

LETTING DATE  
12-15-2015

GRADING  
NHSX-032-1(25)--3H-31

DUBUQUE COUNTY

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>C Sheets</b>	<b>Quantities and General Information</b>
C.1	Project Description
C.1	Estimated Project Quantities
C.1	Estimate Reference Information
C.1	Standard Road Plans
C.1	Index of Tabulations
C.1	Pollution Prevention Plan
C.1	General Notes
C.1	Tabulations (beg. with tab. of incidentals if needed)
<b>CS Sheets</b>	<b>Soils Tabulations</b>
CS.1	Soils Tabulations
<b>D Sheets</b>	<b>Mainline Plan and Profile Sheets</b>
* D.1	Plan & Profile Legend & Symbol Information Sheet
* D.2 - 7	Southwest Arterial
<b>E Sheets</b>	<b>Side Road Plan and Profile Sheets</b>
* E.1	English Mill Road (For Information Only)
* E.2 - 4	Connector Road
* E.5	Temporary Connector Road
* E.6 - 7	North Cascade Road (For Information Only)
* E.8 - 9	Access Road "A"
* E.10	Access Road "C"
<b>F Sheets</b>	<b>Detour or Temporary Pavement Sheets</b>
* F.1	Detour Plan and Profile Sheets
<b>G Sheets</b>	<b>Survey Sheets</b>
G.1 - 2	Reference Ties and Bench Marks
G.3 - 8	Horizontal Control Tab. & Super for all Alignments
<b>H Sheets</b>	<b>Right-of-Way Sheets</b>
H.1 - 6	Southwest Arterial (For Information Only)
H.7	Connector Road (For Information Only)
H.8 - 9	North Cascade Road (For Information Only)
<b>J Sheets</b>	<b>Traffic Control and Staging Sheets</b>
* J.1	Traffic Control Plan
* J.2	Staging Notes Stage
* J.3	Tabulation of Special Events
* J.4	Traffic Control & Staging Legend & Symbol Info. Sheet
* J.5	Staging and Traffic Control Sheets Stage ??
<b>K Sheets</b>	<b>Interchange Sheets</b>
* K.1 - 2	NCR-EMR Interchange Layout Sheets
* K.3	RAMP "A" Plan and Profile Sheet
* K.4	RAMP "B" Plan and Profile Sheet
* K.5	RAMP "C" Plan and Profile Sheet
* K.6	RAMP "D" Plan and Profile Sheet
<b>L Sheets</b>	<b>Geometric, Staking and Jointing Sheets</b>
L.1	Geometric & Staking "Mainline or Side Road Name"
L.2	Edge Profiles "Mainline or Side Road Name"
L.3	Jointing "Mainline or Side Road Name"
<b>M Sheets</b>	<b>Storm Sewer Sheets</b>
M.1	Storm Sewer Tabulations
M.2	Storm Sewer Legend & Symbol Information Sheet
M.3	Storm Sewer Plan and Profile Sheets "ML or SR Name"
<b>Q Sheets</b>	<b>Soils Sheets</b>
Q.1	Soils Legend & Symbol Information Sheet
Q.2 - 12	Soils Sheets "Mainline or Side Road Name"
<b>S Sheets</b>	<b>Sidewalk Sheets</b>
* S .1	Sidewalk Legend & Symbol Information Sheet
* S .2 - 6	Sidewalk Plan and Profile Sheets
<b>SPS Sheets</b>	<b>Bridge Plan Soils Sheets</b>
SPS.1	Bridge Plan Soils Sheets
<b>T Sheets</b>	<b>Earthwork Quantity Sheets</b>
T.1 - 5	Earthwork Quantity Sheets
<b>U Sheets</b>	<b>500 Series, Mod.Stds. and Detail Sheets</b>
U.1	500 Series, Modified Standards and Detail Sheets
<b>V Sheets</b>	<b>Bridge and Culvert Situation Plans</b>



Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE  
PRIMARY ROAD SYSTEM  
DUBUQUE COUNTY

GRADING

Southwest Arterial from English Mill Road to Catfish Creek

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.15 of the Specifications.



REVISIONS

TOTAL
xx
PROJECT IDENTIFICATION NUMBER
94-31-032-010
PROJECT NUMBER
NHSX-032-1(25)--3H-31
R.O.W. PROJECT NUMBER
NHSN-032-1(20)--2R-31

INDEX OF SHEETS	
No.	DESCRIPTION
V.1	Bridge and Culvert Situation Plans
<b>W Sheets</b>	<b>Mainline Cross Sections</b>
W.1	Cross Sections Legend & Symbol Information Sheet
W.2 - 33	Mainline Cross Sections
<b>X Sheets</b>	<b>Side Road Cross Sections</b>
X.1	Side Road Cross Sections
<b>Y Sheets</b>	<b>Ramp Cross Sections</b>
Y.1	Ramp Cross Sections
<b>Z Sheets</b>	<b>Borrow Cross Sections</b>
Z.1	Borrow Cross Sections
	* Color Plan Sheets

MILEAGE SUMMARY			
		105-1	
		09-27-94	
Div.	Location	Lin. Ft.	Miles
	Southwest Arterial Sta. 101+10.00 to Sta. 244+85.00	14375.00	2.72
	Connector Road Sta. 11500+35.56 to Sta. 11534+00.00	3364.44	0.64
	Temporary Connector Road Sta. 21508+90.00 to Sta. 21522+70.14	1380.14	0.26
	Access Road "A" Sta. 19+79.39 to Sta. 54+32.18	3452.79	0.65
	Access Road "C" Sta. 6230+21.98 to Sta. 6244+55.70	1433.72	0.27
Totals		24,006.09	4.54

DESIGN DATA RURAL			
20--	AADT	N/A	V.P.D.
2030	AADT	21,100	V.P.D.
2030	DHV	2030	V.P.H.
TRUCKS		--	%
Total			
Design	ESALs	--	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
A.1	Mark D. Durbahn, PE AECOM	Primary Signature Block
Q.1	Theresa M. Stromberg-Murphy, PE Terracon	Soils Sheets

**PRELIMINARY PLANS**

Subject to change by final design.

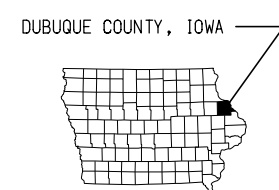
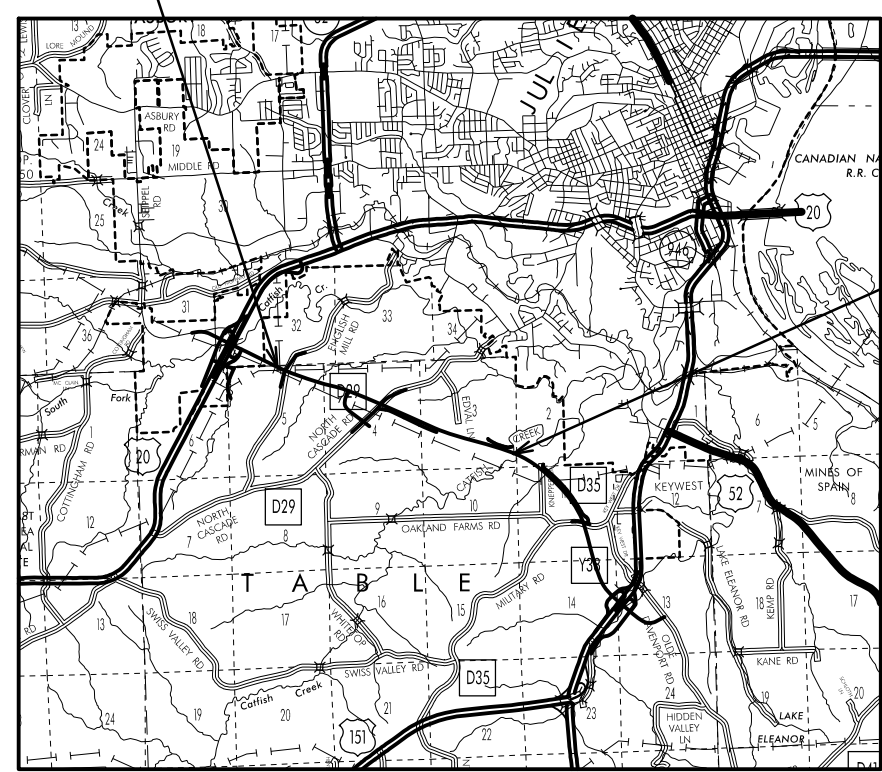
Date: X

BEGIN PROJECT  
STA. 101+10.00

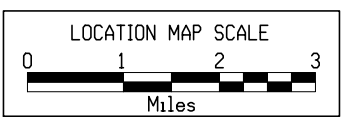
END PROJECT  
STA. 244+85.00

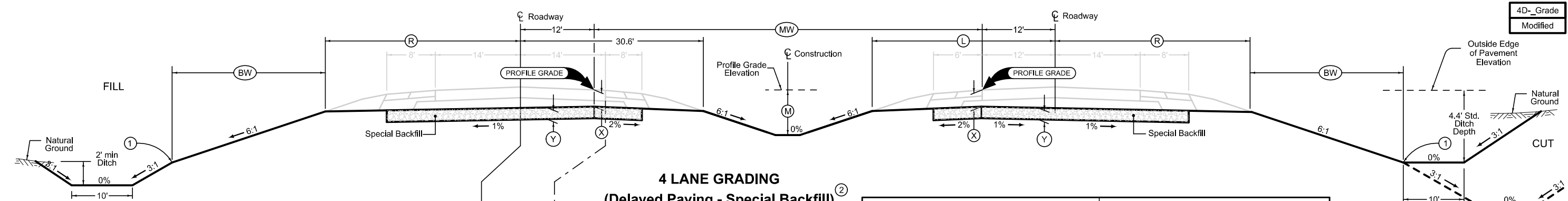


T-89N  
T-88N



R-1E      R-2E      R-3E

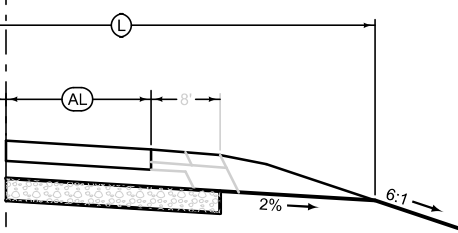




**4 LANE GRADING  
(Delayed Paving - Special Backfill)**

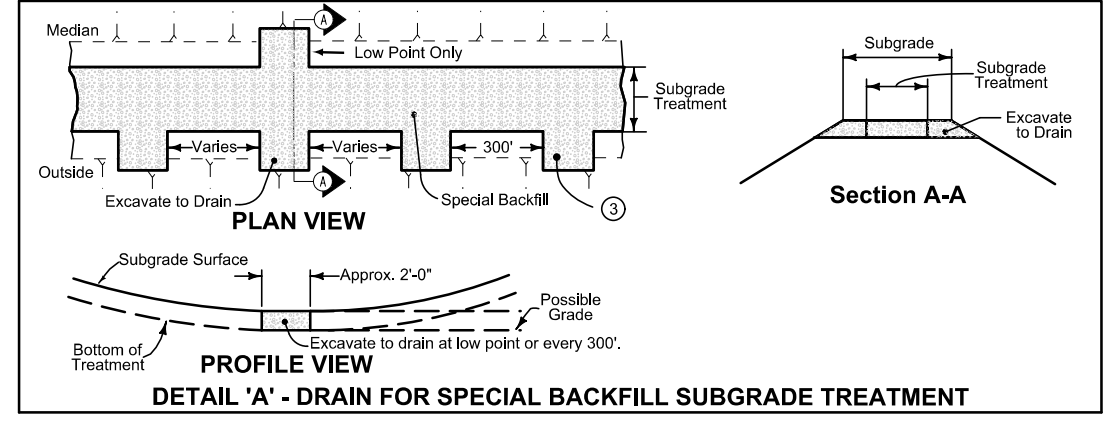
ROAD IDENTIFICATION	STATION TO STATION	DIMENSIONS							
		L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	Y Inches	
Southwest Arterial	101+10 * 118+75 *	28.5	32.5	17.0	15.5	64.0	4.0	12.0	
Southwest Arterial	118+75 167+00	28.5	32.5	17.0	15.5	64.0	4.0	12.0	
Southwest Arterial	167+00 * 171+10 *	28.5	32.5	17.0	15.5	64.0	4.0	12.0	
Southwest Arterial	171+10 178+50	28.5	32.5	17.0	15.5	64.0	4.0	12.0	
Southwest Arterial	178+50 * 187+50 *	28.5	32.5	17.0	15.5	64.0	4.0	12.0	
Southwest Arterial	187+50 244+15.89	28.5	32.5	17.0	15.5	64.0	4.0	12.0	

\*Subgrade graded by others. Place Special Backfill Only.



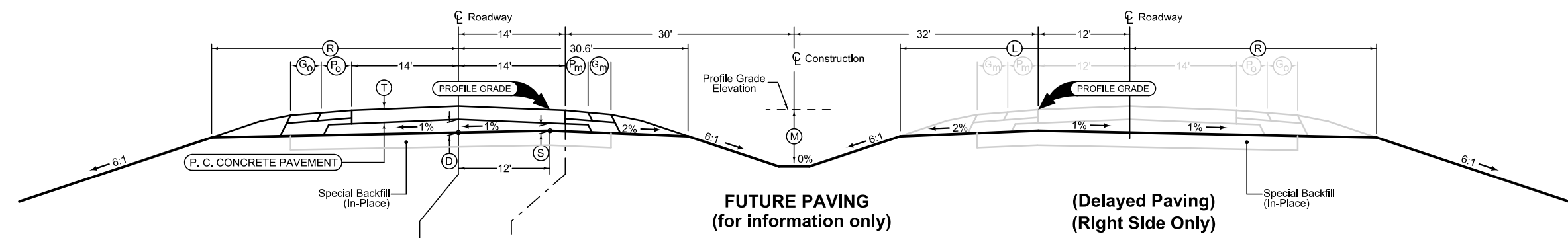
**Auxiliary Lane Grading**

AUXILIARY LANE			L
ROAD IDENTIFICATION	STATION TO STATION		Feet
Southwest Arterial	135+20.00 144+80.00		32.3-48.3
Southwest Arterial	144+80.00 148+65.00		48.3
Southwest Arterial	148+65.00 158+25.00		48.3-32.3



Normal section shown may be modified appropriately in areas of super-elevated curves or other locations specifically designated by the Engineer.  
See Plan & Profiles sheets and cross sections for additional details of ditches and backstops.

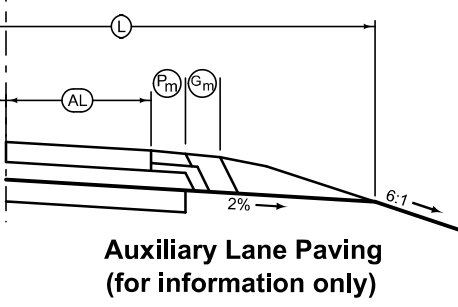
- ① Refer to project plan and cross sections for specific location of foreslope change.
- ② See Detail 'A'
- ③ Excavate a portion of subgrade as necessary to provide drainage for the treatment. The additional excavation and Special Backfill for outlets is incidental and will not be paid for separately.



**FUTURE PAVING  
(for information only)**

**(Delayed Paving)  
(Right Side Only)**

AUXILIARY LANE			AL
ROAD IDENTIFICATION	STATION TO STATION		Feet
Southwest Arterial	135+20.00 144+80.00		2.0-16.0
Southwest Arterial	144+80.00 148+65.00		16.0
Southwest Arterial	148+65.00 158+25.00		16.0-2.0

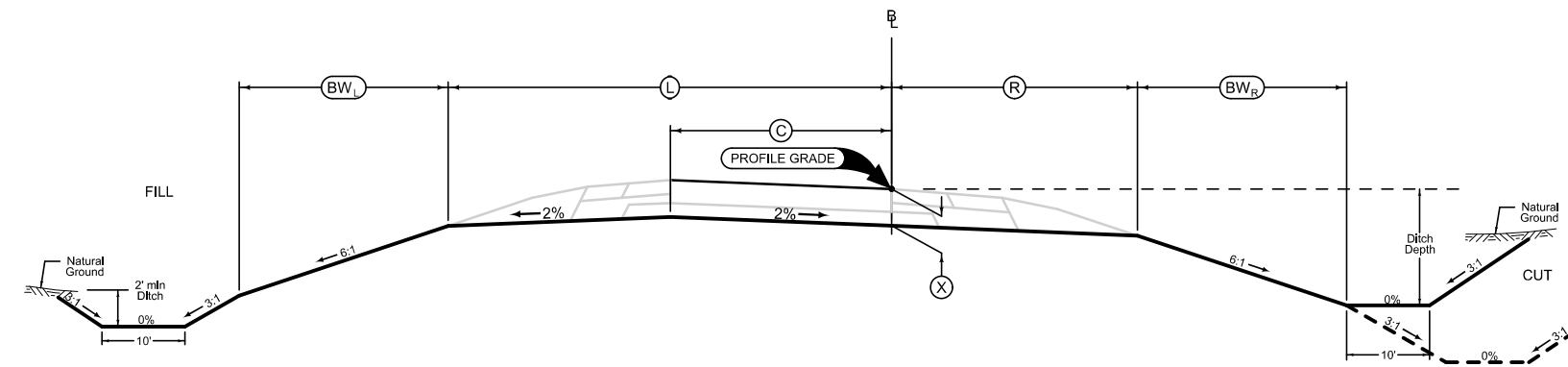


**Auxiliary Lane Paving  
(for information only)**

ROAD IDENTIFICATION	STATION TO STATION	MAINLINE							SHOULDER ①			
		T Inches	S Inches	D Inches	M Feet	L Feet	R Feet	P <sub>m</sub> Feet	G <sub>m</sub> Feet	P <sub>o</sub> Feet	G <sub>o</sub> Feet	
Southwest Arterial	101+10 243+80.12	11	6	10.3	3.7	28.5	32.5					

① Shoulder Design to be determined in separate Paving Contract

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		Ⓐ	Ⓑ	Ⓒ	Ⓧ	Ⓑ <sub>L</sub>	Ⓑ <sub>R</sub>
				Feet	Feet	Feet	Inches	Feet	Feet
NCR/EMR	A	1548+83.84	1560+40.00	30.2	16.0	16.0	17	15.8	14.0
NCR/EMR	B	2536+30.00	2547+67.66	30.2	16.0	16.0	17	15.8	14.0
NCR/EMR	C	3536+28.66	3548+07.75	30.2	16.0	16.0	17	15.8	14.0
NCR/EMR	D	4548+60.44	4561+51.34	30.2	16.0	16.0	17	15.8	14.0

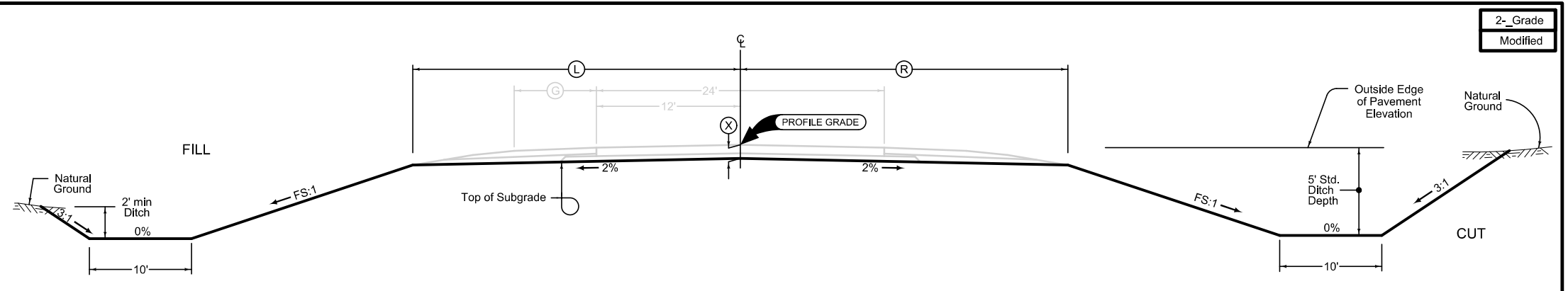


RAMP GRADING

Section view is in direction of traffic.  
Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or super-elevated curves.



LOCATION		DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	FS
Connector Road	11500+35.56 11502+15	44.9	30.9	15	3
Connector Road	11502+15 11504+25	44.9-30.9	30.9	15	3
Connector Road	11504+25 11509+97.02	30.9	30.9	15	3
Connector Road	11509+97.02 11516+46.28	30.9-57.3	30.9	15	3
Connector Road	11528+65.54 11530+86.06	33.9-30.9	50.7-40.6	15	3
Connector Road	11530+86.06 11532+56.36	30.9	40.6-30.9	15	3
Connector Road	11532+56.36 11534+00.00	30.9	30.9	15	3
Temp Connector Road	21508+90.00 21519+95.95	30.9	30.9	15	3
Temp Connector Road	21519+95.95 21522+05.95	30.9	30.9-44.9	15	3
Temp Connector Road	21522+05.95 21522+70.14	30.9	44.9	15	3



**2 LANE GRADING**

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

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

2-Grade  
Modified

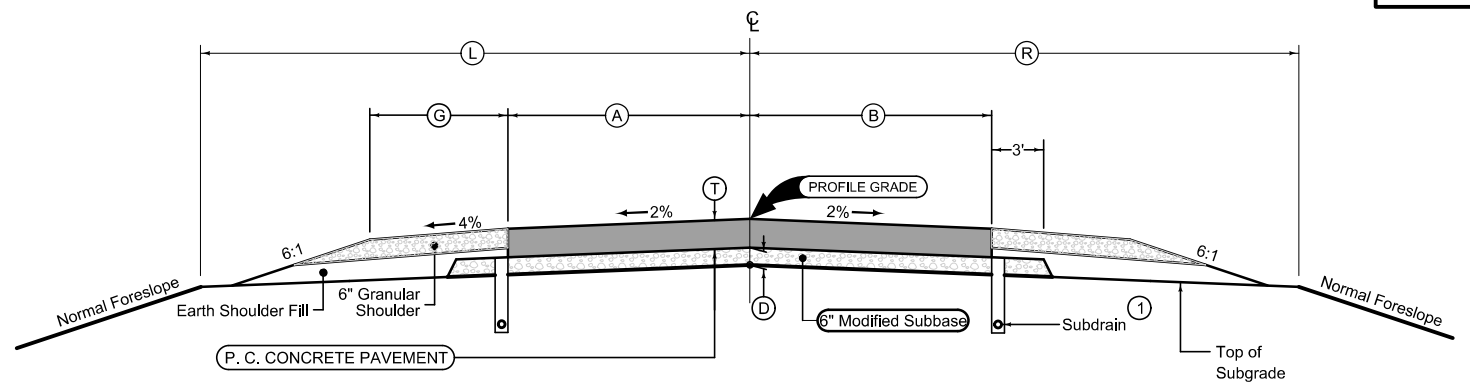
LOCATION		MAINLINE							SHLDR
ROAD IDENTIFICATION	STATION TO STATION	T Inches	D Inches	L Feet	R Feet	A Feet	B Feet	G Feet	
Connector Road	11500+35.56 11502+15	9	6	44.9	30.9	26	12	10	
Connector Road	11502+15 11504+25	9	6	44.9-30.9	30.9	26-12	12	10	
Connector Road	11504+25 11509+97.02	9	6	30.9	30.9	12	12	10	
Connector Road	11509+97.02 11516+46.28	9	6	30.9-57.3	30.9		12	10	
Connector Road	11528+65.54 11530+86.06	9	6	33.9-30.9	50.7-40.6			8	
Connector Road	11530+86.06 11532+56.36	9	6	30.9	40.6-30.9	12		8	
Connector Road	11532+56.36 11534+00.00	9	6	30.9	30.9	12	12	8	
Temp Connector Road	21508+90.00 21519+95.95	9	6	30.9	30.9	12	12	10	
Temp Connector Road	21519+95.95 21522+05.95	9	6	30.9	30.9-44.9	12	12-26	10	
Temp Connector Road	21522+05.95 21522+70.14	9	6	30.9	44.9	12	26	10	

Dimensions are symmetrical about the centerline.

