



PLANS OF PROPOSED IMPROVEMENT ON THE  
**PRIMARY ROAD SYSTEM**  
**Cherokee COUNTY**  
PCC Pavement - Grade and New  
IA 143 Intersection in Marcus

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



INDEX OF SHEETS	
No.	DESCRIPTION
<b>A Sheets</b>	<b>Title Sheets</b>
A.1	Title Sheet
A.2	Location Map Sheet
<b>B Sheets</b>	<b>Typical Cross Sections and Details</b>
B.1 - 6	Typical Cross Sections and Details
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 6	IA 3
* D.7 - 9	IA143
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1 - 3	L36
* E.4	Roundabout Circle
<b>F Sheets</b>	<b>Detour or Temporary Pavement Sheets</b>
* F.1 - 3	Detour Plan and Profile Sheets
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1	Reference Ties and Bench Marks
G.2	Horizontal Control Tab. & Super for all Alignments
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1 - 6	Staging and Traffic Control Sheets
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W.1 - 32	Mainline Cross Sections IA 3
W.33 - 39	Mainline Cross Sections IA 143
W.40 - 70	Detour Cross Sections IA 3
W.71 - 83	Detour Cross Sections IA 3EB
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1 - 8	Side Road Cross Sections L-36
	* Color Plan Sheets

H Sheets

IA 3	
DESIGN DATA URBAN	
2026	AADT 3,700 V.P.D.
2046	AADT 4,300 V.P.D.
2046	DHV 450 V.P.H.
	TRUCKS 23 %
Total	
Design	ESALs --

L36	
DESIGN DATA RURAL	
2019	AADT 1,350 V.P.D.
20	AADT - V.P.D.
20	DHV - V.P.H.
	TRUCKS - %
Total	
Design	ESALs -

IA 143	
DESIGN DATA URBAN	
2021	AADT 2,820 V.P.D.
20	AADT - V.P.D.
20	DHV - V.P.H.
	TRUCKS 15 %
Total	
Design	ESALs -

REVISIONS

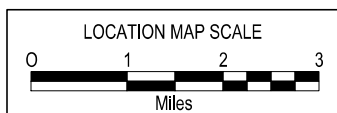
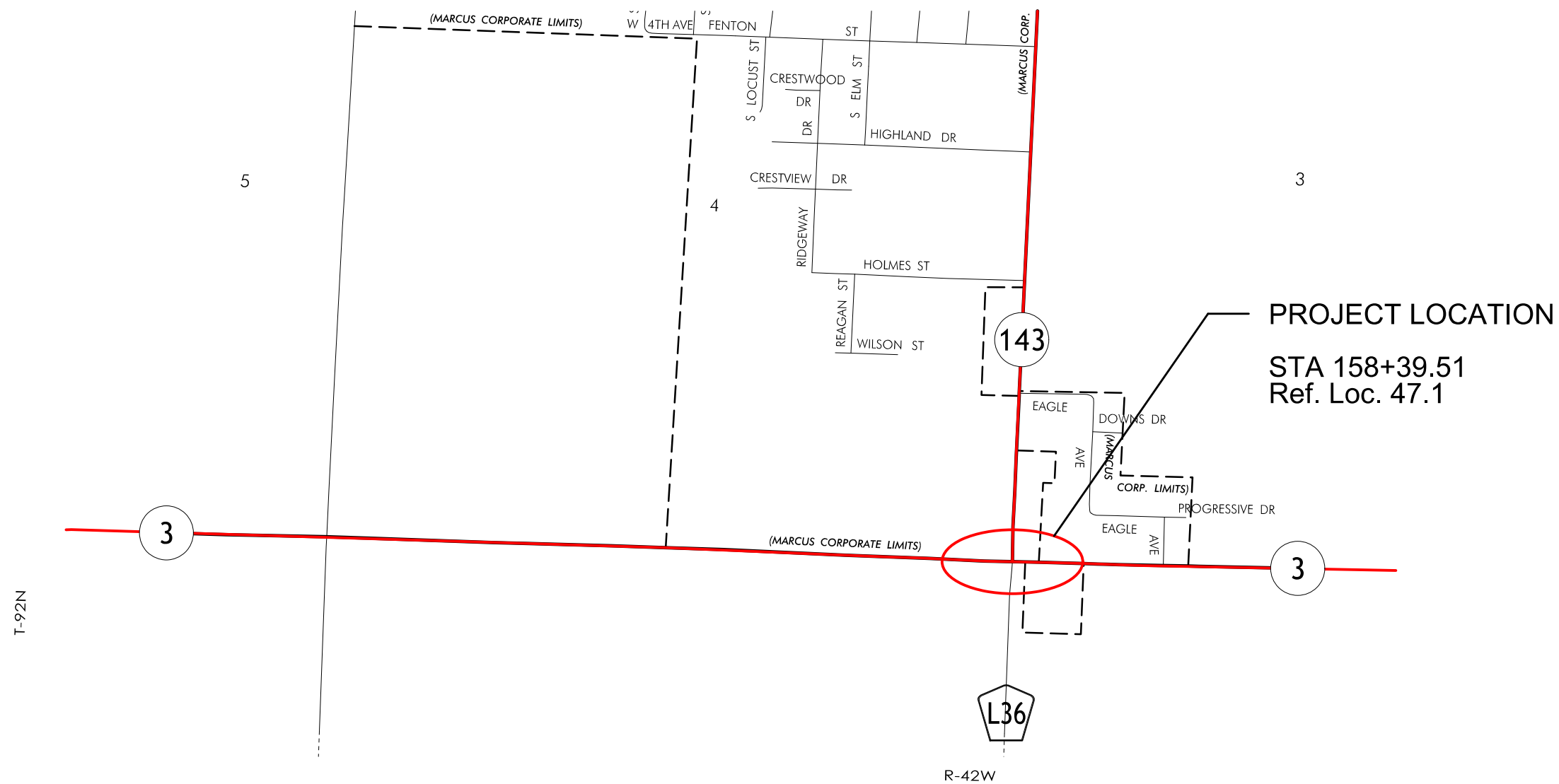
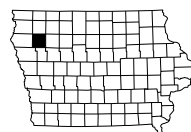
TOTAL

PROJECT IDENTIFICATION NUMBER	22-18-003-010
PROJECT NUMBER	HSIPX-003-2(086)--3L-18
R.O.W. PROJECT NUMBER	HSIPX-003-2(089)--3L-18

**PRELIMINARY PLANS**

Subject to change by final design.

**D5 PLAN - Date: 11/09/23**



### Curbed Shoulder

Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
Staged: KT-2  
Transverse: CD refer to L sheets for spacing

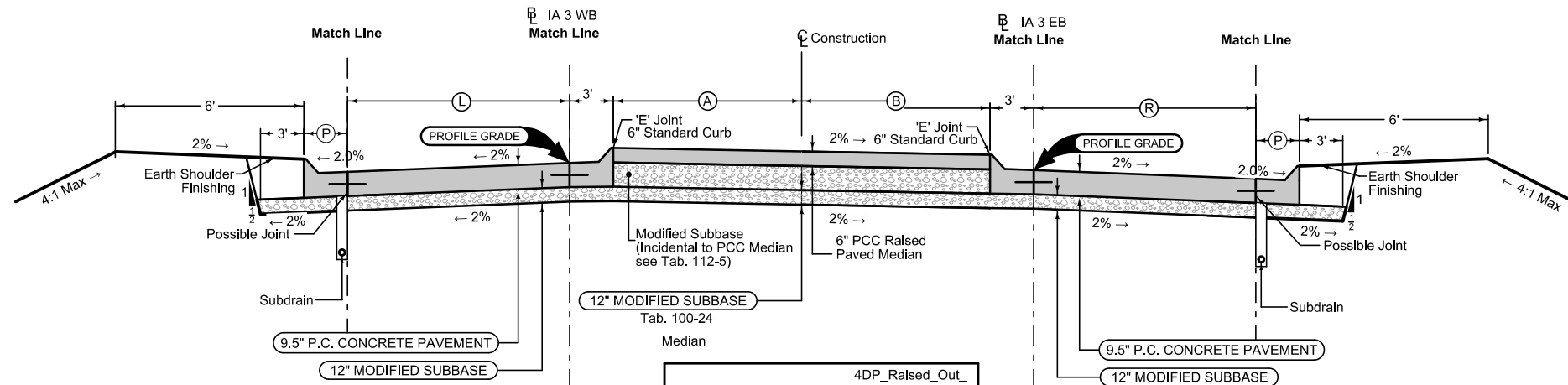
STATION TO STATION		(P) Feet	Curb Type See PV-102
4155+60.00	4157+62.28	3	6" Standard
4159+25.00	4162+50.96	3	6" Standard

### Curbed Shoulder

Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
Staged: KT-2  
Transverse: CD refer to L sheets for spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
3155+13.26	3157+54.03	3	6" Standard
3159+16.15	3160+64.93	3	6" Standard



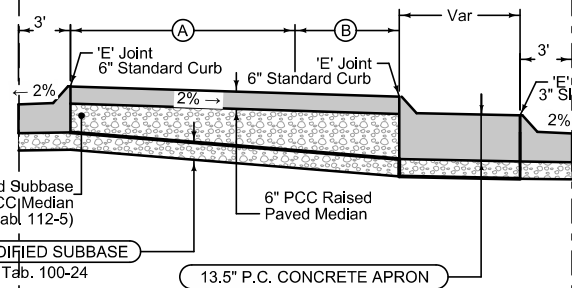
Mainline Jointing:  
Transverse joints: CD refer to L sheets for spacing  
Longitudinal joint: L-2

BEGIN STATION	END STATION	(L) Feet
4151+00.00	4155+65.00	12
4155+65.00	4157+62.28	Vari. (12-16.8)
4159+25.00	4160+15.51	Vari. (19.6-12)
4160+15.51	4169+70.00	12

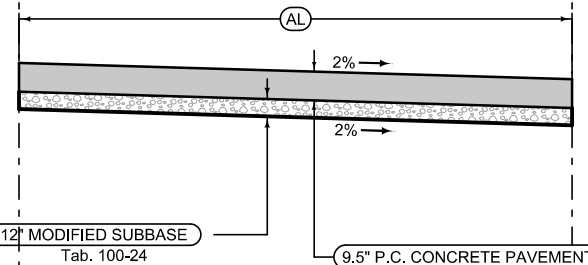
4DP_Raised_Out_04-21-20			
BEGIN STATION	END STATION	(A) Feet	(B) Feet
153+93.00	157+50.88	Vari.	Vari.
160+28.69	162+79.15	Vari.	Vari.

Mainline Jointing:  
Transverse joints: CD refer to L sheets for spacing  
Longitudinal joint: L-2

BEGIN STATION	END STATION	(R) Feet
3151+00.00	3156+57.02	12
3156+57.02	3157+54.03	Vari. (12-20.2)
3159+16.15	3160+94.93	Vari. (16.6-12)
3160+94.93	3169+70.00	12



4DP_Raised_Out_04-21-20			
BEGIN STATION	END STATION	(A) Feet	(B) Feet
159+19.51	160+28.69	Vari.	Vari.



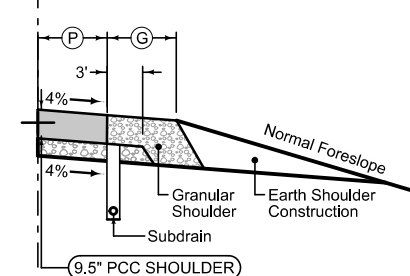
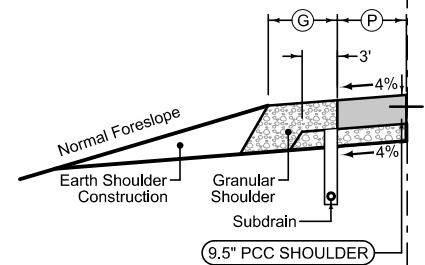
Median Jointing:  
Transverse joints: CD refer to L sheets for spacing  
Longitudinal joint: L-2

STATION TO STATION		(AL) Feet
151+00.00	153+93.00	Vari
162+71.00	169+70.00	Vari

### Full Depth PCC Combination Shoulder

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

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
4151+00.00	4155+60.00	4	2
4162+50.96	4169+70.00	4	4



### Full Depth PCC Combination Shoulder

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

2_C_FullPCC_04-20-21			
STATION TO STATION		(P) Feet	(G) Feet
3151+00.00	3155+13.26	4	2
3160+64.93	3169+70.00	8	0

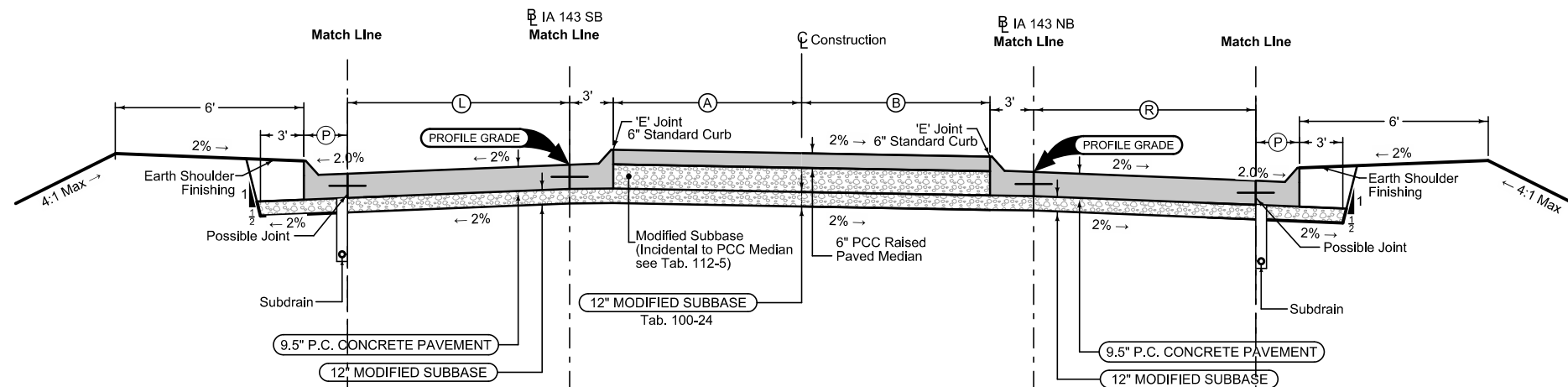
See Tab 100-24 or 100-25 for pavement quantities.  
See Tab 112-9 for shoulder quantities.

### Curbed Shoulder

Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
Staged: KT-2  
Transverse: CD refer to L sheets for spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
6002+48.69	6004+82.93	3	6" Standard



Mainline Jointing:  
Transverse joints: CD refer to L sheets for spacing  
Longitudinal joint: L-2

BEGIN STATION	END STATION	(L) Feet
6002+48.69	6003+33.65	Vari. (20.4-12)
6003+33.65	6007+24.00	12

### Median

4DP_Raised_Out_ 04-21-20			
BEGIN STATION	END STATION	(A) Feet	(B) Feet
2+53.47	5+08.55	Vari.	Vari.

Mainline Jointing:  
Transverse joints: CD refer to L sheets for spacing  
Longitudinal joint: L-2

BEGIN STATION	END STATION	(R) Feet
5002+41.00	5004+60.00	Vari. (15.8-12)
5004+60.00	5007+24.00	12

### Curbed Shoulder

Shoulder Jointing:  
Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

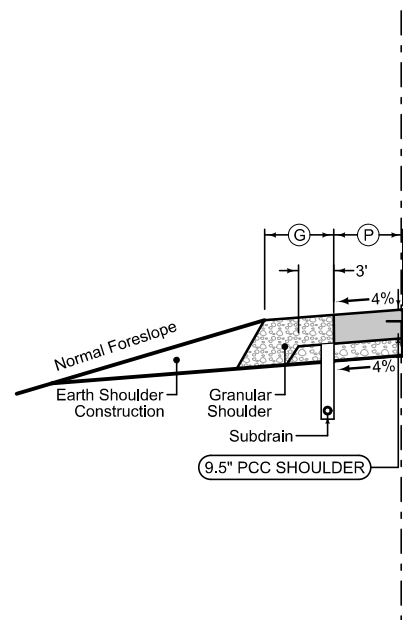
Single pour: L-2  
Staged: KT-2  
Transverse: CD refer to L sheets for spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
5002+41.00	5004+60.00	3	6" Standard

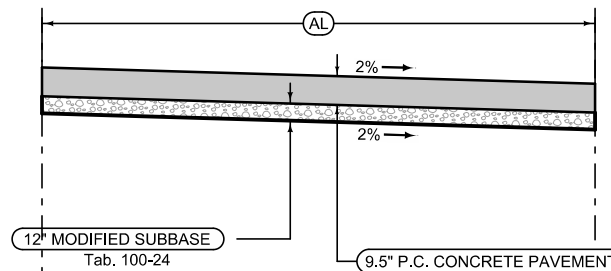
### Full Depth PCC Combination Shoulder

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

STATION TO STATION		(P) Feet	(G) Feet
6004+82.93	6007+24.00	4	2



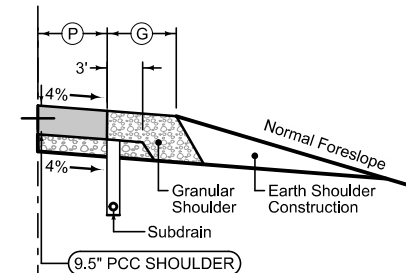
Mainline paving



Median Jointing:  
Transverse joints: CD refer to L sheets for spacing  
Longitudinal joint: L-2

STATION TO STATION		(AL) Feet
5+08.55	7+24.00	Vari

Mainline paving



### Full Depth PCC Combination Shoulder

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

STATION TO STATION		(P) Feet	(G) Feet
5004+60.00	5007+24.00	4	2

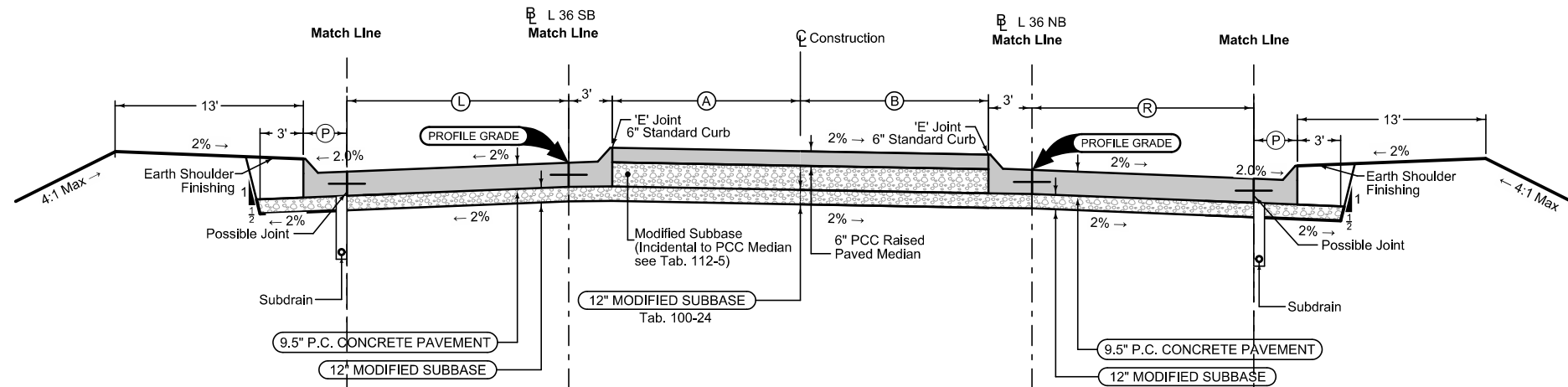
See Tab 100-24 or 100-25 for pavement quantities.  
See Tab 112-9 for shoulder quantities.

### Curbed Shoulder

Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
 Staged : KT-2  
 Transverse: CD refer to L sheets for spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
8144+85.00	8157+30.26	3	6" Standard



Mainline Jointing:  
 Transverse joints: CD refer to L sheets for spacing  
 Longitudinal joint: L-2

BEGIN STATION	END STATION	(L) Feet
8152+12.00	8144+85.00	12
8144+85.00	8157+30.26	Vari. (12-15.7)

### Median

4DP_Raised_Out_ 04-21-20			
BEGIN STATION	END STATION	(A) Feet	(B) Feet
2155+50.00	2157+16.98	Vari.	Vari.

Mainline Jointing:  
 Transverse joints: CD refer to L sheets for spacing  
 Longitudinal joint: L-2

BEGIN STATION	END STATION	(R) Feet
5002+41.00	5004+60.00	Vari. (15.8-12)
5004+60.00	5007+24.00	12

### Curbed Shoulder

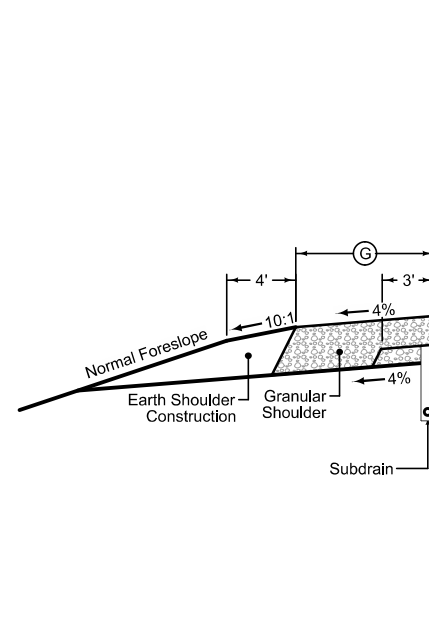
Shoulder Jointing:  
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2  
 Staged : KT-2  
 Transverse: CD refer to L sheets for spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
5002+41.00	5004+60.00	3	6" Standard

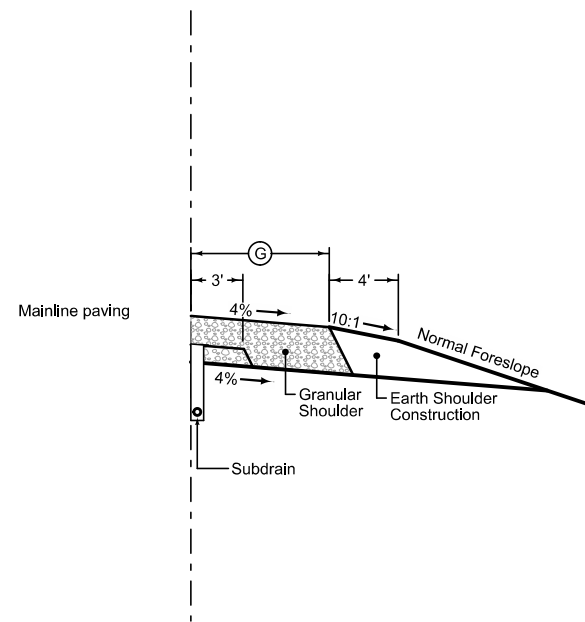
### Granular Shoulder

STATION TO STATION		(G) Feet
8152+12.00	8144+85.00	6



Median Jointing:  
 Transverse joints: CD refer to L sheets for spacing  
 Longitudinal joint: L-2

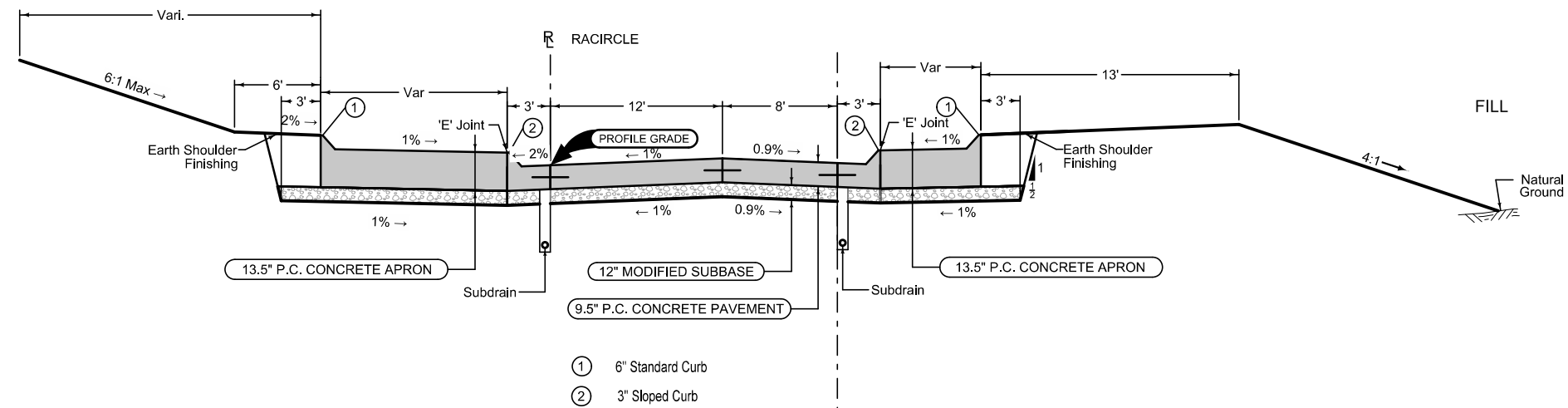
STATION TO STATION		(AL) Feet
2152+12.00	2155+50.00	Vari



### Granular Shoulder

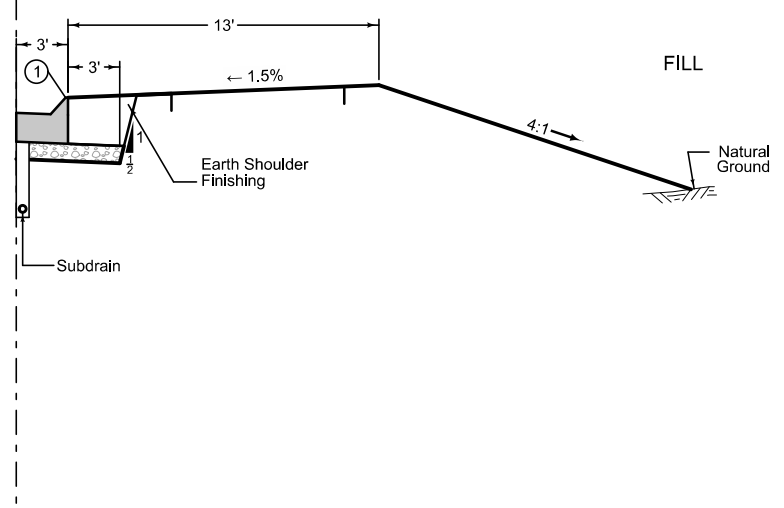
STATION TO STATION		(G) Feet
5004+60.00	5007+24.00	6

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



LOCATION		
ROAD IDENTIFICATION	STATION TO STATION	
RACIRCLE	1000+00.00	1004+39.82

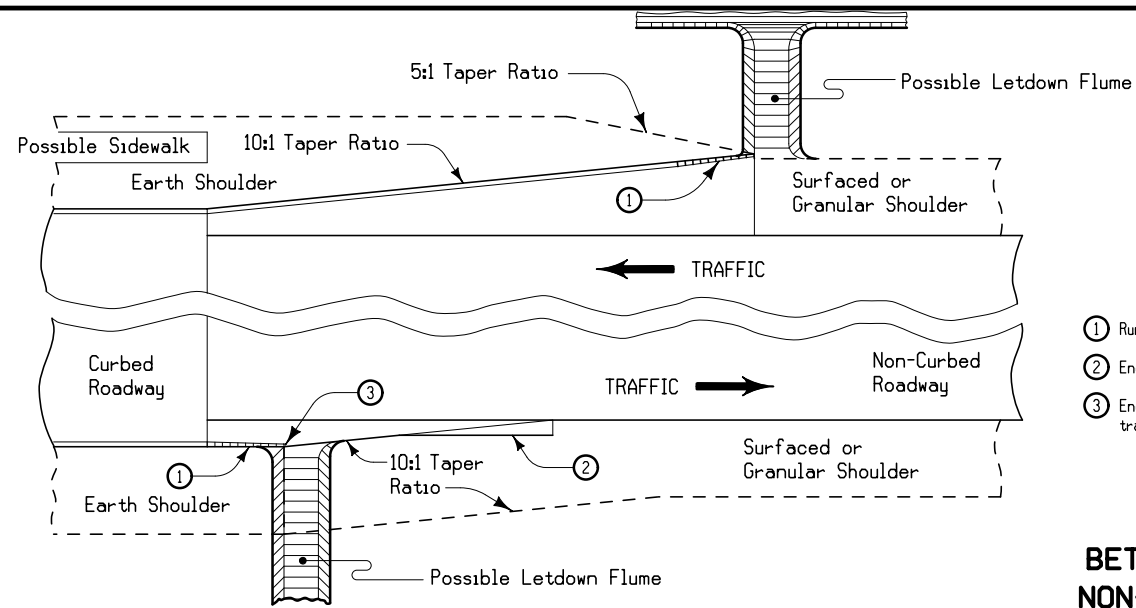
Note: See 'L' Sheets for Jointing Layout



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

**Roundabout**

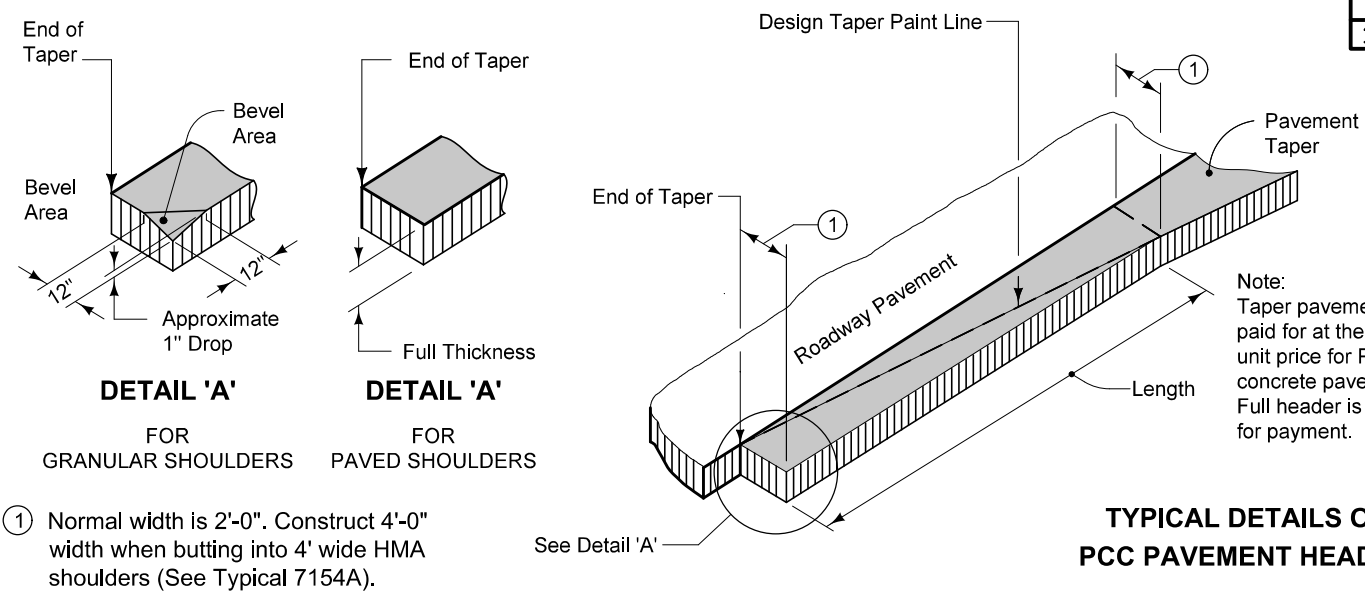
6147  
10-20-15



- ① Runout curb according to PV-102
- ② End of Taper Details see Typical Detail 7101
- ③ End earth shoulder at the end of the curb transition when no flume is needed.

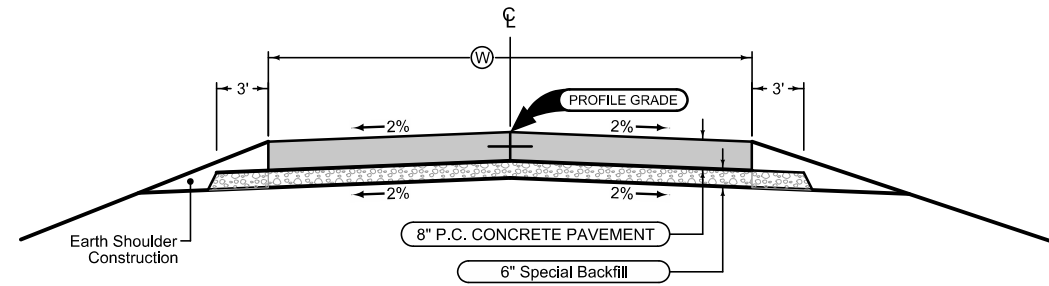
**TRANSITION  
BETWEEN CURBED AND  
NON-CURBED ROADWAYS**

7101  
10-19-10



- ① Normal width is 2'-0". Construct 4'-0" width when butting into 4' wide HMA shoulders (See Typical 7154A).

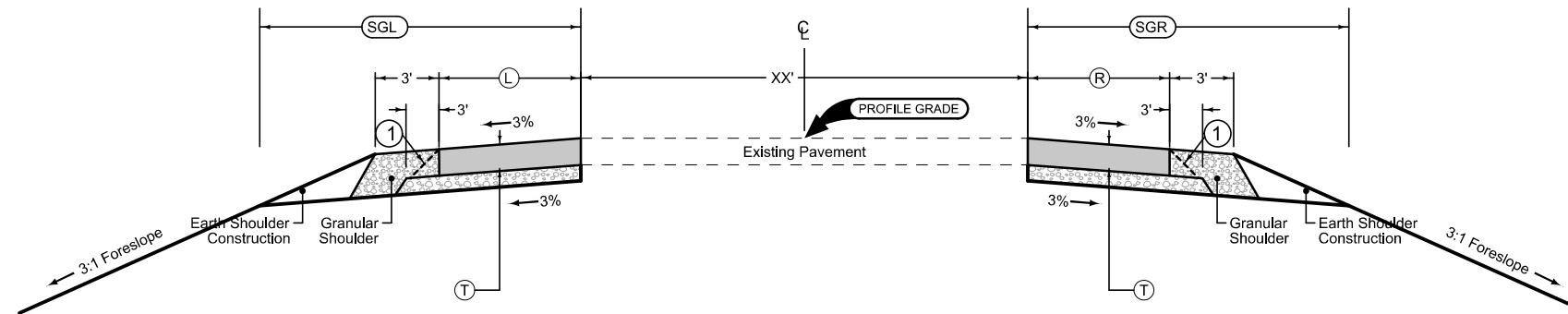
**TYPICAL DETAILS OF  
PCC PAVEMENT HEADER**



ROAD IDENTIFICATION	Ⓜ Feet
ENTR163 (IA 3)	45
ENTR2154 (L36)	45

See Tab 102-3 for pavement quantities.

**PAVED ENTRANCE**



LOCATION		DIMENSIONS						6" Special Backfill Tons/Station	Earth Shoulder Construction Station
ROAD IDENTIFICATION	STATION TO STATION	HMA			PCC				
		Ⓜ Feet	Ⓣ Inches	Ⓜ Feet	Ⓜ Feet	Ⓣ Inches	Ⓜ Feet		
IA 3	145+52.72 - 157+77.07			N/A			9.5		
IA 3	164+62.95 - 169+93.14			9			8		
IA 3	170+44.18 - 174+09.49			9			8		

LOCATION		DIMENSIONS						6" Special Backfill Tons/Station	Earth Shoulder Construction Station
ROAD IDENTIFICATION	STATION TO STATION	HMA			PCC				
		Ⓜ Feet	Ⓣ Inches	Ⓜ Feet	Ⓜ Feet	Ⓣ Inches	Ⓜ Feet		
IA 3 EB	3163+60.35 - 3173+94.07			9			8		

Quantity calculations based on vertical pavement edges.  
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

① Possible HMA 1:1 slope

**DETOUR PAVEMENT**



### SURVEY SYMBOLS

- Interstate Highway Symbol
- U.S. Highway Symbol
- Iowa Highway Symbol
- County Road Highway Symbol
- Evergreen Tree
- Deciduous Tree
- Fruit Tree
- Shrub (Bushes)
- Timber
- Hedge
- Stump
- Swamp
- Rock Outcrop
- Broken Concrete
- Revetment (Rip Rap)
- Cemetery
- Grave
- Cave
- Sink Hole
- Board Fence
- Chain Link or Security Fence
- Wire Fence
- Terrace
- Earth Dam or Dike (Existing)
- Tile Outlet
- Edge of Water
- Existing Drainage
- Right of Way Rail or Lot Corner
- Concrete Monument
- Well
- Windmill
- Beehive Intake
- Existing Intake
- Existing Utility Access (Manhole)
- Fire Hydrant
- Water Hydrant (Rural)
- Septic Tank
- Cistern
- L.P. Gas Tank (No Footing)
- Underground Storage Tank
- Latrine
- Satellite TV Dish
- Water Hook Up
- Radio Tower
- Tower Anchor
- Guardrail (Beam or Cable)
- Guard Post (one or two)
- Guard Post (over two)
- Filler Pipe
- Gas Valve
- Water Valve
- Speed Limit Sign
- Mile Marker Post
- Sign
- Traffic Signal Control Box
- Rail Road Signal Control Box
- Telephone Switch Box
- Electric Box

### UTILITY LEGEND

- FOID, West Iowa Telephone - Quality D
- WLID, Cherokee Rural Water District - Quality D
- WL2D, Macus, City of - Quality D
- ELID, MidAmerican-Elec - Quality D
- GLID, MidAmerican-Gas - Quality D
- SAID, Marcus, City of - Quality D
- PPA, MidAmerican-Elec

### 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.
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Blue, Light	(230)	Proposed Paved Median
Pink	(11)	Proposed Paved Truck Apron
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

### PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK		Design Color No.
Green	(10)	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
- Access Control
- Property Line

## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

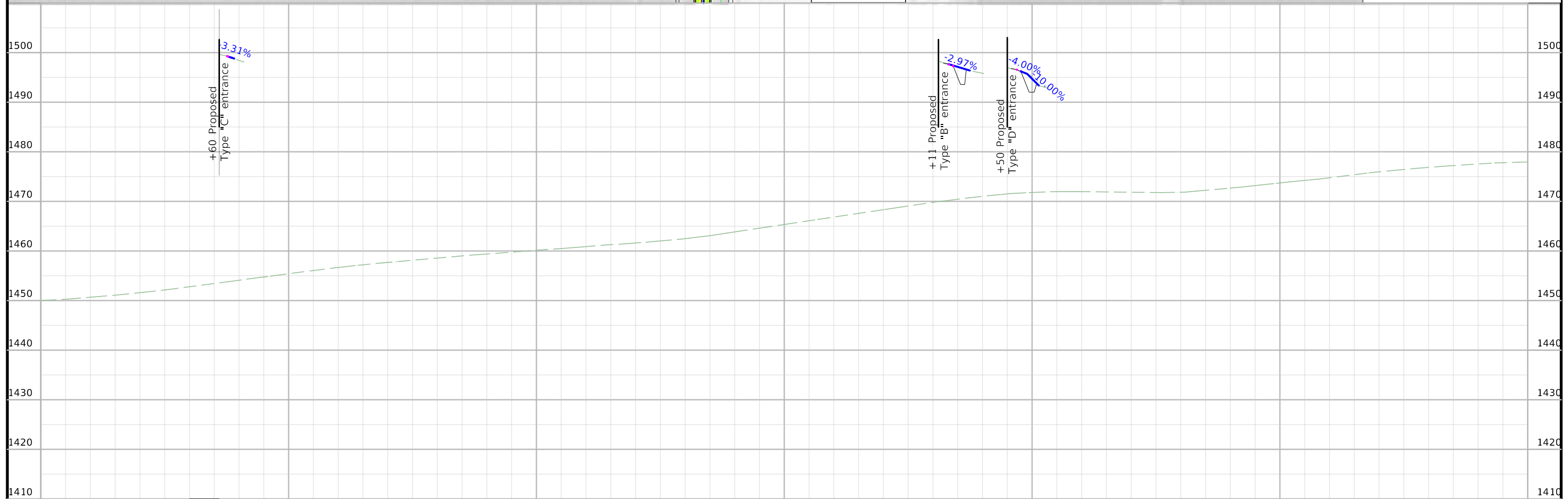
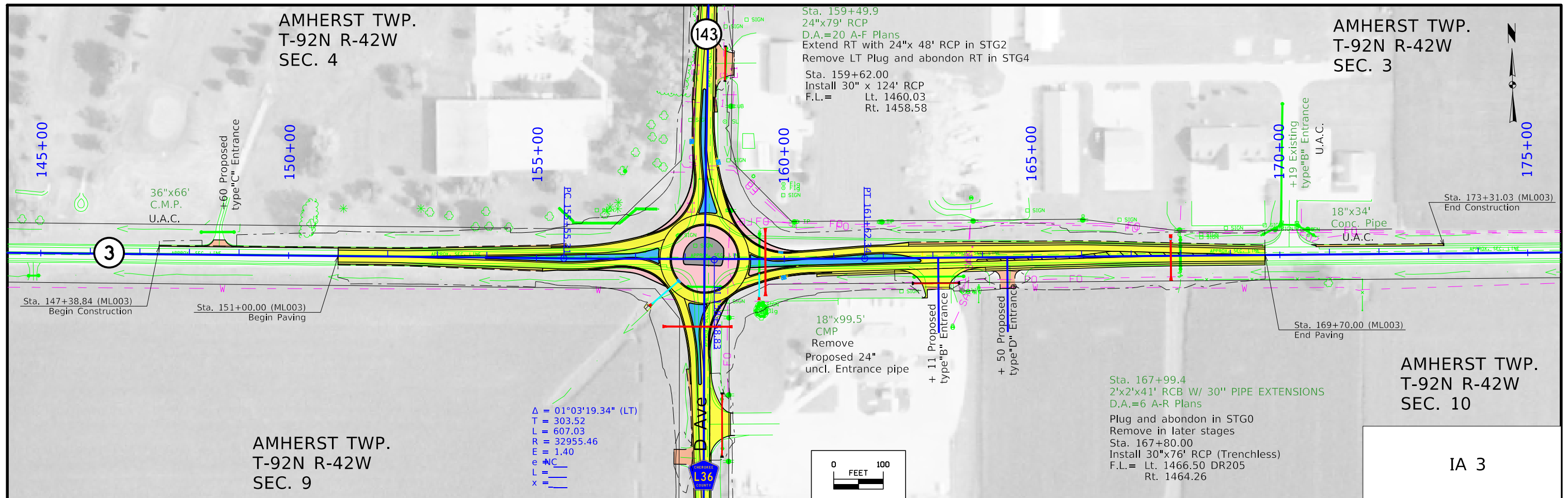
AMHERST TWP.  
T-92N R-42W  
SEC. 4

AMHERST TWP.  
T-92N R-42W  
SEC. 3

AMHERST TWP.  
T-92N R-42W  
SEC. 9

AMHERST TWP.  
T-92N R-42W  
SEC. 10

IA 3



AMHERST TWP.  
T-92N R-42W  
SEC. 4

$\Delta = 01^{\circ}37'54.81''$  (RT)  
T = 21.36  
L = 42.72  
R = 1500.00  
E = 0.15

$\Delta = 07^{\circ}35'10.05''$  (LT)  
T = 39.78  
L = 79.44  
R = 600.00  
E = 1.32

$\Delta = 56^{\circ}13'30.70''$  (RT)  
T = 64.11  
L = 117.76  
R = 120.00  
E = 16.05

Sta. 3151+00.00 (ML003EB W)  
Sta. 151+00 (ML003)

Begin Construction

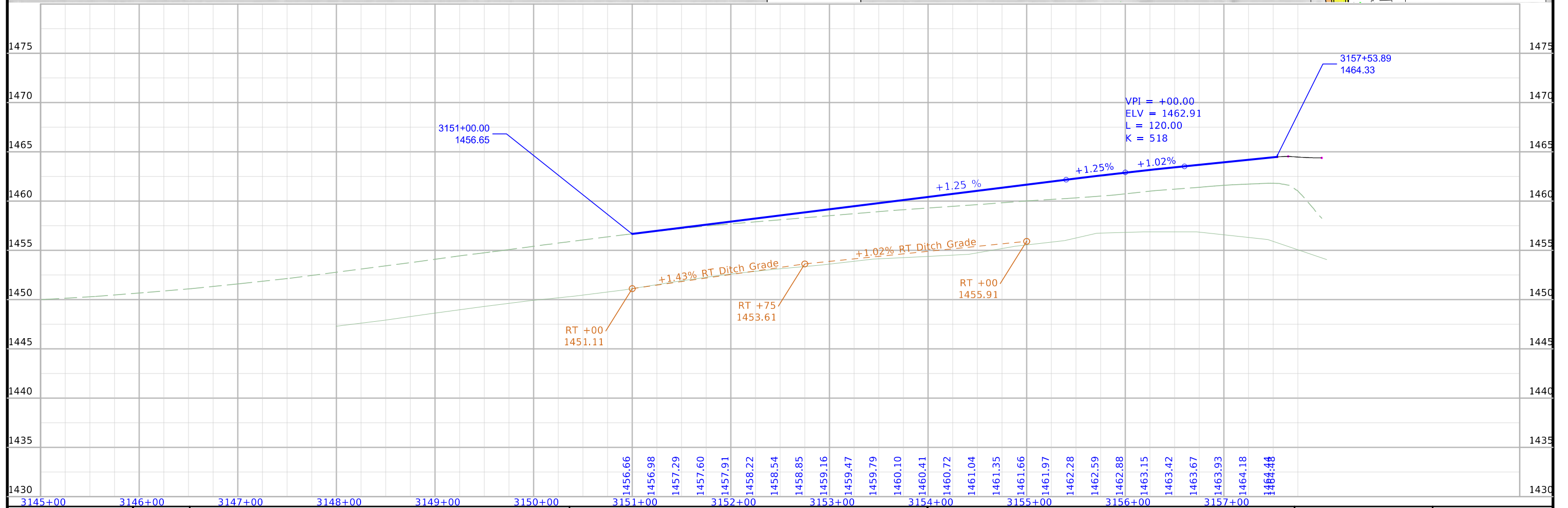
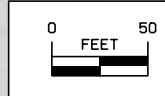
3151+86.11 (ML003EB W)  
151+86.11 (ML003)

Sta. 3157+54.03 (ML003EB W)  
Stop Construction

3157+99.25 (ML003EB W)  
1003+26.42 (CIRCLE)

IA 3 EB\_W

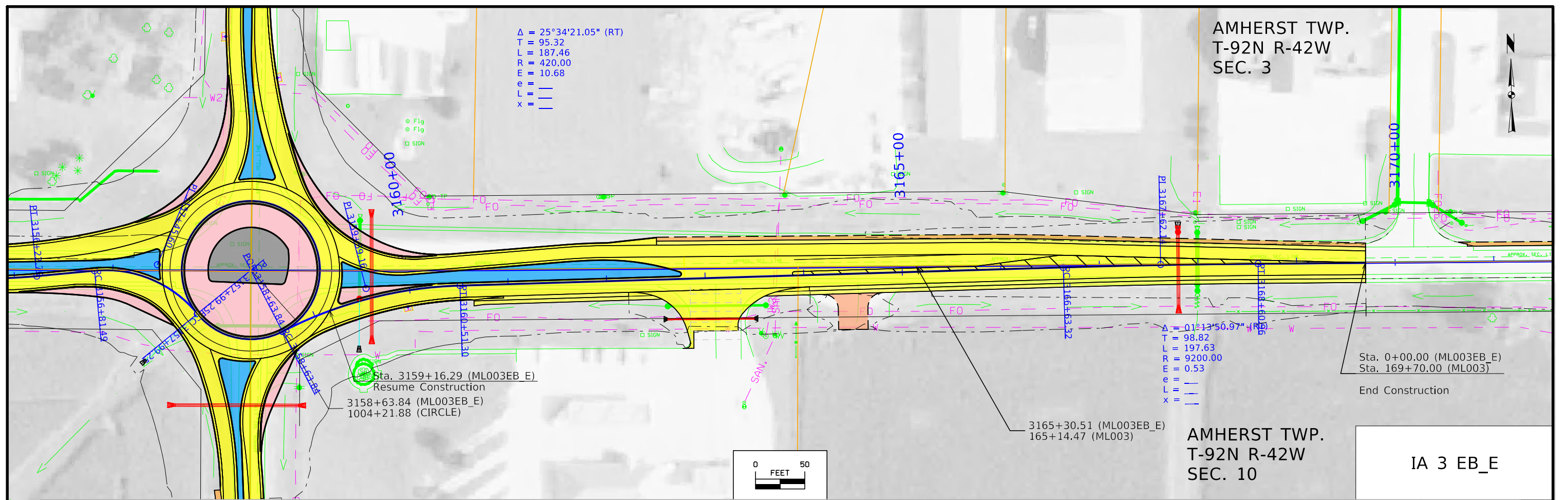
AMHERST TWP.  
T-92N R-42W  
SEC. 9



FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	D.3
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$\Delta = 25^\circ 34' 21.05''$  (RT)  
 T = 95.32  
 L = 187.46  
 R = 420.00  
 E = 10.68  
 e = —  
 L = —  
 x = —

AMHERST TWP.  
 T-92N R-42W  
 SEC. 3



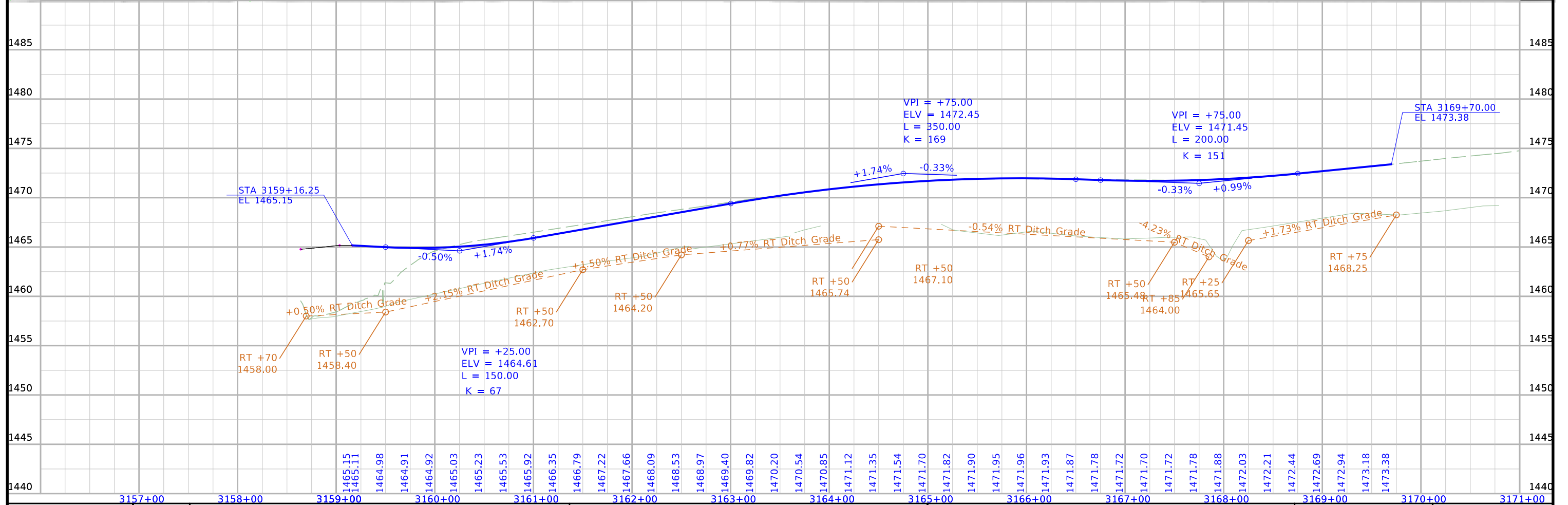
$\Delta = 01^\circ 13' 50.97''$  (RT)  
 T = 98.82  
 L = 197.63  
 R = 9200.00  
 E = 0.53  
 e = —  
 L = —  
 x = —

Sta. 0+00.00 (ML003EB\_E)  
 Sta. 169+70.00 (ML003)  
 End Construction

3165+30.51 (ML003EB\_E)  
 165+14.47 (ML003)

AMHERST TWP.  
 T-92N R-42W  
 SEC. 10

IA 3 EB\_E



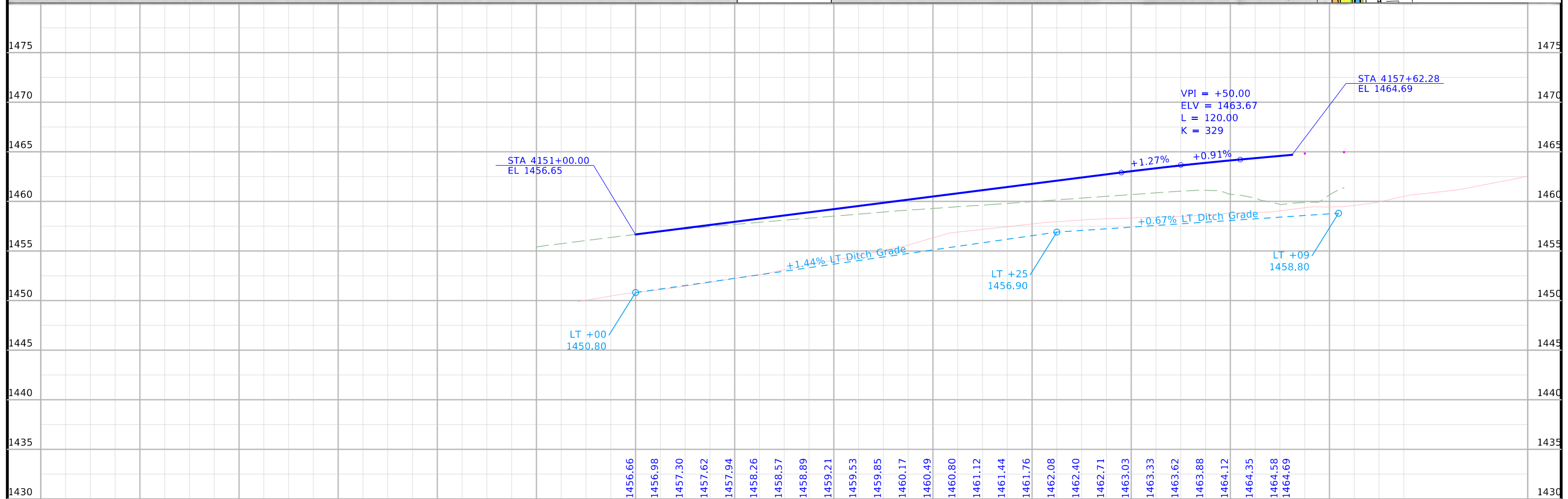
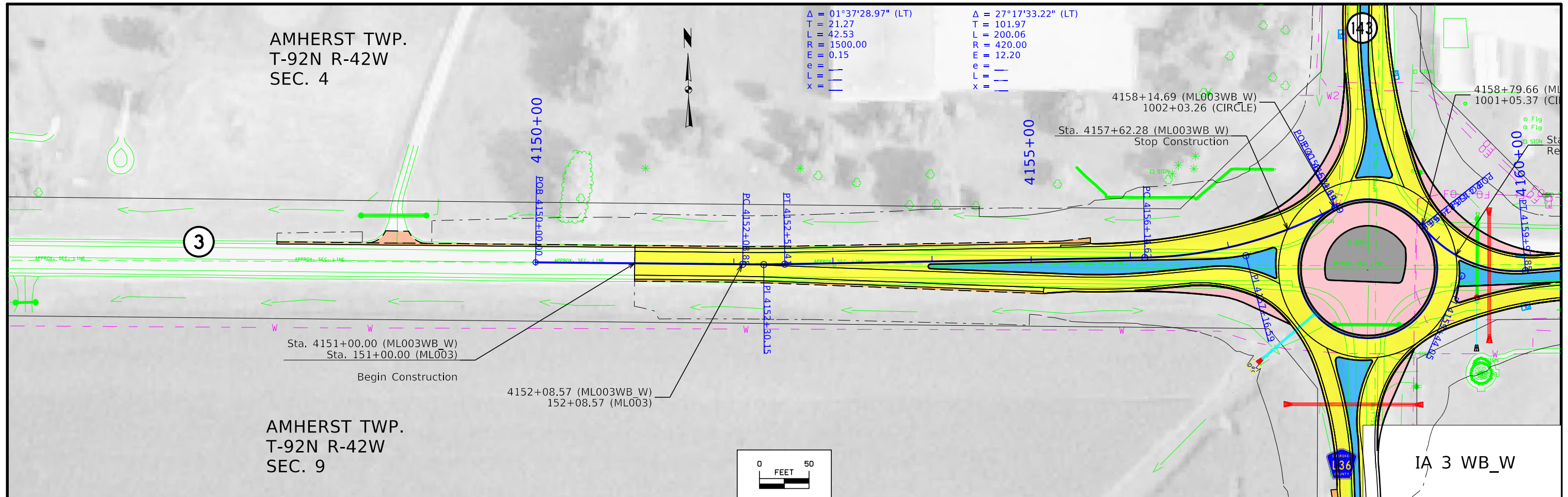
FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	D.4
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AMHERST TWP.  
T-92N R-42W  
SEC. 4

