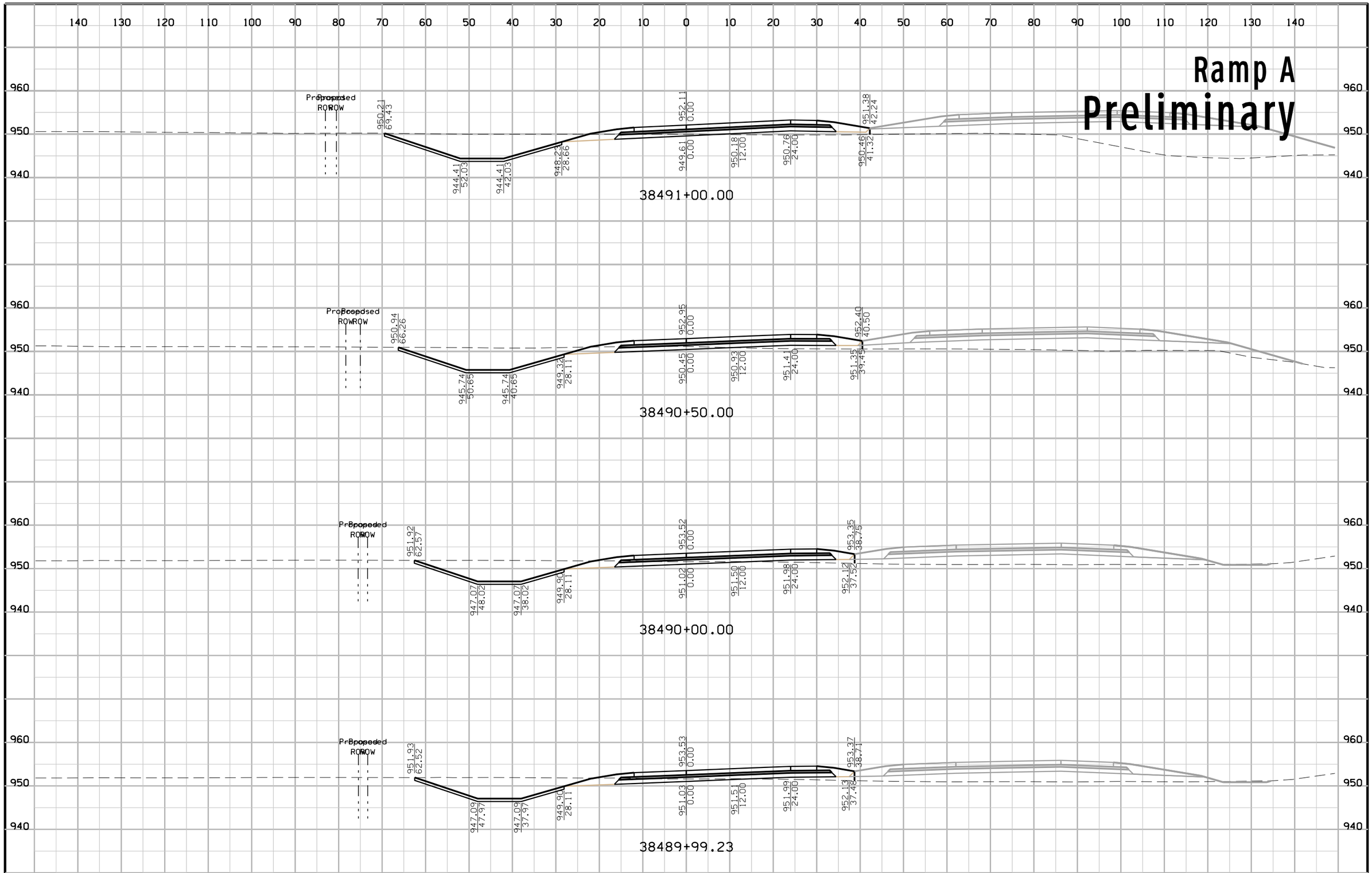
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.1

8:26:53 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

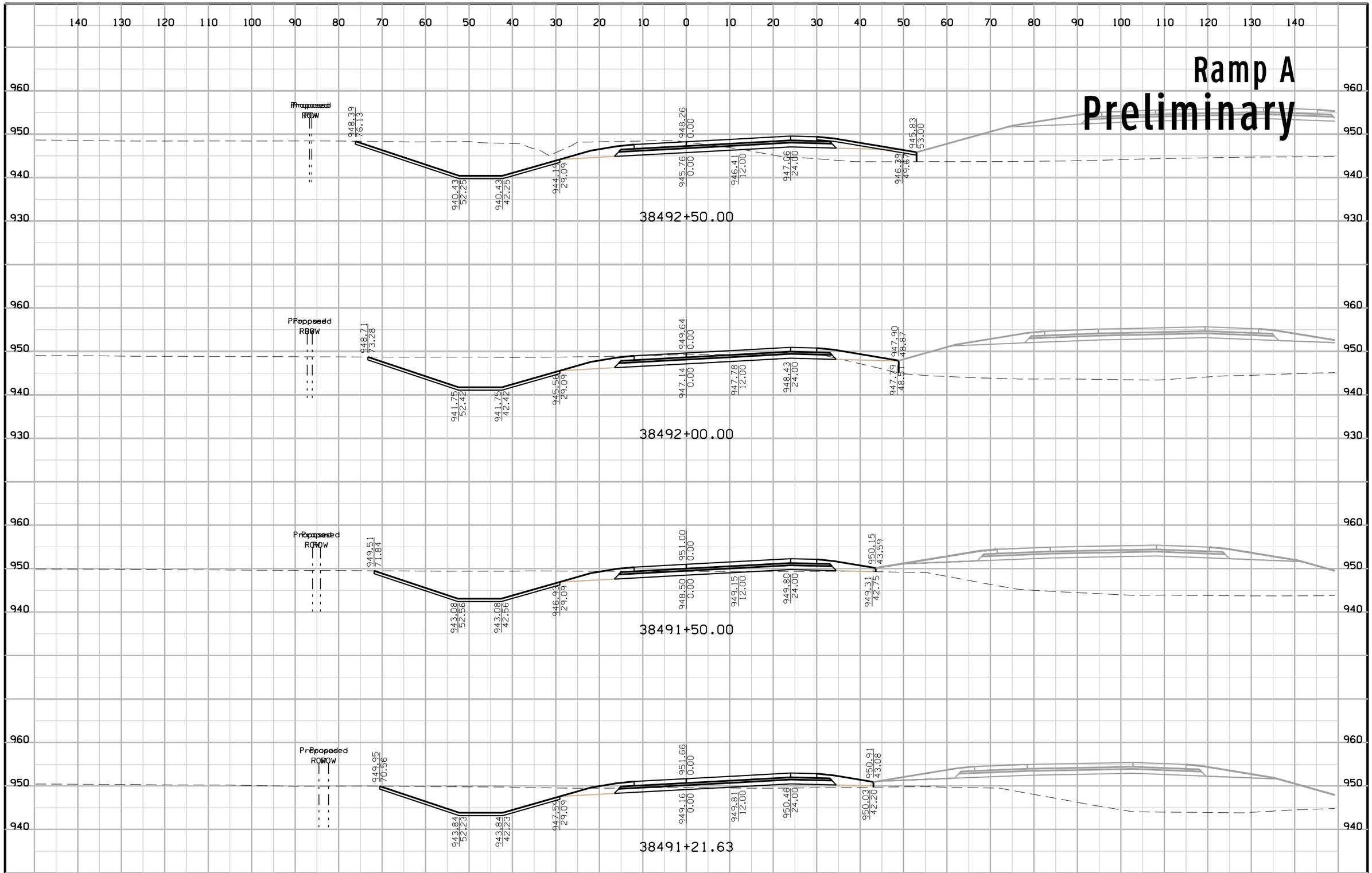
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.2

8:26:55 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

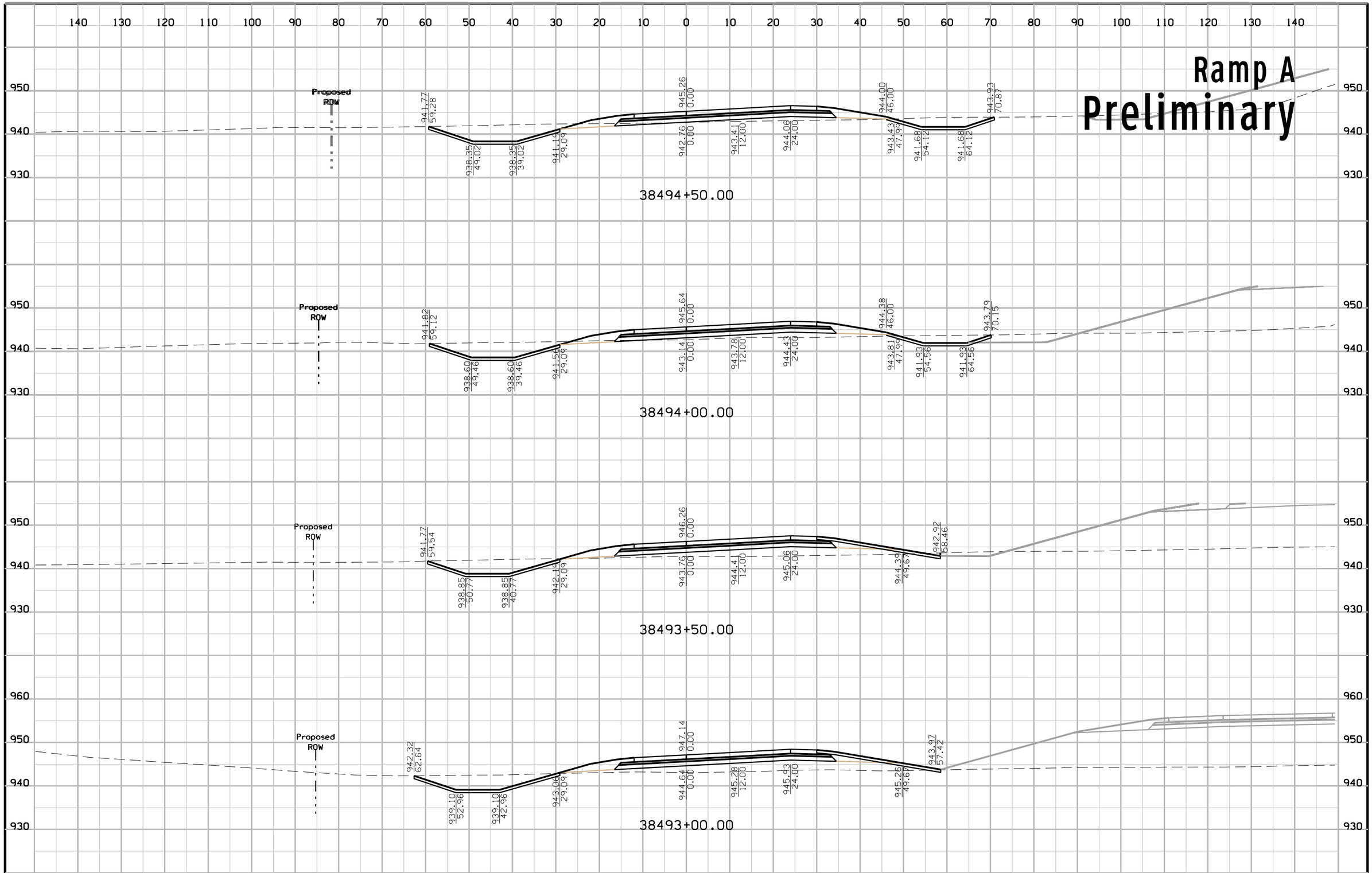
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.3

8:26:56 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

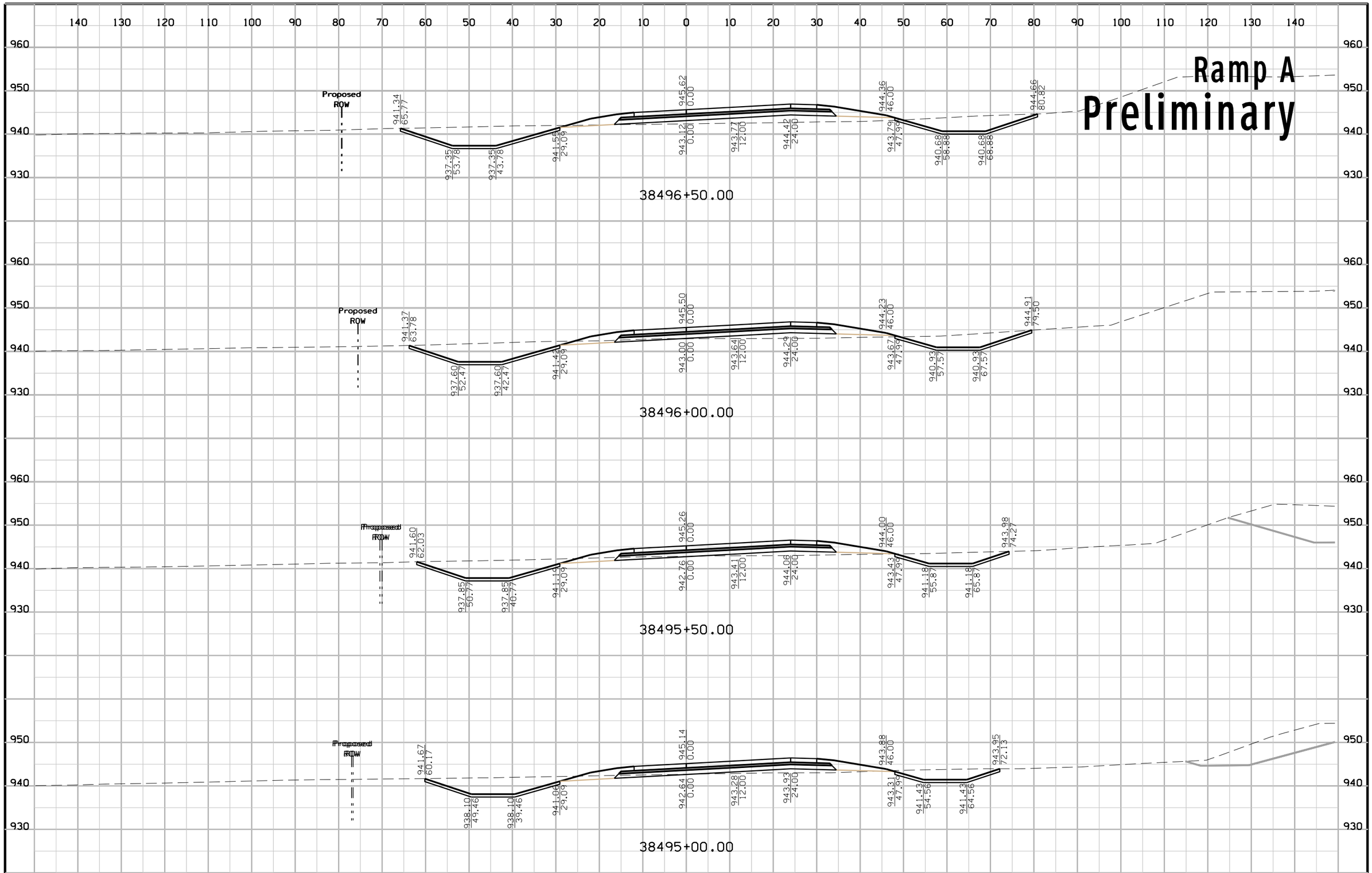
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.4

8:26:58 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

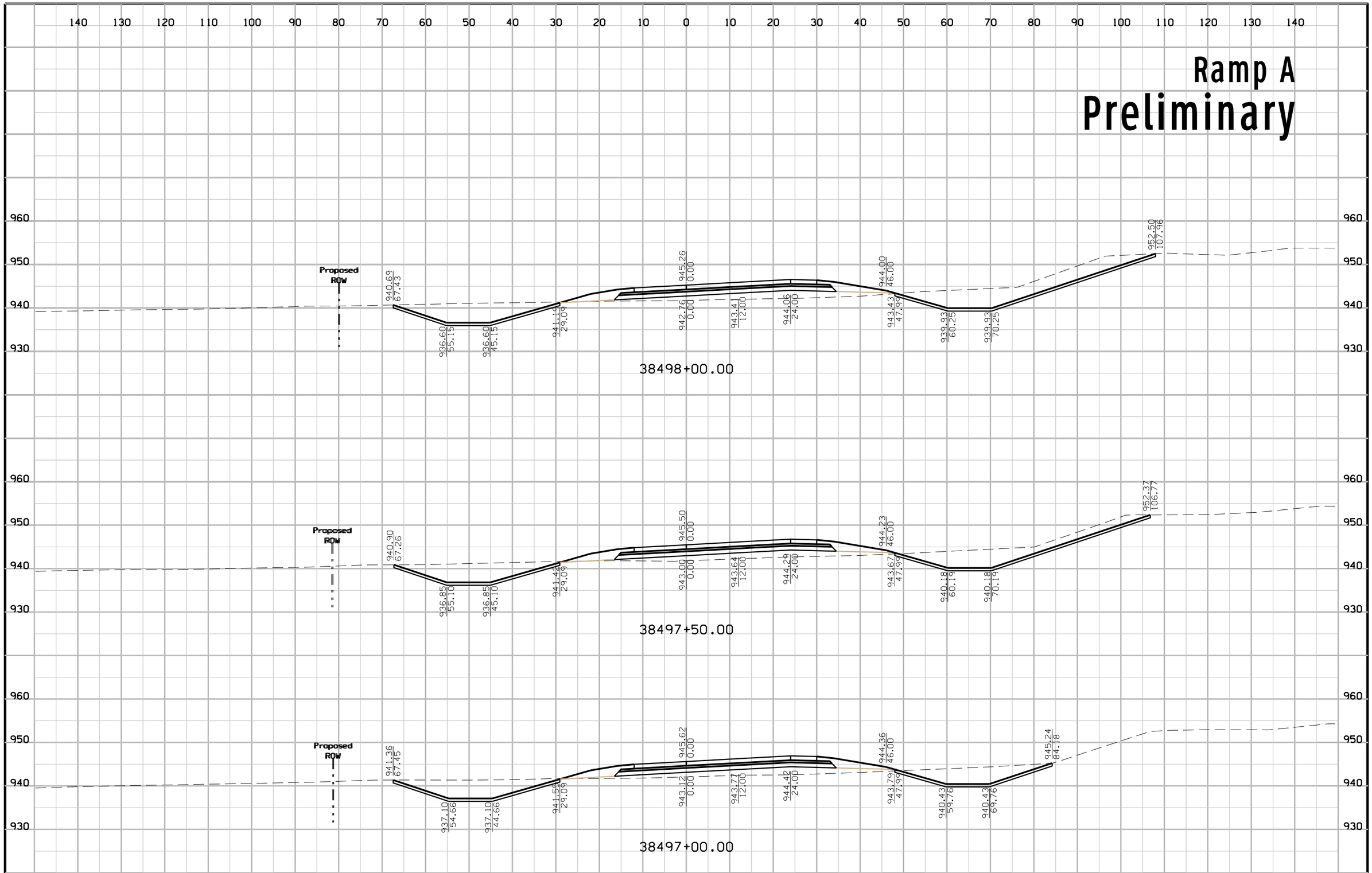
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.5

8:26:59 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

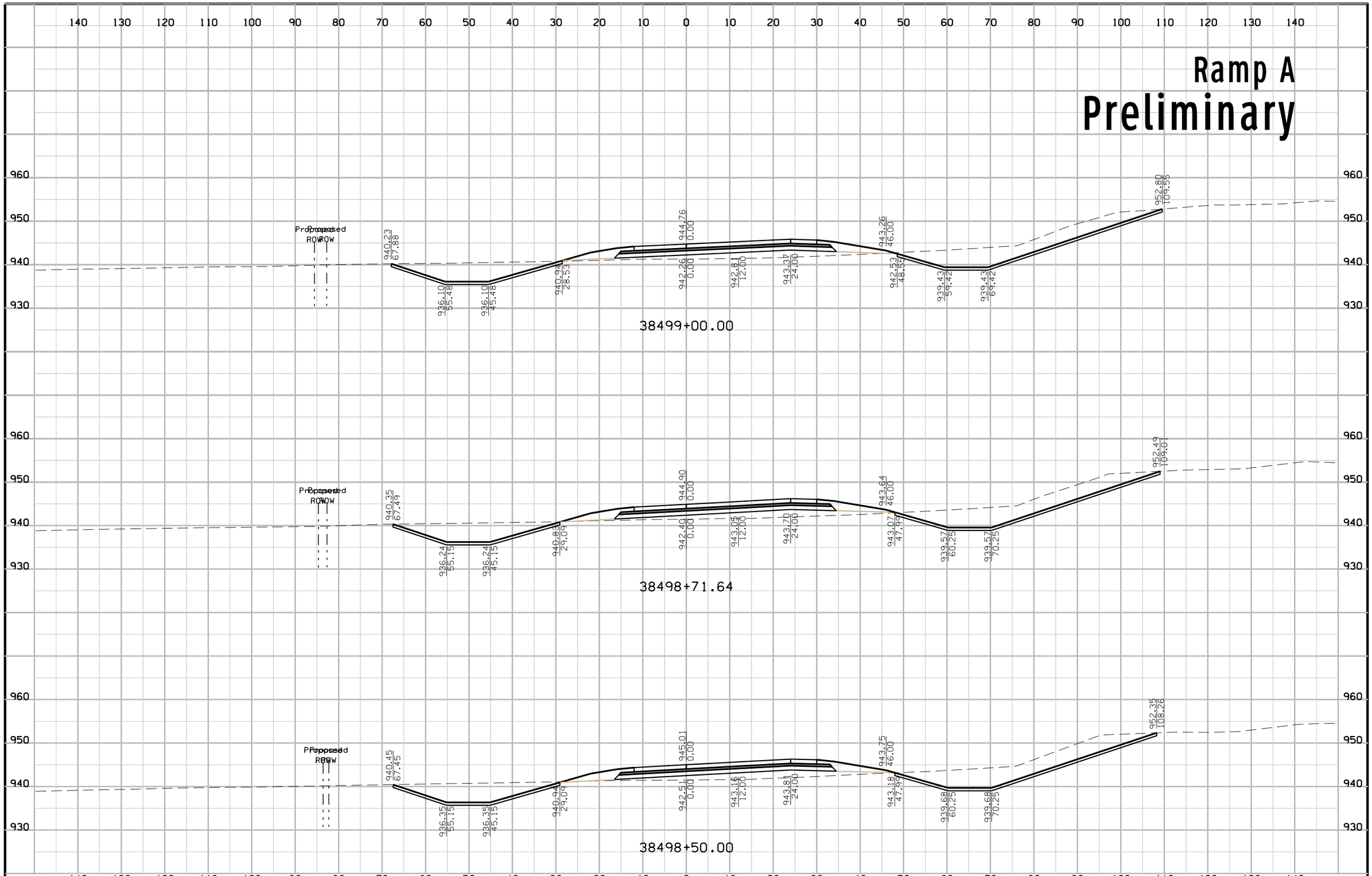
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.6

8:27:00 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

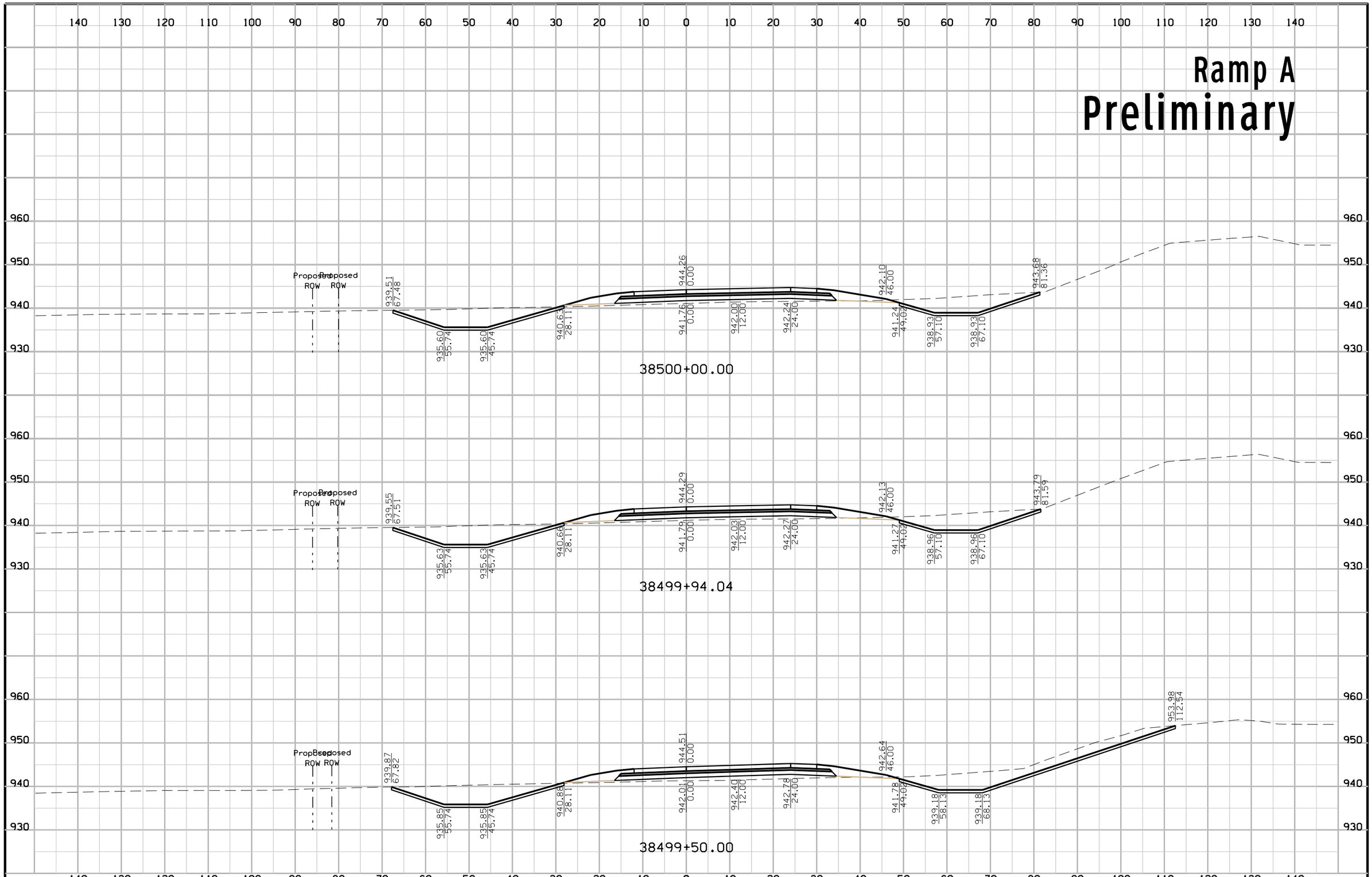
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.7

8:27:02 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

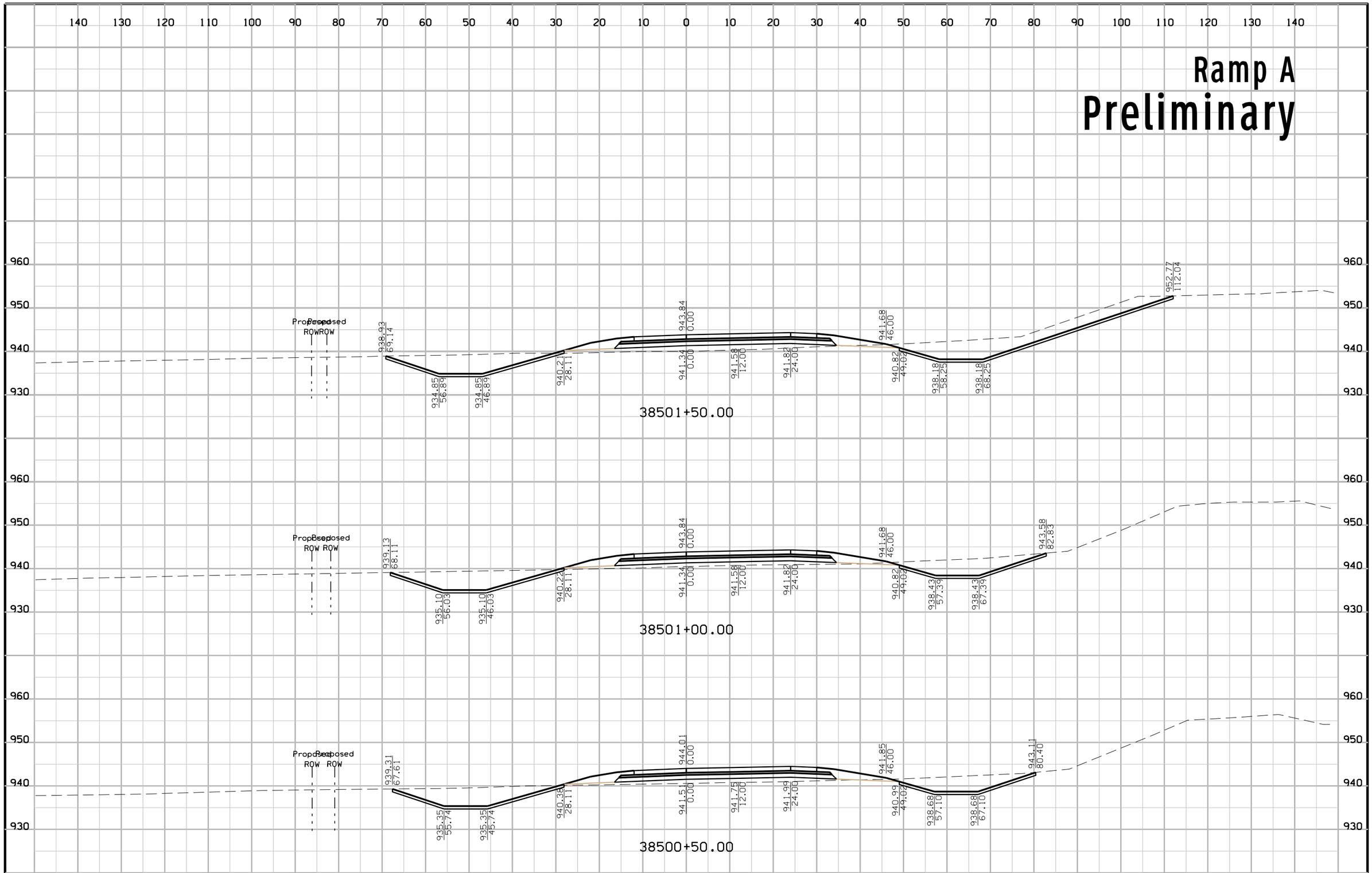
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.8