Normal sections shown may be modified appropriately in areas specifically designated by the Engineer such as intersections or super-elevated curves.

① Refer to RF-19C.

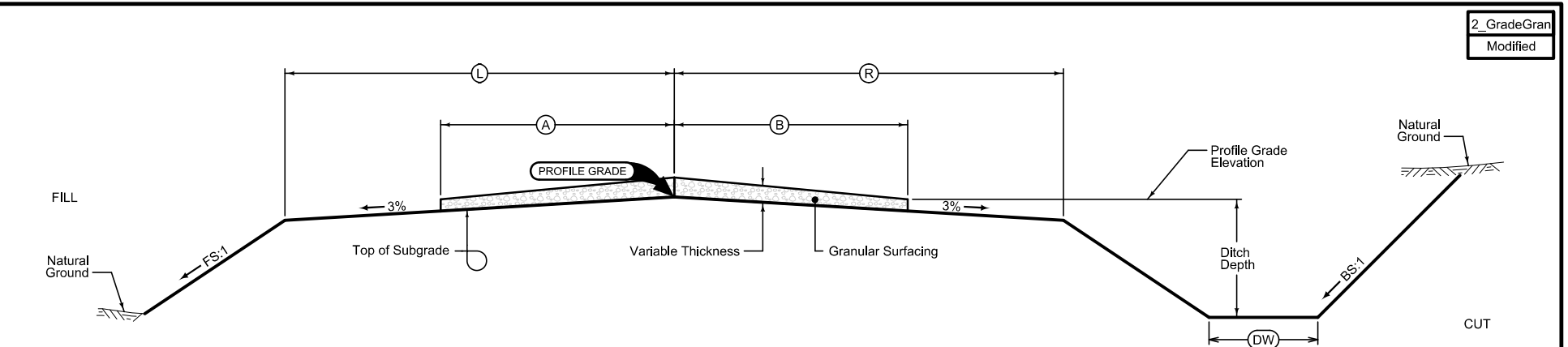
Mainline Pavement:  
Transverse joints: CD at 20' spacing  
Longitudinal joint: L-2



**2-LANE PCC PAVING (Granular Shoulders)  
(for information only)**

2P\_G--G  
Modified

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	A Feet	B Feet	FS	BS	DW Feet
ACCESS ROAD "A"	19+79.39 54+32.18	14	14	12	12	3	3	5
ACCESS ROAD "C"	6230+21.98 6244+55.70	7	7	5	5	3	3	5



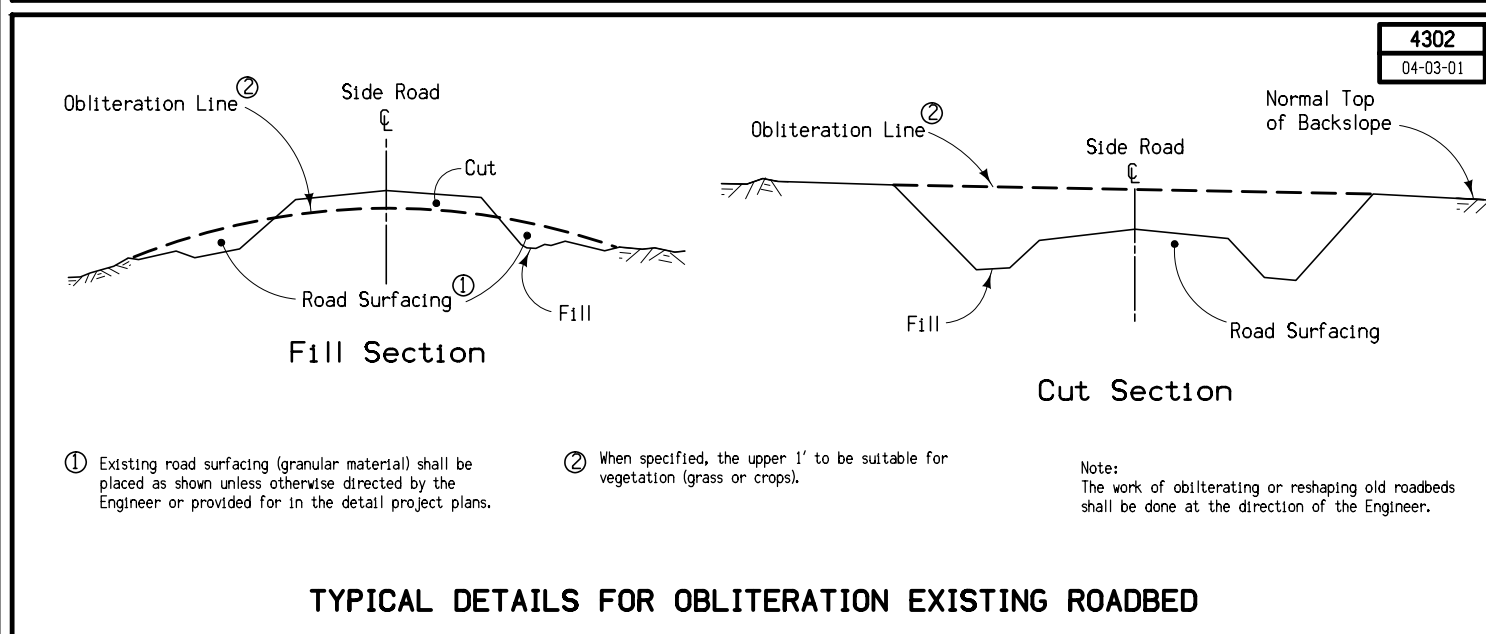
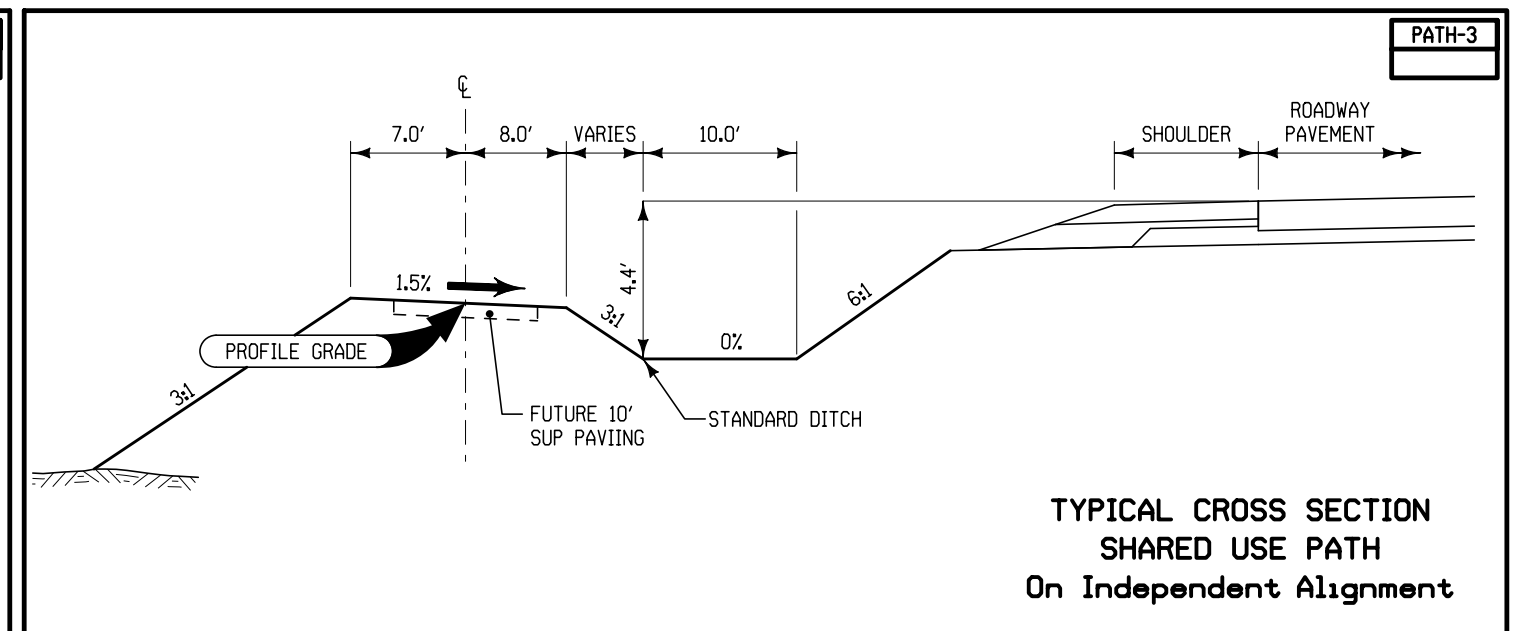
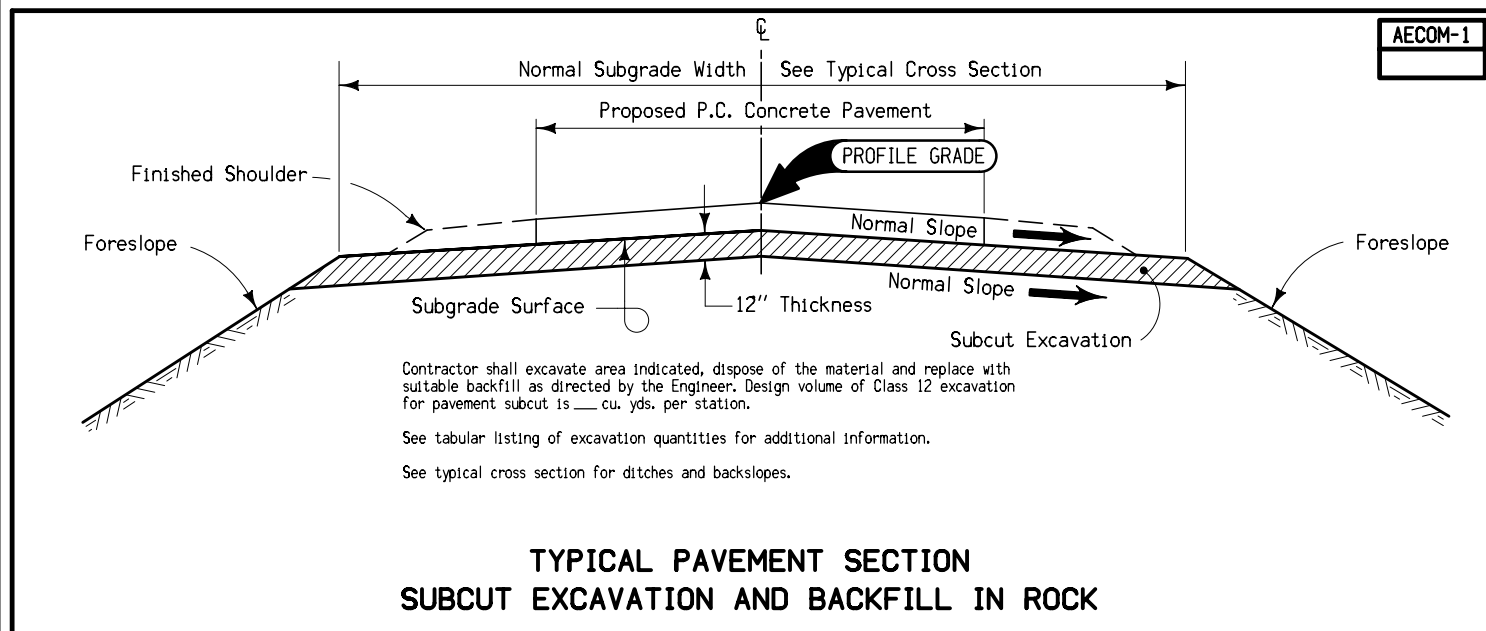
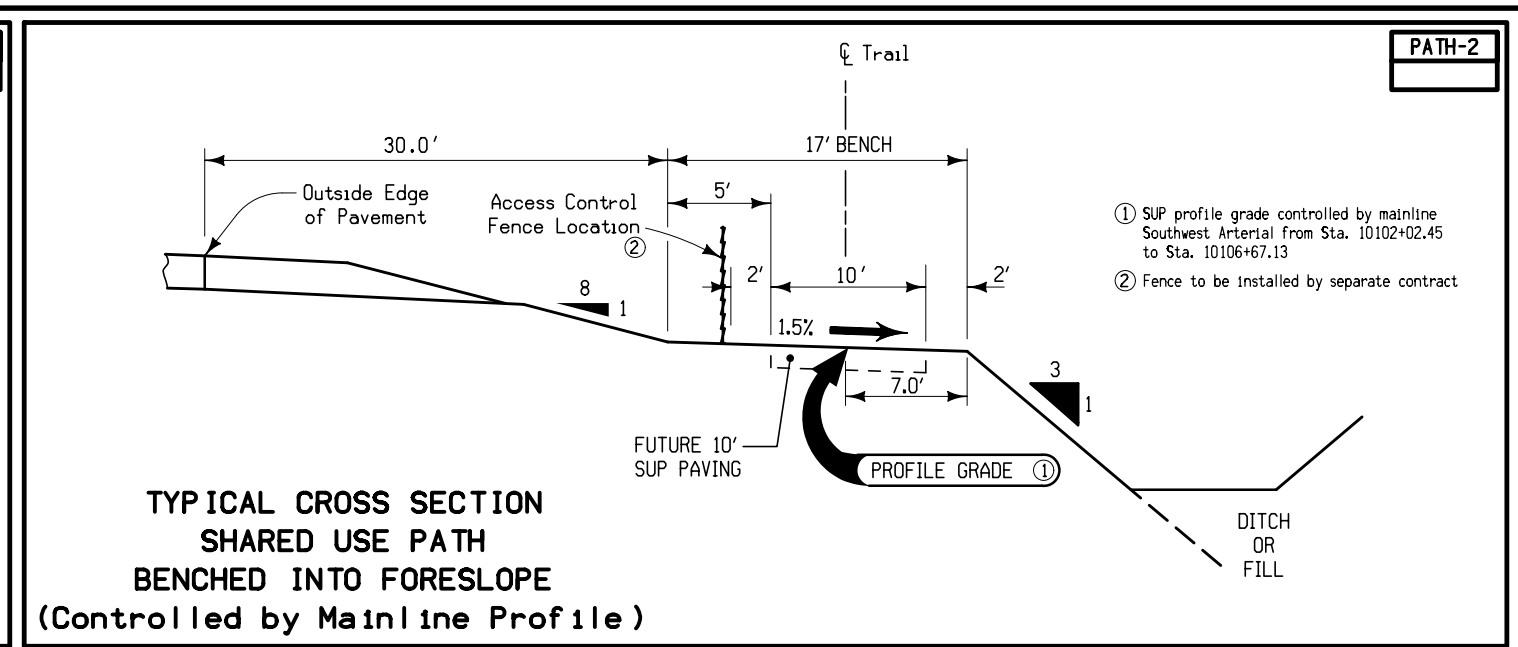
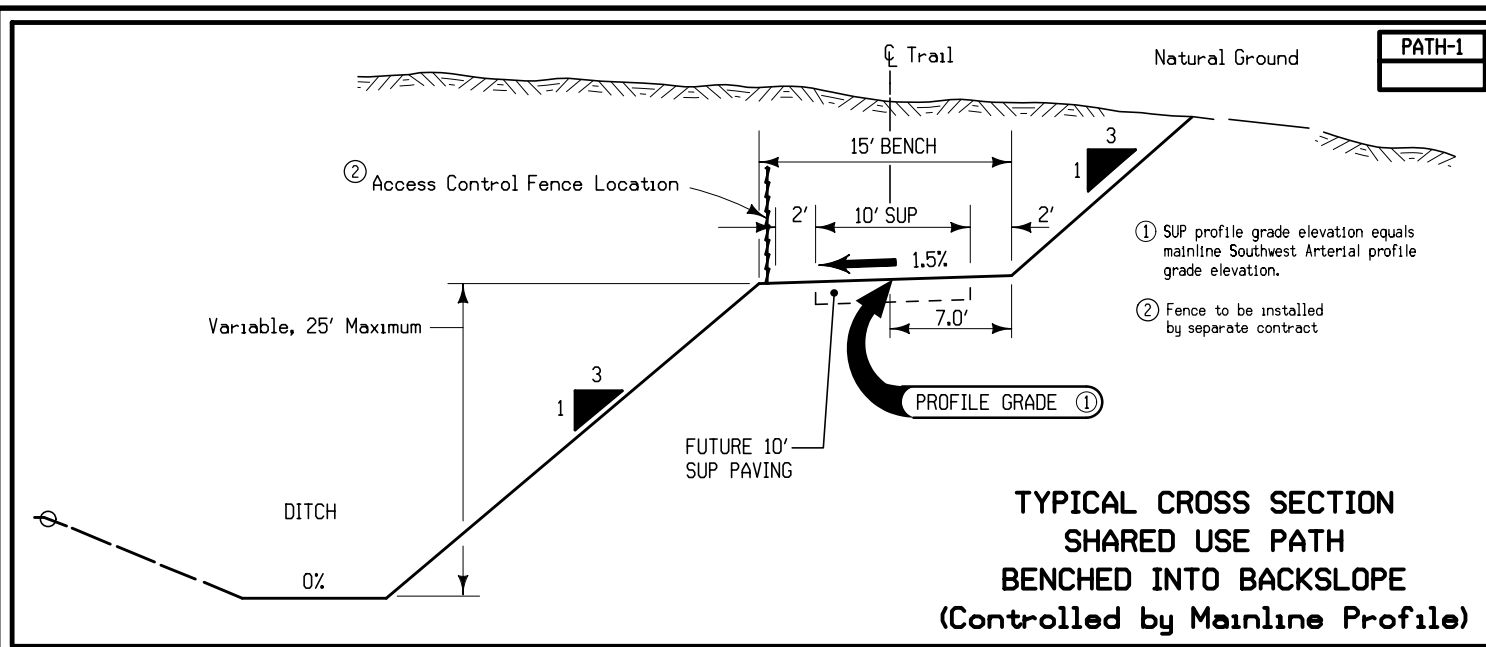
**GRADING AND GRANULAR SURFACING**

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

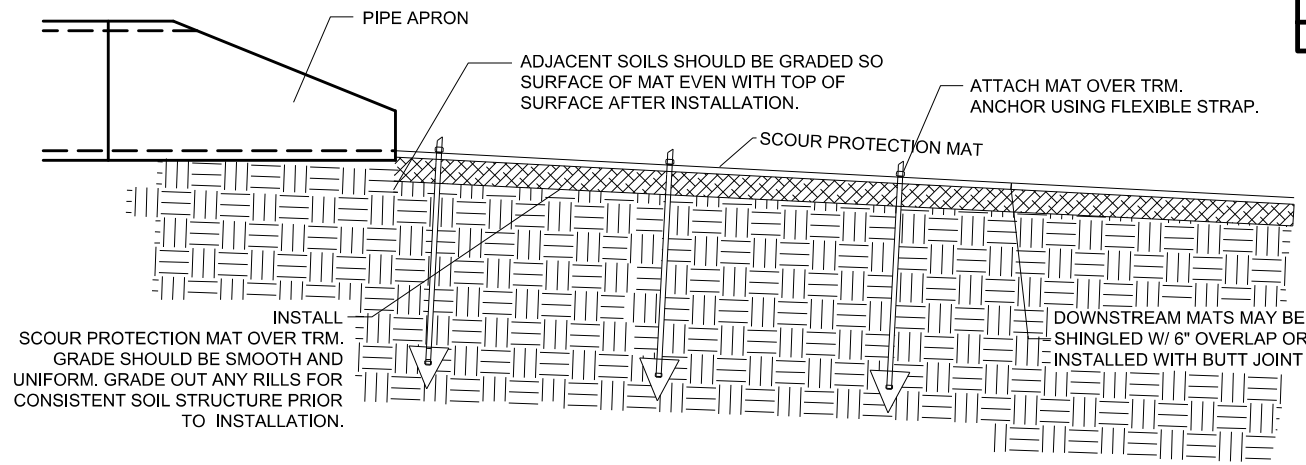
See plan & profile sheets and cross sections for additional details of ditches and backslopes.

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

2-GradeGran  
Modified



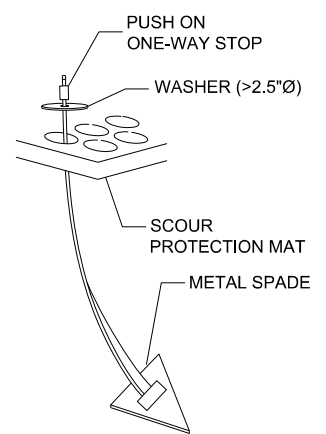
X-4  
SPECIAL



Refer to Tabulation 100-23 for additional information.