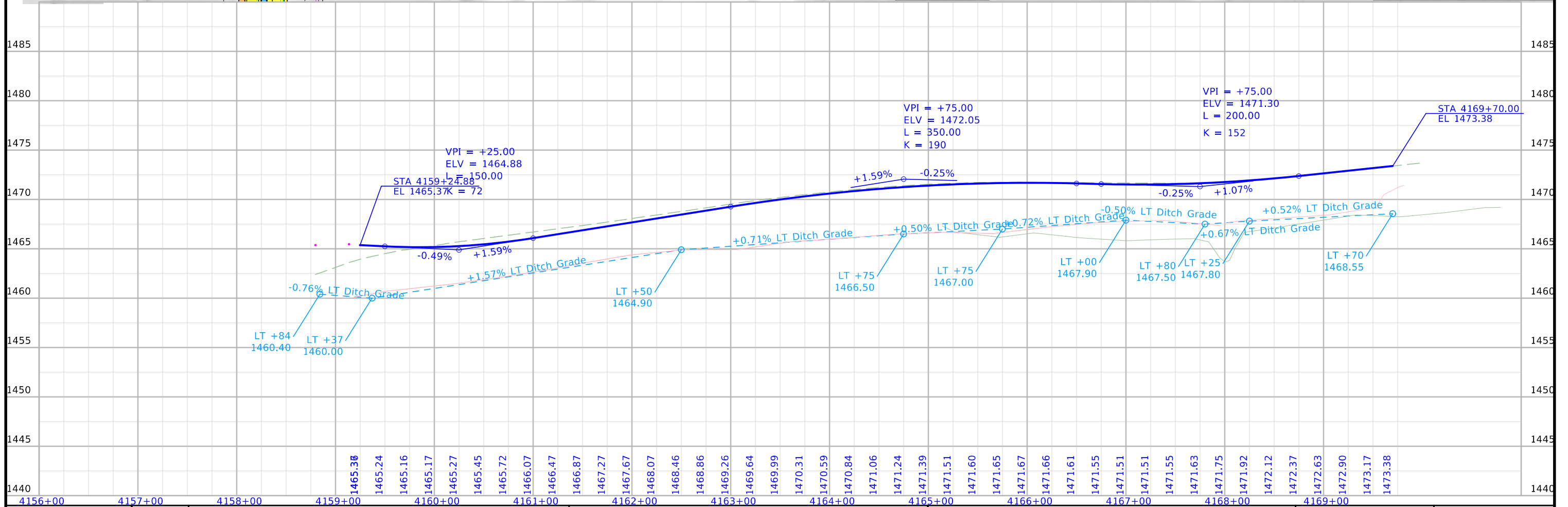
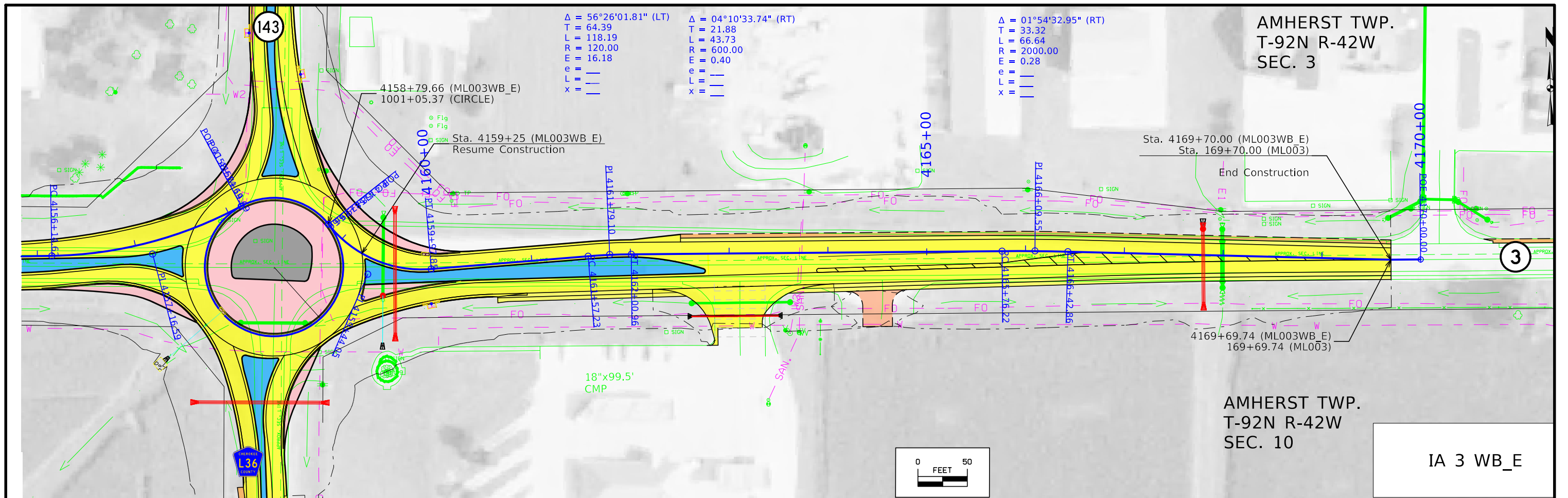
AMHERST TWP.  
T-92N R-42W  
SEC. 9

$\Delta = 01^{\circ}37'28.97"$  (LT)  
 $T = 21.27$   
 $L = 42.53$   
 $R = 1500.00$   
 $E = 0.15$   
 $L =$   
 $E =$   
 $X =$

$\Delta = 27^{\circ}17'33.22"$  (LT)  
 $T = 101.97$   
 $L = 200.06$   
 $R = 420.00$   
 $E = 12.20$   
 $L =$   
 $E =$   
 $X =$



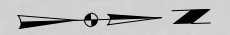
FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	D.5
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FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	D.6
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AMHERST TWP.  
T-92N R-42W  
SEC. 9

AMHERST TWP.  
T-92N R-42W  
SEC. 4



1+62.86 (ML143)  
158+39.50 (ML003)

Sta. 2+53.47 (ML143)  
Begin Construction

Sta. 7+24.15 (ML143)  
End Construction

5+00

10+00

15+51

20+00



D Ave



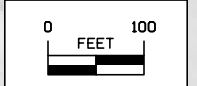
Golf Course Rd

Eagle Ave

AMHERST TWP.  
T-92N R-42W  
SEC. 10

AMHERST TWP.  
T-92N R-42W  
SEC. 3

IA 143



+57 Proposed  
Type "B" Entrance

4.00%

4.86%

-5+00

-0+00

5+00

10+00

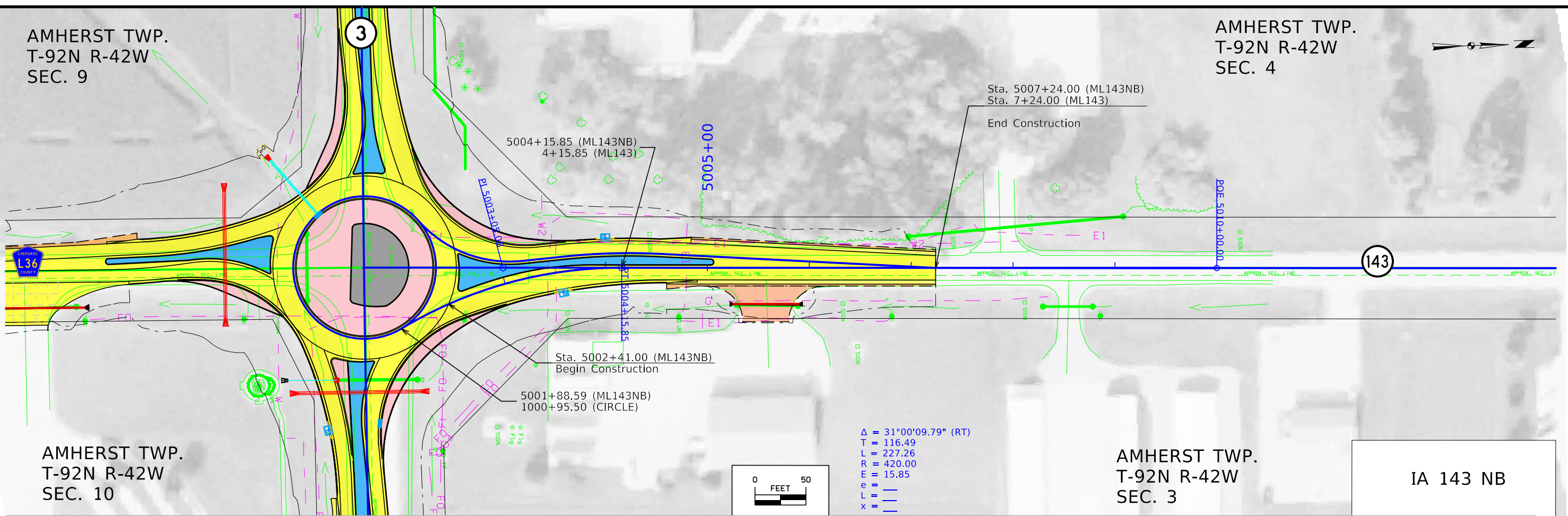
15+00

20+00

FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	D.7
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AMHERST TWP.  
T-92N R-42W  
SEC. 9

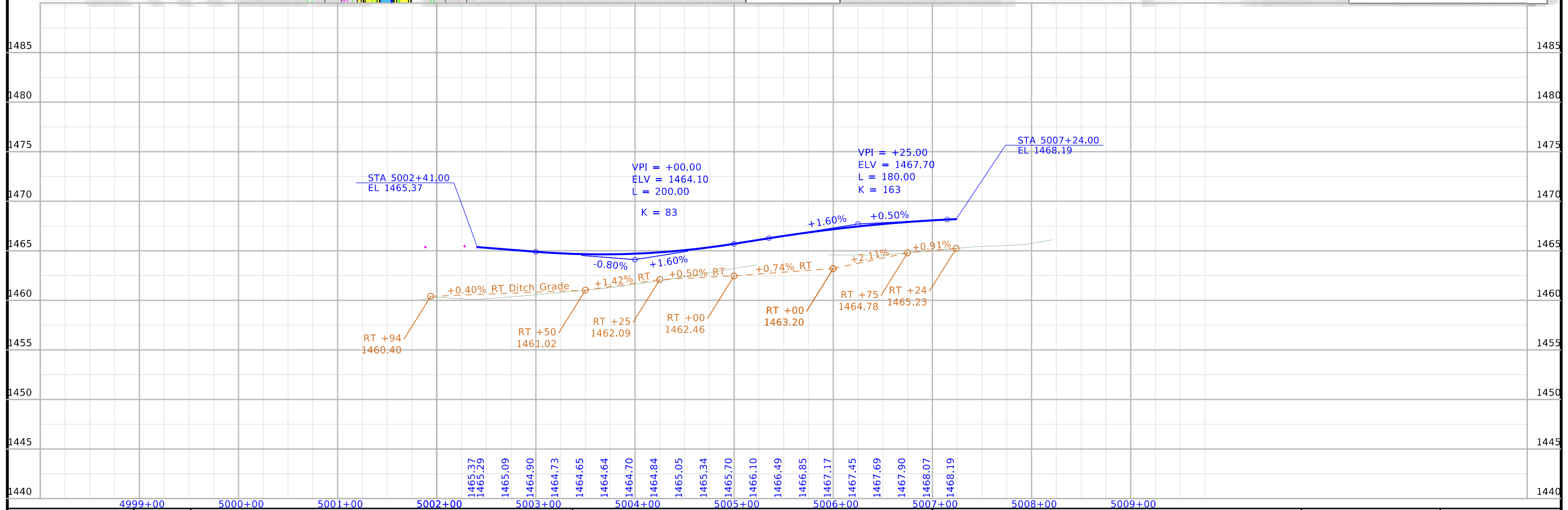
AMHERST TWP.  
T-92N R-42W  
SEC. 4



AMHERST TWP.  
T-92N R-42W  
SEC. 10

AMHERST TWP.  
T-92N R-42W  
SEC. 3

IA 143 NB

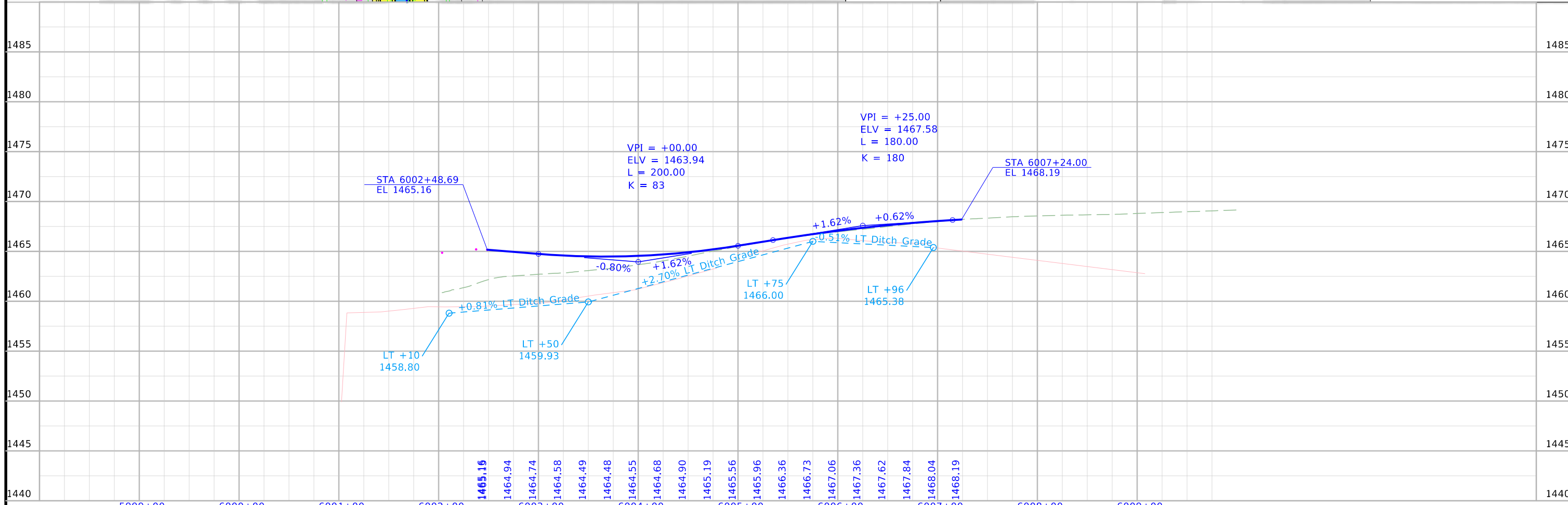
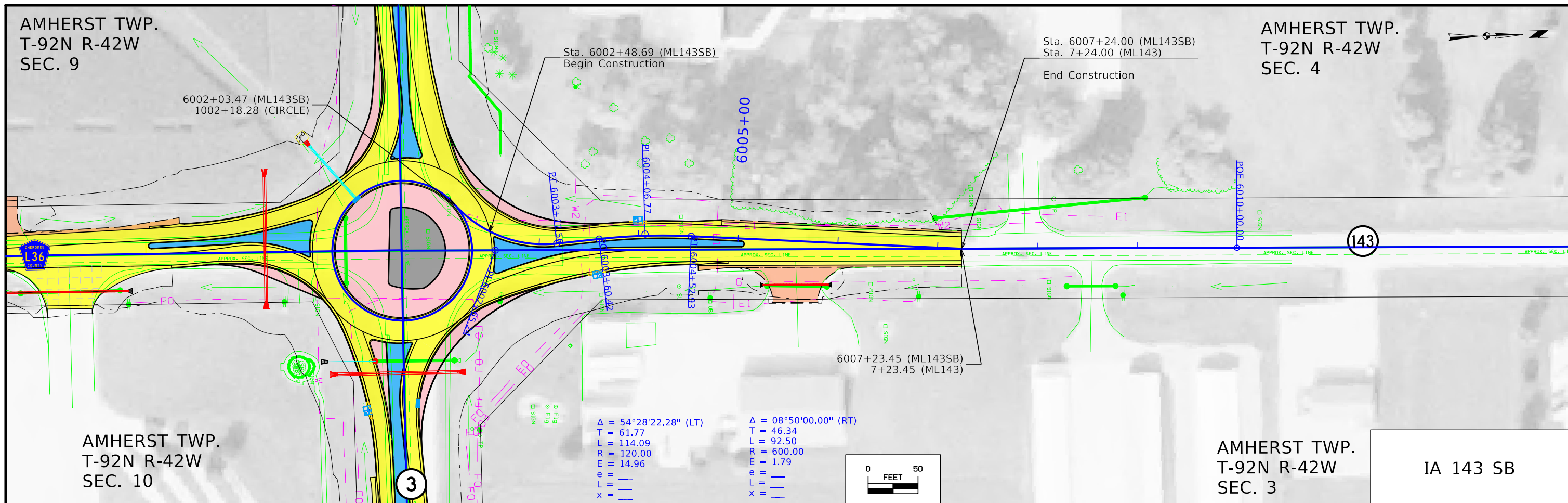
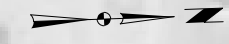


FILE NO.	ENGLISH	DESIGN TEAM Strum/Janus	Cherokee COUNTY	PROJECT NUMBER HSI PX-003-2(086)--3L-18	SHEET NUMBER D.8
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AMHERST TWP.  
T-92N R-42W  
SEC. 9

AMHERST TWP.  
T-92N R-42W  
SEC. 4



FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	D.9
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AMHERST TWP.  
T-92N R-42W  
SEC. 9

AMHERST TWP.  
T-92N R-42W  
SEC. 4

Golf Course Rd

Eagle Ave

2145+00

2150+00

2155+00

2158+06.37 (SRL36)  
158+38.99 (ML003)

Sta. 2152+12.00 (SRL36)  
Begin Construction

Sta. 2157+16.98 (SRL36)  
End Construction

+07 Proposed  
type "D" Entrance

18"x100'  
C.M.P.  
Remove  
Proposed 24"  
uncl. Entrance pipe

+73 Proposed  
type "B" Entrance

+ Existing  
type "B" Entrance  
CLOSE

Sta. 2149+02.0  
2'x2'x62' RCB  
D.A.=PART OF 41 A-F  
U.A.C.  
Sta. 2148+86.2  
30"x57' RCP  
D.A.=PART OF 41 A-F  
U.A.C.

AMHERST TWP.  
T-92N R-42W  
SEC. 10

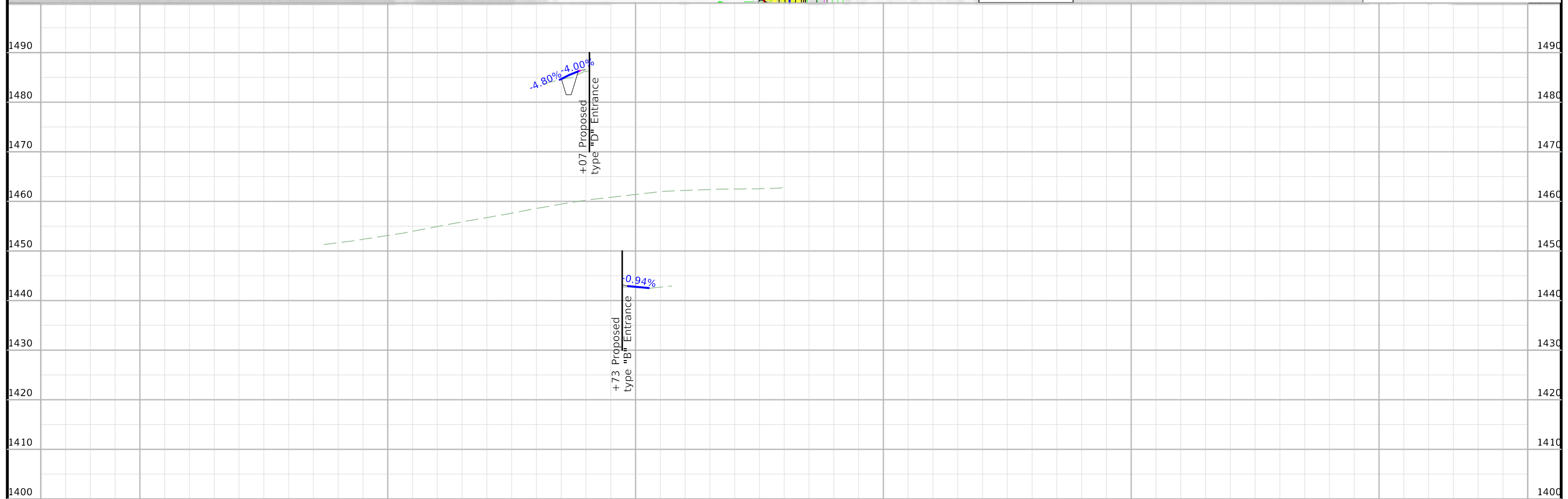
Sta. 2157+50.4  
24"x65' RCP  
D.A.=22 A-F  
Remove

Sta. 2156+70.00  
Install 30" x 128' RCP (Trenched)  
F.L.= Lt. 1454.28  
Rt. 1457.56



AMHERST TWP.  
T-92N R-42W  
SEC. 3

L36

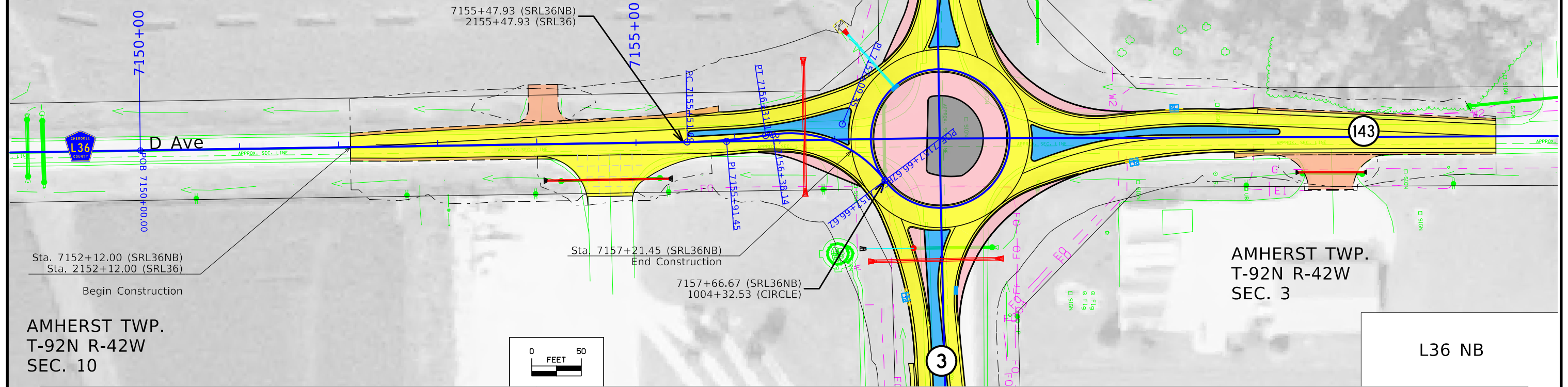


FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	E.1
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AMHERST TWP.  
T-92N R-42W  
SEC. 9

$\Delta = 07^{\circ}35'00.00''$  (LT)     $\Delta = 61^{\circ}22'02.36''$  (RT)  
T = 39.76                      T = 71.20  
L = 79.41                      L = 128.53  
R = 600.00                    R = 120.00  
E = 1.32                        E = 19.54  
e = —                         e = —  
L = —                         L = —  
x = —                         x = —

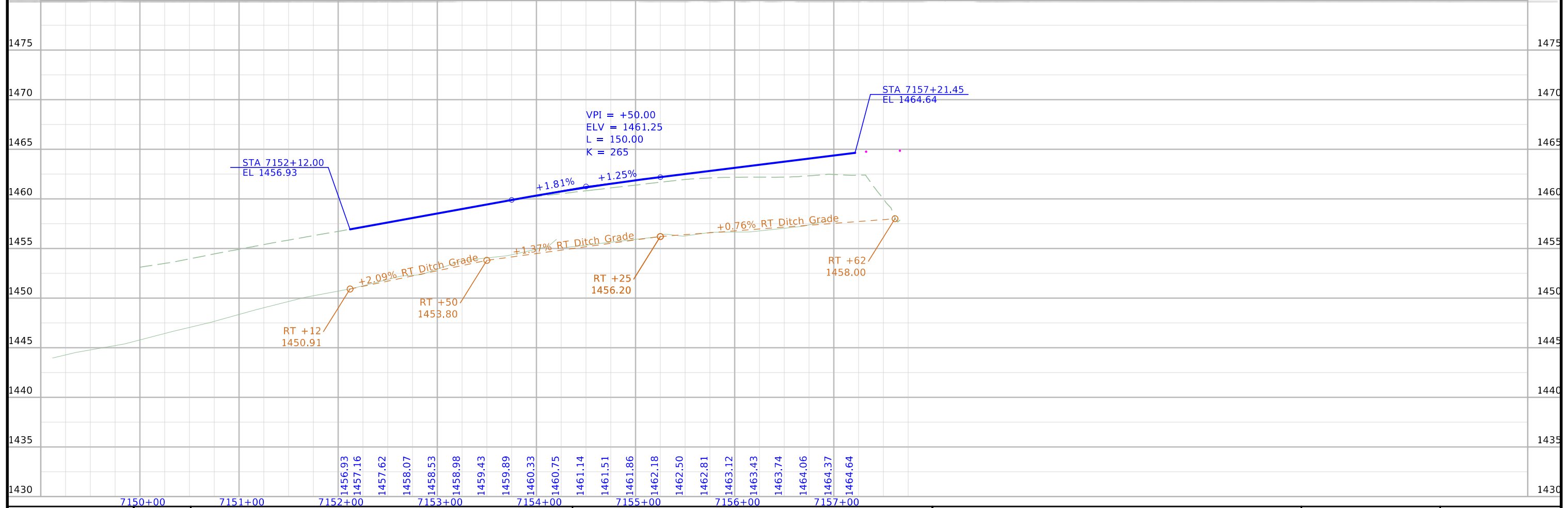
AMHERST TWP.  
T-92N R-42W  
SEC. 4



AMHERST TWP.  
T-92N R-42W  
SEC. 10

AMHERST TWP.  
T-92N R-42W  
SEC. 3

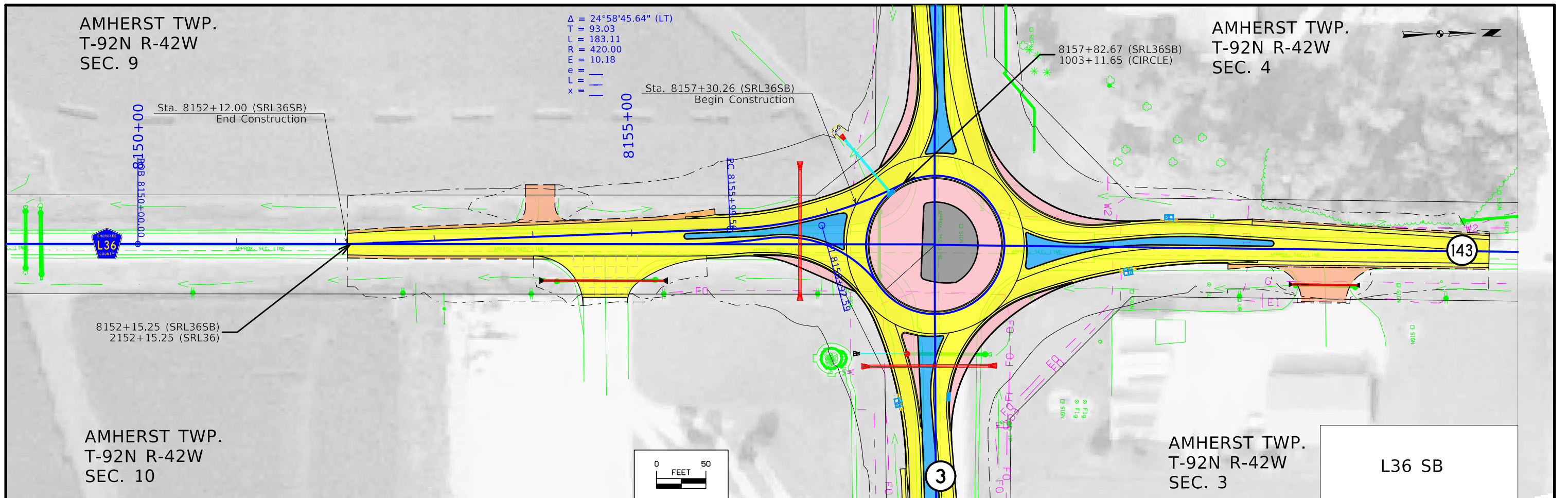
L36 NB



AMHERST TWP.  
T-92N R-42W  
SEC. 9

AMHERST TWP.  
T-92N R-42W  
SEC. 4

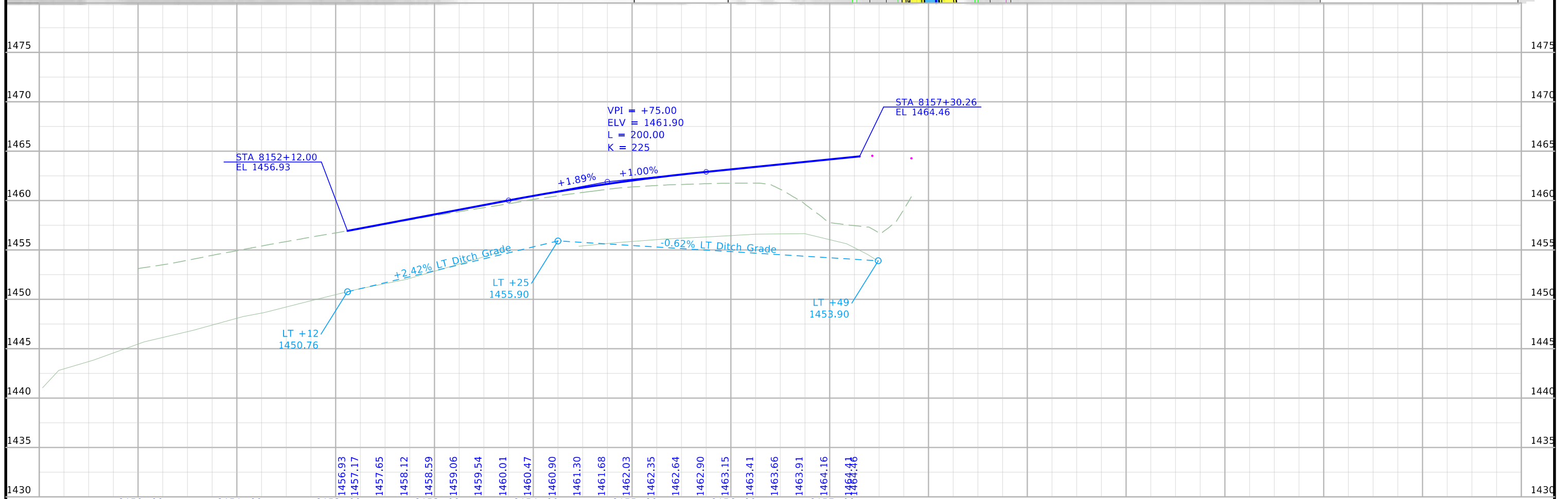
$\Delta = 24^\circ 58' 45.64''$  (LT)  
T = 93.03  
L = 183.11  
R = 420.00  
E = 10.18  
e =  
L =  
x =



AMHERST TWP.  
T-92N R-42W  
SEC. 10

AMHERST TWP.  
T-92N R-42W  
SEC. 3

L36 SB



FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	E.3
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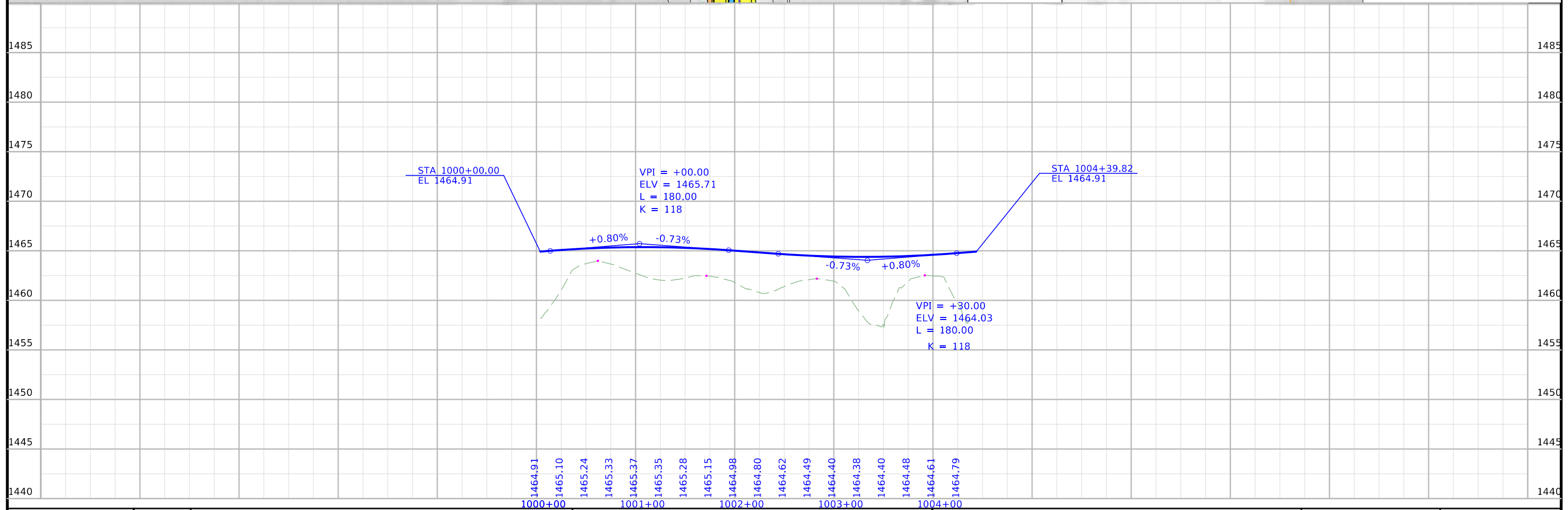
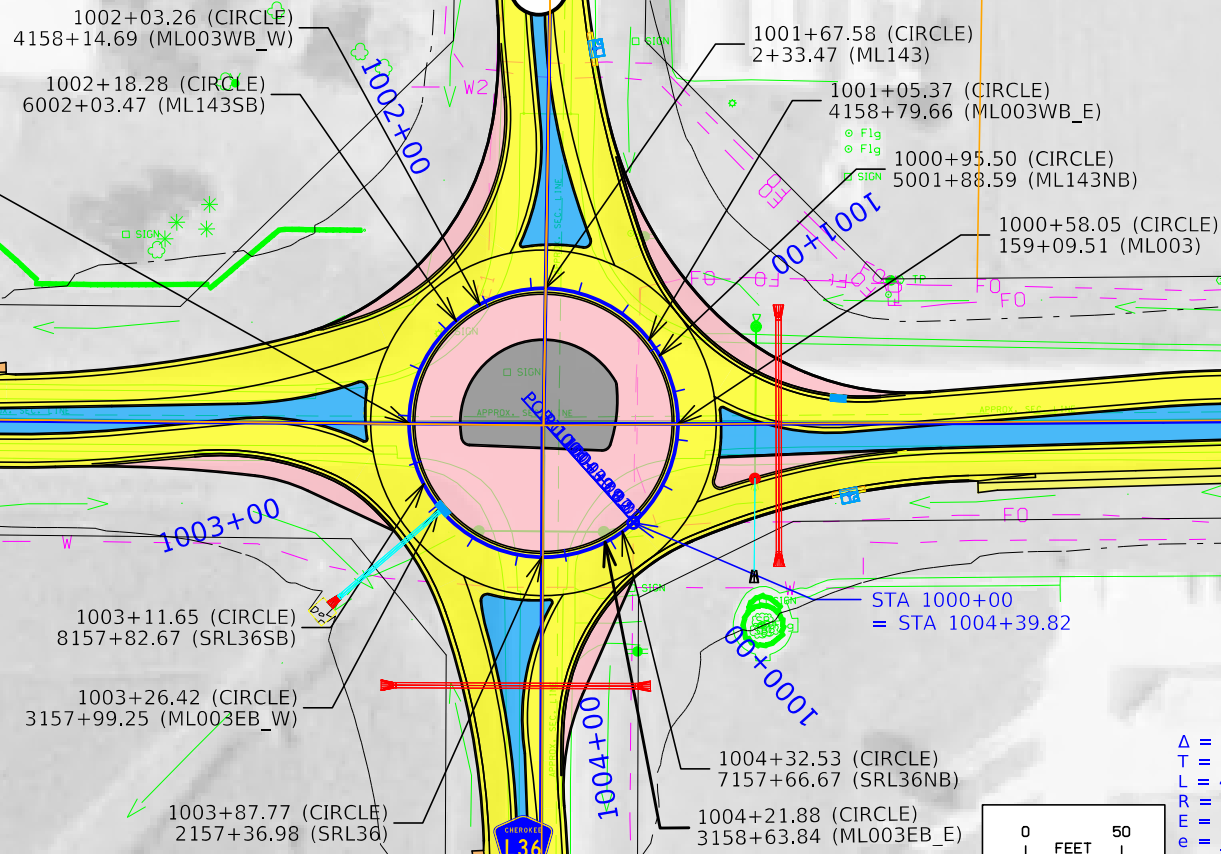
AMHERST TWP.  
T-92N R-42W  
SEC. 4

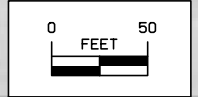
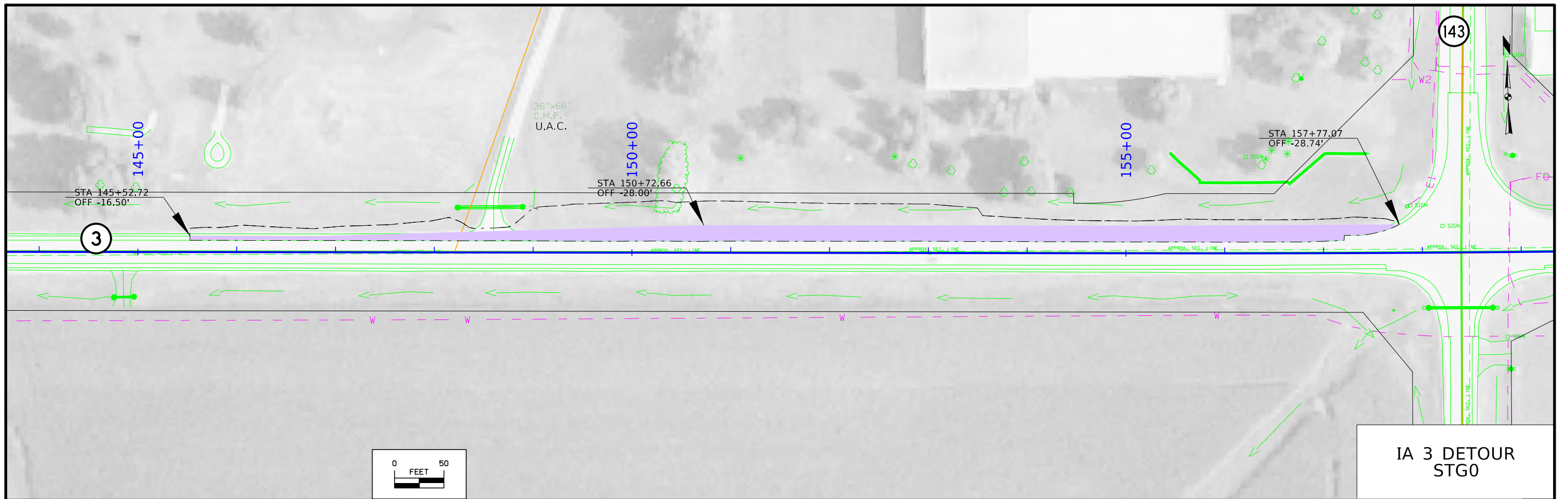
AMHERST TWP.  
T-92N R-42W  
SEC. 3

AMHERST TWP.  
T-92N R-42W  
SEC. 9

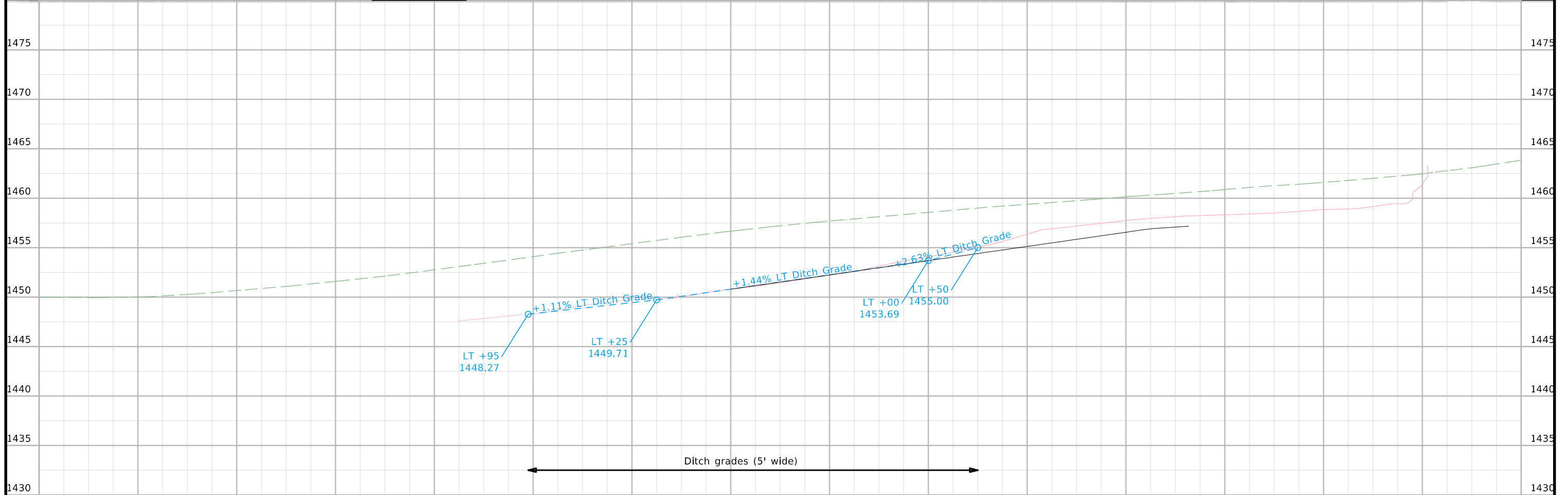
AMHERST TWP.  
T-92N R-42W  
SEC. 10

ROUNDAABOUT  
(RACIRCLE)

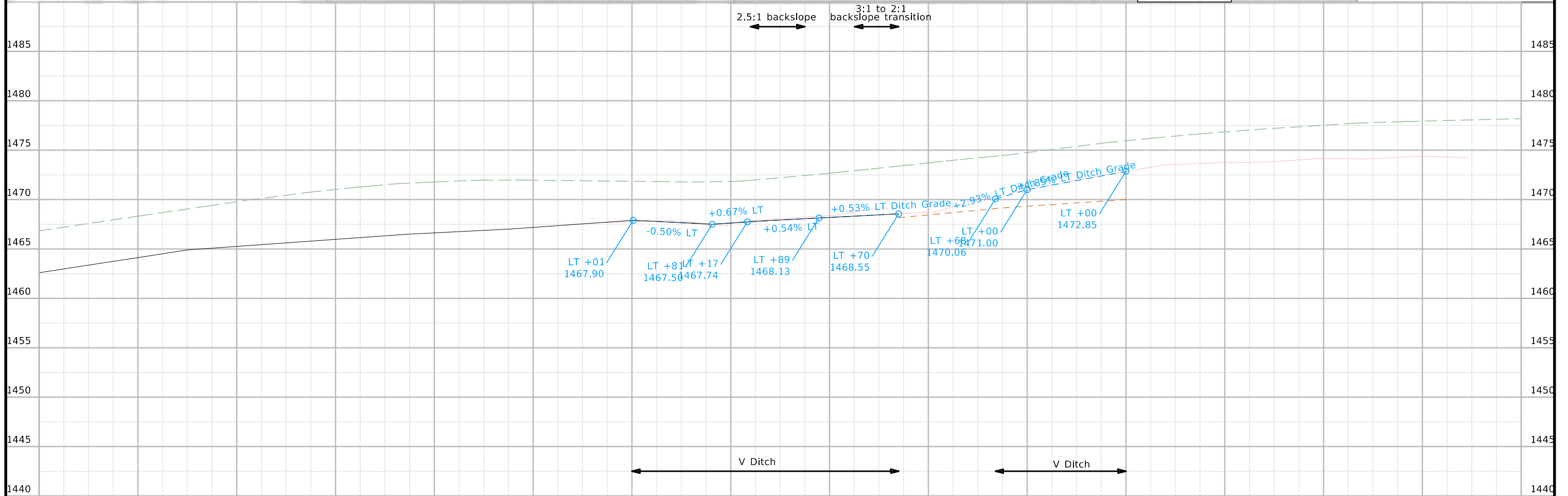
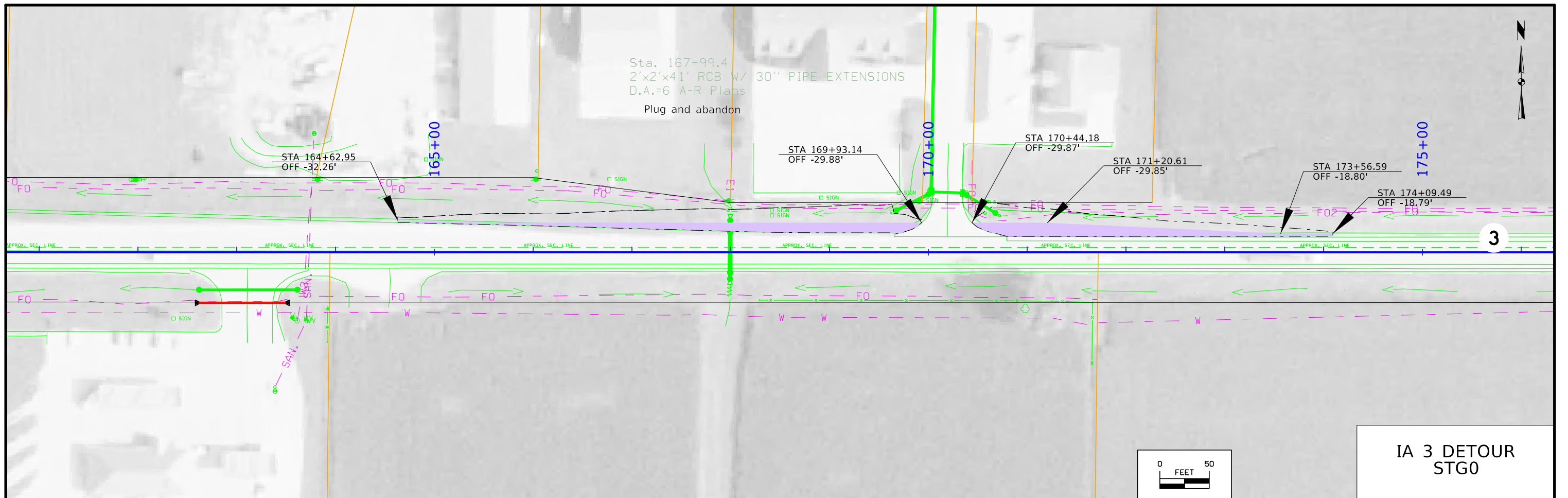




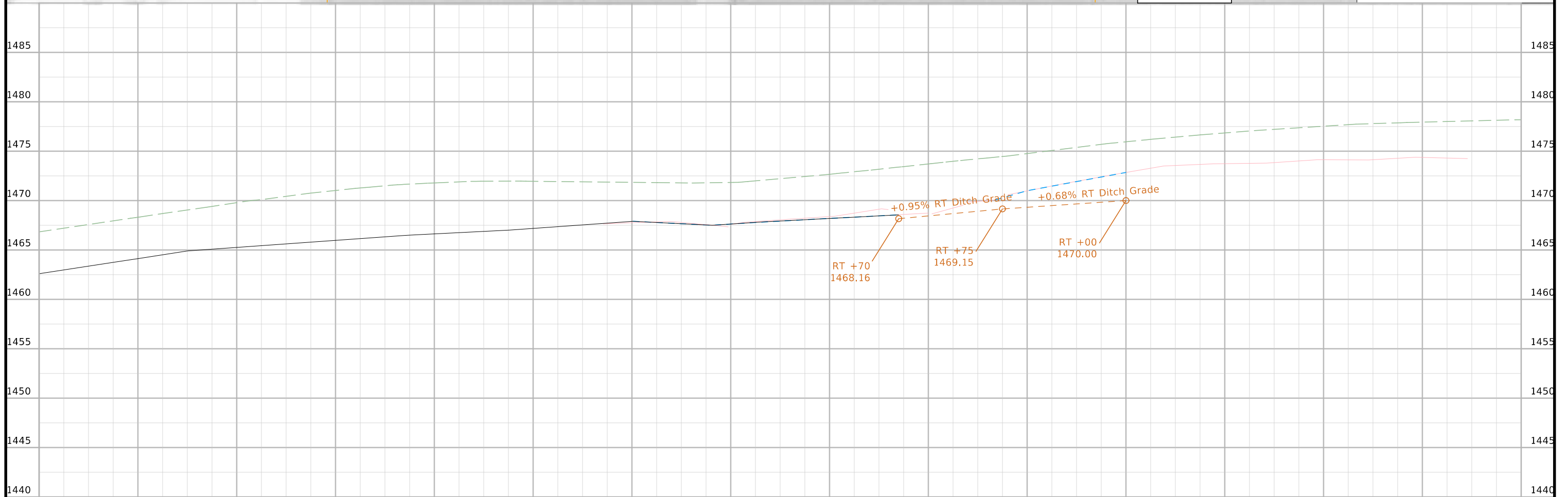
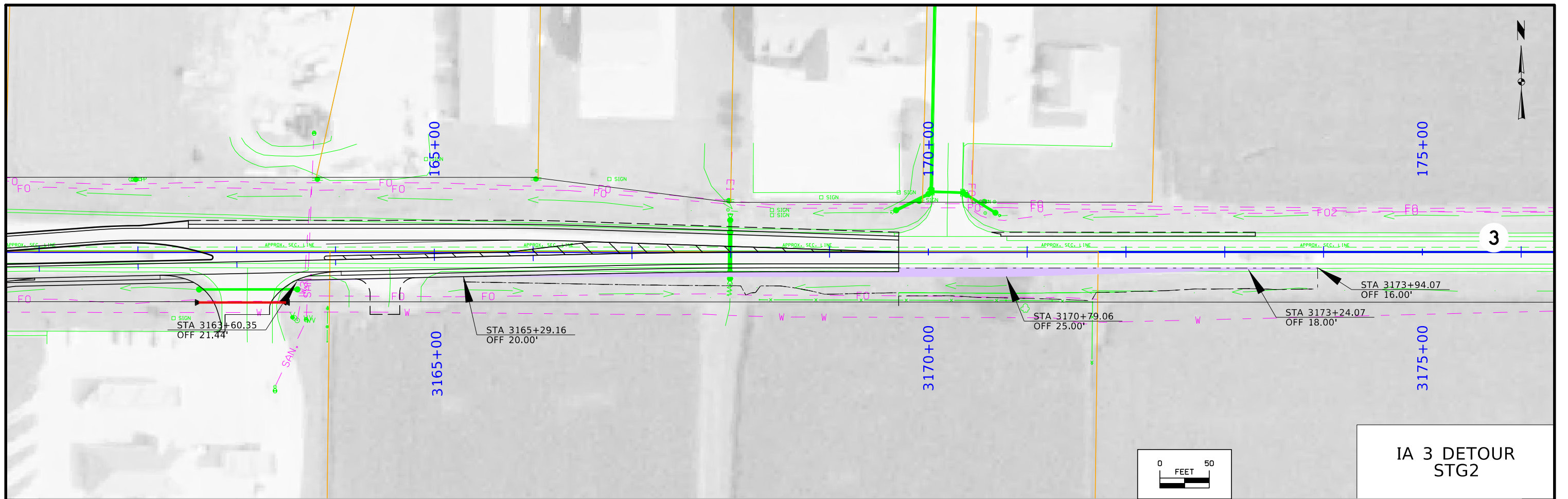
IA 3 DETOUR  
STG0



144+00	145+00	146+00	147+00	148+00	149+00	150+00	151+00	152+00	153+00	154+00	155+00	156+00	157+00	158+00
FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus			Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18				SHEET NUMBER	F.1	



FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus	Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18	SHEET NUMBER	F.2
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161+00	162+00	163+00	164+00	165+00	166+00	167+00	168+00	169+00	170+00	171+00	172+00	173+00	174+00	175+00
FILE NO.	ENGLISH	DESIGN TEAM	Strum/Janus				Cherokee COUNTY	PROJECT NUMBER	HSIPX-003-2(086)--3L-18				SHEET NUMBER	F.3





**SPIRAL OR CIRCULAR CURVE DATA**

Name	Location	ΔSCS	Horizontal Alignment Data												Remarks			
			Spiral Data						Curve Data									
			θS	Ls	Ts	Es	Xc	Yc	L.T.	S.T.	ΔC	T	L	R		E		
C1	ML003												01°03'19.338"	303.524	607.030	32955	1.398	
C1	ML003EB_W												01°37'54.812"	21.363	42.723	1500	0.152	
C2	ML003EB_W												07°35'10.054"	39.779	79.442	600	1.317	
C3	ML003EB_W												56°13'30.696"	64.108	117.758	120	16.051	
C1	ML003EB_E												25°34'21.051"	95.316	187.456	420	10.680	
C2	ML003EB_E												01°13'50.972"	98.821	197.634	9200	0.531	
C1	ML003WB_W												01°37'28.968"	21.269	42.535	1500	0.151	
C2	ML003WB_W												27°17'33.220"	101.968	200.065	420	12.201	
C1	ML003WB_E												56°26'01.811"	64.389	118.195	120	16.184	
C2	ML003WB_E												04°10'33.737"	21.875	43.731	600	0.399	
C3	ML003WB_E												01°54'32.949"	33.324	66.642	2000	0.278	
C1	ML143NB												31°00'09.789"	116.487	227.262	420	15.855	
C1	ML143SB												54°28'22.275"	61.768	114.088	120	14.964	
C2	ML143SB												08°49'59.998"	46.343	92.502	600	1.787	
C1	SRL36NB												07°35'00.000"	39.764	79.412	600	1.316	
C2	SRL36NB												61°22'02.356"	71.205	128.527	120	19.535	
C1	SRL36SB												24°58'45.641"	93.032	183.108	420	10.180	
C1	CIRCLE												360°00'00.000"		439.823	70		
C1	RETA												75°09'16.871"	92.337	157.404	120	31.414	
C2	RETA												20°22'10.095"	104.199	206.198	580	9.286	
C1	RETB												77°17'24.914"	87.954	148.387	110	30.840	
C2	RETB												16°45'54.183"	91.360	181.415	620	6.695	
C1	RETC												29°16'16.210"	36.560	71.523	140	4.695	
C2	RETC												18°25'01.508"	12.159	24.108	75	0.979	
C3	RETC												28°15'07.586"	35.233	69.033	140	4.365	
C4	RETC												17°21'33.555"	61.063	121.191	400	4.634	
C1	RETD												08°25'28.648"	22.095	44.111	300	0.813	
C28	RETD												63°37'01.518"	68.226	122.136	110	19.440	
C2	RETD												21°35'26.169"	76.270	150.731	400	7.206	

## Survey Information

### SURVEY INDEX

County: Cherokee  
PIN: 22-18-003-010  
Project Number: HSIPX-003-2(086)--3L-18  
Location: IA 143 Intersection in Marcus  
Type of Work: Roundabout  
Project Directory: 1800301022

PROJECT DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 ADJUSTMENT)  
COORDINATE SYSTEM: IOWA REGIONAL COORDINATE SYSTEM ZONE 04  
(U.S. SURVEY FOOT)  
VERTICAL DATUM: NAVD88  
GEOID MODEL: 2018u2

### Alignment Information

Alignment information is provided by the District 3 Land Survey Office.

### Survey Personnel

Jason Arn – Survey Party Chief  
Robert Fredrickson – Assistant Survey Party Chief

### Date(s) of Survey

Begin Date 09/16/2022  
End Date 10/20/2022

### General Information

This survey is for the reconstruction of IA Hwy 3 and IA Hwy 143 intersection at Marcus for a potential roundabout. This project is a Full Field DTM survey.

### Utility Information

For logging data and other utility details see Utility Survey and Ownership Report in the Utility folder of the PrelimSurvey project directory.

### Project Control

Coordinates were determined for primary project control points by conducting two concurrent six-hour static observations. Post processing is constrained to nearby Iowa Real Time Network reference stations. An additional primary control point was placed in the project corridor using a GNSS Base-Rover setup relative to Pt. 180030466 and Pt. 180030471. Three observations with a minimum of 2-hours between were collected and used in a weighted average. For additional details of the control survey, contact the Preliminary Survey department.

## CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment) - Iowa RCS Zone 04 (U.S. Survey Foot)

VERT. DATUM: NAVD88 - Geoid Model: 2018u2

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

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING  
 HORIZ. DATUM: NAD83(2011) for EPOCH 2010.00 (IaRTN 2019 Adjustment)  
 Ia. Regional Coordinate System Zone 04 (U.S. Survey Foot)  
 VERT. DATUM: NAVD88  
 Geoid Model: 2018u2

Point Name	Northing	Easting	Elevation	Feature Definition-Description
180030466	8701583.38	14237972.06	1461.61	CP 180030466 SET FENO MONUMENT 0.5 MI WEST OF HWY 3 AND HWY 143 INTERSECTION IN THE SOUTH DITCH WEST SIDE OF FIELD ENTRANCE
180030471	8701511.93	14240564.28	1457.79	CP 180030471 FND CONC MONUMENT IN GOOD CONDITION IN SW QUAD OF HWY 3 AND HWY 143 INTERSECTION
181430003	8702943.16	14240724.54	1473.63	CP 181430003 FND CONC MONUMENT IN GOOD CONDITION IN NE QUAD OF HWY 143 AND EAGLE AVE INTERSECTION IN MARCUS

NO ACCESS RIGHTS ARE TO BE ACQUIRED ON THIS PROJECT.