8:27:03 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

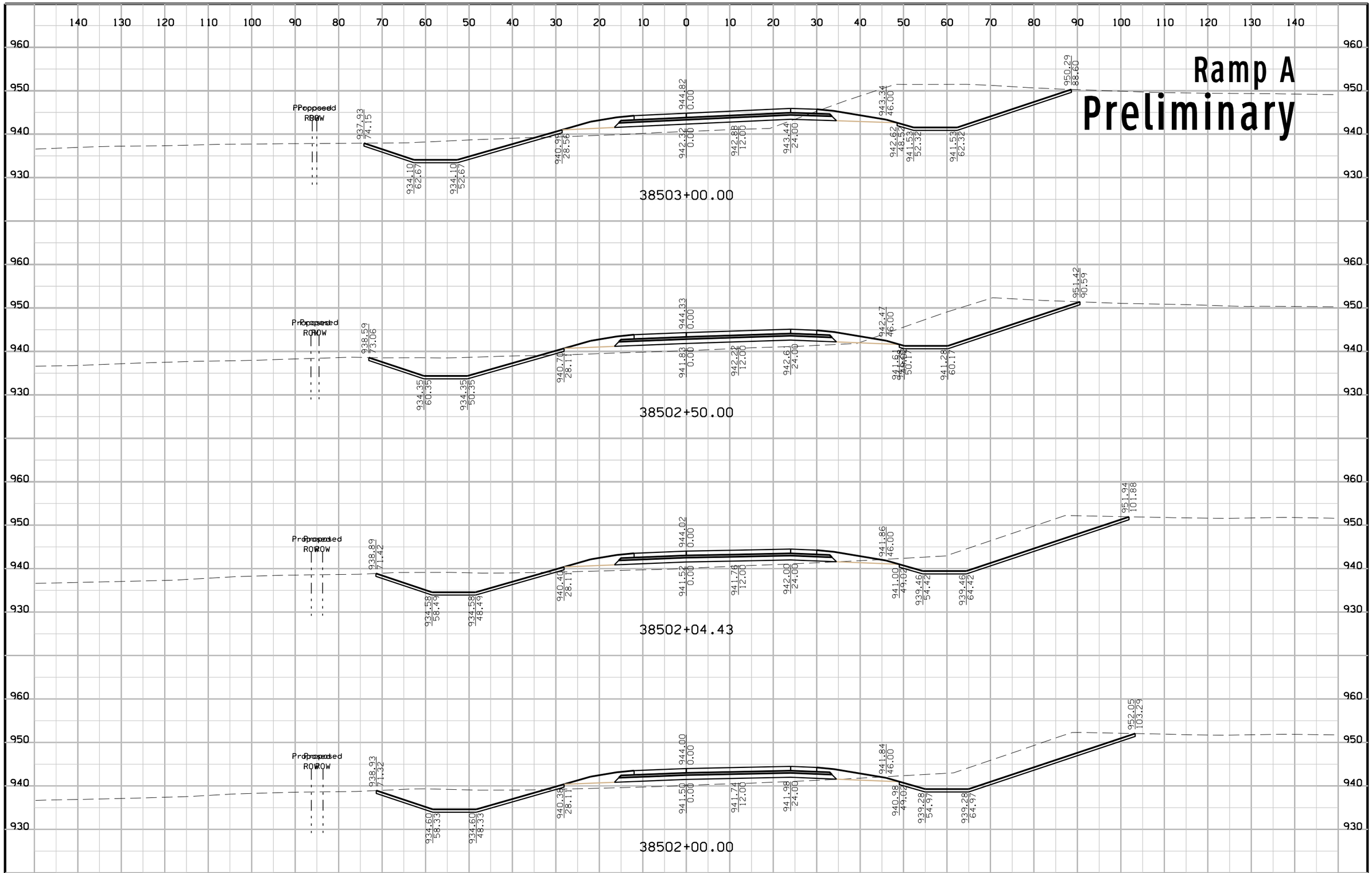
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.9

8:27:04 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

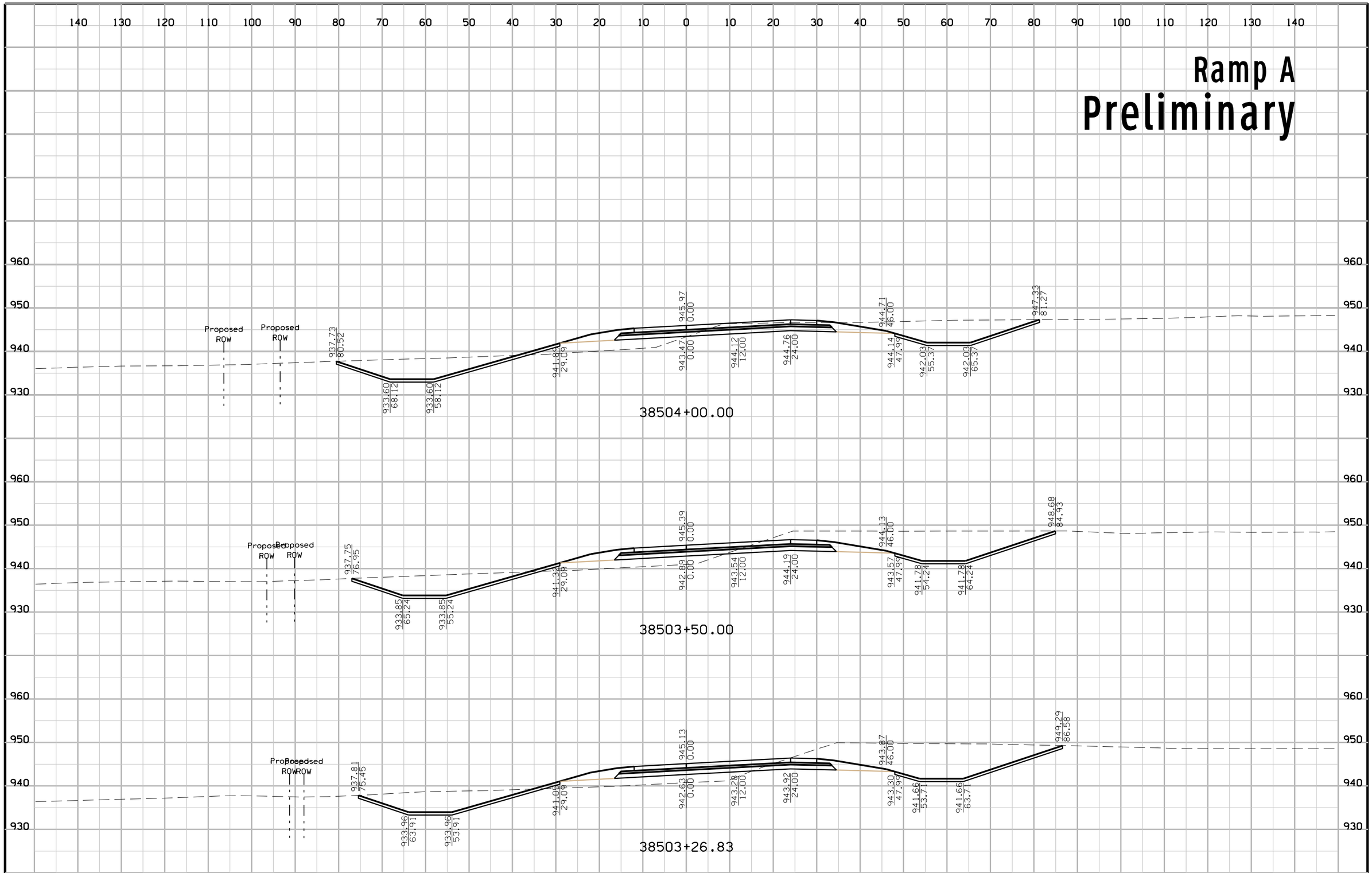
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.10

8:27:06 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

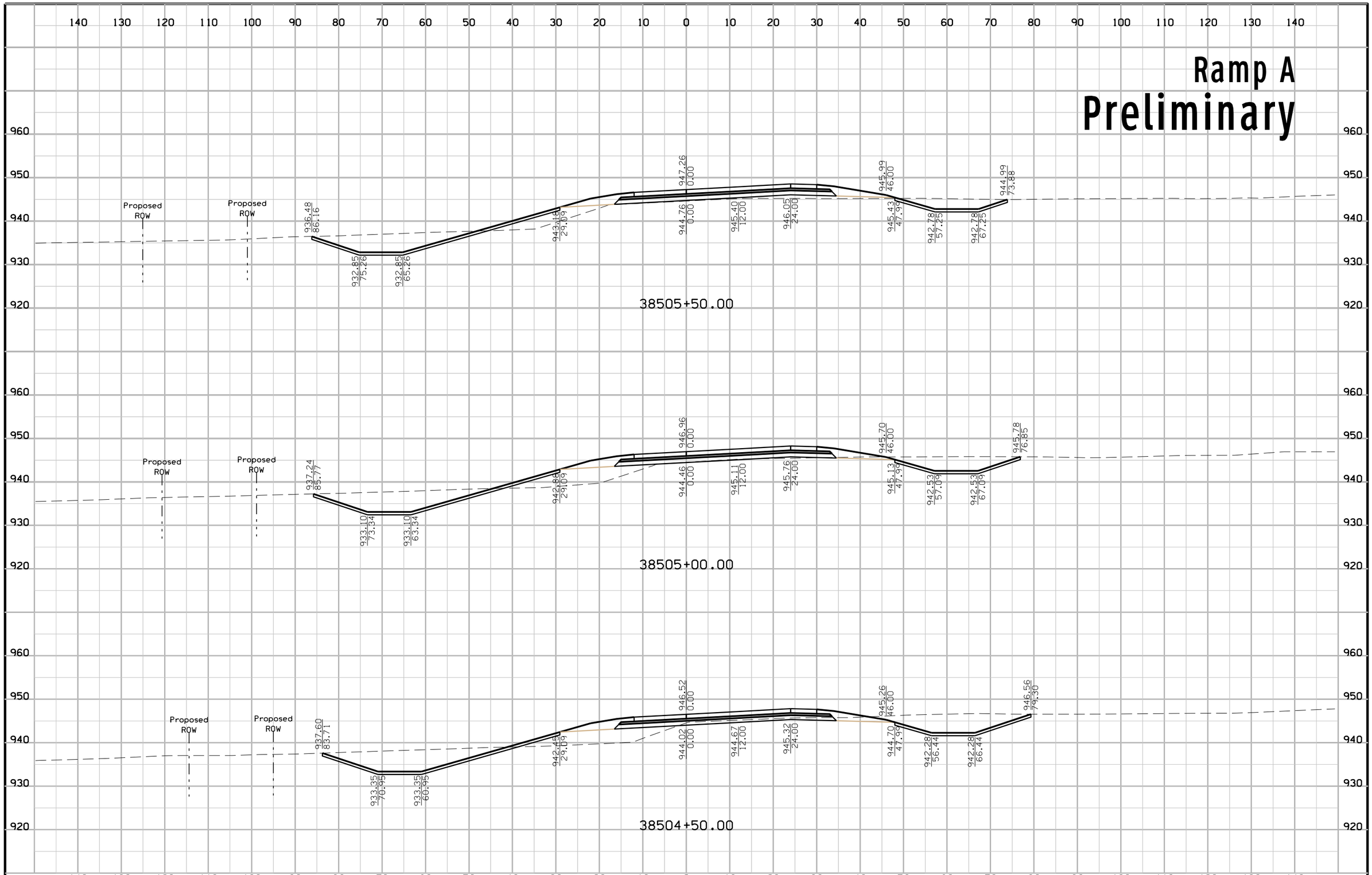
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.11

8:27:07 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

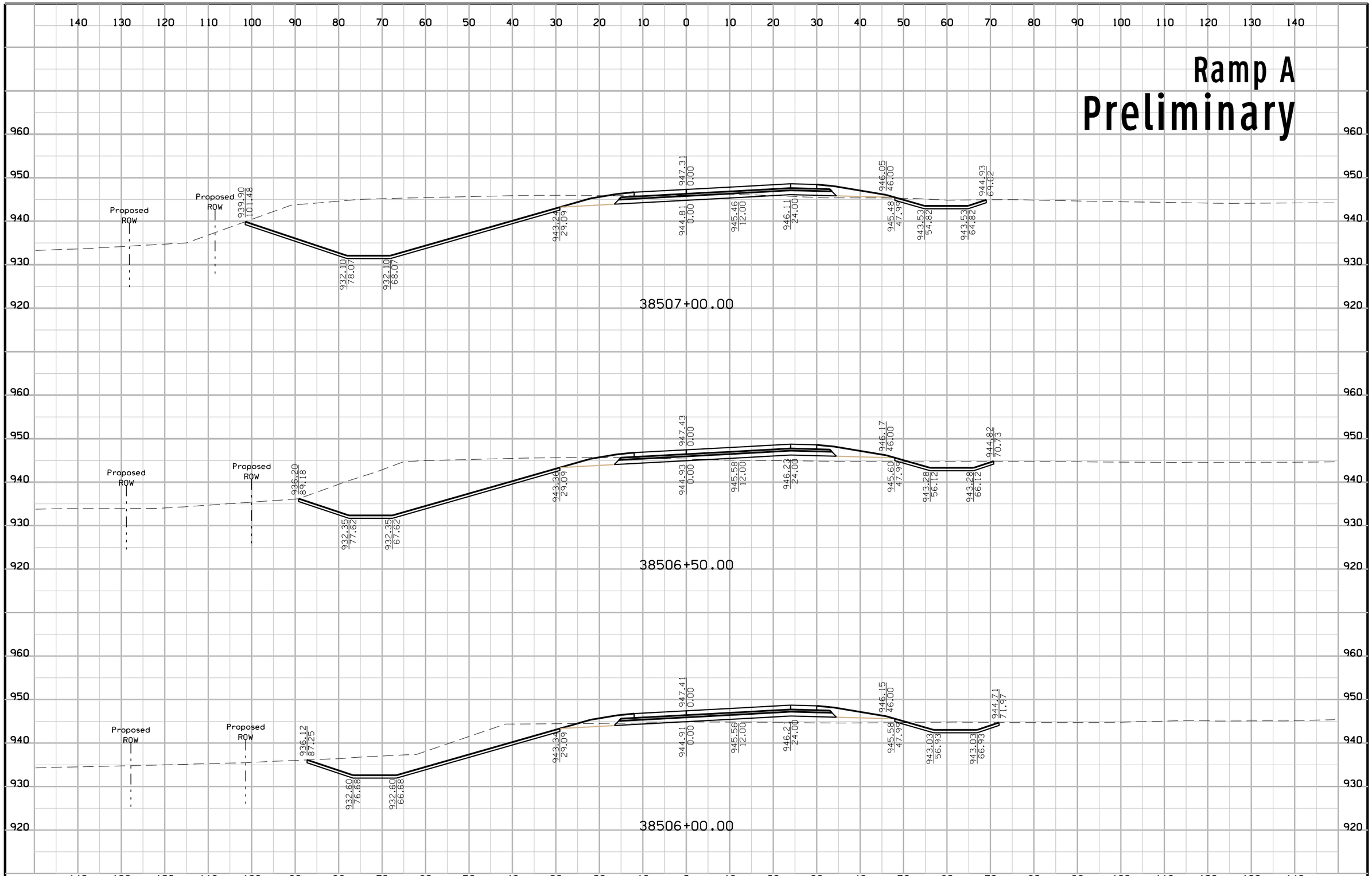
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.12

8:27:08 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

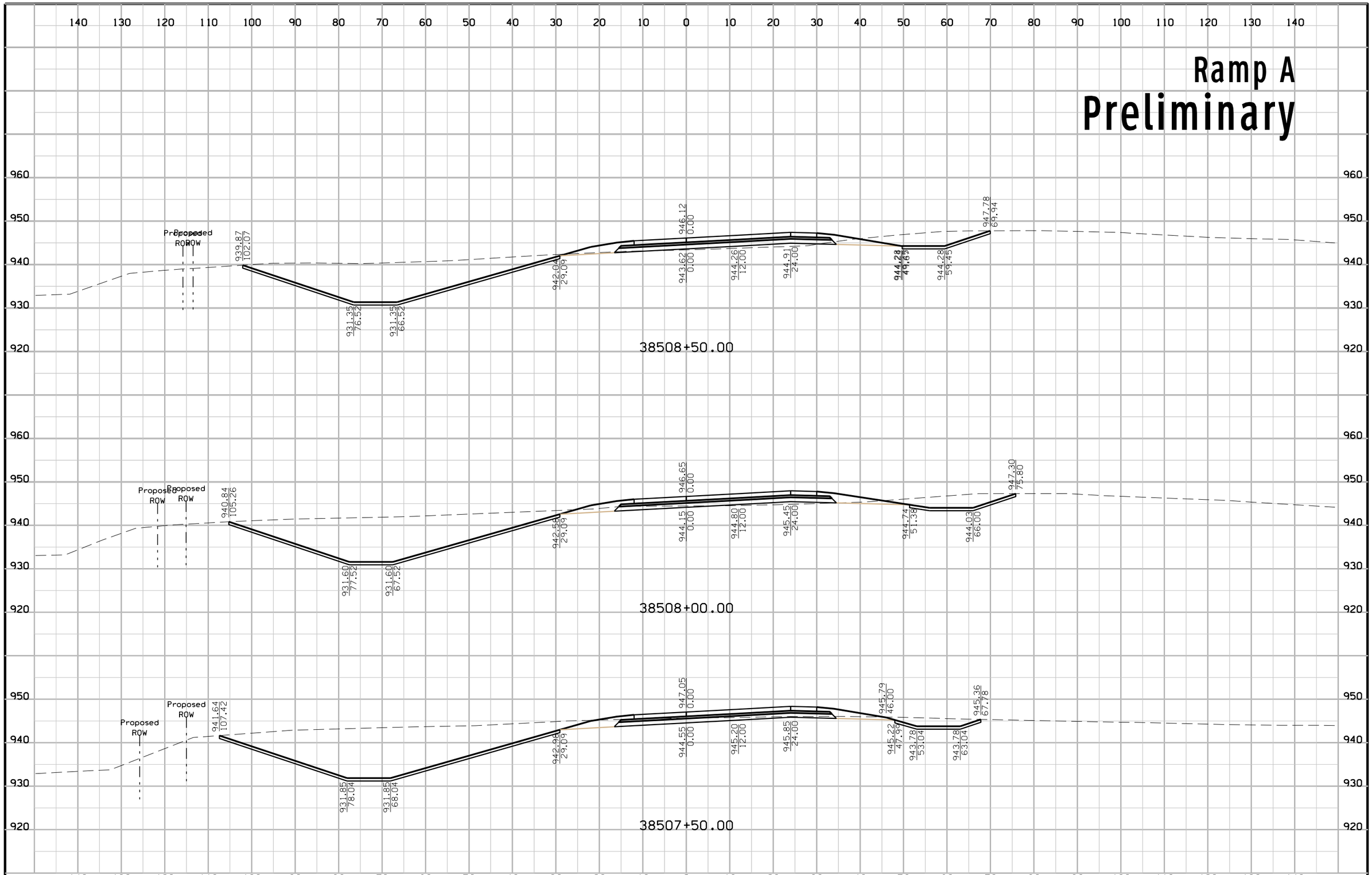
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.13

8:27:09 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

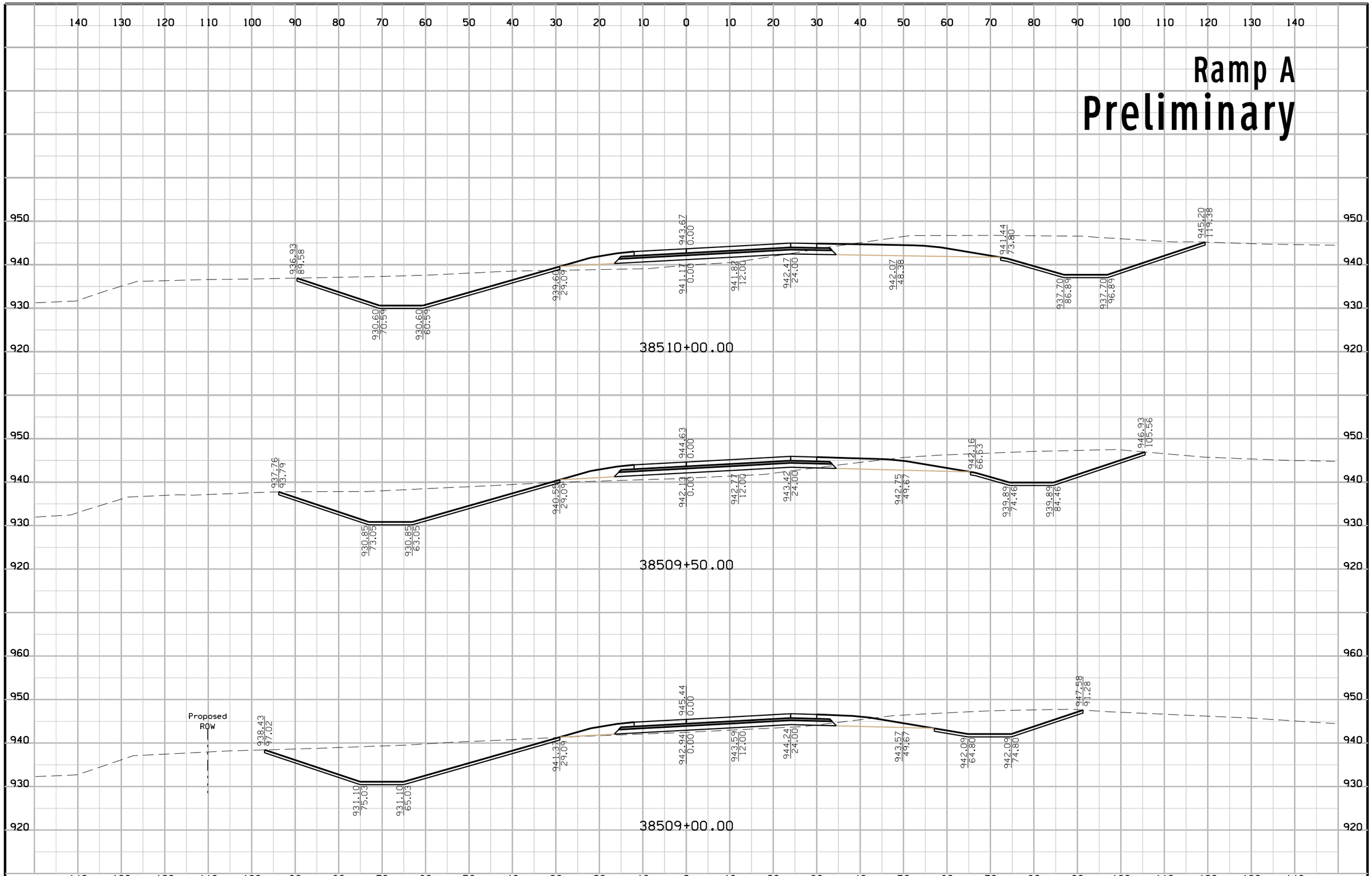
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.14

8:27:11 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

Ramp A
Preliminary

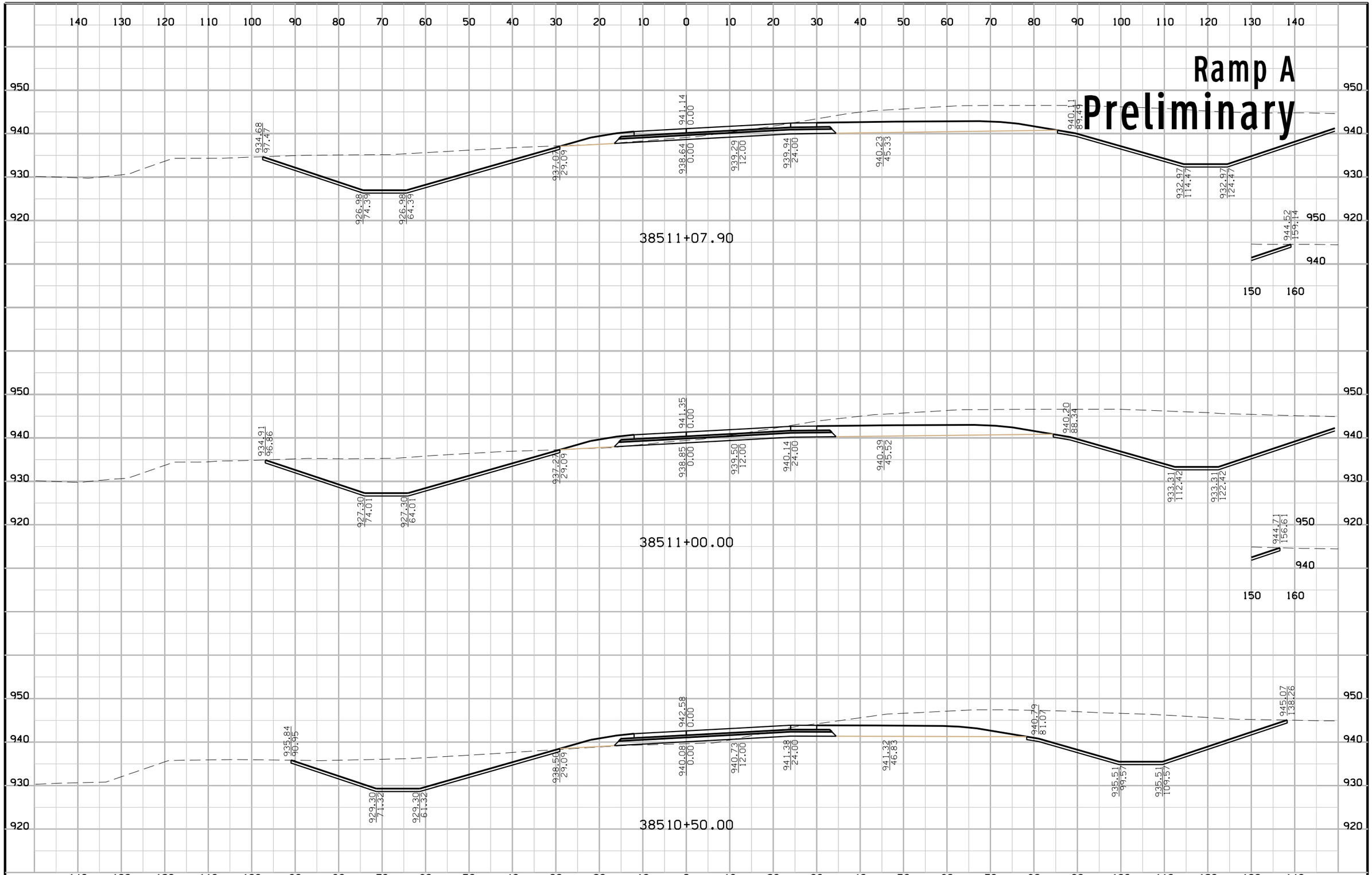


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.15

8:27:12 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

Ramp A

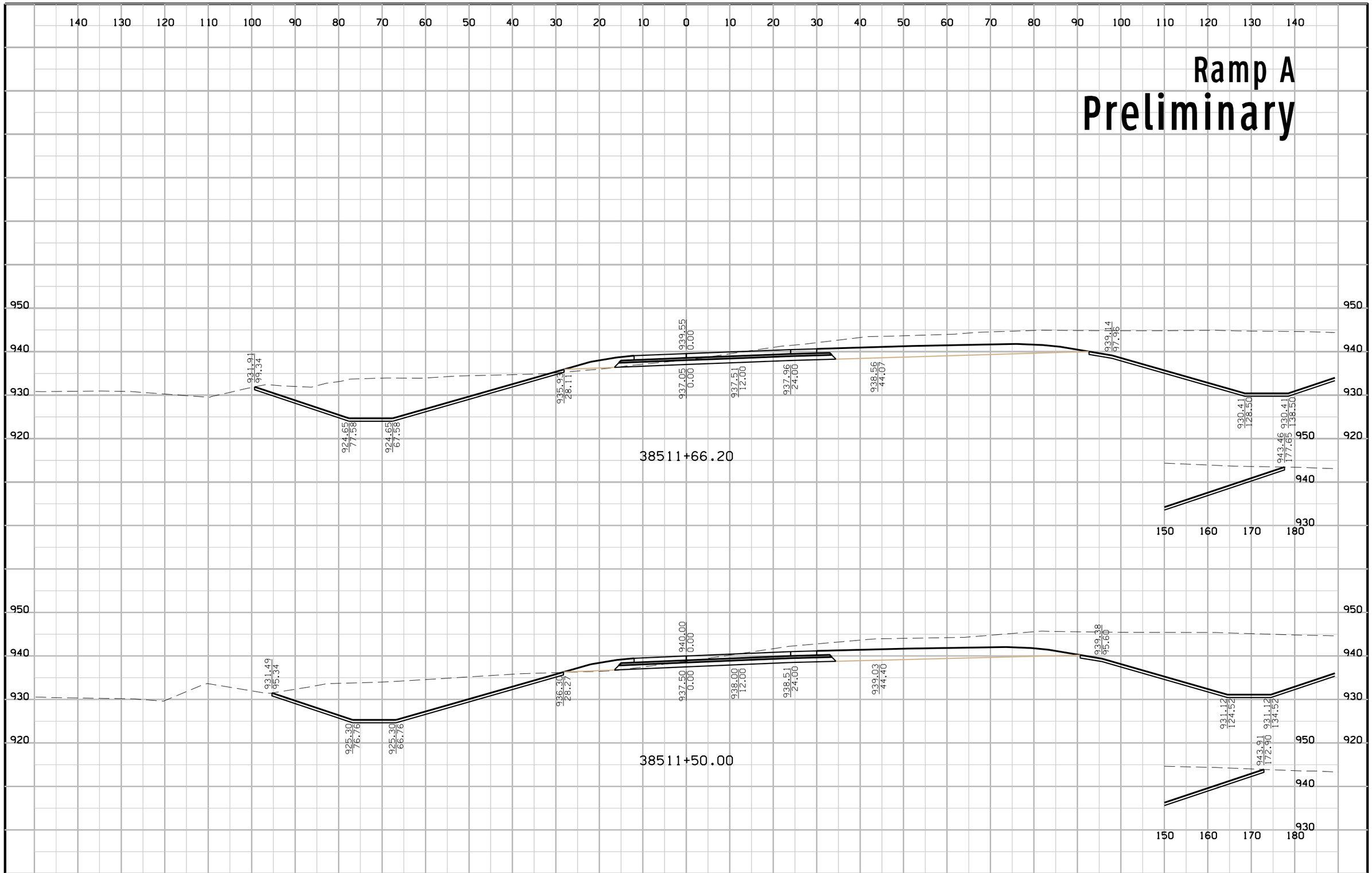
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.16