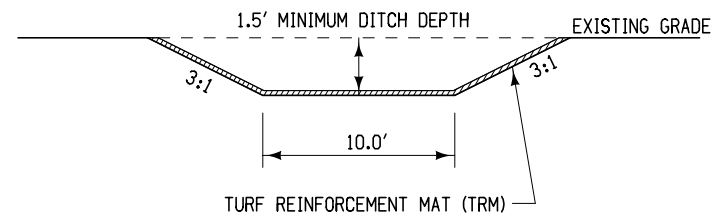
### TYPICAL TURF REINFORCEMENT MAT (TRM) AND SCOUR PROTECTION MAT PLACEMENT

X-5  
SPECIAL



### TYPICAL SCOUR PROTECTION MAT ANCHOR

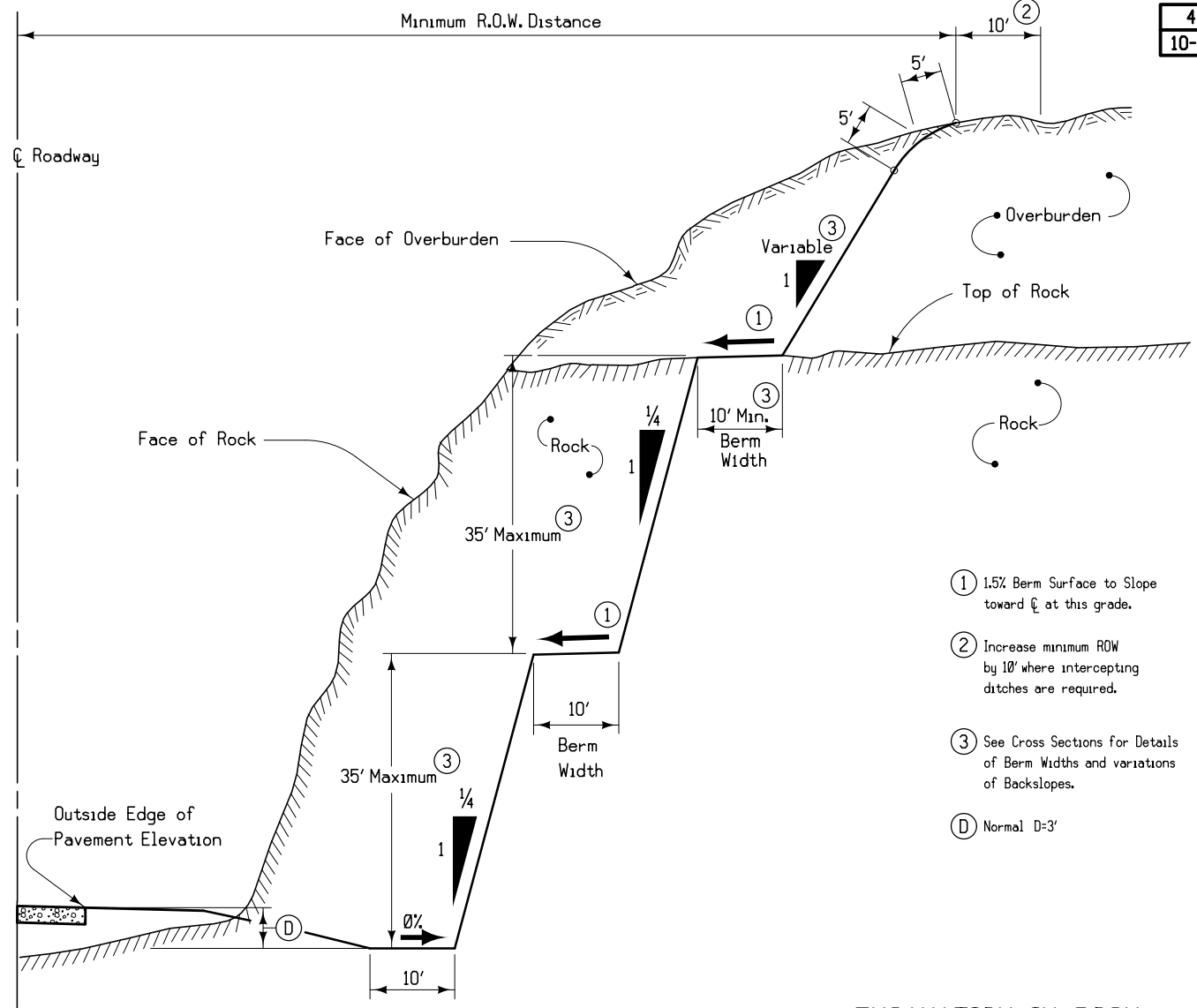
X-6  
SPECIAL



REFER TO TAB 100-22 FOR LOCATION

### SPECIAL DITCH TYPICAL SECTION

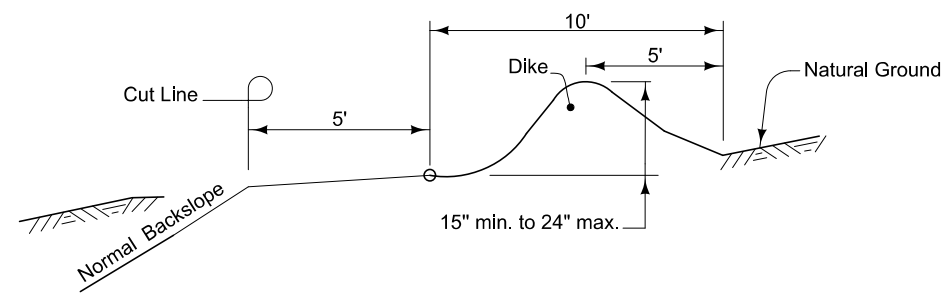
4111  
10-15-13



- ① 1.5% Berm Surface to Slope toward  $\text{CL}$  at this grade.
- ② Increase minimum ROW by 10' where intercepting ditches are required.
- ③ See Cross Sections for Details of Berm Widths and variations of Backslopes.
- ⓓ Normal D=3'

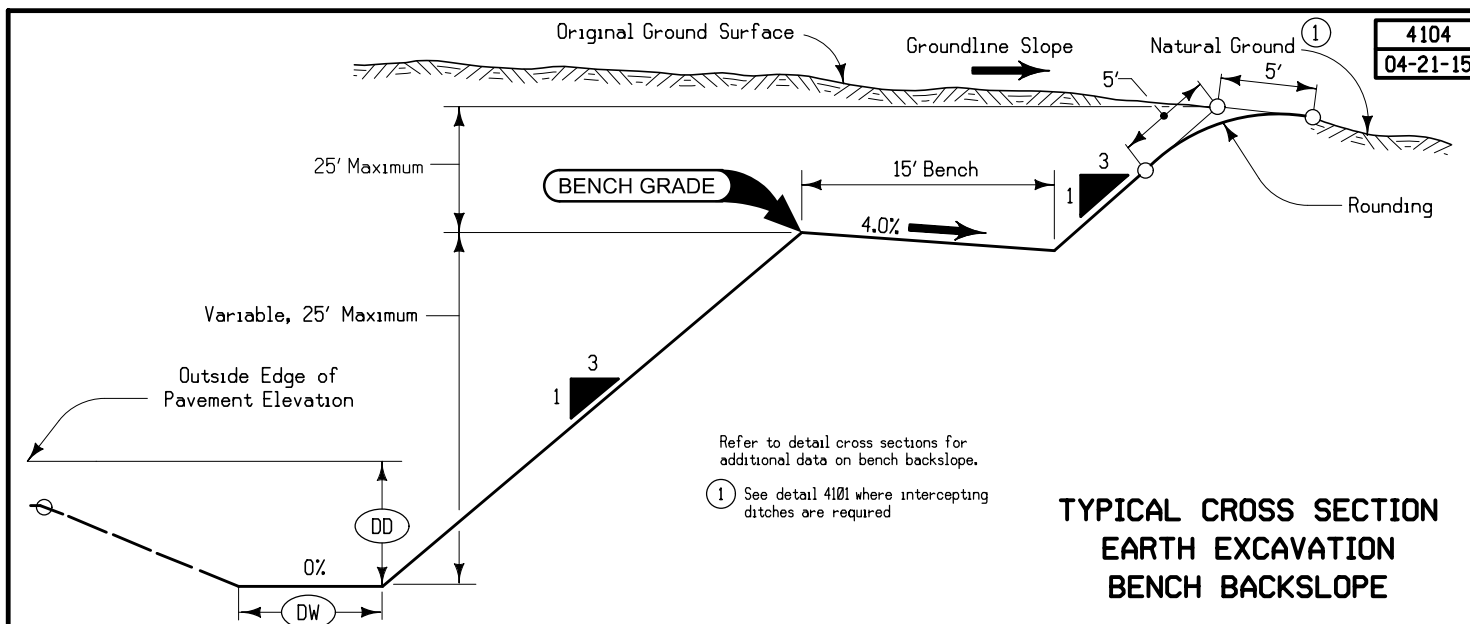
**EXCAVATION IN ROCK USING PRE-SPLITTING METHOD**

4101  
04-20-10



**TYPICAL CROSS SECTION INTERCEPTING DITCH**

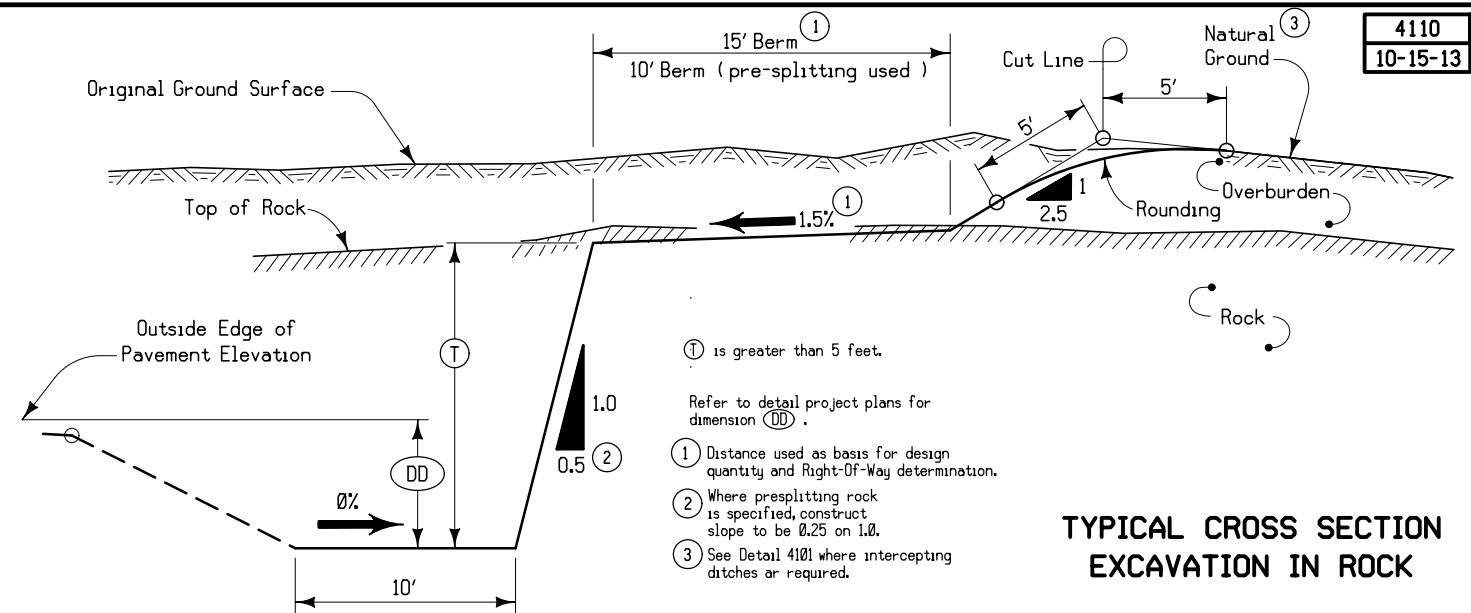
4104  
04-21-15



- ① See detail 4101 where intercepting ditches are required

**TYPICAL CROSS SECTION EARTH EXCAVATION BENCH BACKSLOPE**

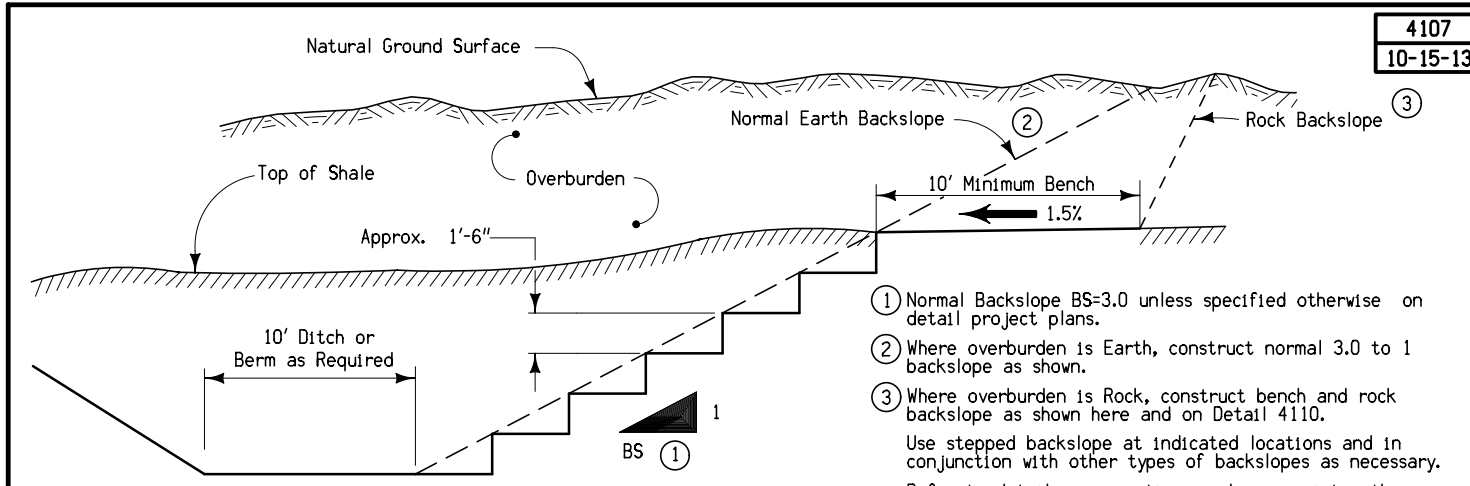
4110  
10-15-13



- ① is greater than 5 feet.
- Refer to detail project plans for dimension  $\text{DD}$ .
- ① Distance used as basis for design quantity and Right-Of-Way determination.
- ② Where presplitting rock is specified, construct slope to be 0.25 on 1.0.
- ③ See Detail 4101 where intercepting ditches are required.

**TYPICAL CROSS SECTION EXCAVATION IN ROCK**

4107  
10-15-13



- ① Normal Backslope BS=3.0 unless specified otherwise on detail project plans.
  - ② Where overburden is Earth, construct normal 3.0 to 1 backslope as shown.
  - ③ Where overburden is Rock, construct bench and rock backslope as shown here and on Detail 4110.
- Use stepped backslope at indicated locations and in conjunction with other types of backslopes as necessary. Refer to detail cross sections and appropriate other drawings for additional data pertaining to backslopes.

**TYPICAL CROSS SECTION STEPPED BACKSLOPE**

### SURVEY SYMBOLS

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

### UTILITY LEGEND

	Black Hills Energy Brad Fleming 402-221-2714 brad.fleming@blackhillscorp.com
	BP Pipelines (North America) Inc. David Sommerfeld 630-536-2729 david.sommerfeld@bp.com
	ITC Holdings Chad Levi 319-297-6765 clevi@tctransco.com
	Maquoketa Valley Rural Electric James Lauzon 319-462-3541 jlauzon@mvec.com
	Mediacom (cable TV) Bob Frazor 563-387-6119 bfrazor@mediacomcc.com
	Centurylink (formerly Qwest Communications) Steven Parker 515-265-0968 steven.parker4@centurylink.com

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

LINEWORK	Design Color No.	Description
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.	Description	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

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

LINEWORK	Design Color No.	Description
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

Symbol	Description
	Reference Point
	Station
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	High Tension Cable Guardrail
	Sheet Pile
	Pavement Removal
	Clearing & Grubbing Area

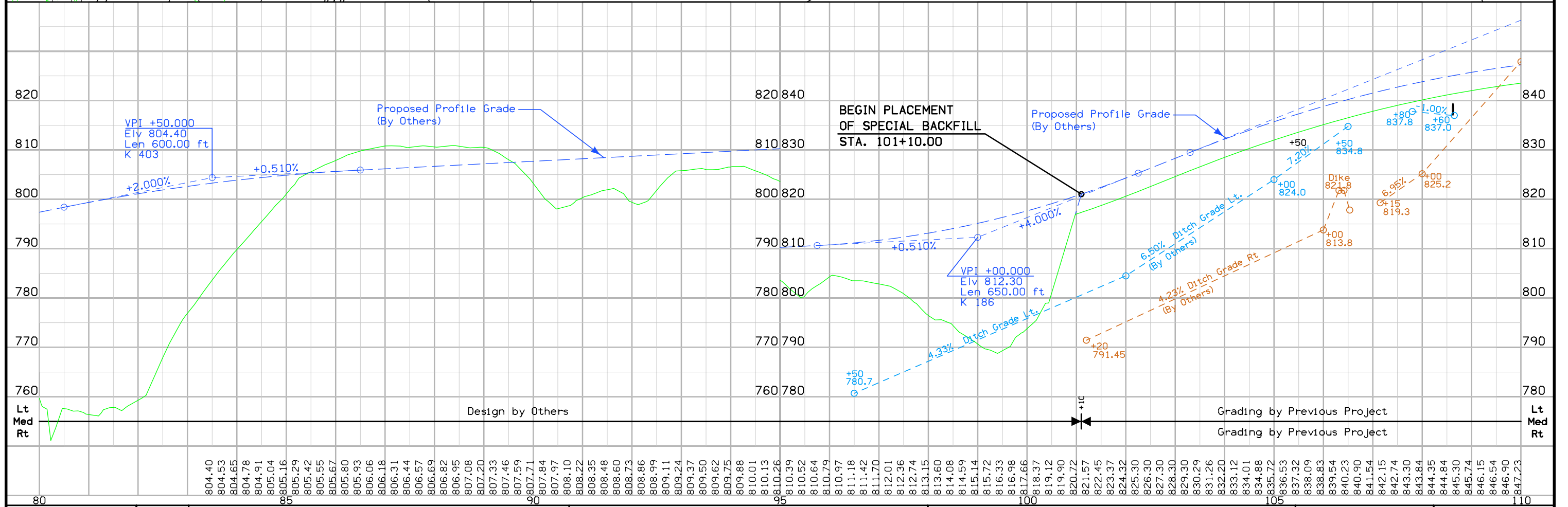
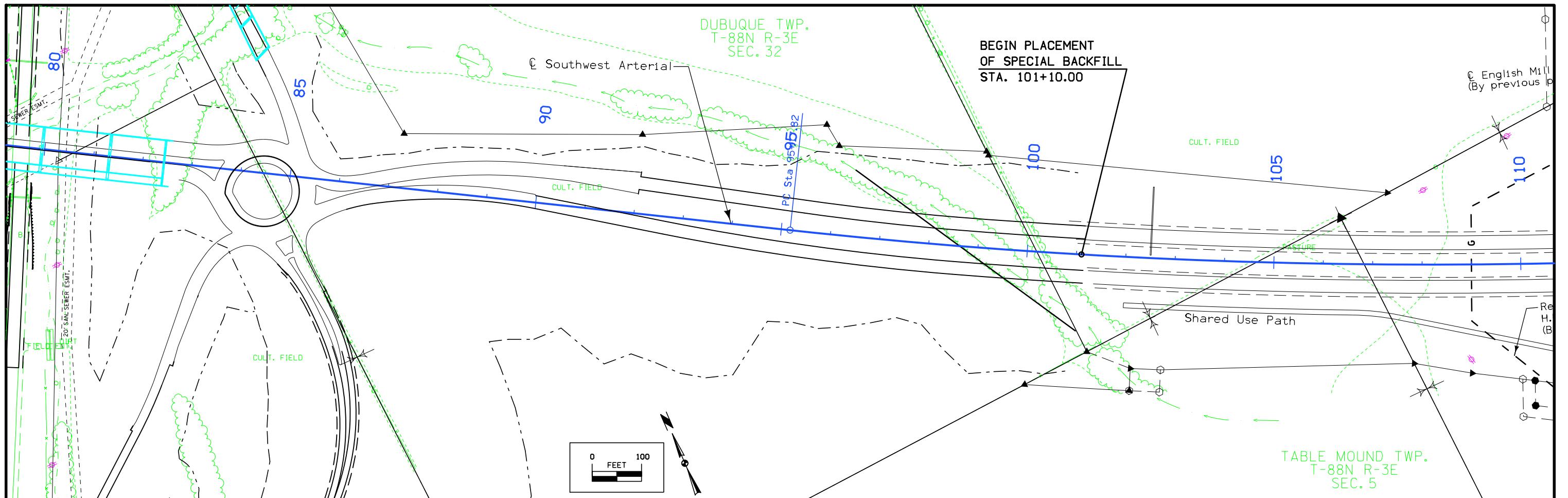
### RIGHT-OF-WAY LEGEND

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

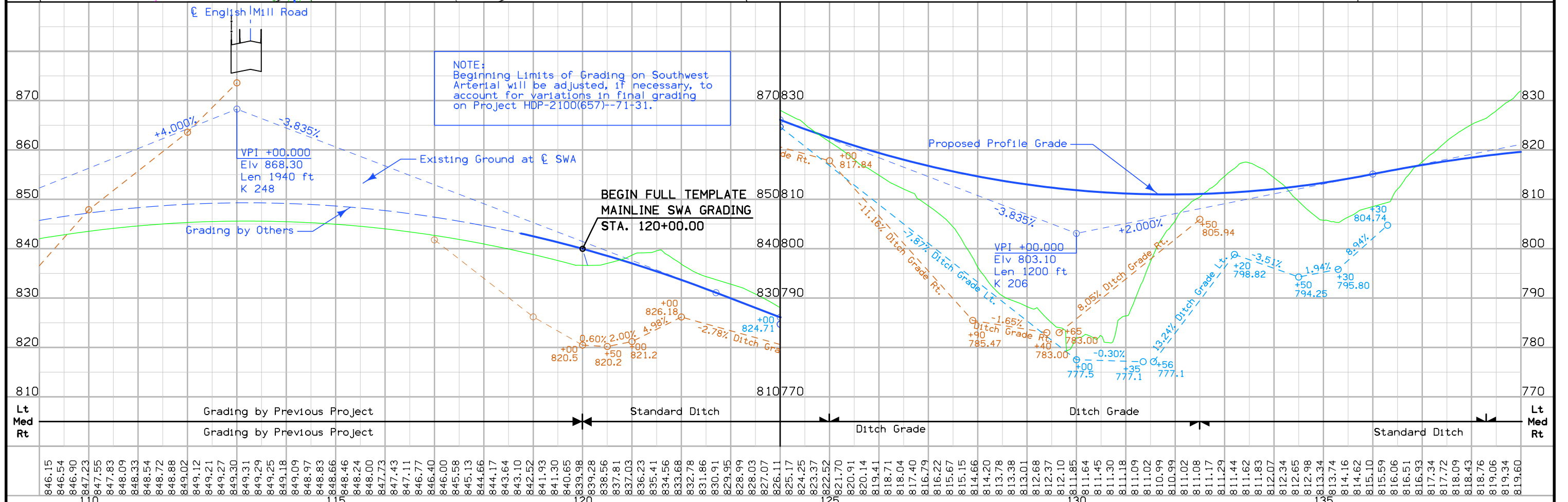
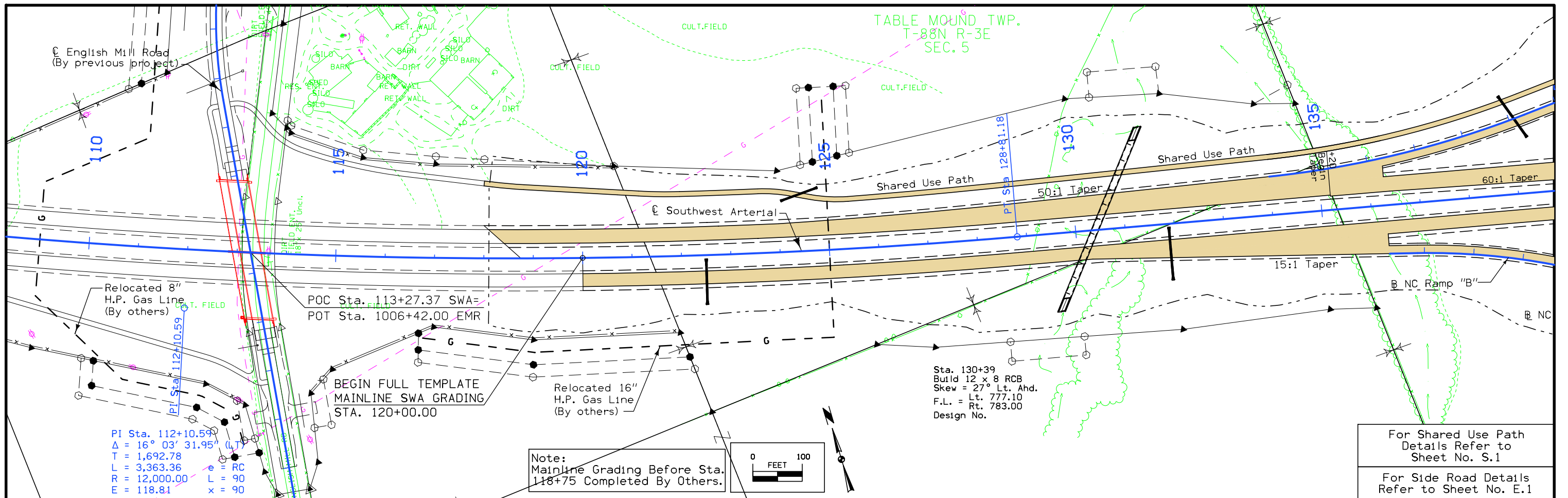


## PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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



FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)-3H-31</b>	SHEET NUMBER	<b>D.2</b>
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FILE NO.	ENGLISH	DESIGN TEAM	AECOM	DUBUQUE	COUNTY	PROJECT NUMBER	NHSX-032-1(25)--3H-31	SHEET NUMBER	D.3
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For Shared Use Path  
Details Refer to  
Sheet No. S.2

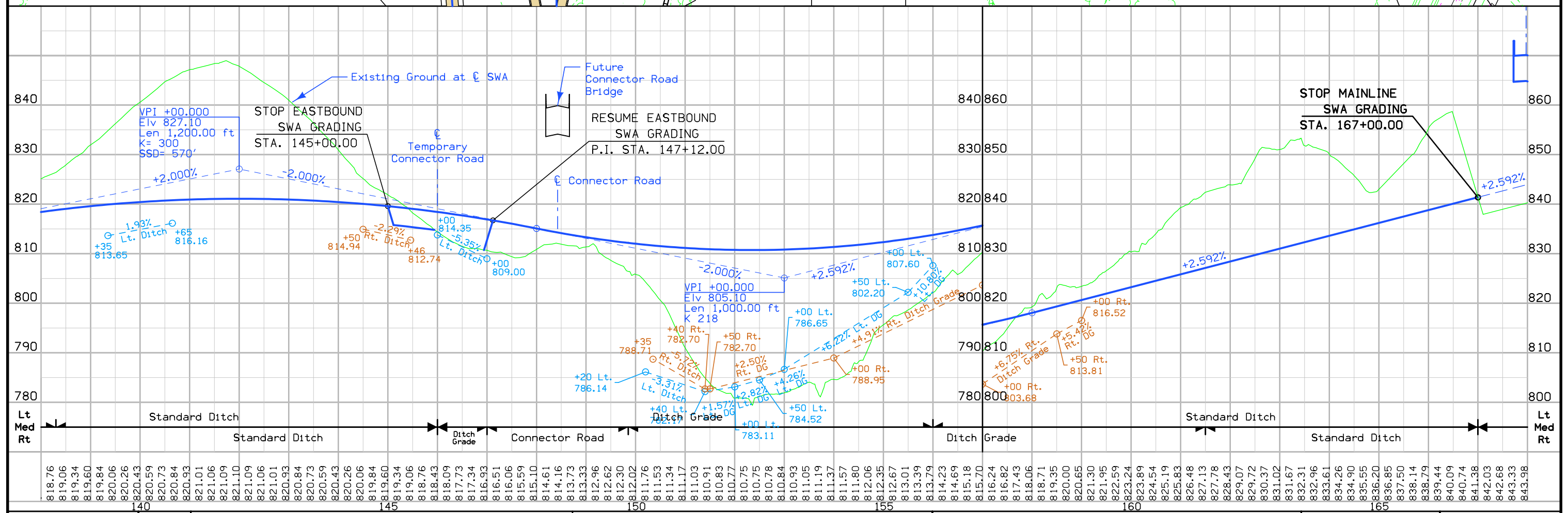
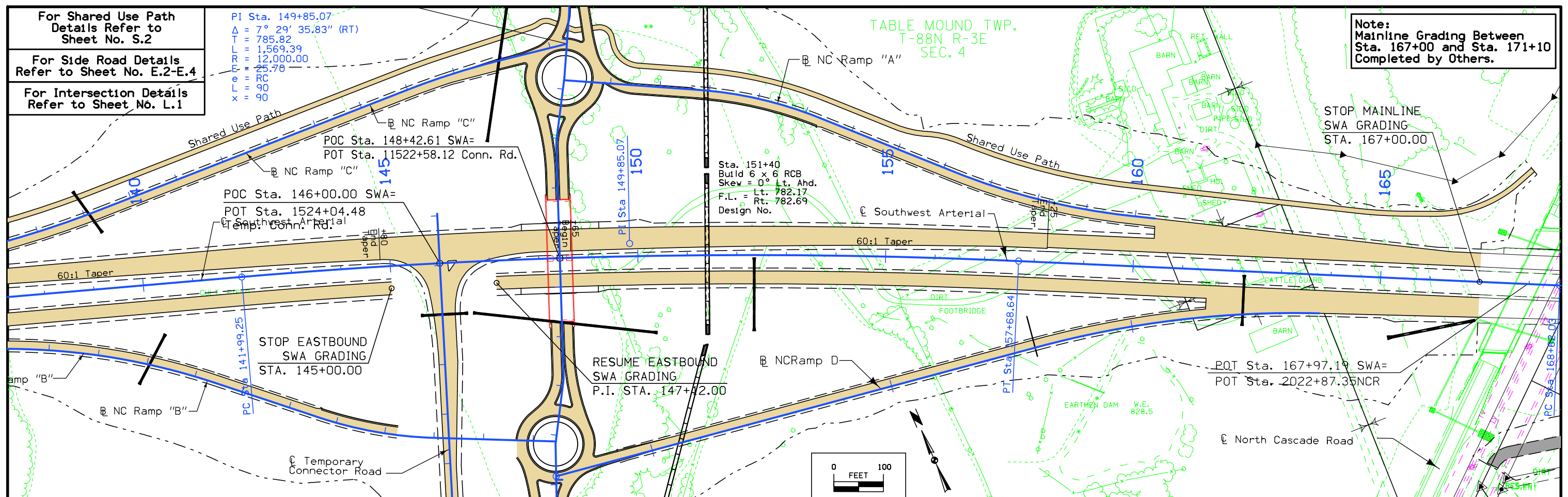
For Side Road Details  
Refer to Sheet No. E.2-E.4

For Intersection Details  
Refer to Sheet No. L.1

PI Sta. 149+85.07  
Δ = 7° 29' 35.83" (RT)  
T = 785.82  
L = 1,569.39  
R = 12,000.00  
e = 25.78  
RC = 90  
LC = 90

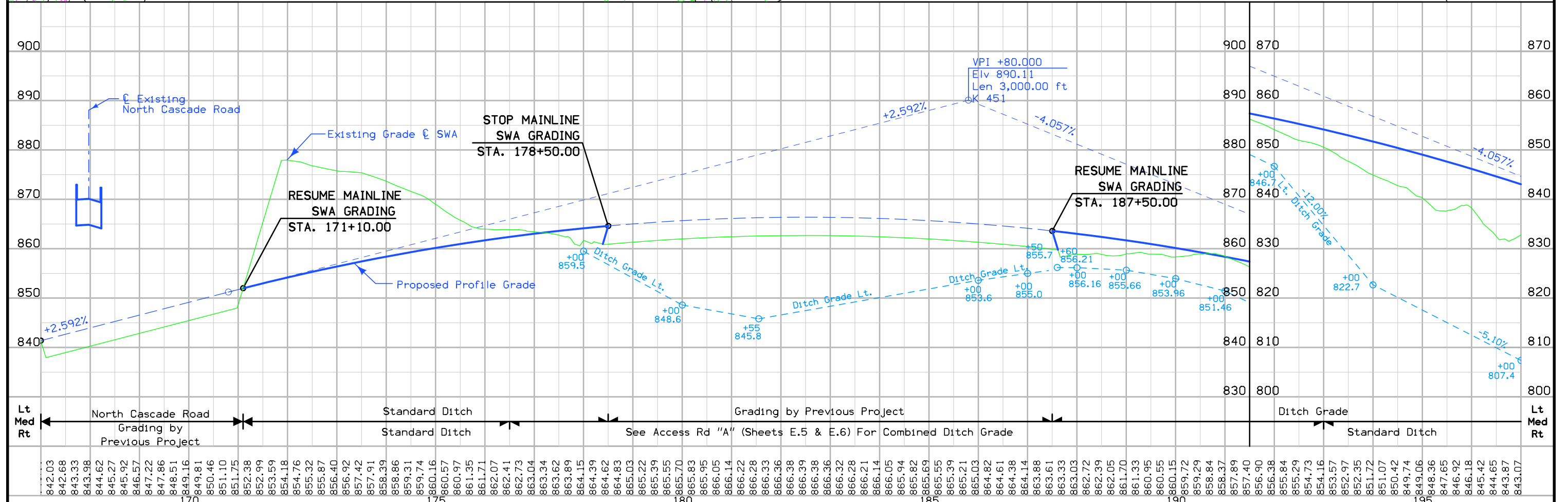
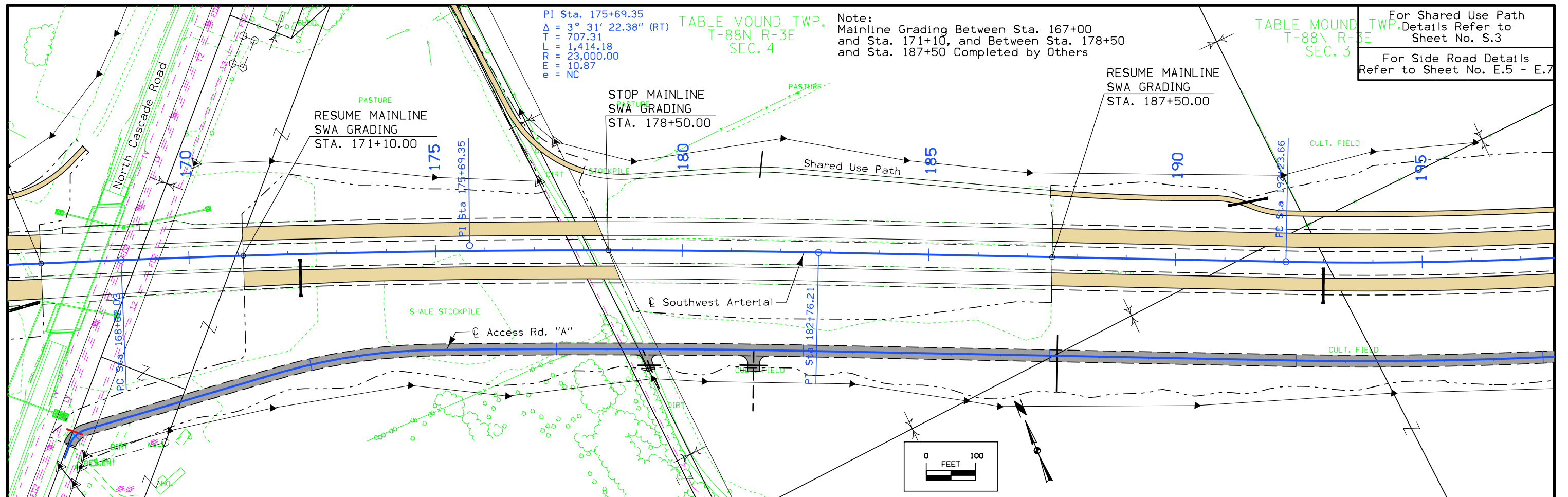
TABLE MOUND TWP.  
T-88N R-3E  
SEC. 4

Note:  
Mainline Grading Between  
Sta. 167+00 and Sta. 171+10  
Completed by Others.

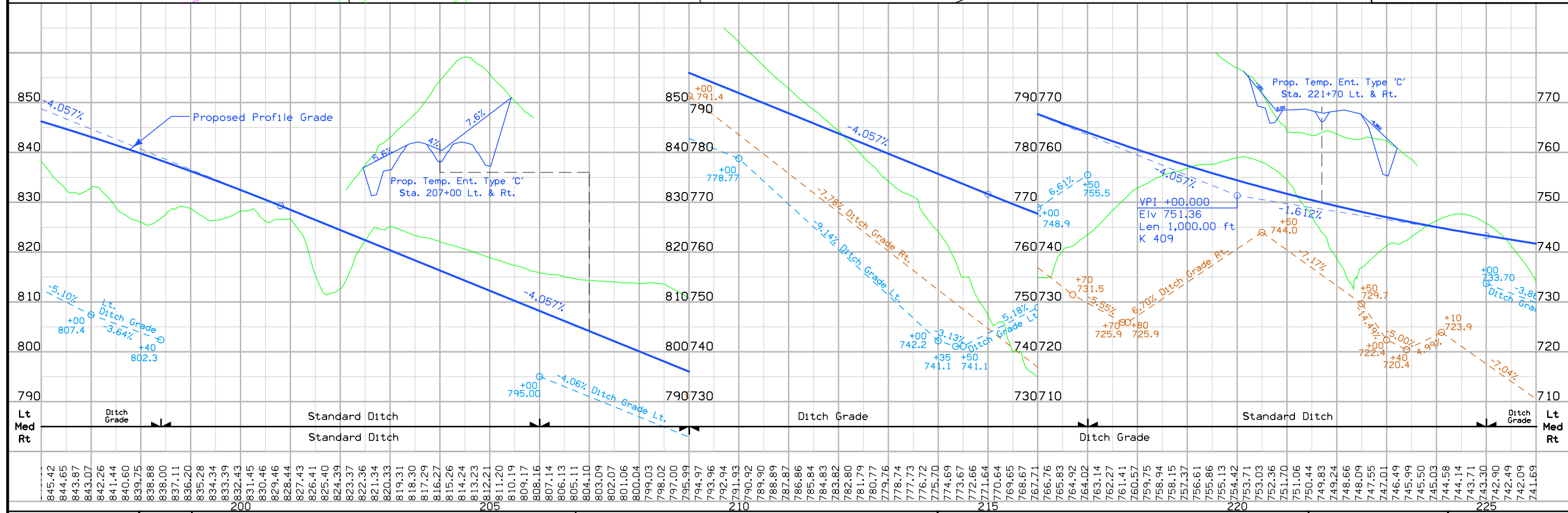
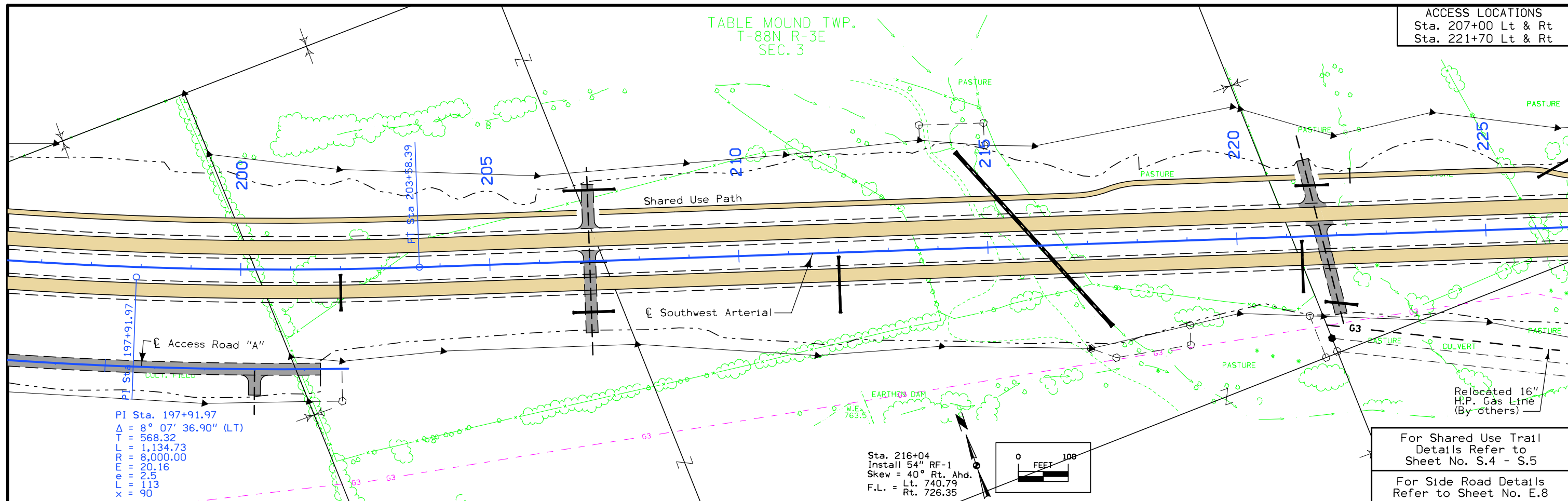


FILE NO.	ENGLISH	DESIGN TEAM	AECOM	DUBUQUE	COUNTY	PROJECT NUMBER	NHSX-032-1(25)-3H-31	SHEET NUMBER	D.4
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FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	DUBUQUE	COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>D.5</b>
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Sta. 226+74  
 Install 36" RF-1  
 Skew = 5° Rt. Ahd.  
 F.L. = Lt. 727.74  
 Rt. 704.59

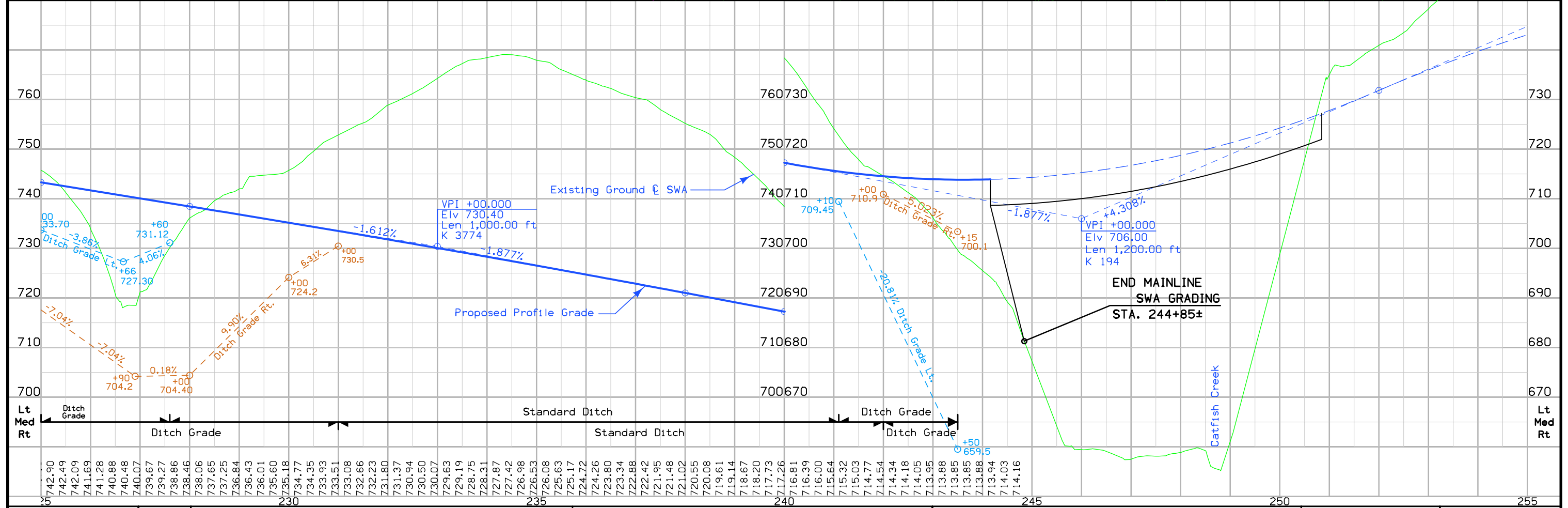
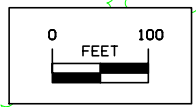
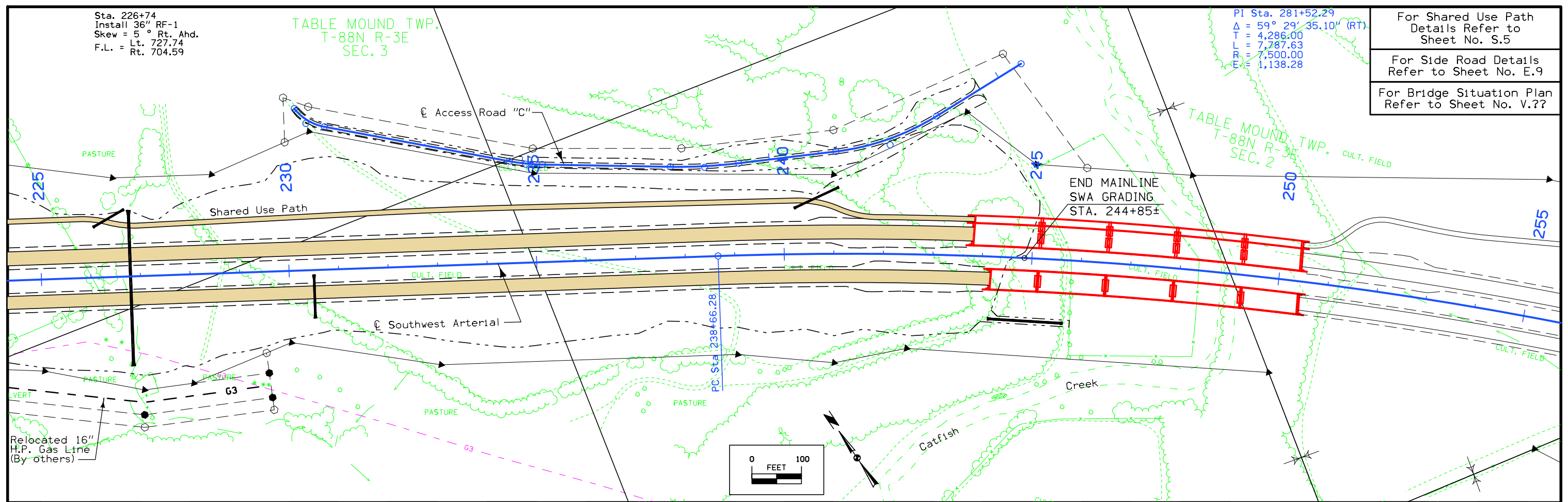
TABLE MOUND TWP.  
 T-88N R-3E  
 SEC. 3