AMHERST TWP.  
T-92N R-42W  
SEC. 4

STAPLES CONTRACT & COMMERCIAL, INC

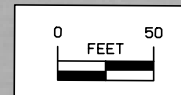
PATRICK J & NORENE A BUNT  
JOINT REVOCABLE TRUST

JOHN AND JUANITA HENSON  
REVOCABLE TRUST

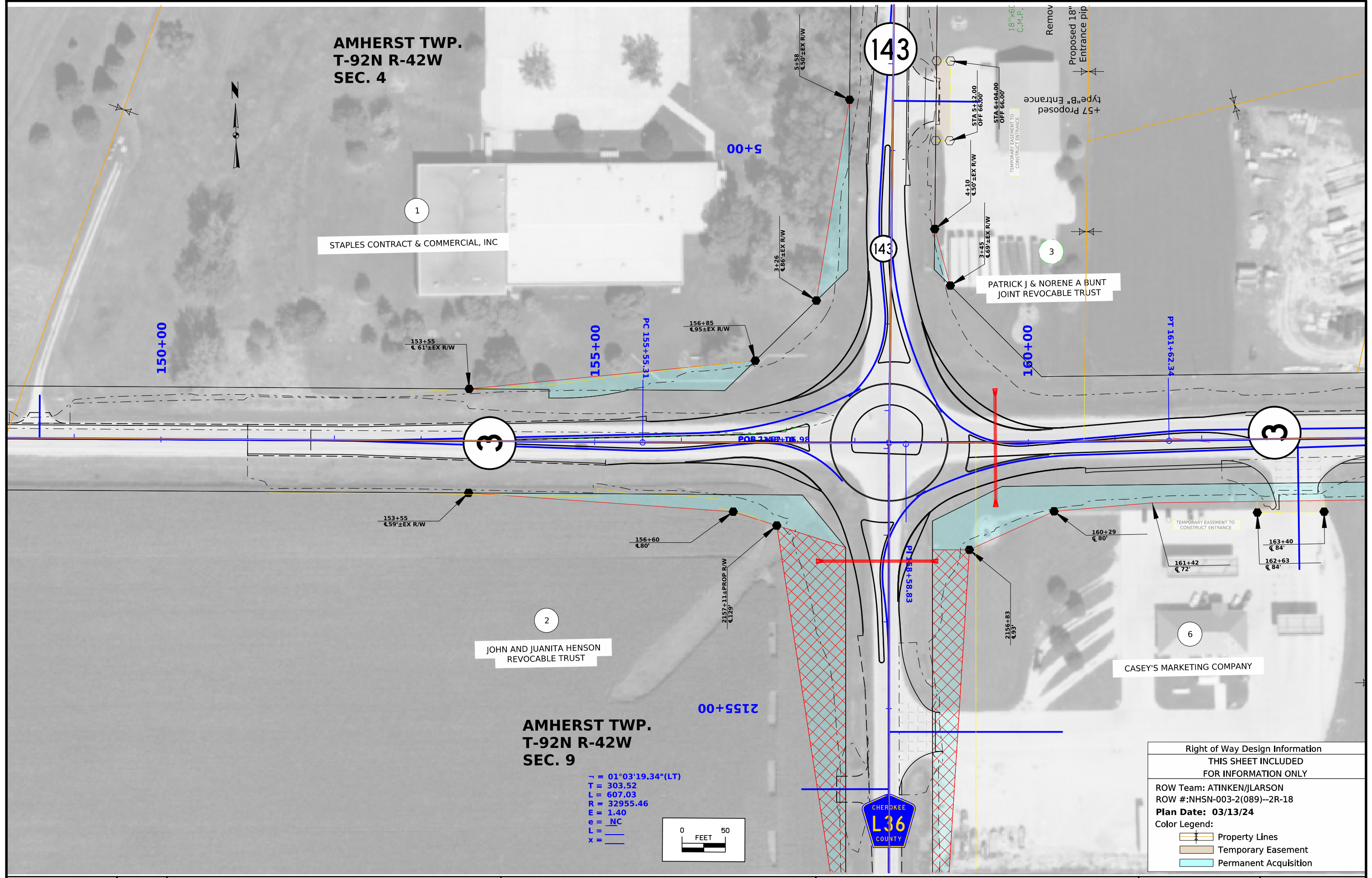
CASEY'S MARKETING COMPANY

AMHERST TWP.  
T-92N R-42W  
SEC. 9

$\Delta = 01^{\circ}03'19.34''(LT)$   
 $T = 303.52$   
 $L = 607.03$   
 $R = 32955.46$   
 $E = 1.40$   
 $e = \underline{NC}$   
 $L = \underline{\quad}$   
 $x = \underline{\quad}$



Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN/JLARSON	
ROW #: NHSN-003-2(089)--2R-18	
Plan Date: 03/13/24	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition



AMHERST TWP.  
T-92N R-42W  
SEC. 3



Sta. 167+99.4  
2'x2'x41' RCB W/ 30" PIPE EXTENSIONS  
D.A.=6 A-R Plans  
Plug and abandon

+19 Existing  
type "B" Entrance

U.A.C.

STA 164+62.95  
OFF -32.26

165+00

STA 169+93.14  
OFF -29.88

170+00

STA 170+44.18  
OFF -29.87  
18"x34'  
Conc. Pipe

STA 171+20.61  
OFF -29.85

STA 173+56.59  
OFF -18.80

175+00

STA 174+09.49  
OFF -18.79

3

163+94±P  
6' 71"  
+ 50 Proposed  
type "D" Entrance

7

MARY E. PETERSON

169+81  
51'± EX R/W

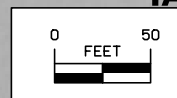
169+75  
73'

Sta. 167+99.4  
2'x2'x41' RCB W/ 30" PIPE EXTENSIONS  
D.A.=6 A-R Plans

Plug and abandon in STG0  
Remove in later stages

AMHERST TWP.  
T-92N R-42W  
SEC. 10

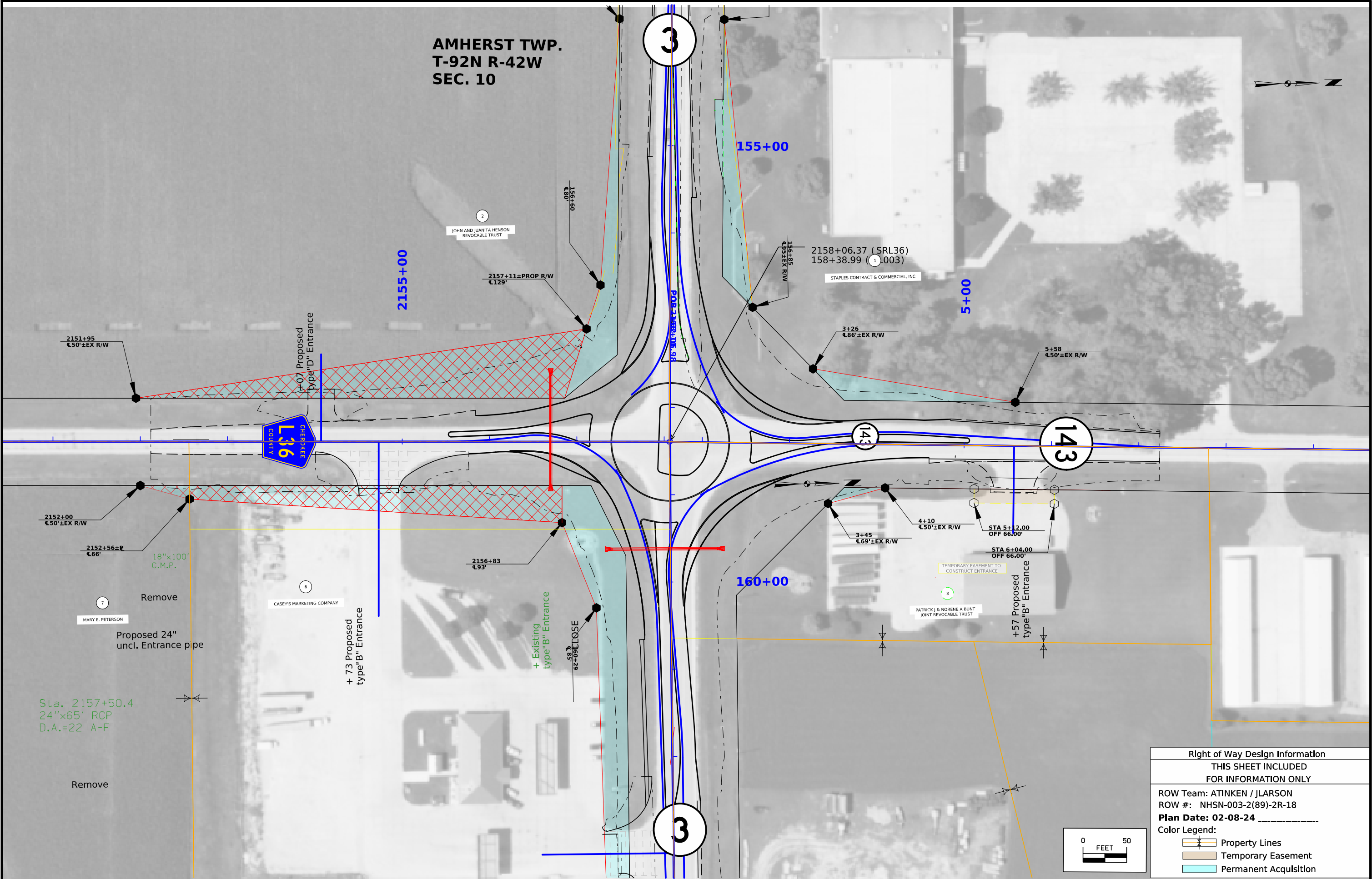
IA 3



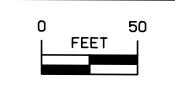
Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN /JLARSON	
NHSN-003-2(089)--2R-18	
Plan Date: 03/13/24	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

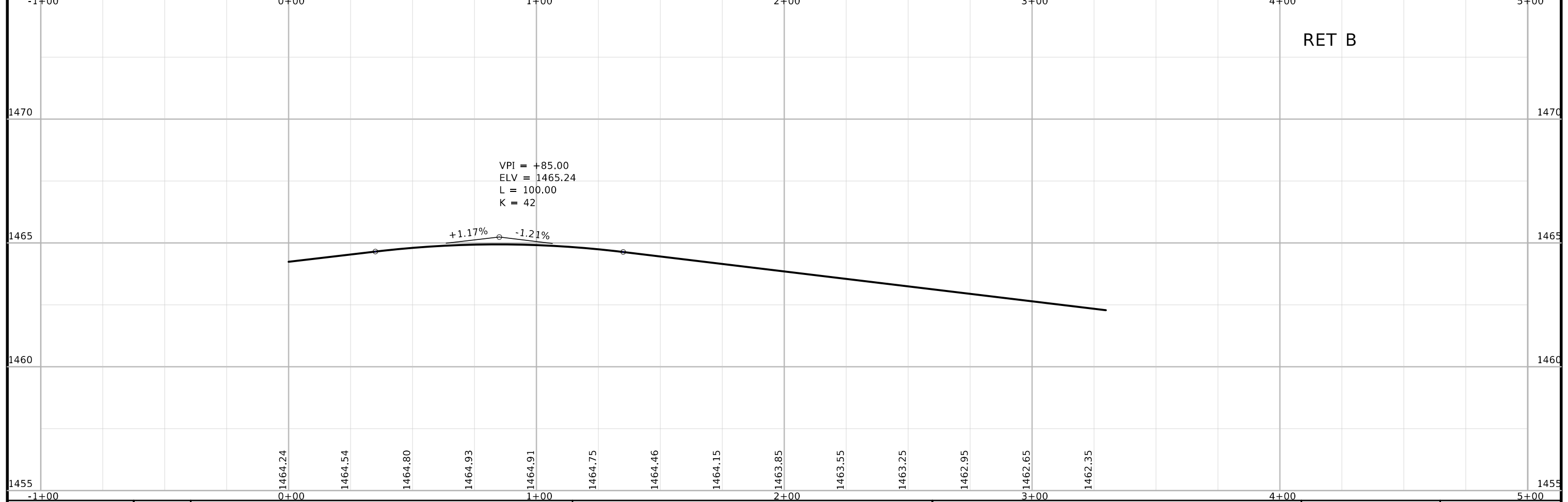
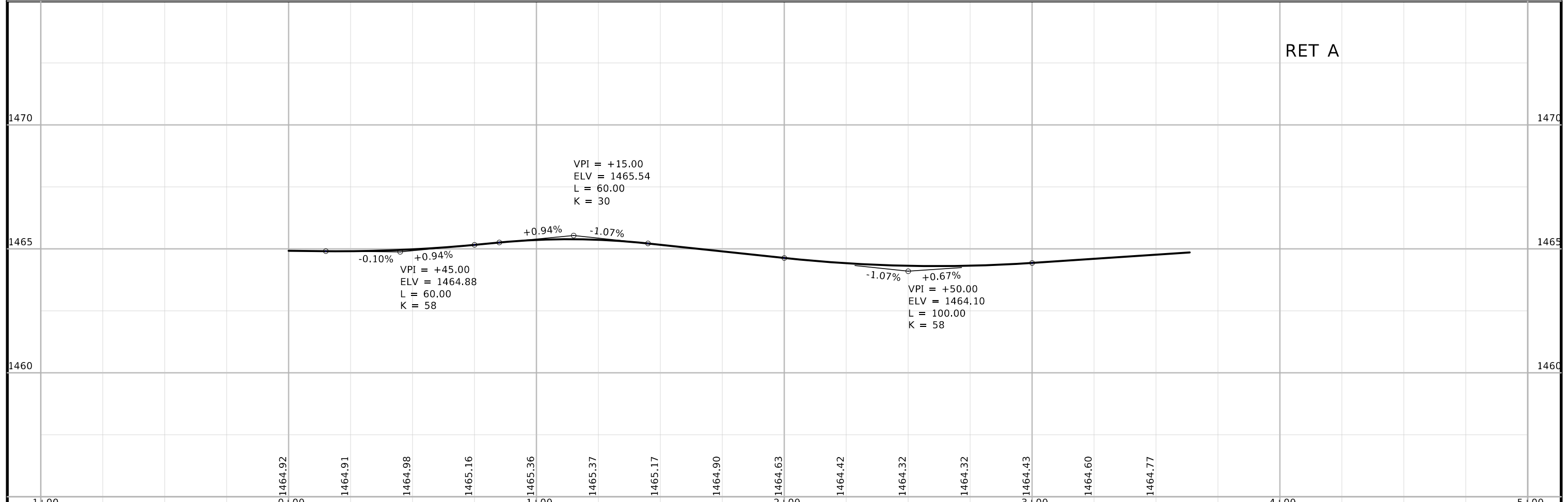


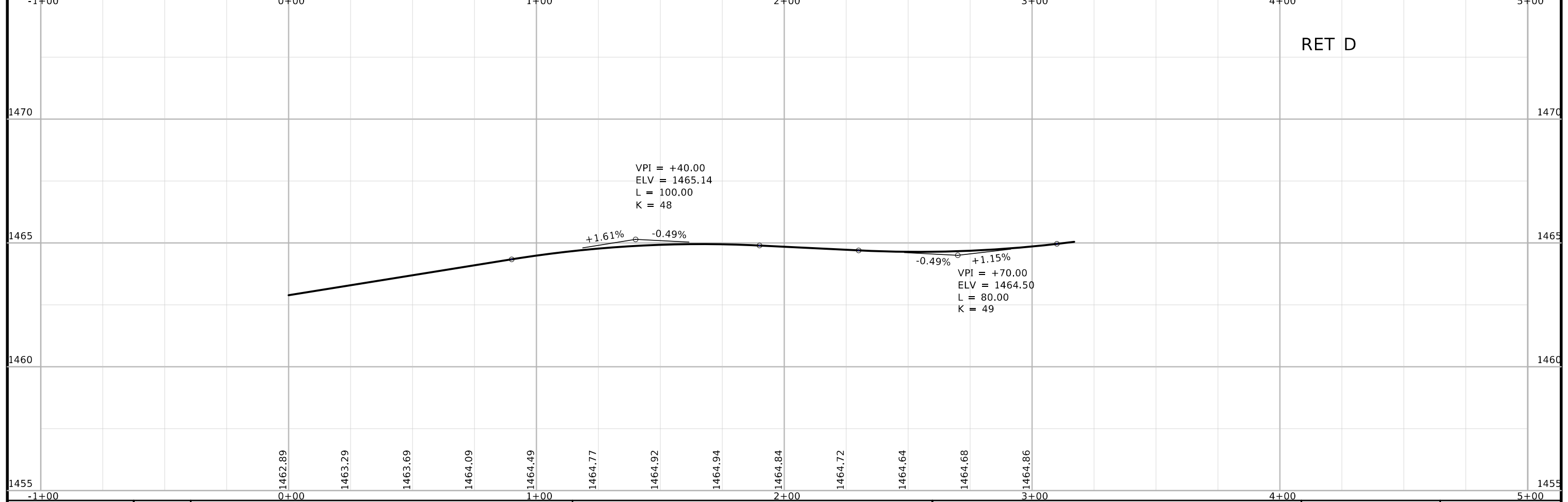
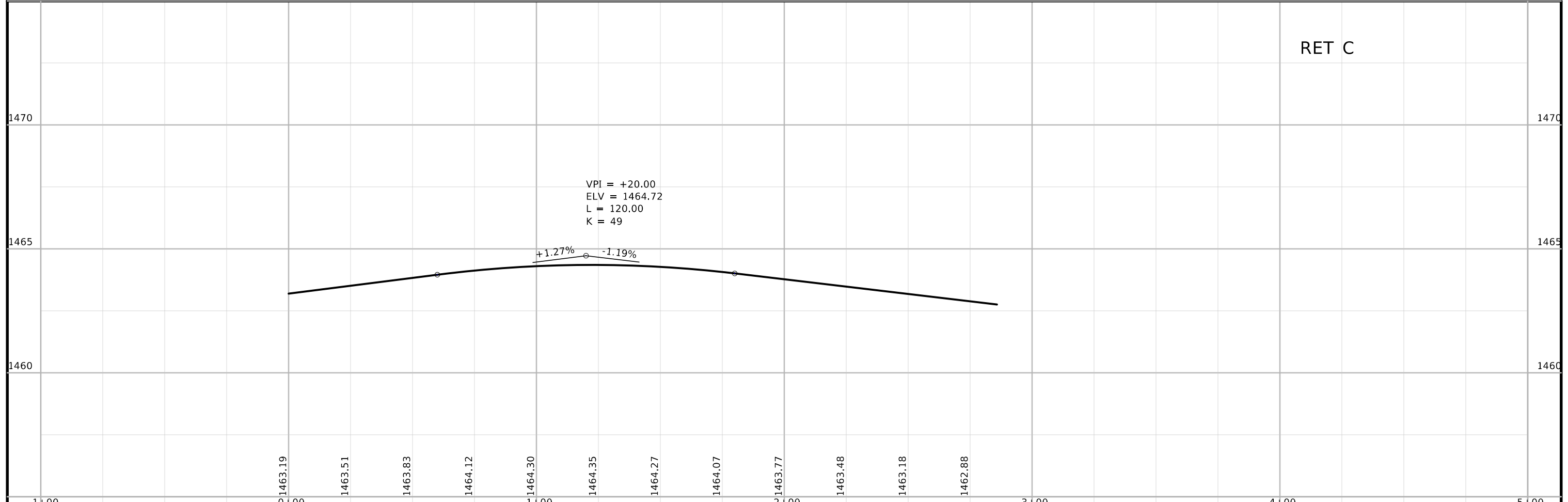
**AMHERST TWP.  
T-92N R-42W  
SEC. 10**

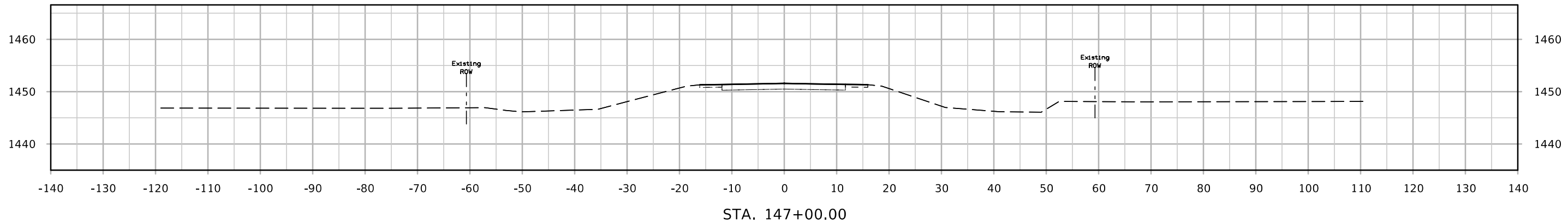
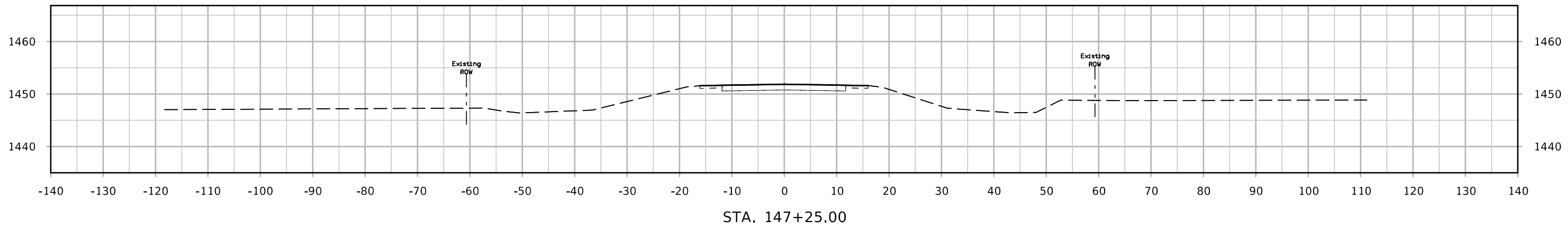
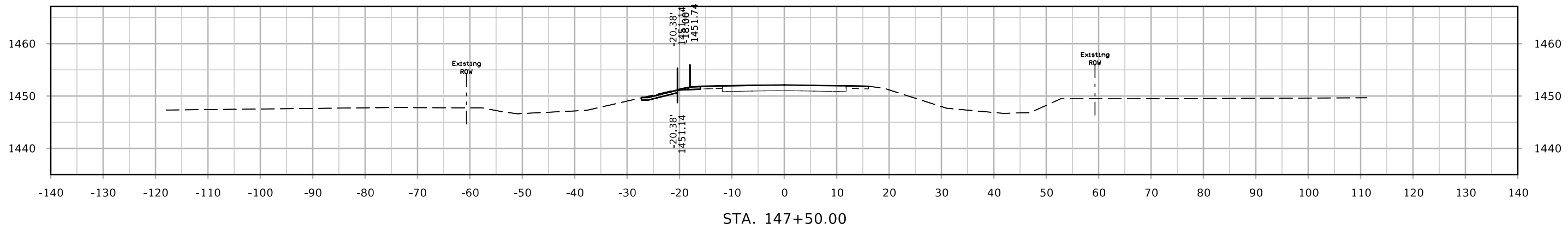


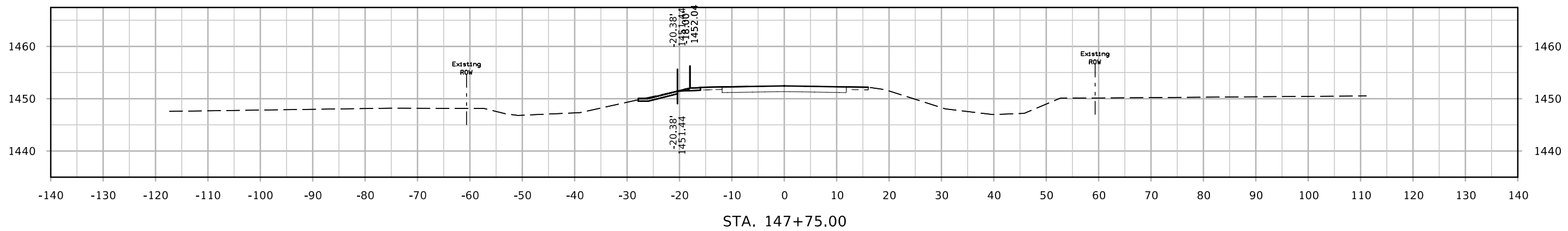
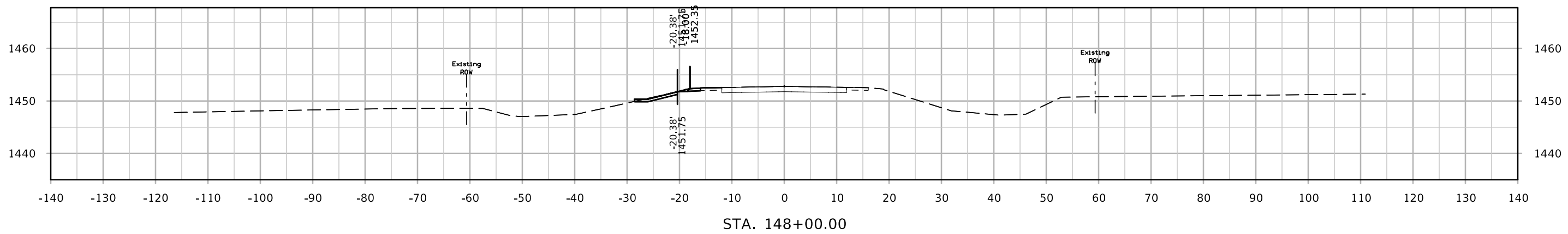
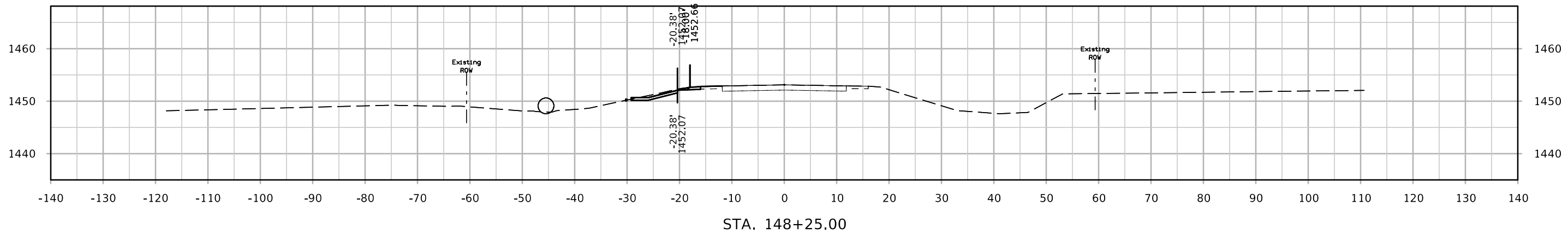
Right of Way Design Information	
THIS SHEET INCLUDED FOR INFORMATION ONLY	
ROW Team: ATINKEN / JLARSON	
ROW #: NHSN-003-2(89)-2R-18	
Plan Date: 02-08-24	
Color Legend:	
	Property Lines
	Temporary Easement
	Permanent Acquisition

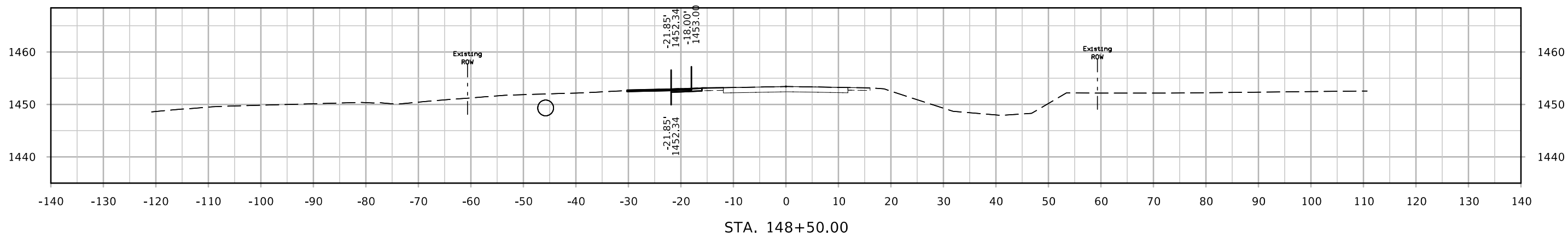
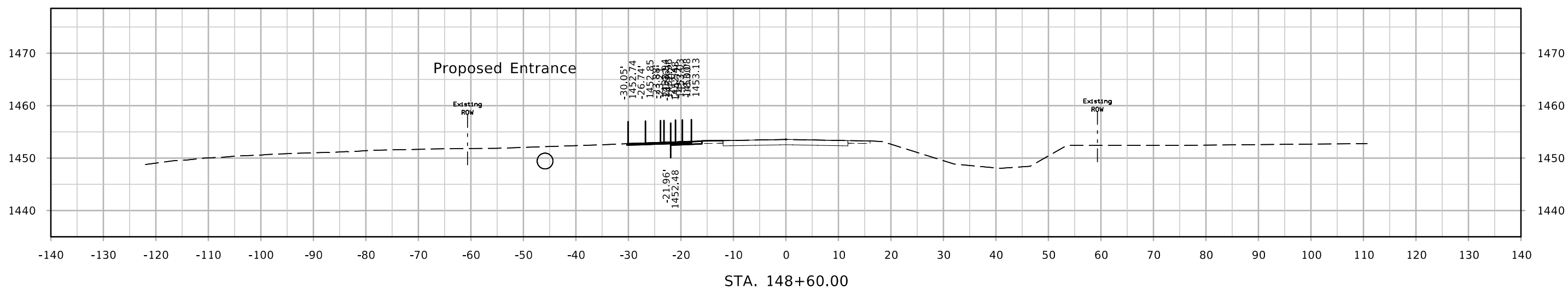
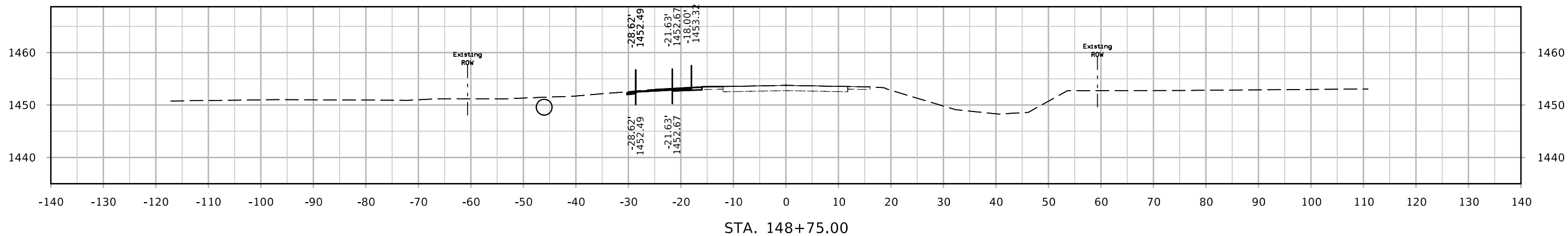


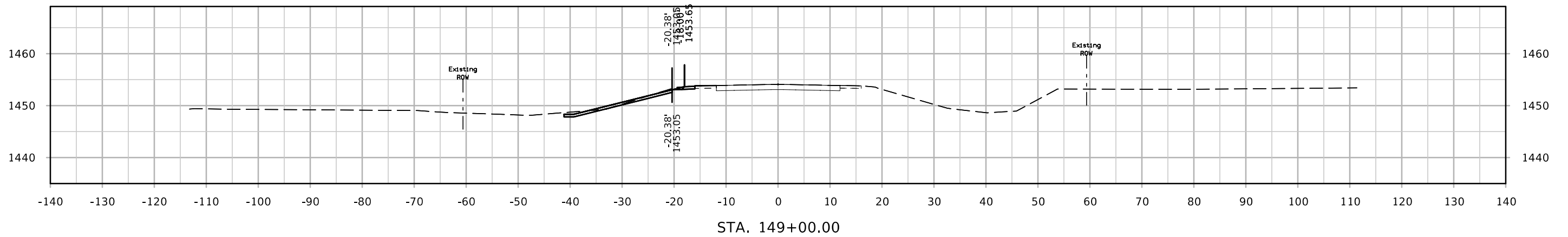
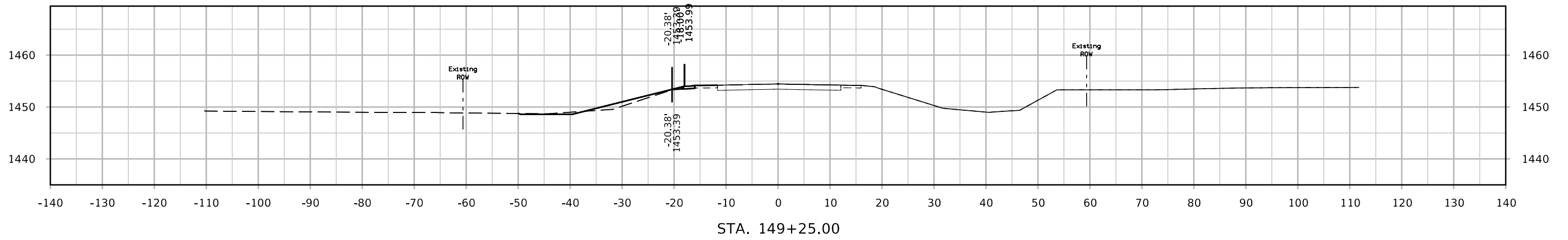
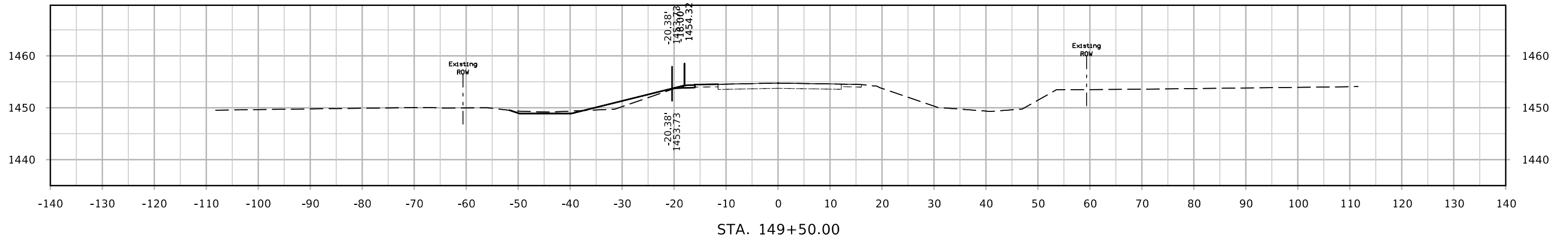


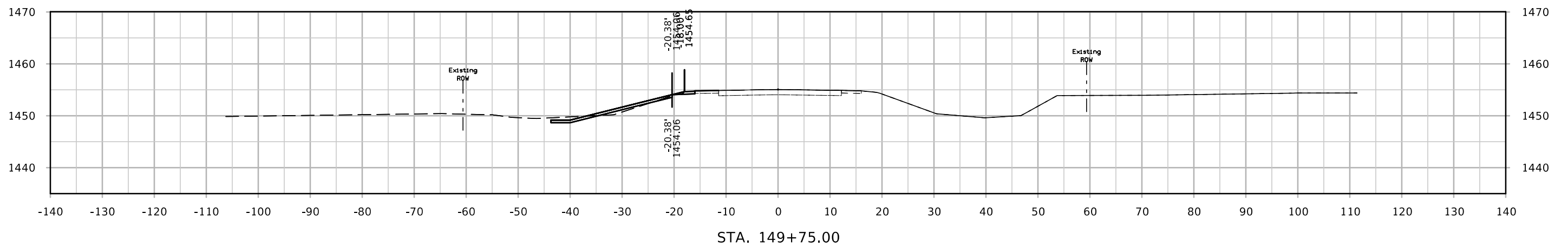
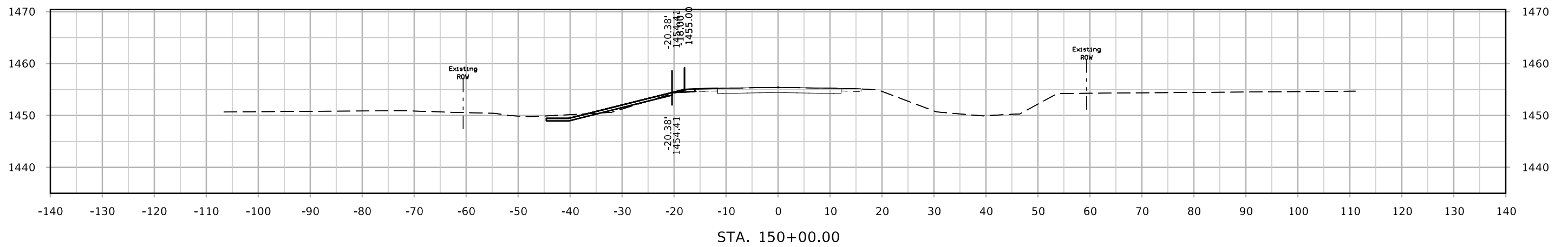
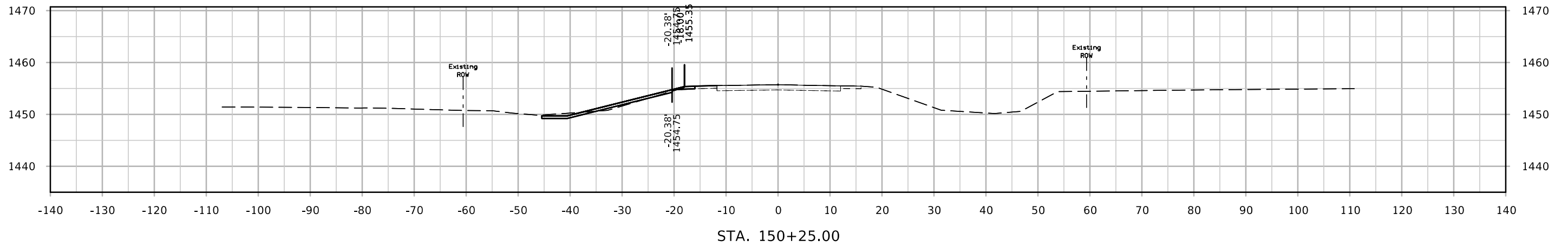




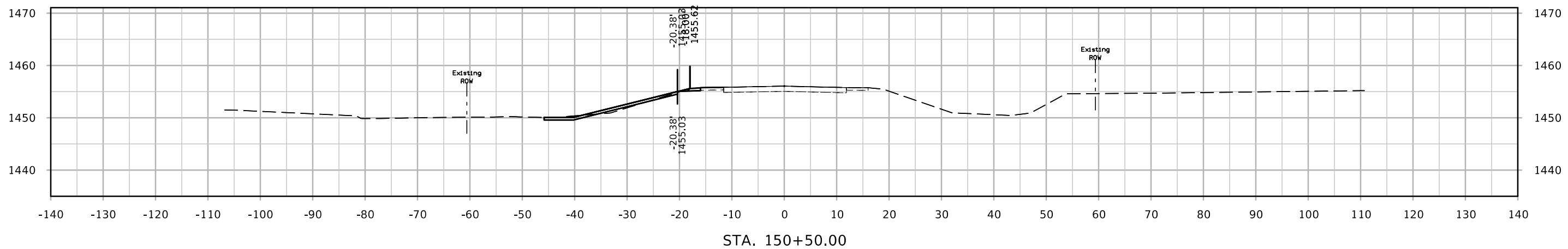
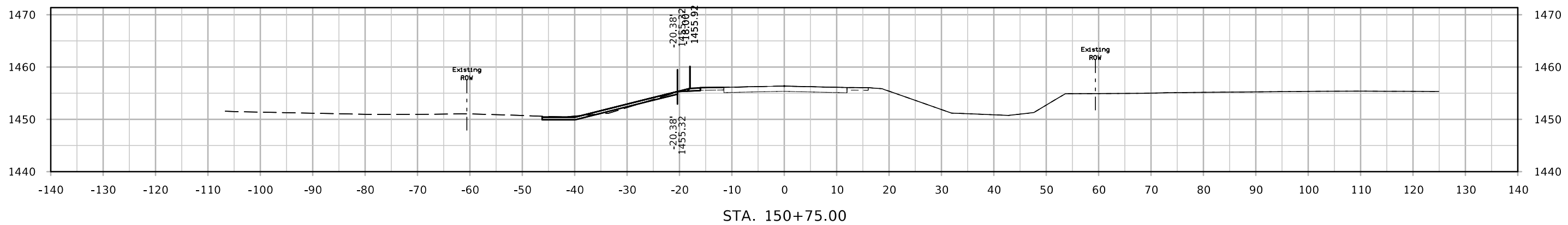
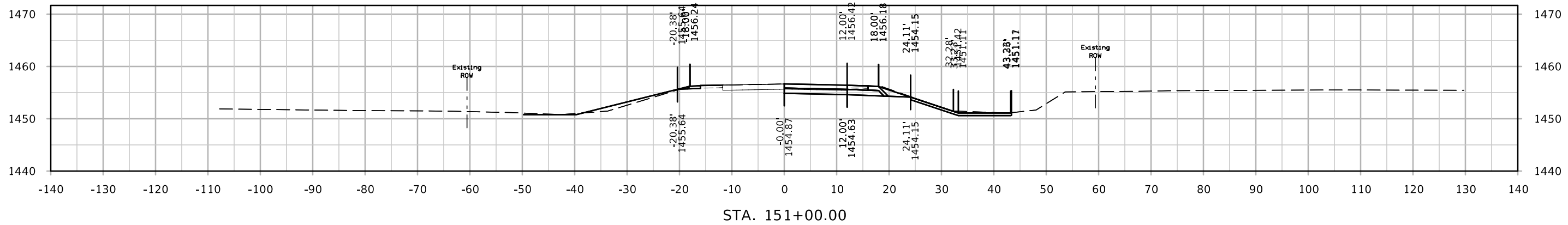


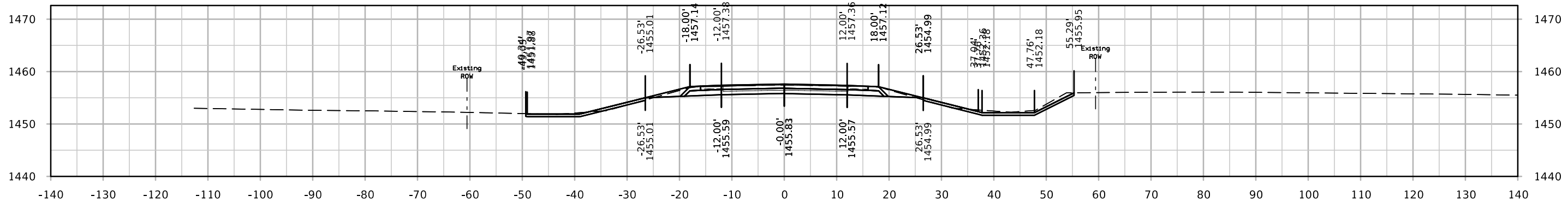




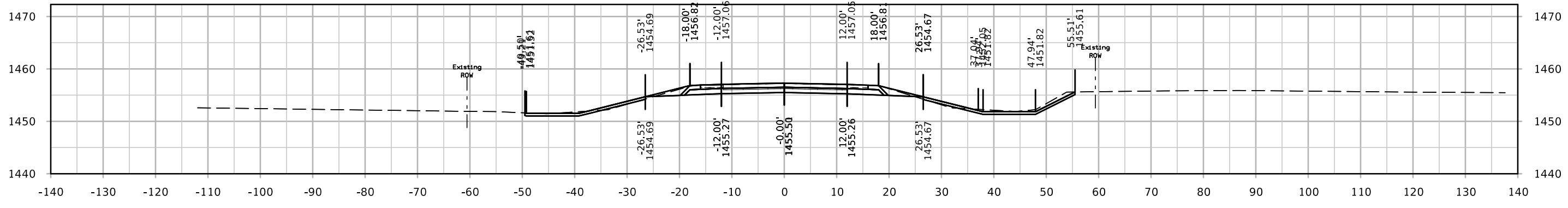




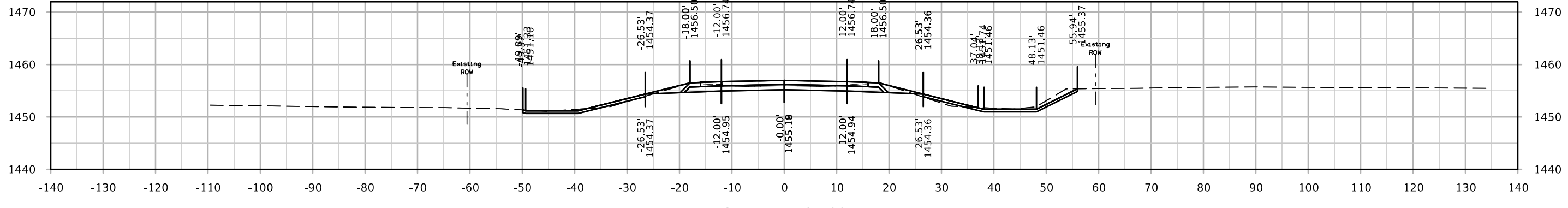




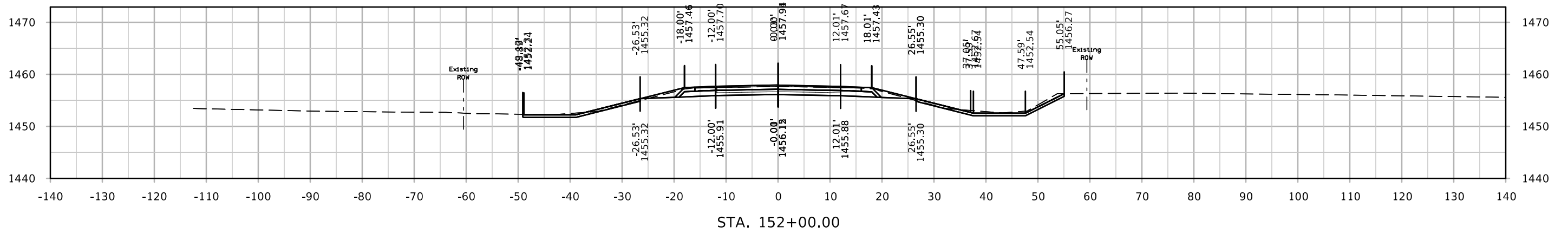
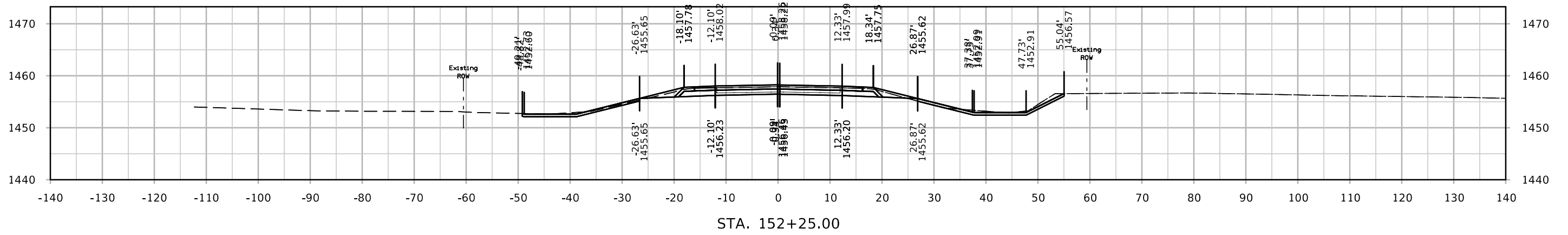
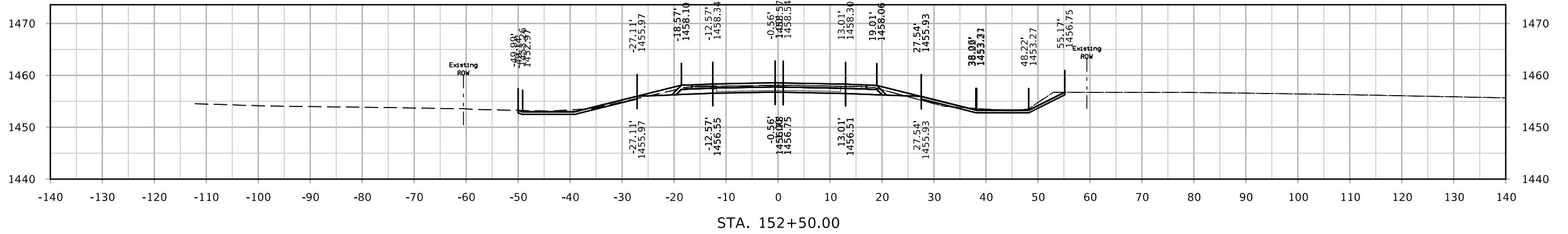
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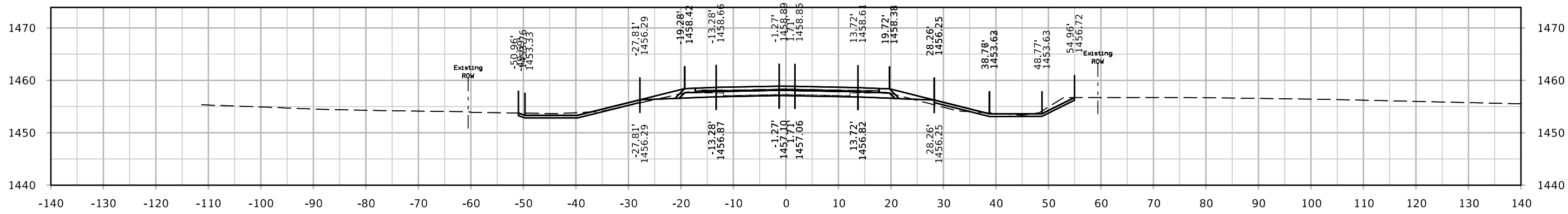
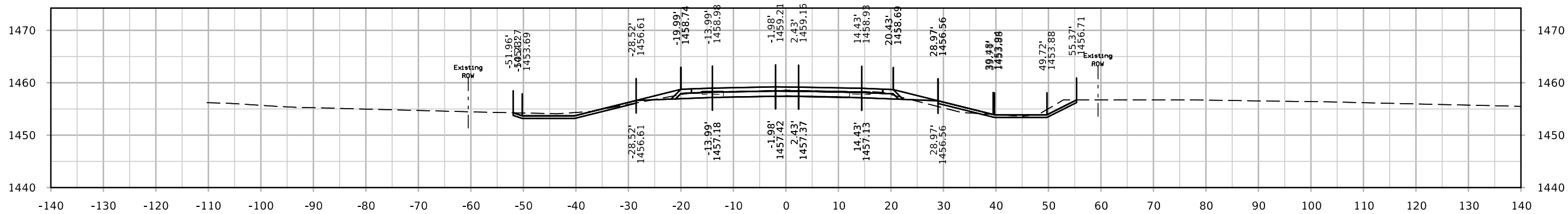
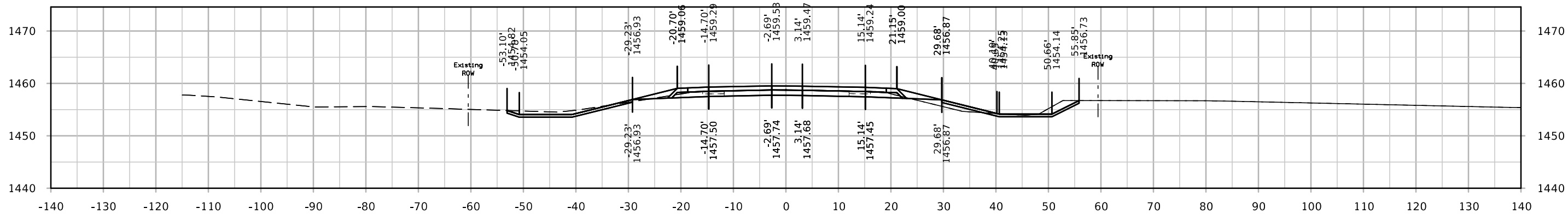


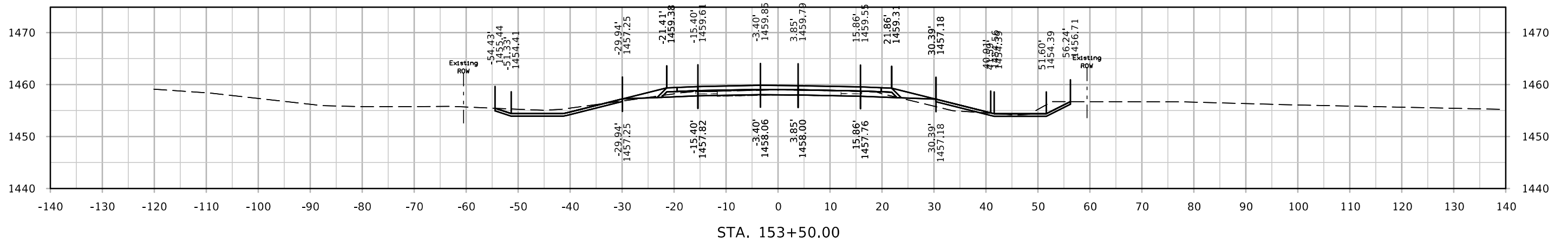
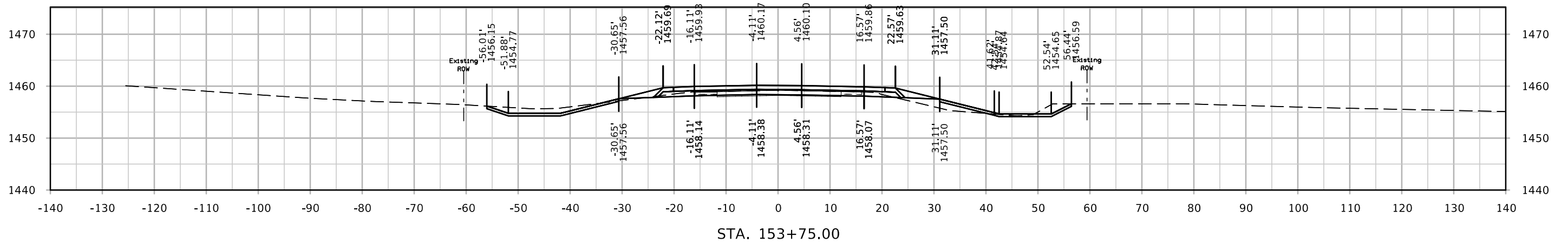
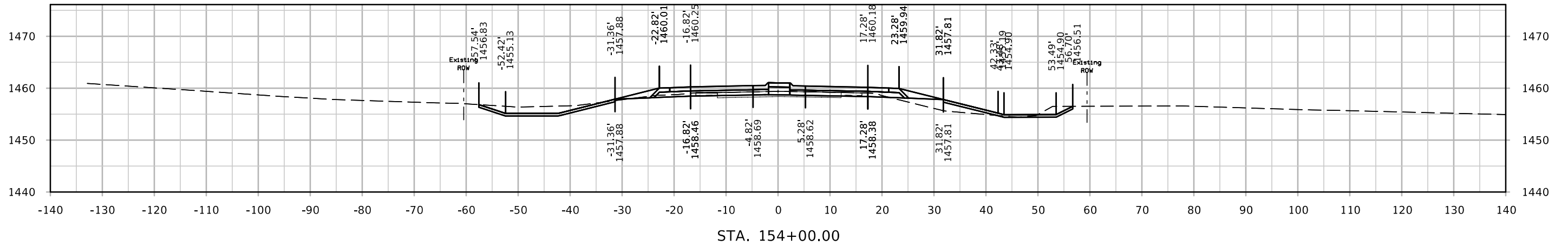
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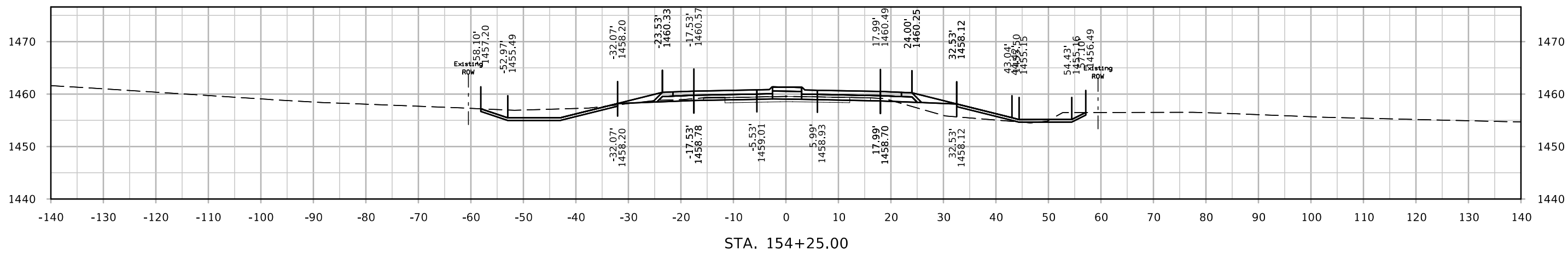
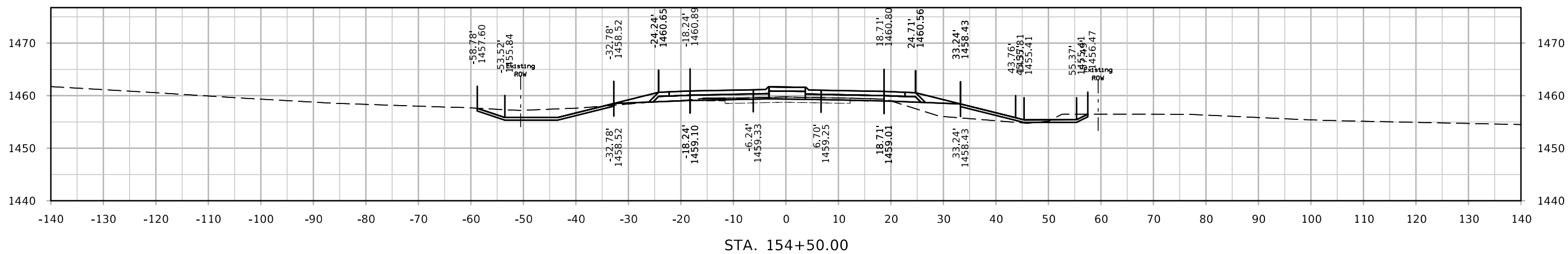
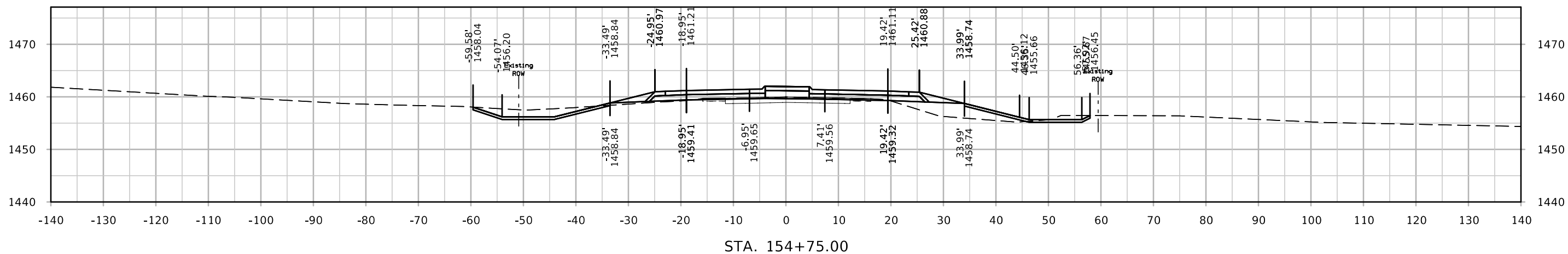