8:27:13 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

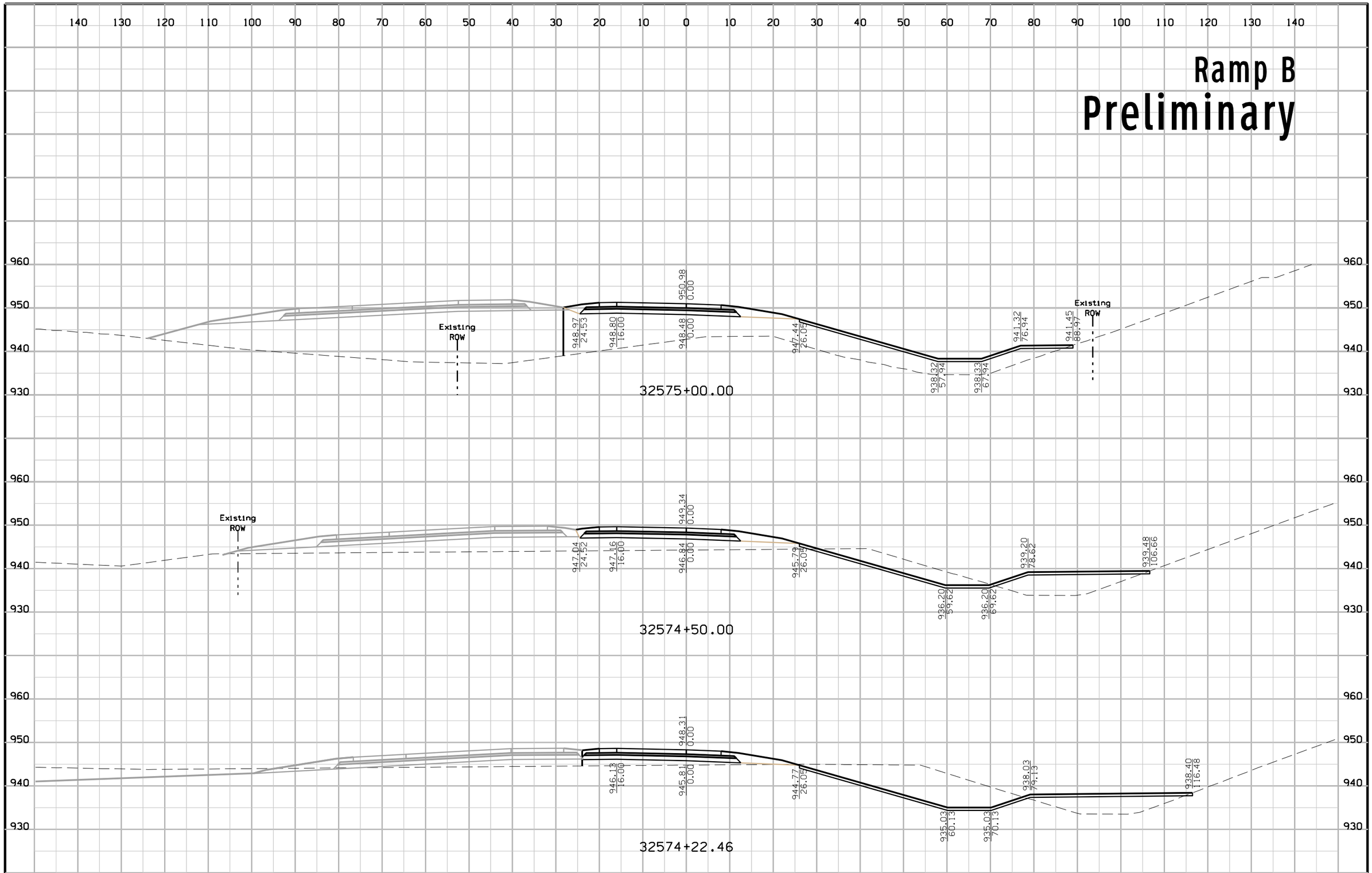
Ramp A
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.17

8:27:14 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

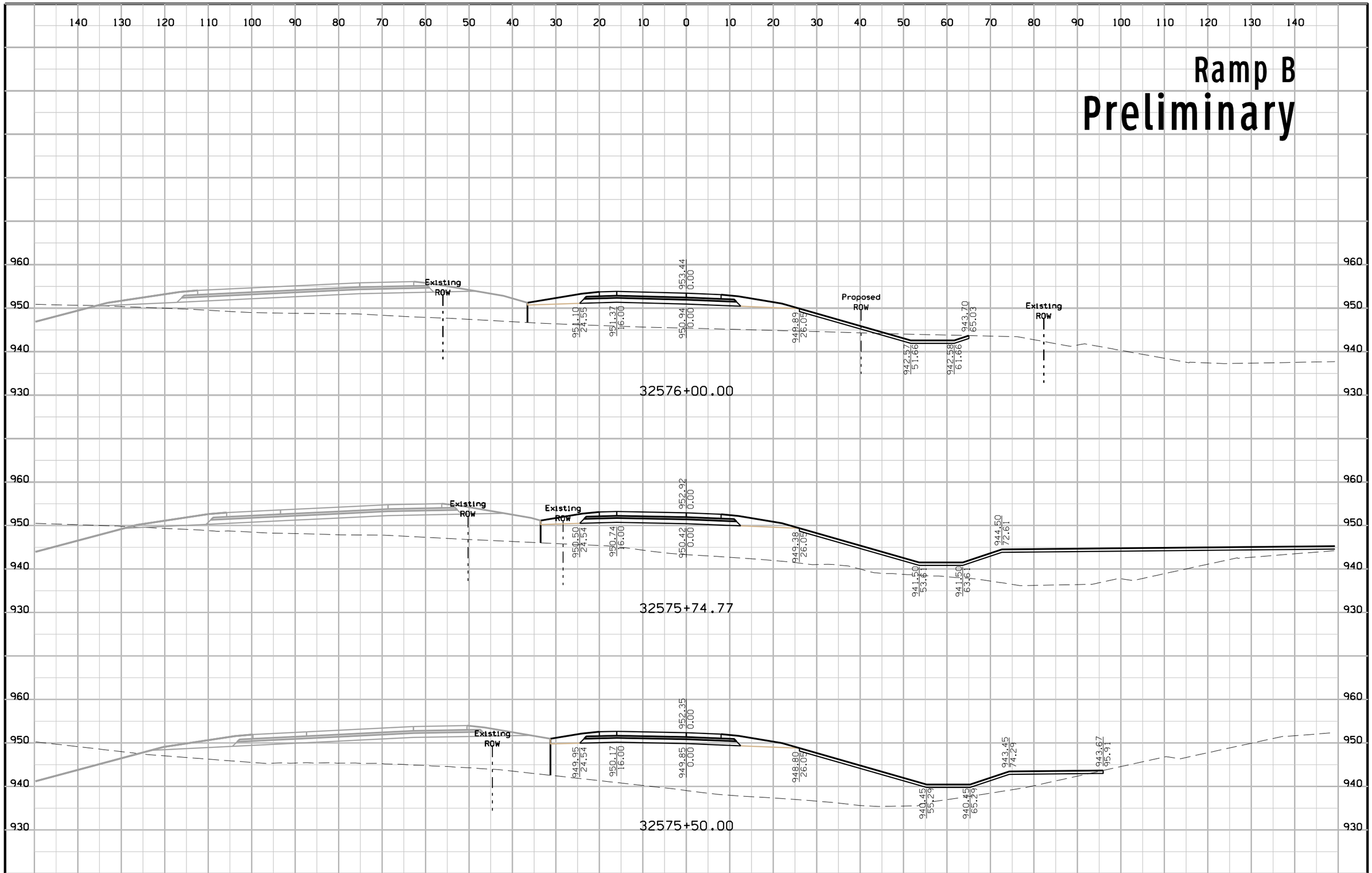
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.18

8:27:16 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

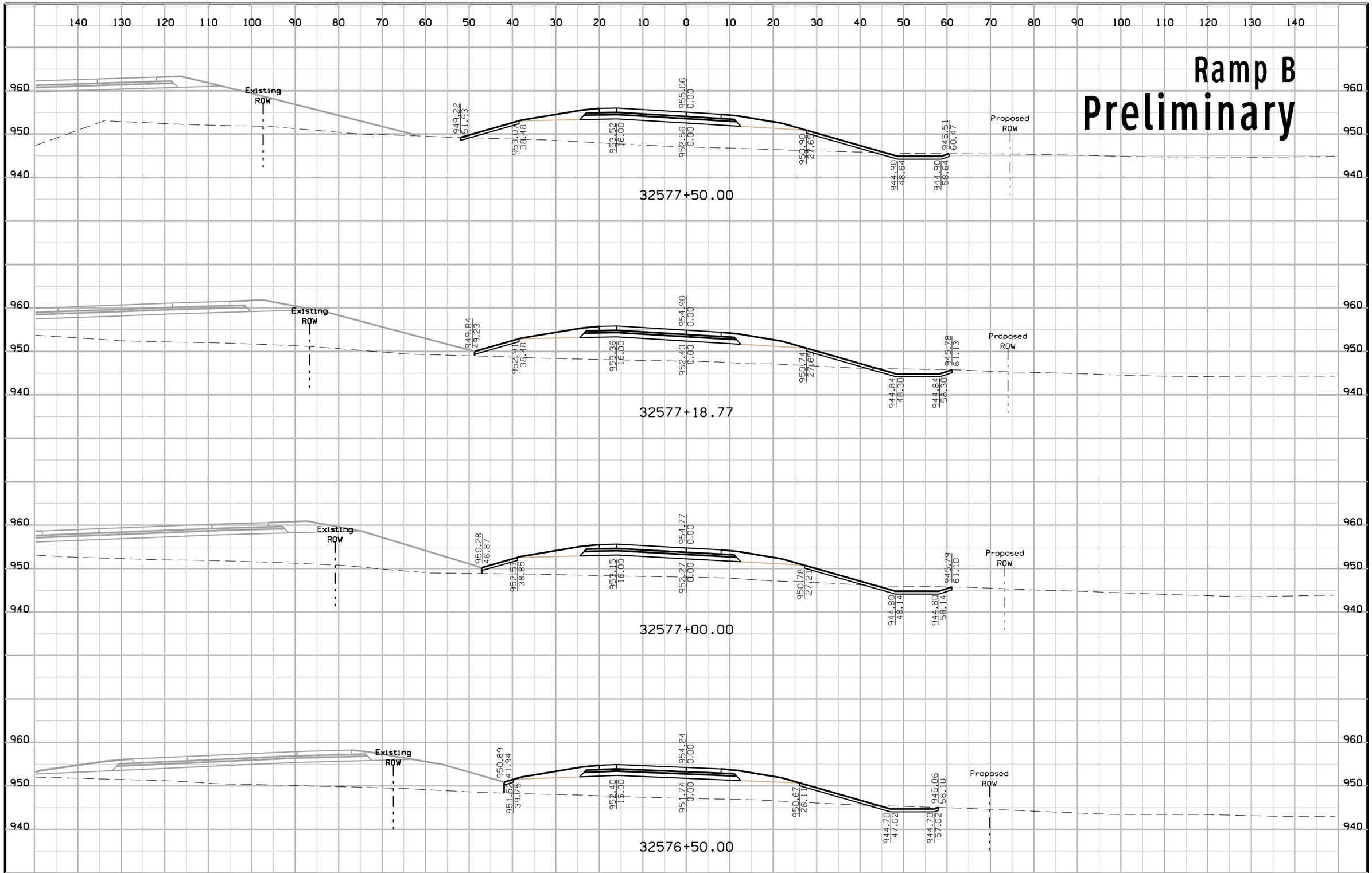
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.19

8:27:17 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

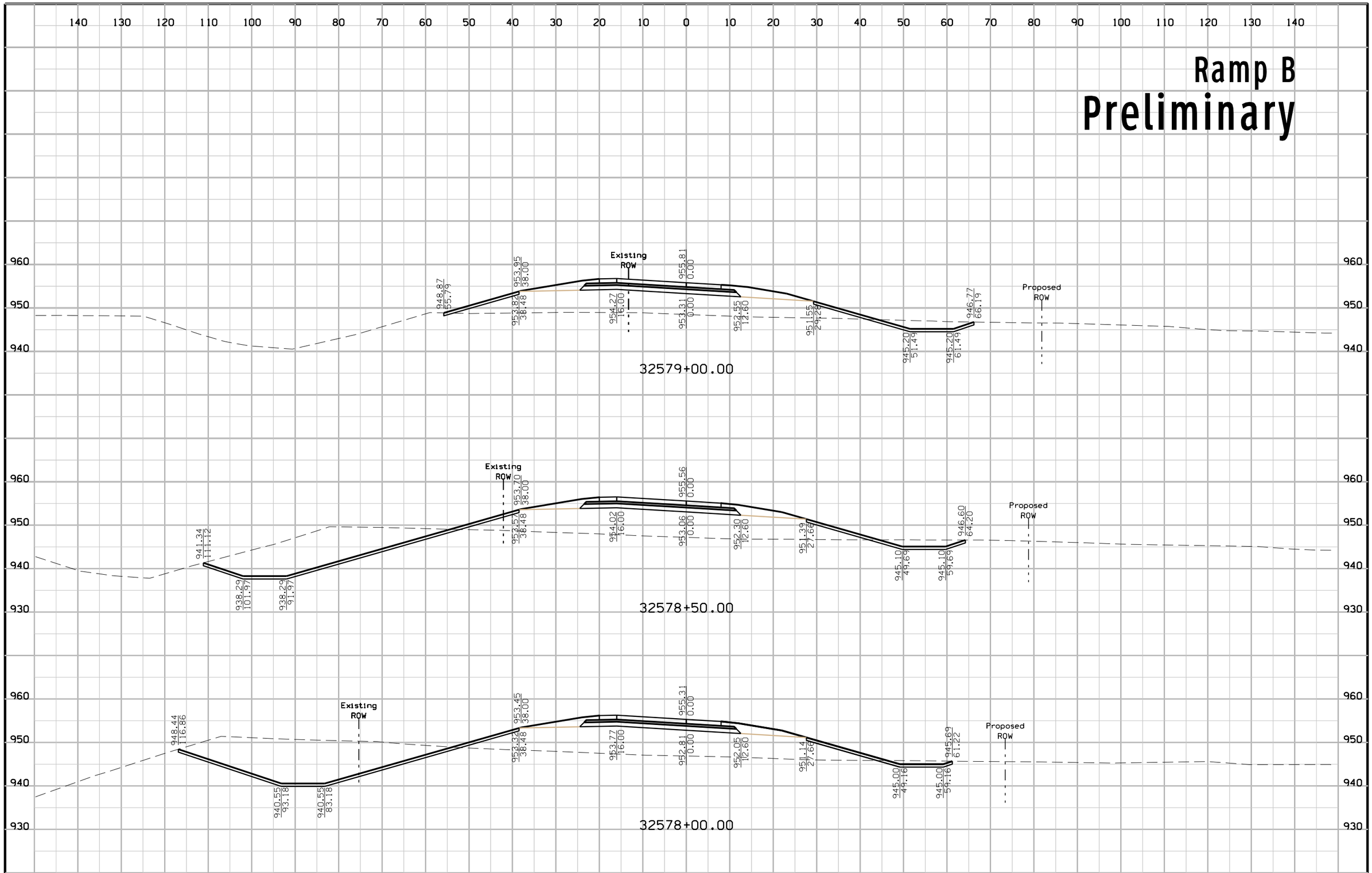
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.20

8:27:18 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

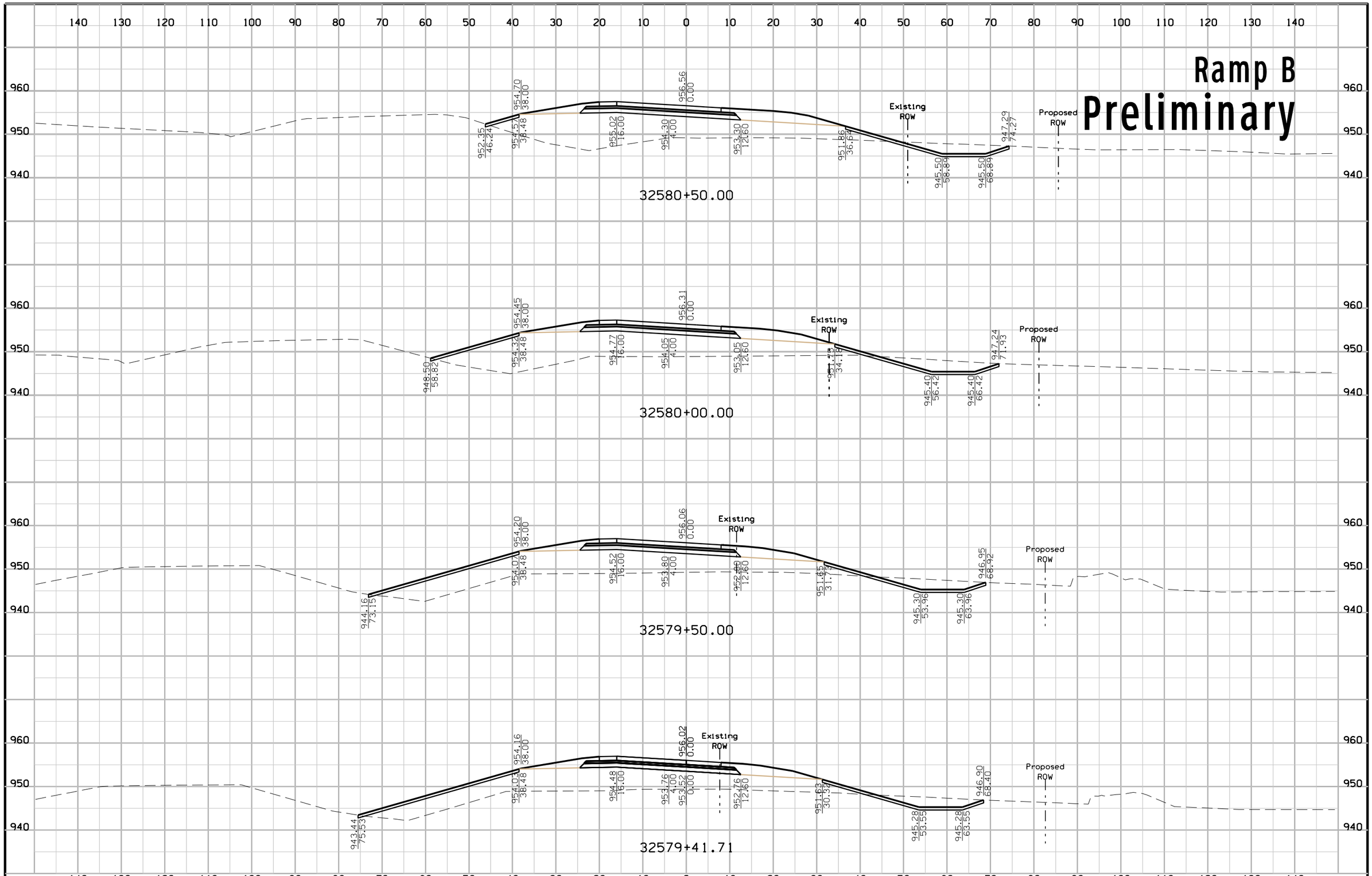
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.21

8:27:19 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

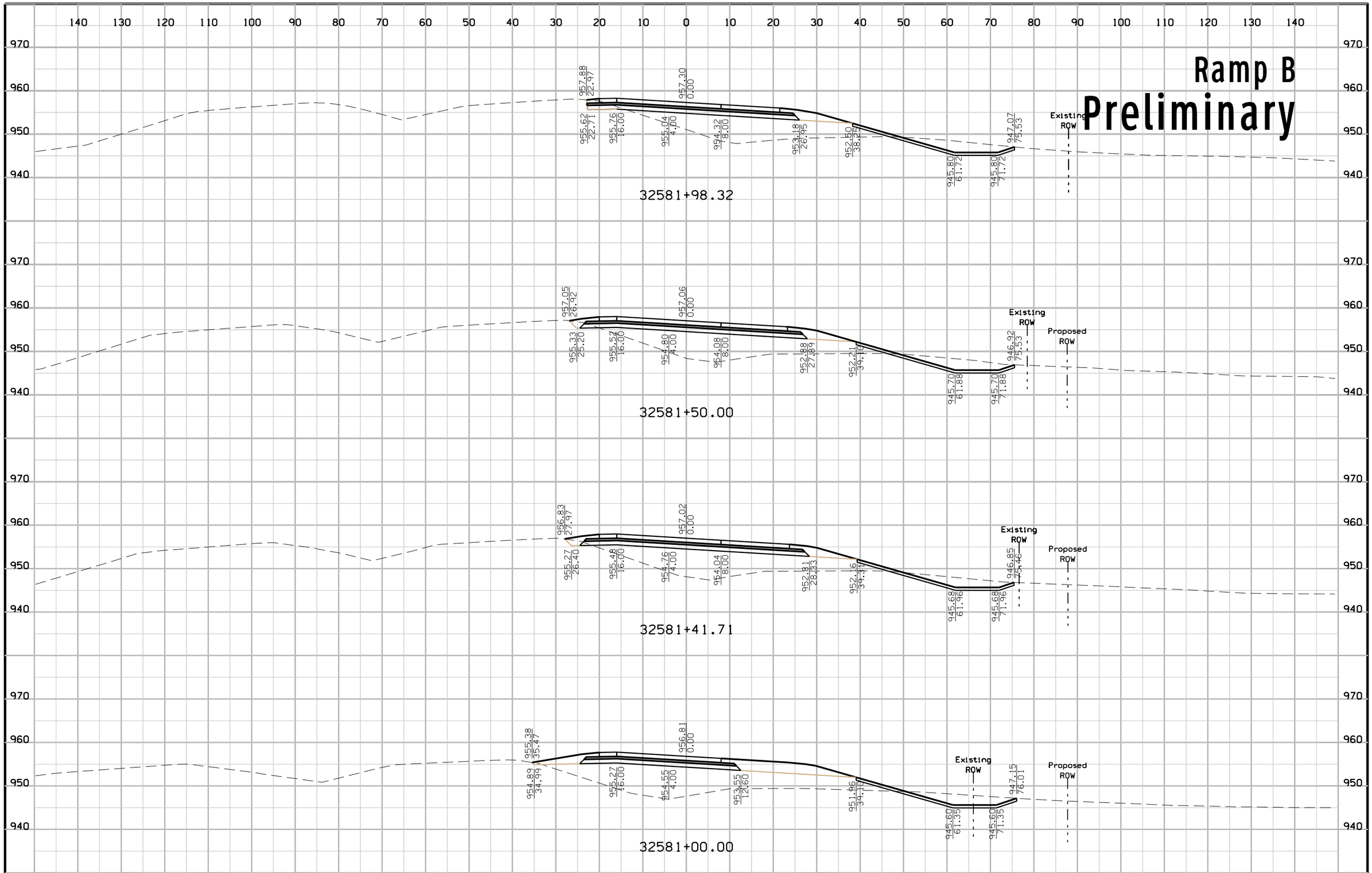
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.22

8:27:20 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

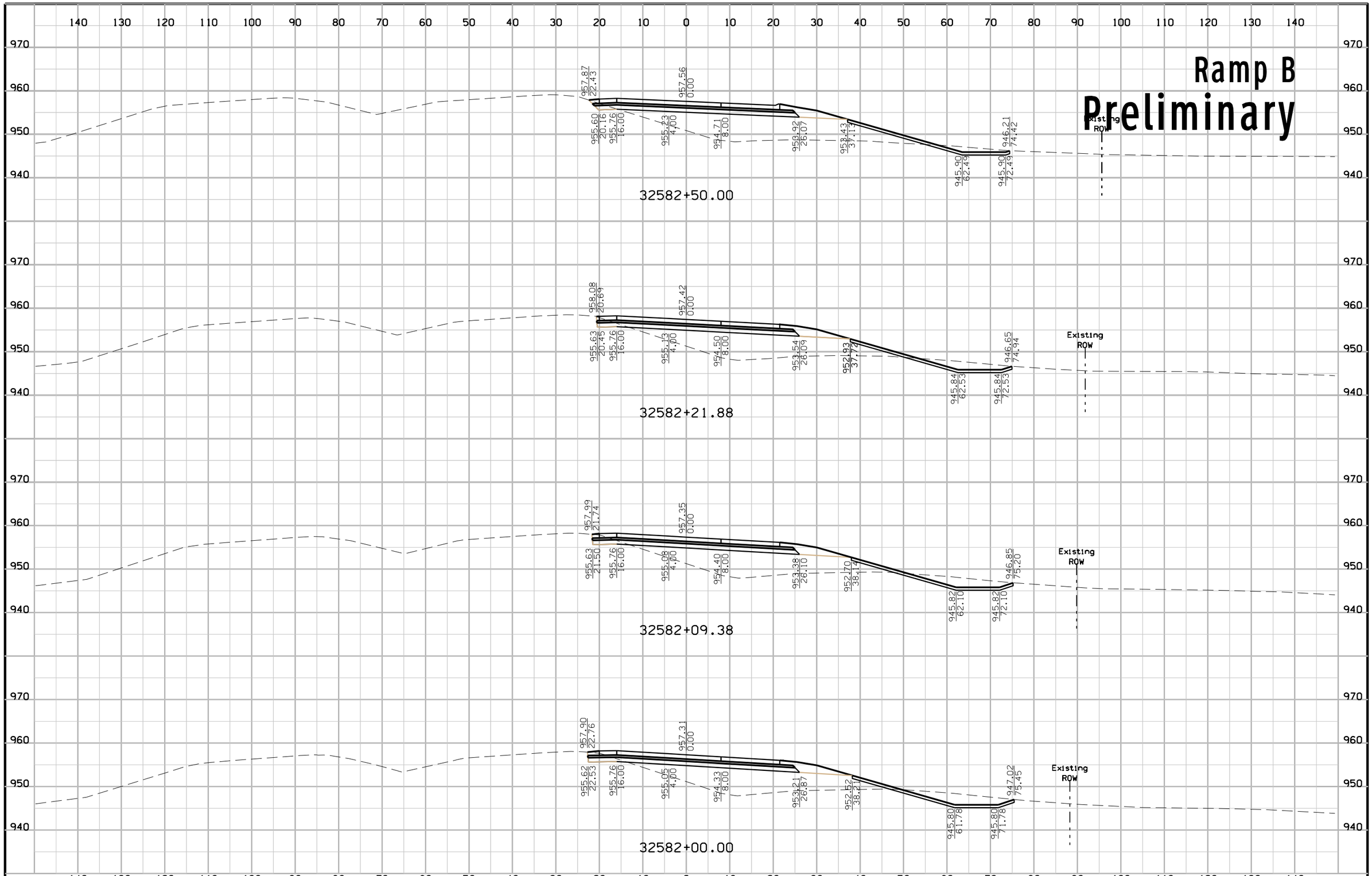
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.23

8:27:22 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

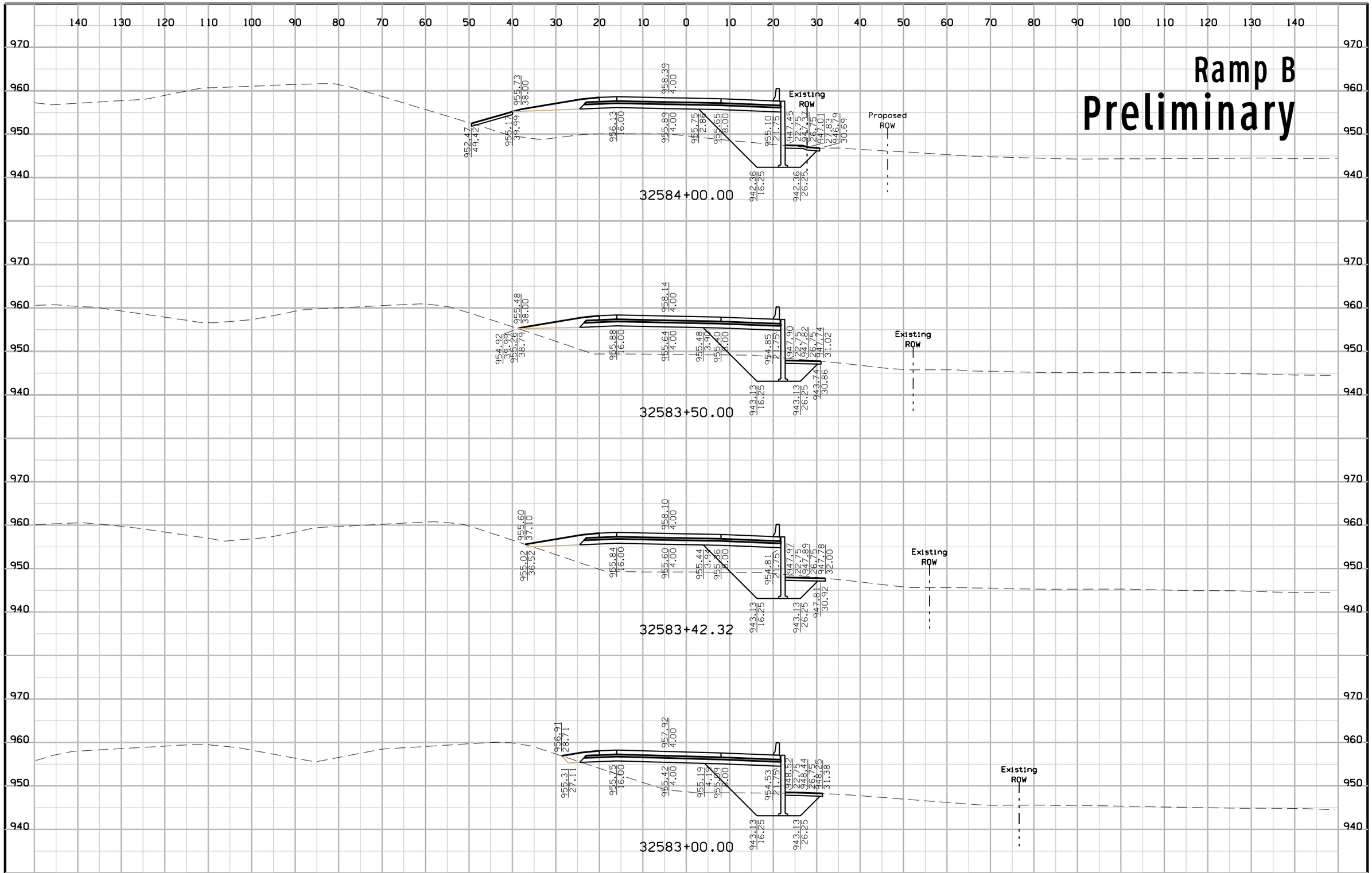
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.24