PI Sta. 281+52.29  
 $\Delta = 59^\circ 29' 35.10" (RT)$   
 $T = 4,286.00$   
 $L = 7,287.63$   
 $R = 7,500.00$   
 $E = 1,138.28$

For Shared Use Path  
 Details Refer to  
 Sheet No. S.5

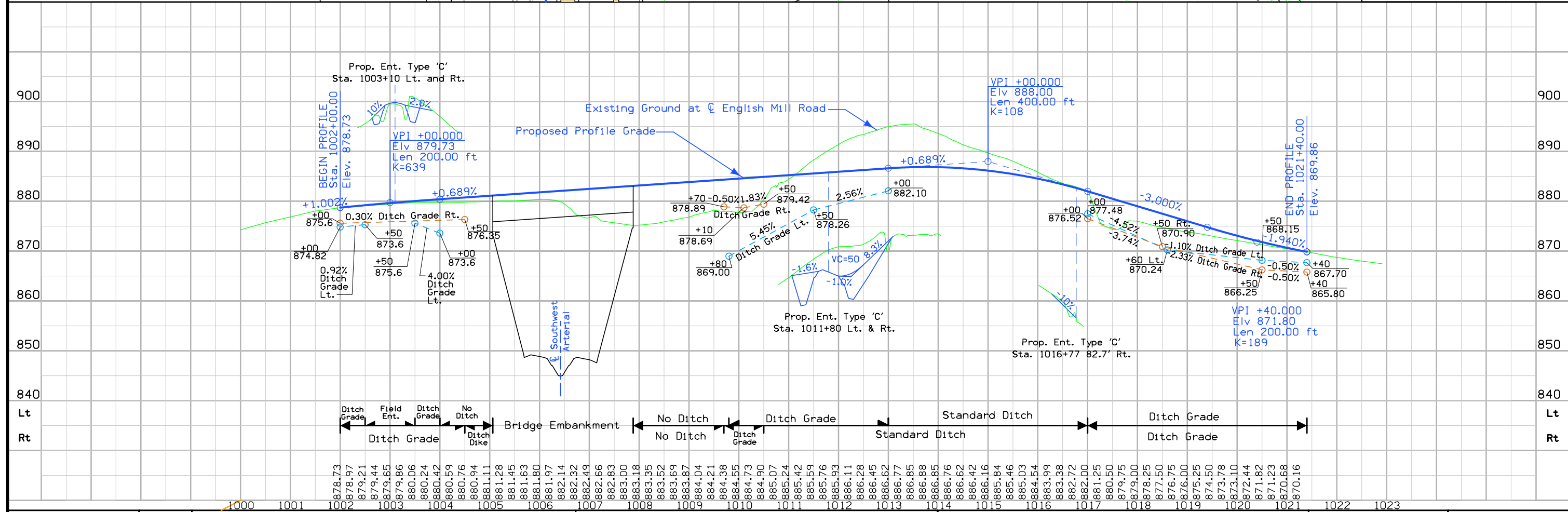
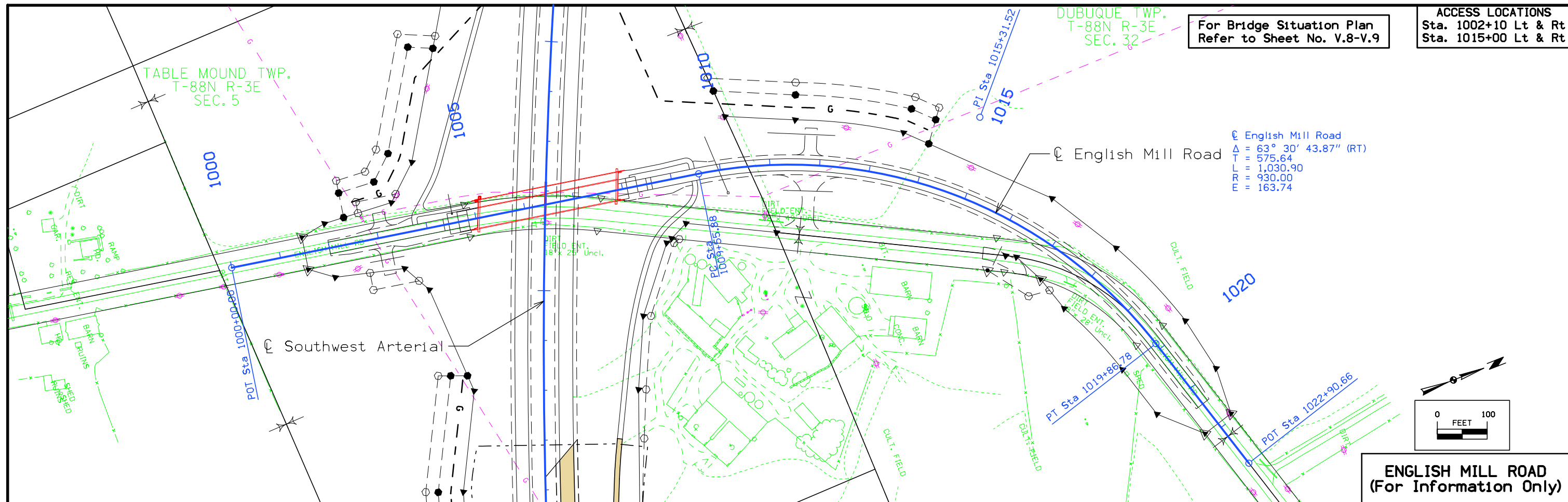
For Side Road Details  
 Refer to Sheet No. E.9

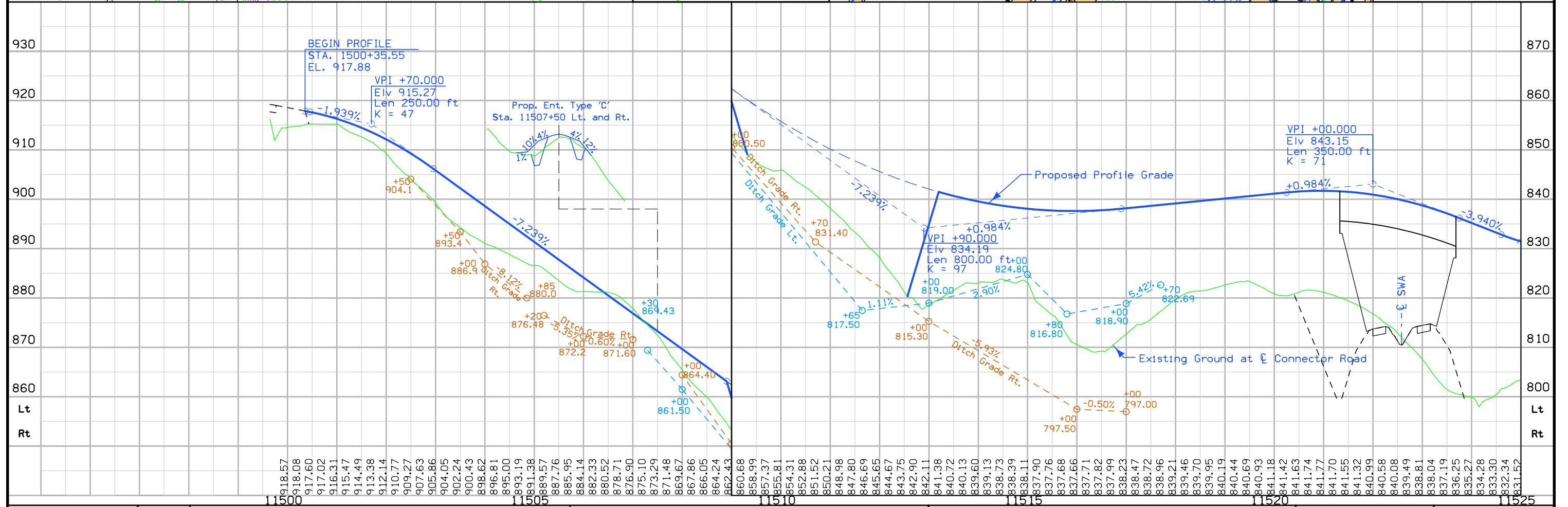
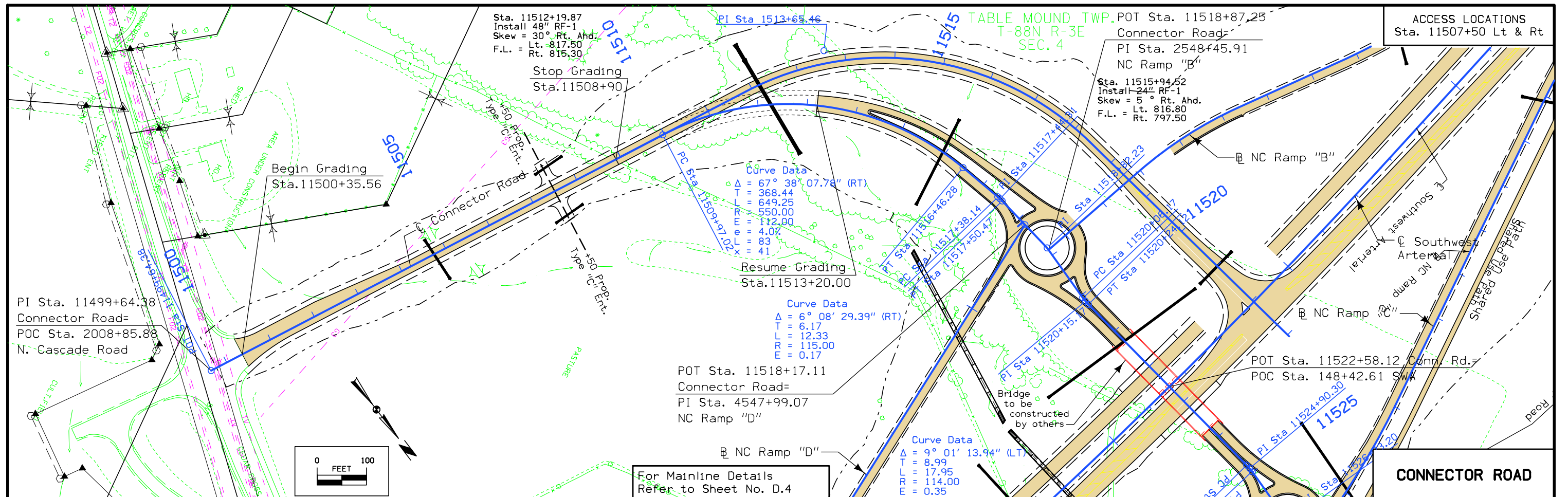
For Bridge Situation Plan  
 Refer to Sheet No. V.??

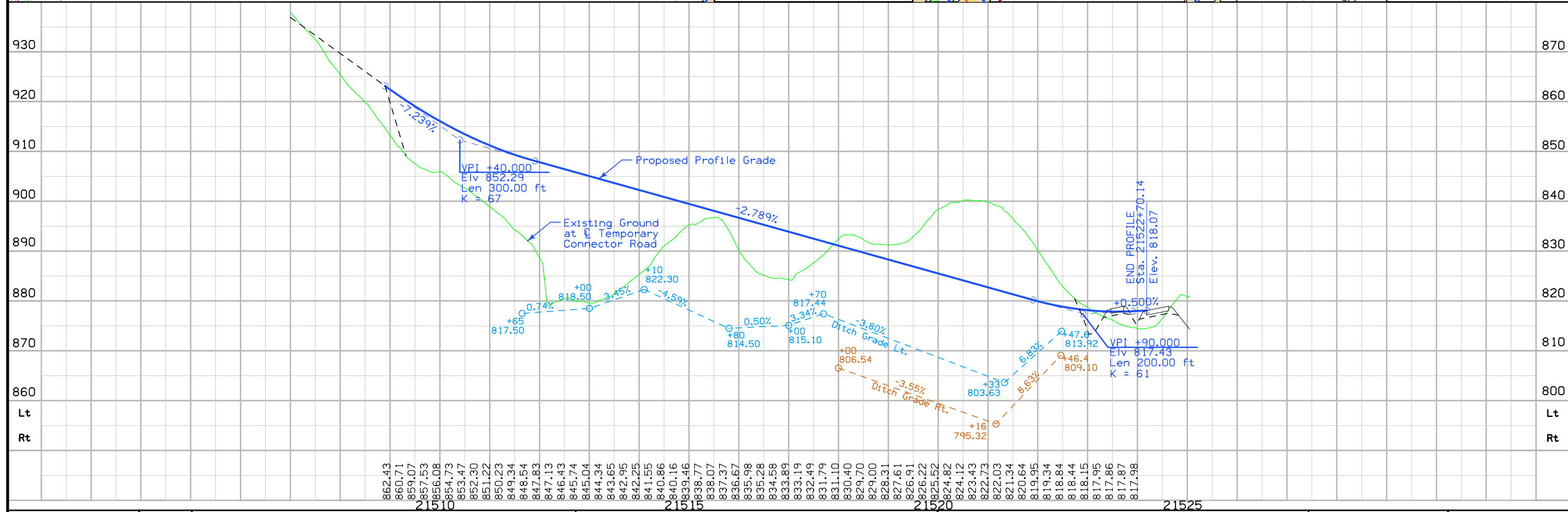
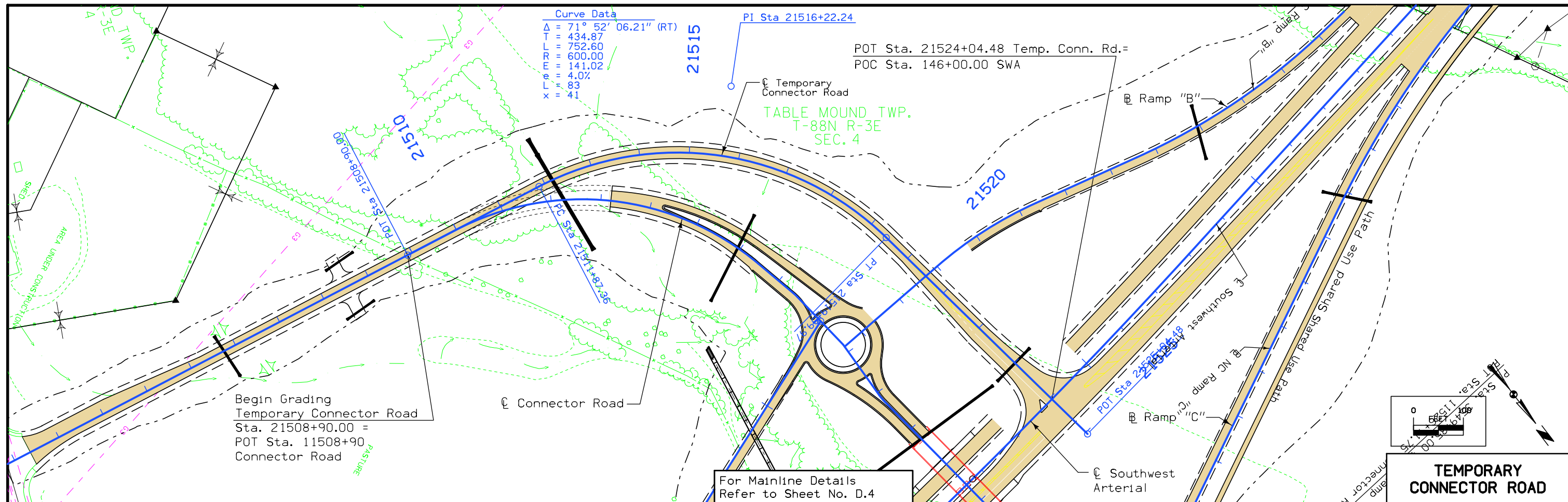


FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	DUBUQUE	COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>D.7</b>
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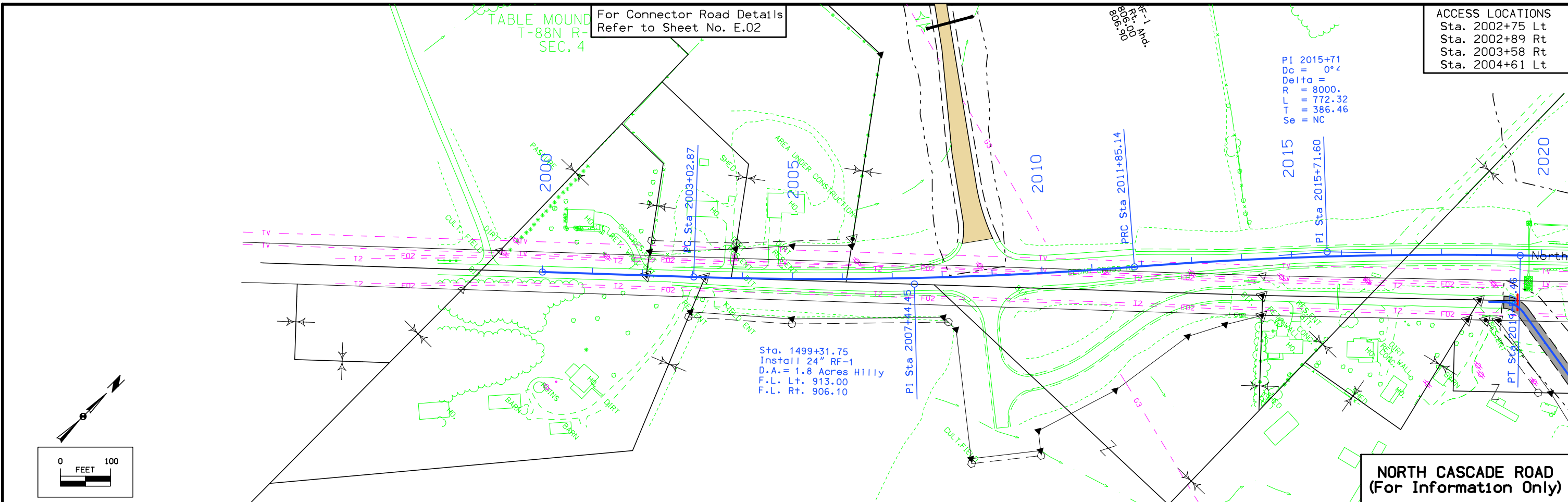
FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>E.5</b>
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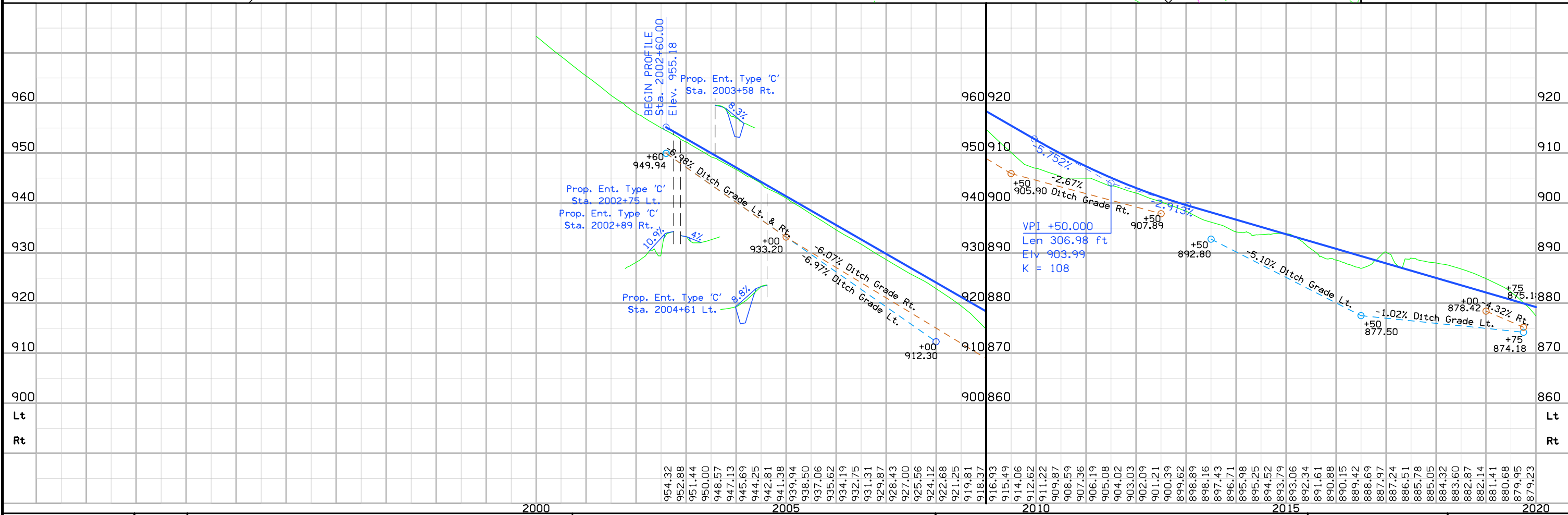
For Connector Road Details  
Refer to Sheet No. E.02

ACCESS LOCATIONS  
Sta. 2002+75 Lt  
Sta. 2002+89 Rt  
Sta. 2003+58 Rt  
Sta. 2004+61 Lt