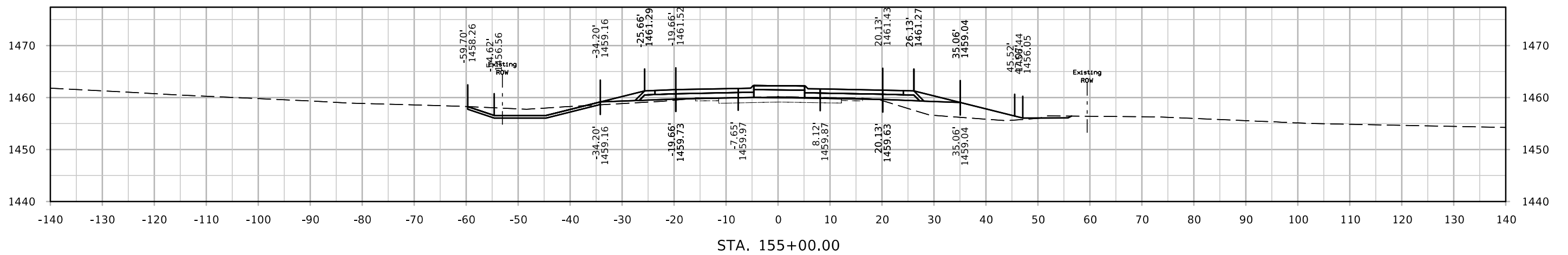
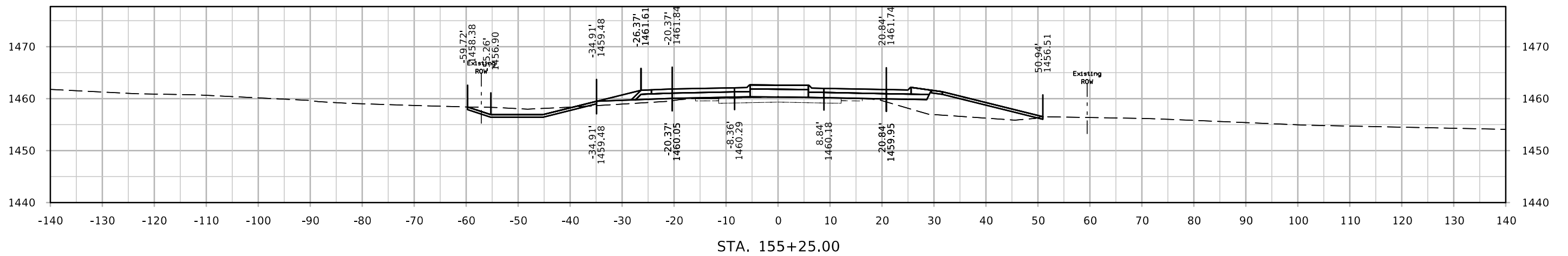
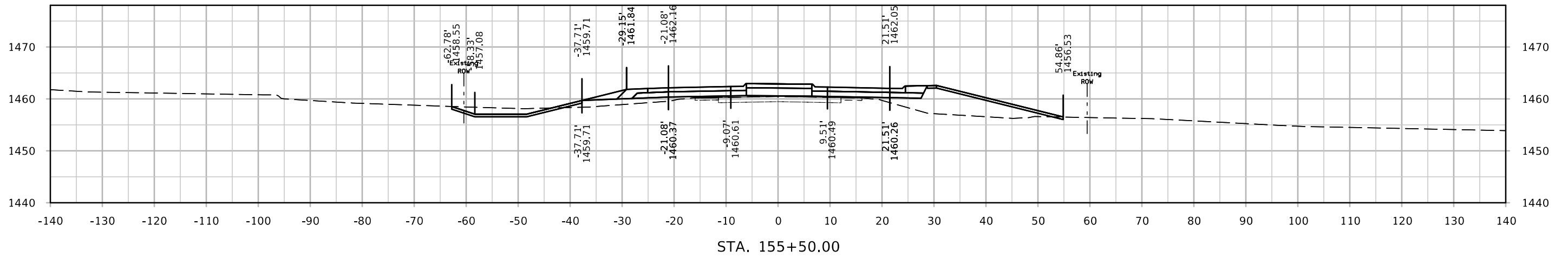
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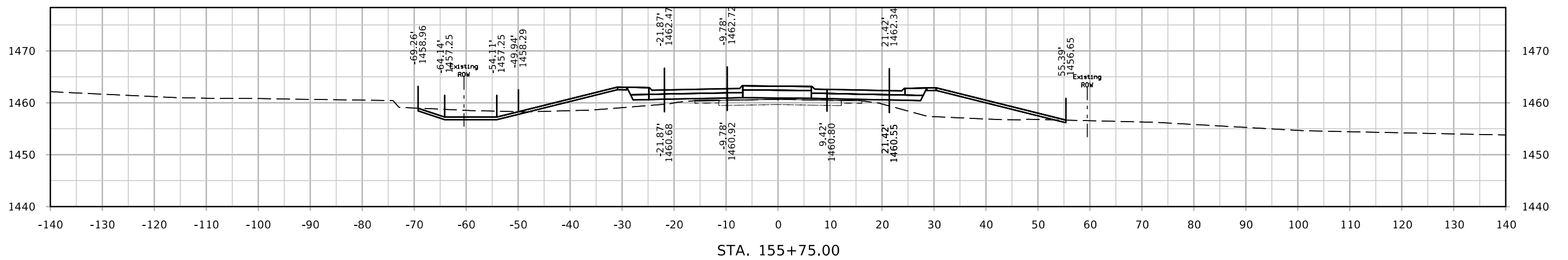
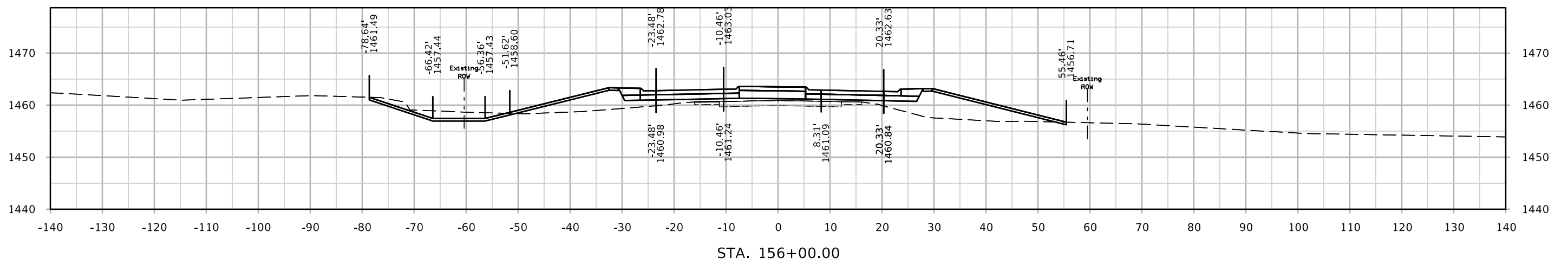
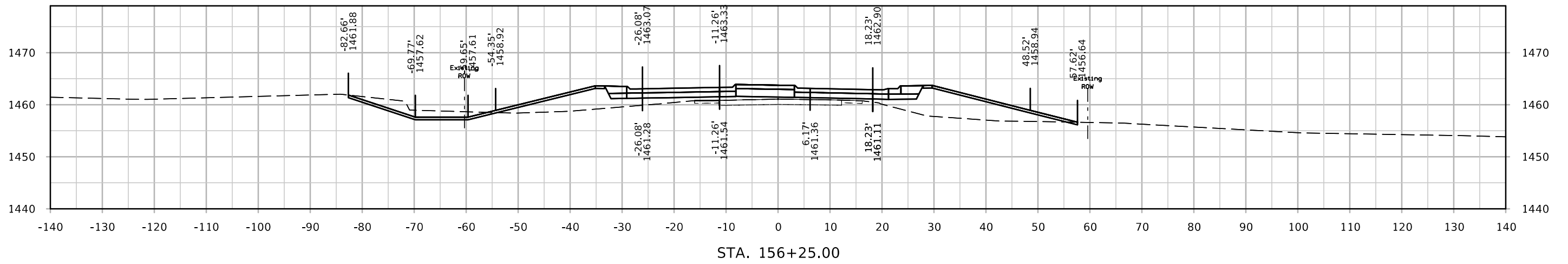






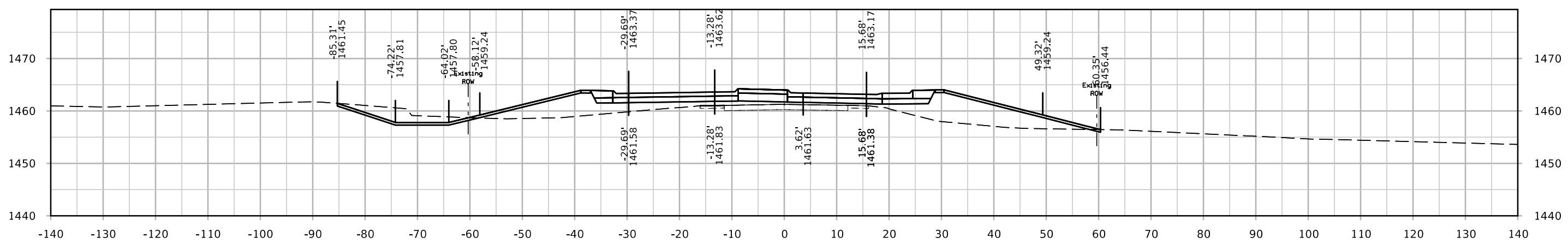
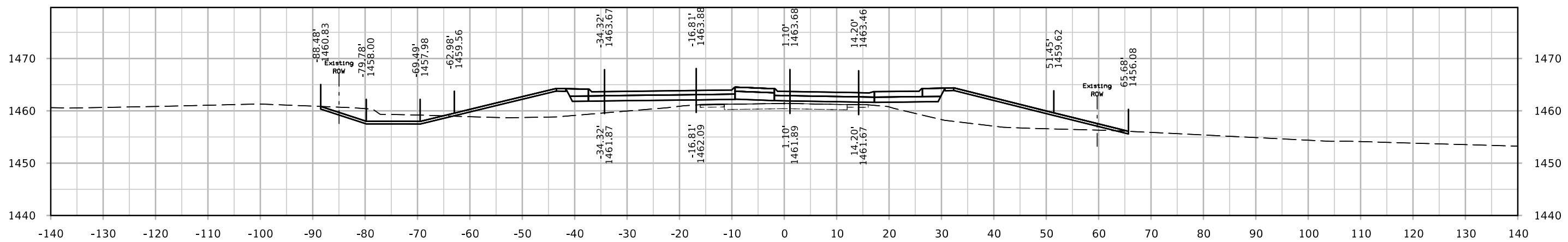
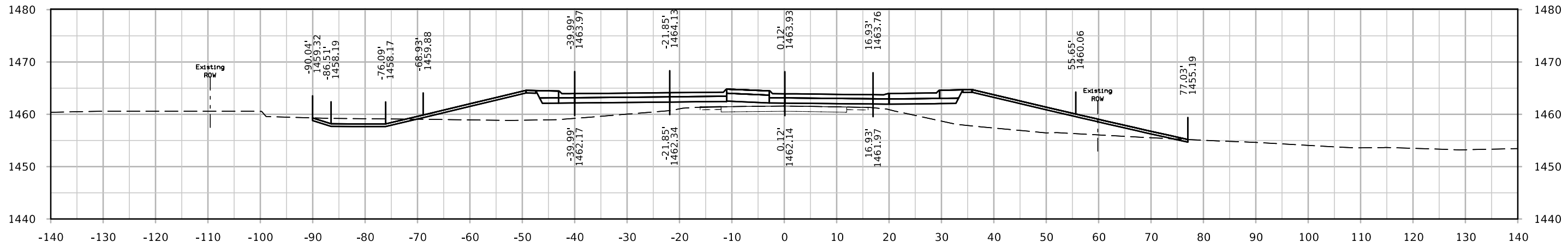


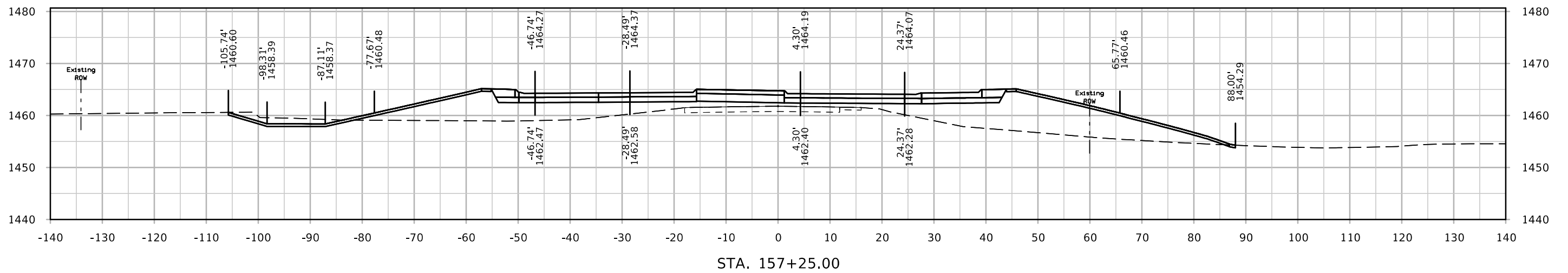
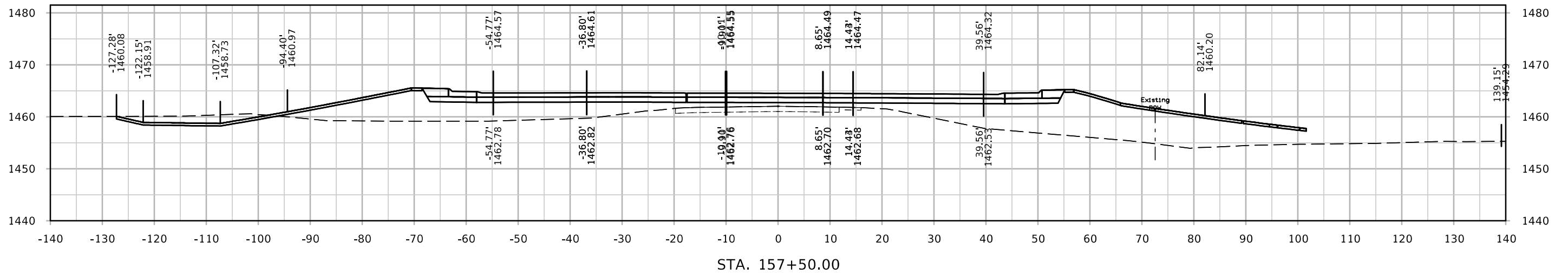
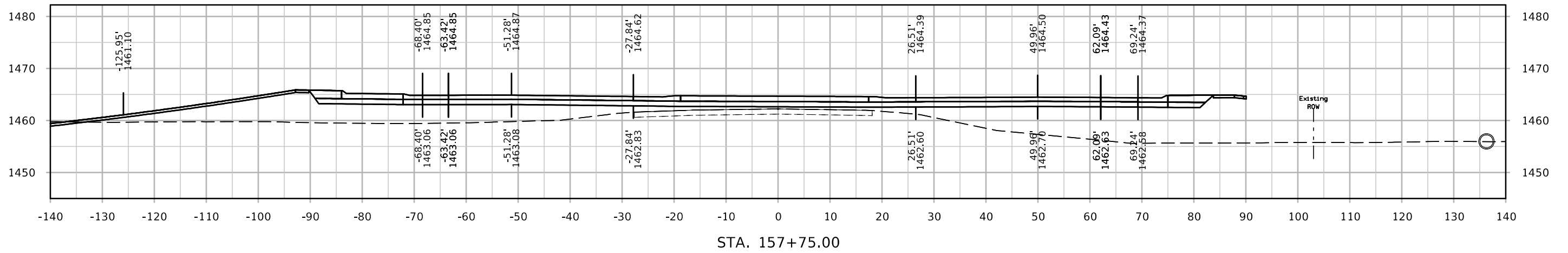


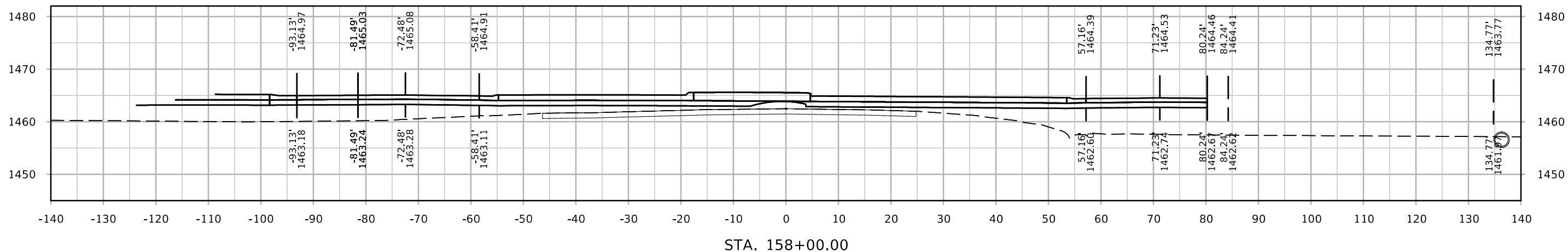
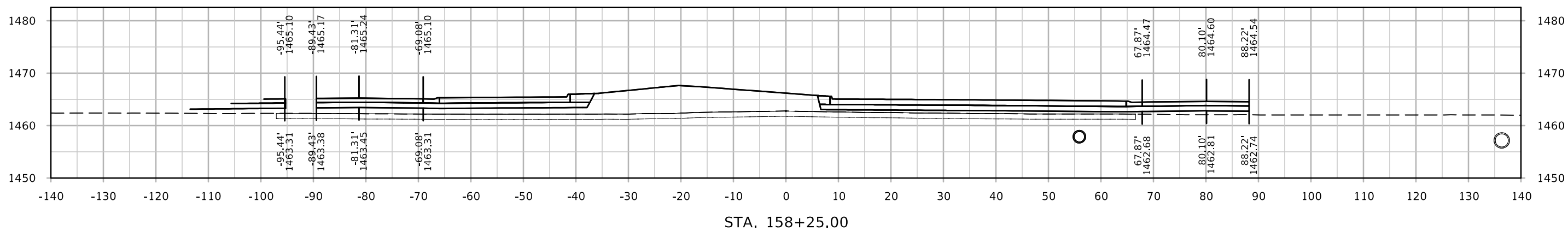
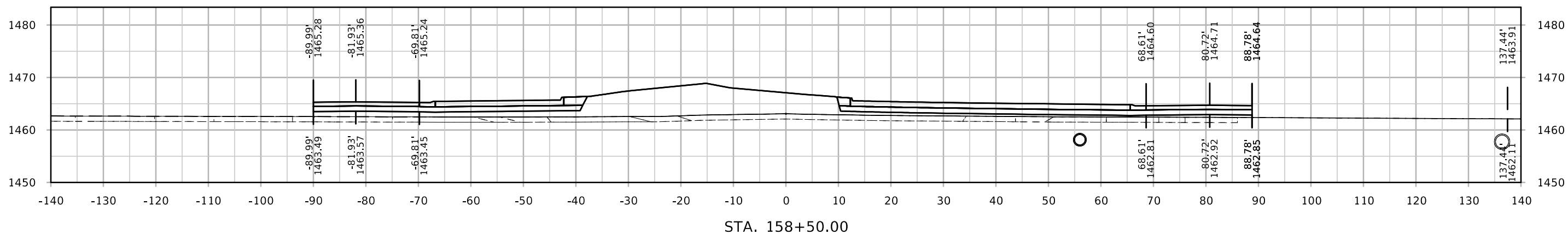


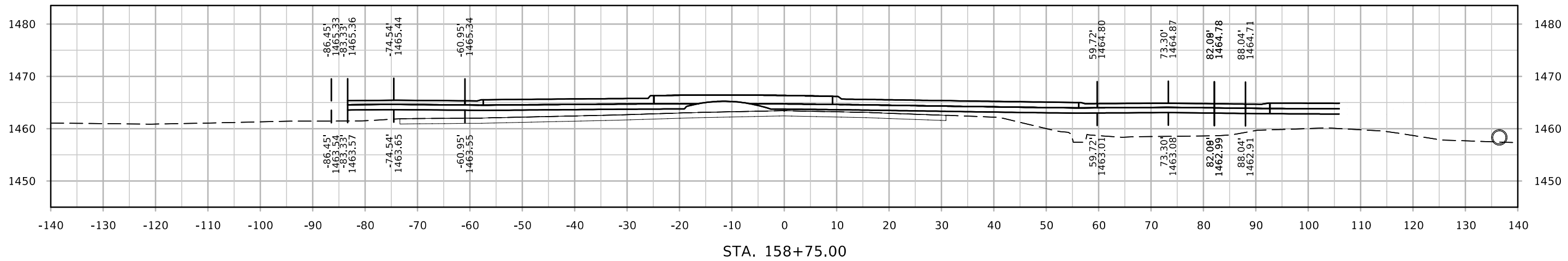
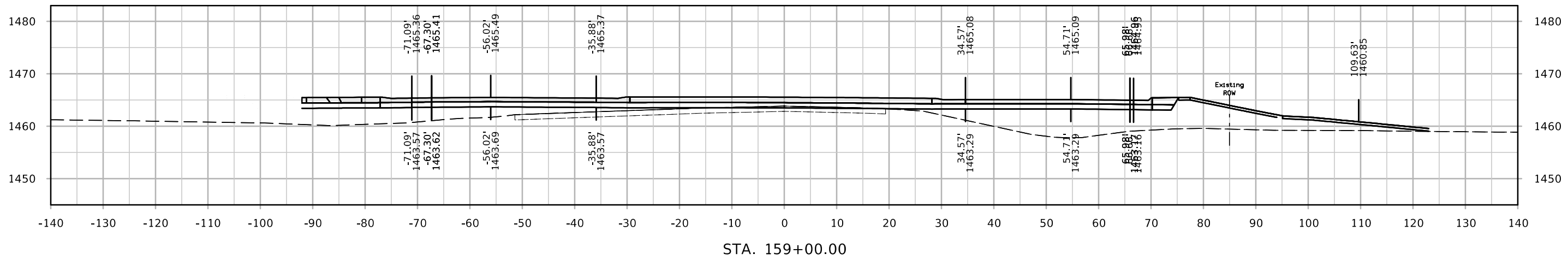
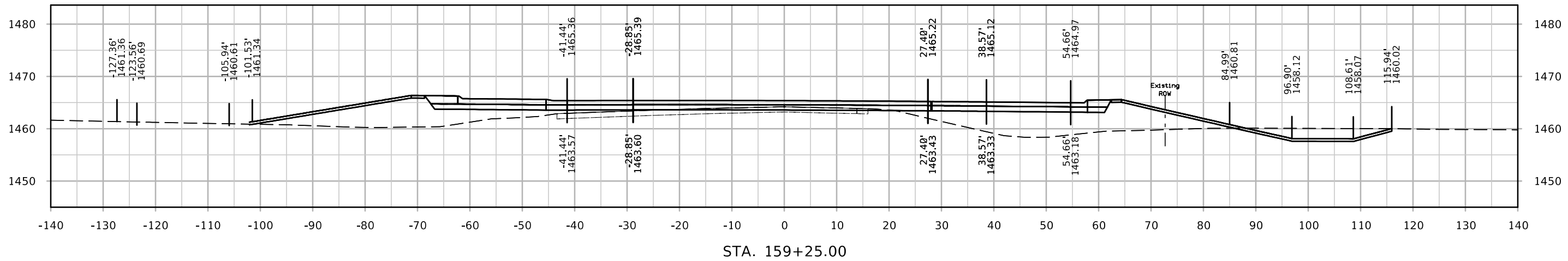


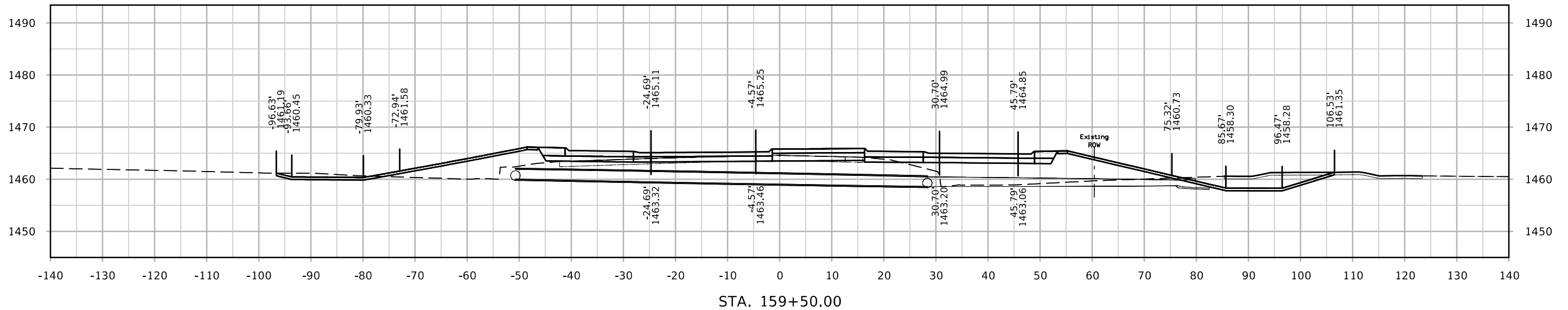
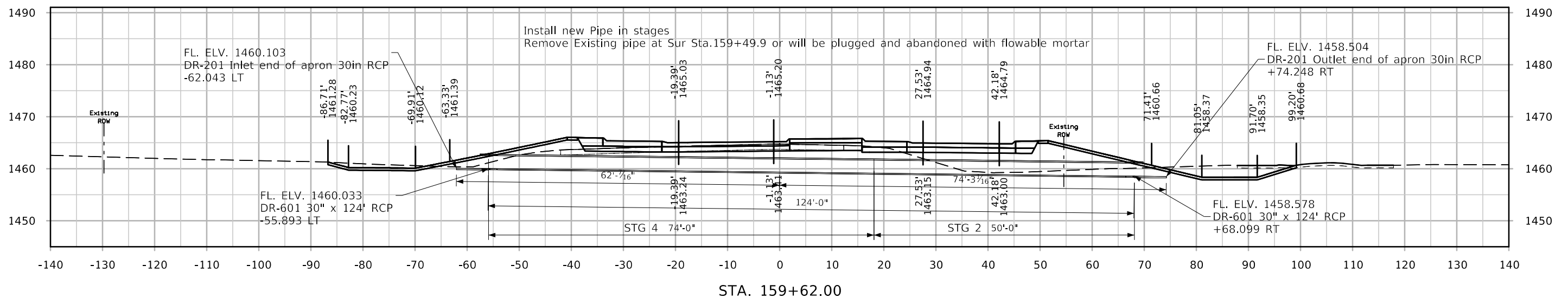
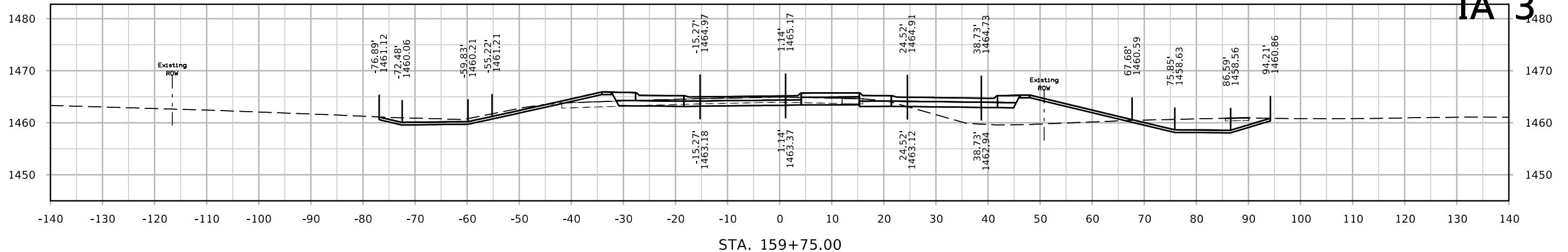
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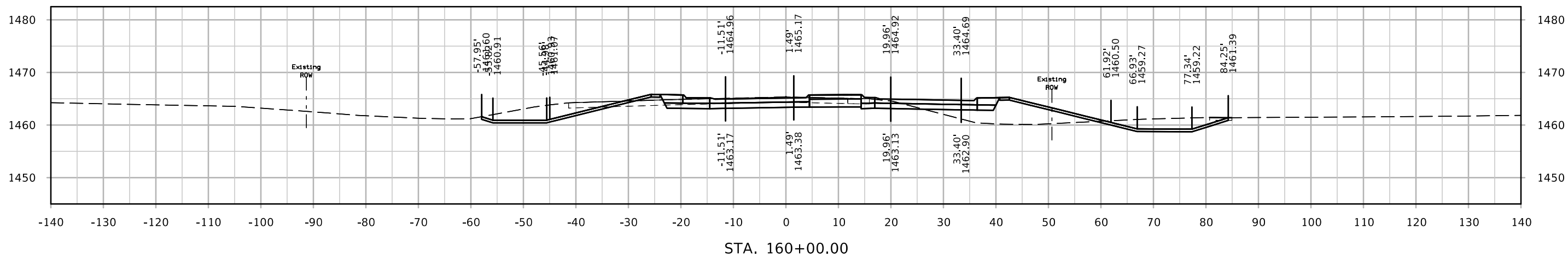
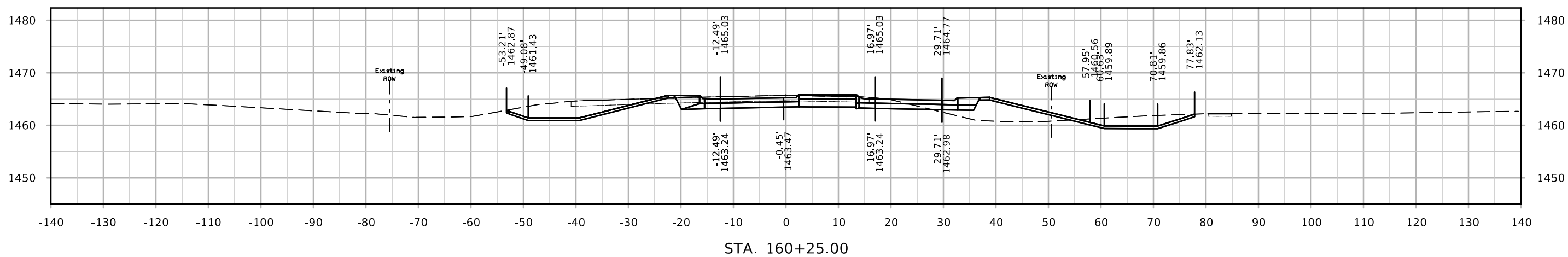
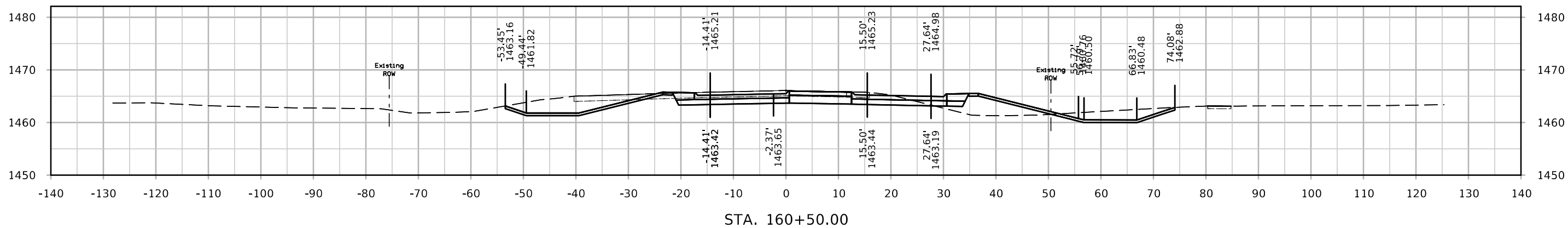


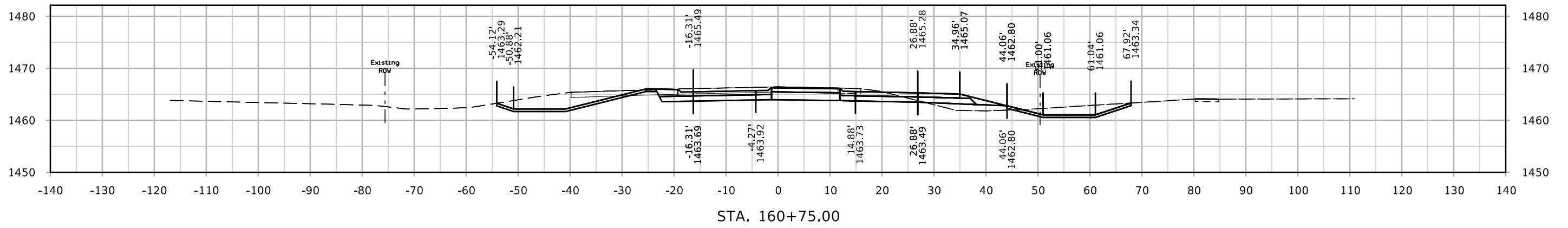
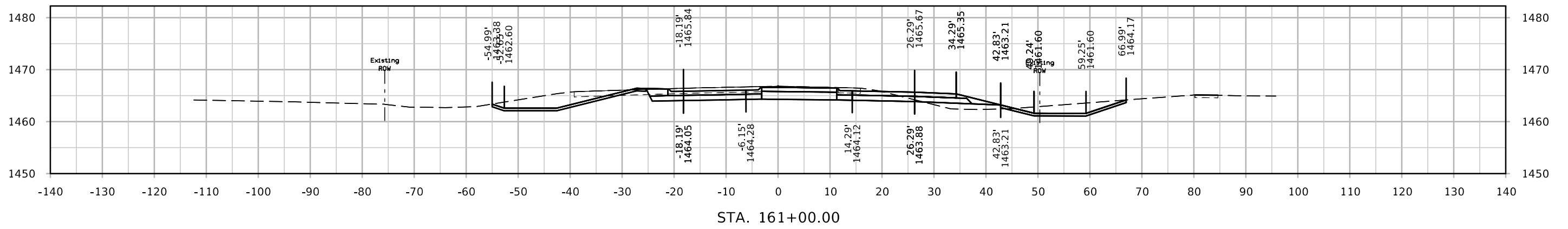
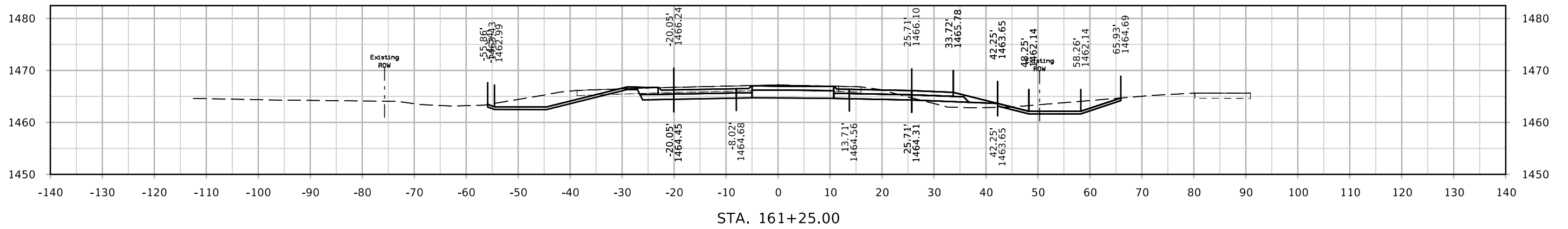


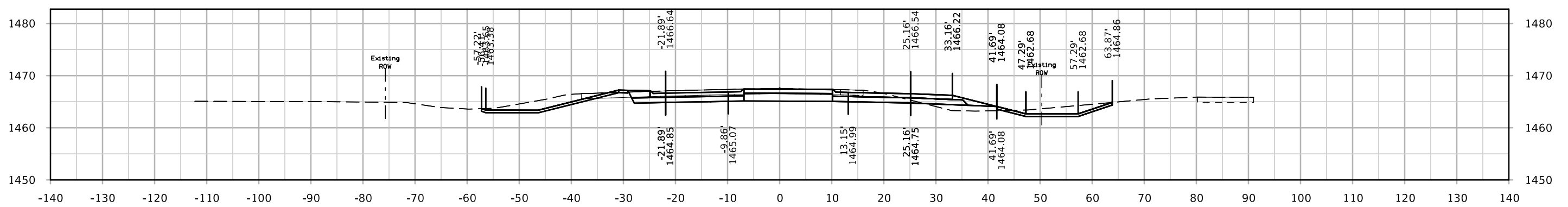
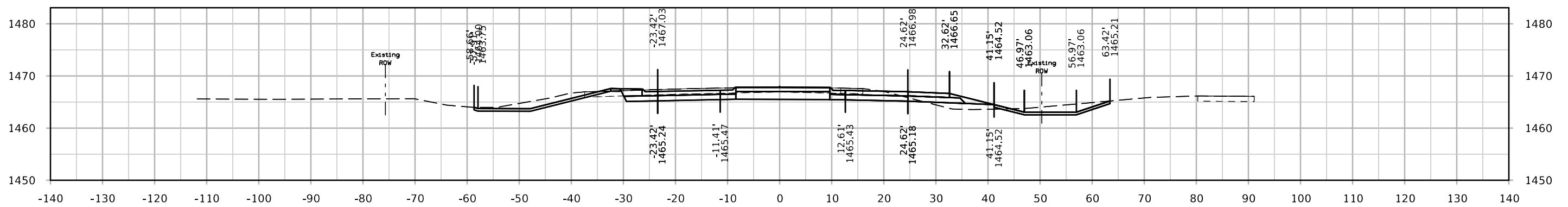
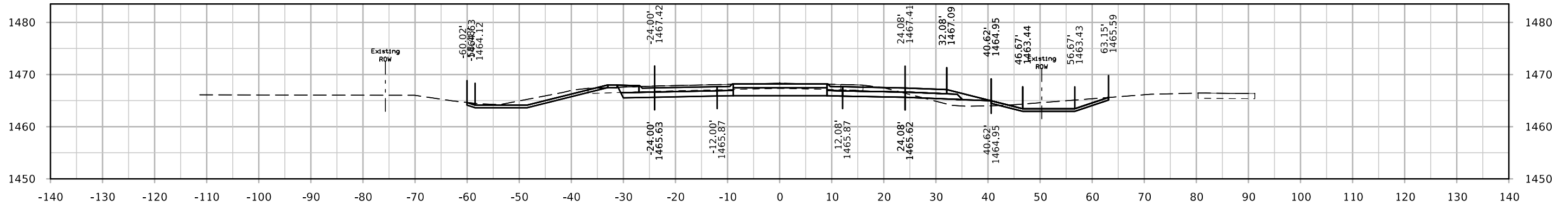




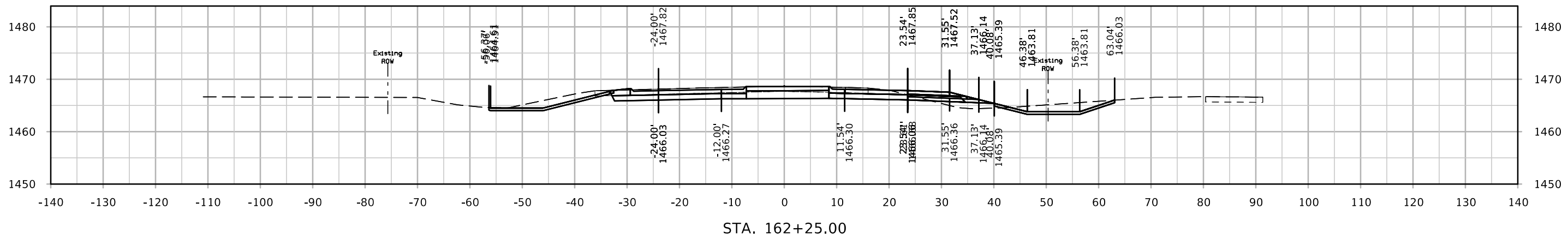
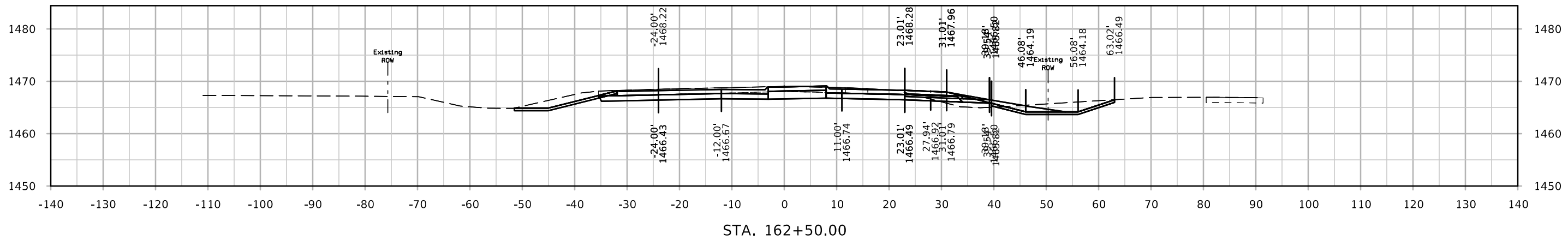
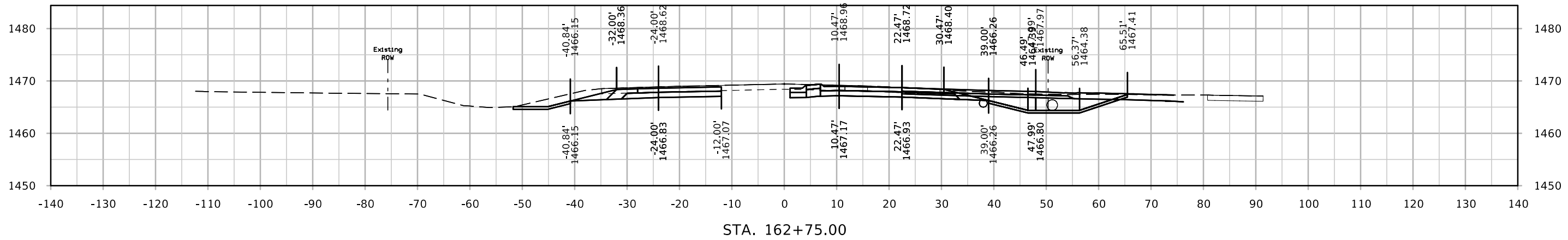


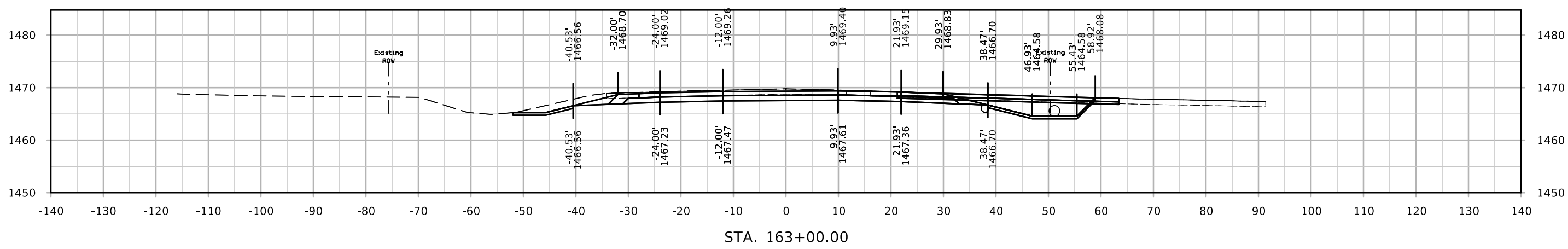
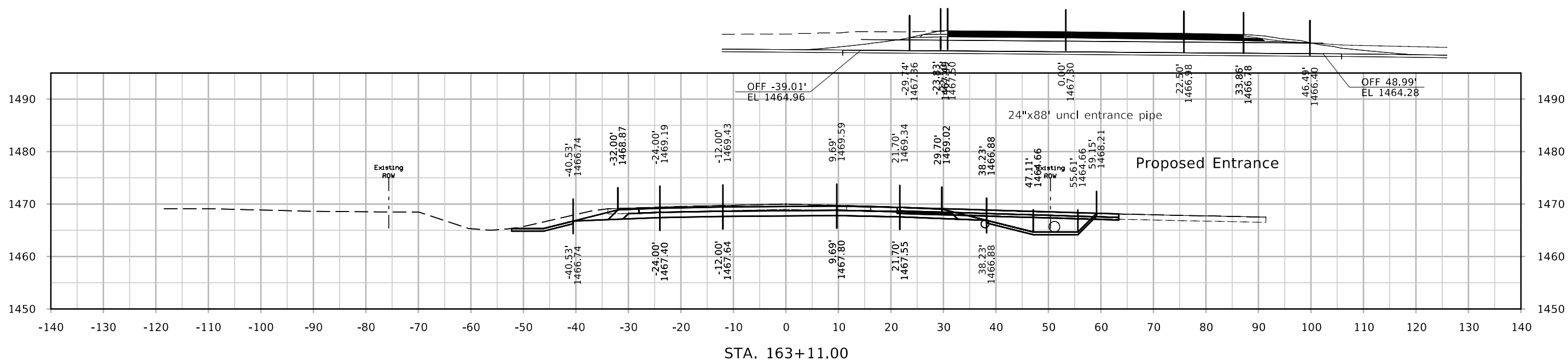
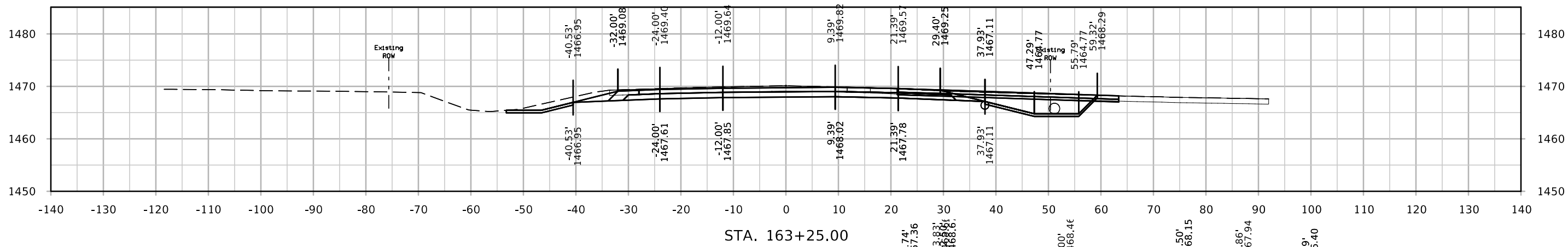


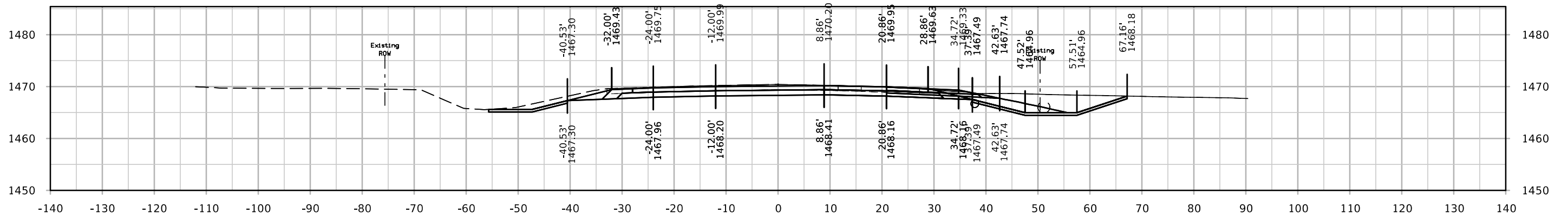
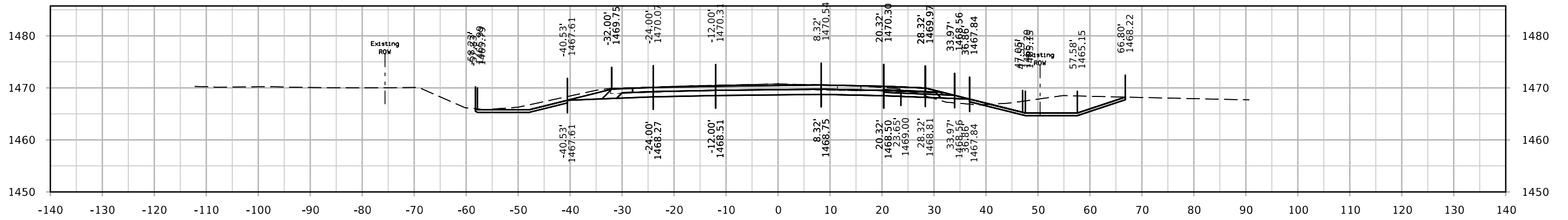
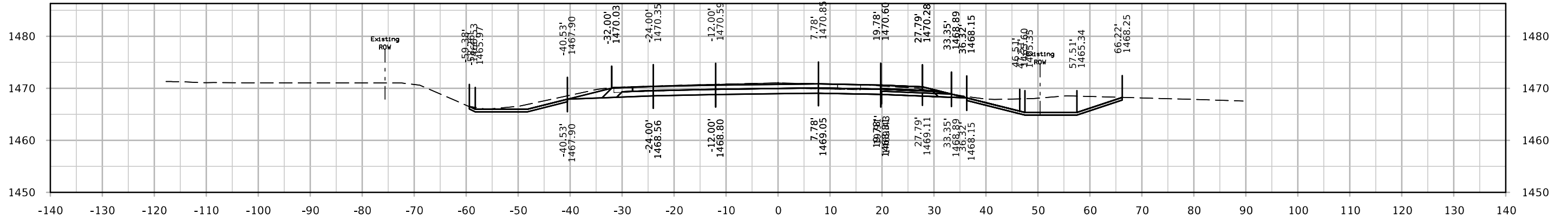


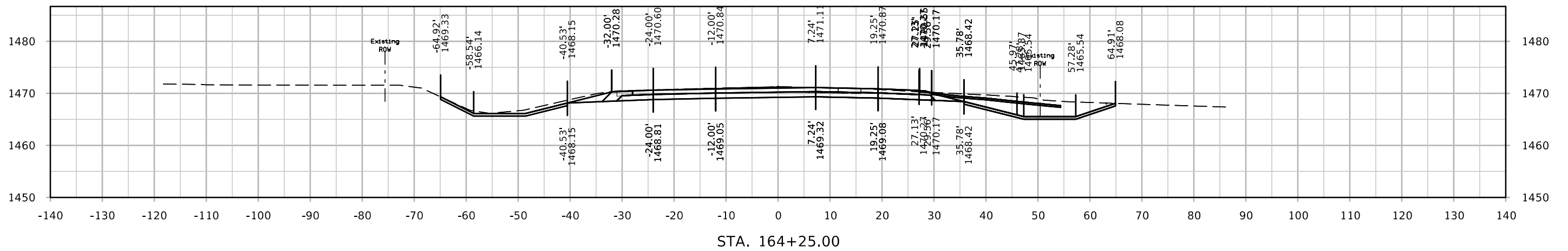
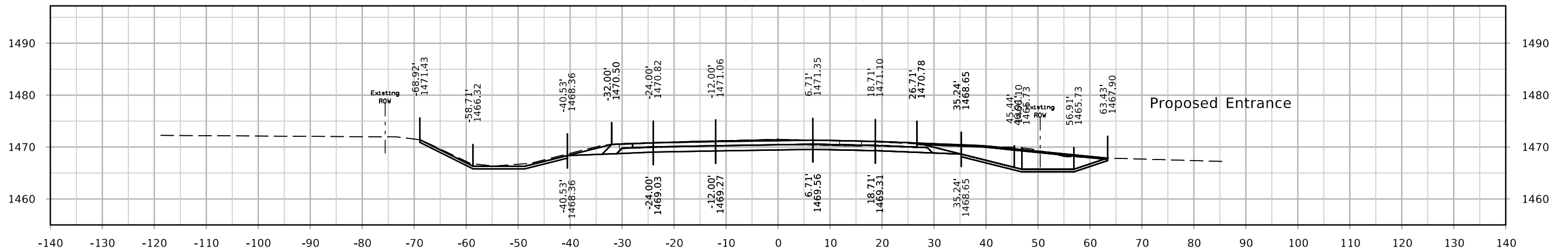
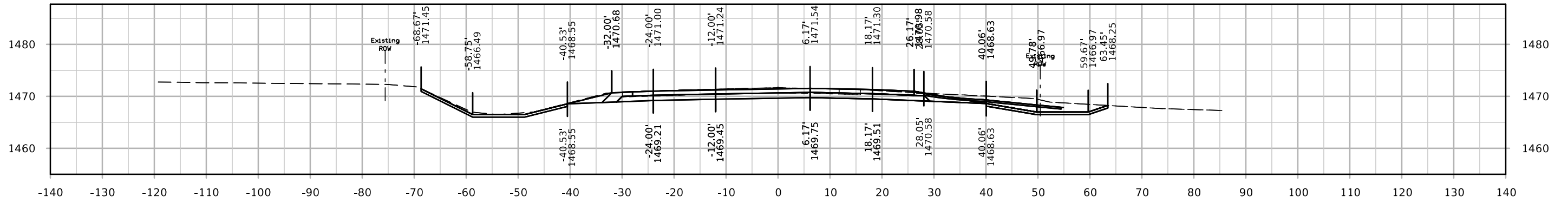


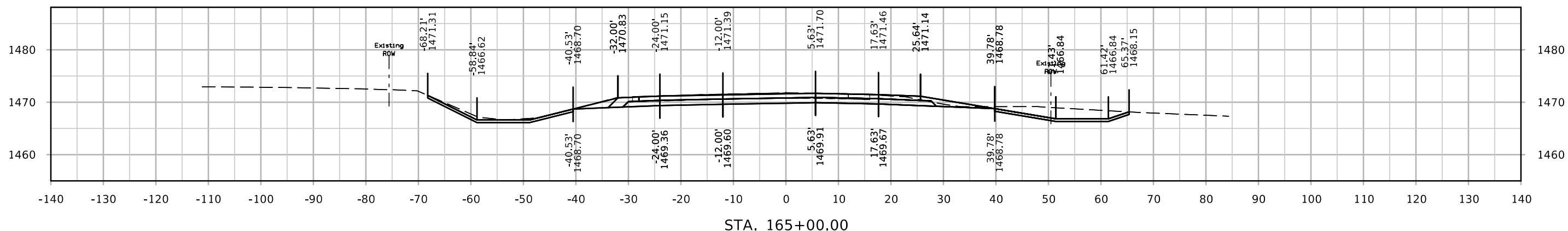
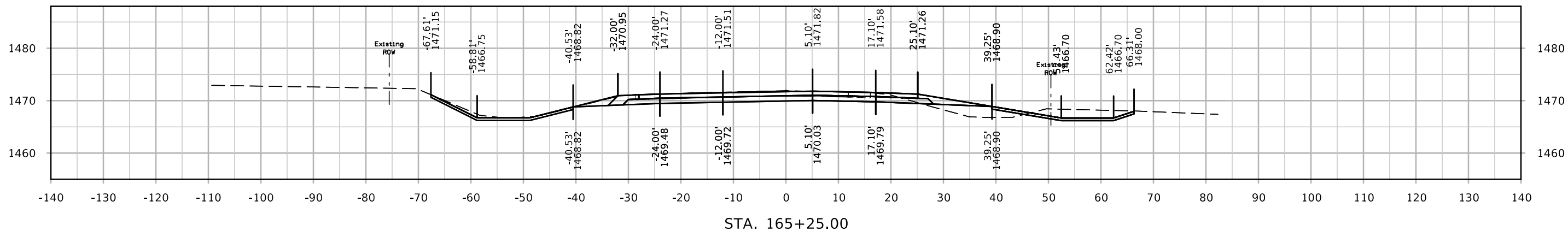
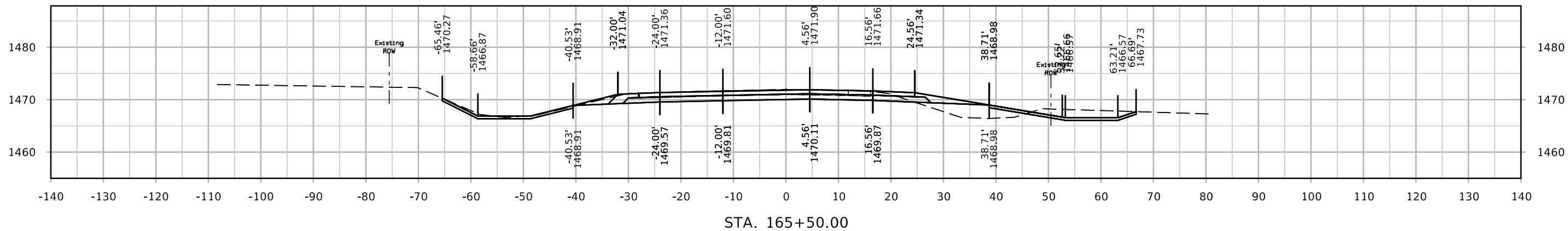