8:27:23 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

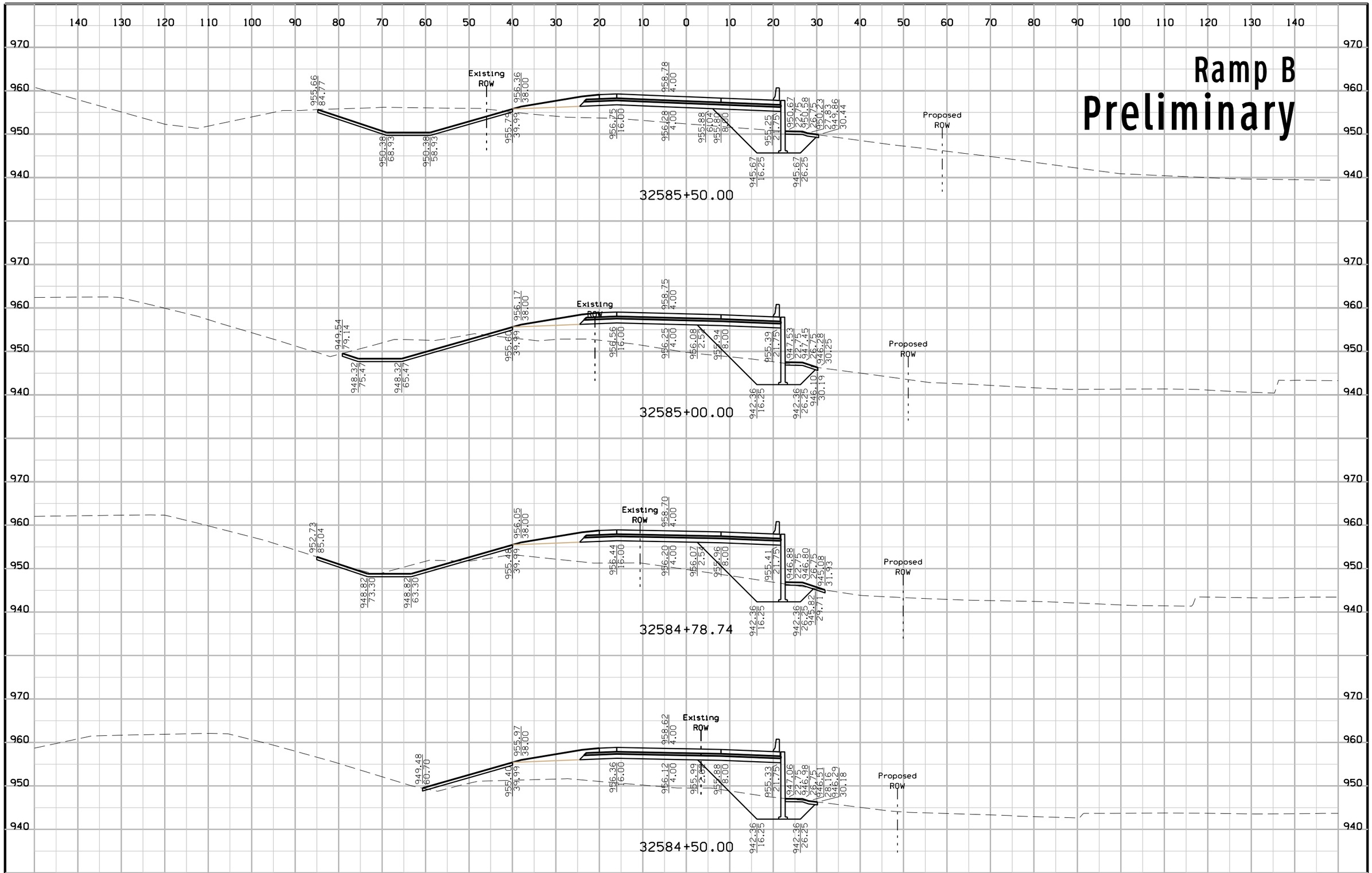
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.25

8:27:24 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

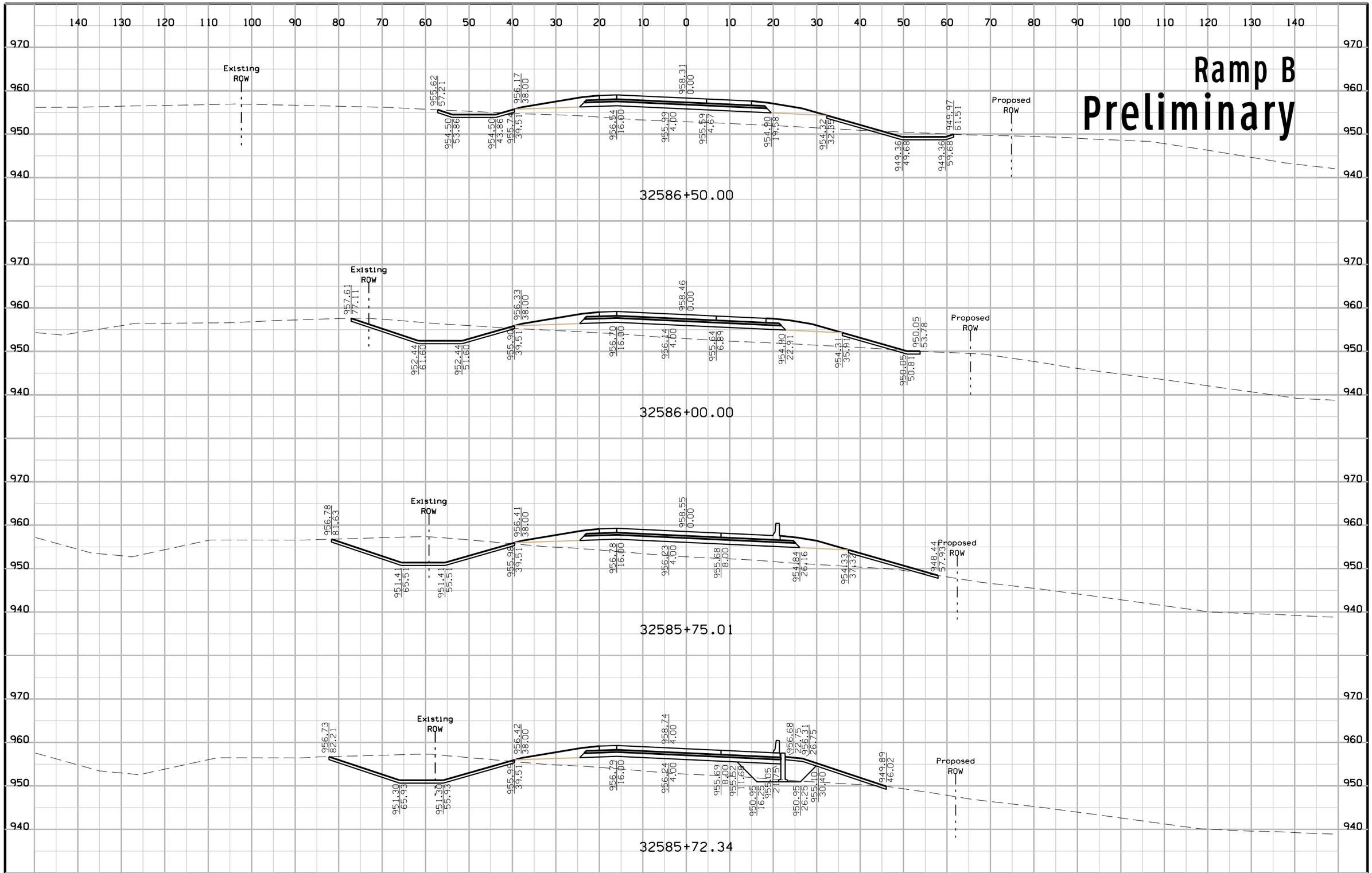
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.26

8:27:25 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

Ramp B
Preliminary

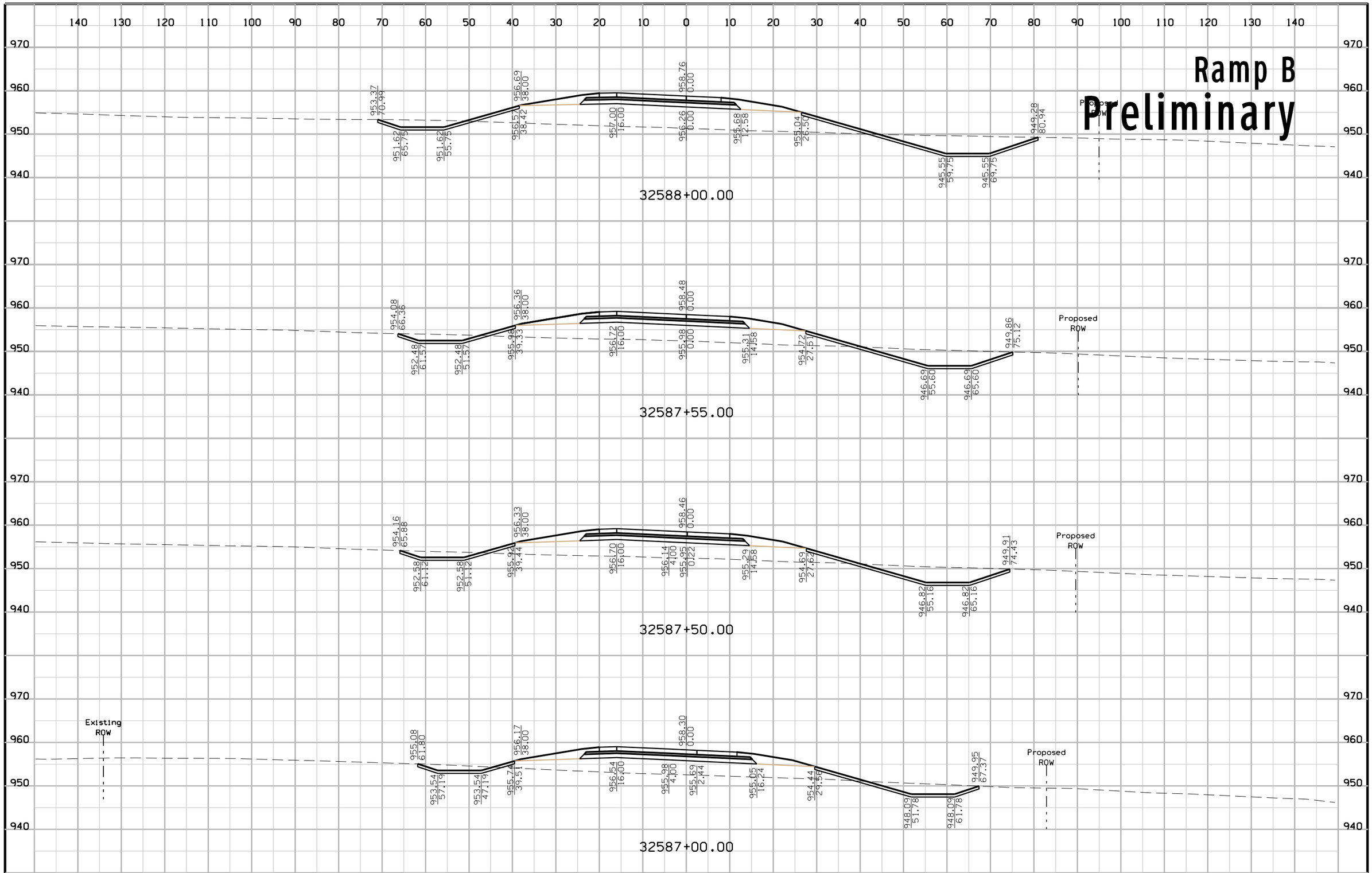


FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.27

8:27:26 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

Ramp B

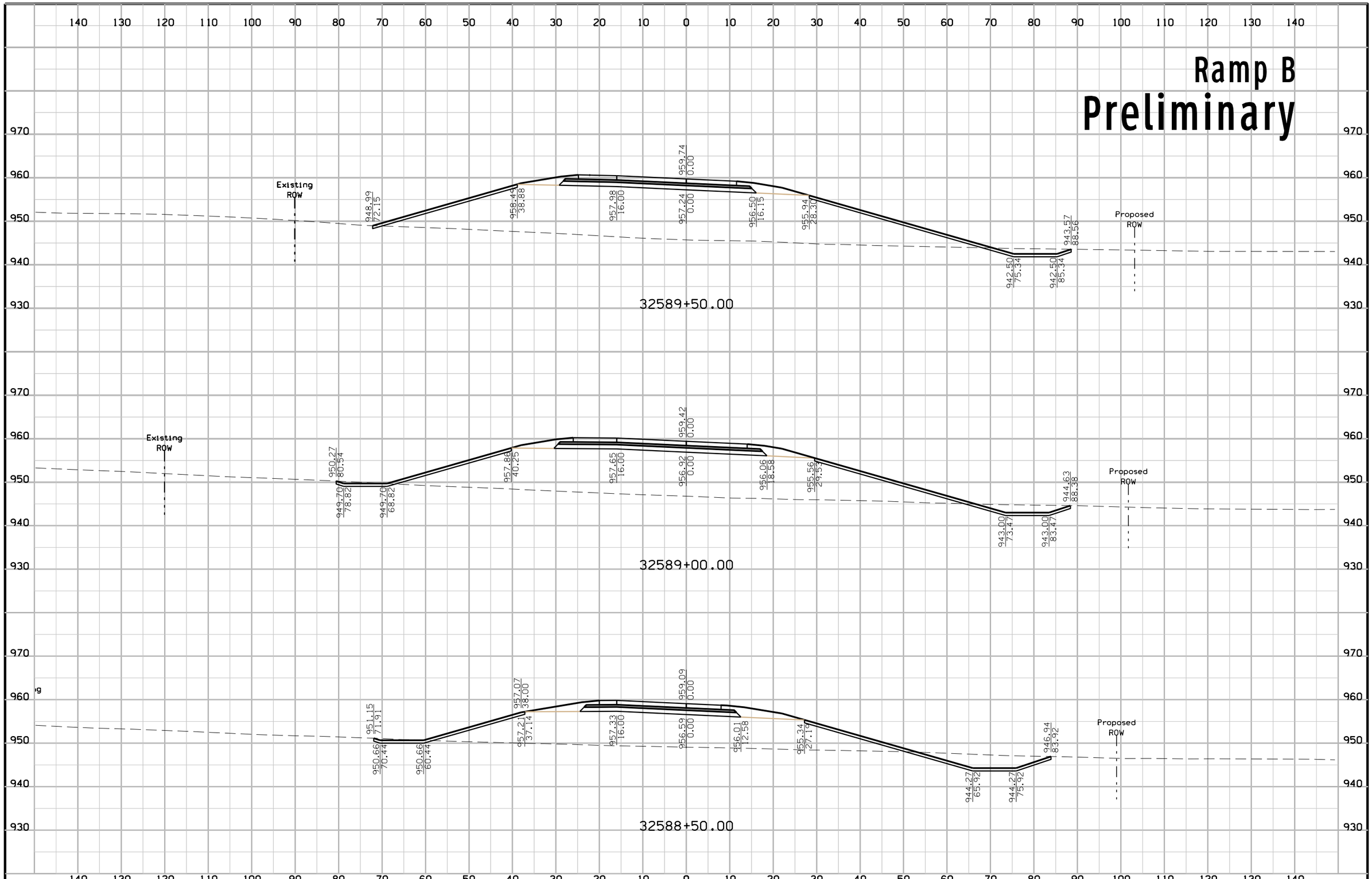
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.28

8:27:28 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

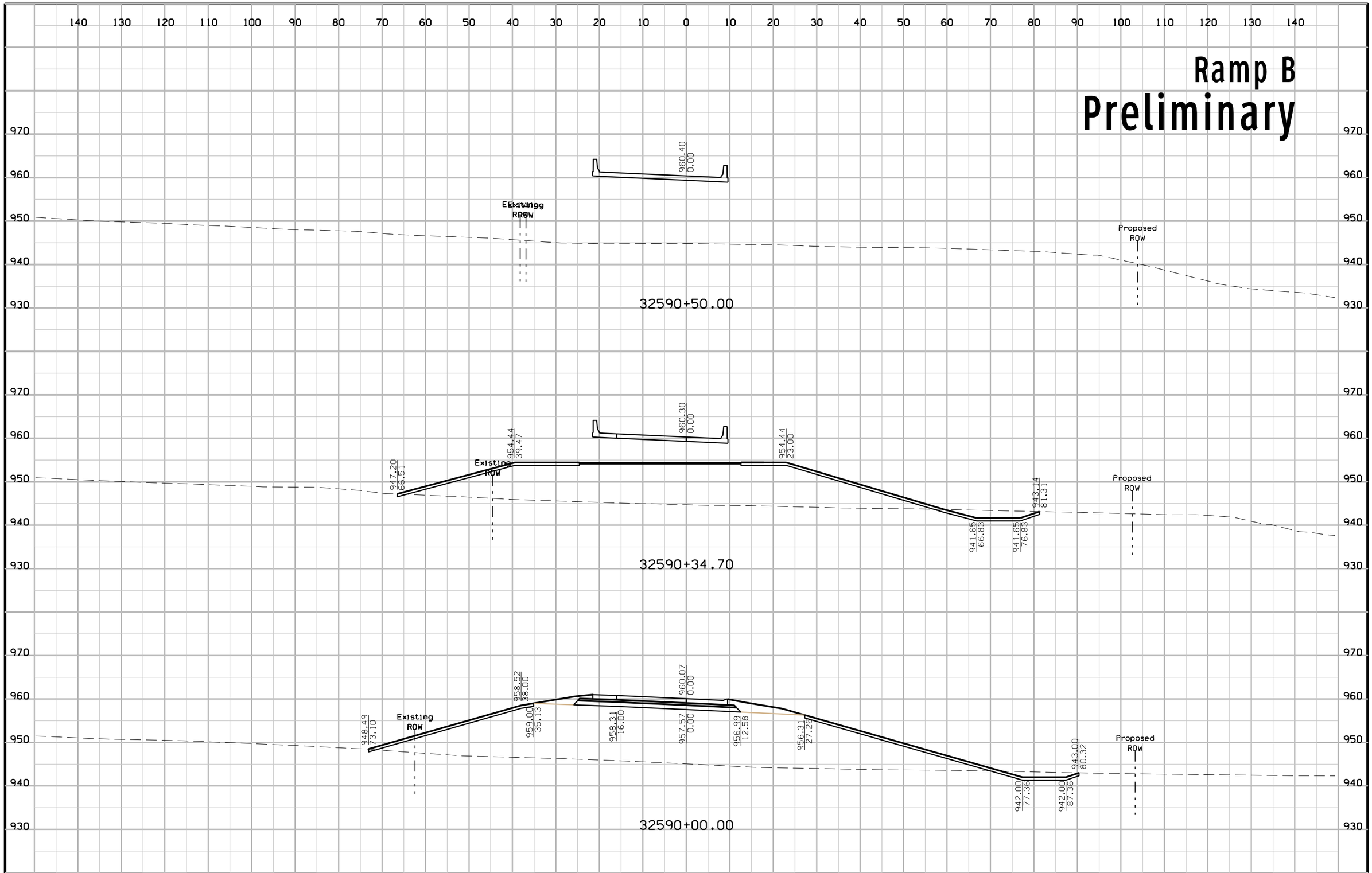
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.29

8:27:29 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

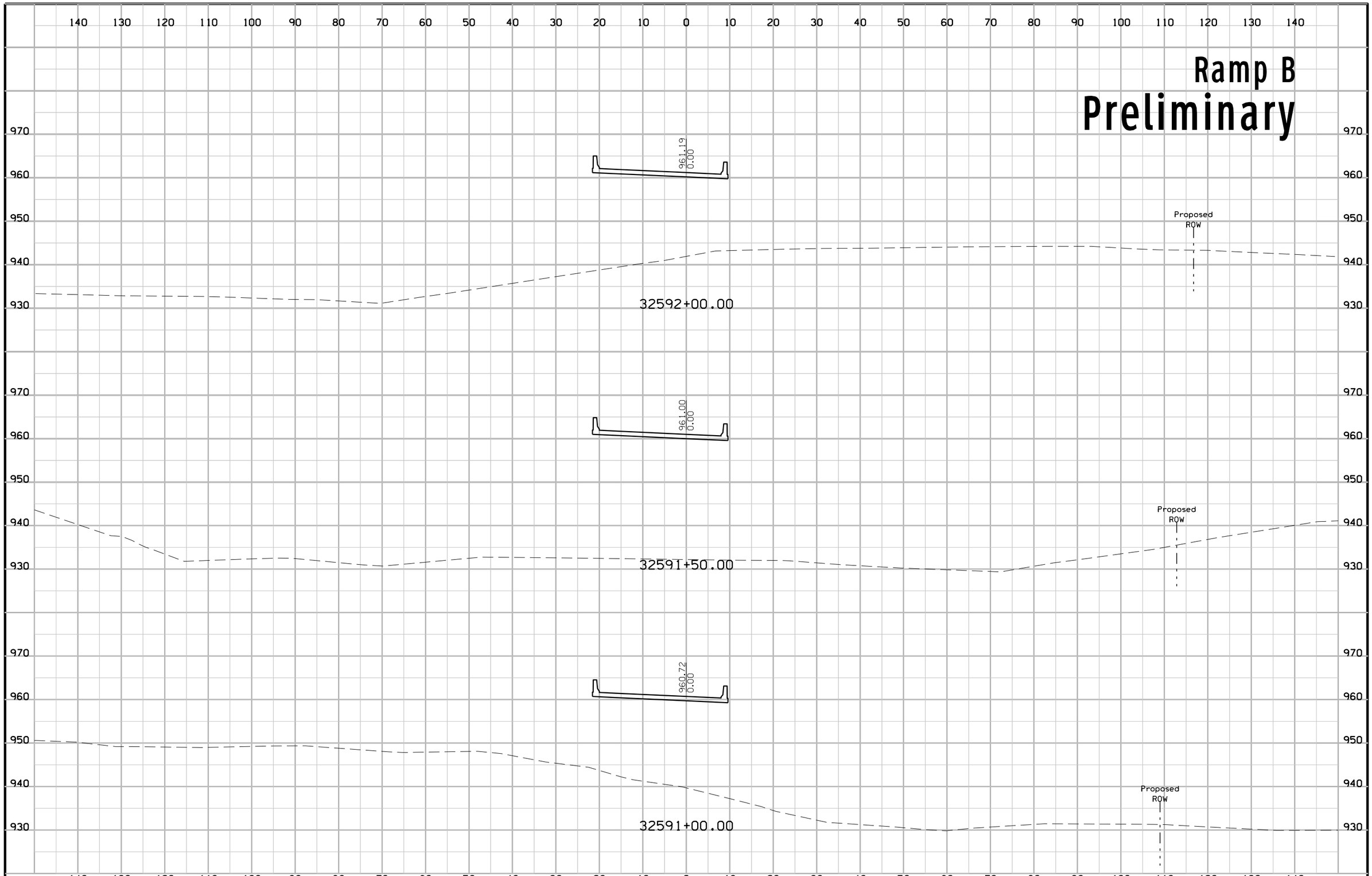
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.30

8:27:30 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

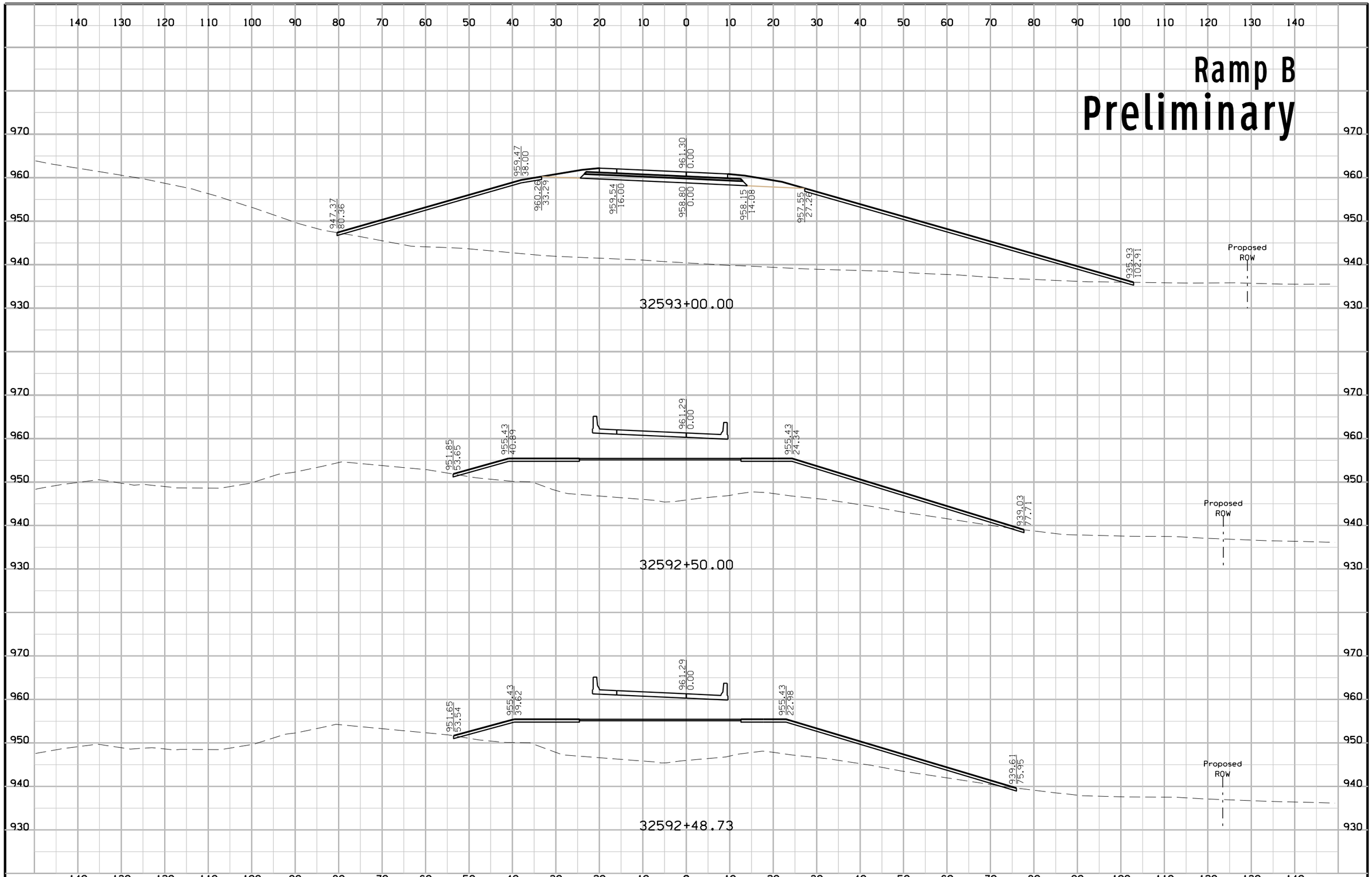
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.31

8:27:31 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

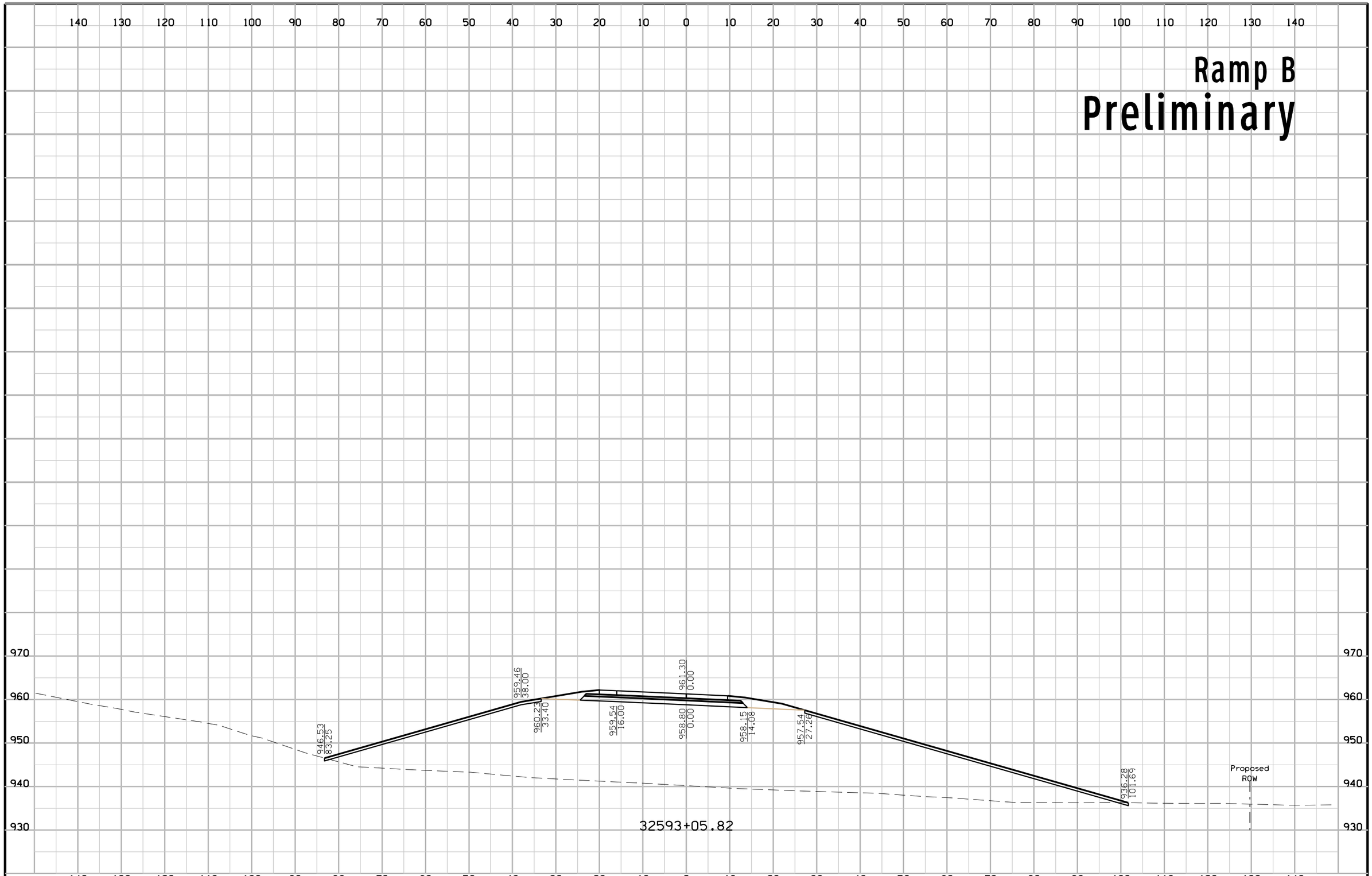
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.32