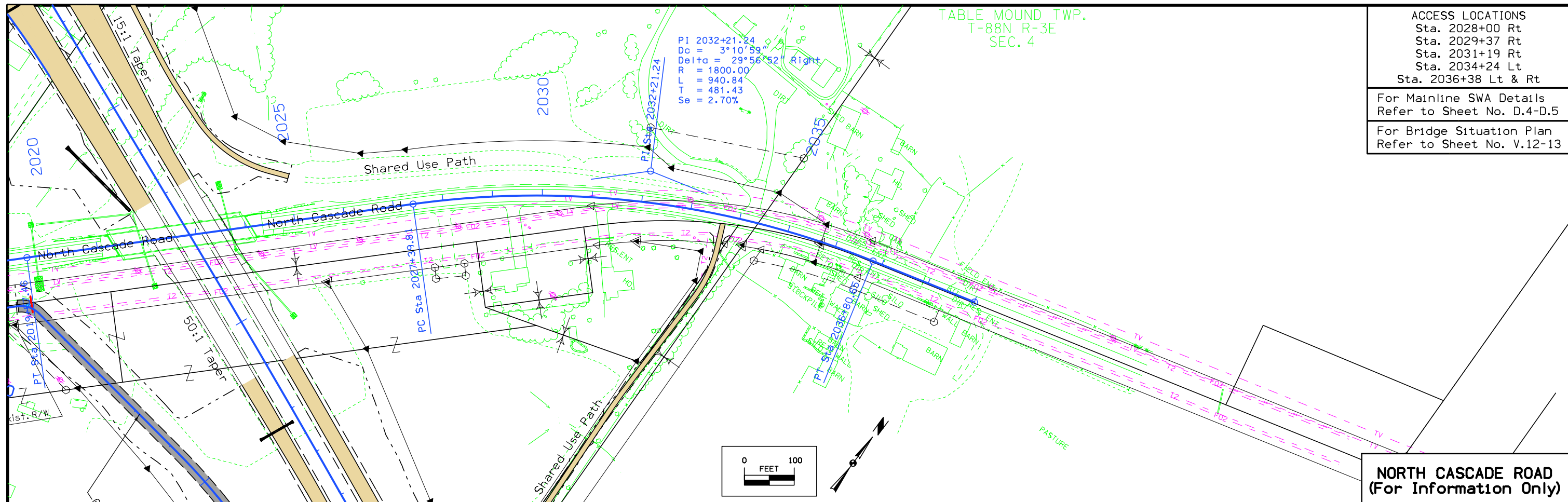
PI 2015+71  
Dc = 0° 4'  
Delta =  
R = 8000.  
T = 772.32  
L = 386.46  
Se = NC



**NORTH CASCADE ROAD**  
(For Information Only)



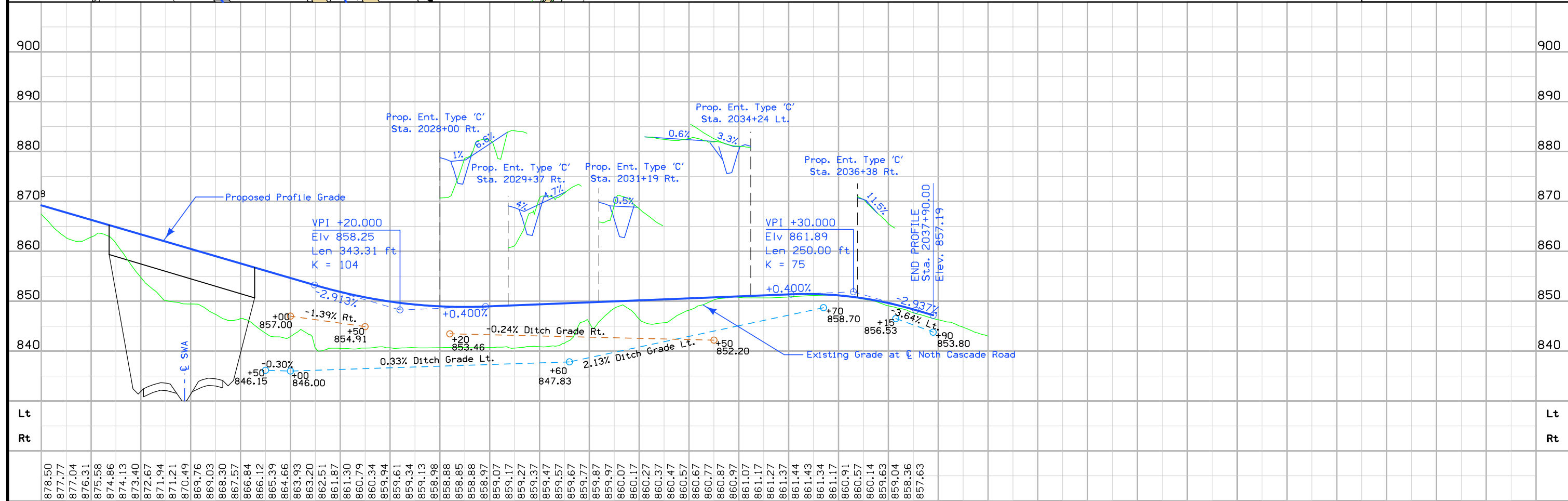
FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	2000	2005	2010	2015	2020		
				<b>DUBUQUE</b>		COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>E.6</b>



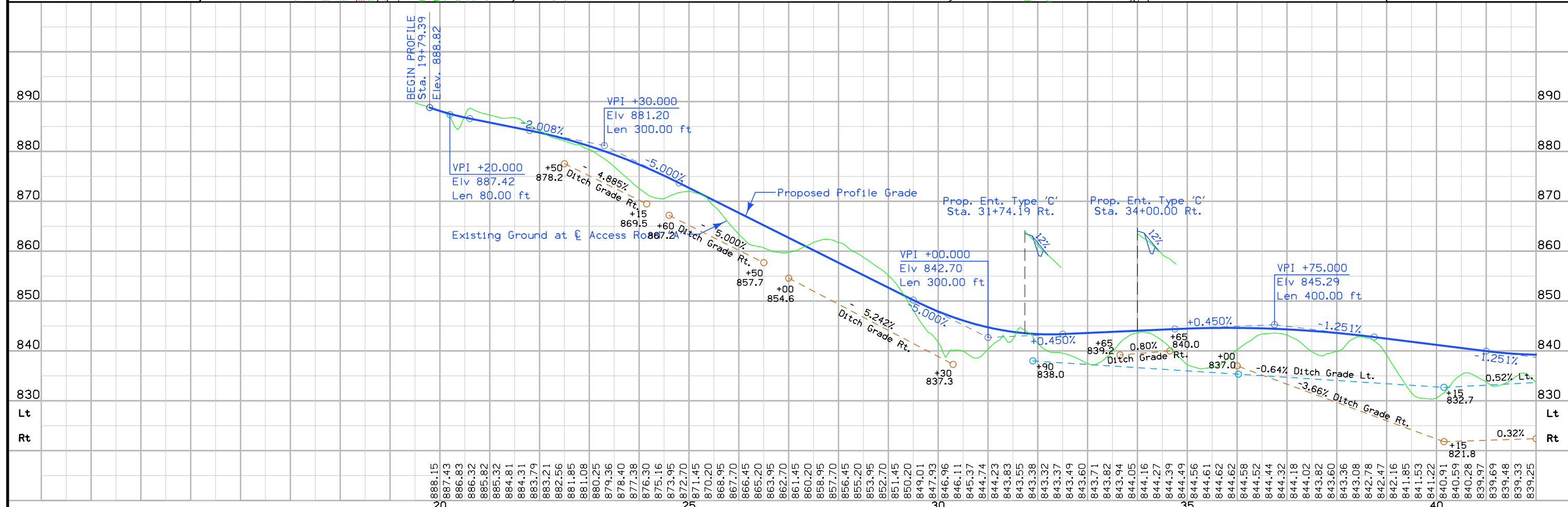
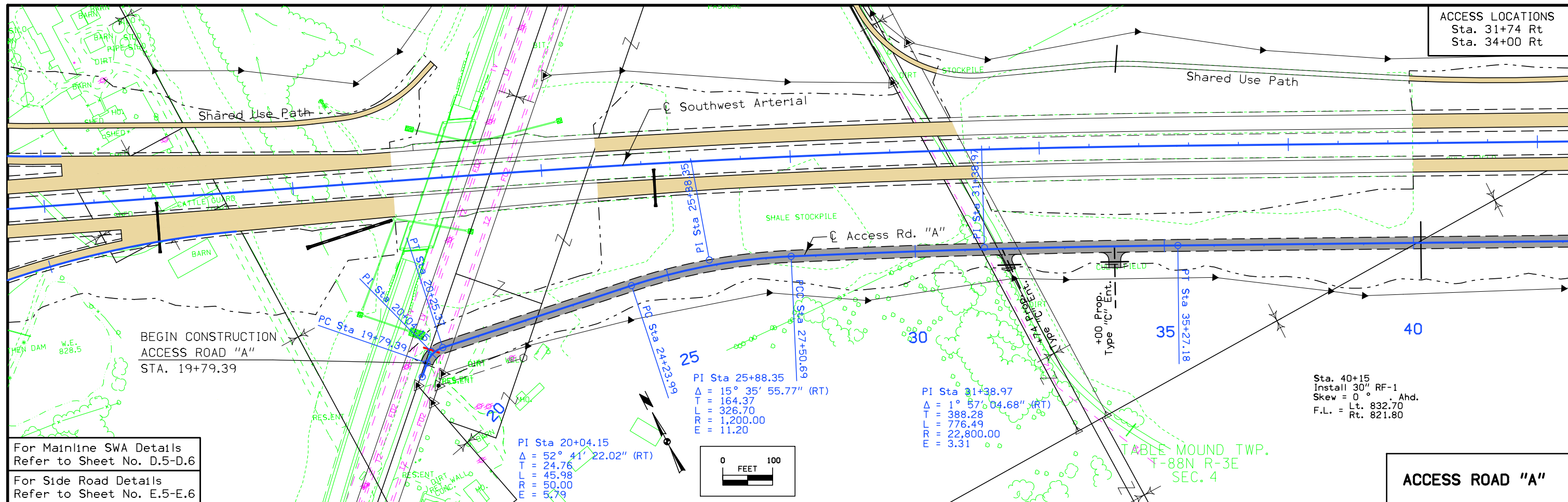
ACCESS LOCATIONS  
Sta. 2028+00 Rt  
Sta. 2029+37 Rt  
Sta. 2031+19 Rt  
Sta. 2034+24 Lt  
Sta. 2036+38 Lt & Rt

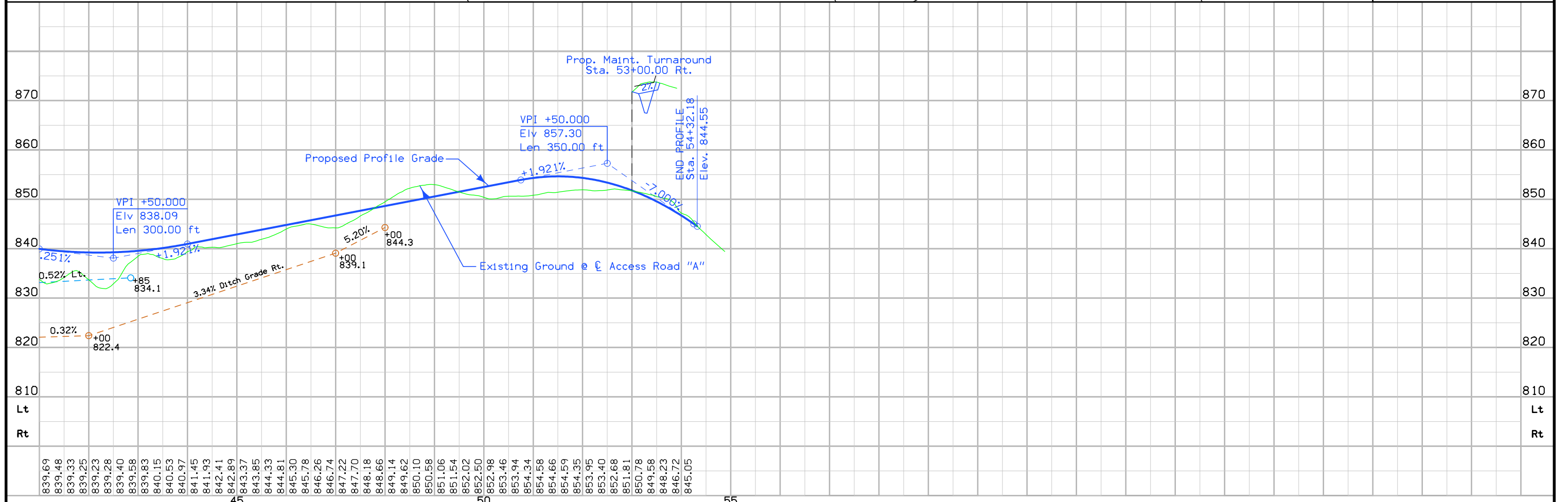
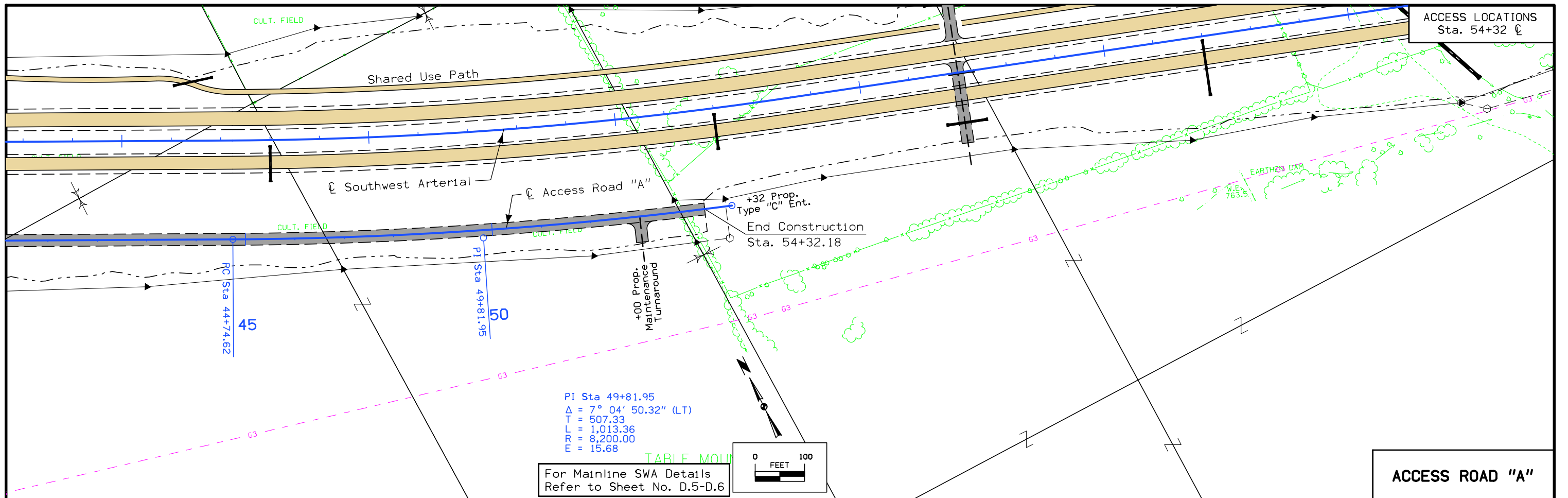
For Mainline SWA Details  
Refer to Sheet No. D.4-D.5

For Bridge Situation Plan  
Refer to Sheet No. V.12-13

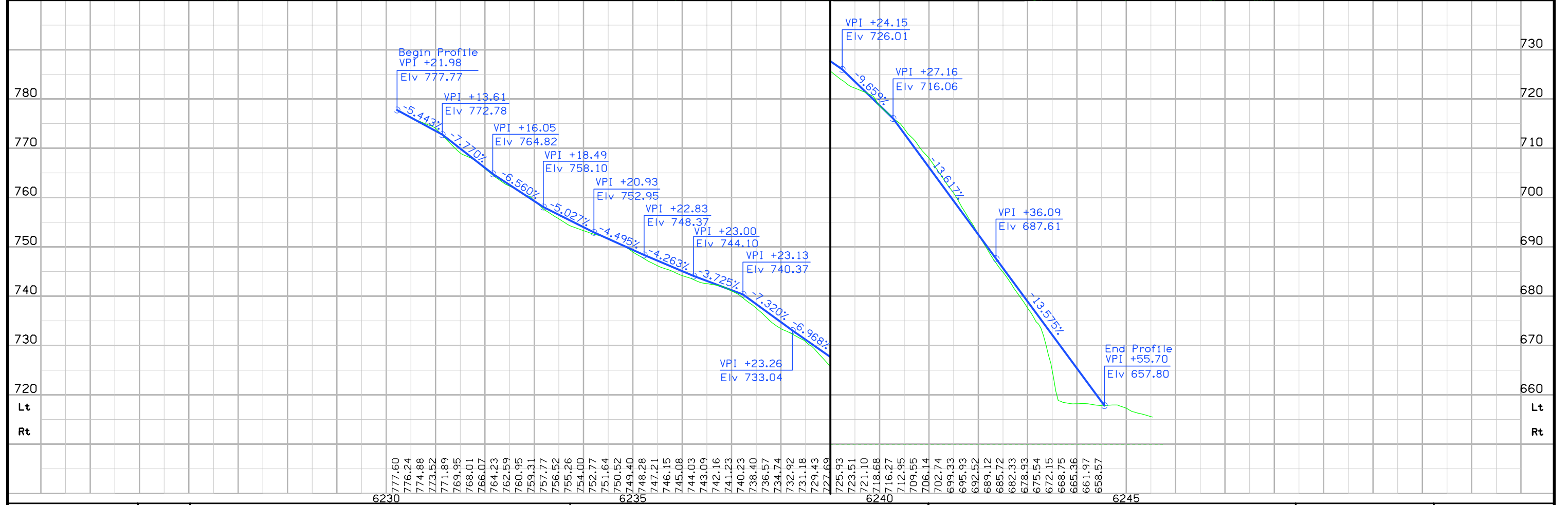
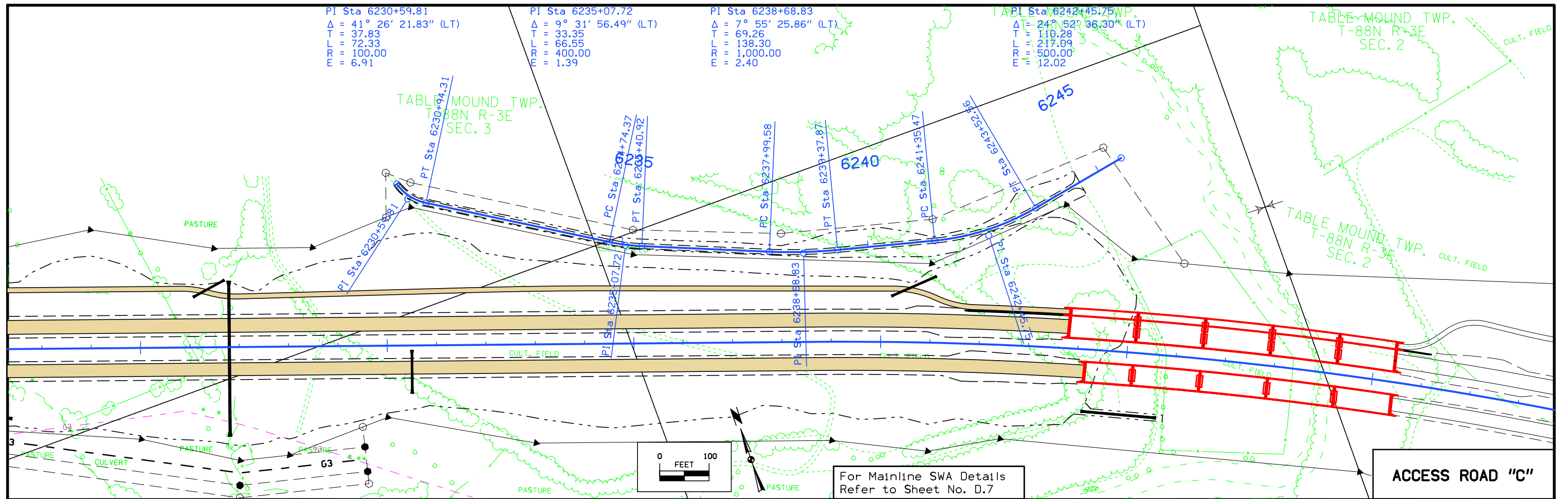