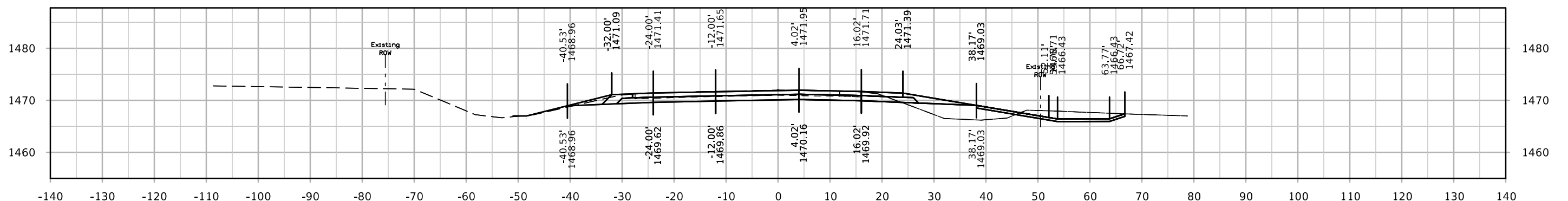
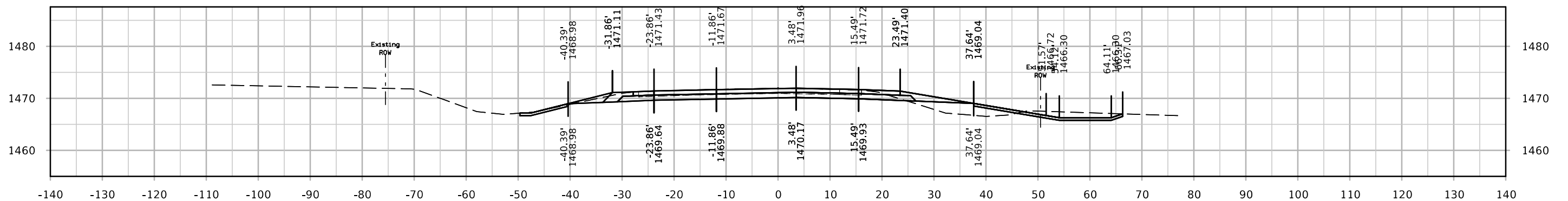
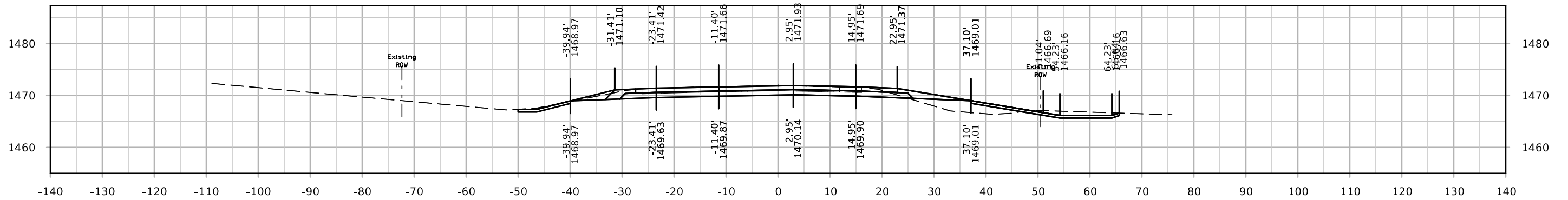


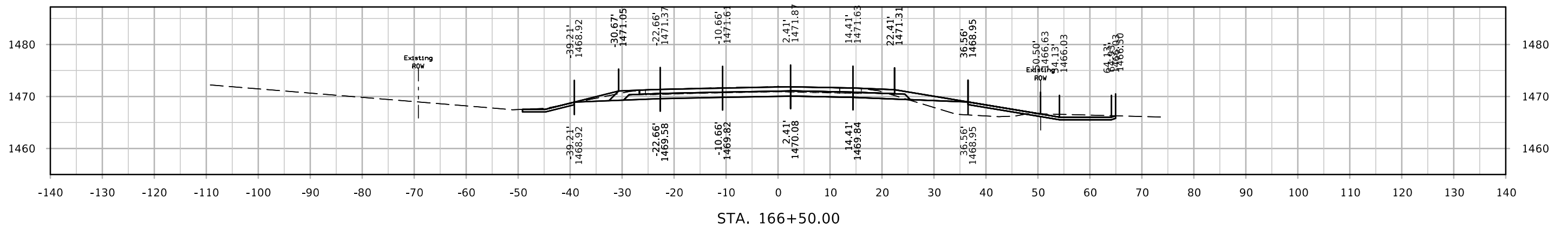
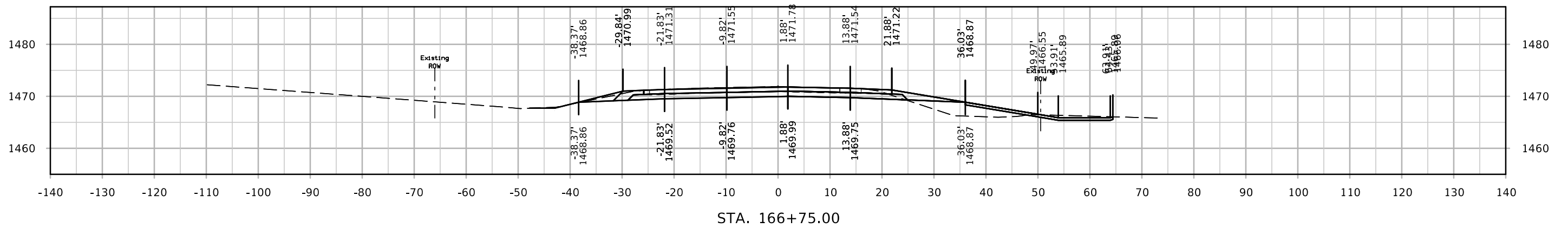
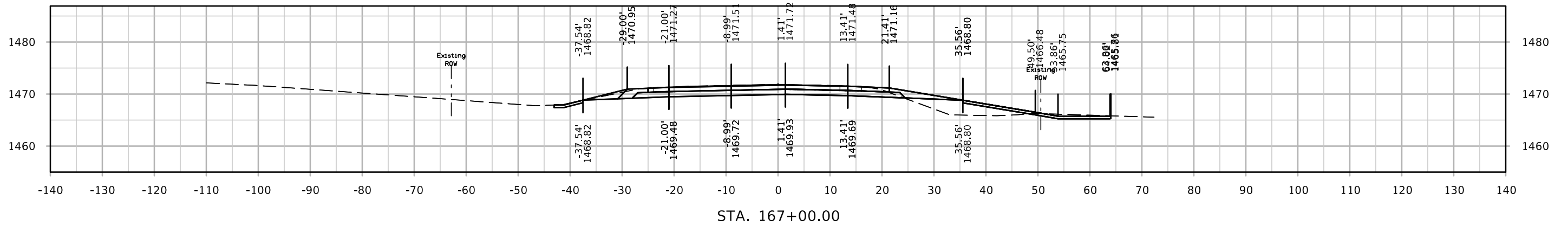


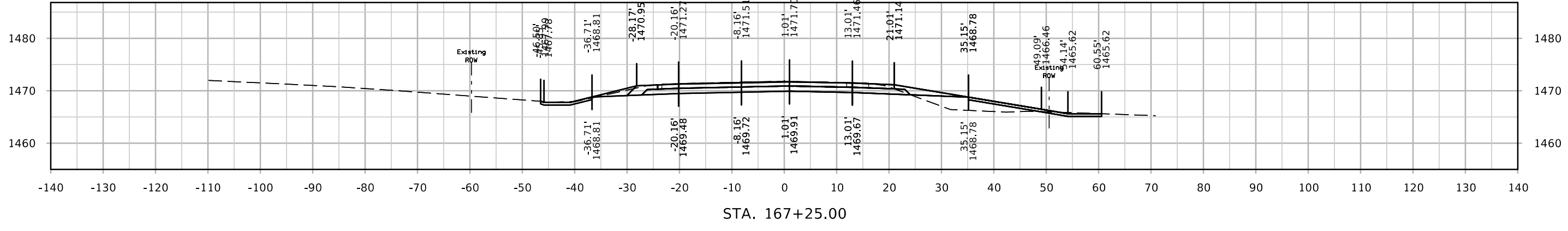
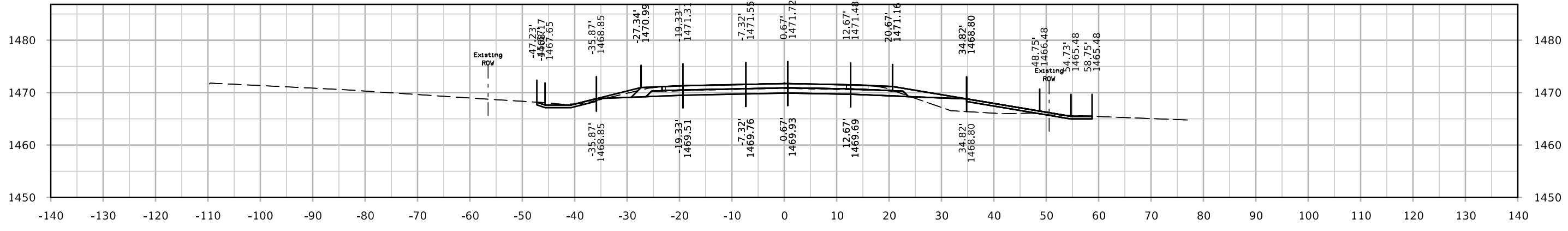
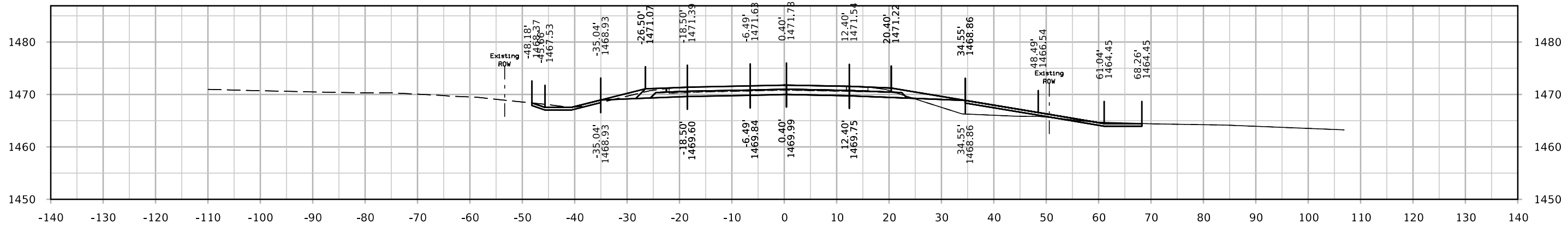




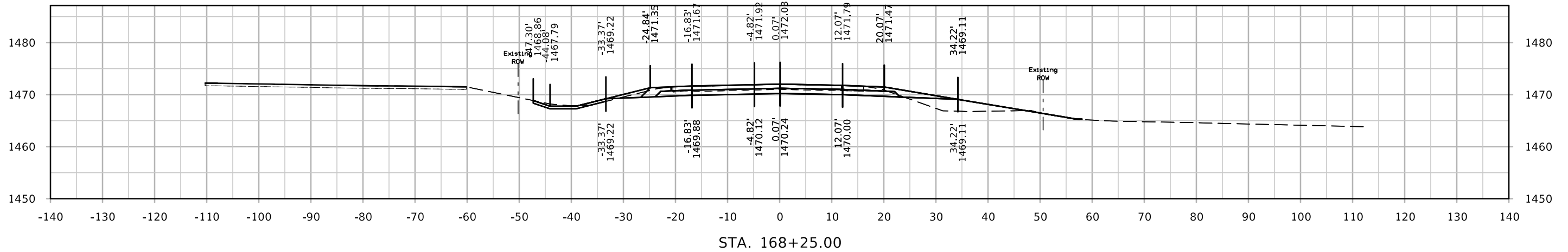




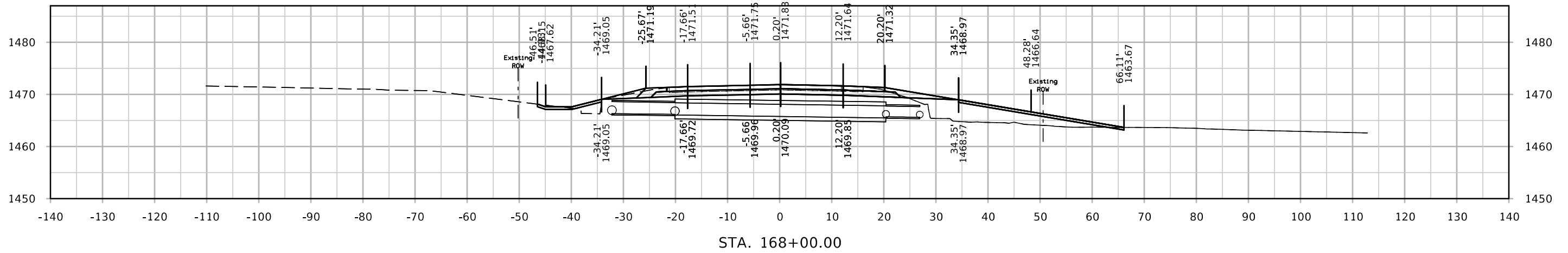




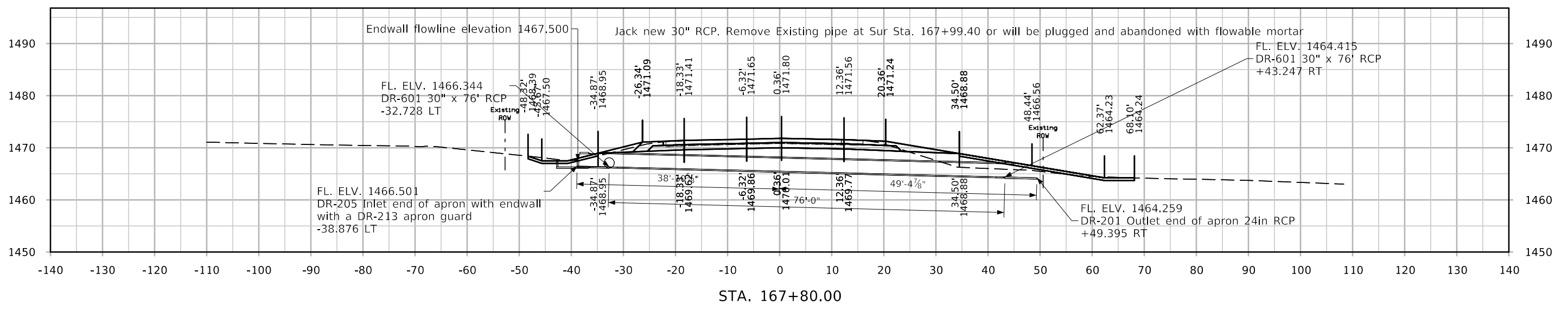




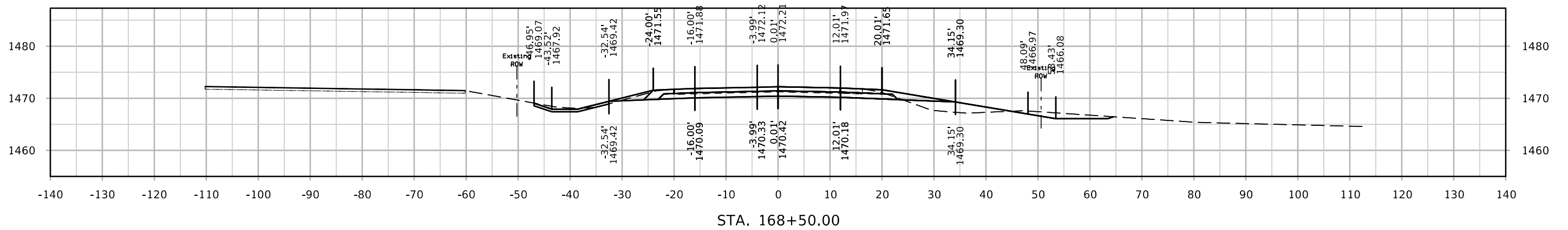
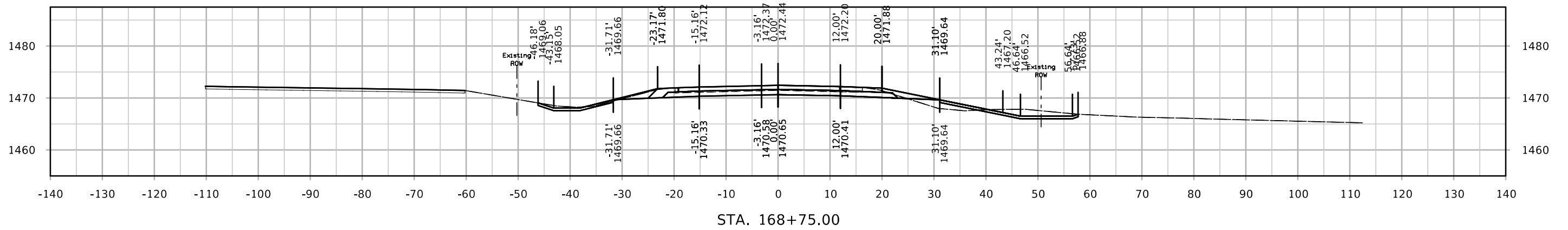
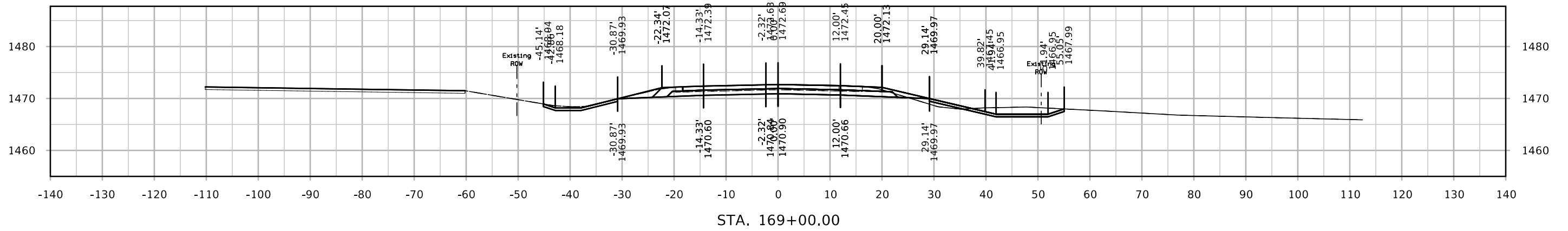
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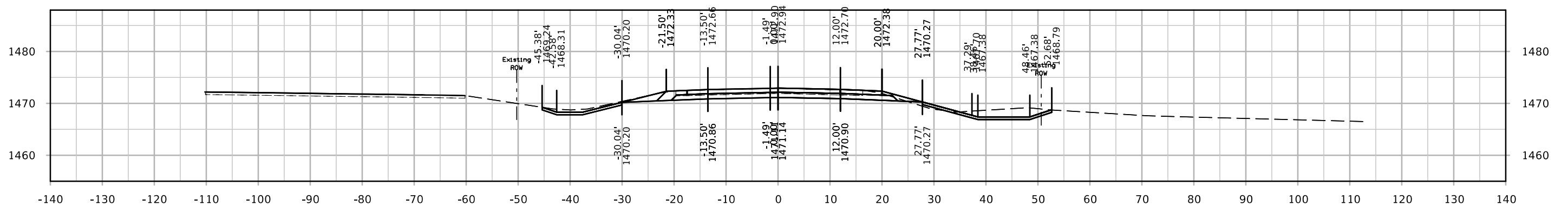
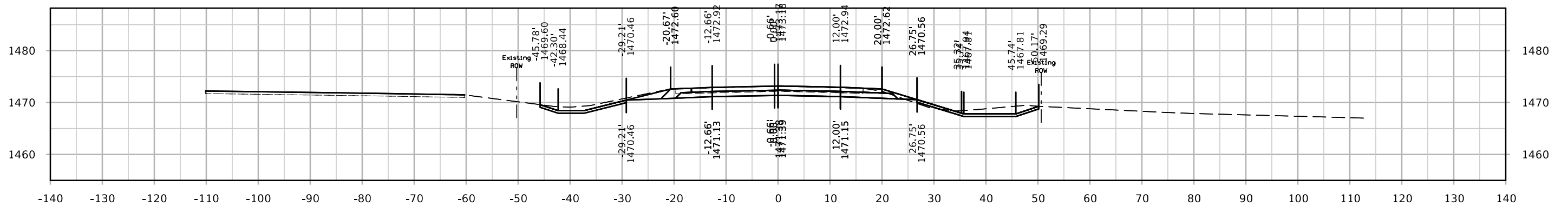
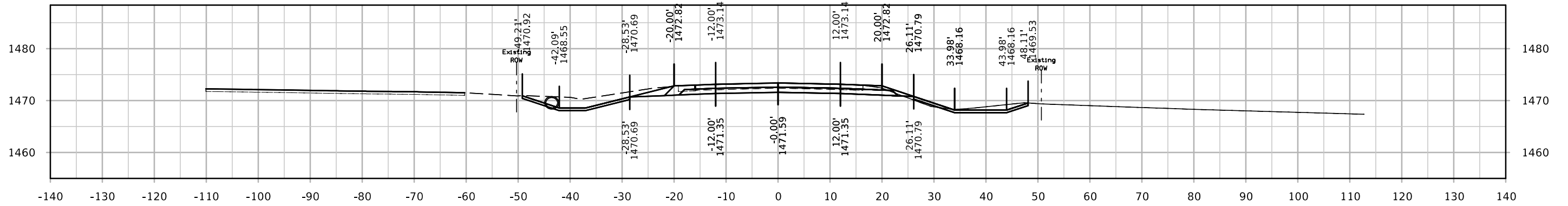


STA. 168+00.00

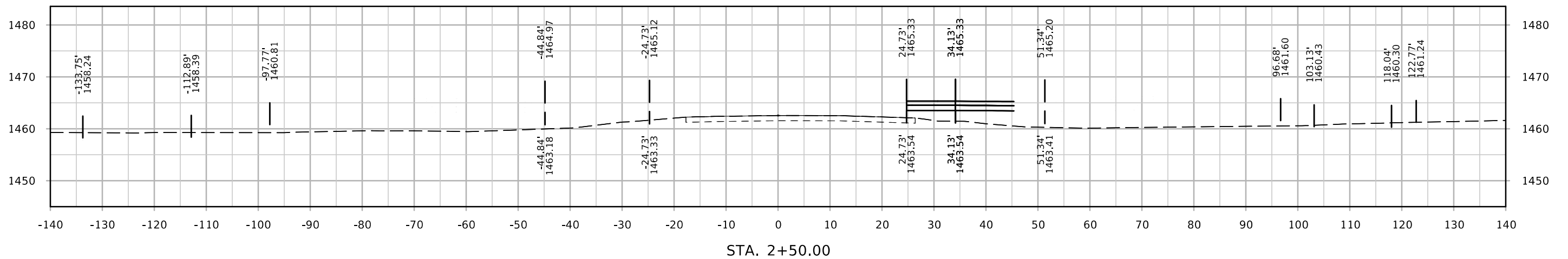
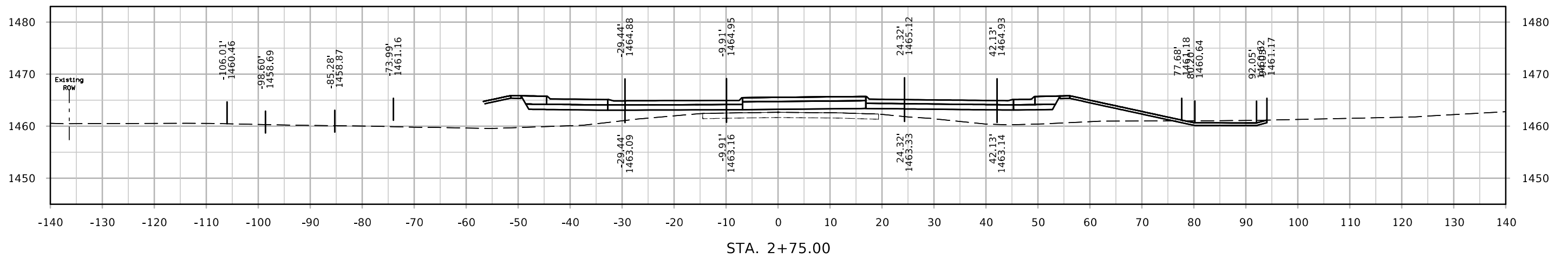
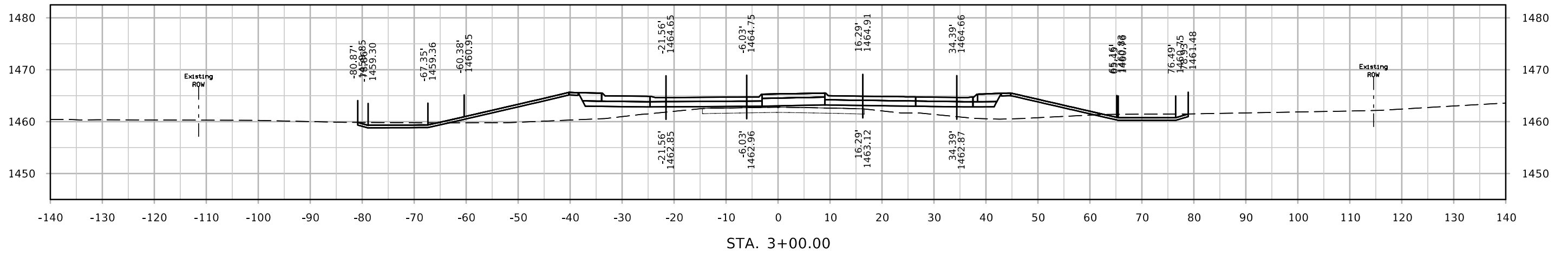


STA. 167+80.00

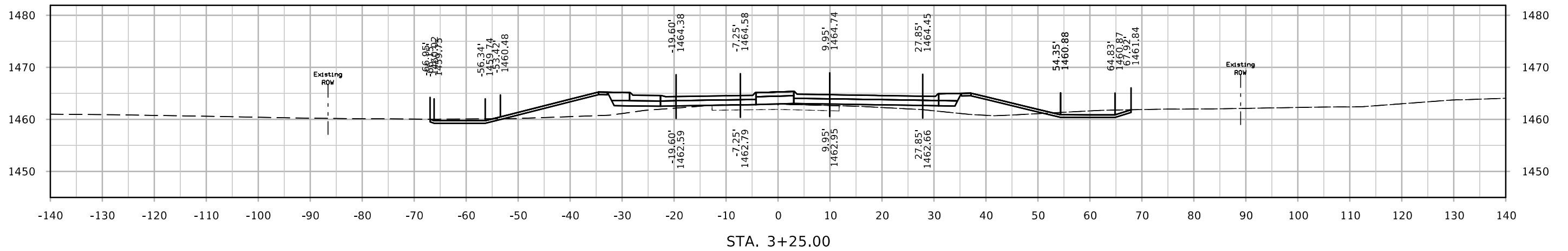
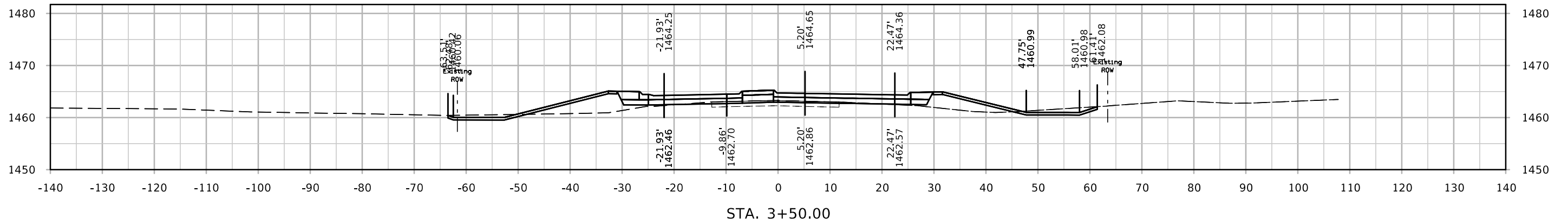
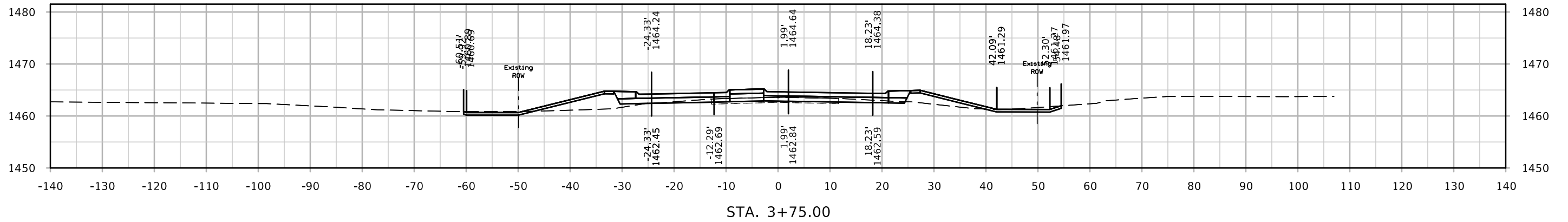


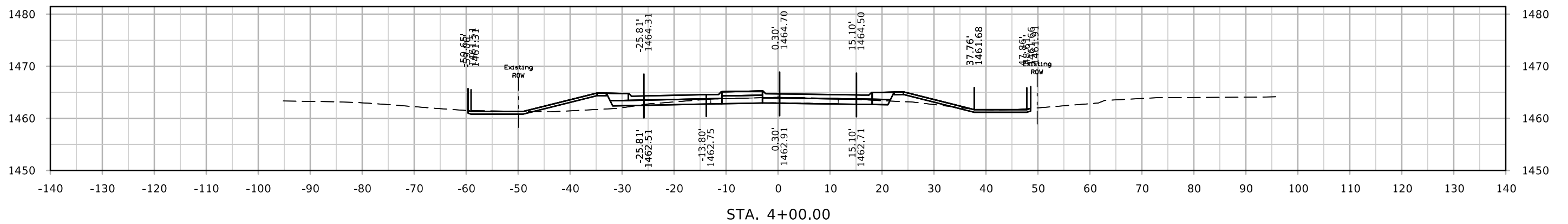
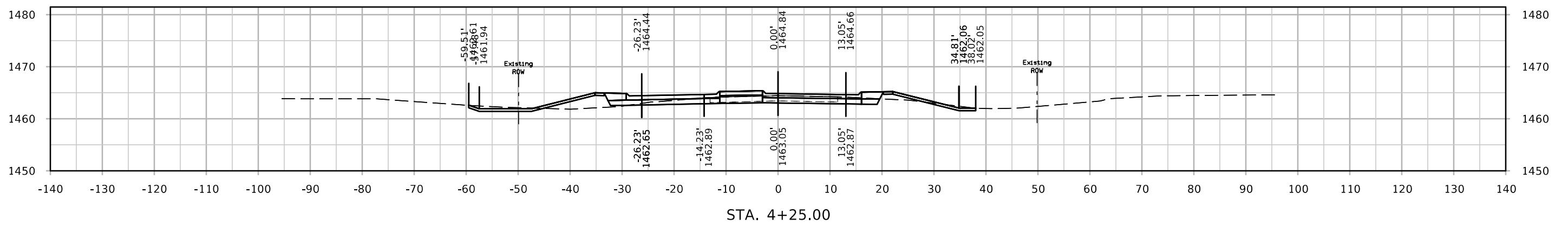
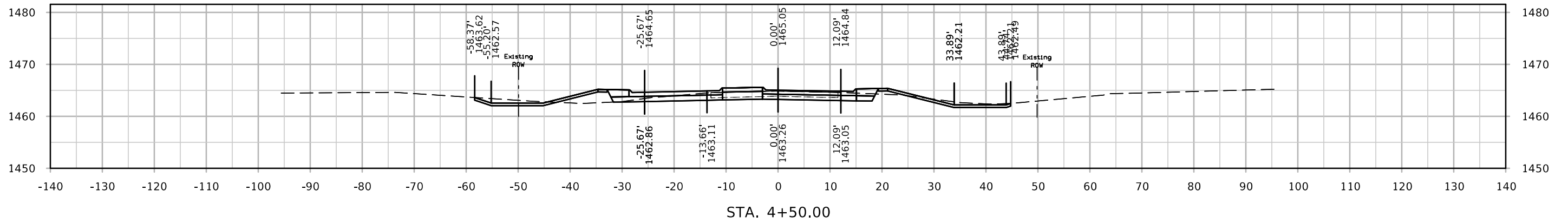


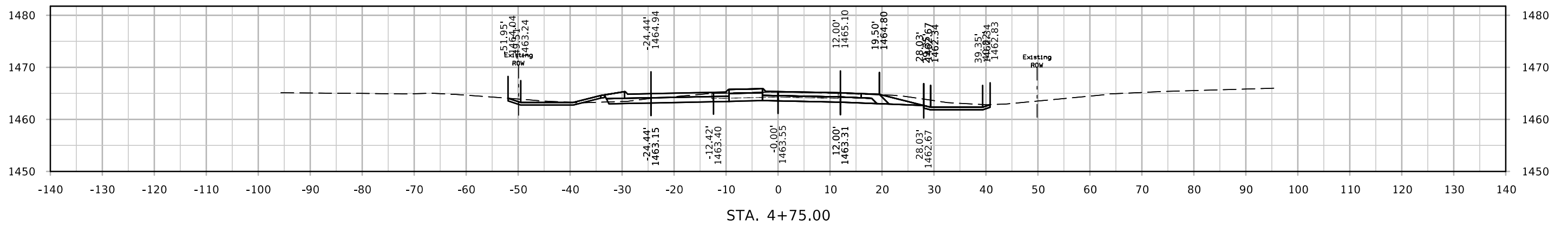
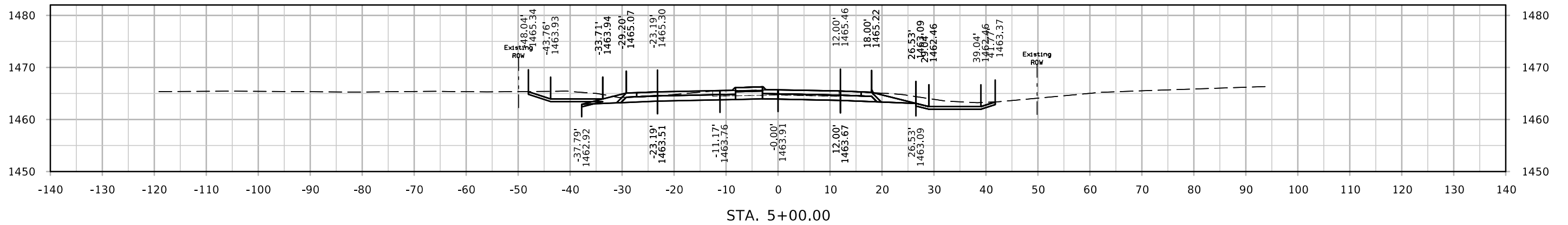
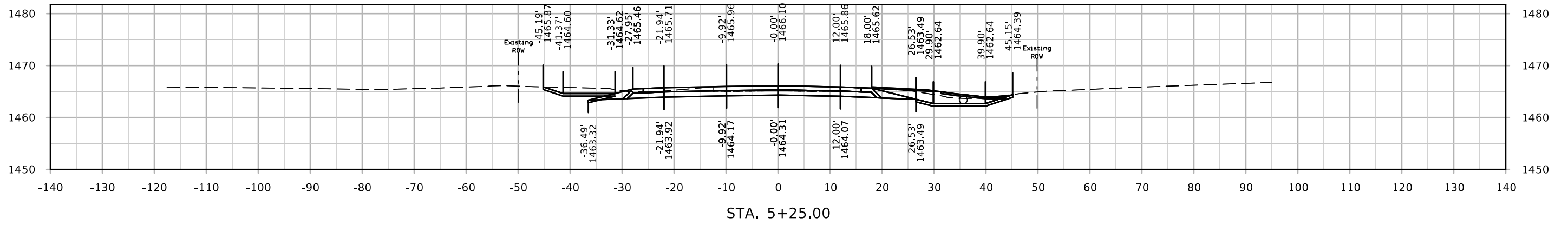
# IA 143



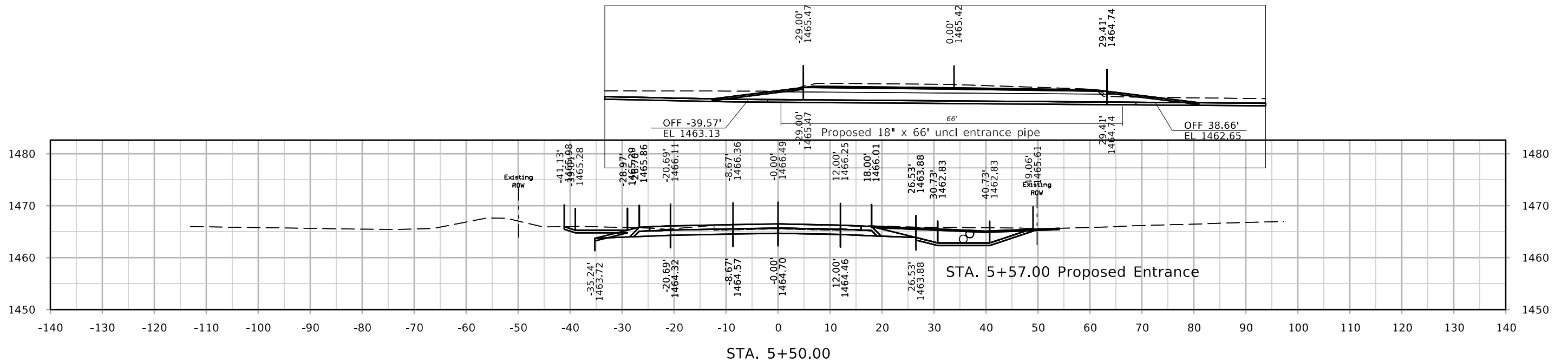
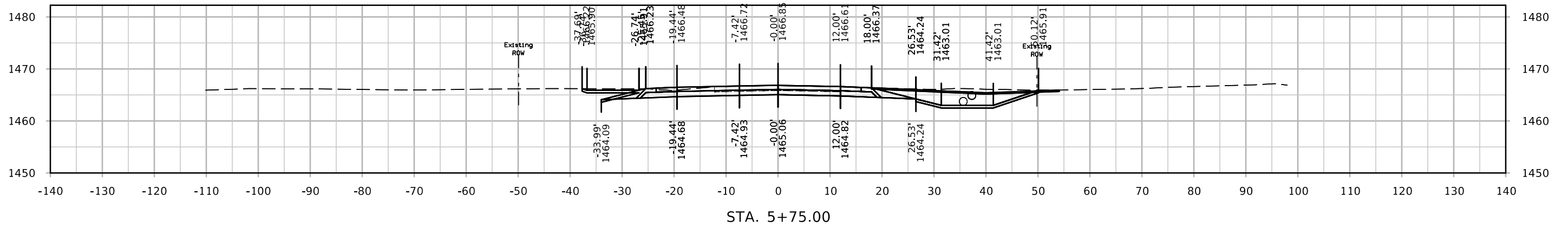
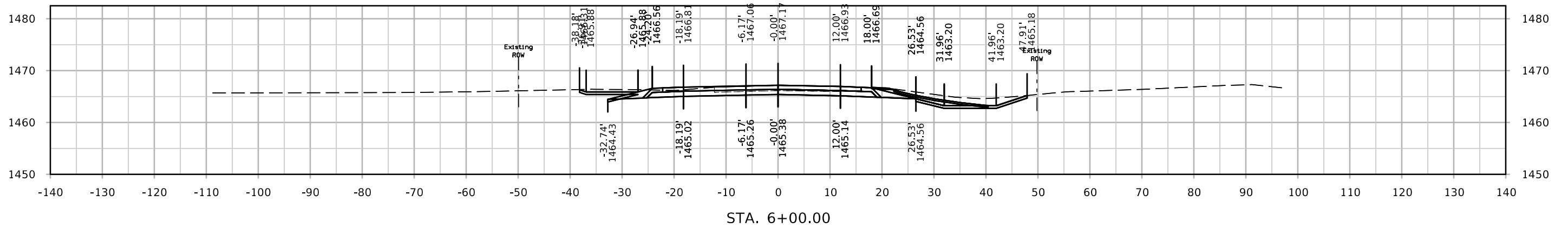
# IA 143



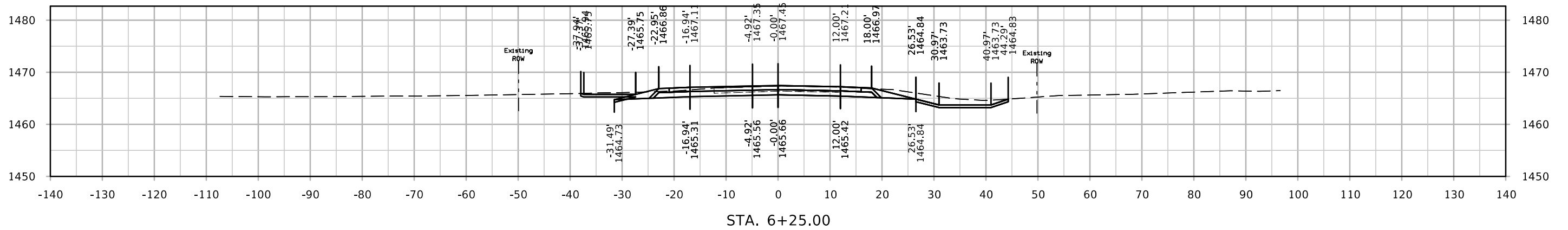
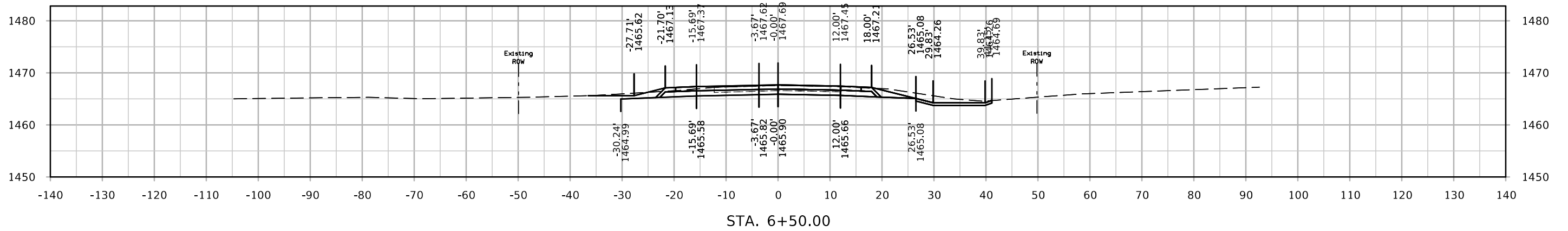
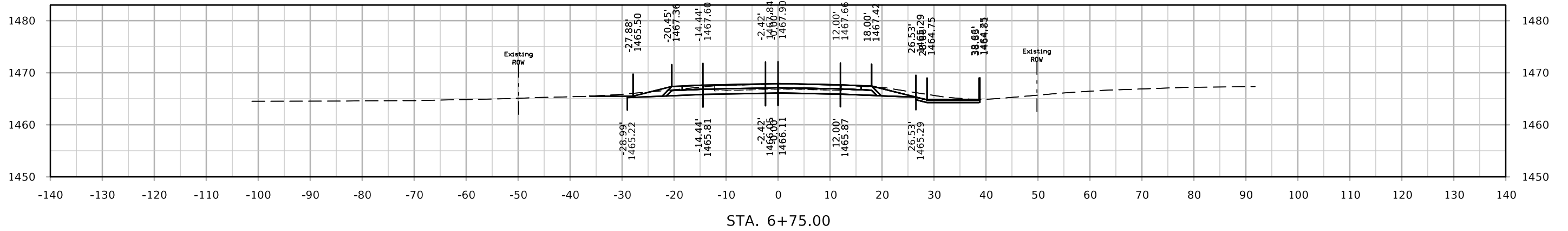


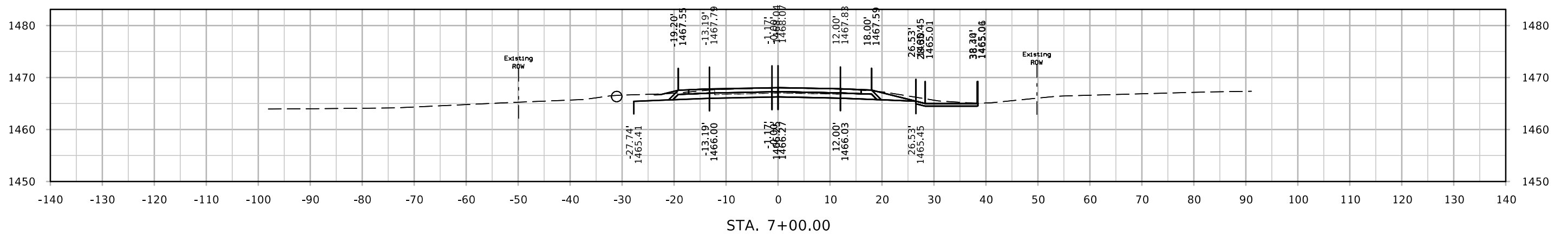
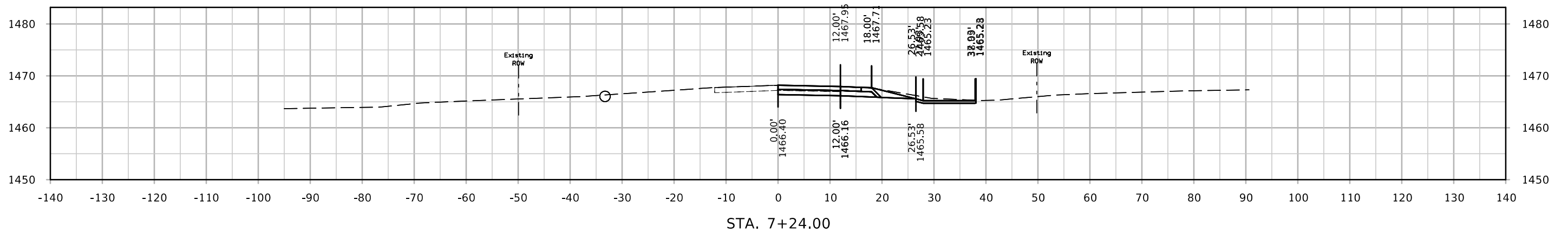


# IA 143

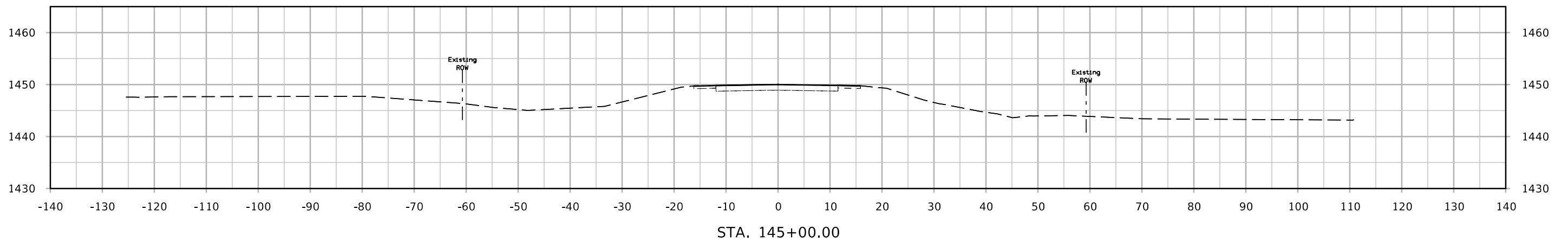
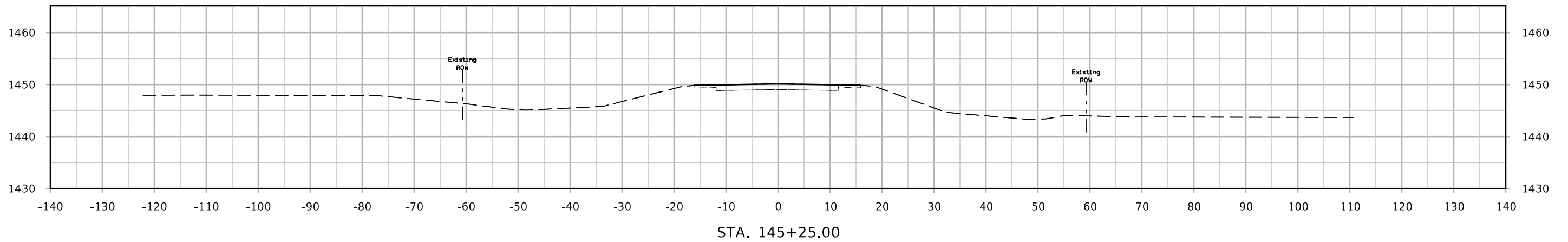
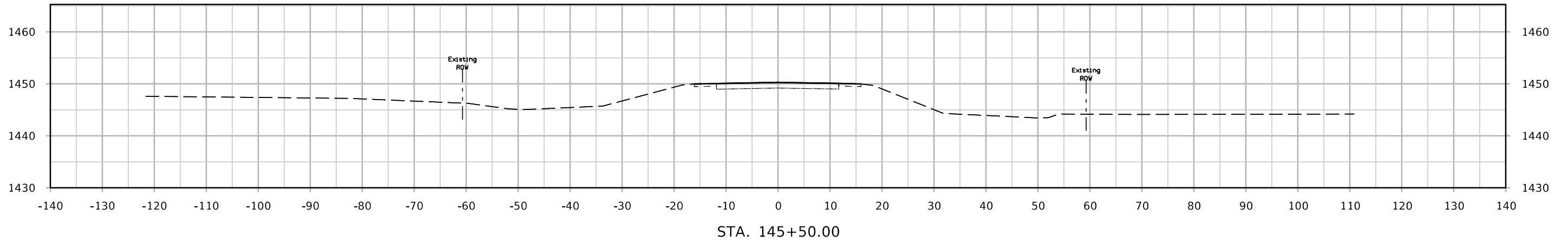




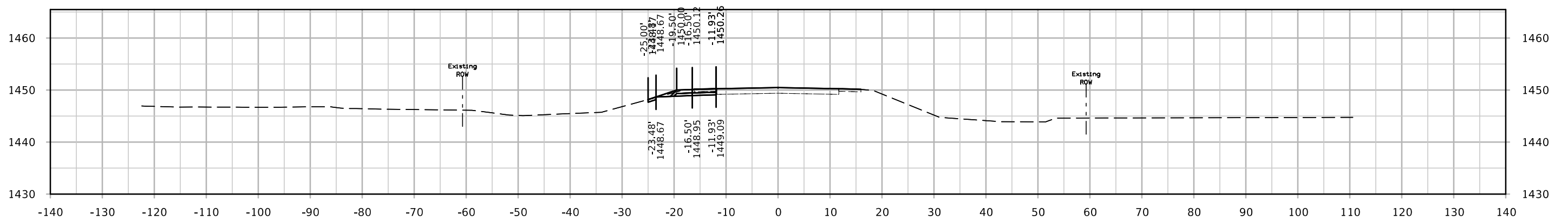
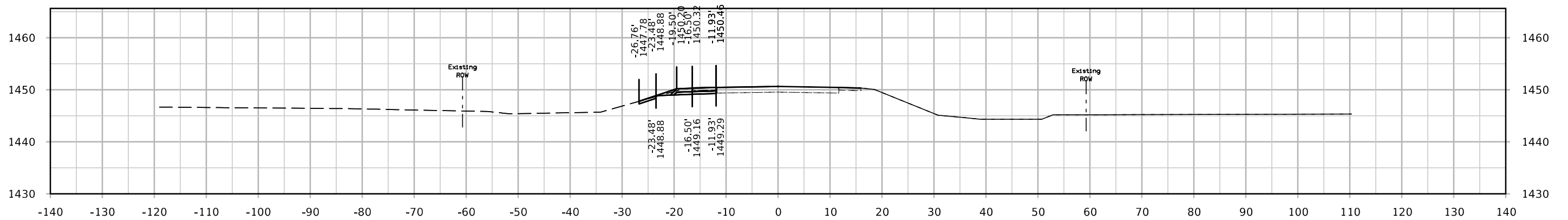
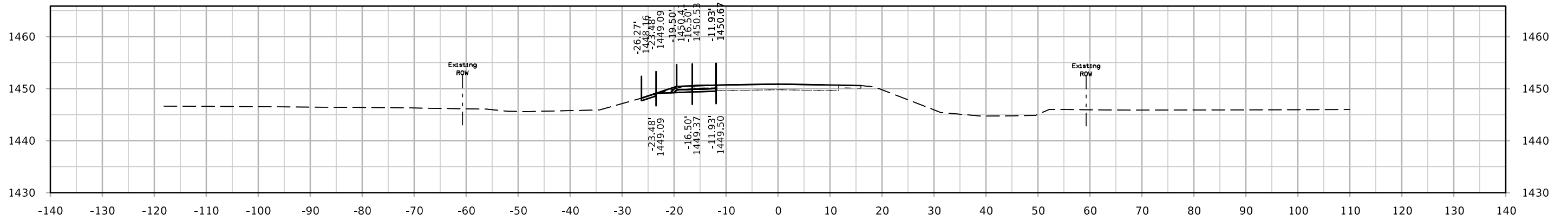




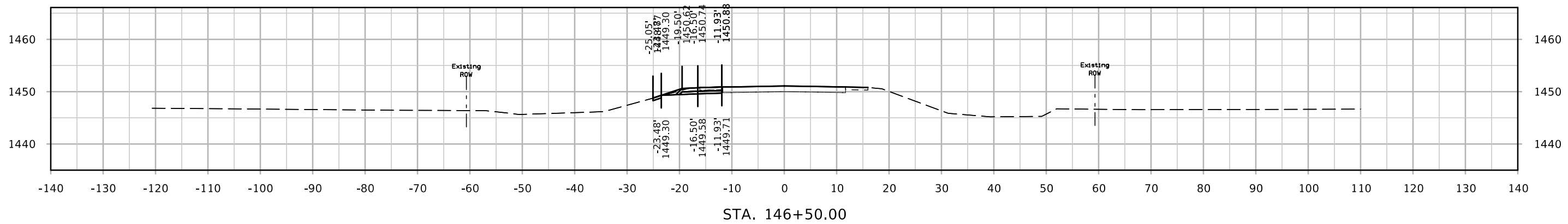
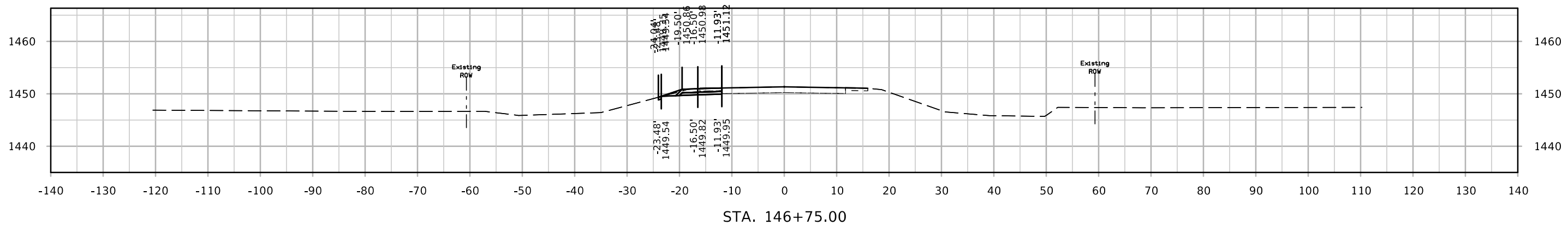
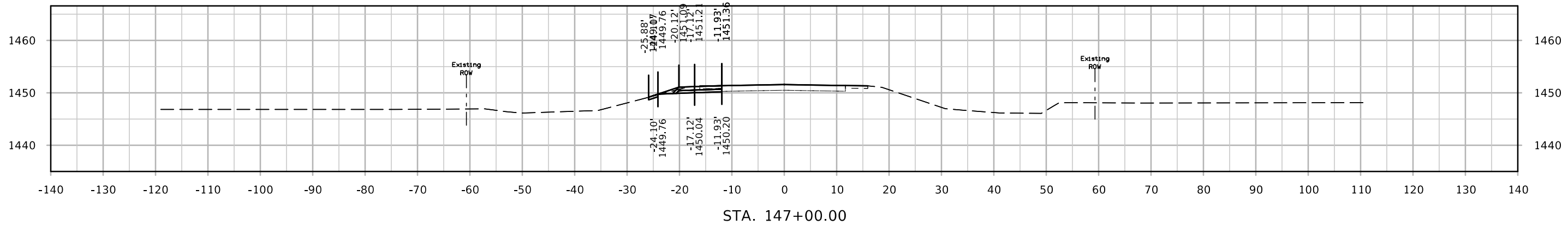
# DET IA3



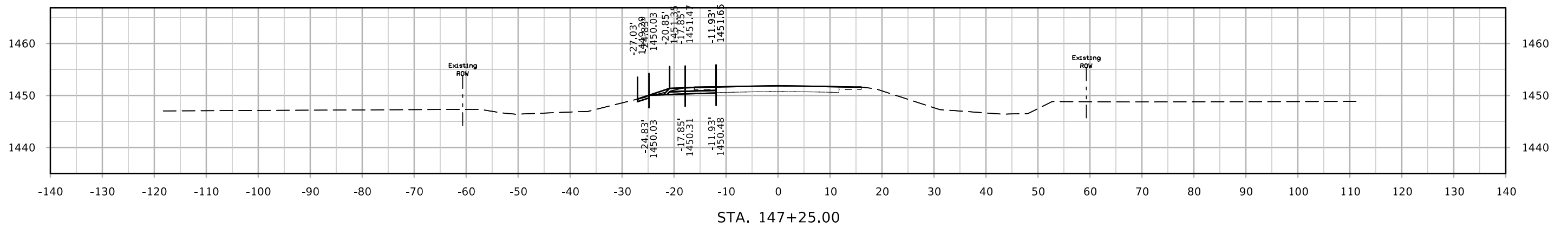
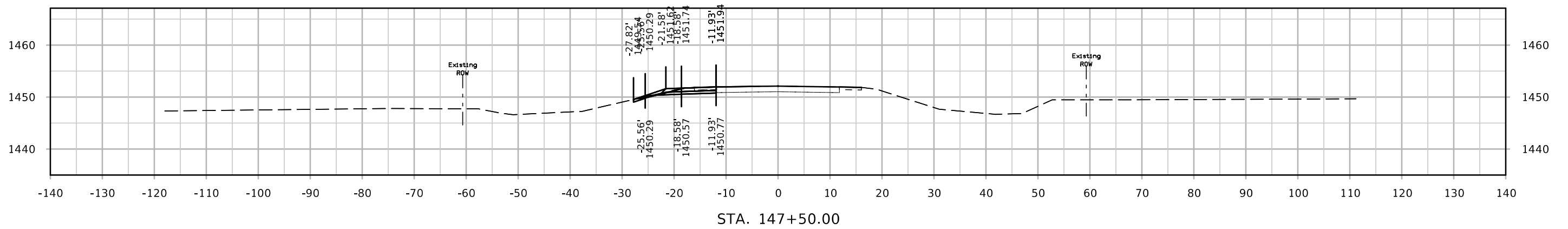
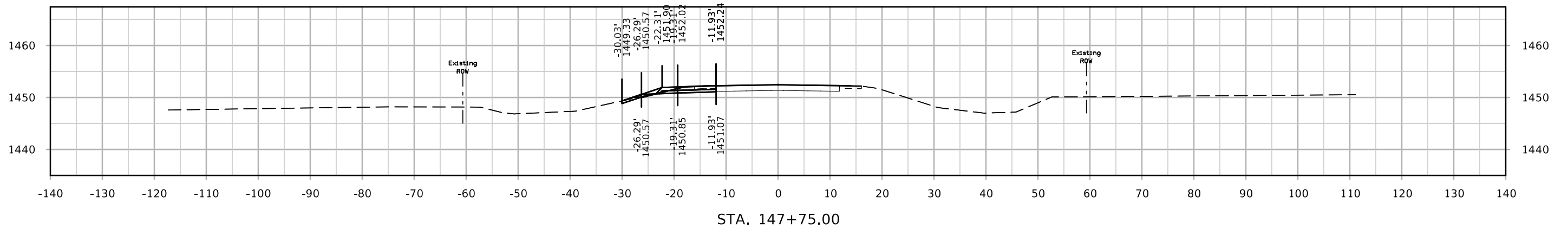
# DET IA3