8:27:32 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

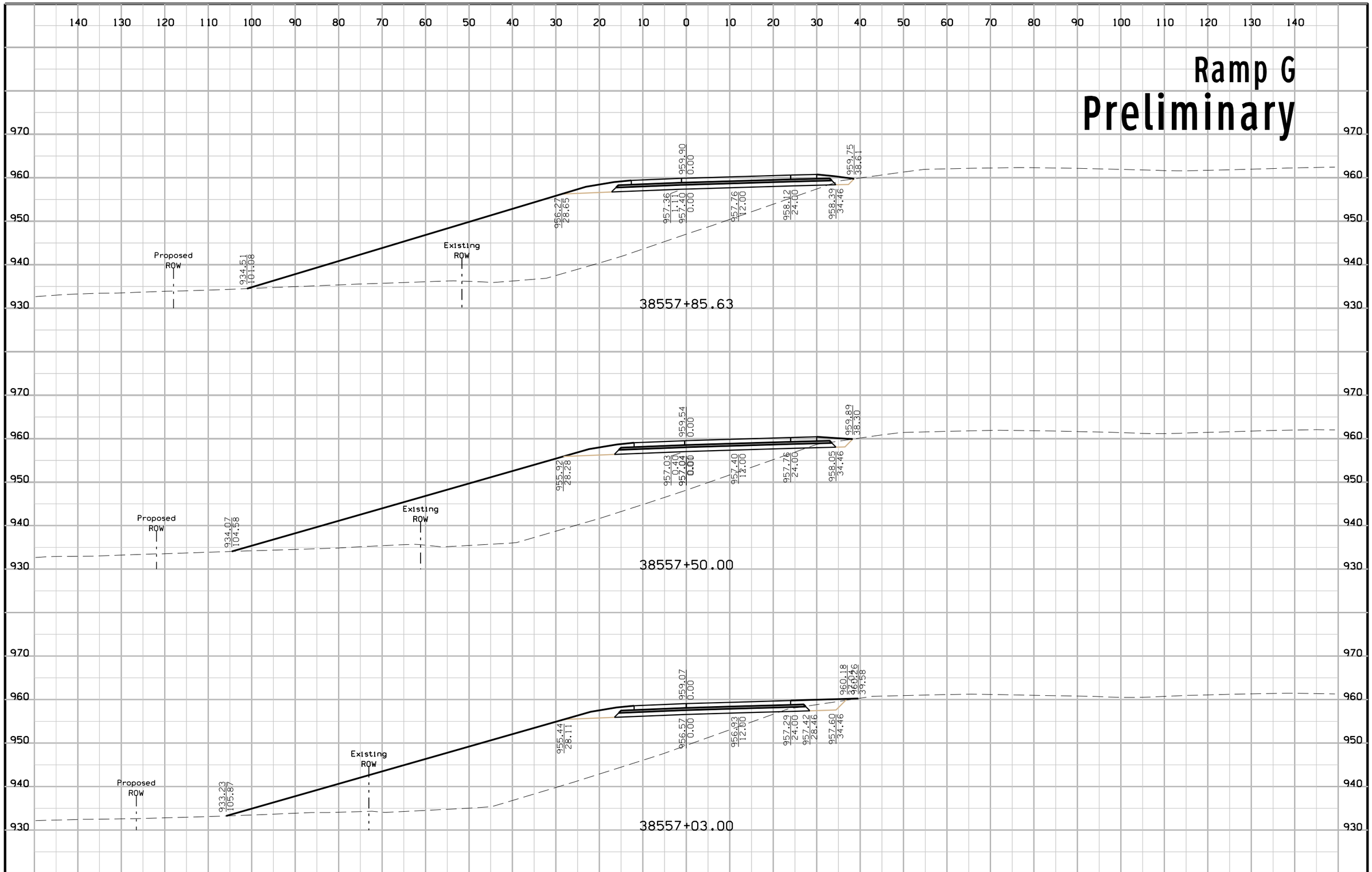
Ramp B
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.33

8:27:33 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

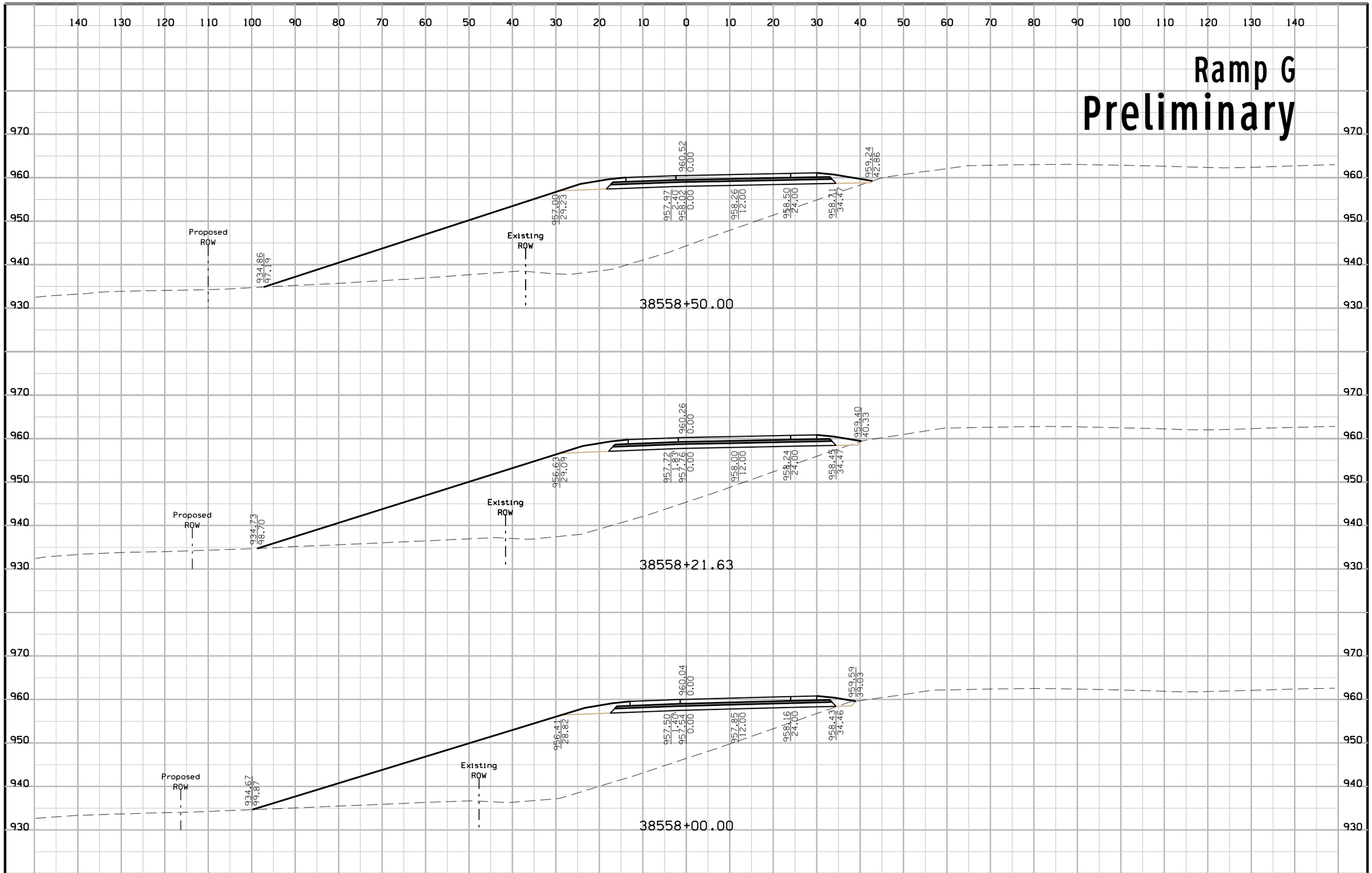
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.34

8:27:35 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

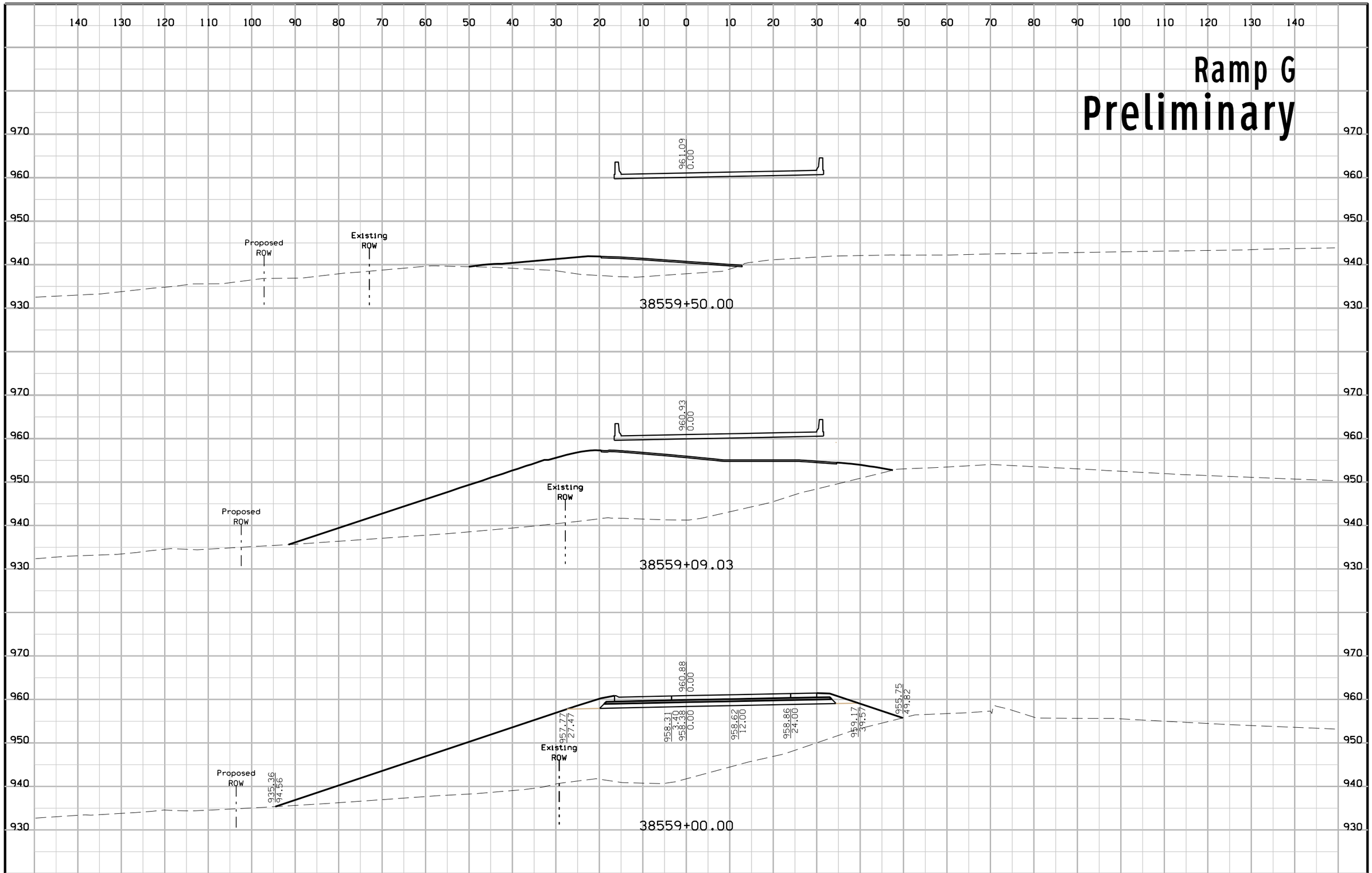
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.35

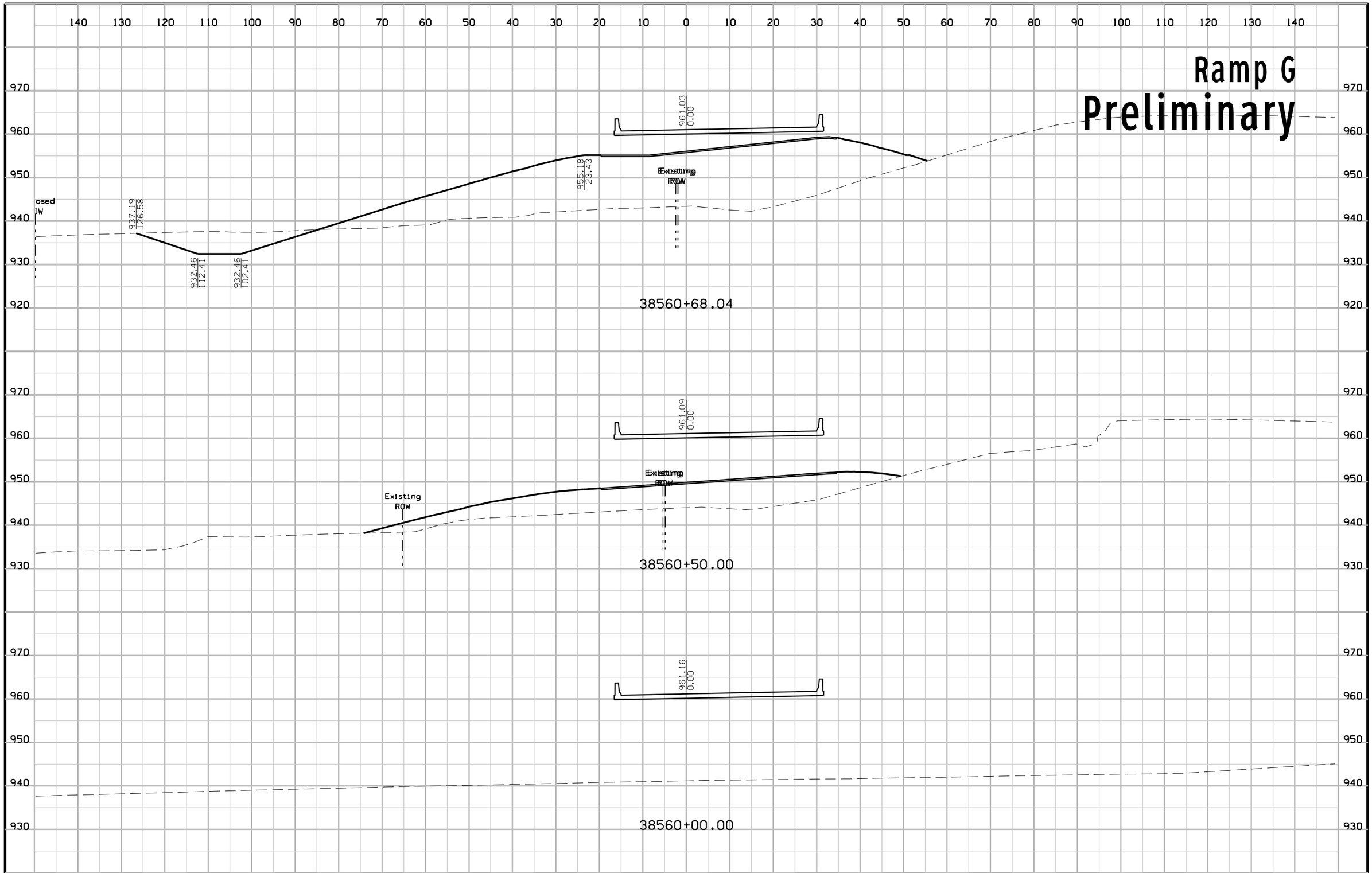
8:27:36 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.36

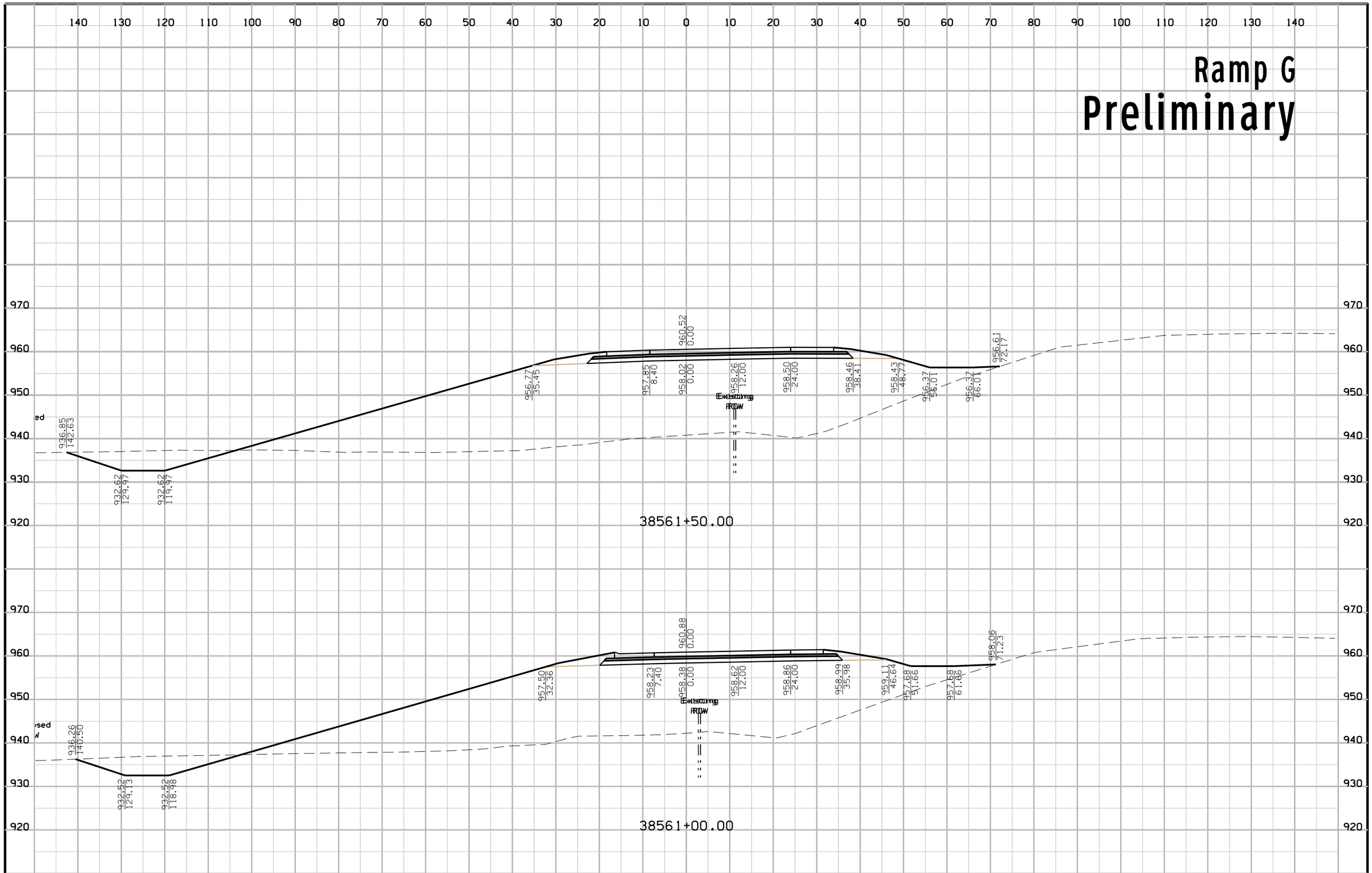
8:27:37 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.37

8:27:38 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

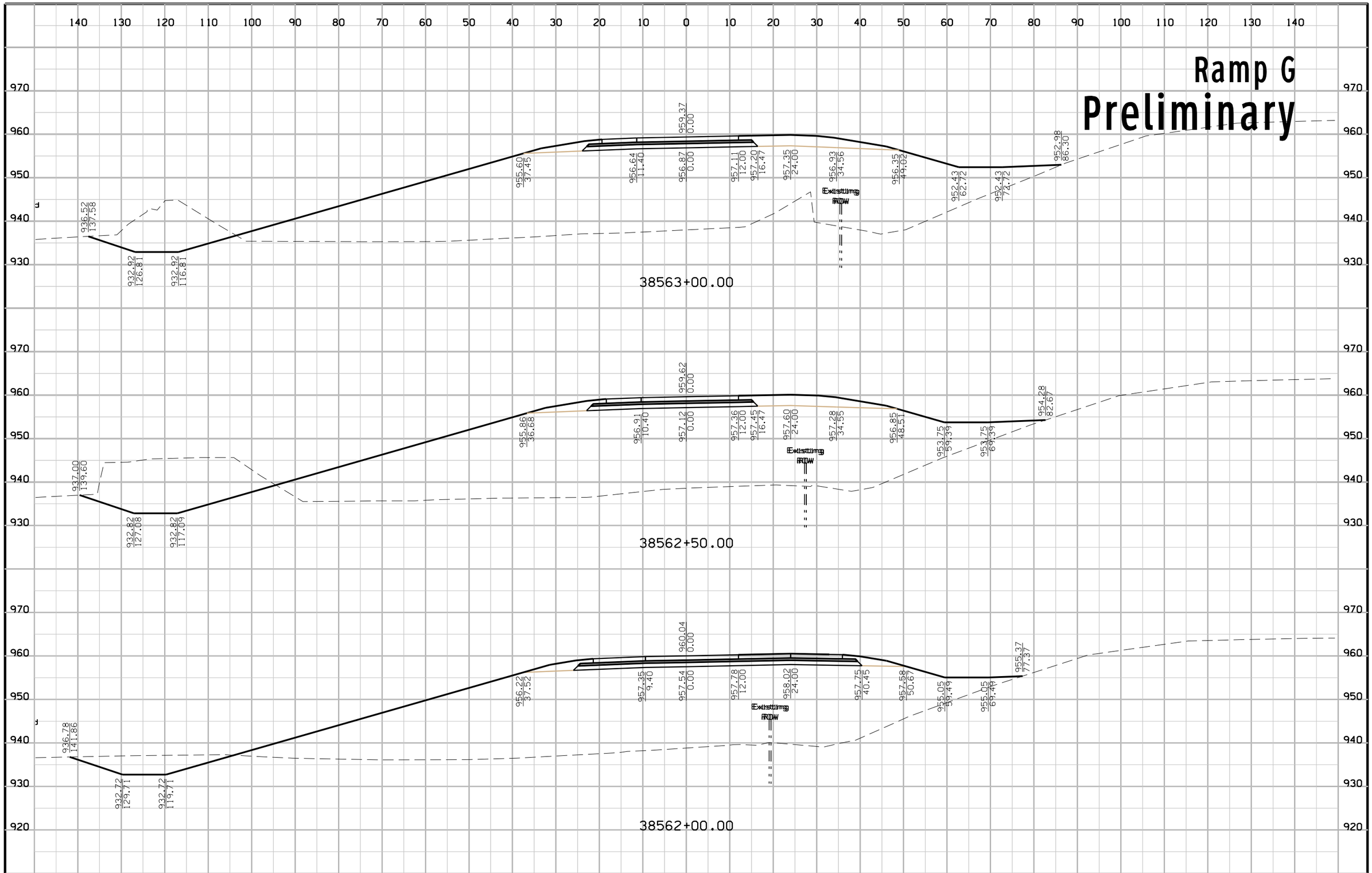
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.38

8:27:39 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

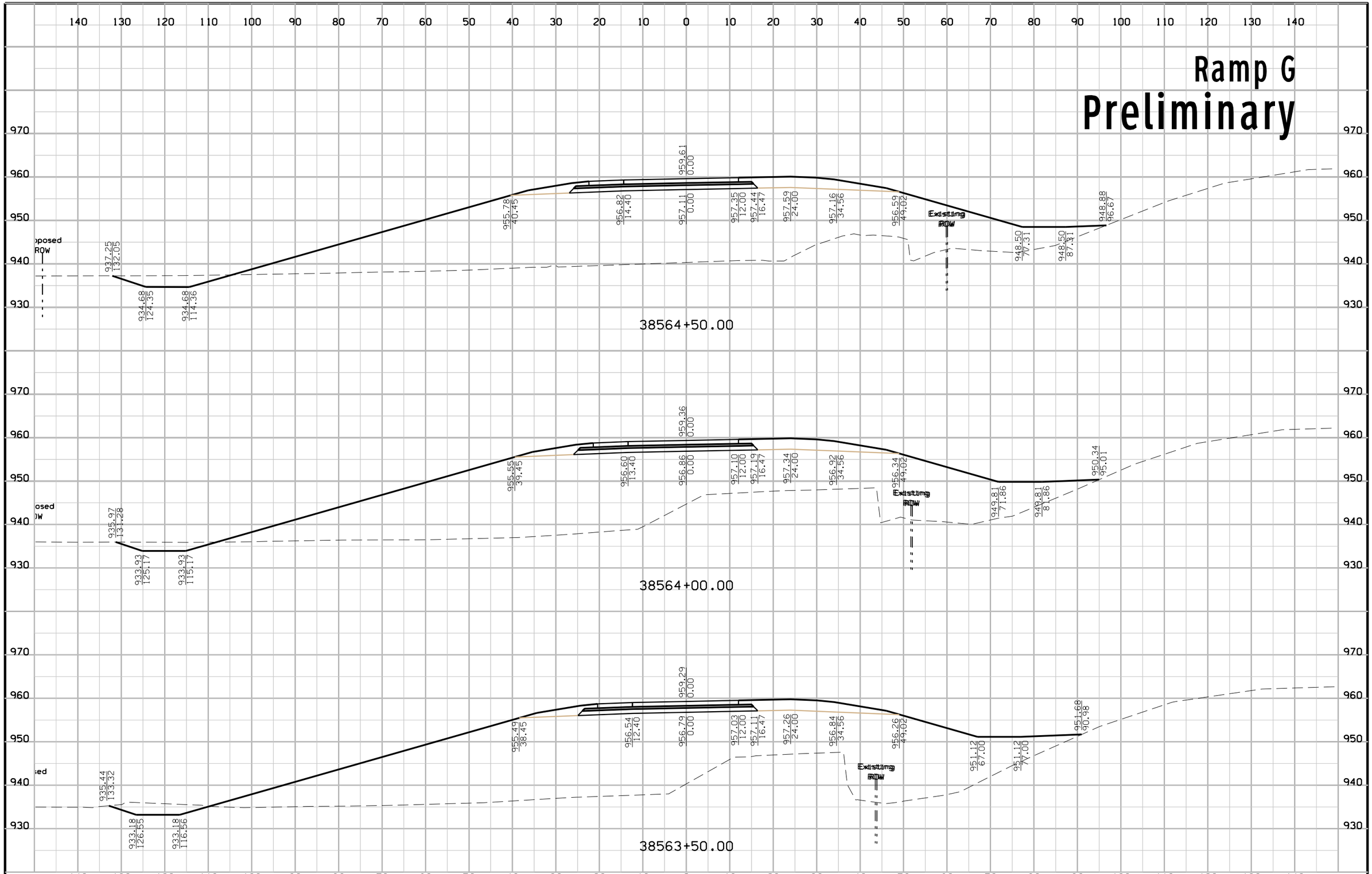
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.39

8:27:40 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

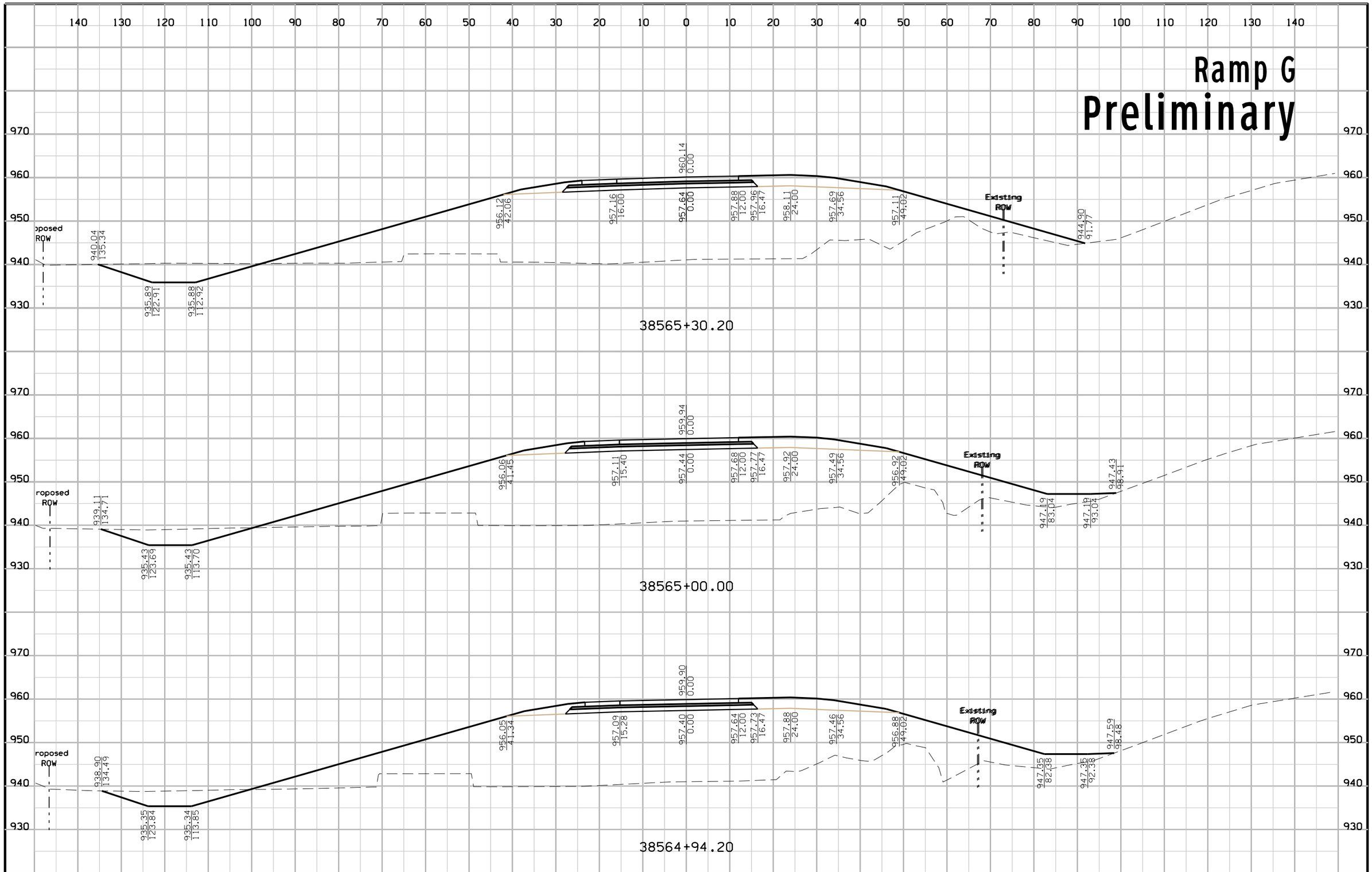
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.40