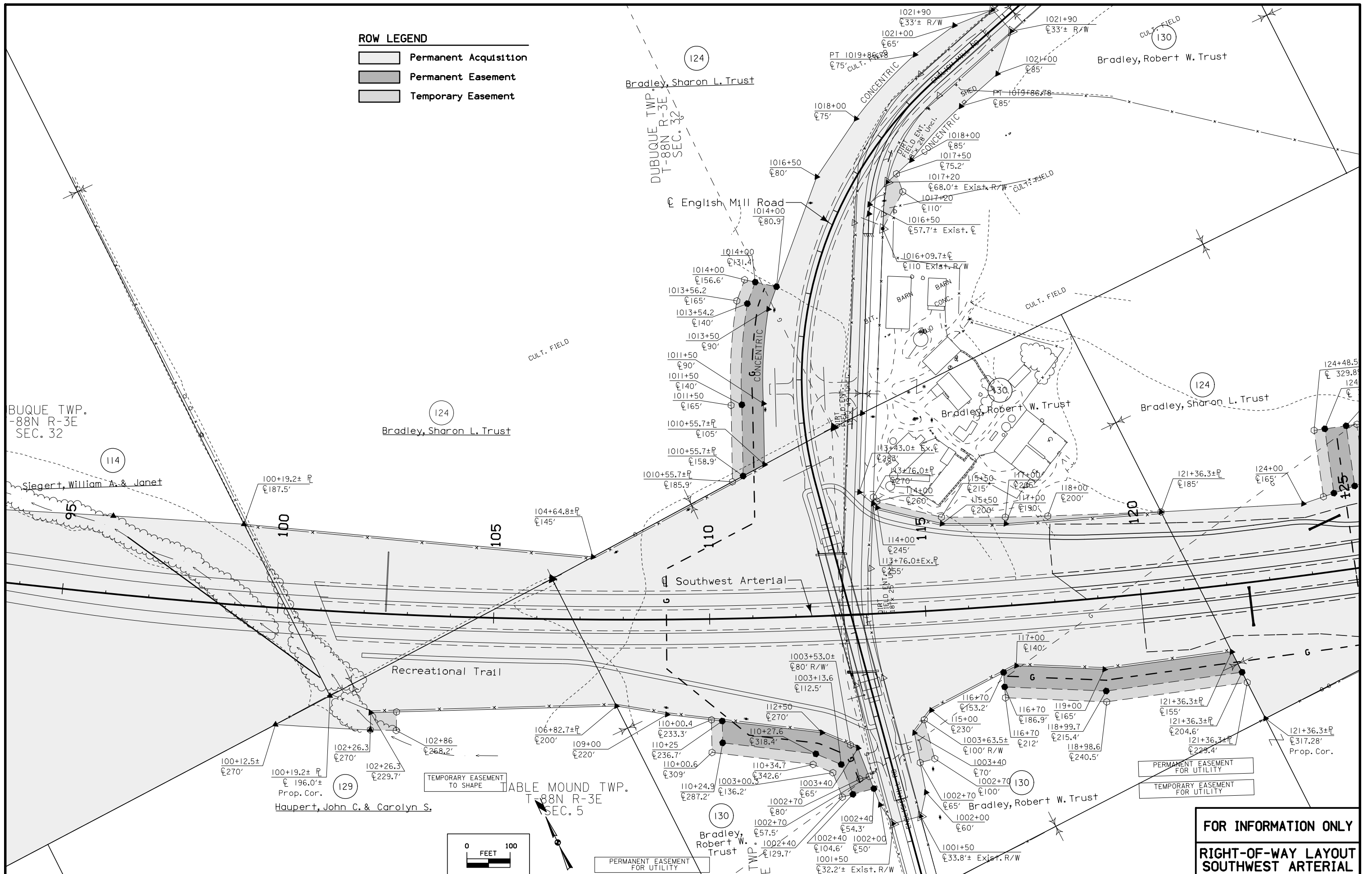
839.69	839.48	839.33	839.25	839.23	839.28	839.40	839.58	839.83	840.15	840.53	840.97	841.45	841.93	842.41	842.89	843.37	843.85	844.33	844.81	845.30	845.78	846.26	846.74	847.22	847.70	848.18	848.66	849.14	849.62	850.10	850.58	851.06	851.54	852.02	852.50	852.98	853.46	853.94	854.34	854.58	854.66	854.59	854.35	853.95	853.40	852.68	851.81	850.78	849.58	848.23	846.72	845.05
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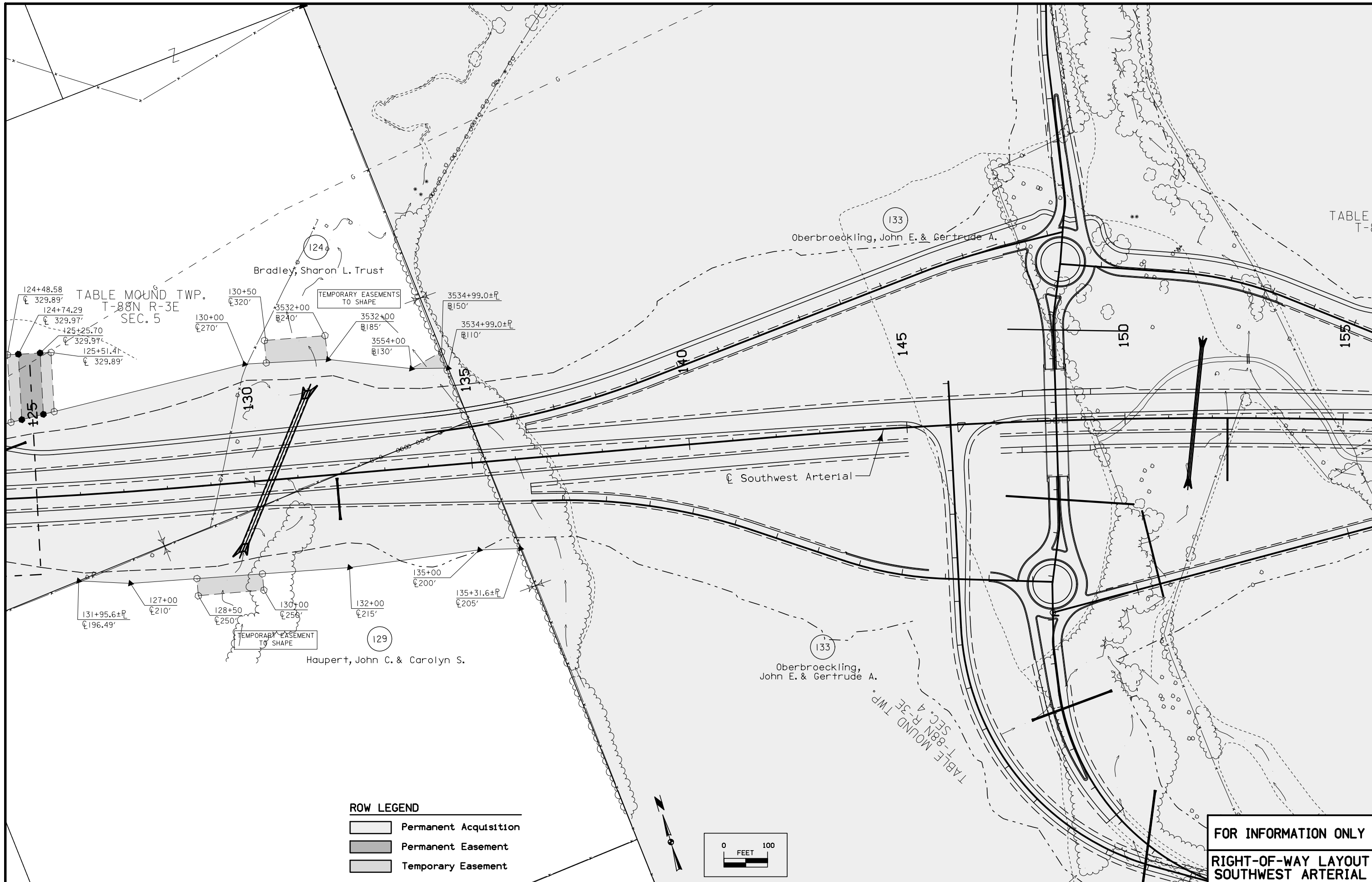
FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	<b>DUBUQUE</b>	COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>E.10</b>
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**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement

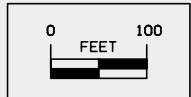


**FOR INFORMATION ONLY**  
**RIGHT-OF-WAY LAYOUT**  
**SOUTHWEST ARTERIAL**

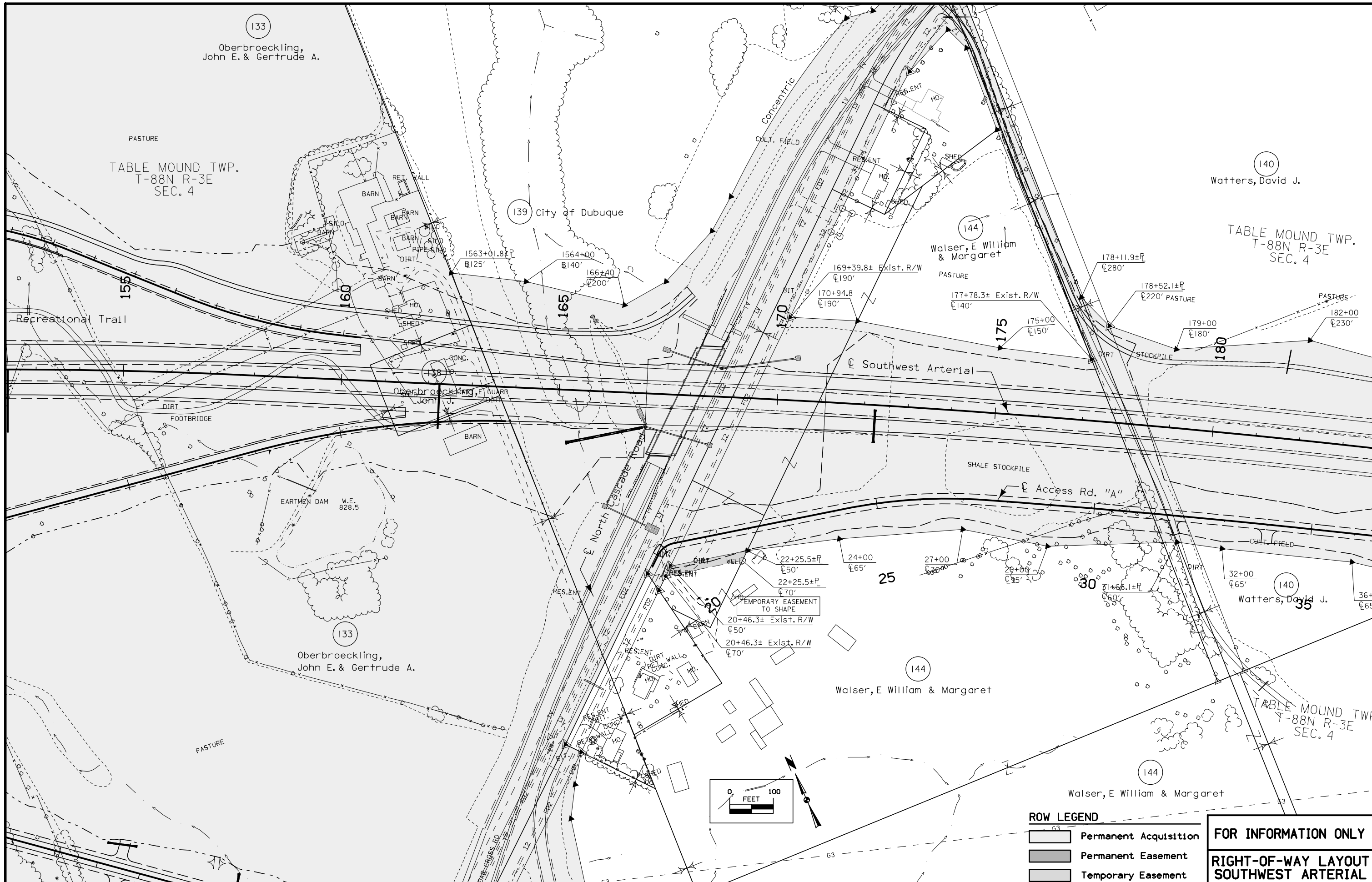


**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement



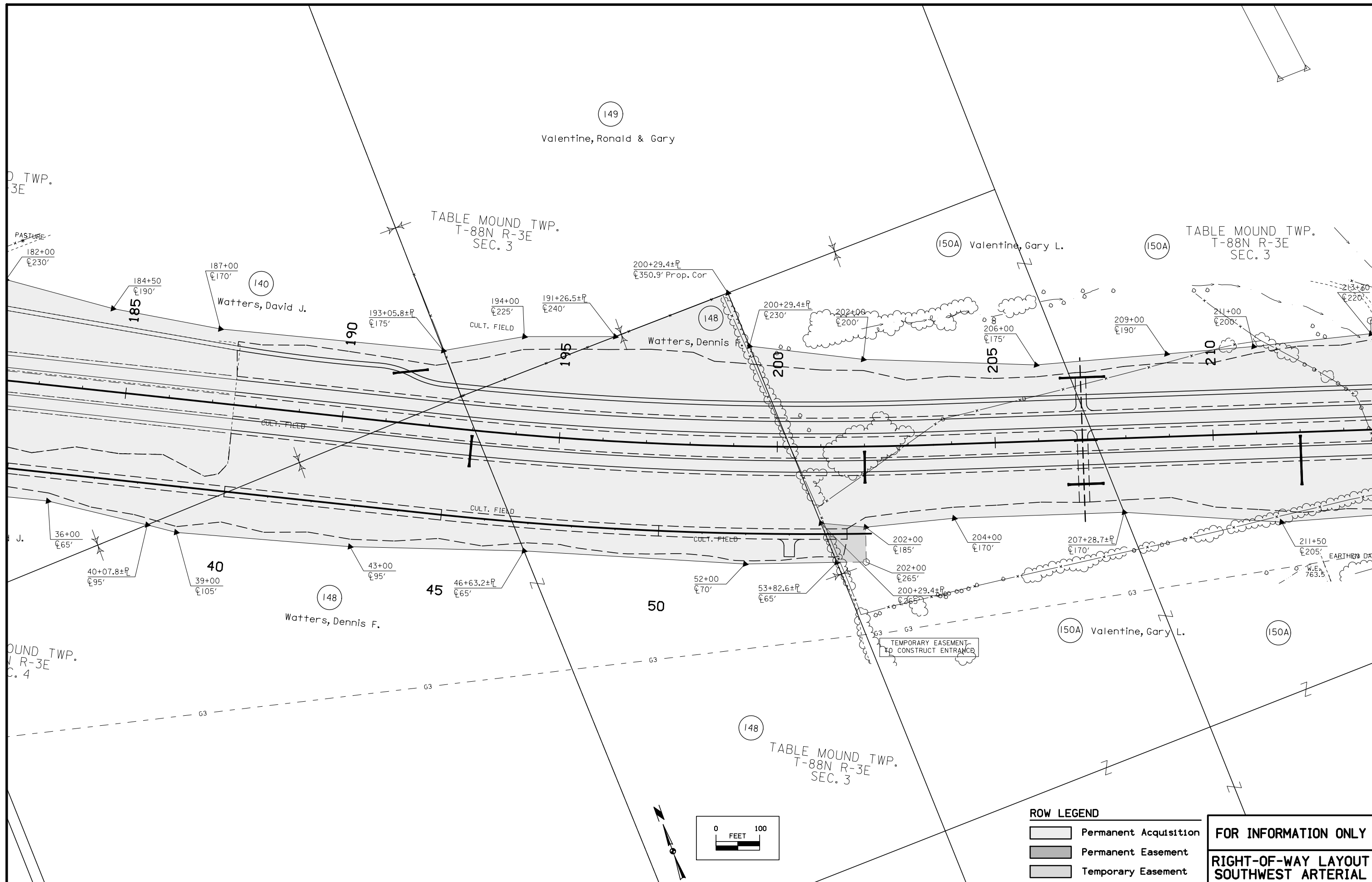




**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement

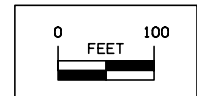
**FOR INFORMATION ONLY**  
**RIGHT-OF-WAY LAYOUT**  
**SOUTHWEST ARTERIAL**



**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement

**FOR INFORMATION ONLY**  
**RIGHT-OF-WAY LAYOUT**  
**SOUTHWEST ARTERIAL**



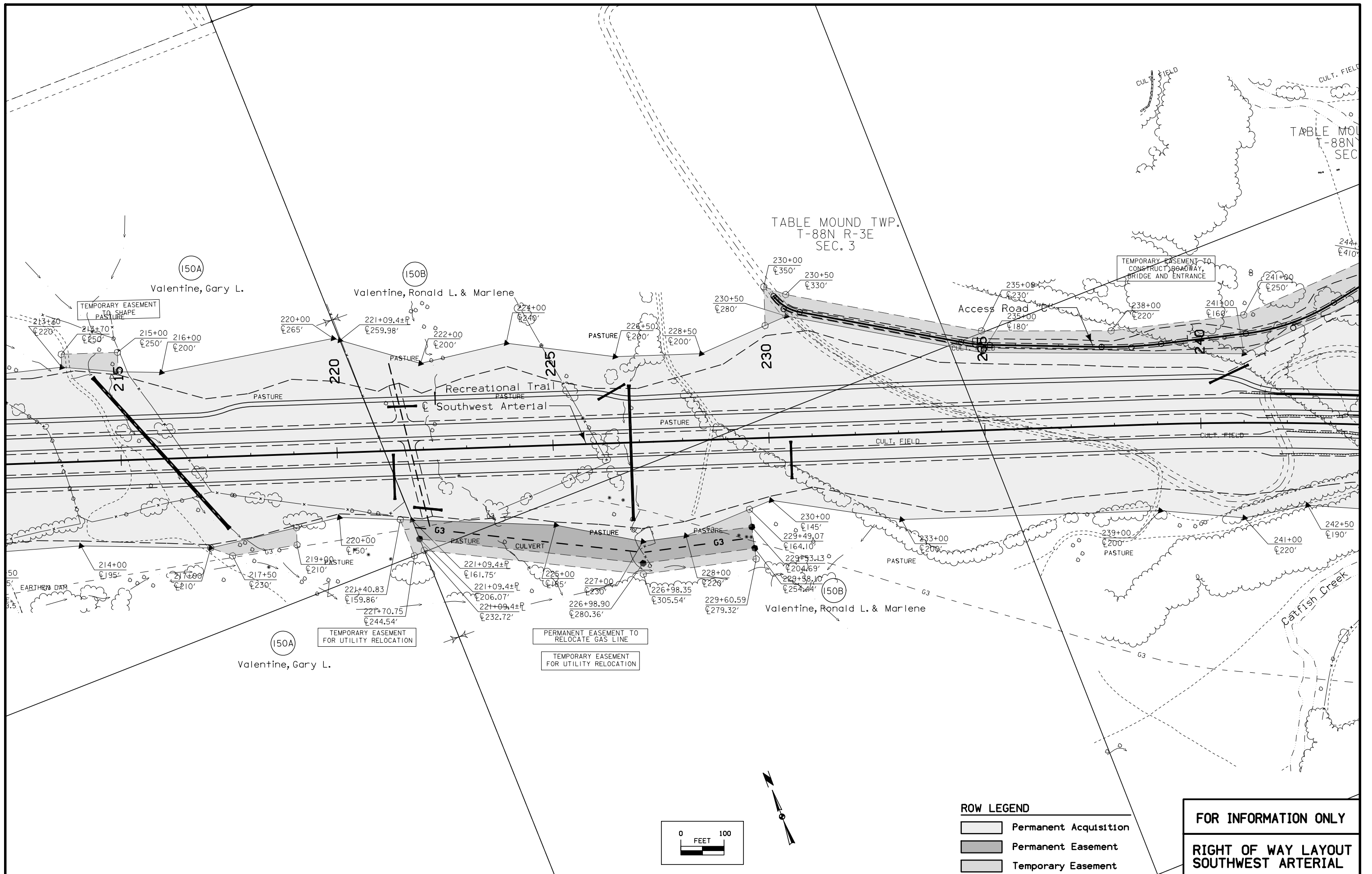
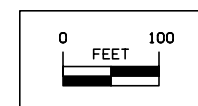