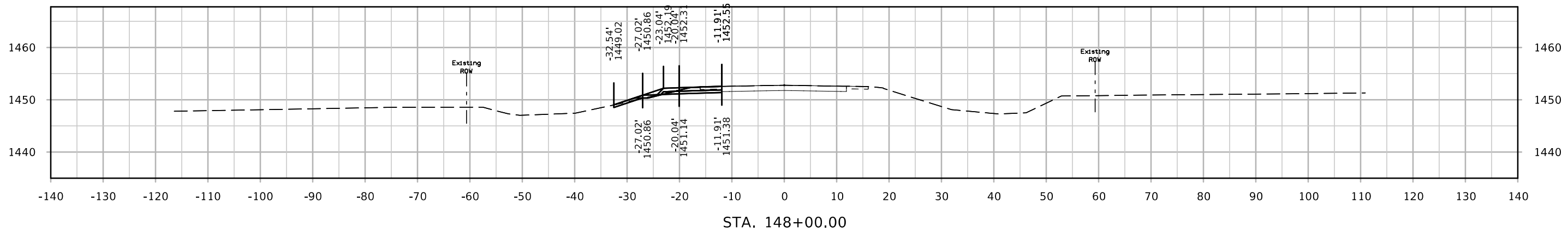
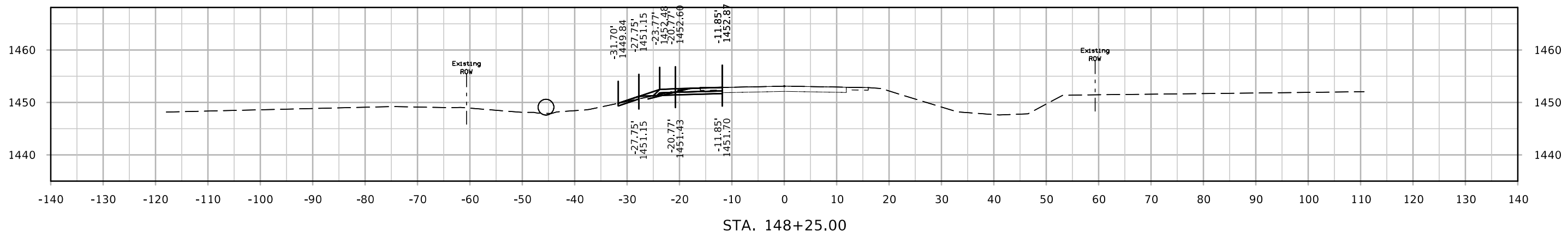
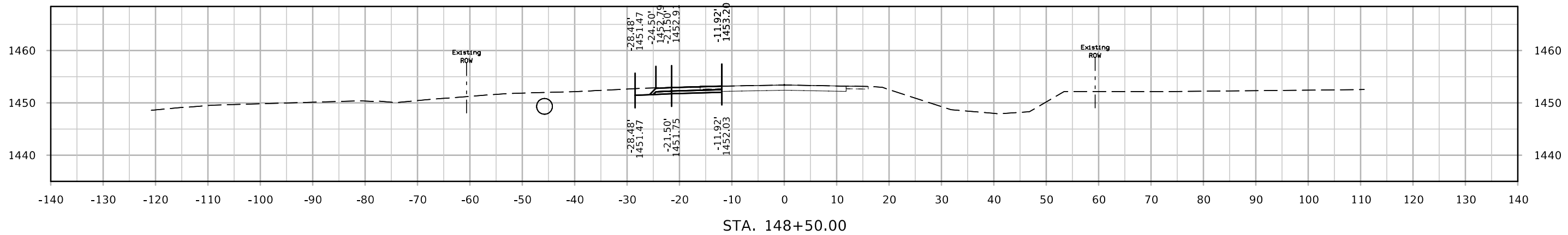
# DET IA3



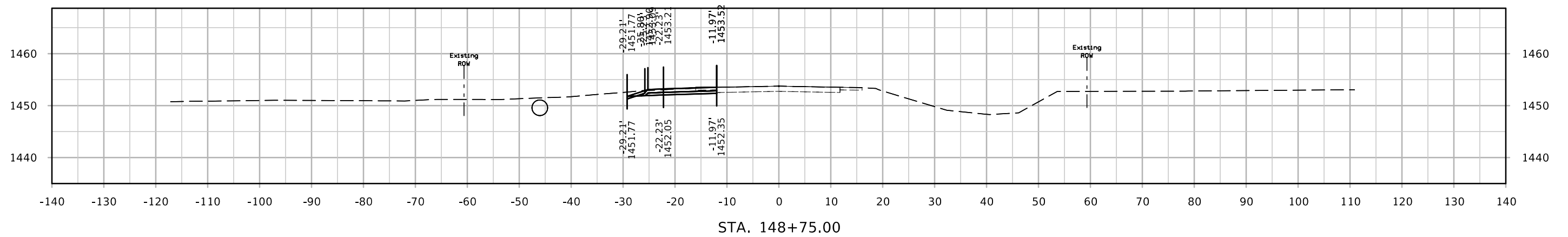
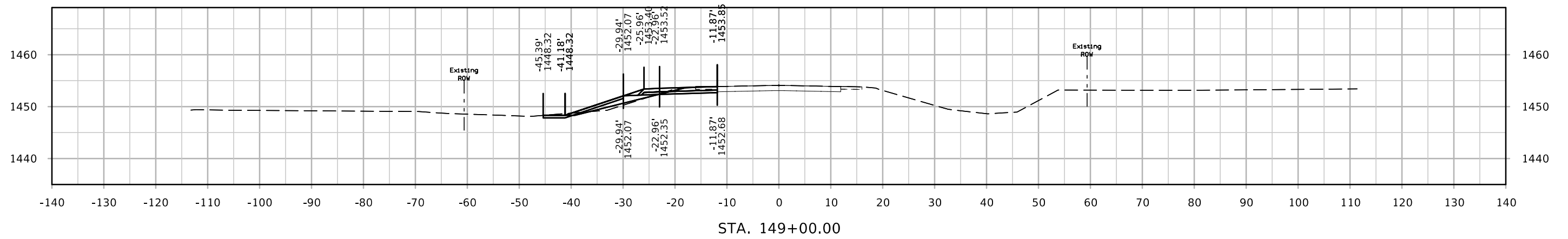
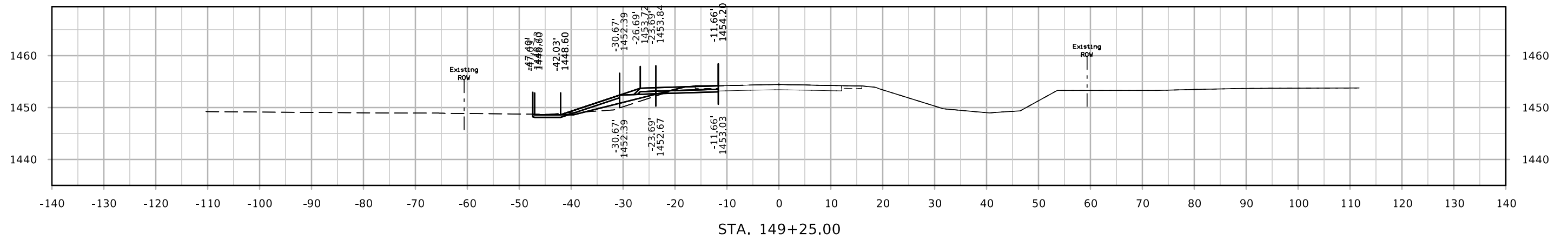
# DET IA3



# DET IA3

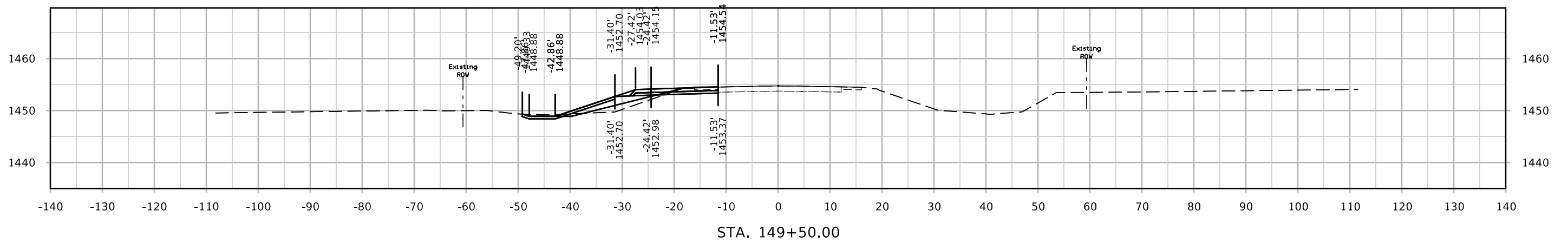
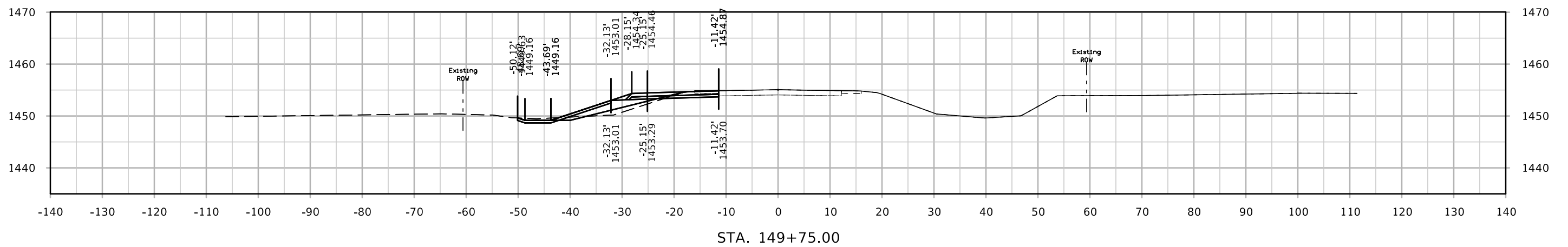
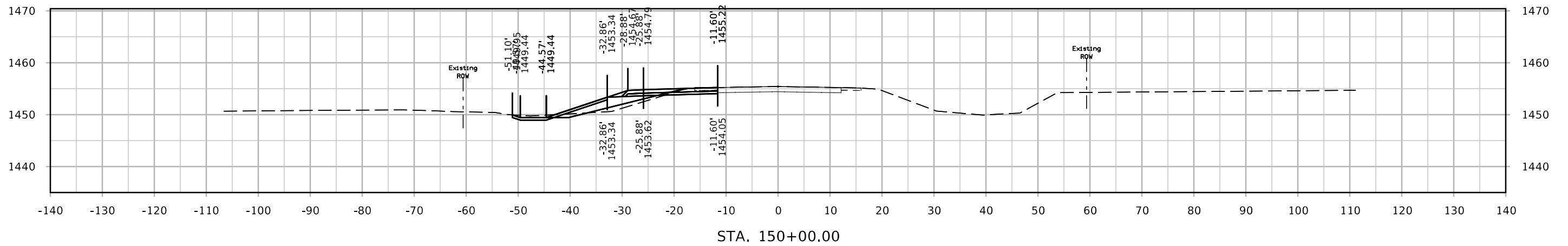


# DET IA3

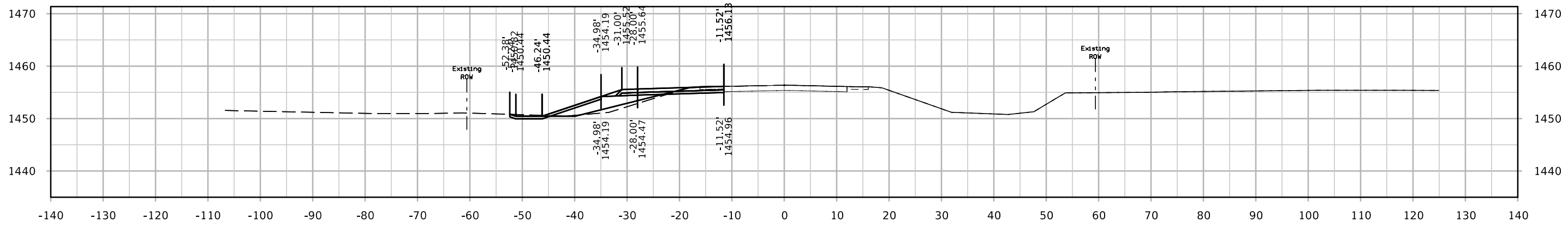




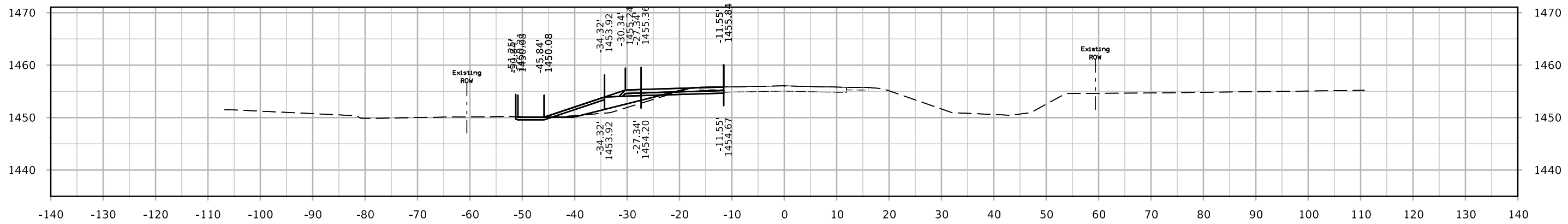
# DET IA3



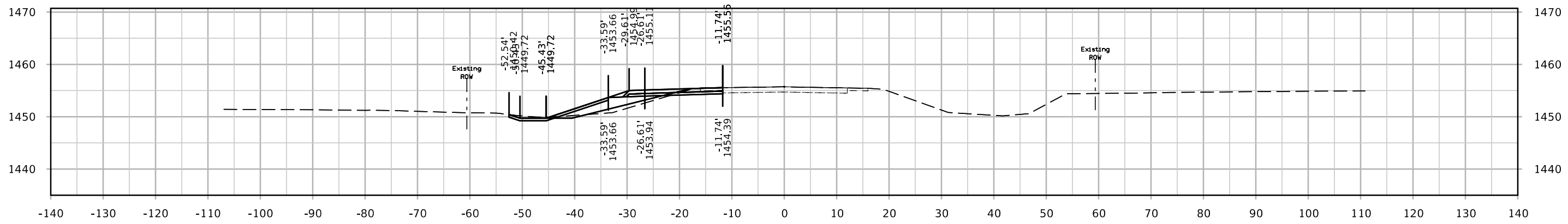
# DET IA3



STA. 150+75.00

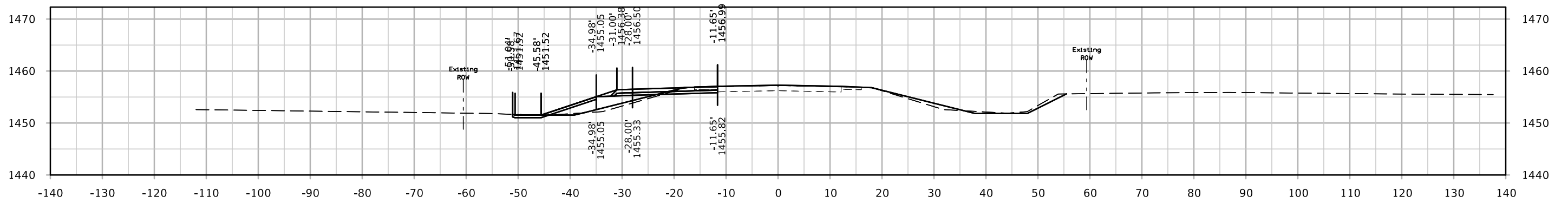


STA. 150+50.00

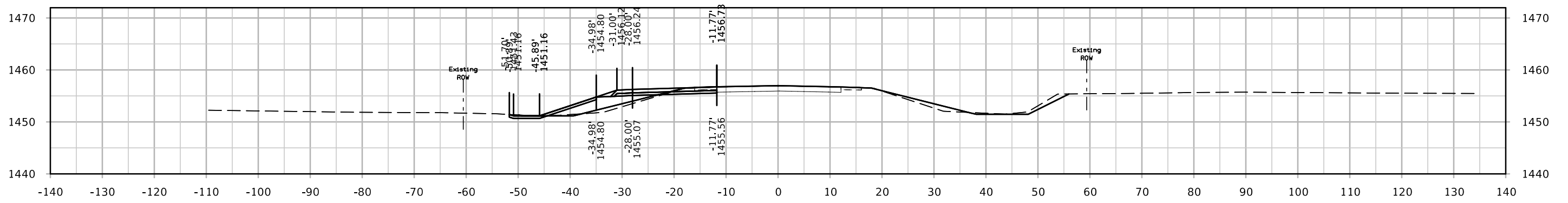


STA. 150+25.00

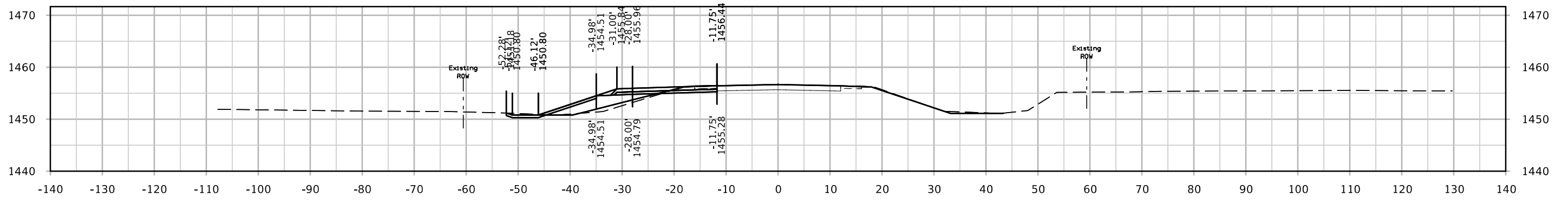
# DET IA3



STA. 151+50.00

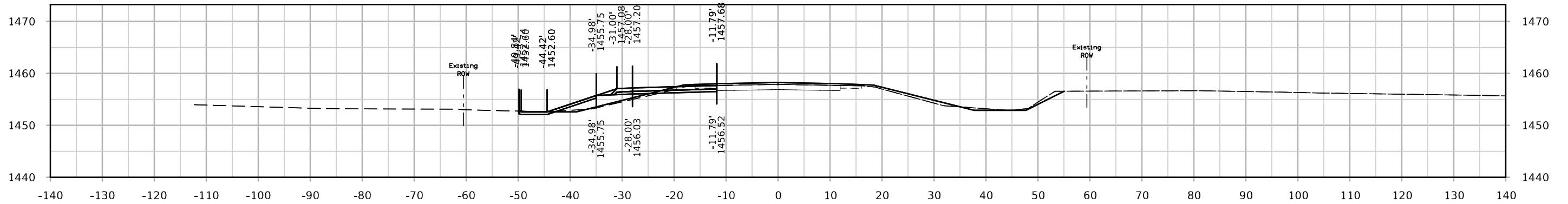


STA. 151+25.00

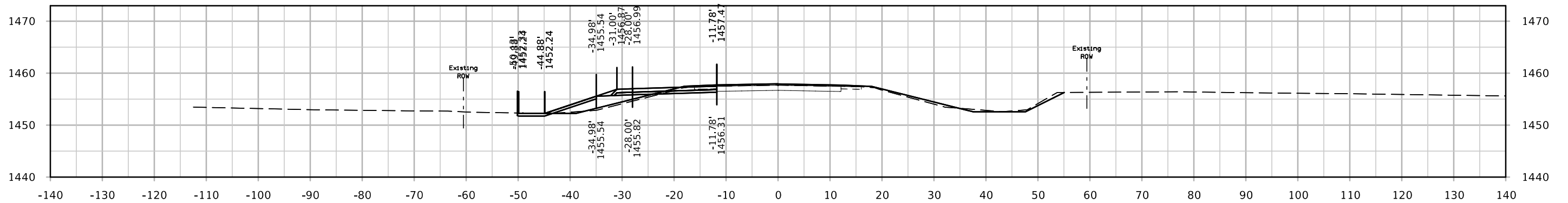


STA. 151+00.00

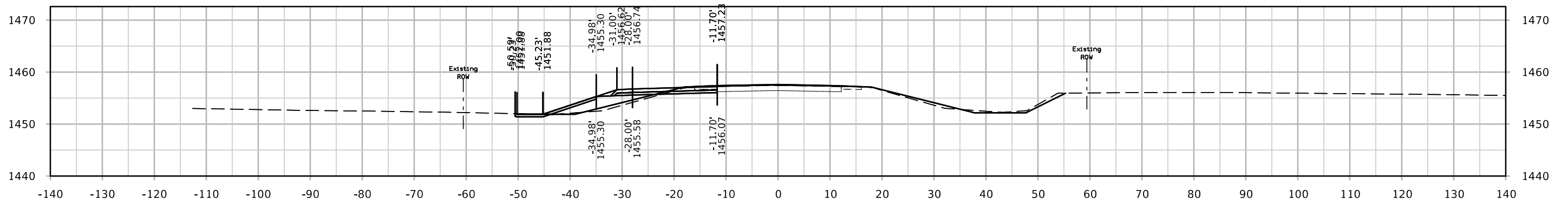
# DET IA3



STA. 152+25.00

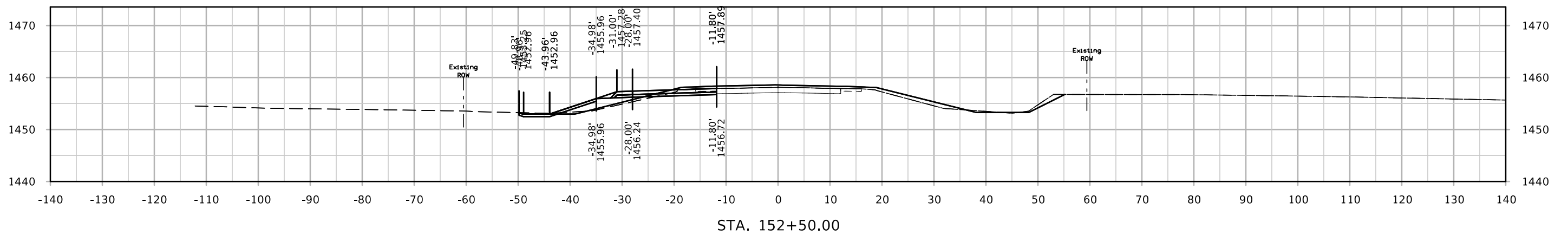
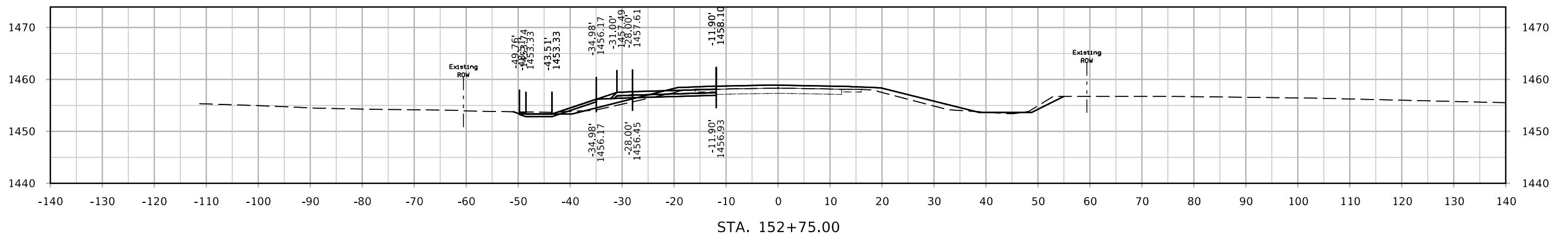
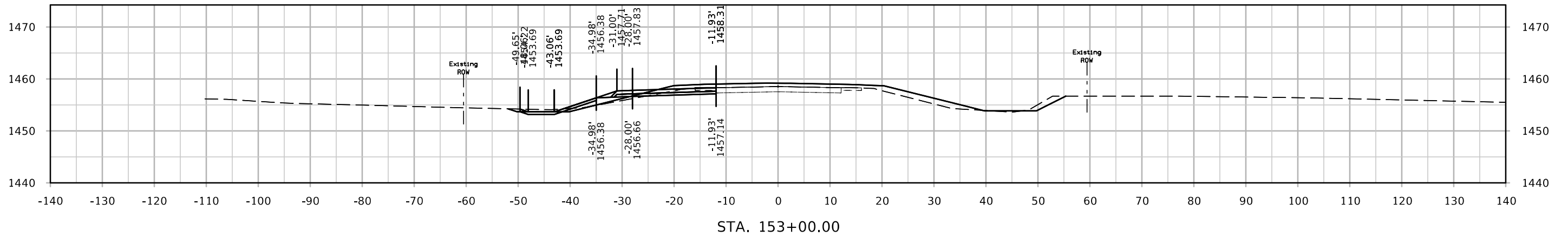


STA. 152+00.00

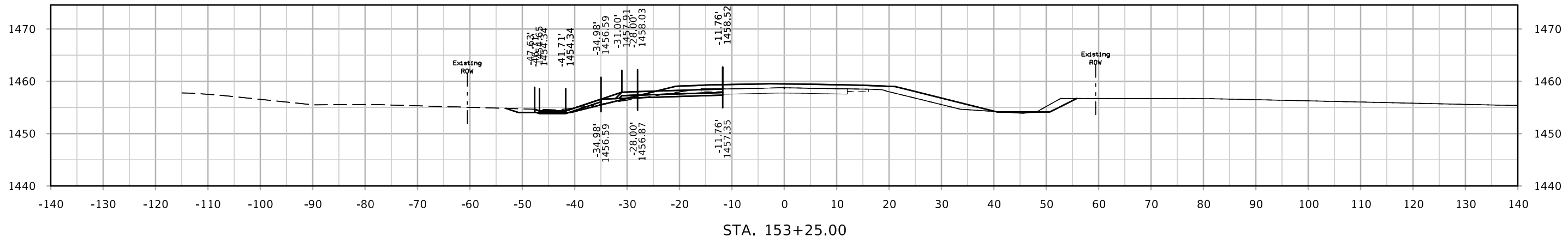
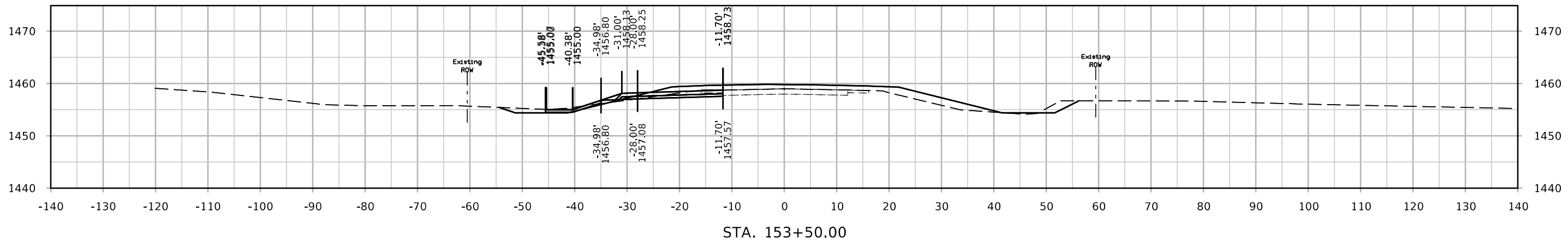
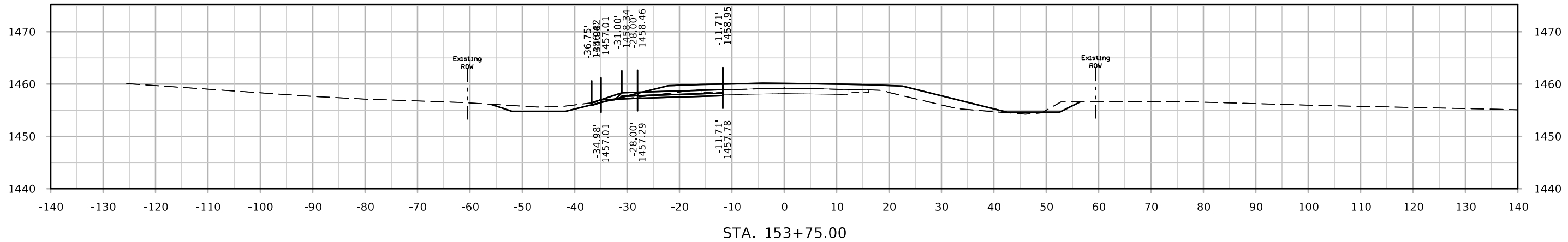


STA. 151+75.00

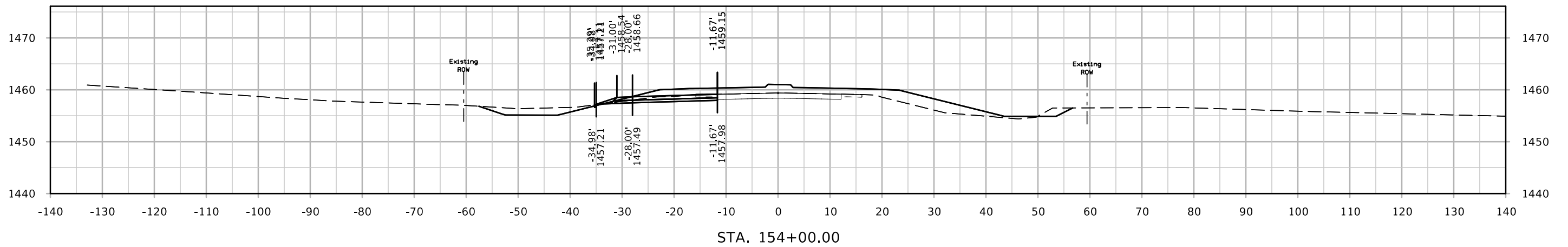
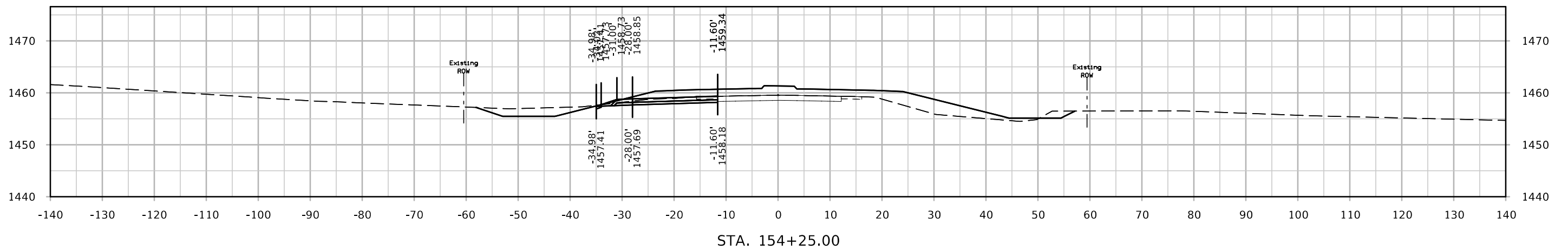
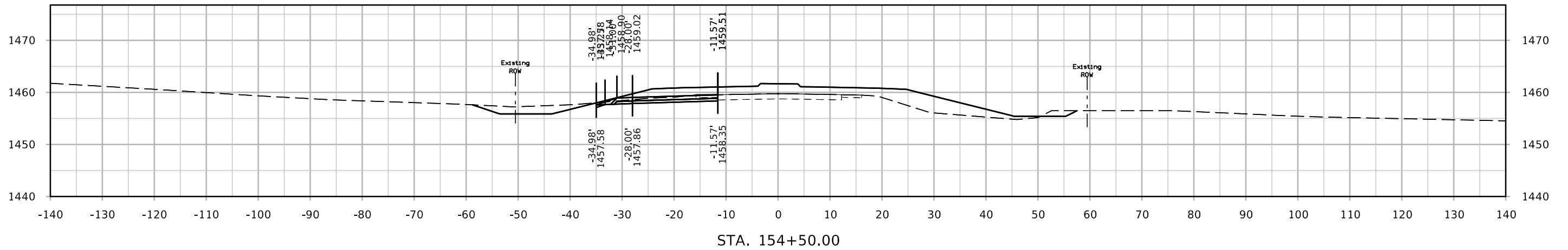
# DET IA3



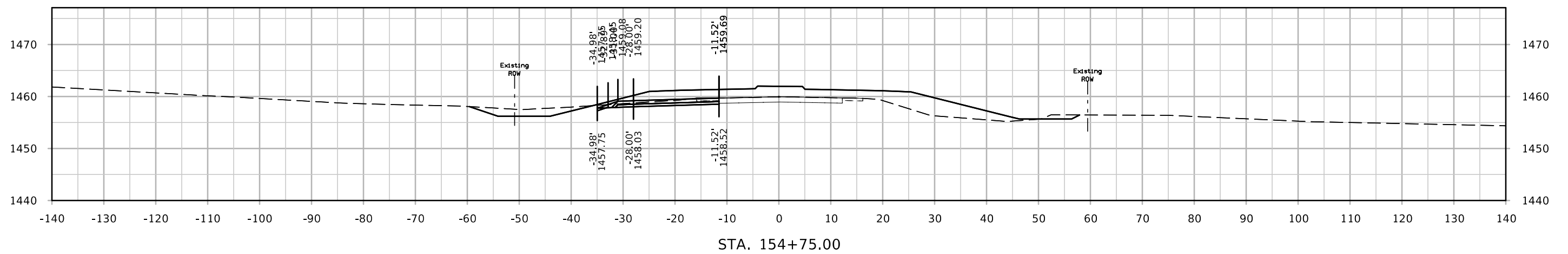
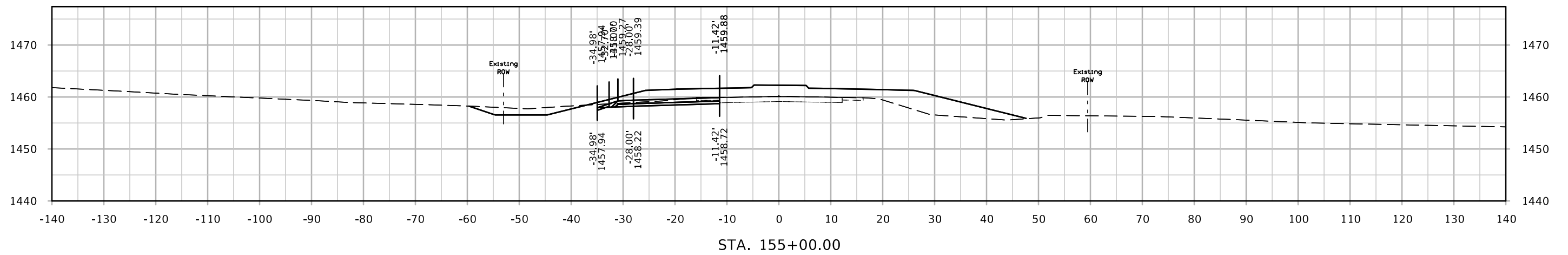
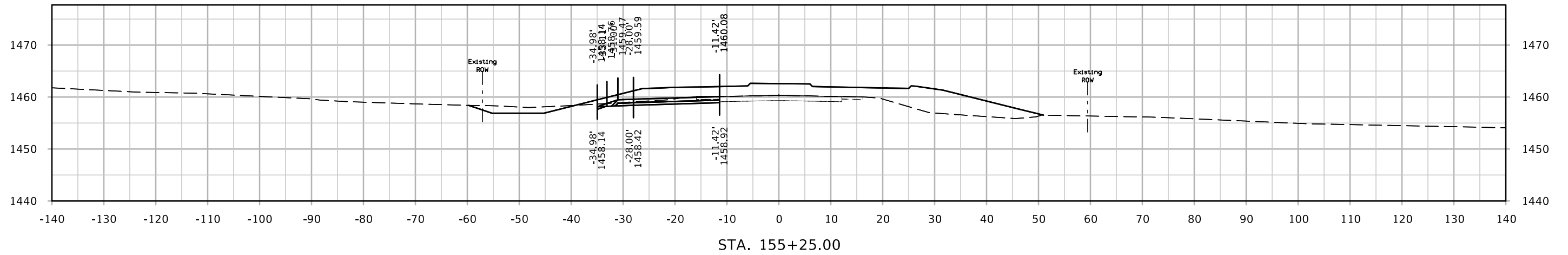
# DET IA3



# DET IA3

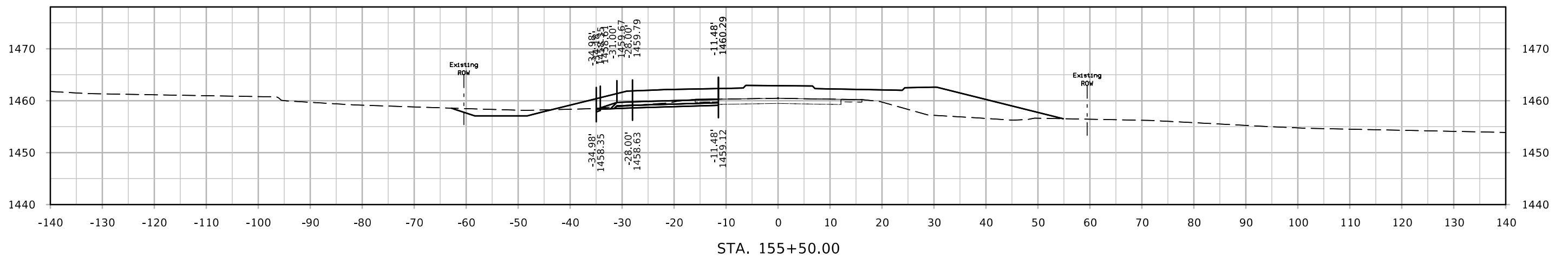
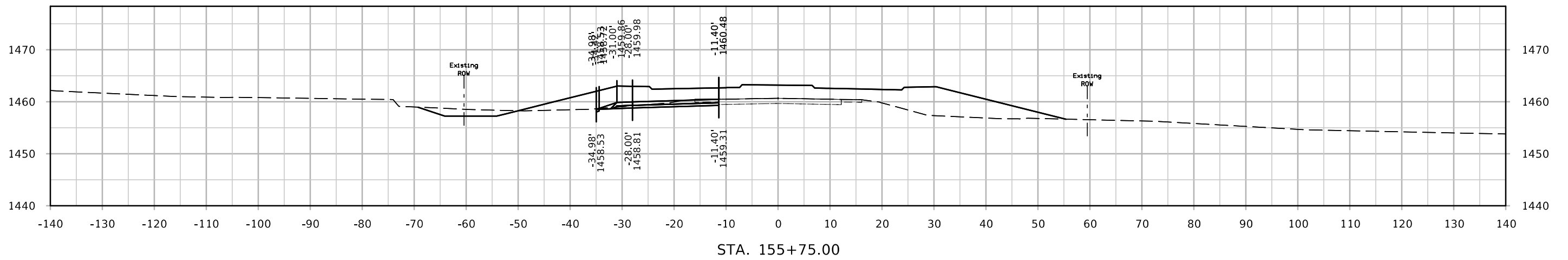
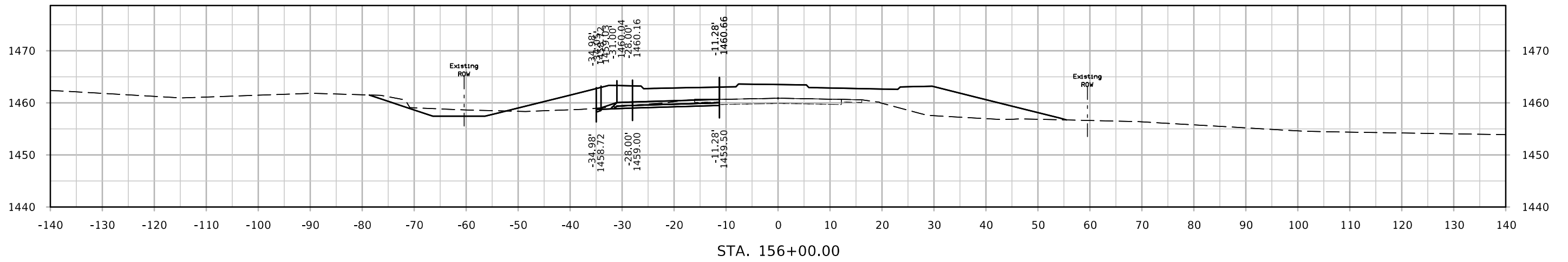


# DET IA3

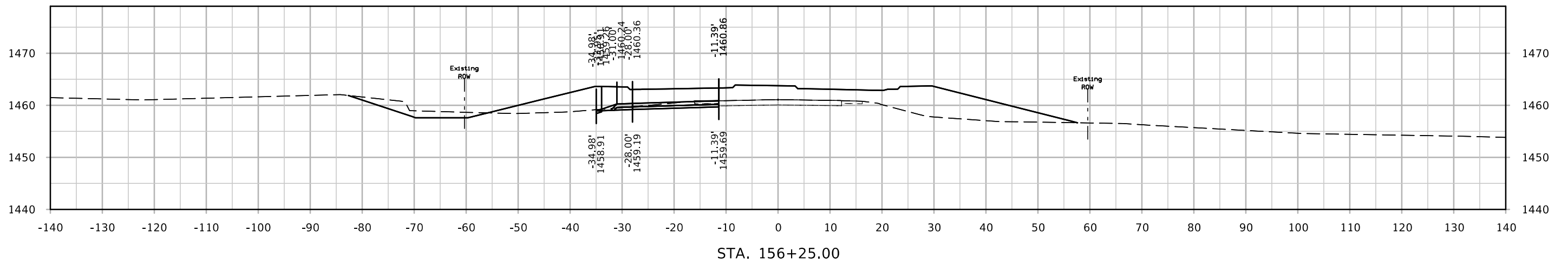
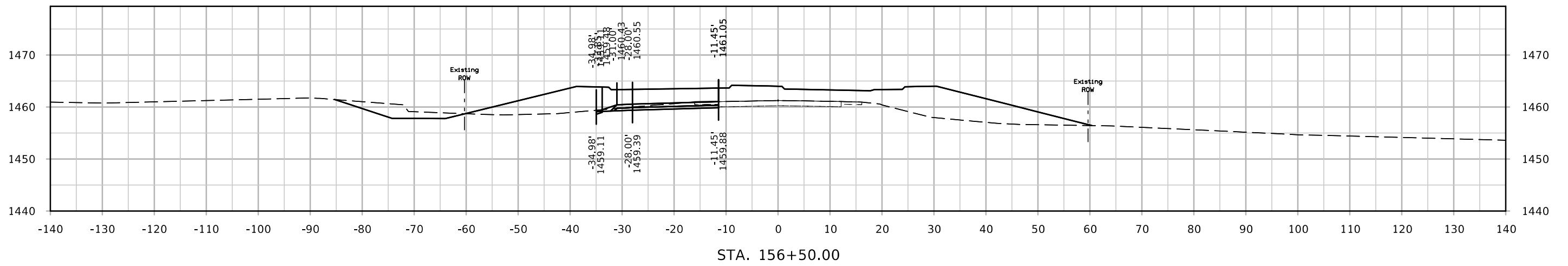
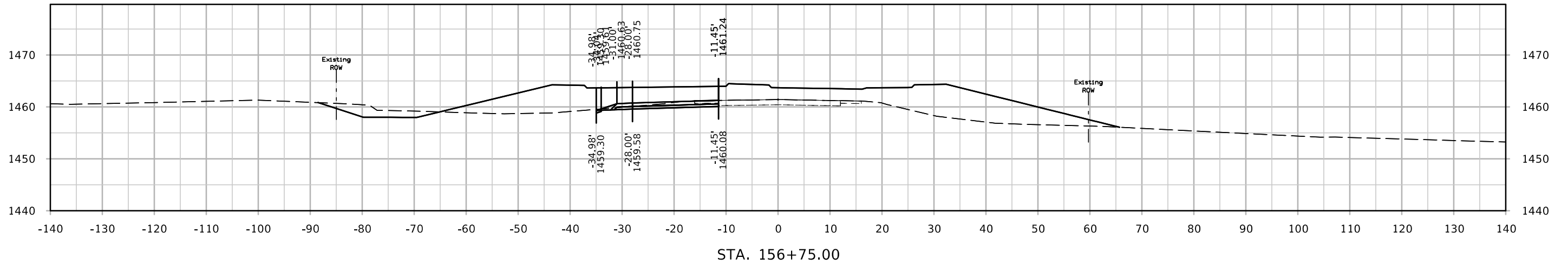




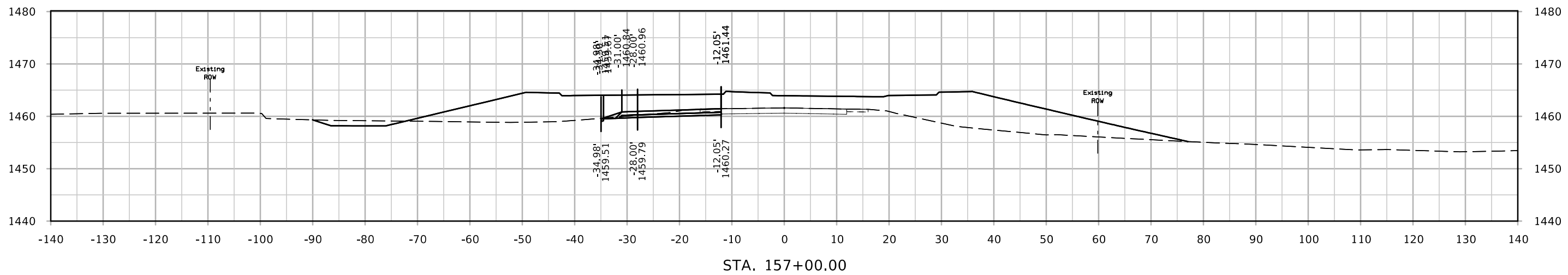
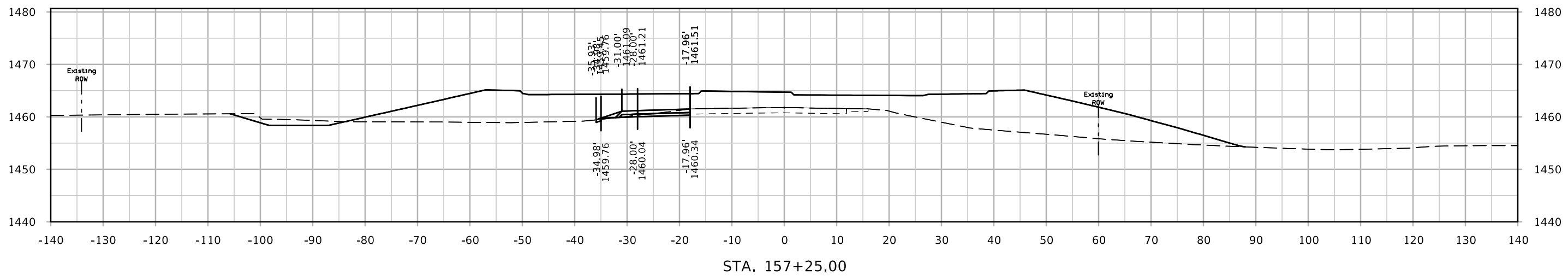
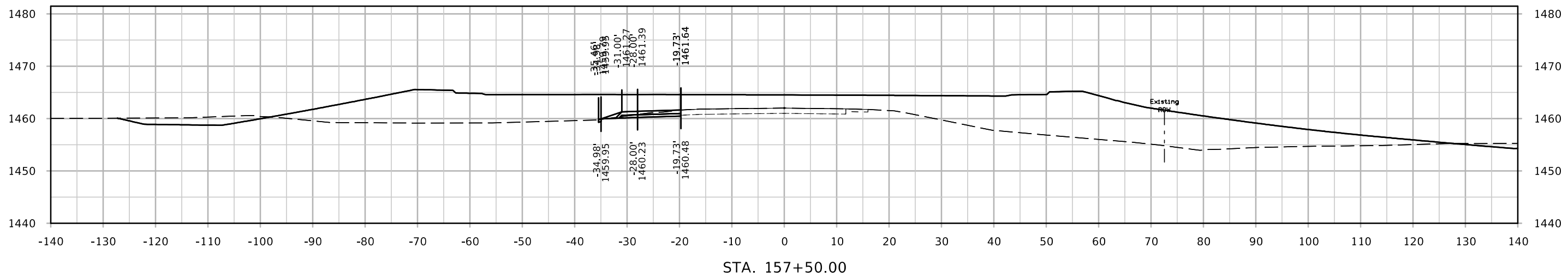
# DET IA3



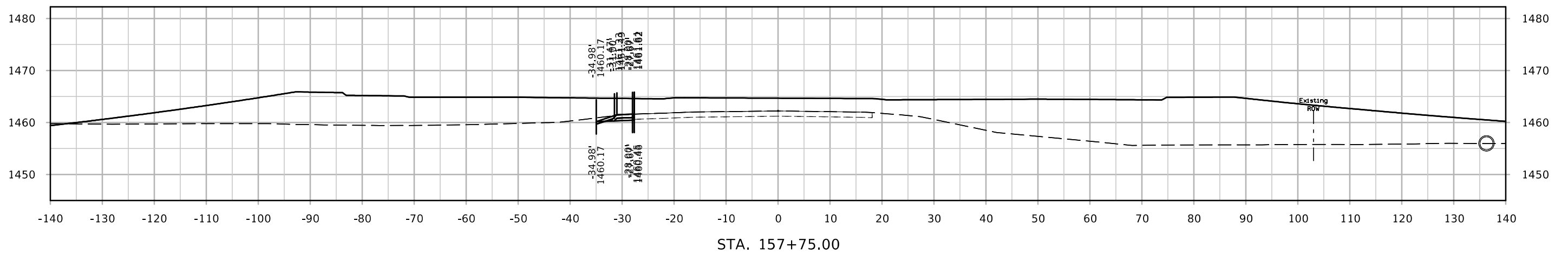
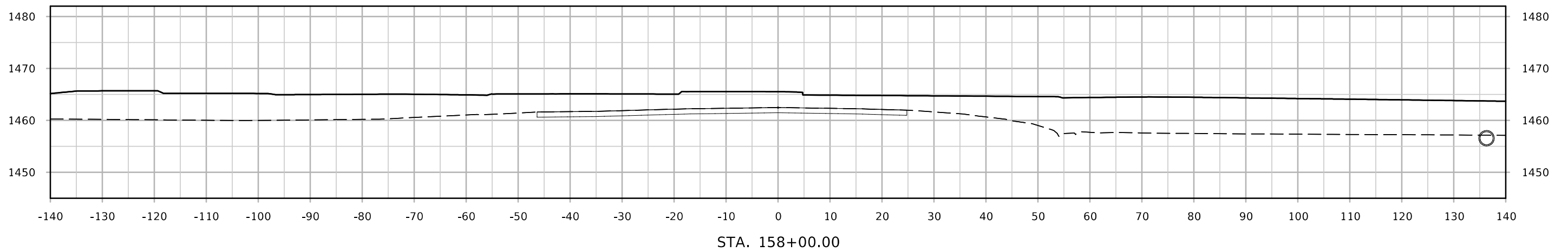
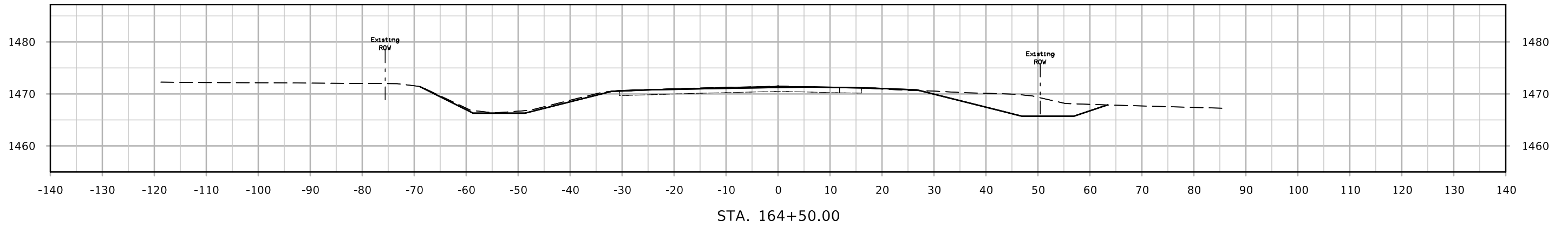
# DET IA3



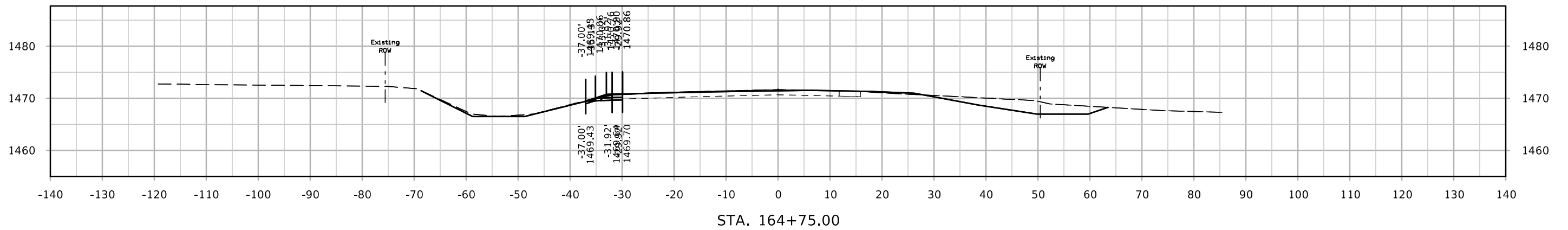
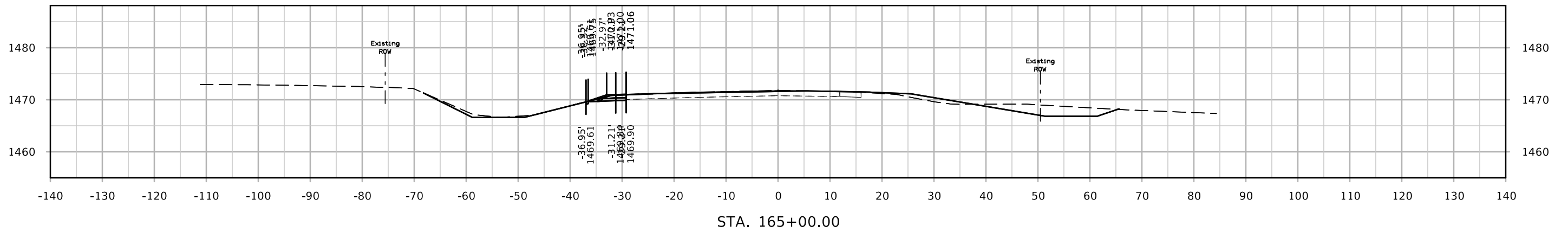
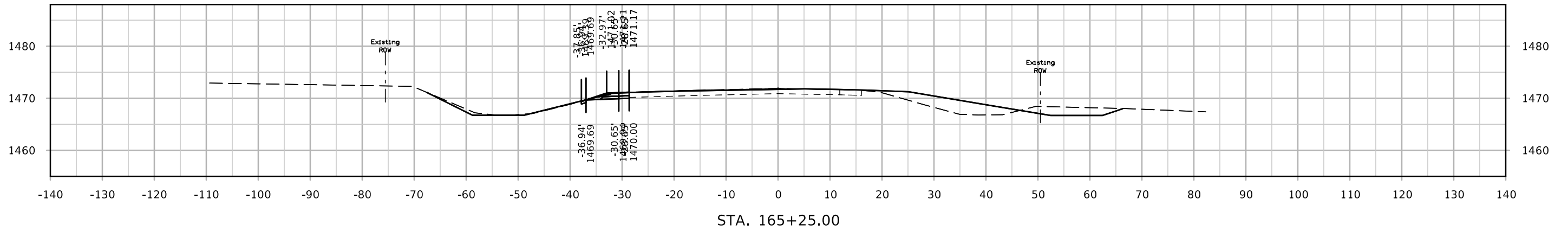
# DET IA3