8:27:42 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

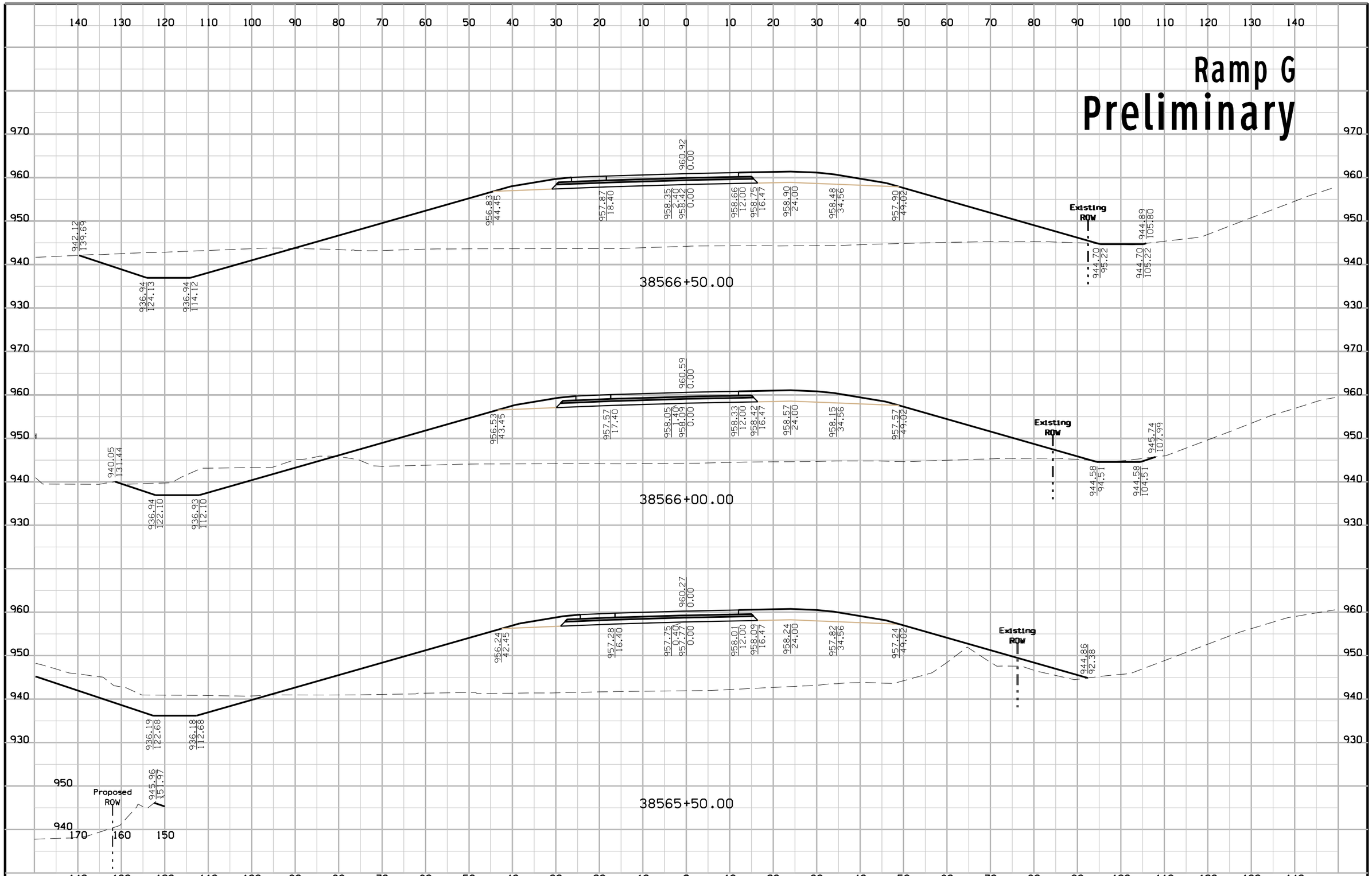
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.41

8:27:43 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

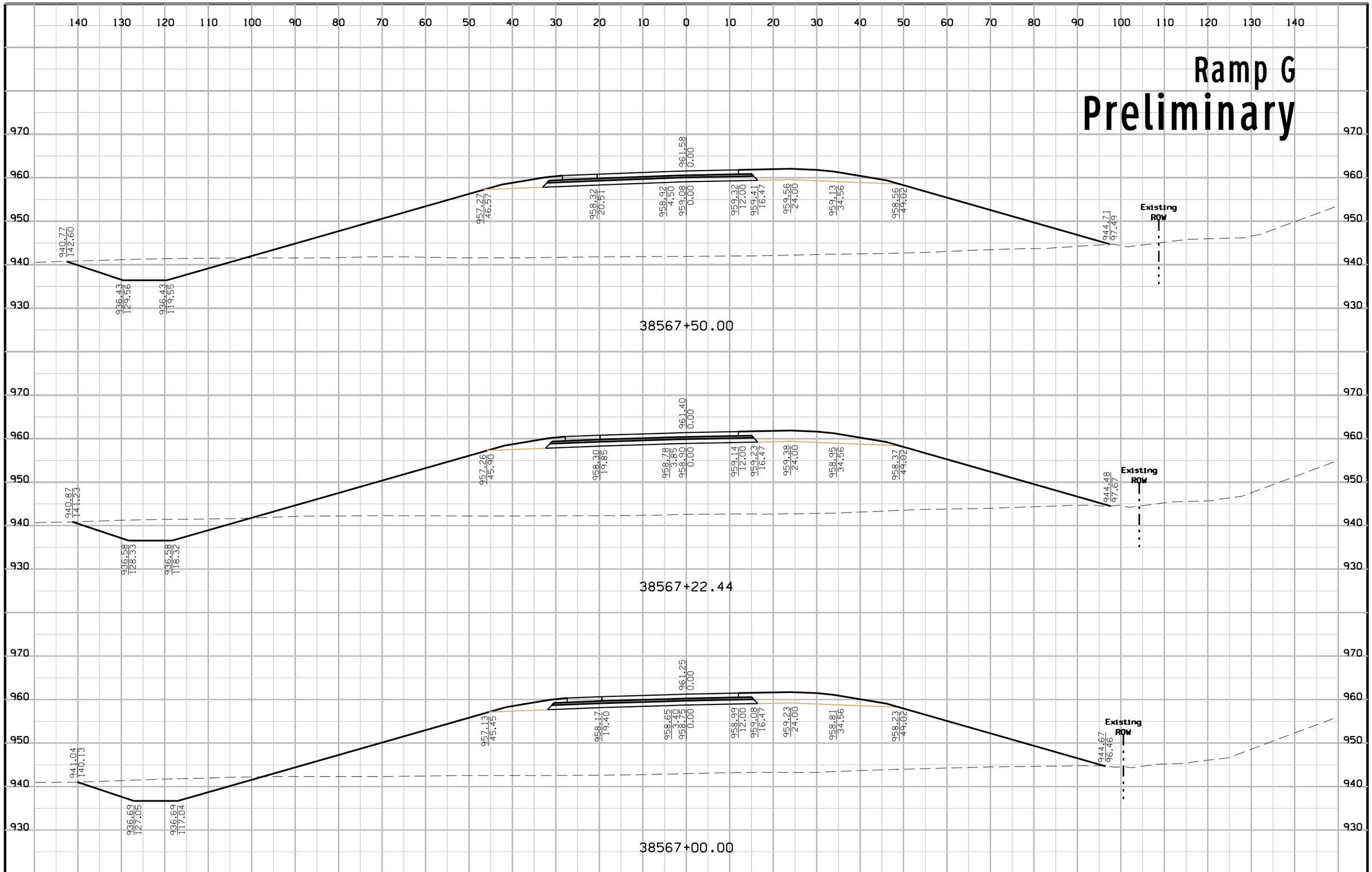
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.42

8:27:44 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

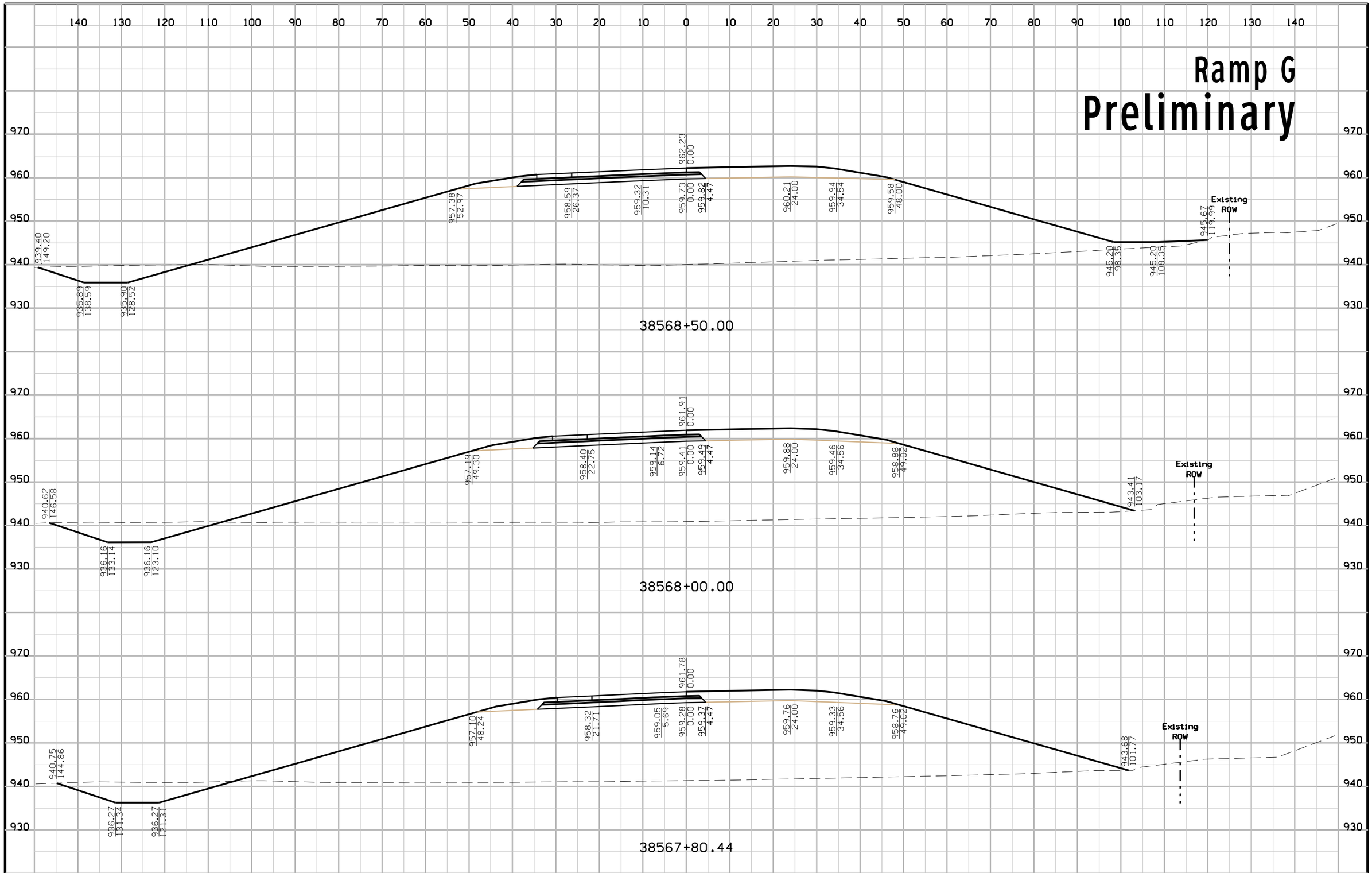
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.43

8:27:45 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

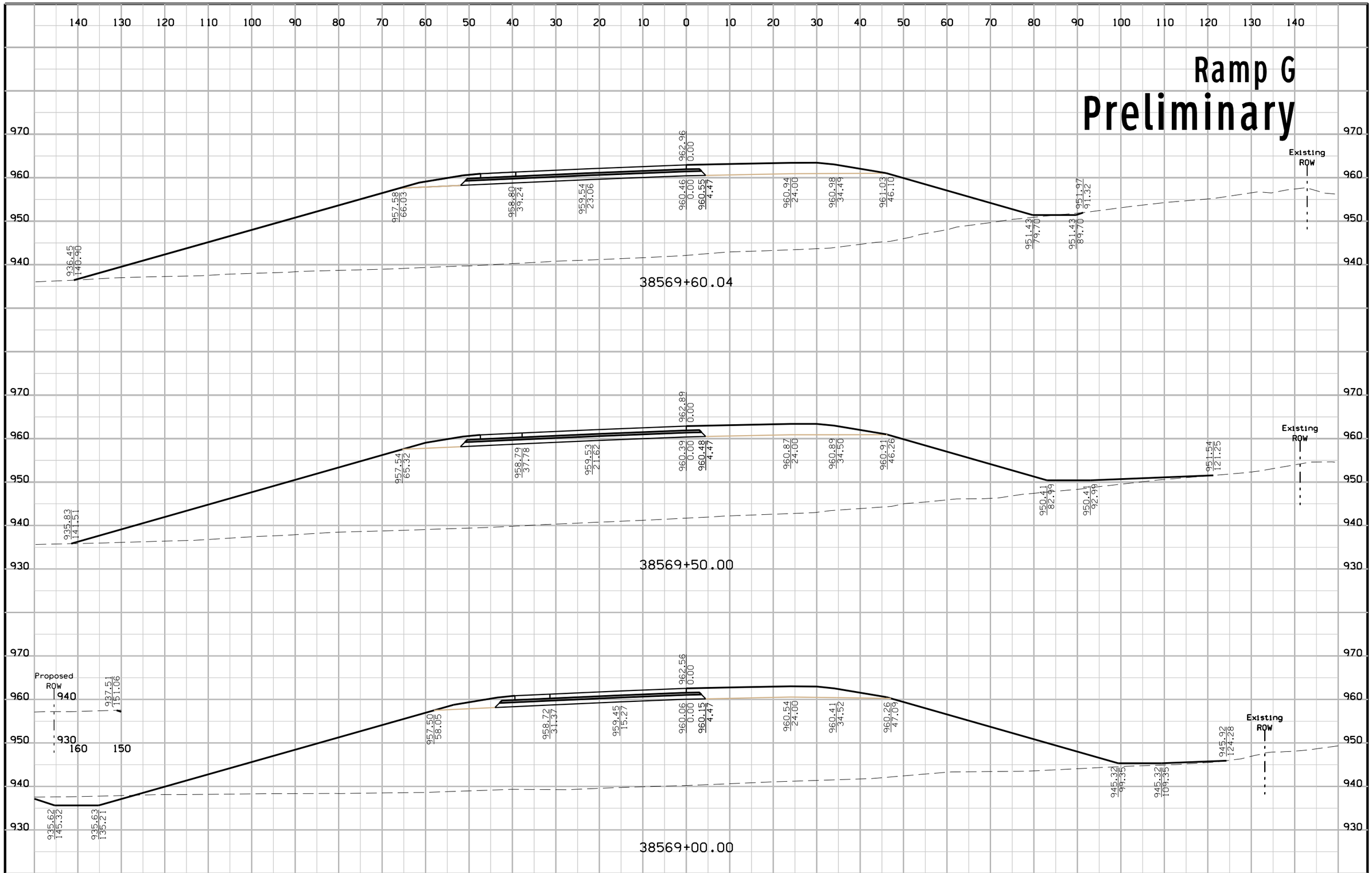
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.44

8:27:46 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

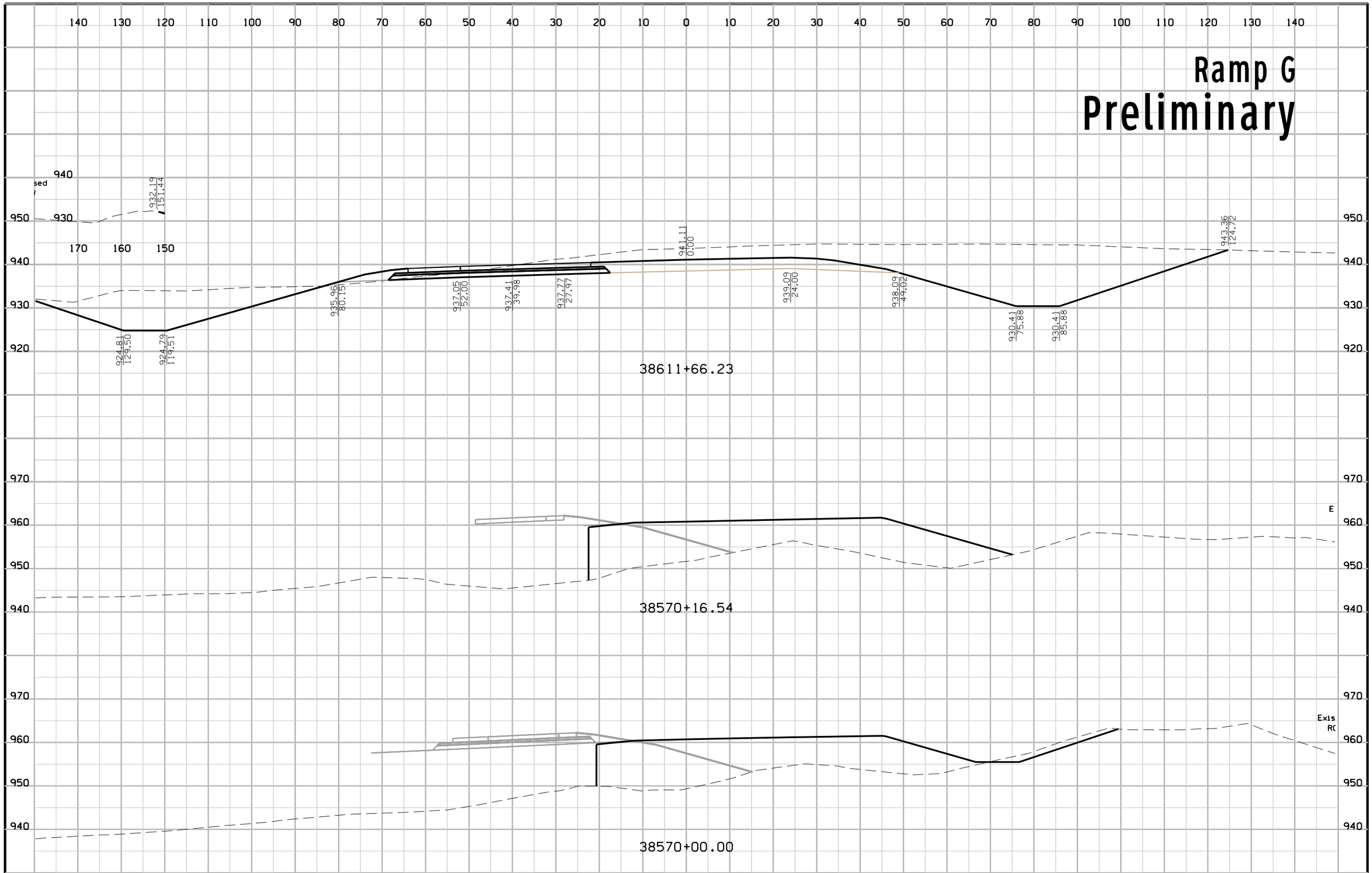
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.45

8:27:48 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

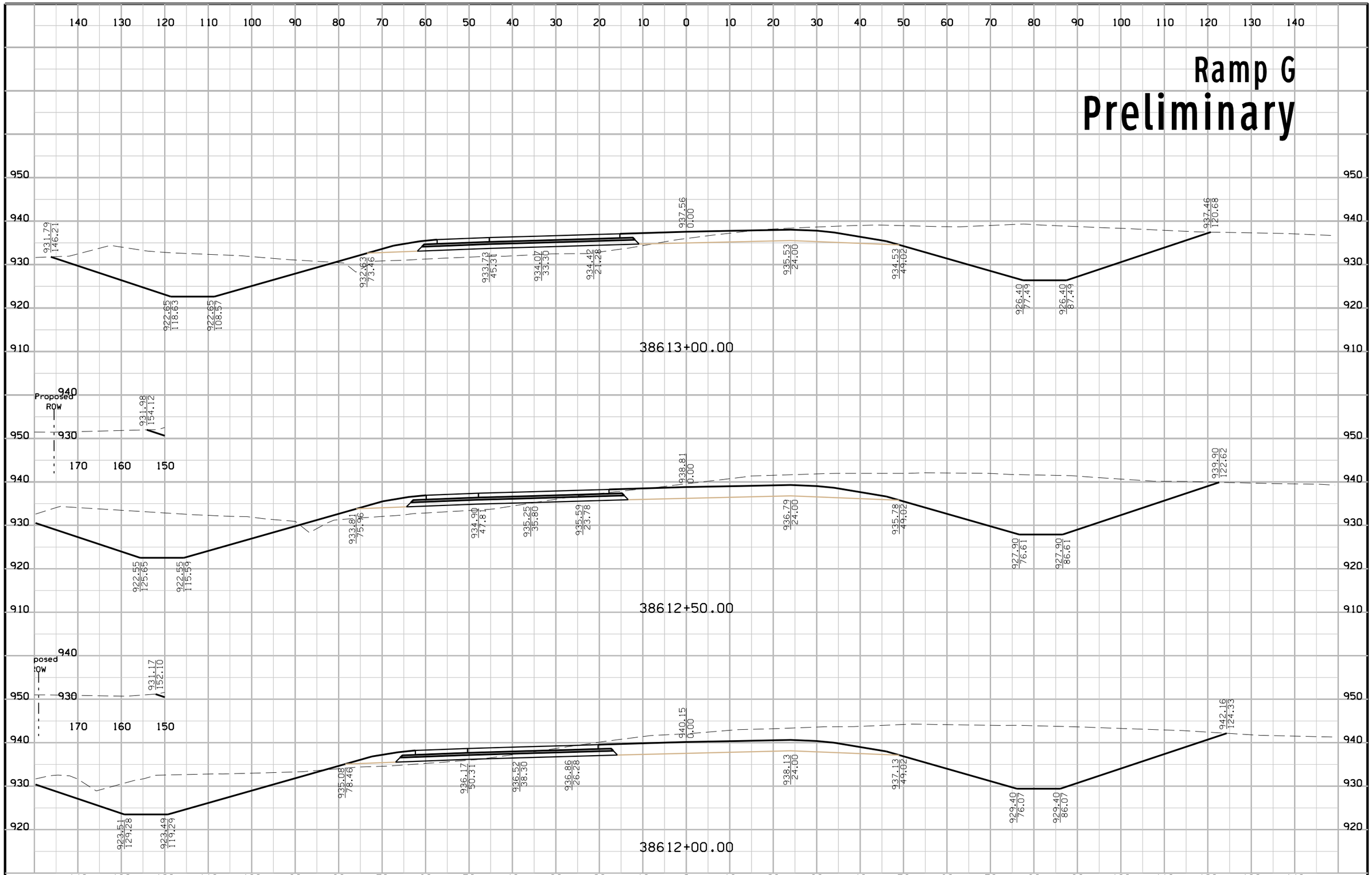
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.46

8:27:49 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

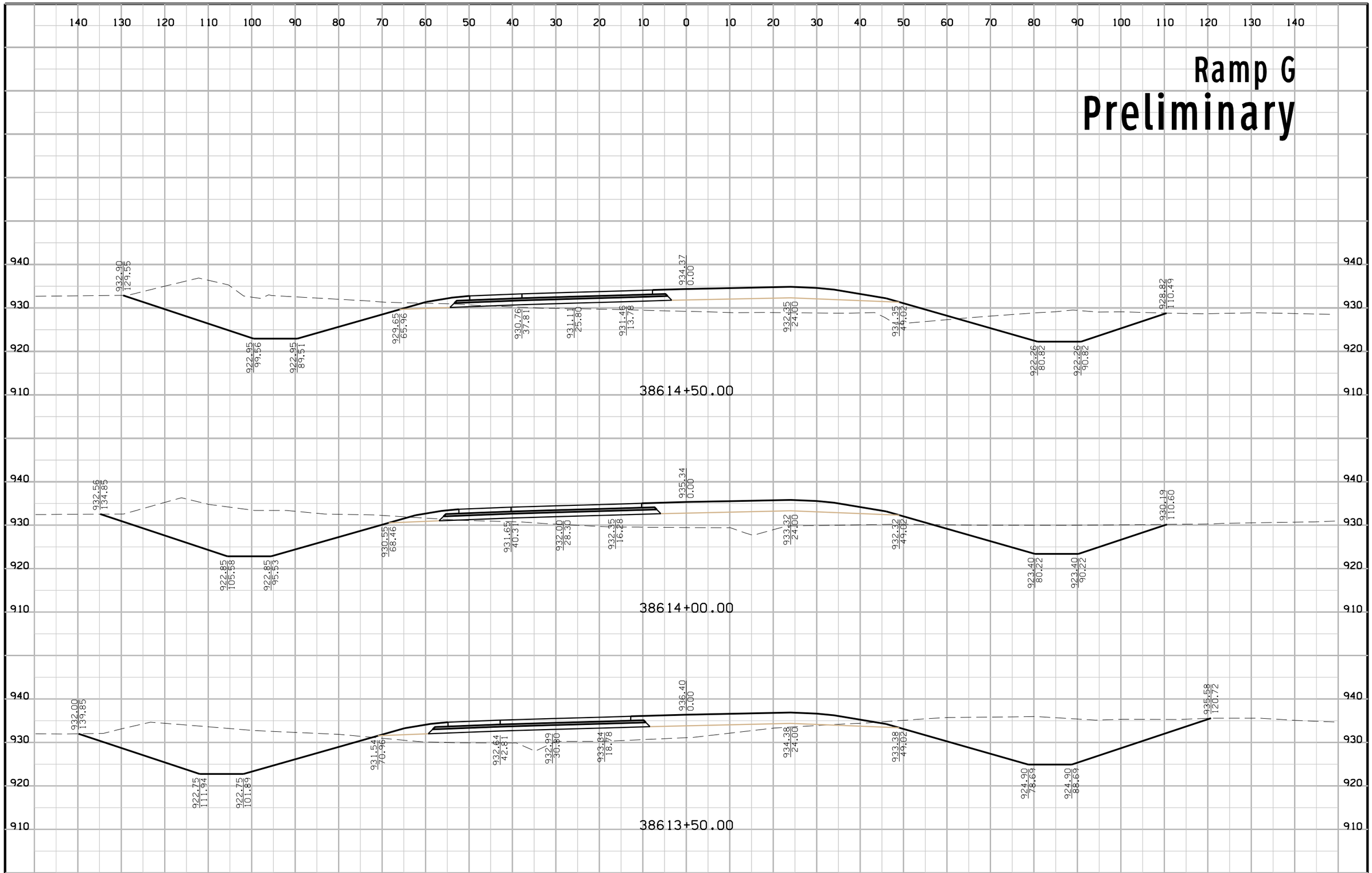
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.47

8:27:50 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

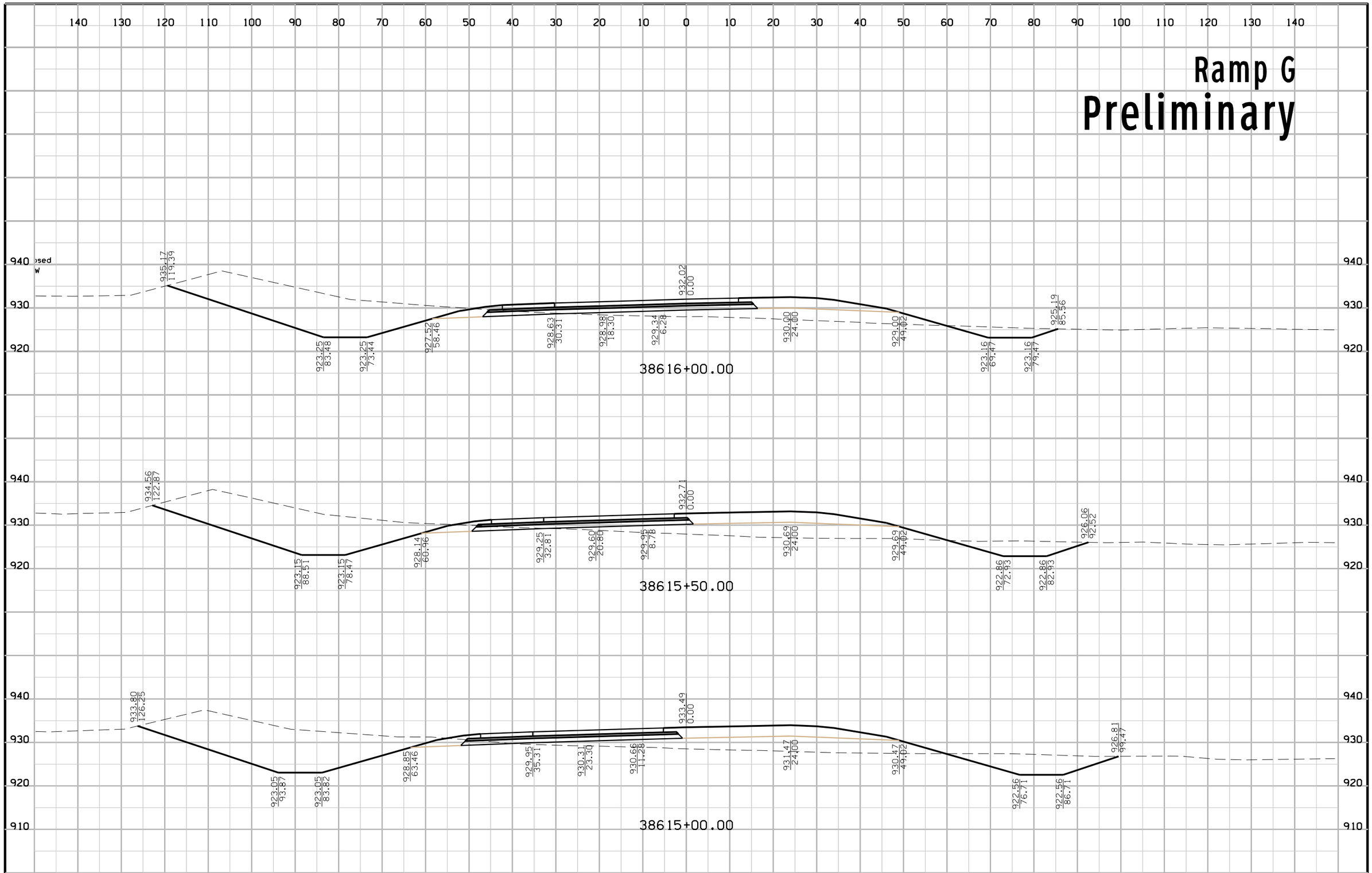
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.48

8:27:51 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

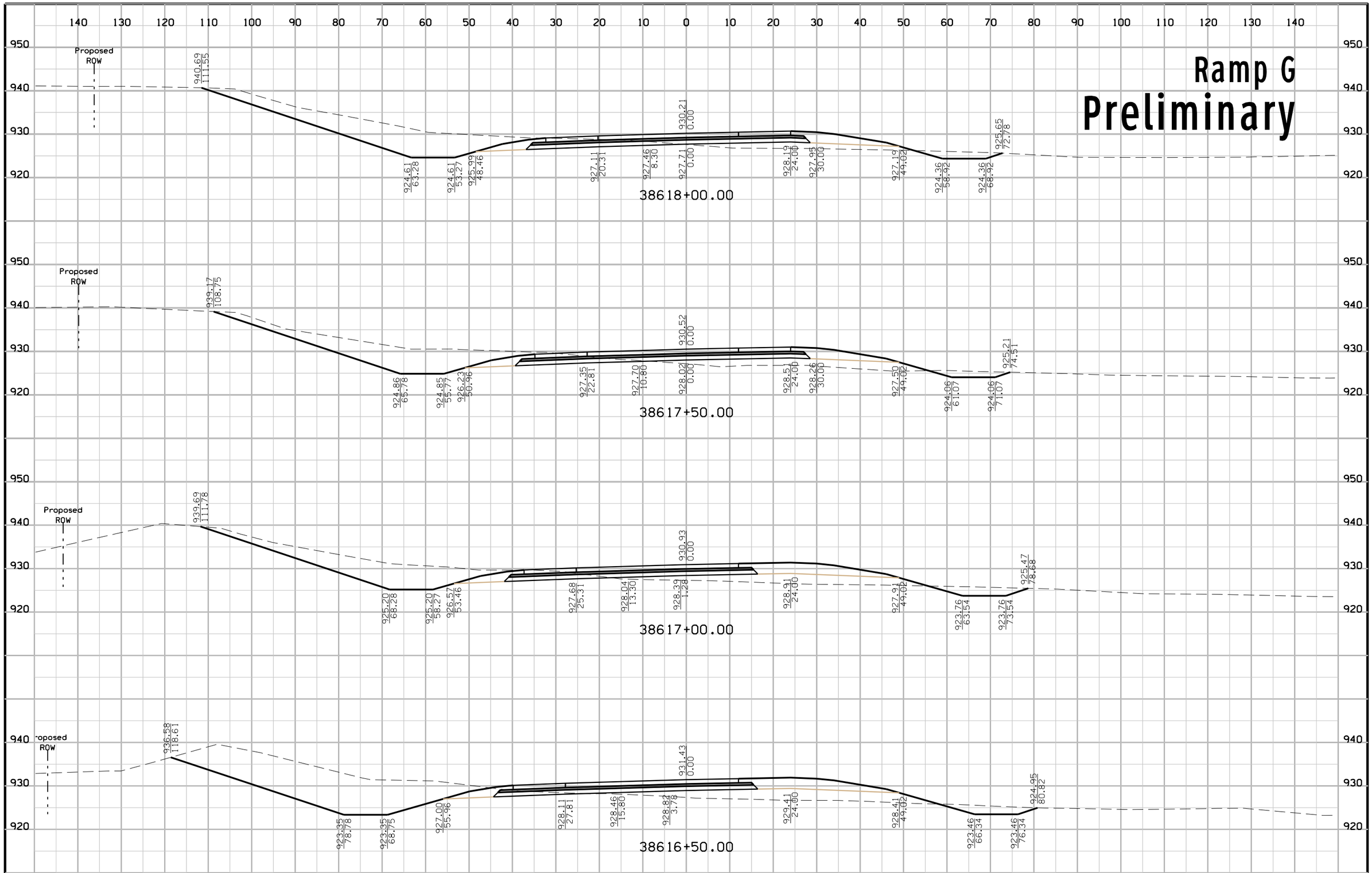
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.49

8:27:52 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

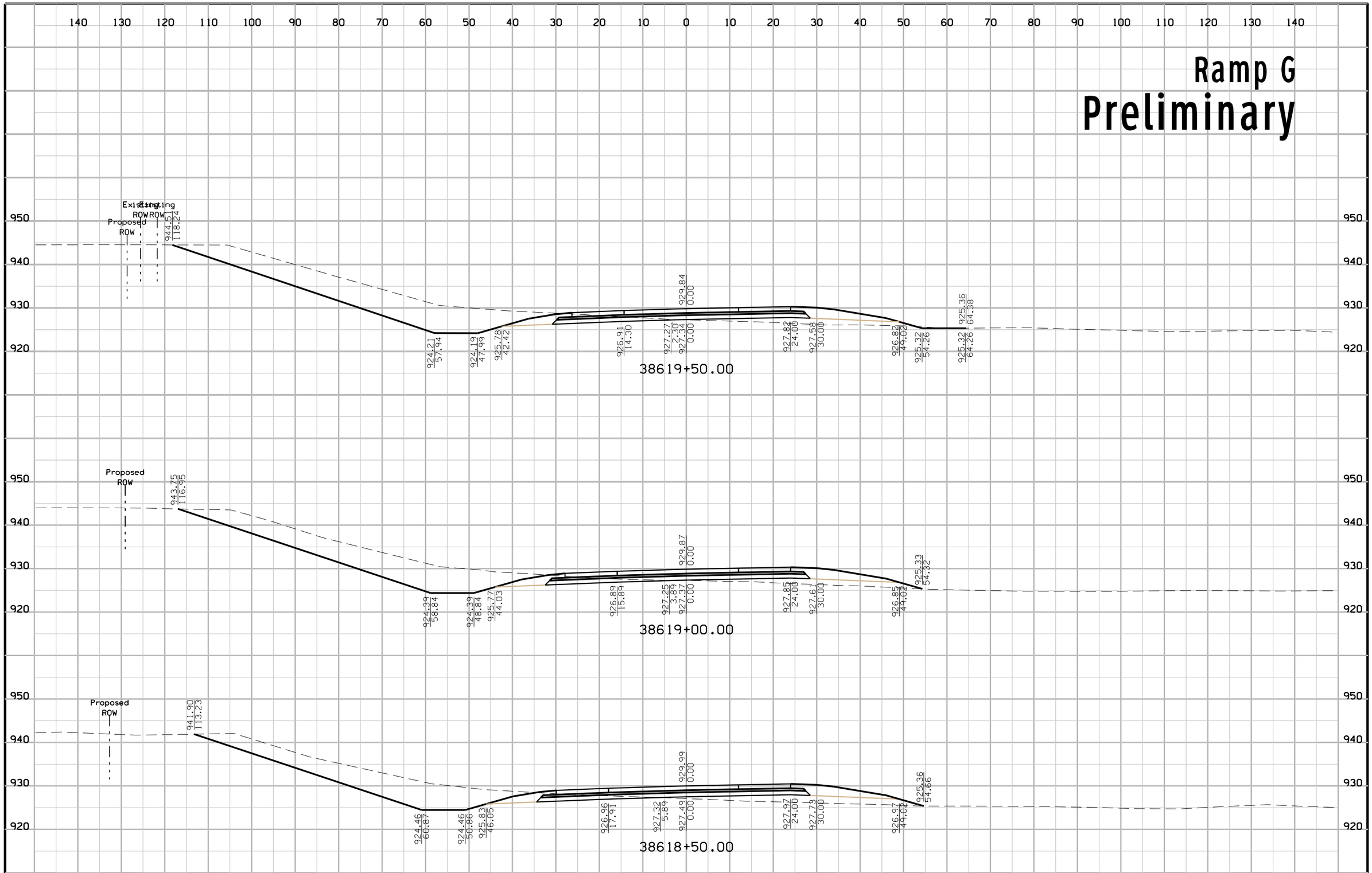
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.50

8:27:53 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

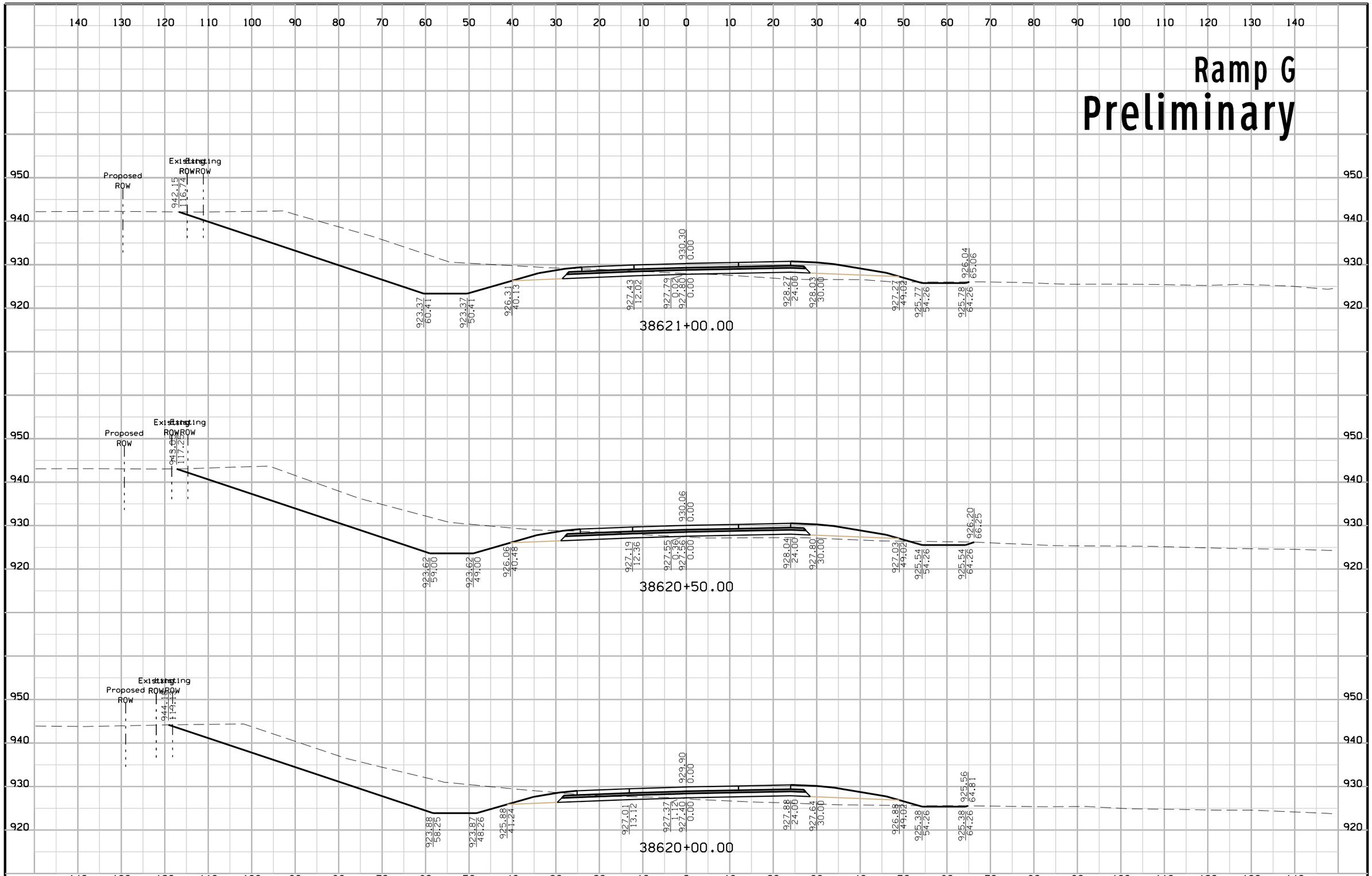
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.51

8:27:55 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

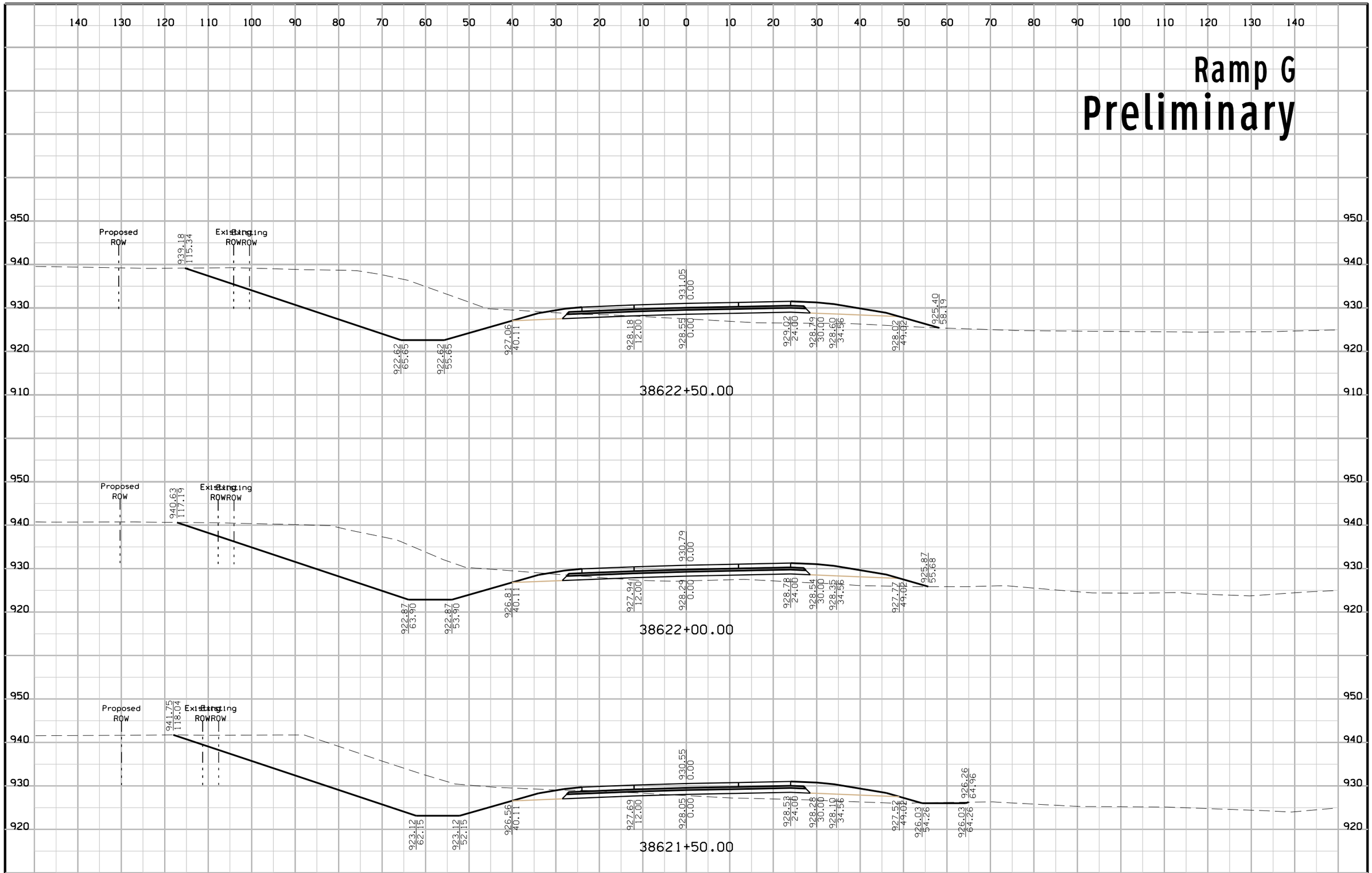
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.52

8:27:56 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

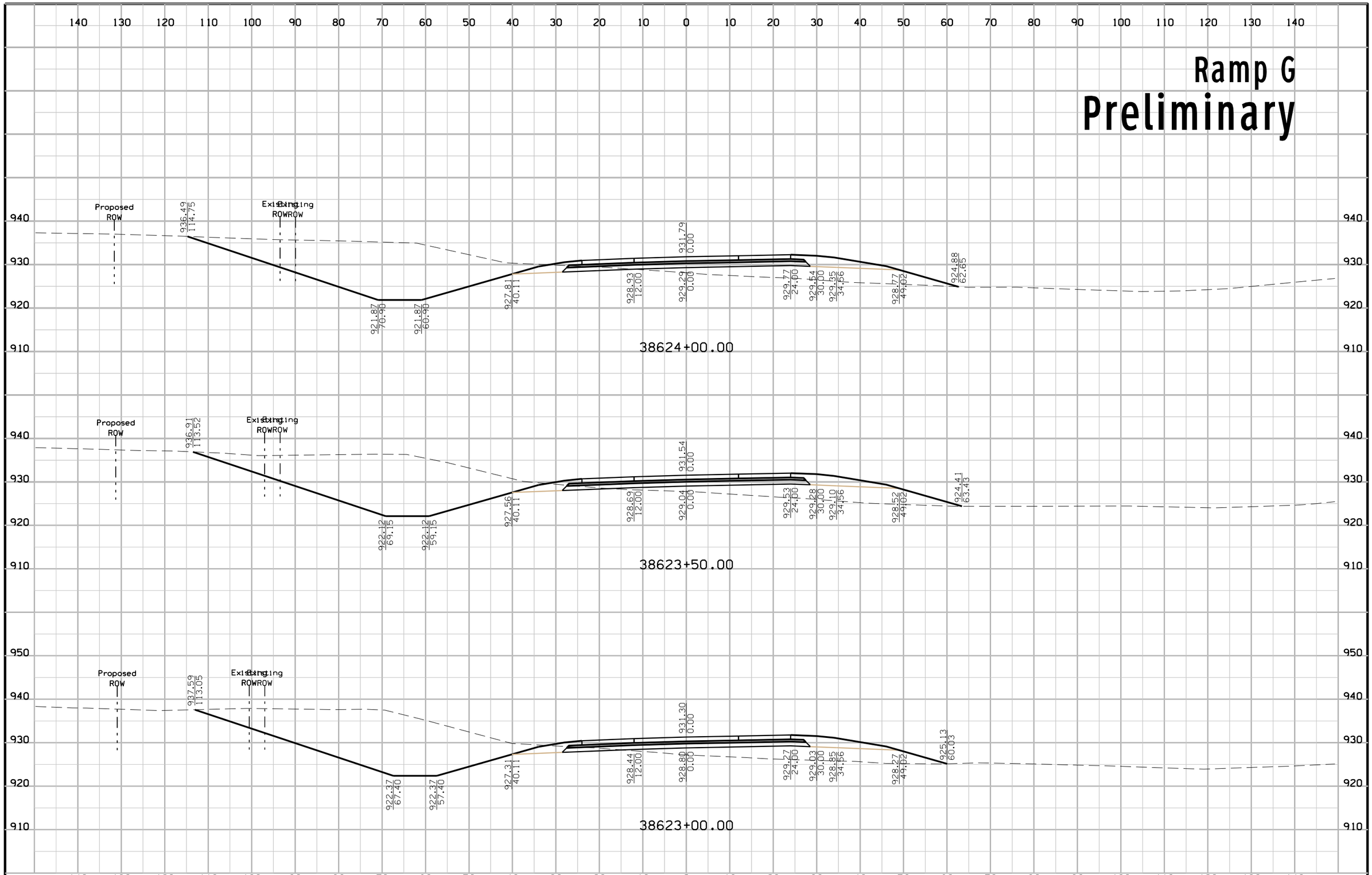
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.53

8:27:57 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

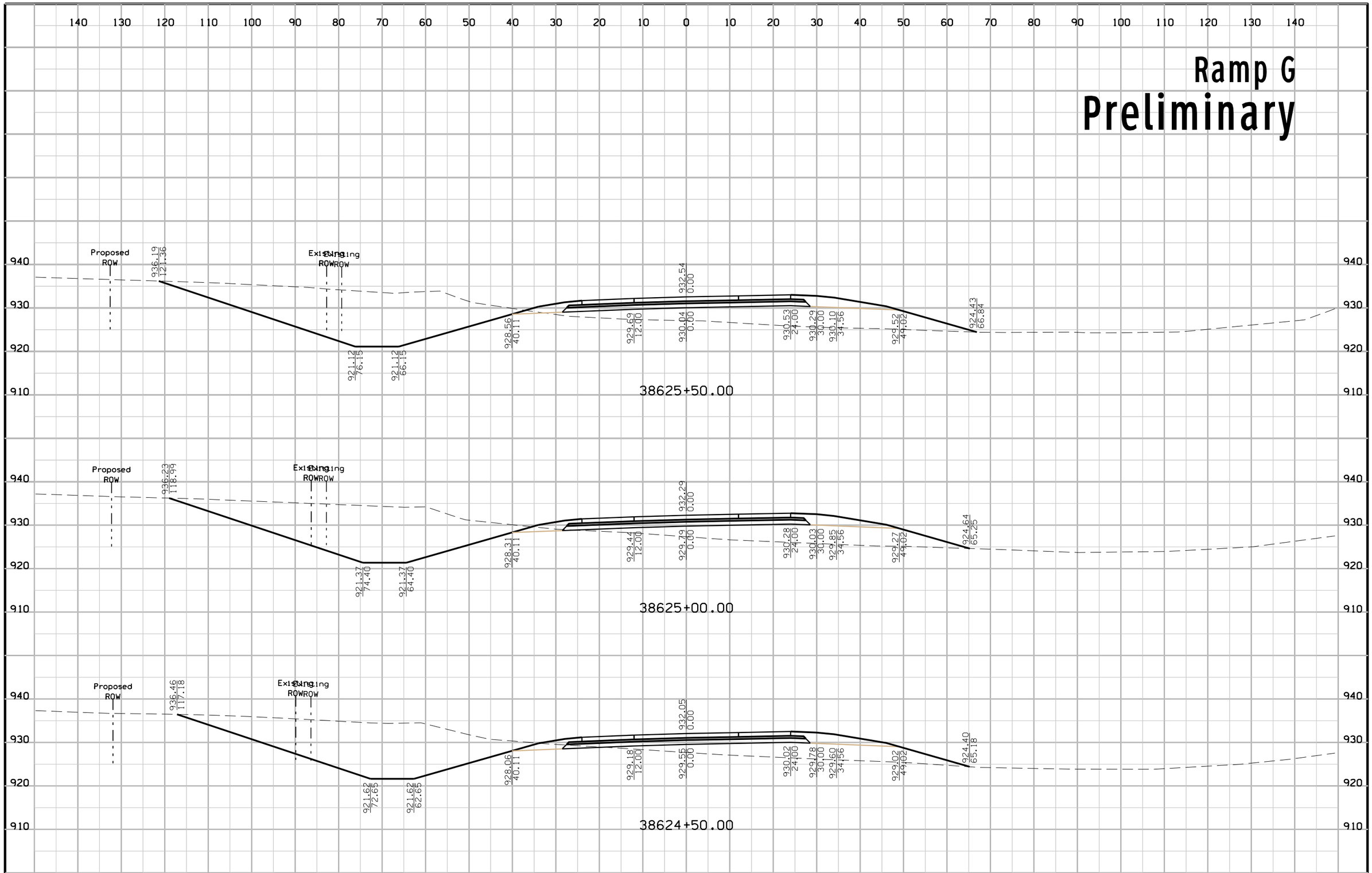
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.54

8:27:58 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

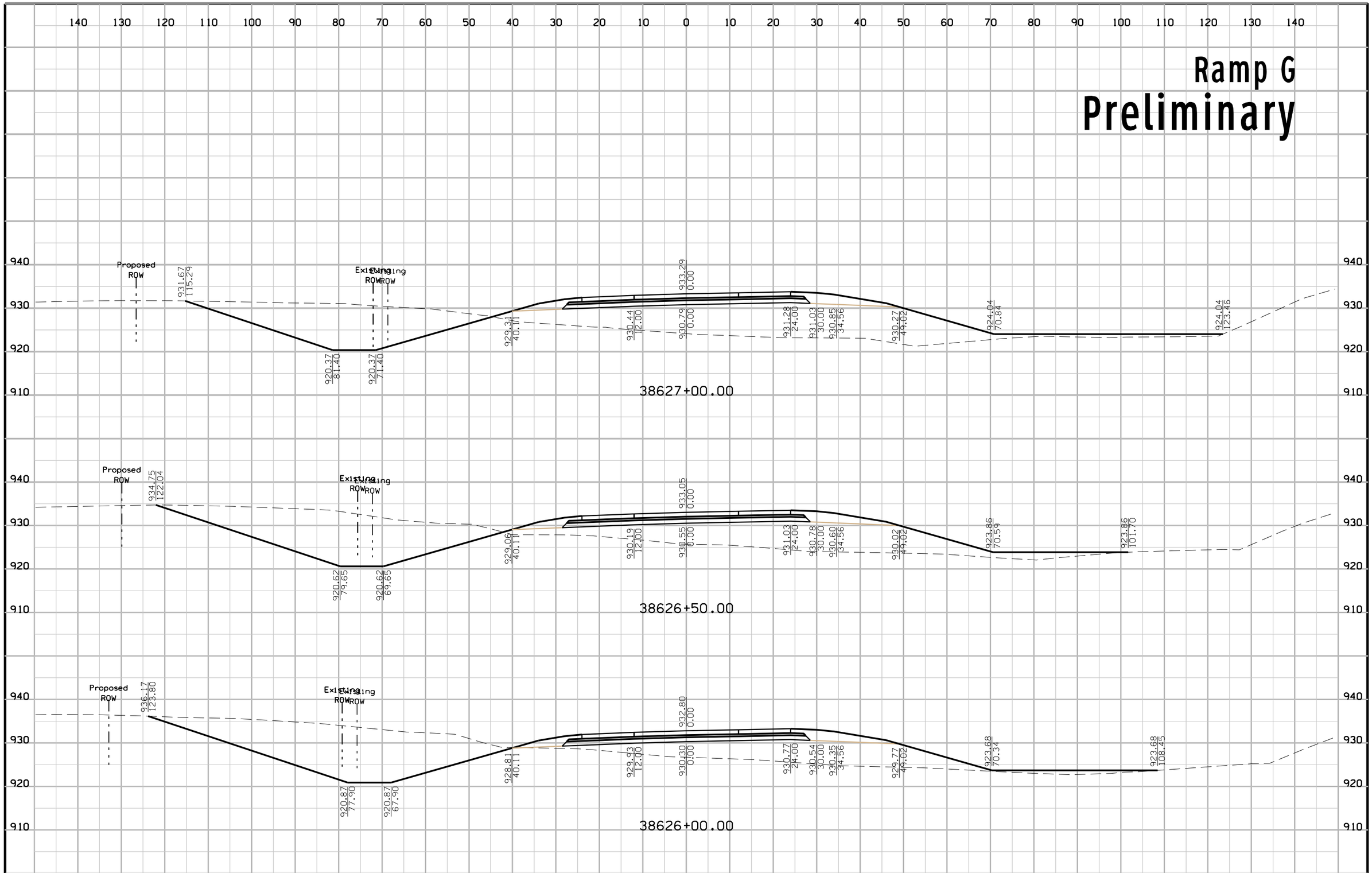
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.55

8:27:59 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

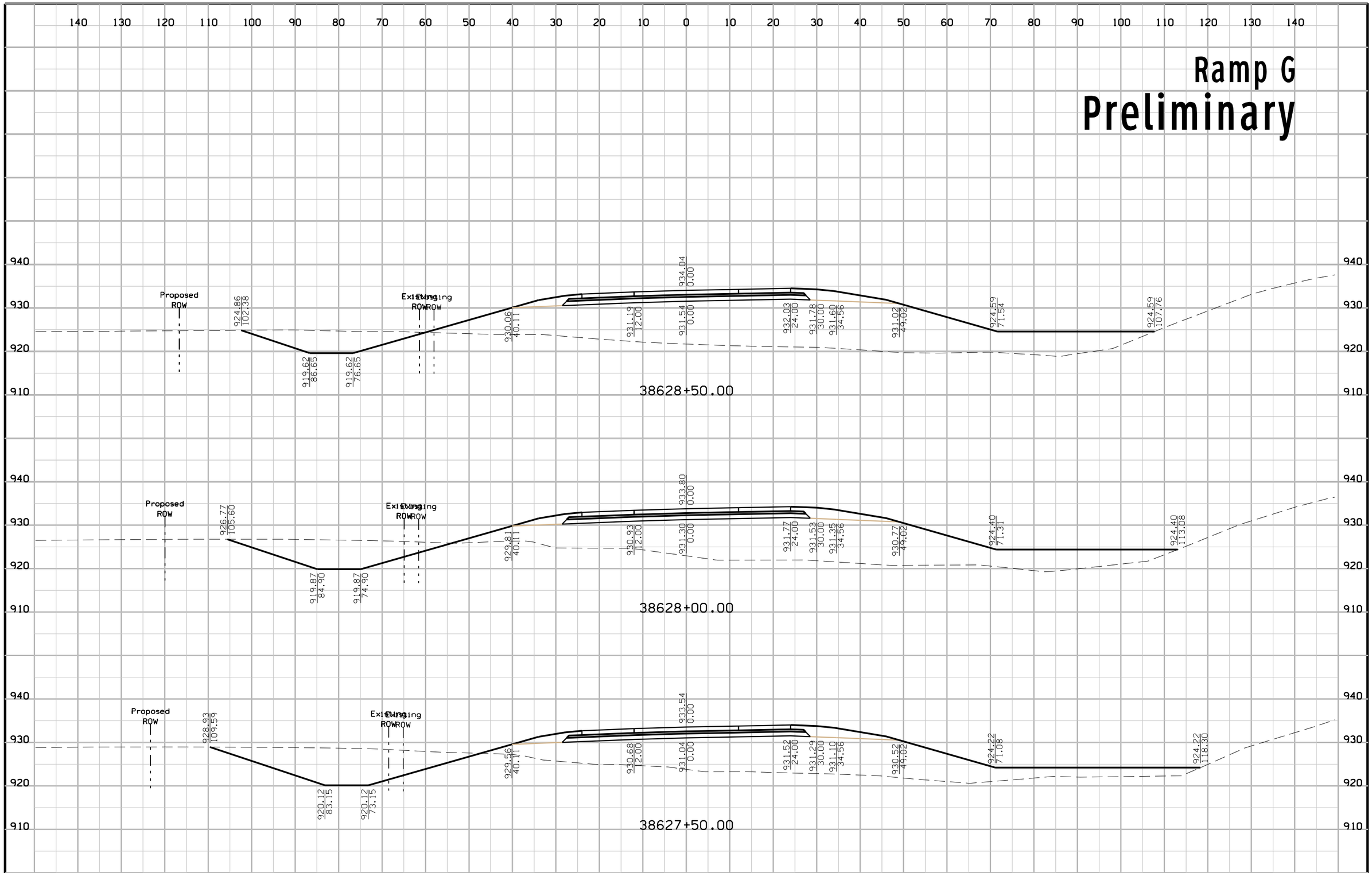
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.56