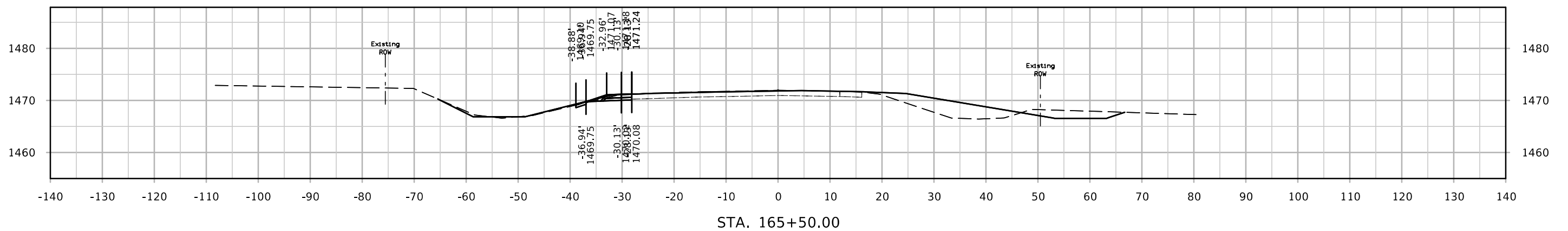
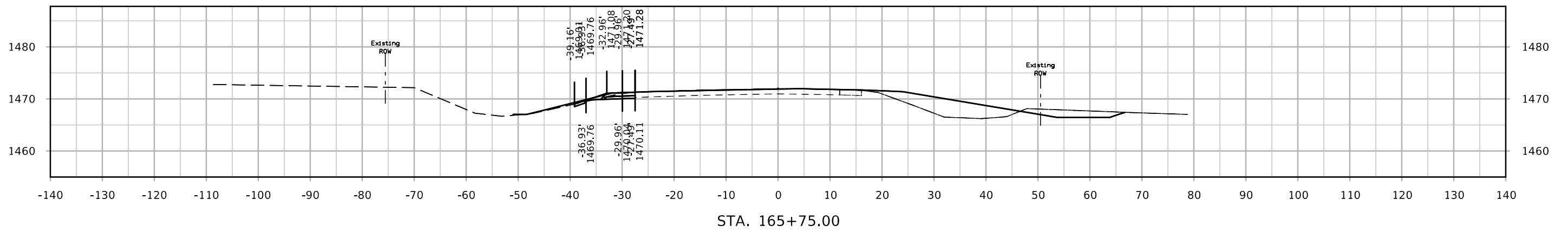
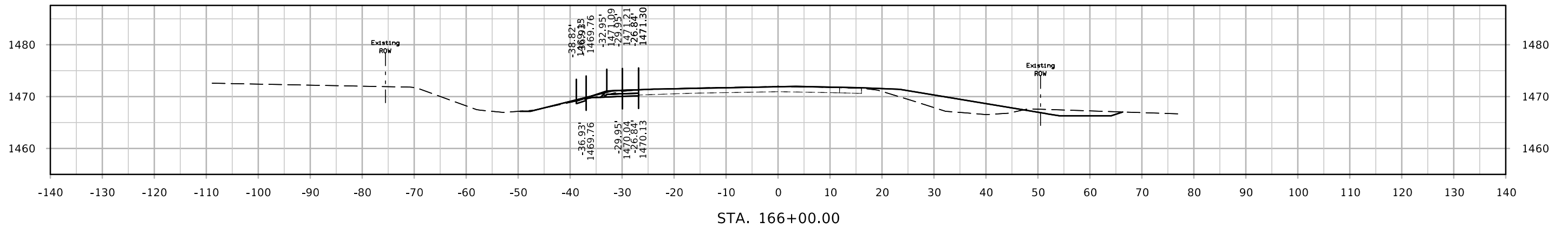
# DET IA3



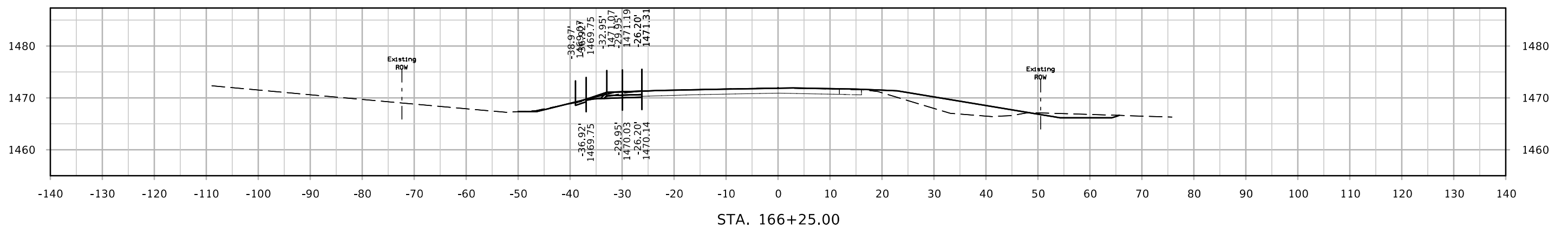
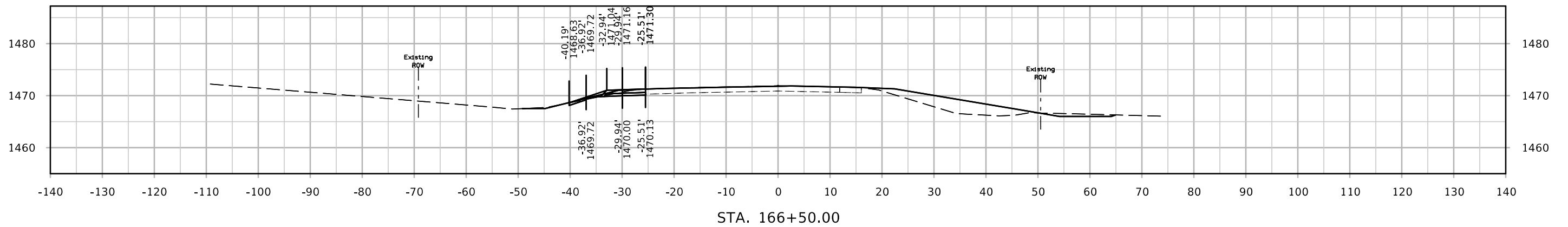
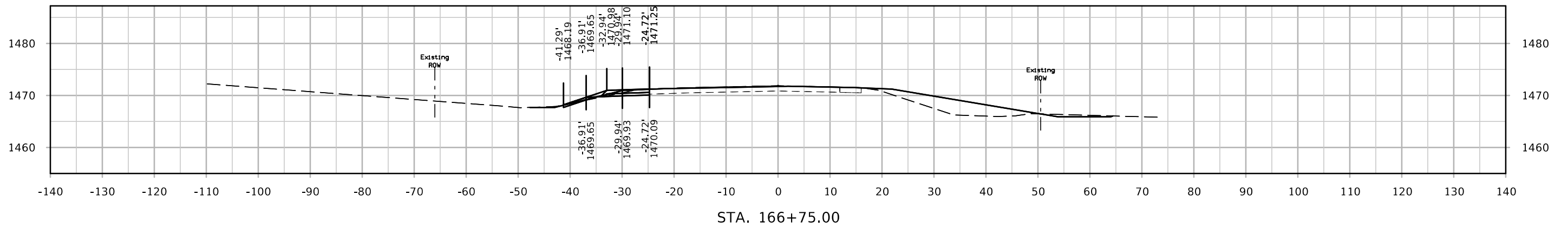
# DET IA3



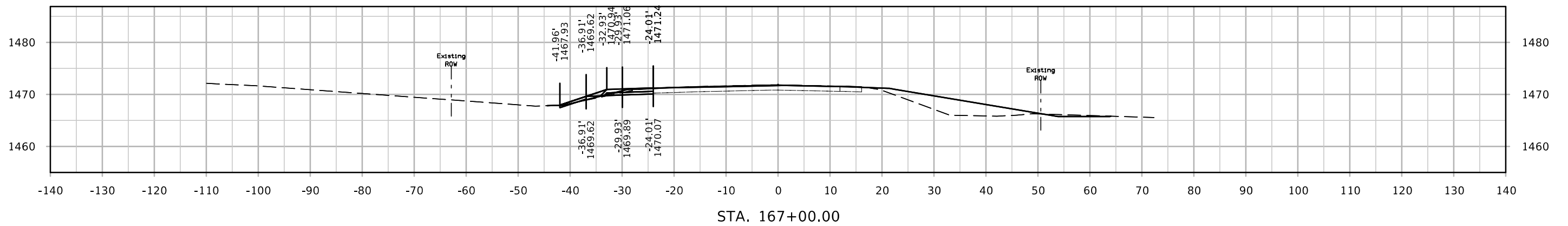
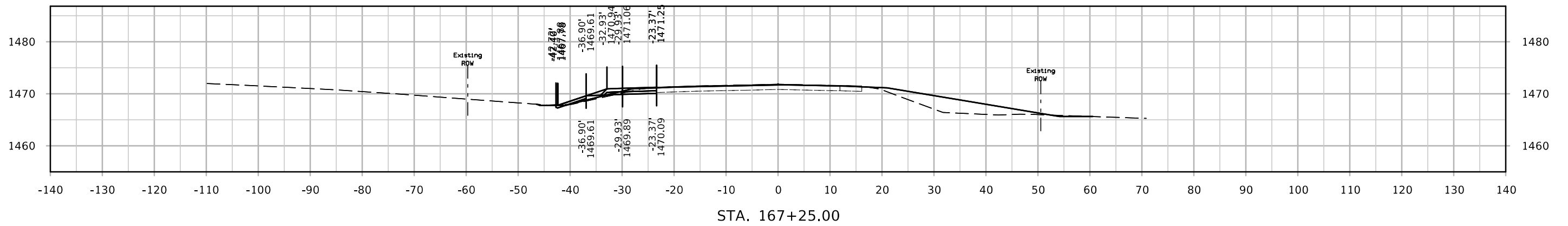
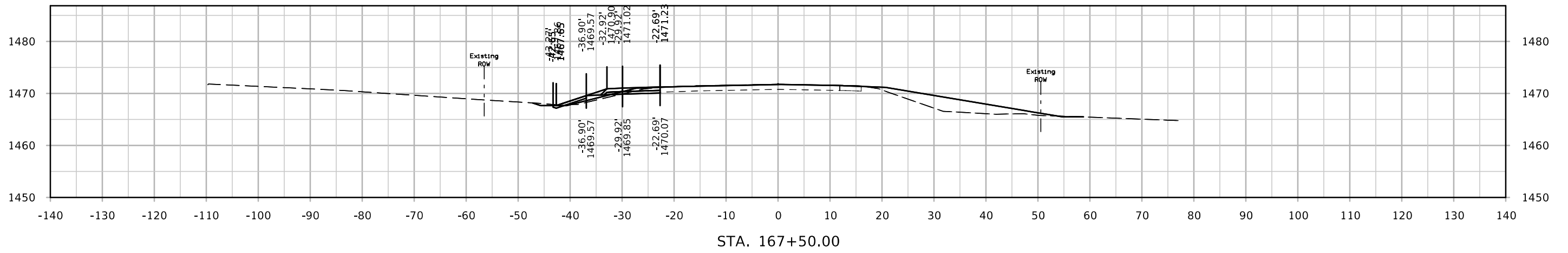
# DET IA3



# DET IA3

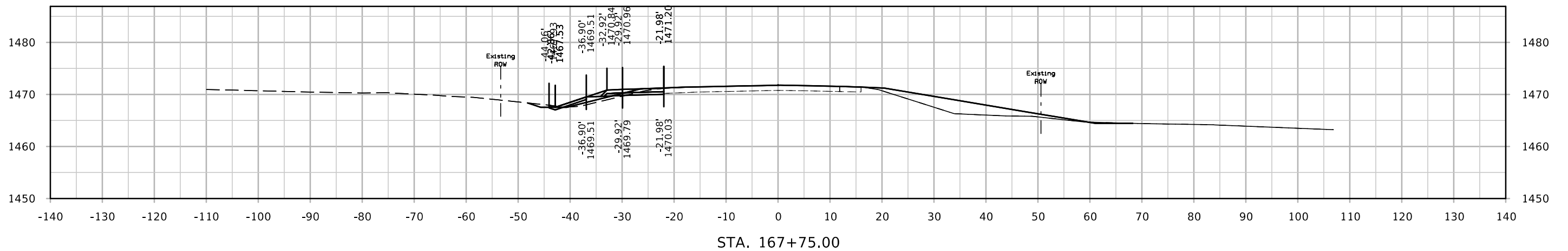
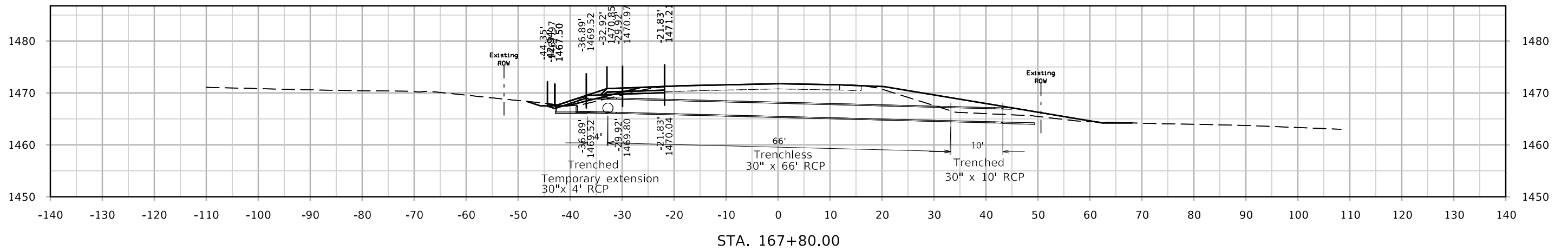
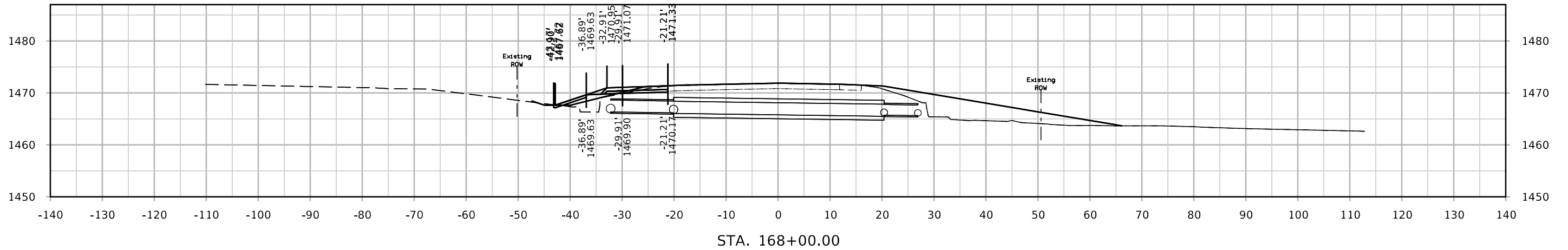


# DET IA3

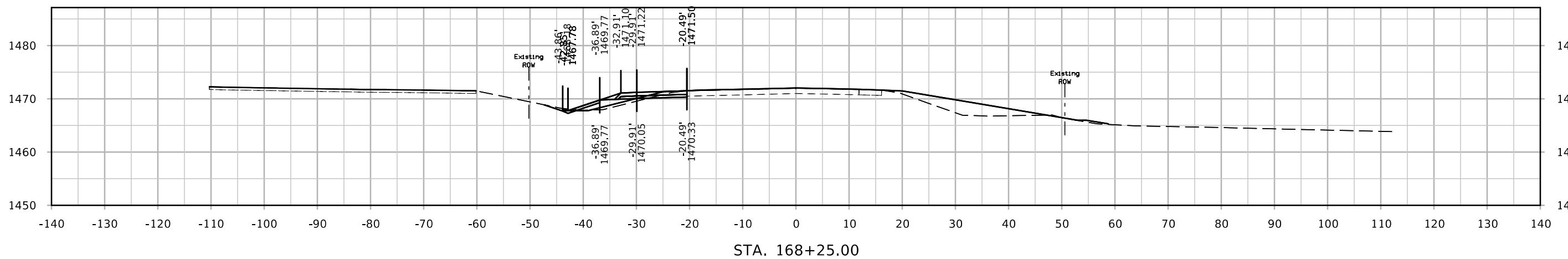
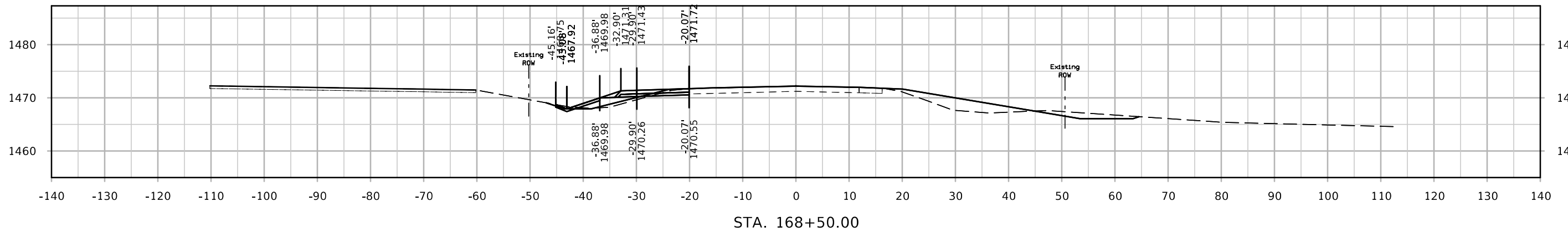
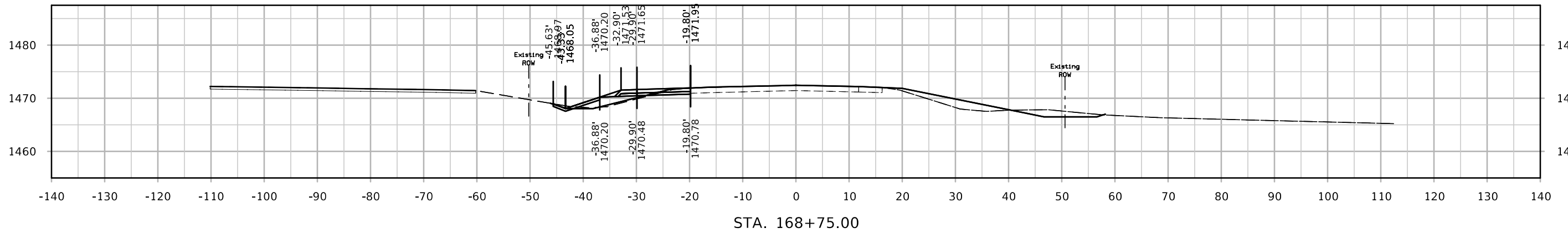




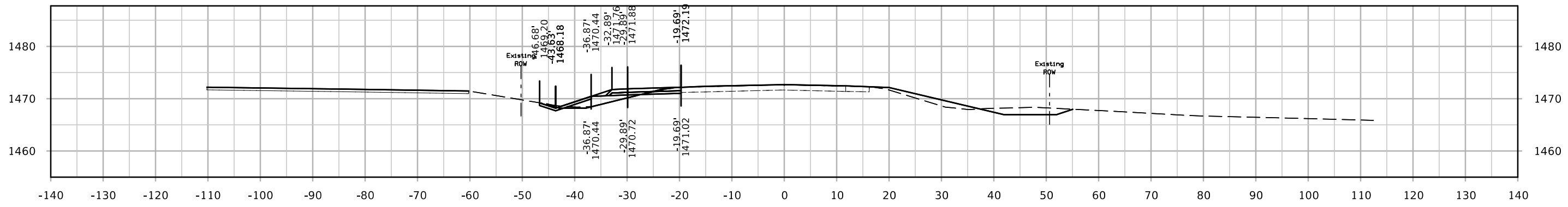
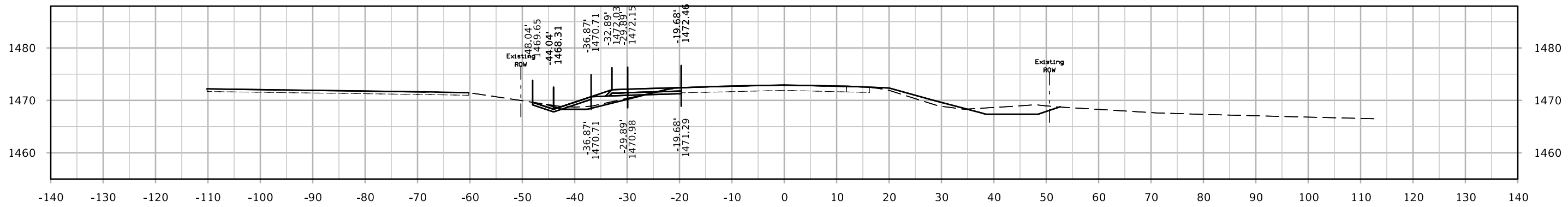
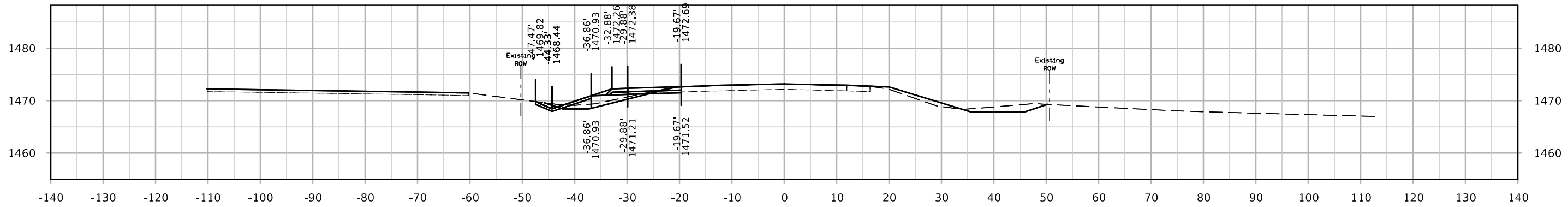
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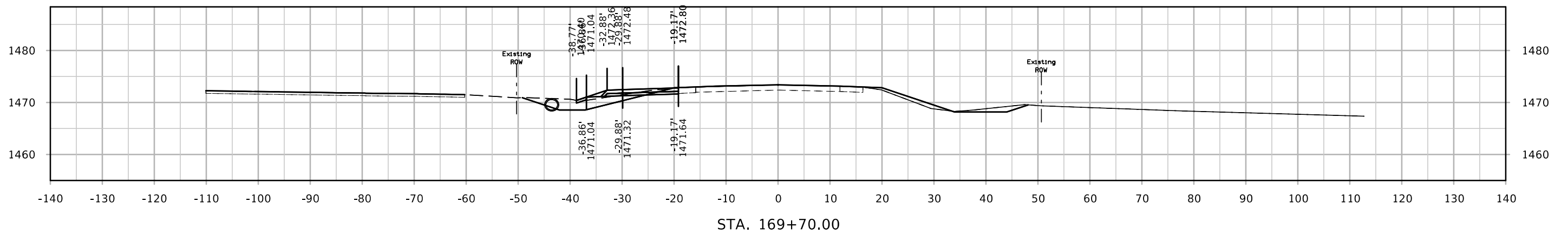
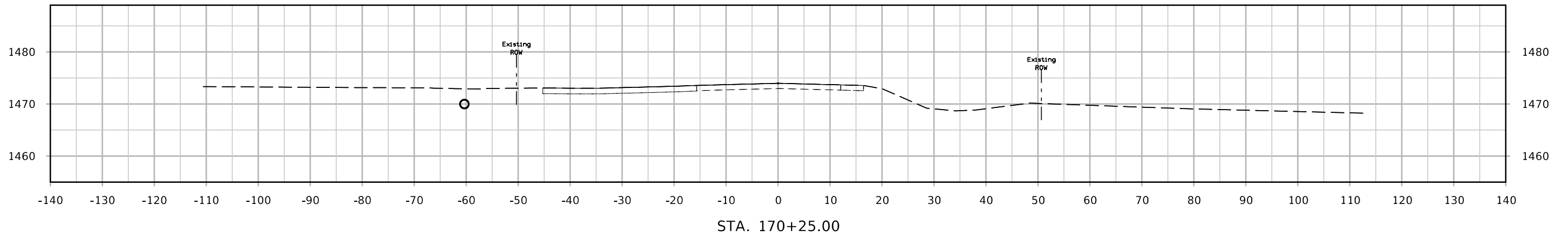
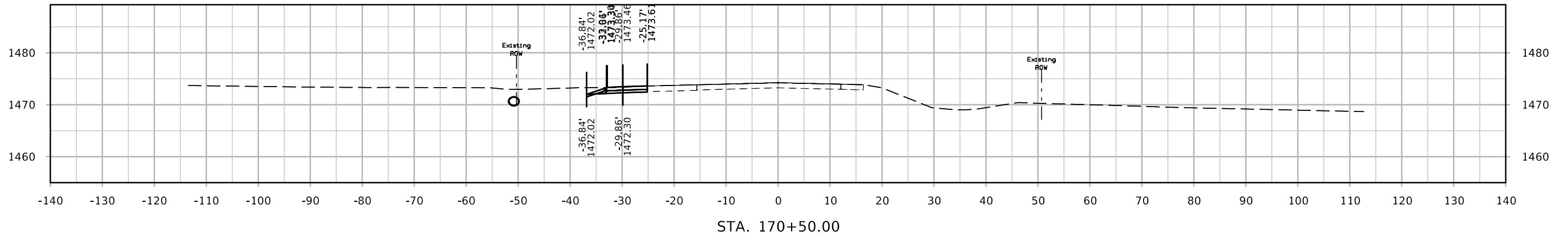
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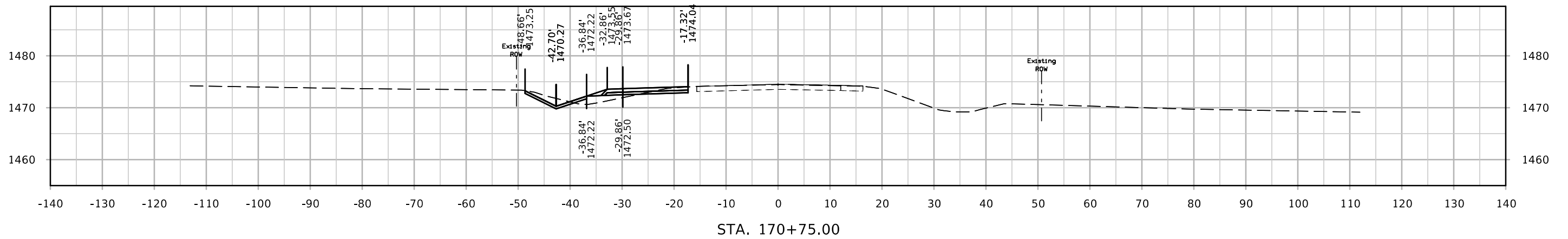
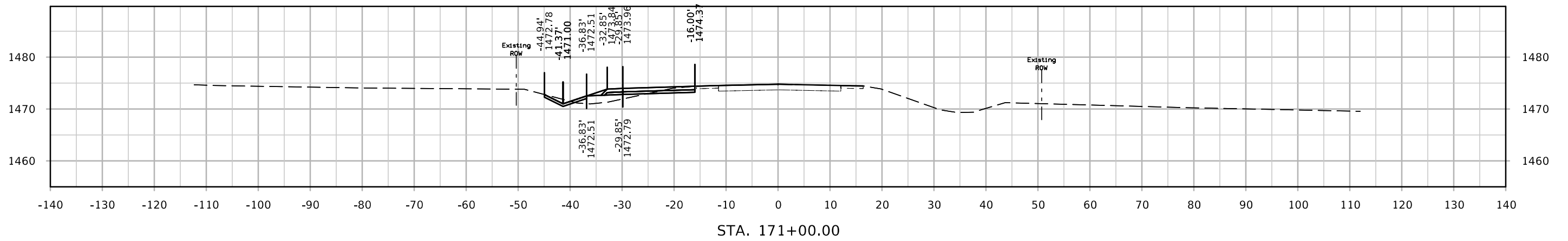
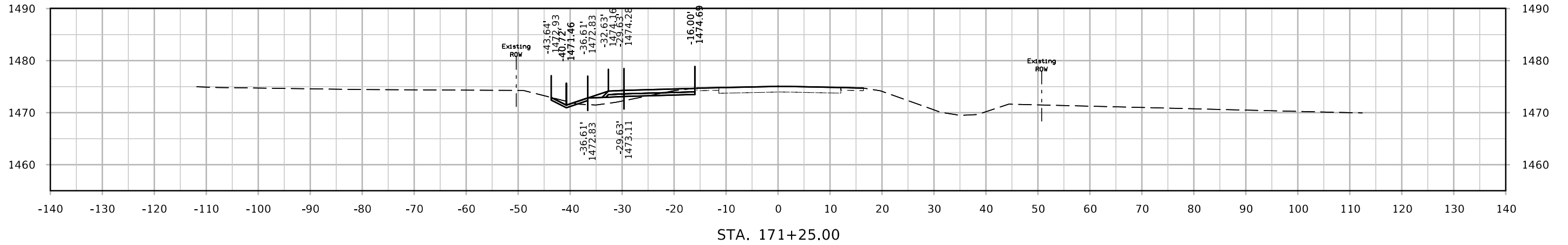
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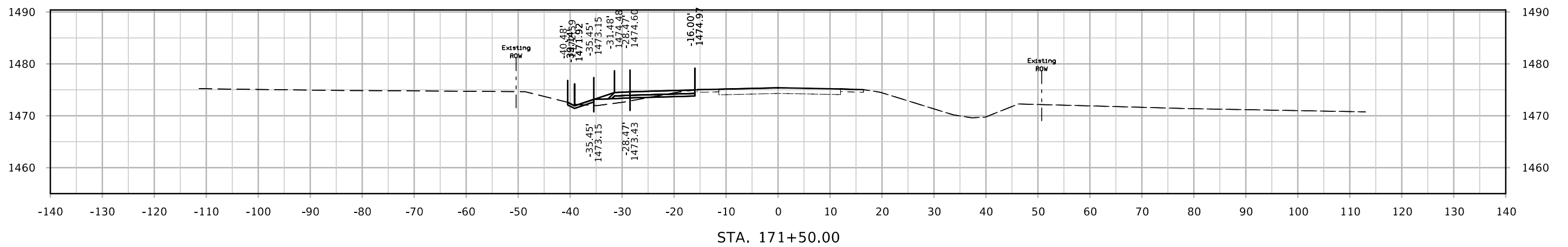
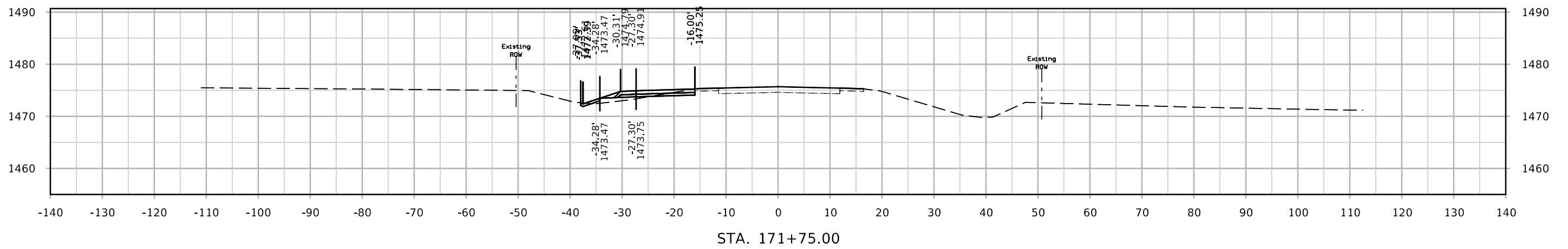
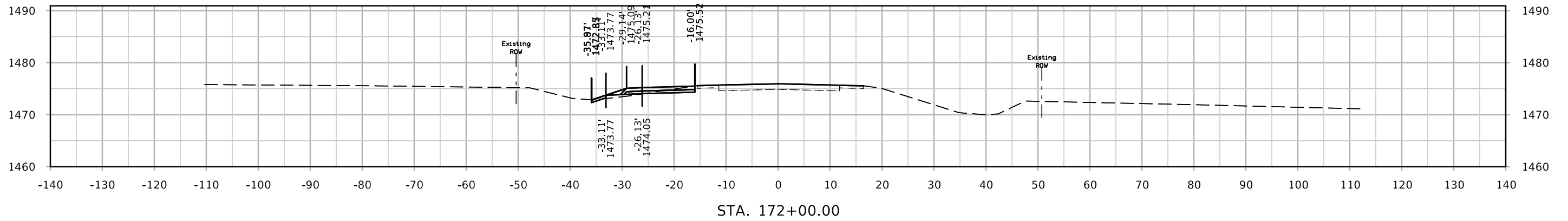
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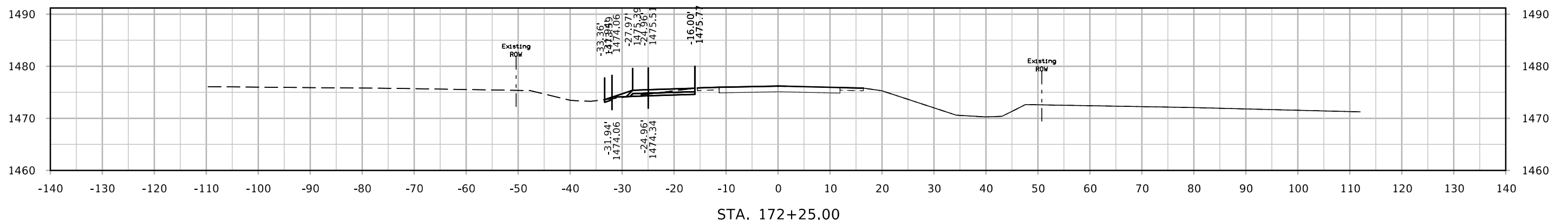
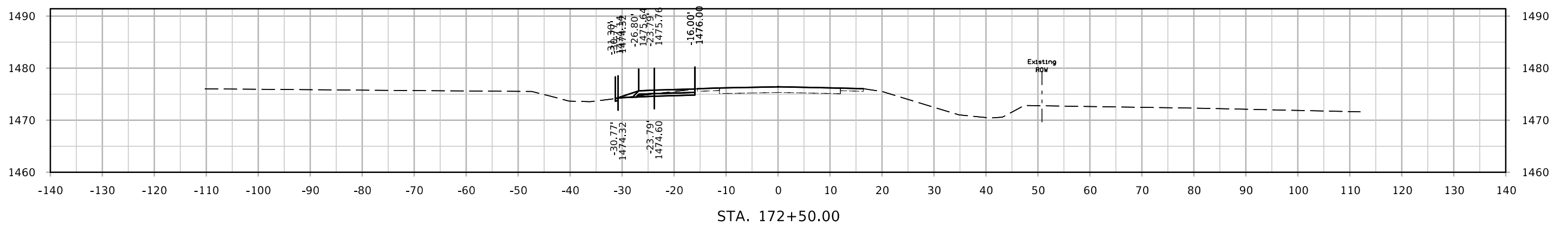
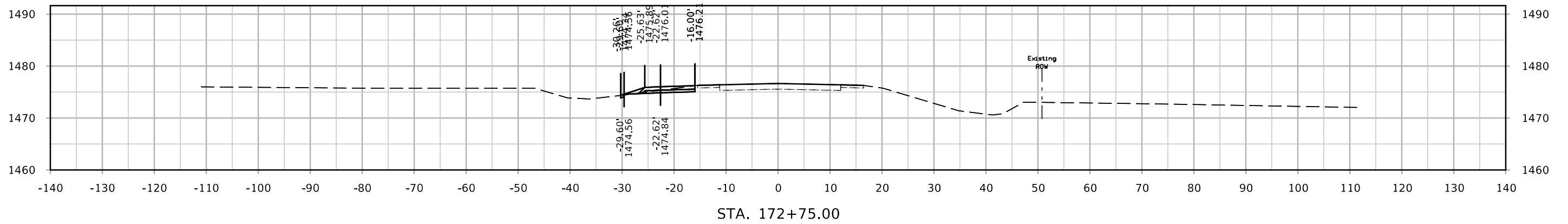
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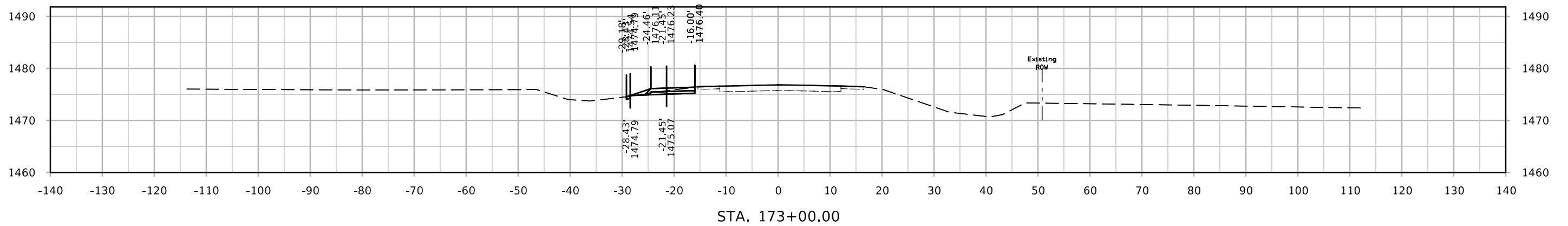
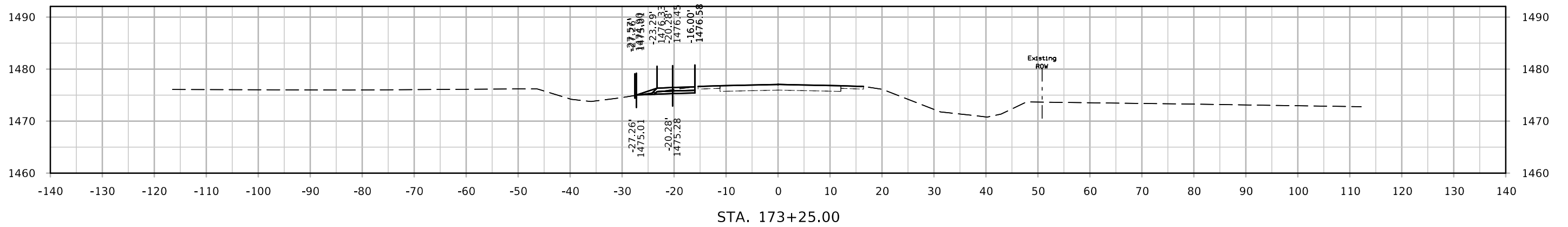
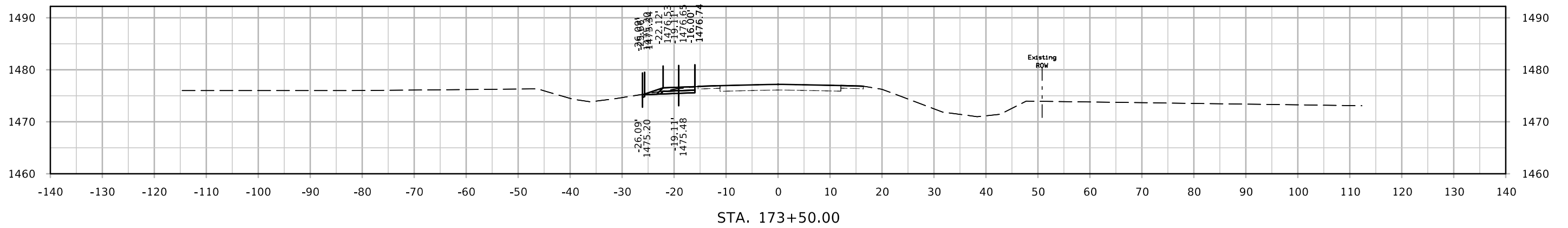
# DET IA3



# DET IA3

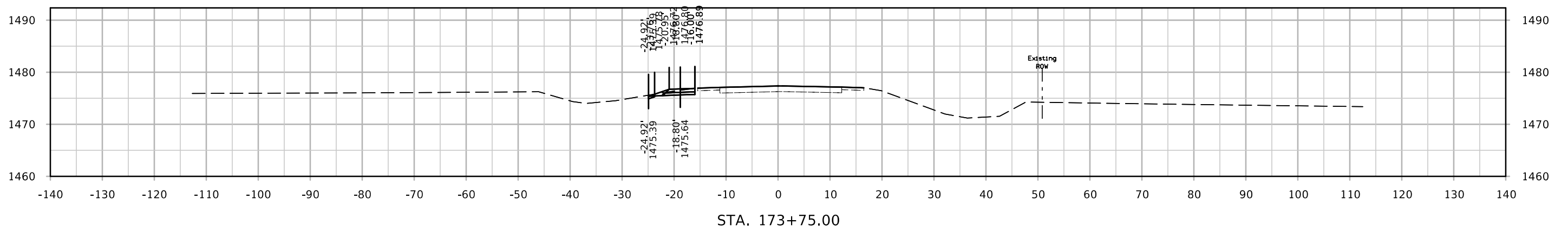
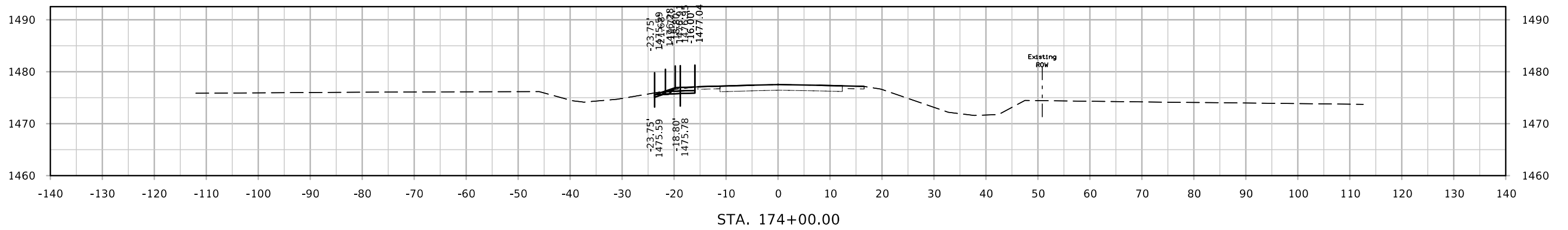
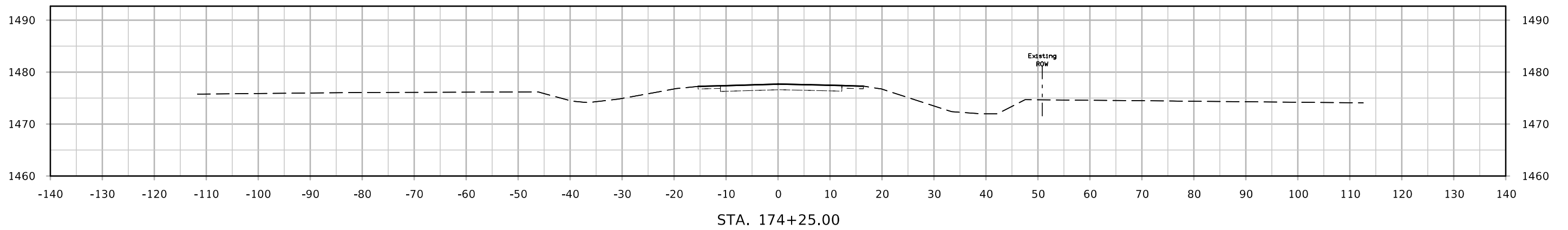


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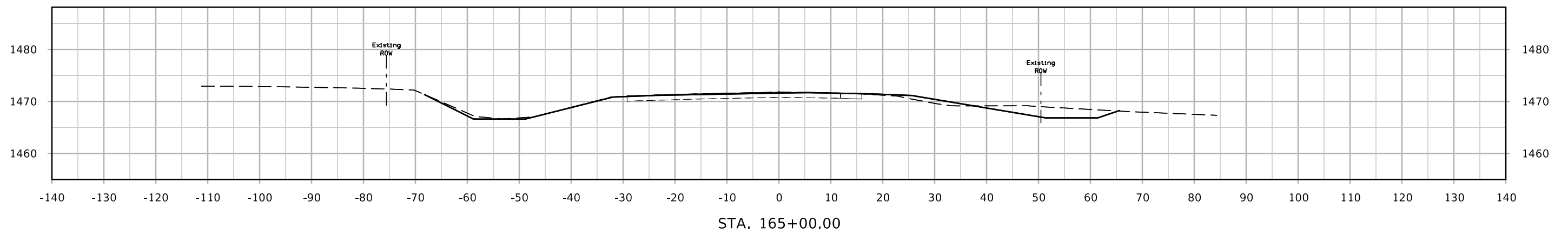
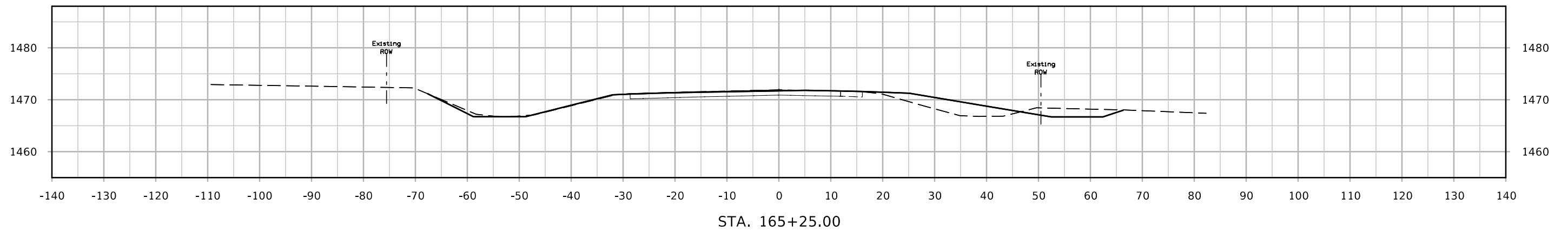
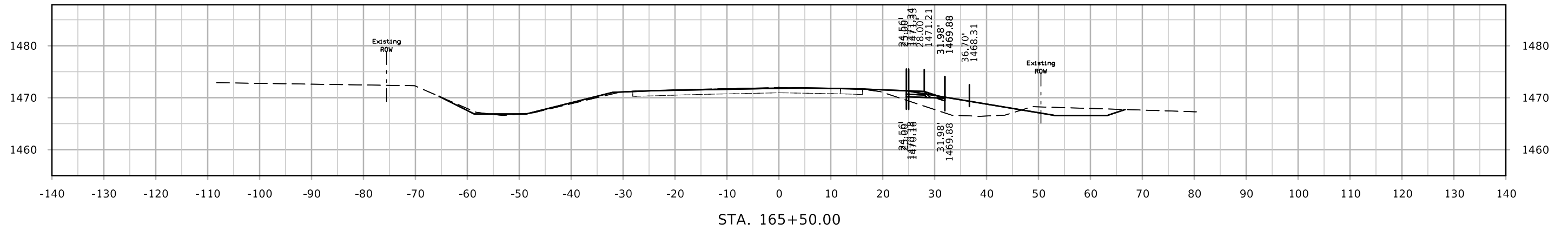




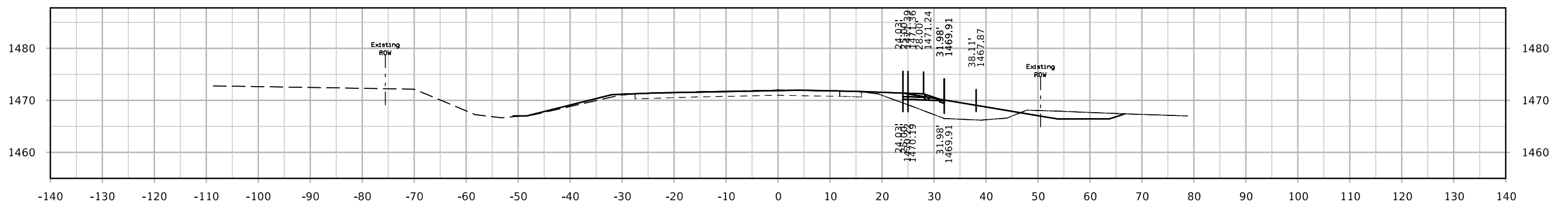
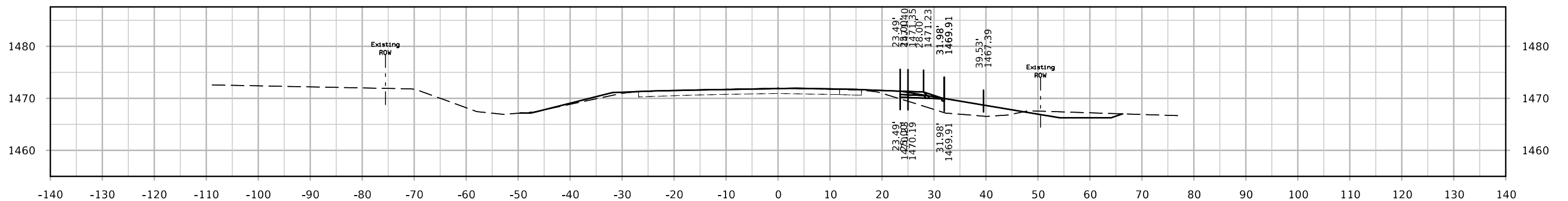
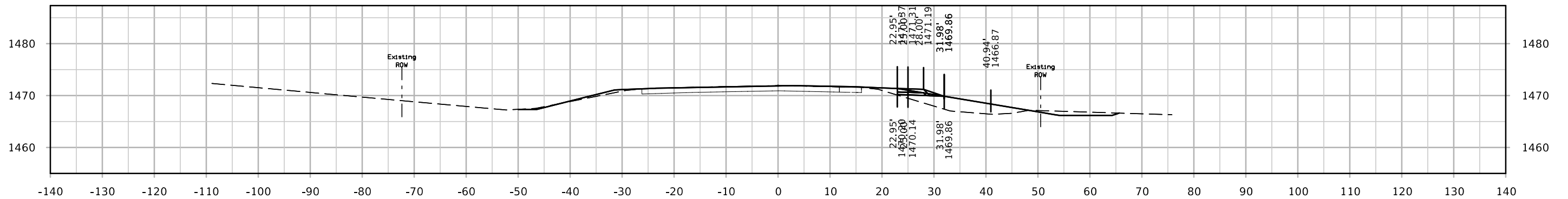
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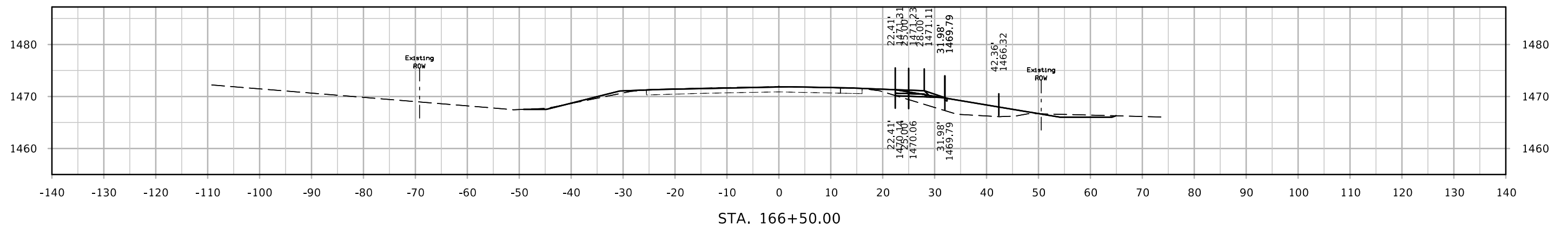
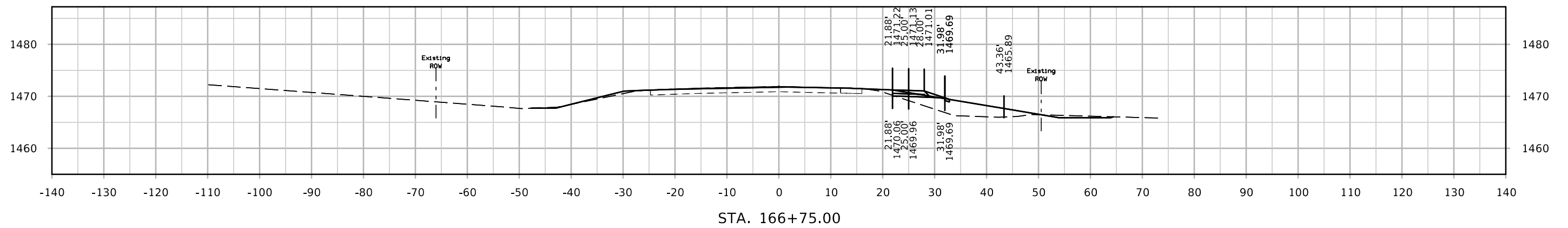
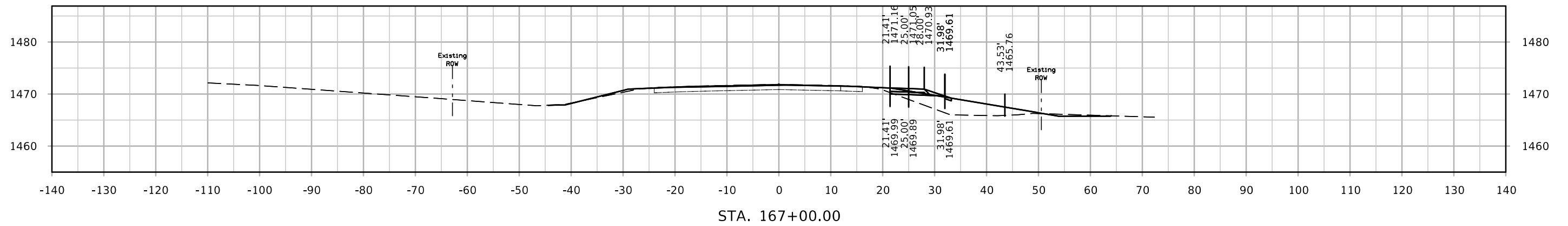
# DET IA3EB



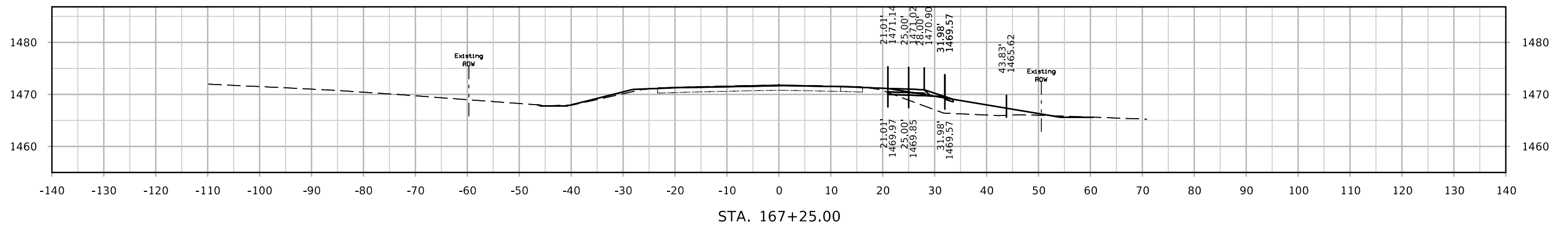
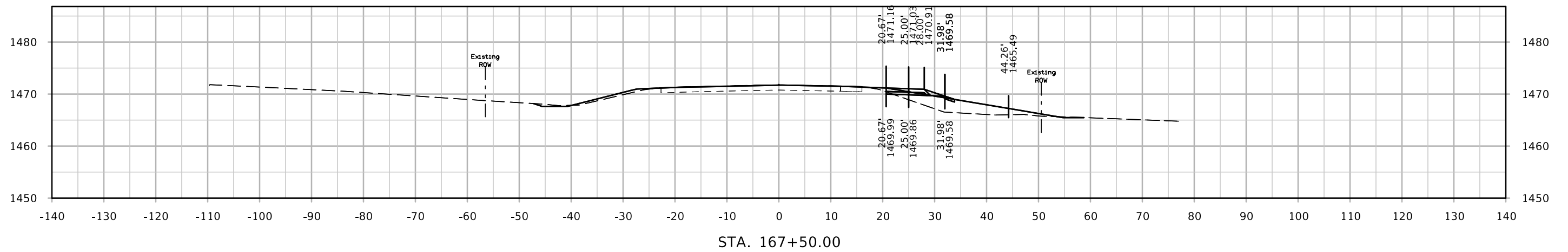
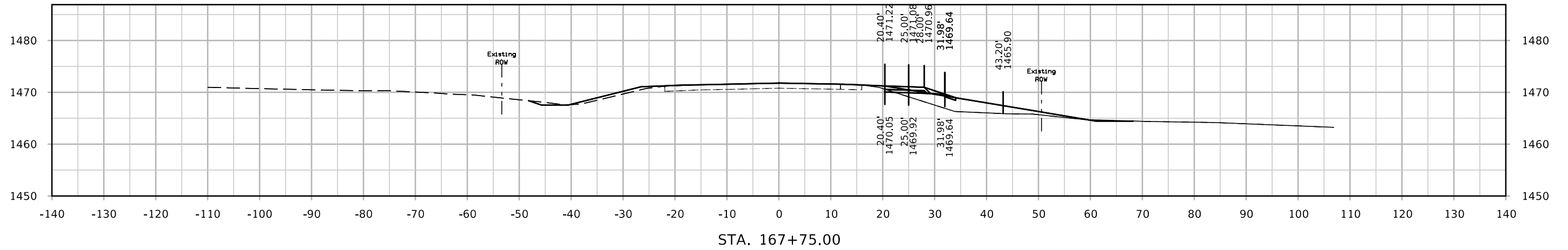
# DET IA3EB



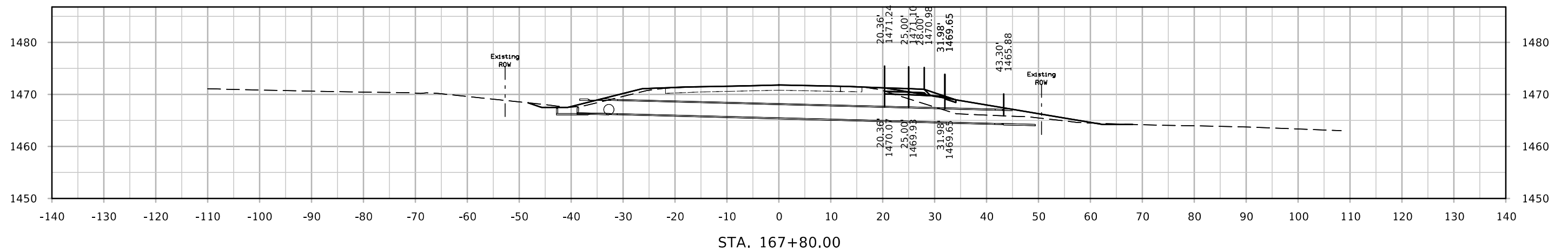
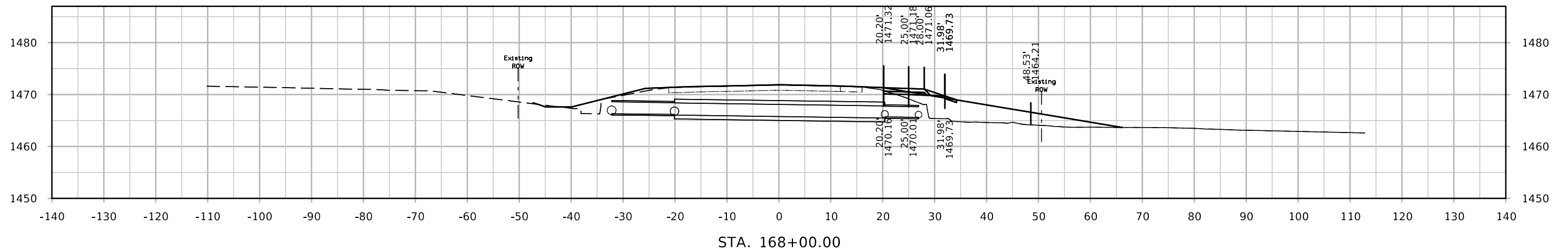
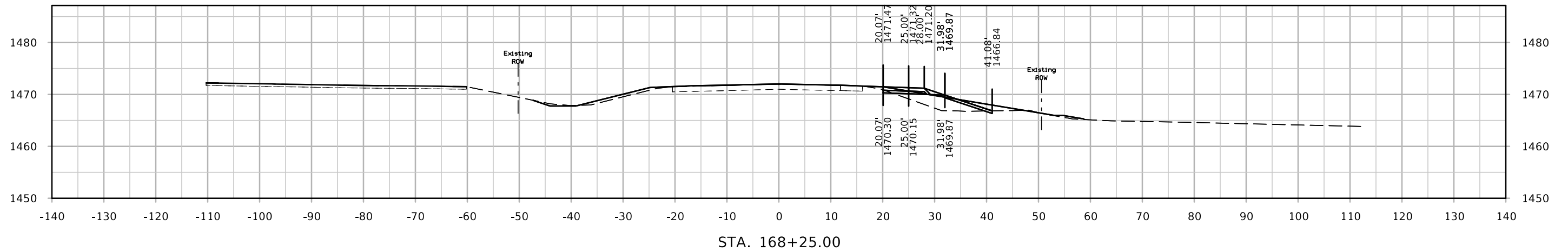
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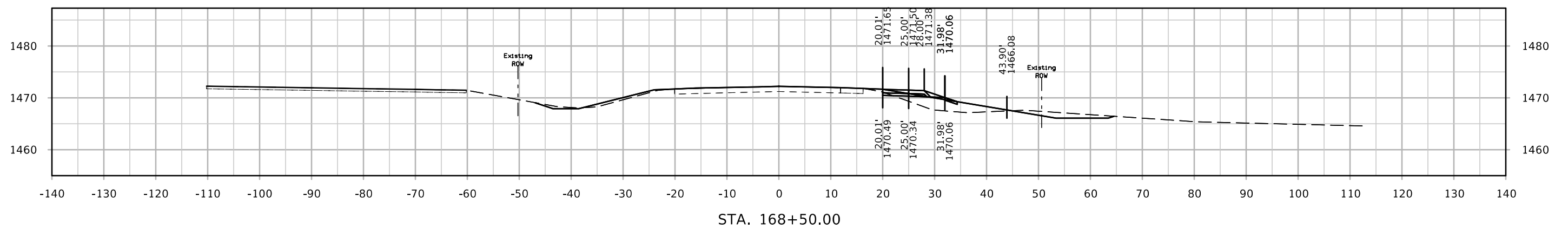
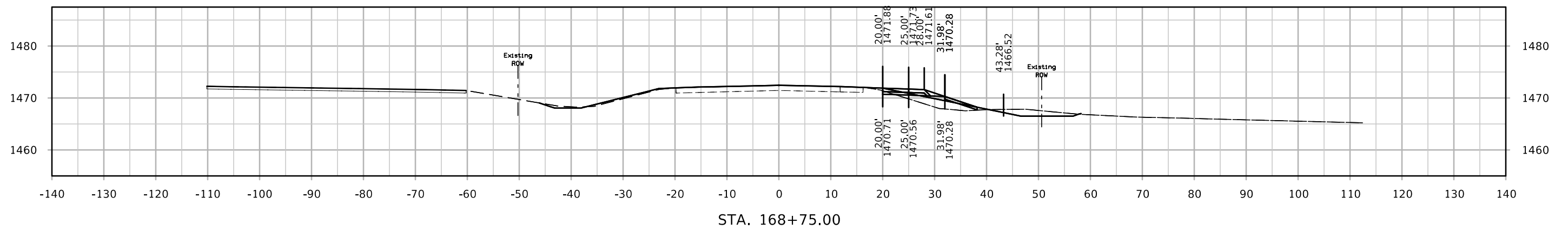
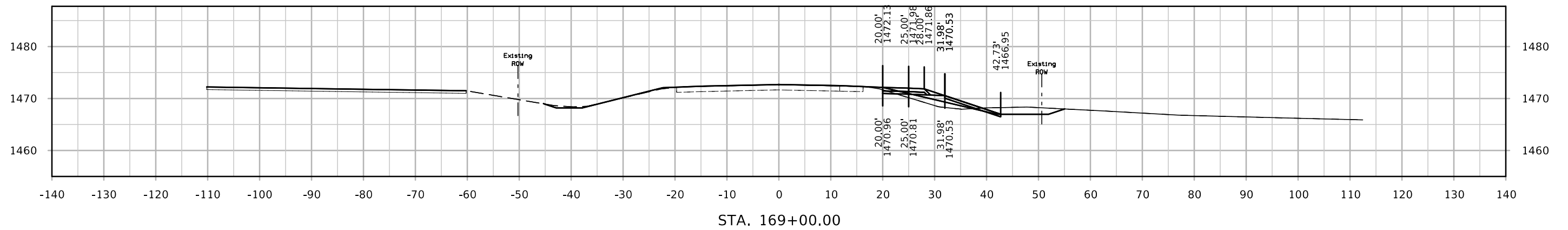
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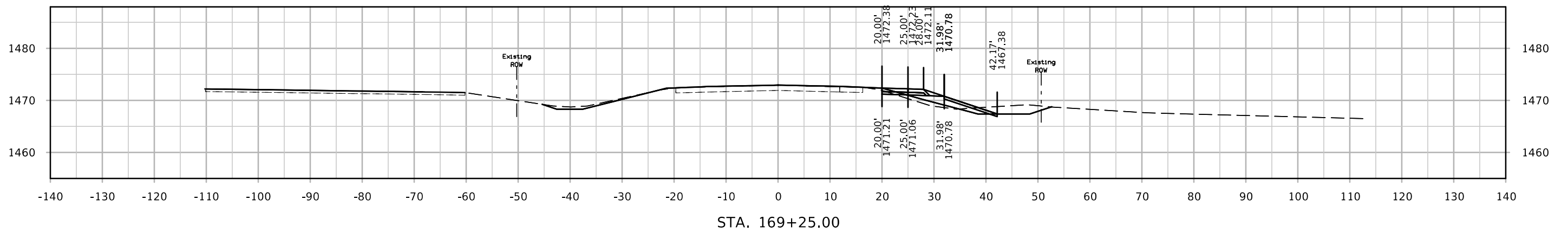
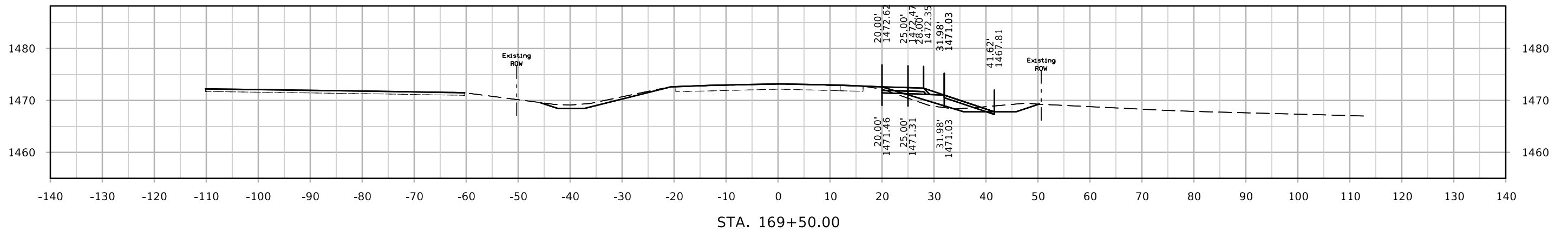
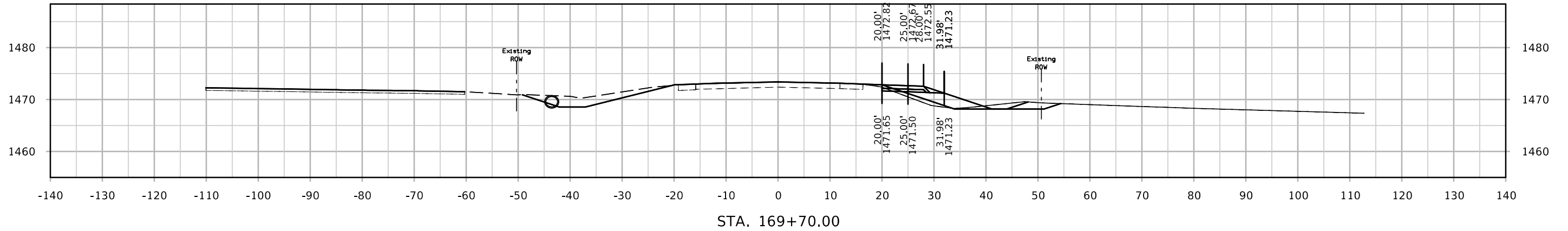
# DET IA3EB



# DET IA3EB

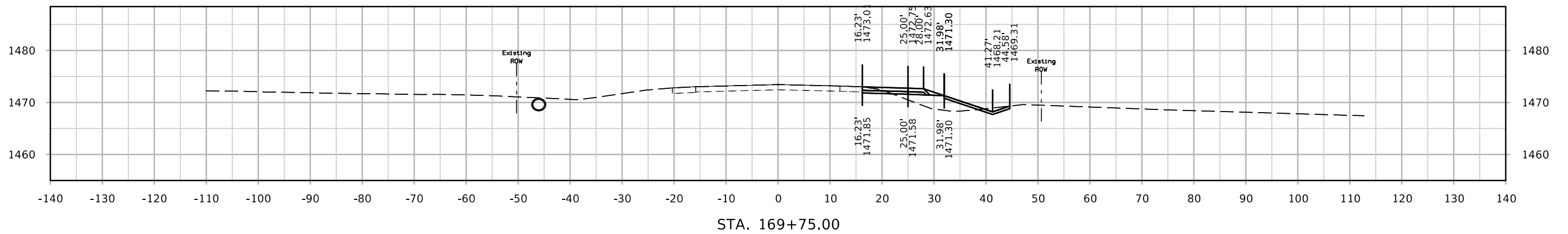
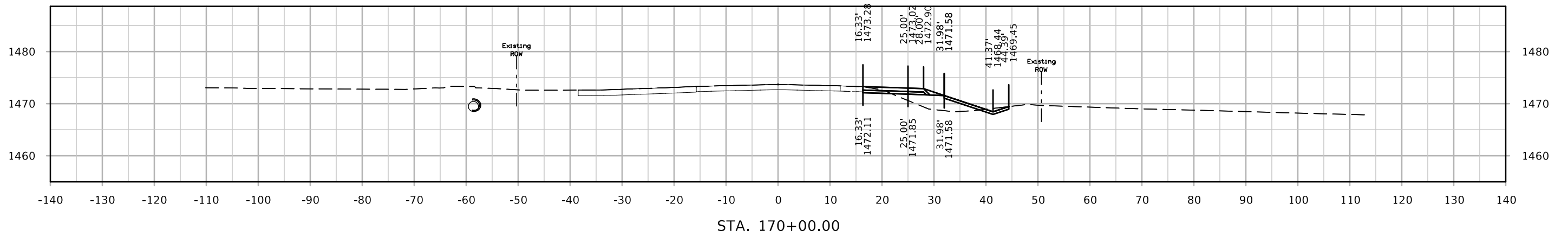
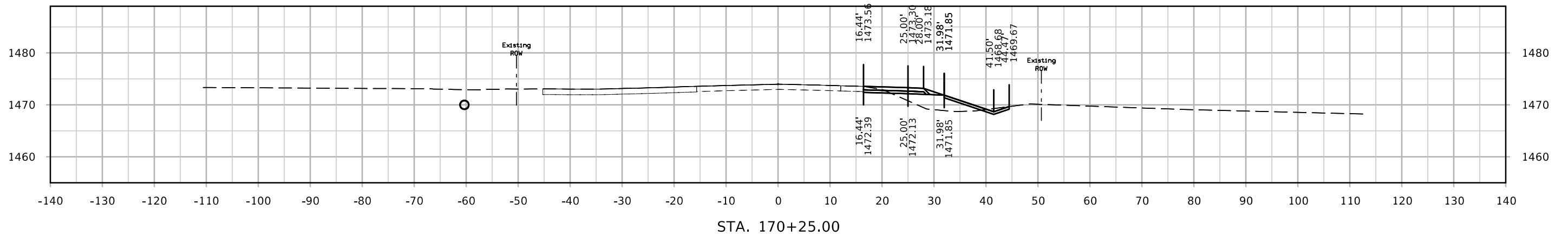


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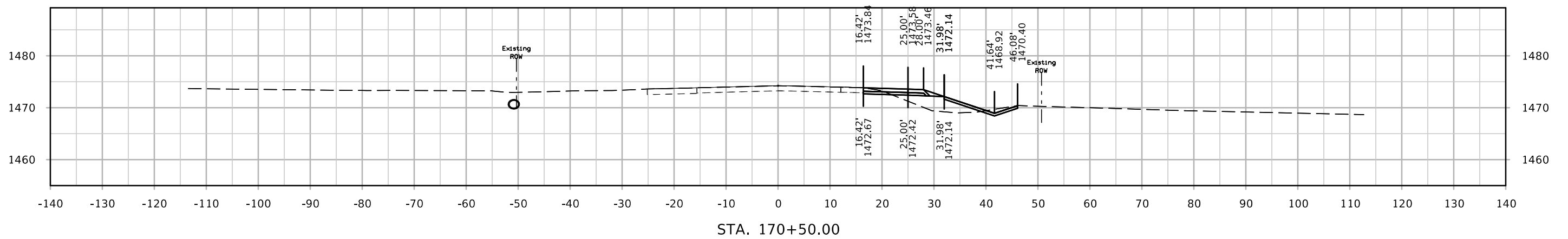
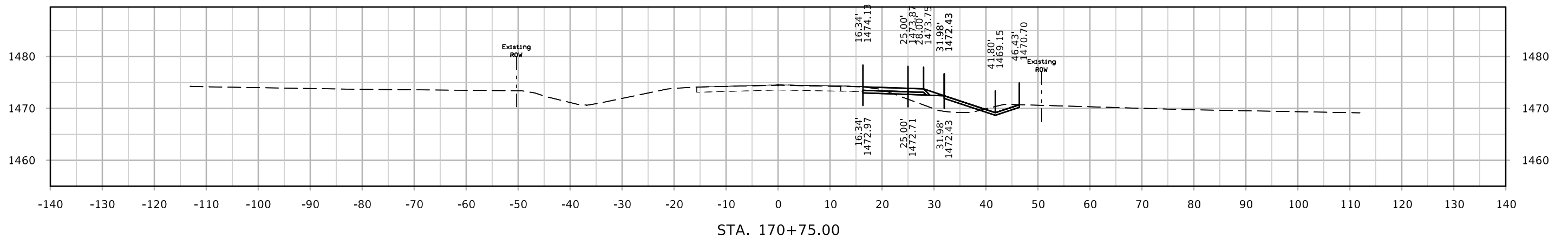
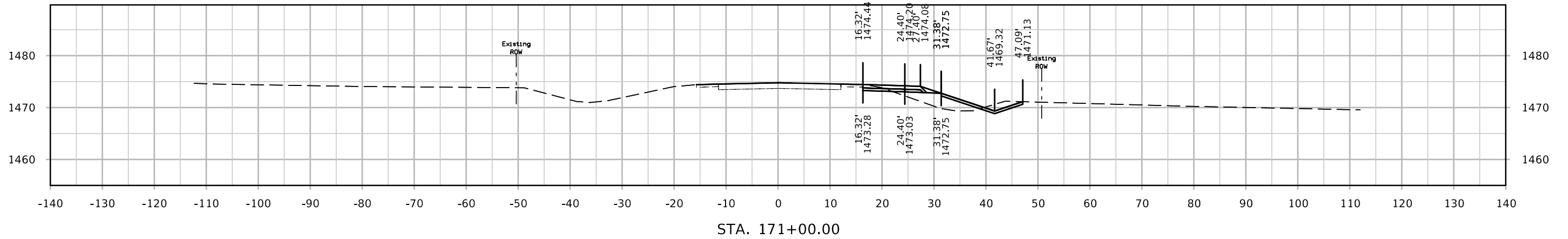




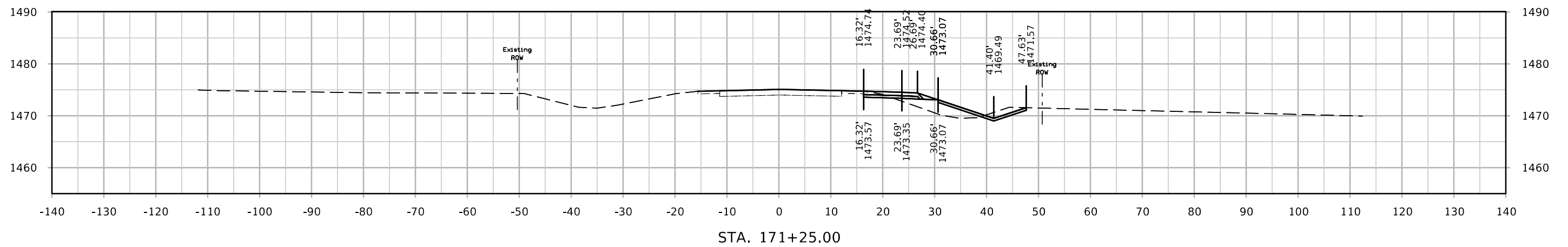
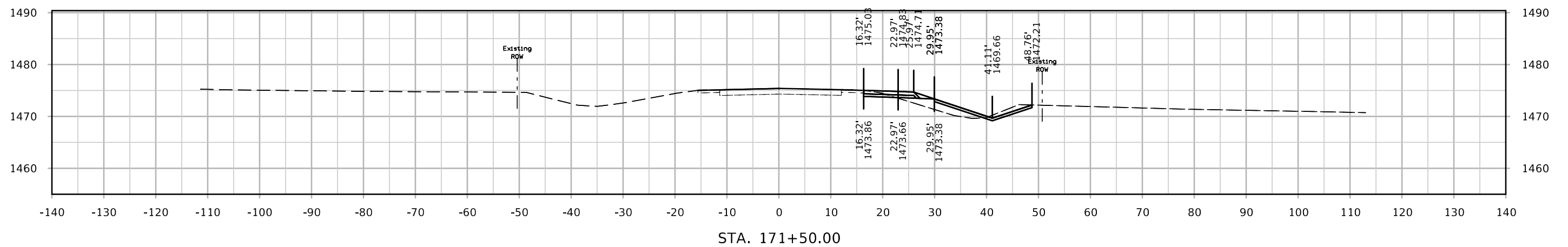
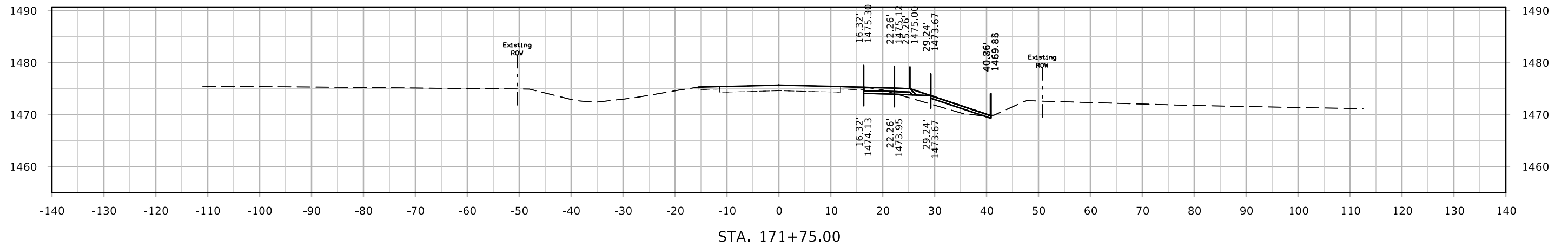
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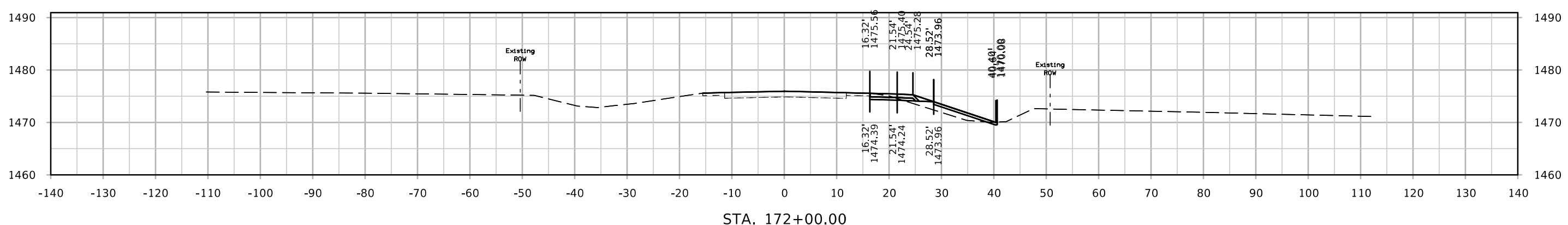
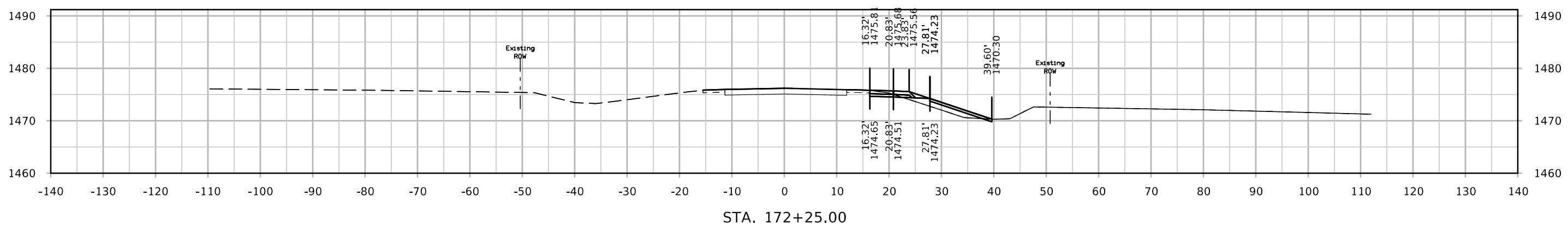
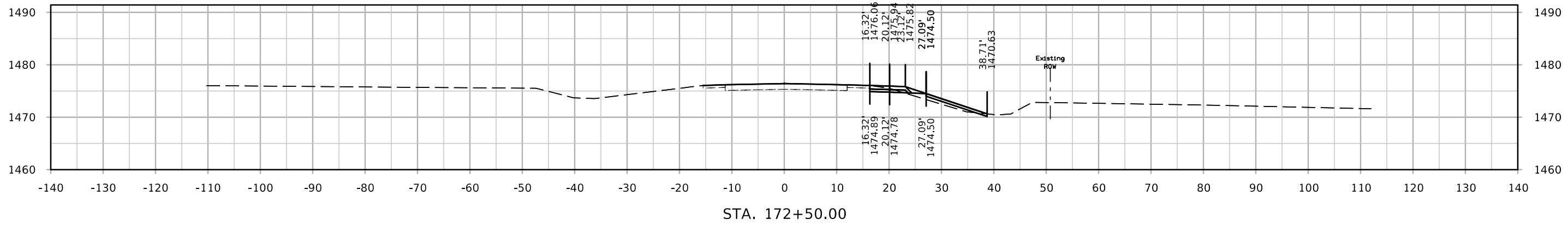
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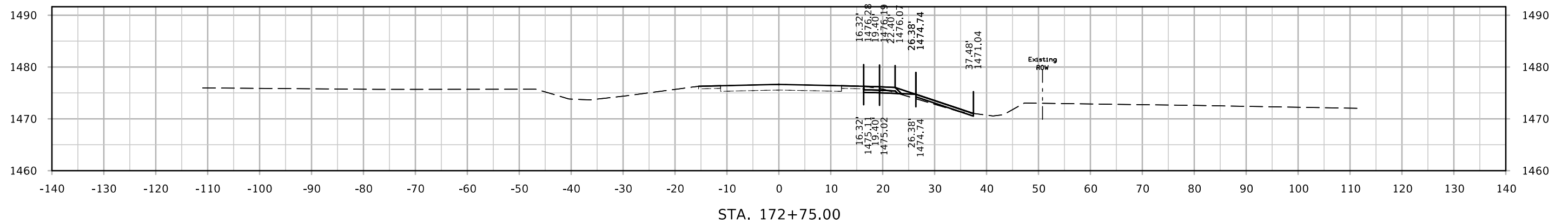
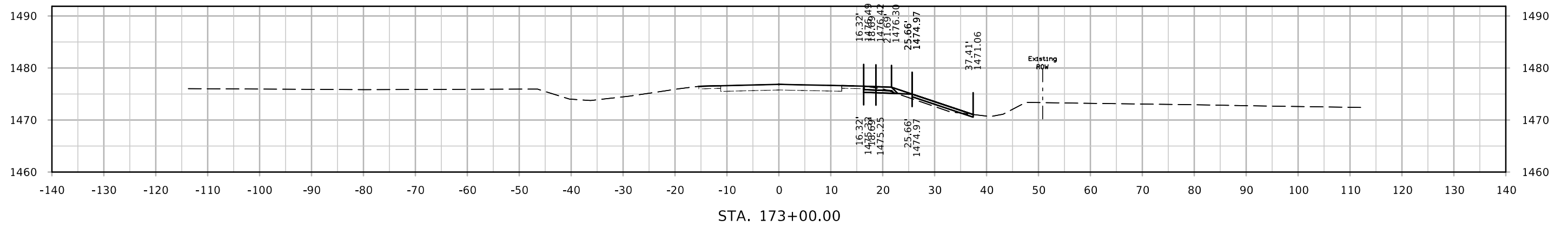
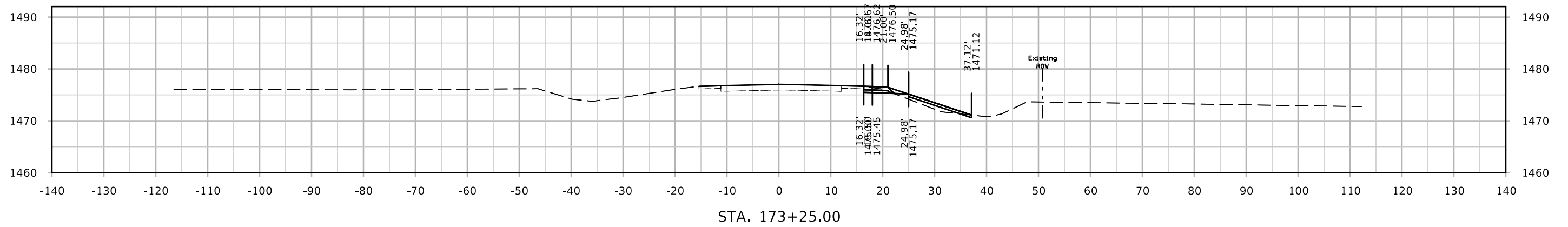
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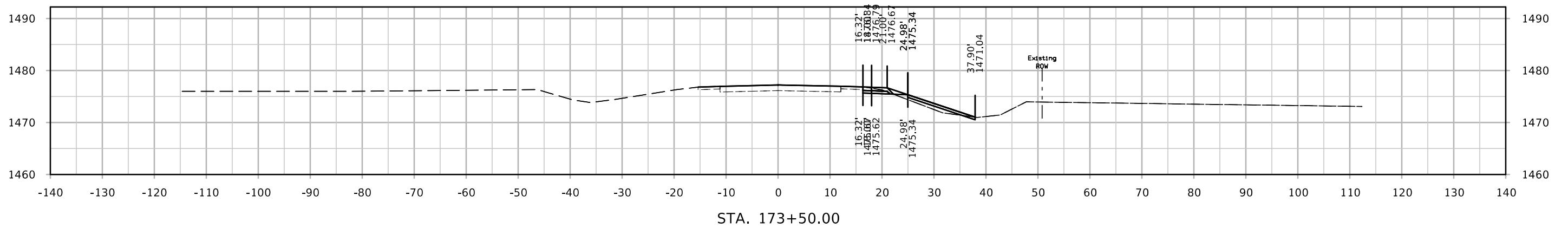
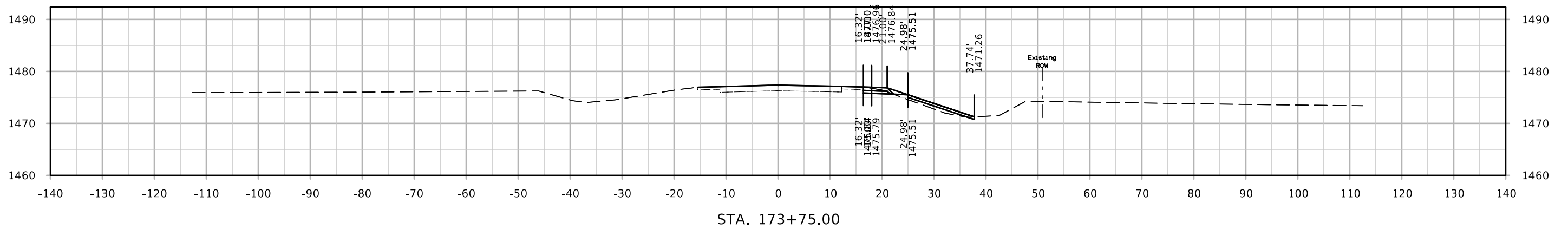
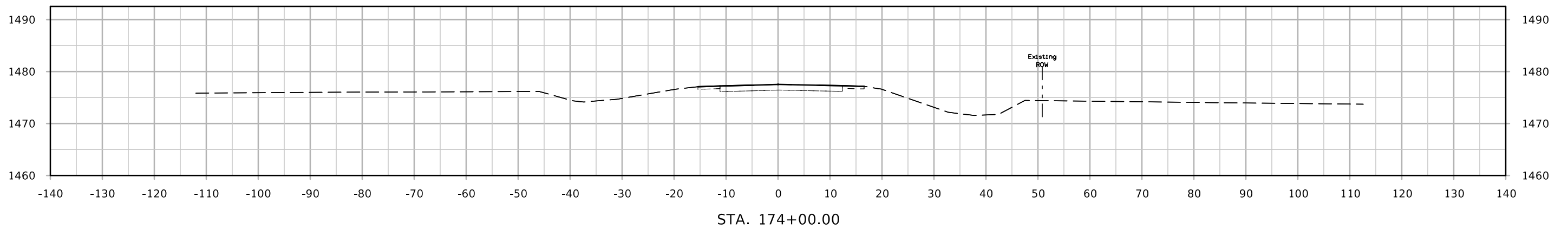
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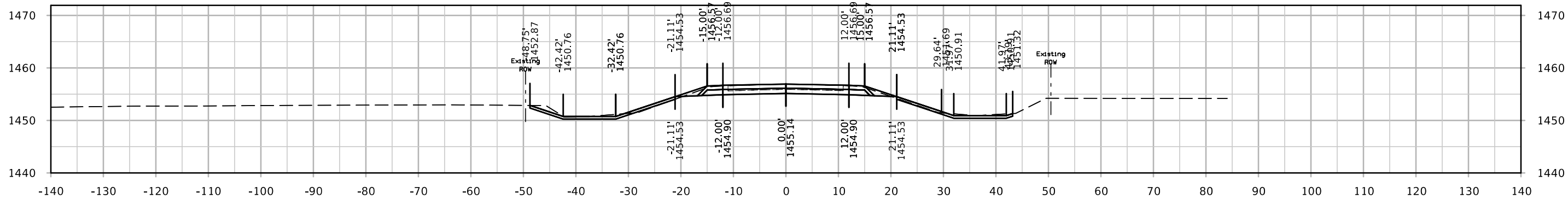
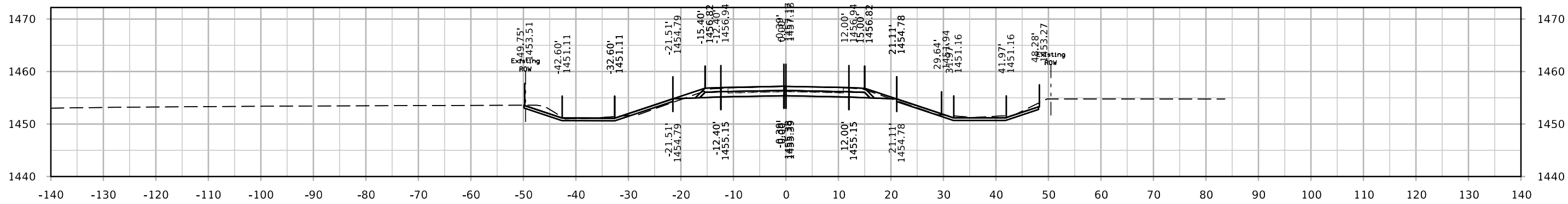
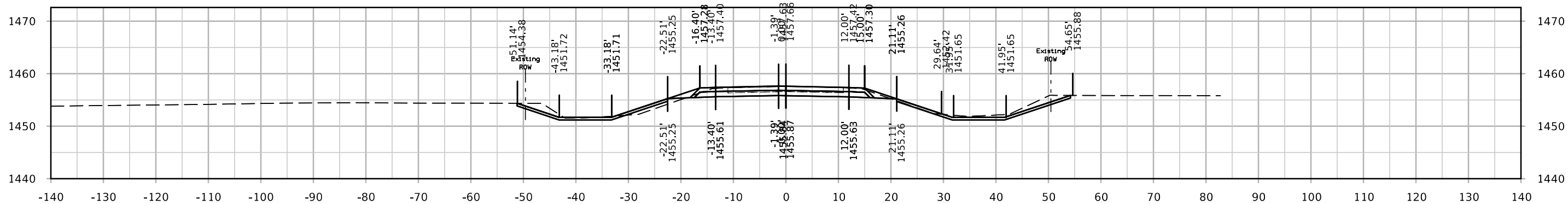


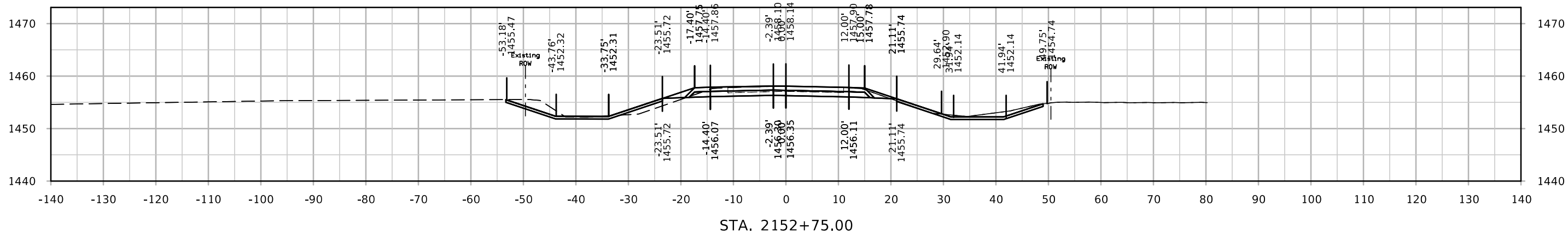
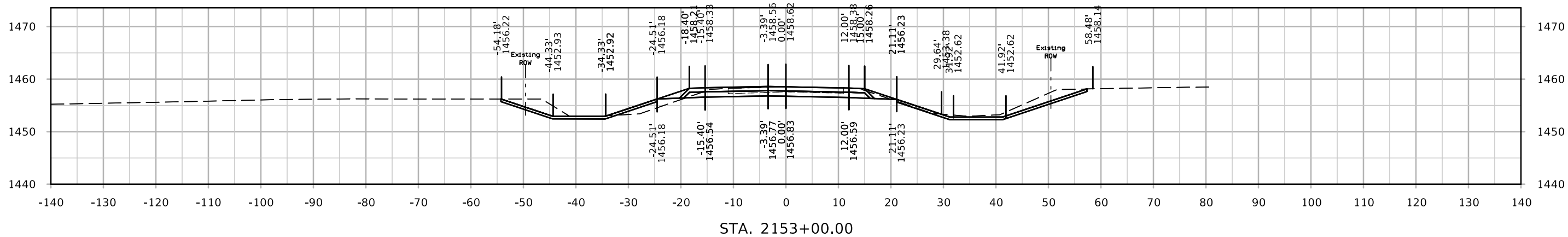
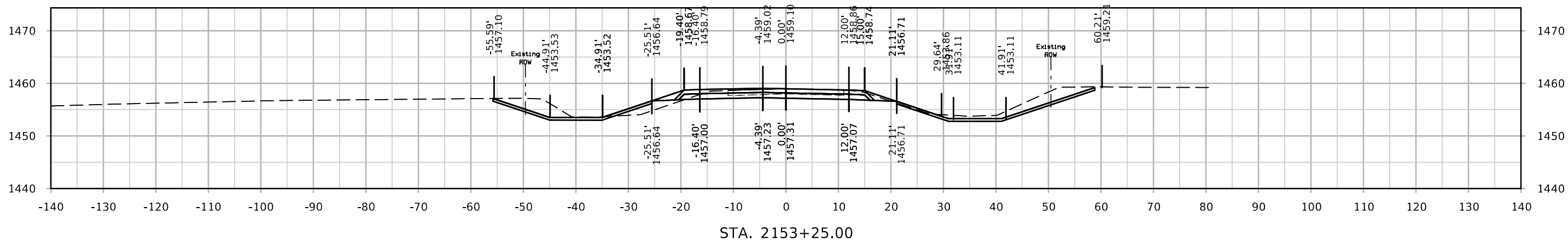
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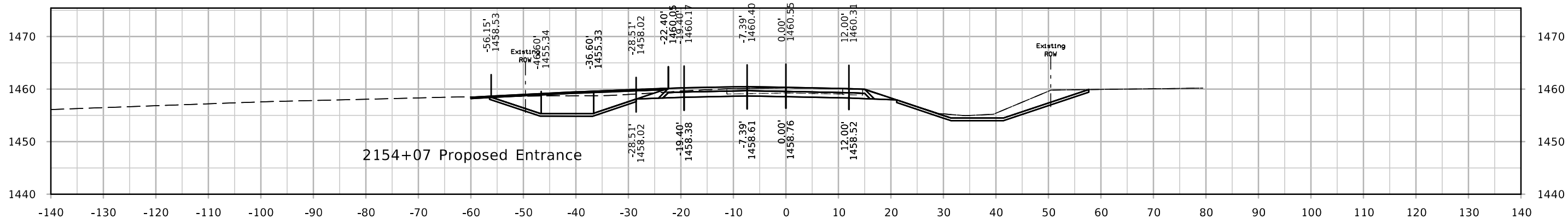
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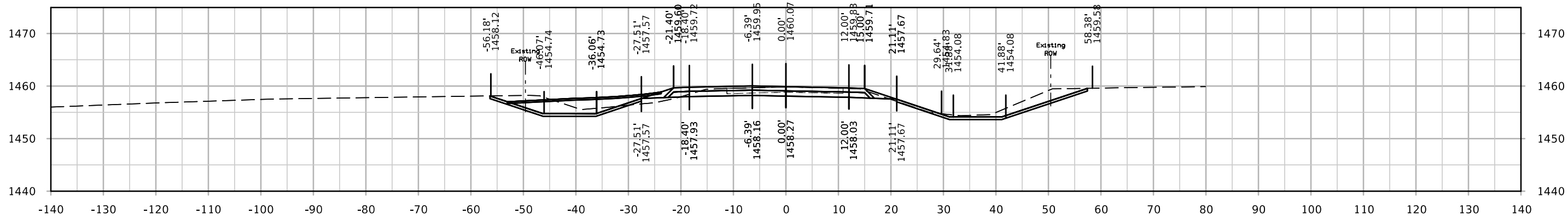




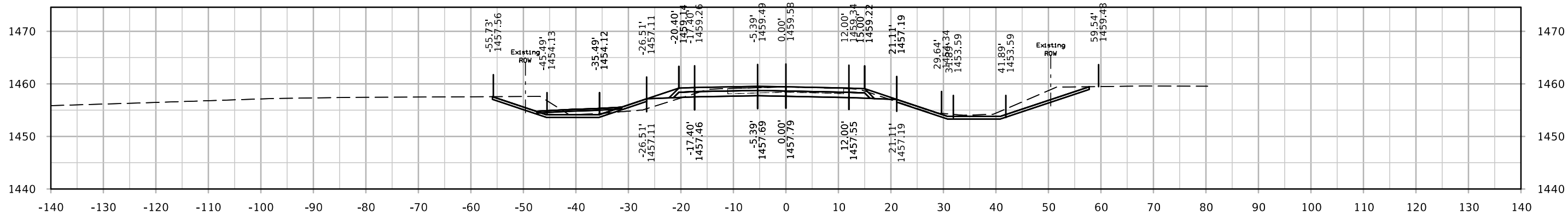




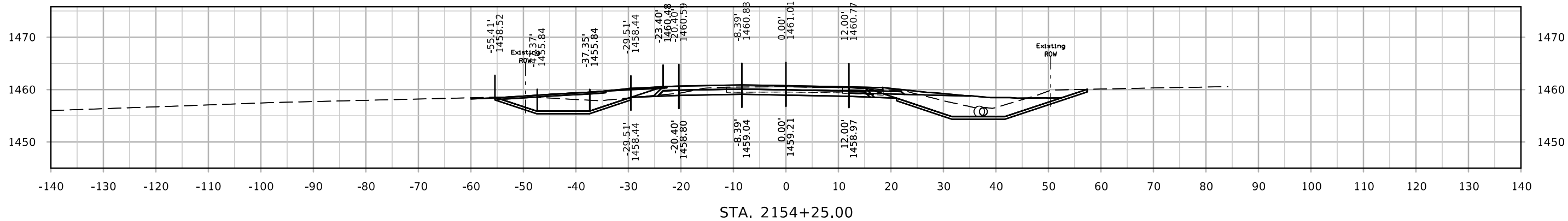
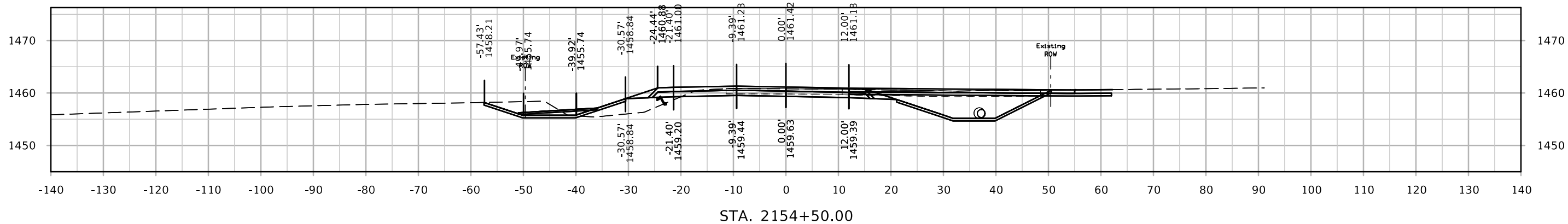
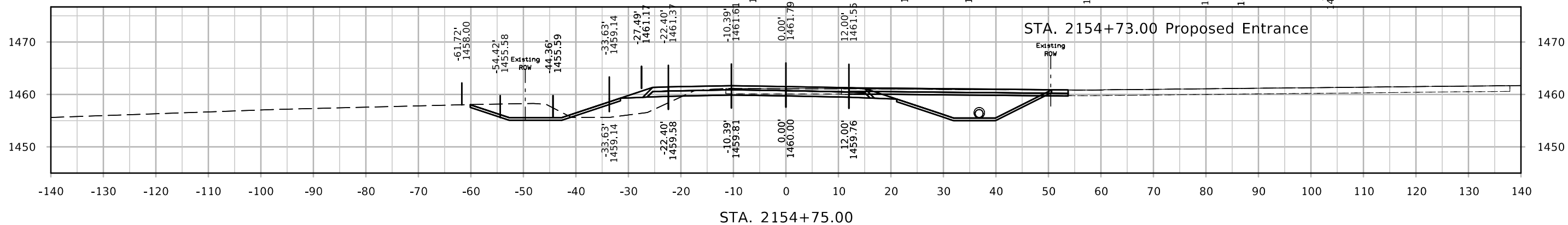
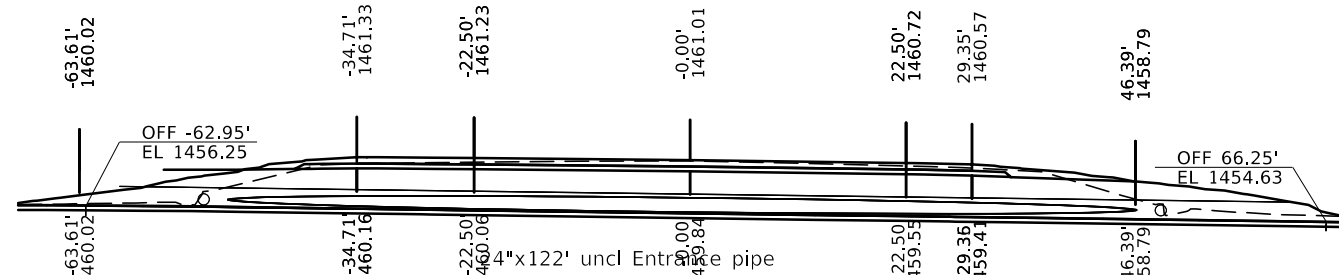
STA. 2154+00.00

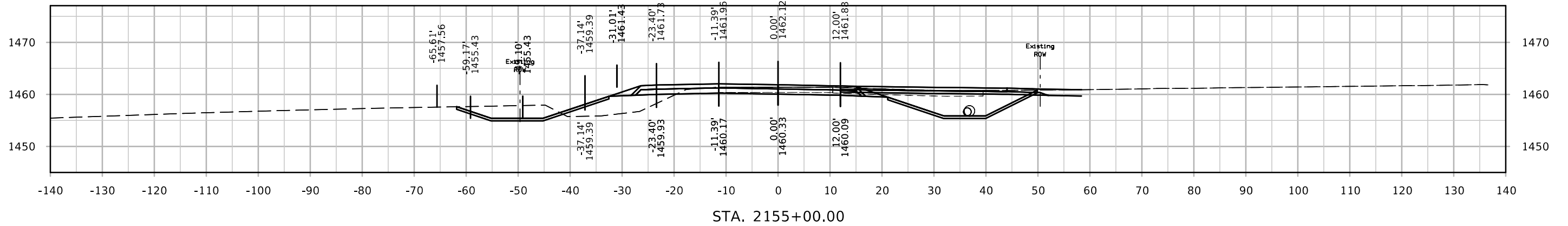
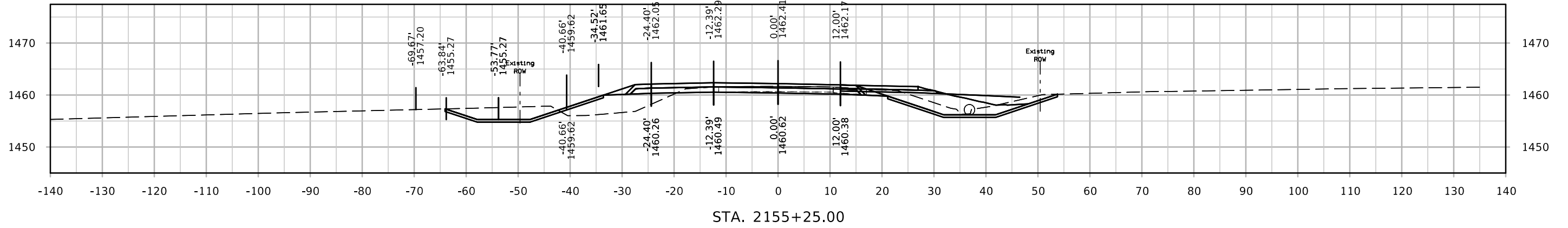
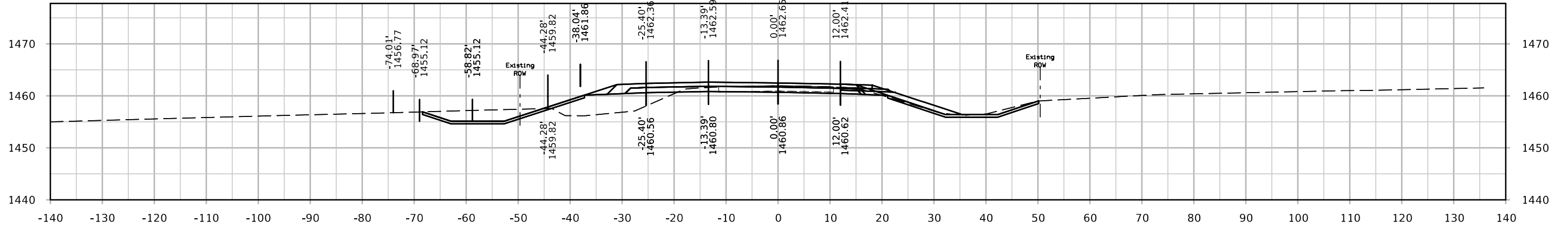


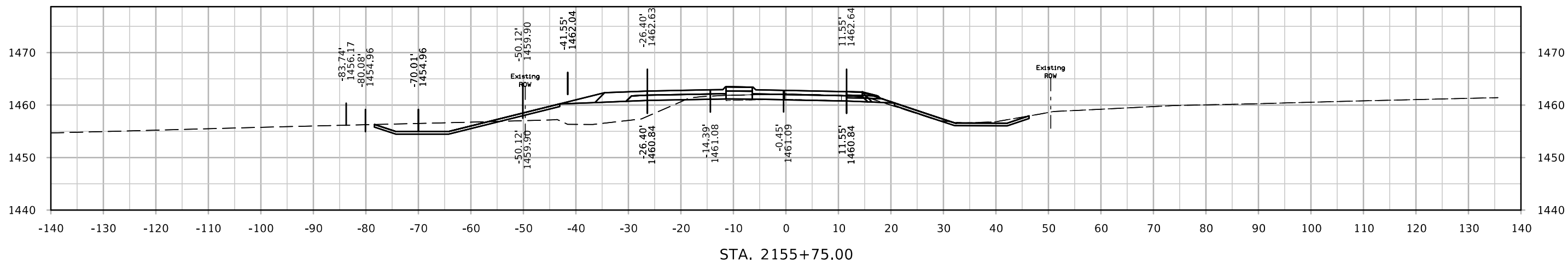
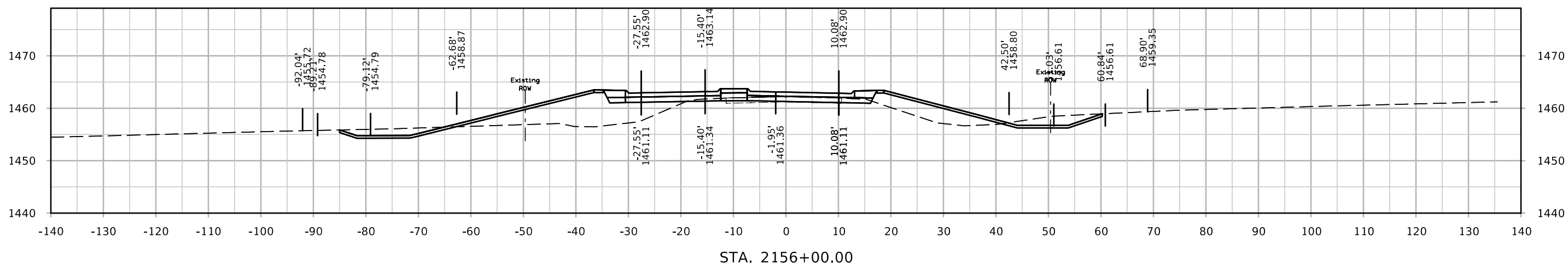
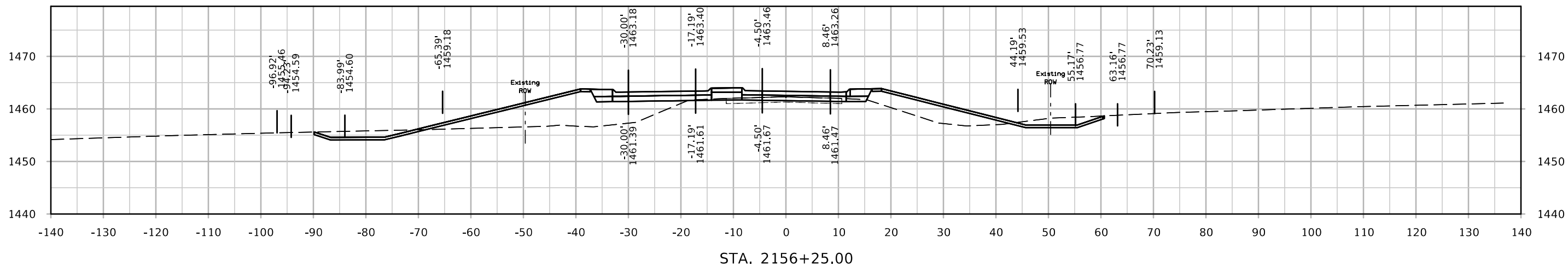
STA. 2153+75.00

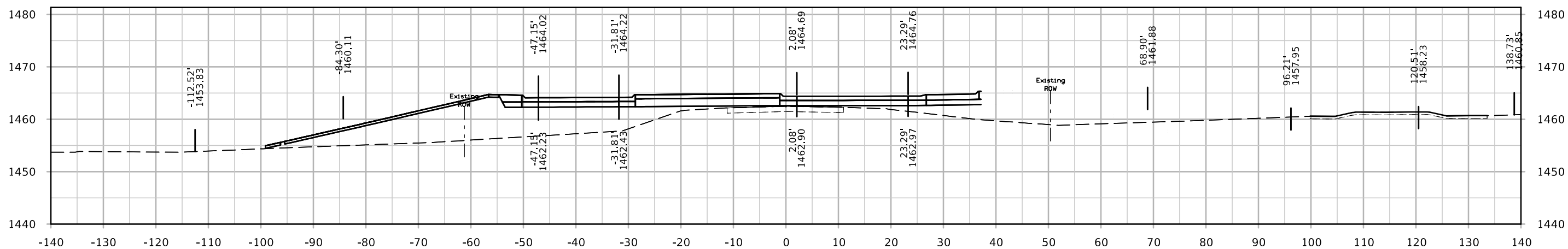


STA. 2153+50.00



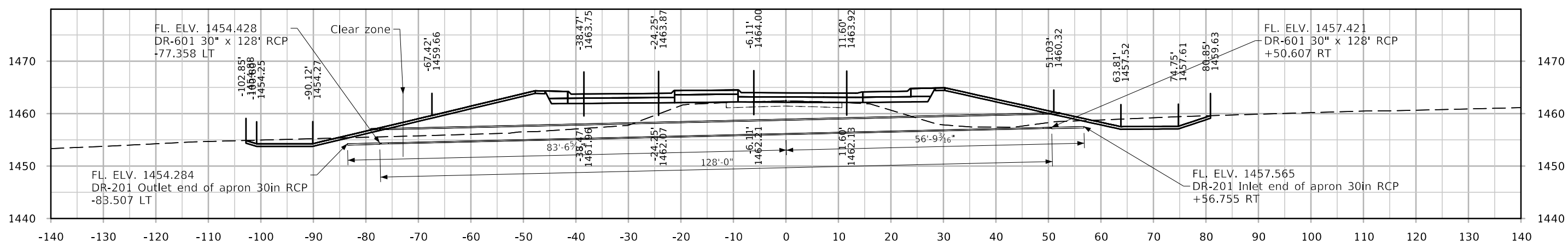




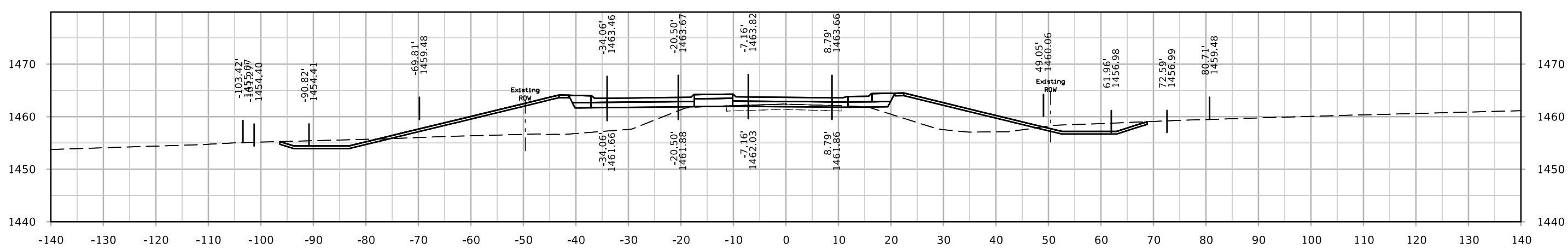


STA. 2157+00.00

Replace new 30" RCP cut and cover. Remove Existing pipe at Sur Sta. 2157+50.4 or will be plugged and abandoned with flowable mortar.



STA. 2156+70.00



STA. 2156+50.00