8:28:00 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

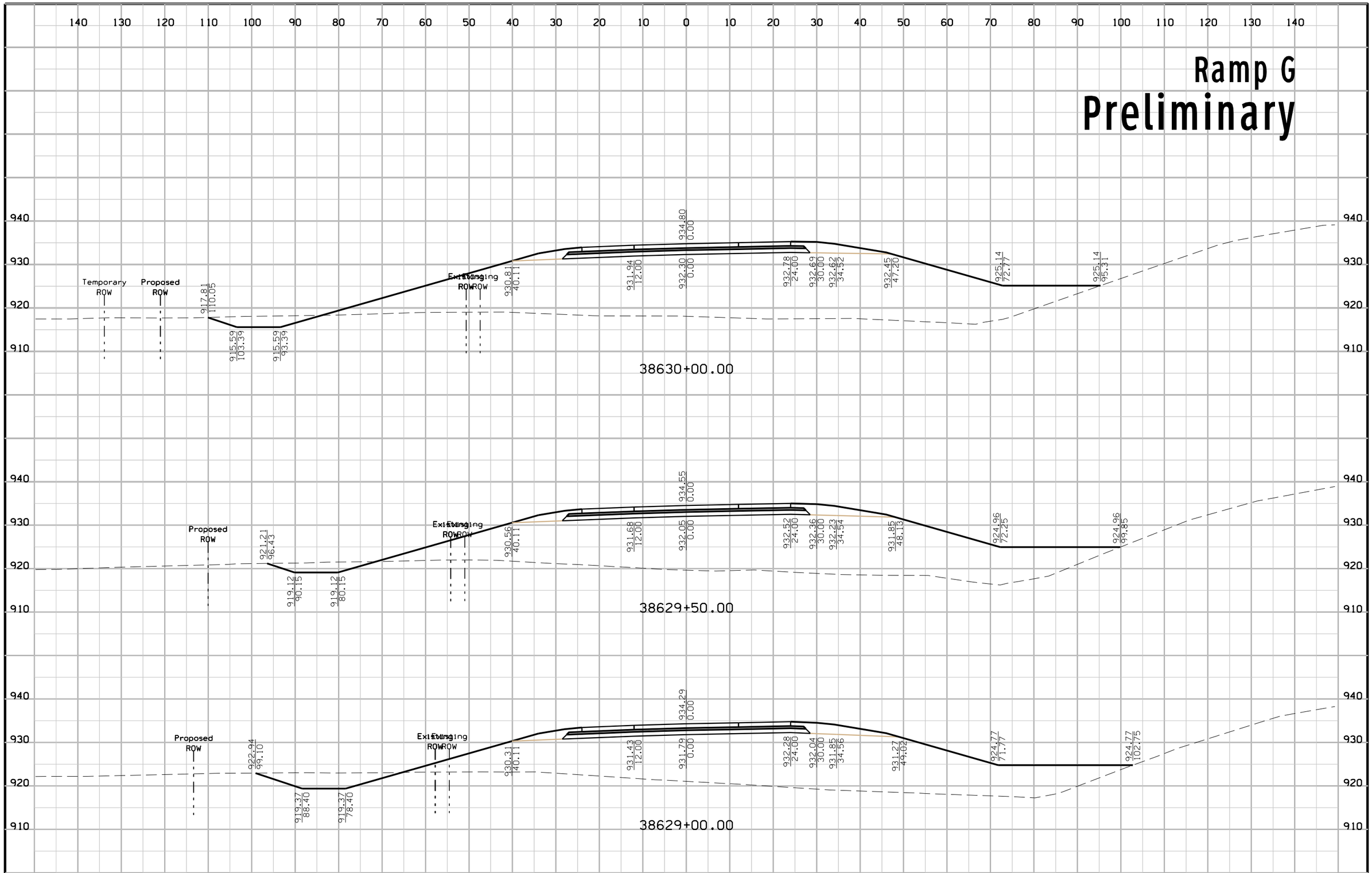
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.57

8:28:02 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

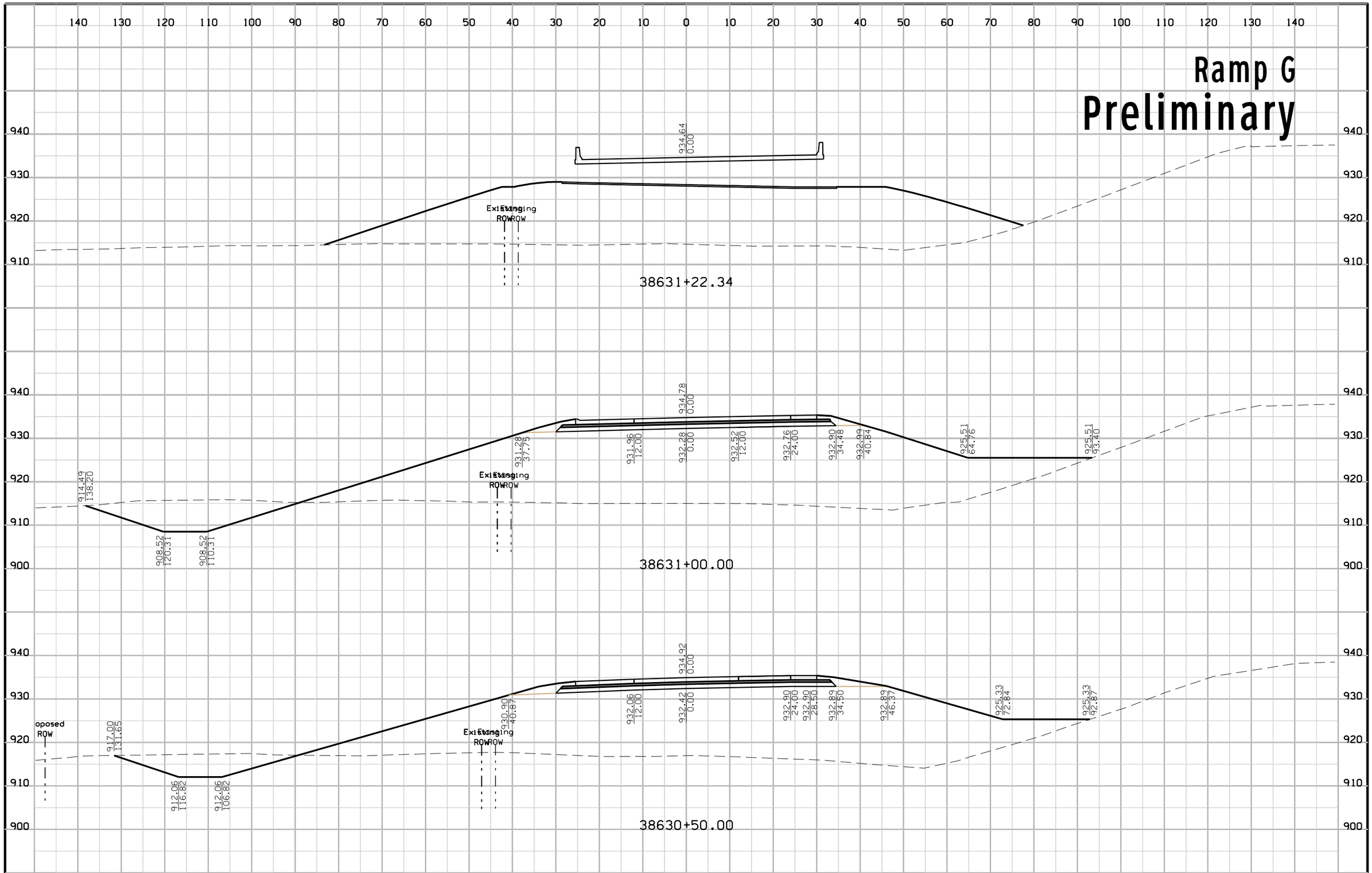
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.58

8:28:03 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

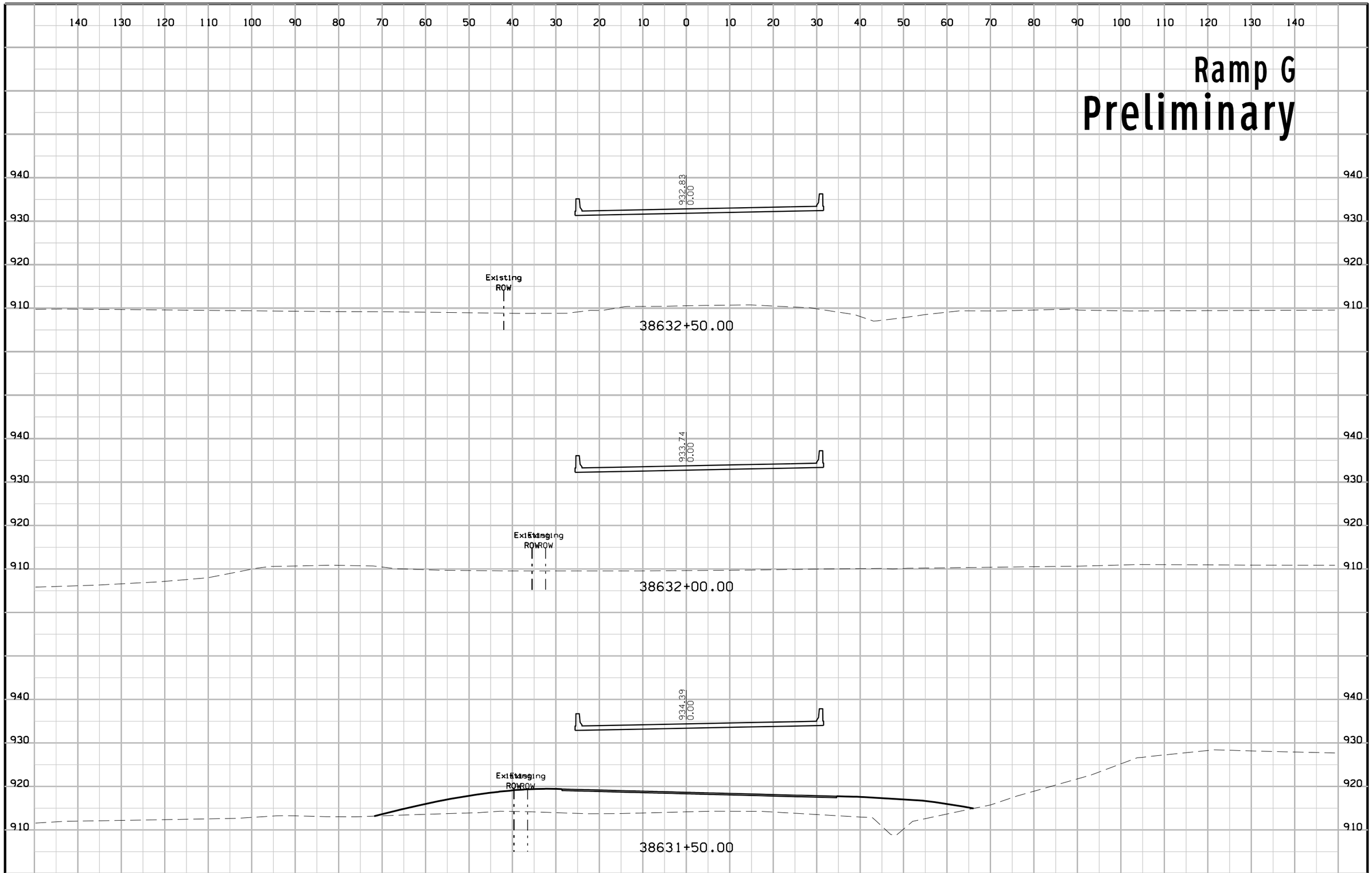
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.59

8:28:04 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

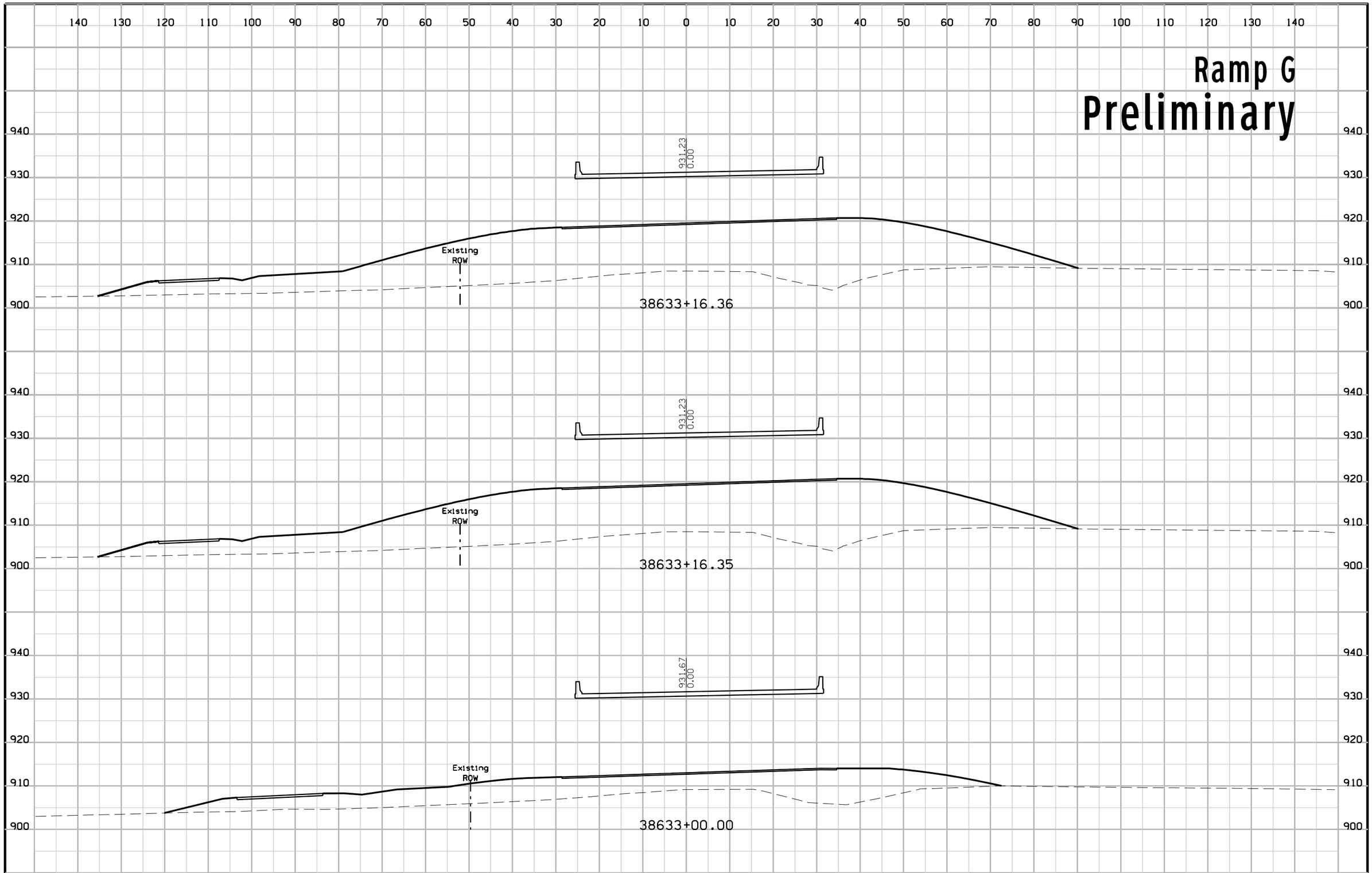
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.60

8:28:05 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

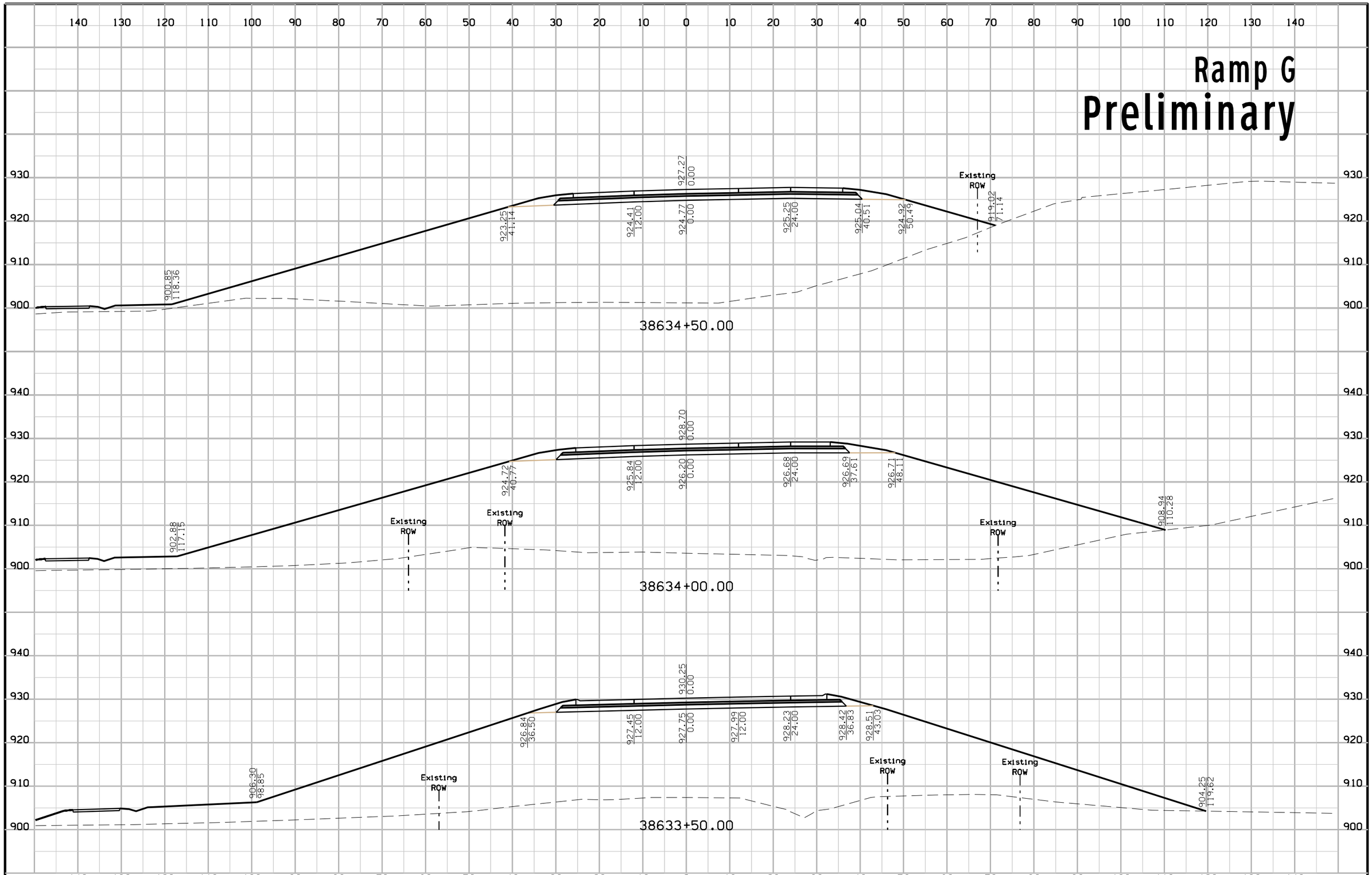
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.61

8:28:06 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

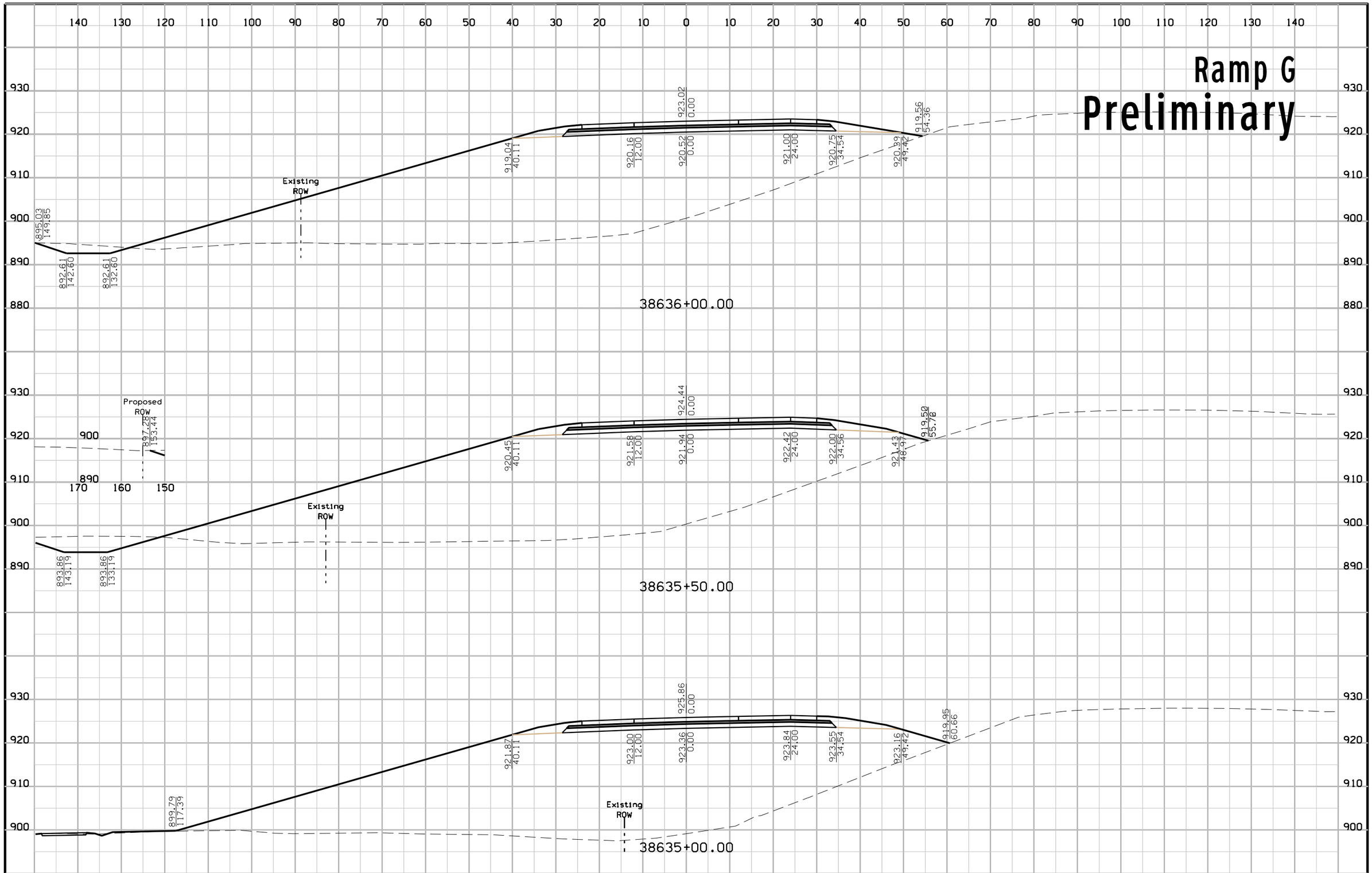
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.62

8:28:07 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

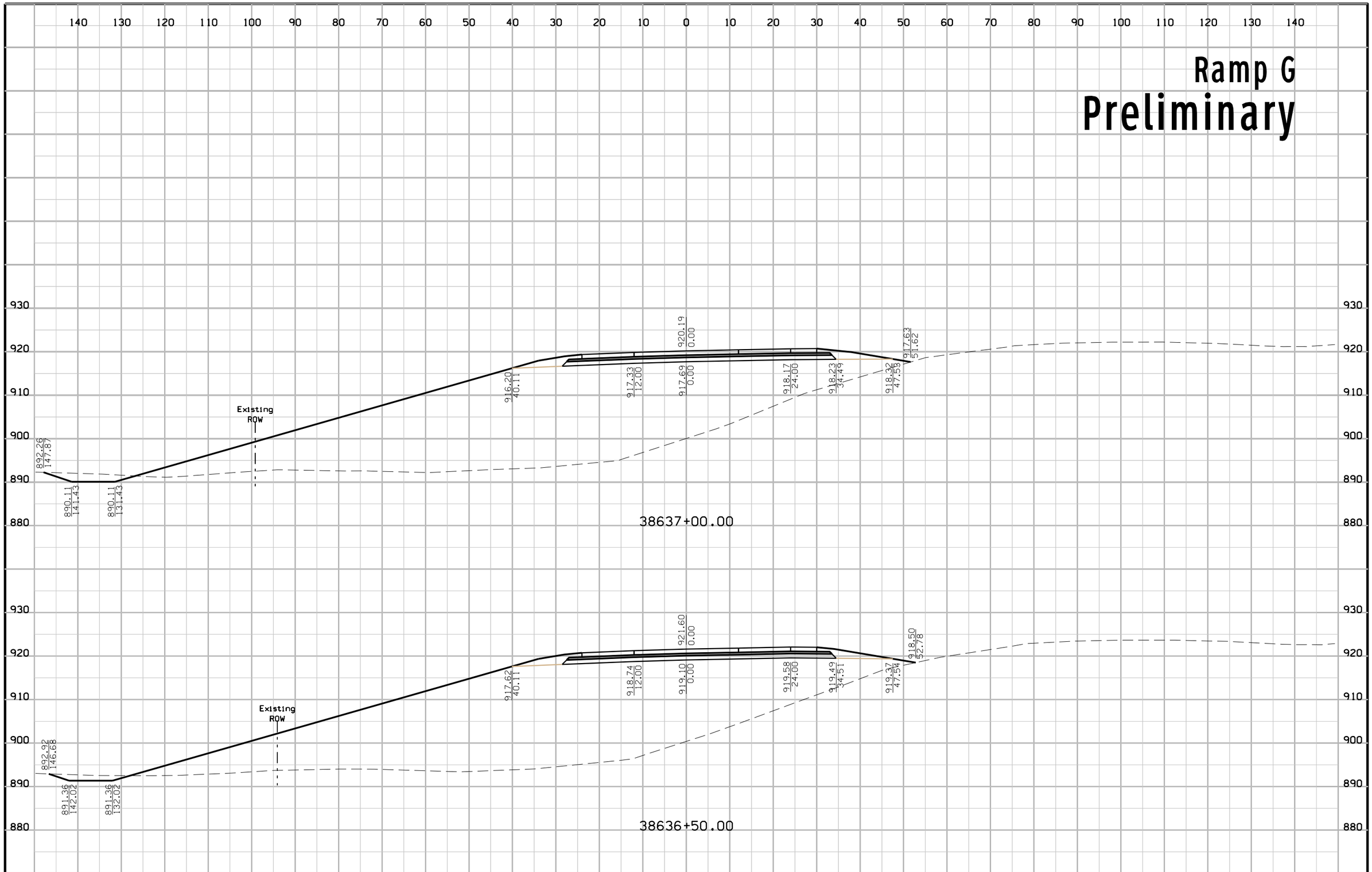
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.63

8:28:09 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

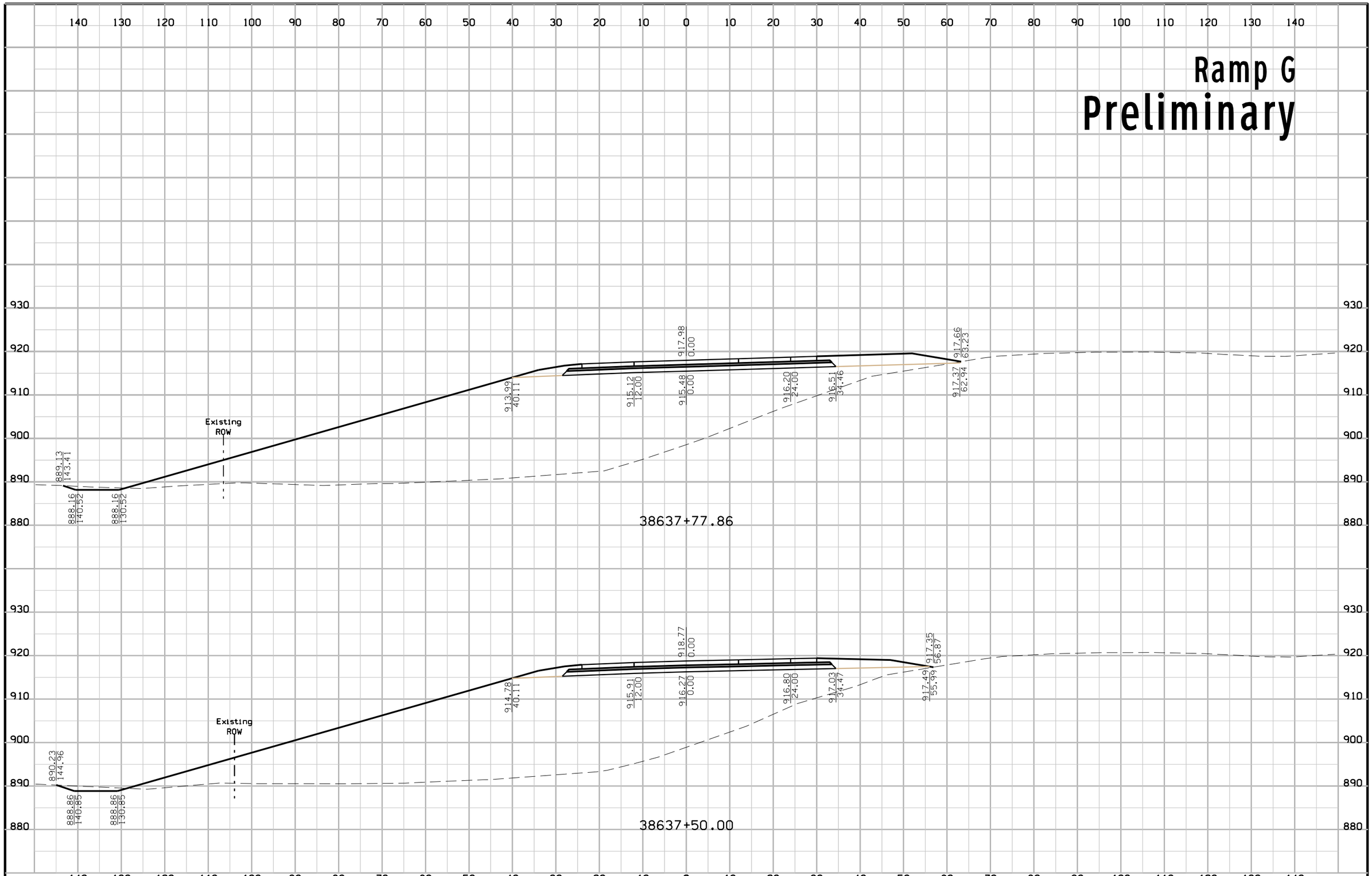
Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.64

8:28:10 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht

Ramp G
Preliminary



FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT\HDR	POLK COUNTY	PROJECT NUMBER IM-035-3(194)87--13-77	SHEET NUMBER Y.65

8:28:11 AM 10/15/2021 JWINKELM pw://HDR_US_Central_01/3047/10195812/77035194Y01.sht