TABLE MOUND TWP.  
T-88N R-3E  
SEC. 3

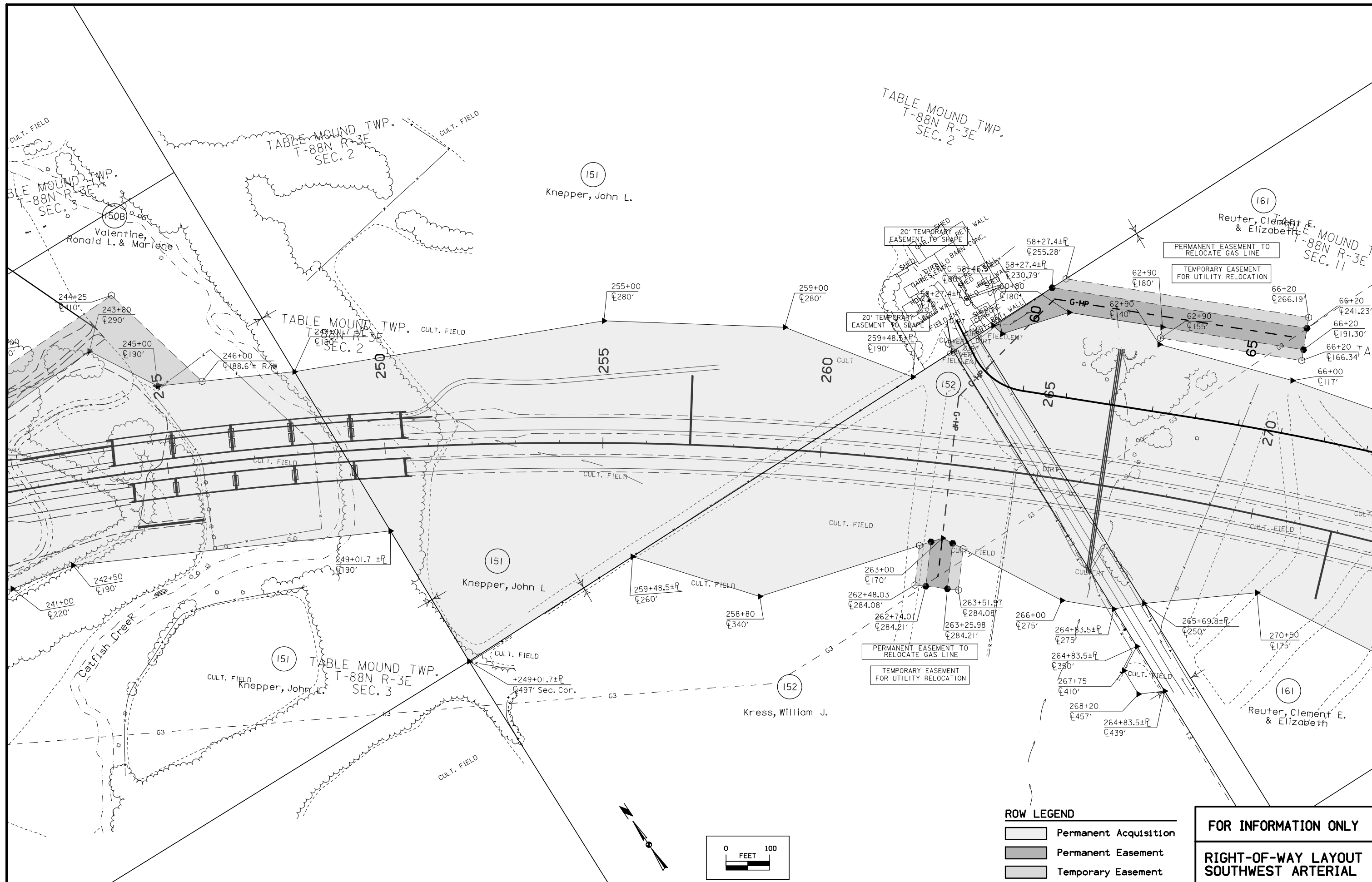
**FOR INFORMATION ONLY**  
**RIGHT OF WAY LAYOUT**  
**SOUTHWEST ARTERIAL**

**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement



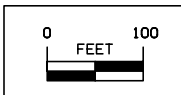


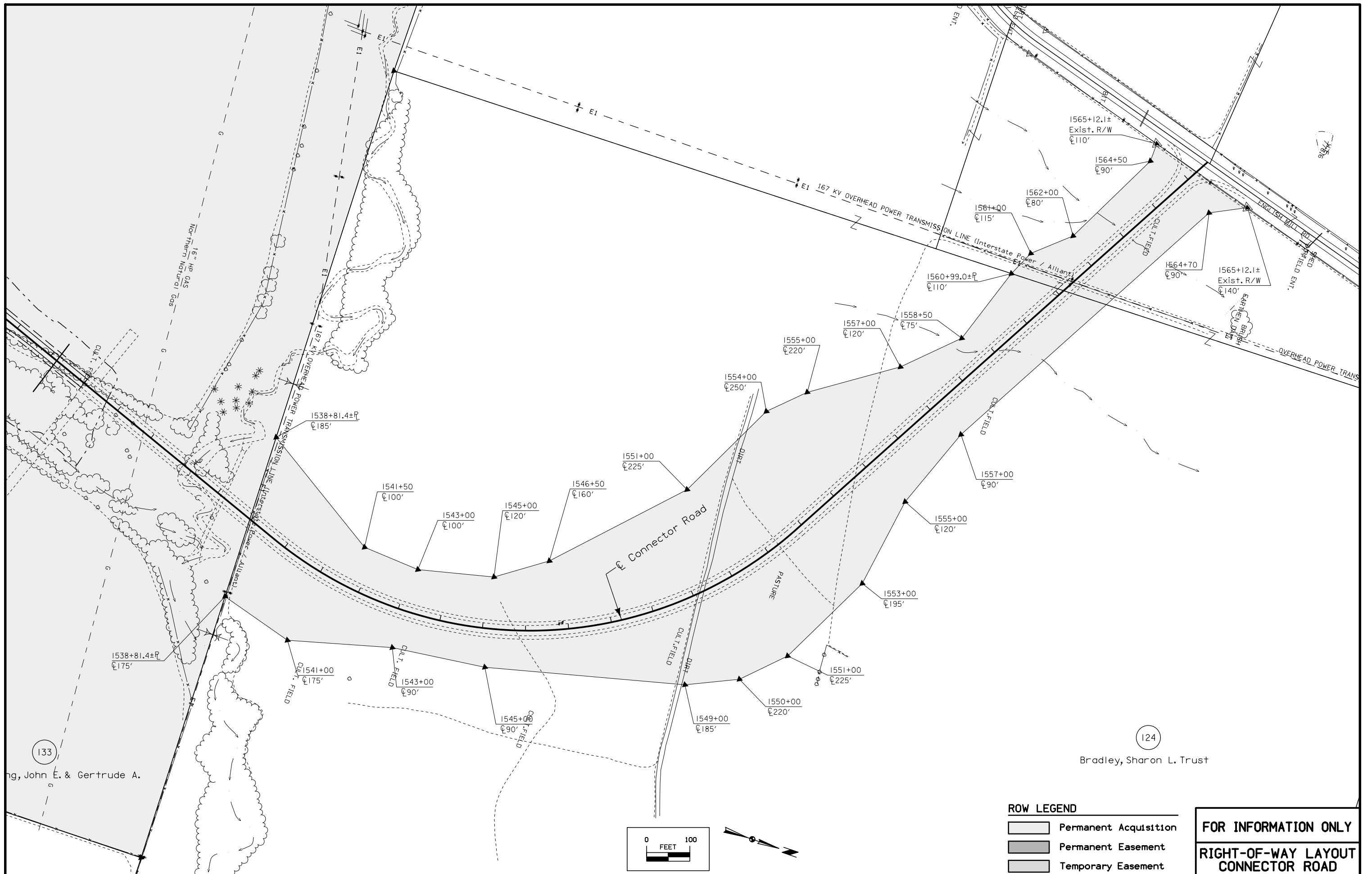


**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement

**FOR INFORMATION ONLY**  
**RIGHT-OF-WAY LAYOUT**  
**SOUTHWEST ARTERIAL**





**ROW LEGEND**

	Permanent Acquisition
	Permanent Easement
	Temporary Easement

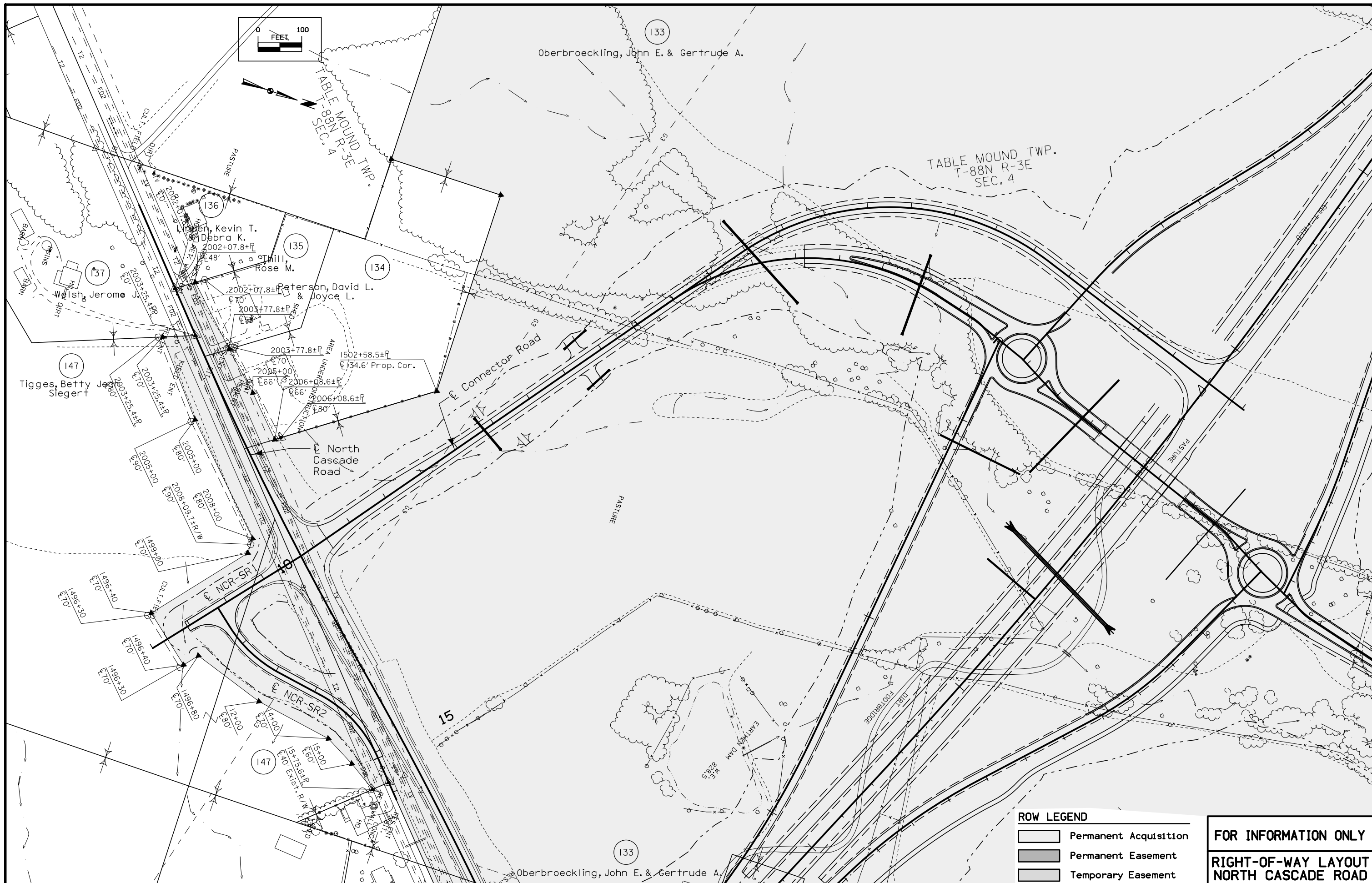
**FOR INFORMATION ONLY**

**RIGHT-OF-WAY LAYOUT**

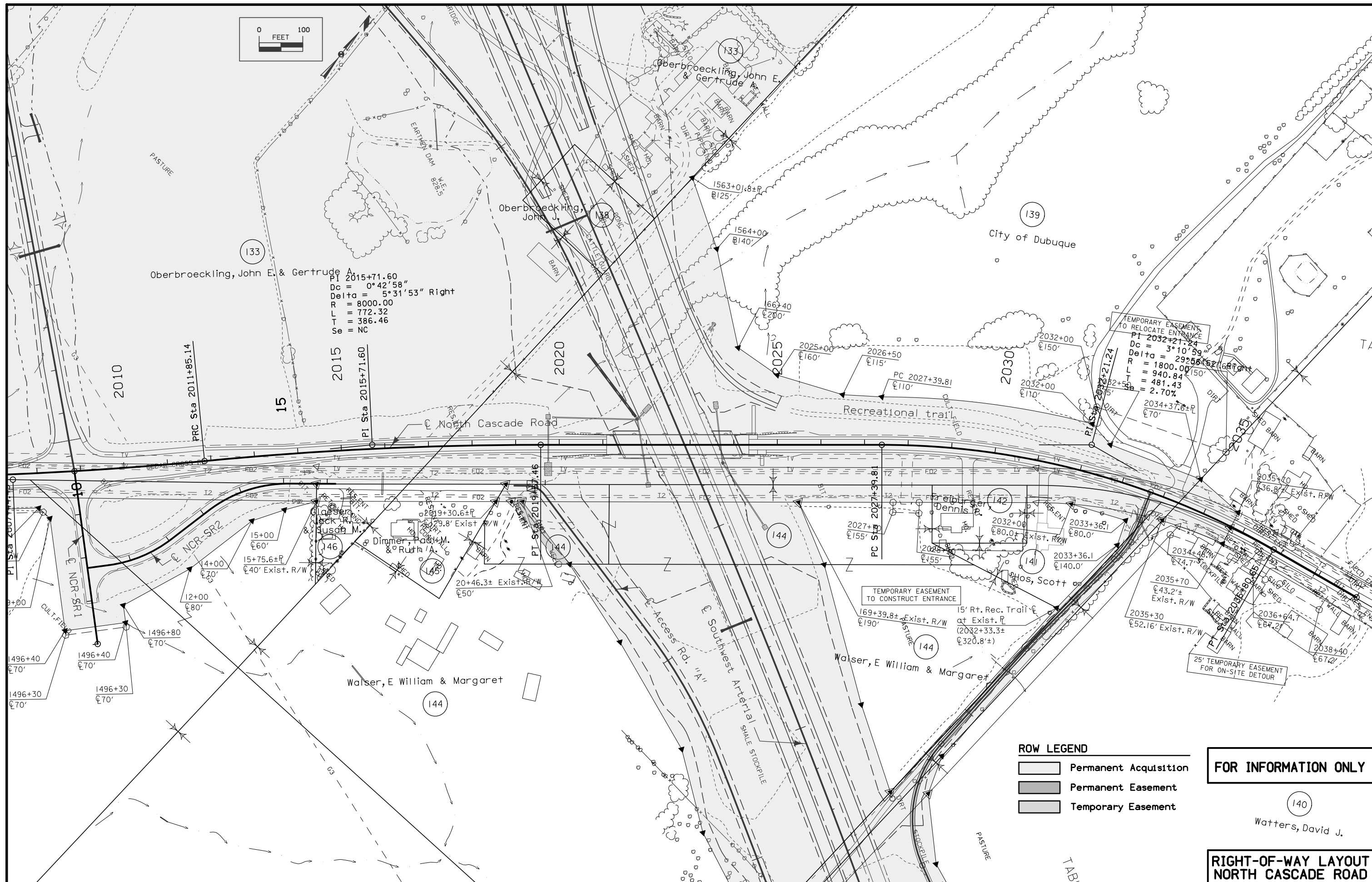
**CONNECTOR ROAD**

(124)  
Bradley, Sharon L. Trust

(133)  
ng, John E. & Gertrude A.



**FOR INFORMATION ONLY**  
**RIGHT-OF-WAY LAYOUT**  
**NORTH CASCADE ROAD**



PI 2015+71.60  
 Dc = 0°42'58"  
 Delta = 5°31'53" Right  
 R = 8000.00  
 T = 772.32  
 L = 386.46  
 Se = NC

TEMPORARY EASEMENT  
 TO RELOCATE ENTRANCE  
 PI 2032+21.24  
 Dc = 3°10'59"  
 Delta = 29°56'52" Left  
 R = 1800.00  
 L = 940.84  
 T = 481.43  
 S = 2.70%  
 2034+37.6±P  
 @ 70'

TEMPORARY EASEMENT  
 TO CONSTRUCT ENTRANCE  
 169+39.8± Exist. R/W  
 @ 190'  
 15' Rt. Rec. Trail @  
 at Exist. P.  
 (2032+33.3±  
 @ 320.8±)

**ROW LEGEND**

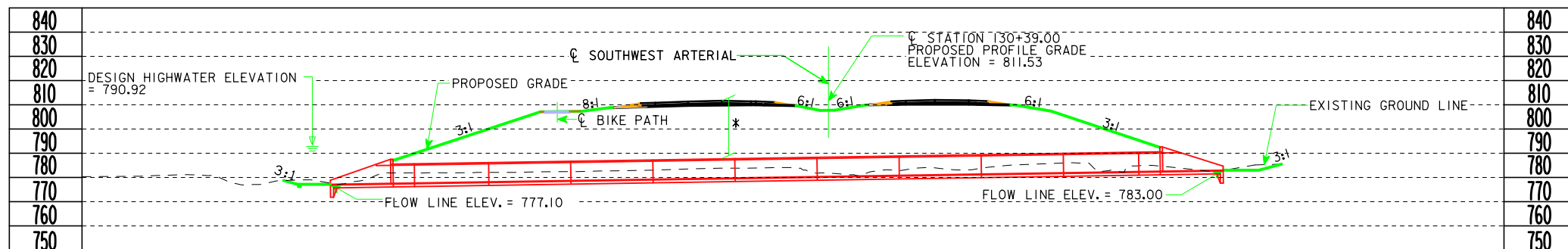
	Permanent Acquisition
	Permanent Easement
	Temporary Easement

**FOR INFORMATION ONLY**

140  
Watters, David J.

**RIGHT-OF-WAY LAYOUT  
NORTH CASCADE ROAD**





**LONGITUDINAL SECTION ALONG CL BOX CULVERT**

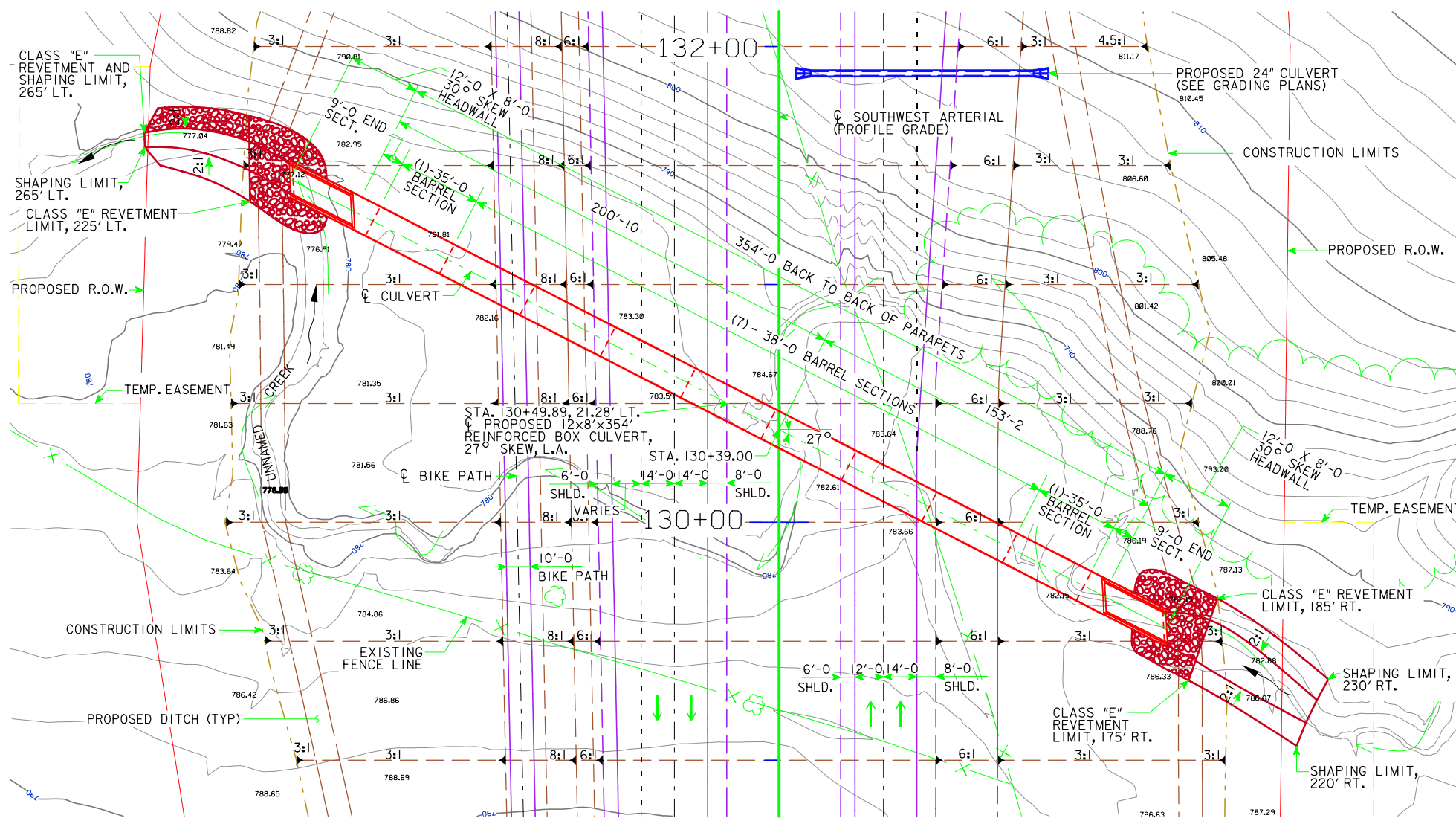
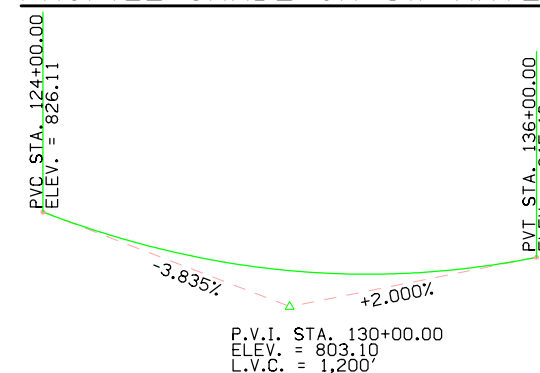
\* DESIGN FILL = 24'  
ANTICIPATED SETTLEMENT = XX

**BENCHMARK:**

BM 10 - 7" SPIKE IN CORNER POST (+/-) 1500' EAST OF BM G022  
FENCES NORTH-SOUTH AND WEST  
364588.37 NORTH, 566433.28 EAST  
ELEV. 787.41

BM 11 - 7" SPIKE IN BRACE POST (+/-) 10' WEST OF CORNER POST  
(+/-) 1/2 MILE EAST OF BM G022 - FENCES NORTH-SOUTH AND WEST  
364588.95 NORTH, 566497.14 EAST  
ELEV. 800.70

**PROFILE GRADE ON SW ARTERIAL**



**SITUATION PLAN**

**SW ARTERIAL ALIGNMENT**

SW ARTERIAL TANGENT BETWEEN CURVES  
PT STA. 128+81.18  
PC STA. 141+99.25

**HYDRAULIC DATA**

DRAINAGE AREA = 491 ACRES  
DESIGN DISCHARGE, Q50 = 792 CFS  
DESIGN HIGH WATER ELEVATION, Q50 = 790.92

**TRAFFIC ESTIMATE**

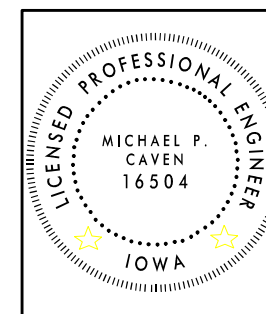
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	21,100	V.P.D.
	TRUCKS	7	%

**LOCATION**

SW ARTERIAL OVER UNNAMED CREEK  
T-88N, R-2E  
SECTION 5  
TABLE MOUND TWP.  
DUBUQUE COUNTY  
CITY OF DUBUQUE  
LAT. 42.4685697°  
LONG. -90.7447183°

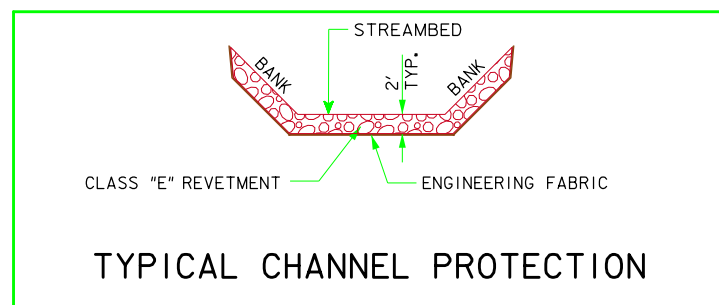
**PLAN NOTES:**

- SEE SHEET A.02 FOR UTILITY LEGEND.
- ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.
- SEE 'J' SHEETS FOR STAGING DETAILS.
- SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION.
- SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.



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

License number 16504  
My license renewal date is December 31, 2016  
Pages or sheets covered by this seal:



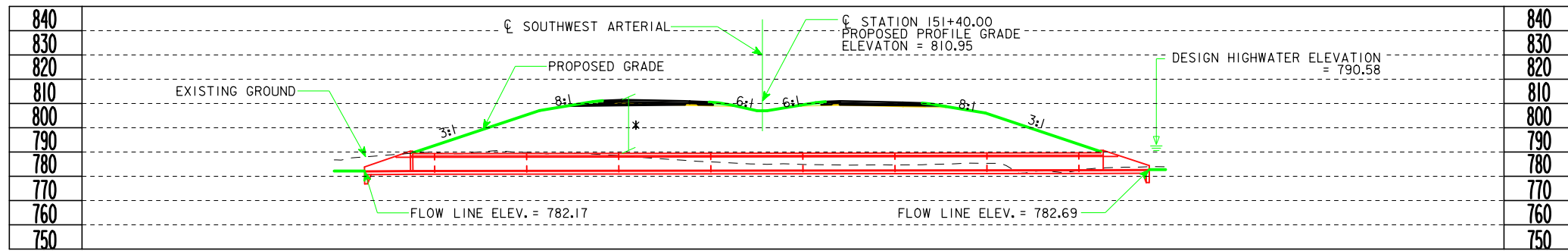
**TYPICAL CHANNEL PROTECTION**

**ESTIMATED REVETMENT QUANTITIES**

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



DESIGN FOR 27° SKEW (L.A.)  
**12'x8'x354' REINFORCED CONCRETE BOX CULVERT**  
**SITUATION PLAN**  
STA. 130+39.00  
JULY, 2015  
**DUBUQUE COUNTY**  
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. OF FILE NO. DESIGN NO.



**LONGITUDINAL SECTION ALONG CL BOX CULVERT**

\* DESIGN FILL = 22'  
ANTICIPATED SETTLEMENT = XX

**BENCHMARK:**

BM 12 - 7" SPIKE IN GATE POST AT NORTH-SOUTH FENCE LINE  
(+/-) 1000' WEST OF BARN ON OBERBROCKLING FARM  
3645353.51 NORTH, 5666313.35 EAST  
ELEV. = 812.92

BM NC 103 - X CUT ON NEW BRIDGE DECK @ NE CORNER N. CASCADE ROAD  
3644802.65 NORTH, 5668121.24 EAST  
ELEV. = 867.27

**PROFILE GRADE ON SW ARTERIAL**



**CURVE DATA  
SW ARTERIAL**

ENTERING CURVE DATA  
(CURVE 21003)  
P.I. STA. 149+85.07  
DELTA = 7° 29' 35.83" (RT)  
DEGREE = 0° 28' 38.87"  
TANGENT = 785.82'  
LENGTH = 1,569.39'  
RADIUS = 12,000.00'  
EXTERNAL = 25.70'  
LONG CHORD = 1,568.27'  
MID. ORD. = 25.65'  
PC STA. 141+99.25  
PT STA. 157+68.64

P.V.I. STA. 153+00.00  
ELEV. = 805.10  
L.V.C. = 1,000

**HYDRAULIC DATA**

DRAINAGE AREA = 131 ACRES  
DESIGN DISCHARGE, Q<sub>50</sub> = 298 CFS  
DESIGN HIGH WATER ELEVATION, Q<sub>50</sub> = 790.58

**LOCATION**

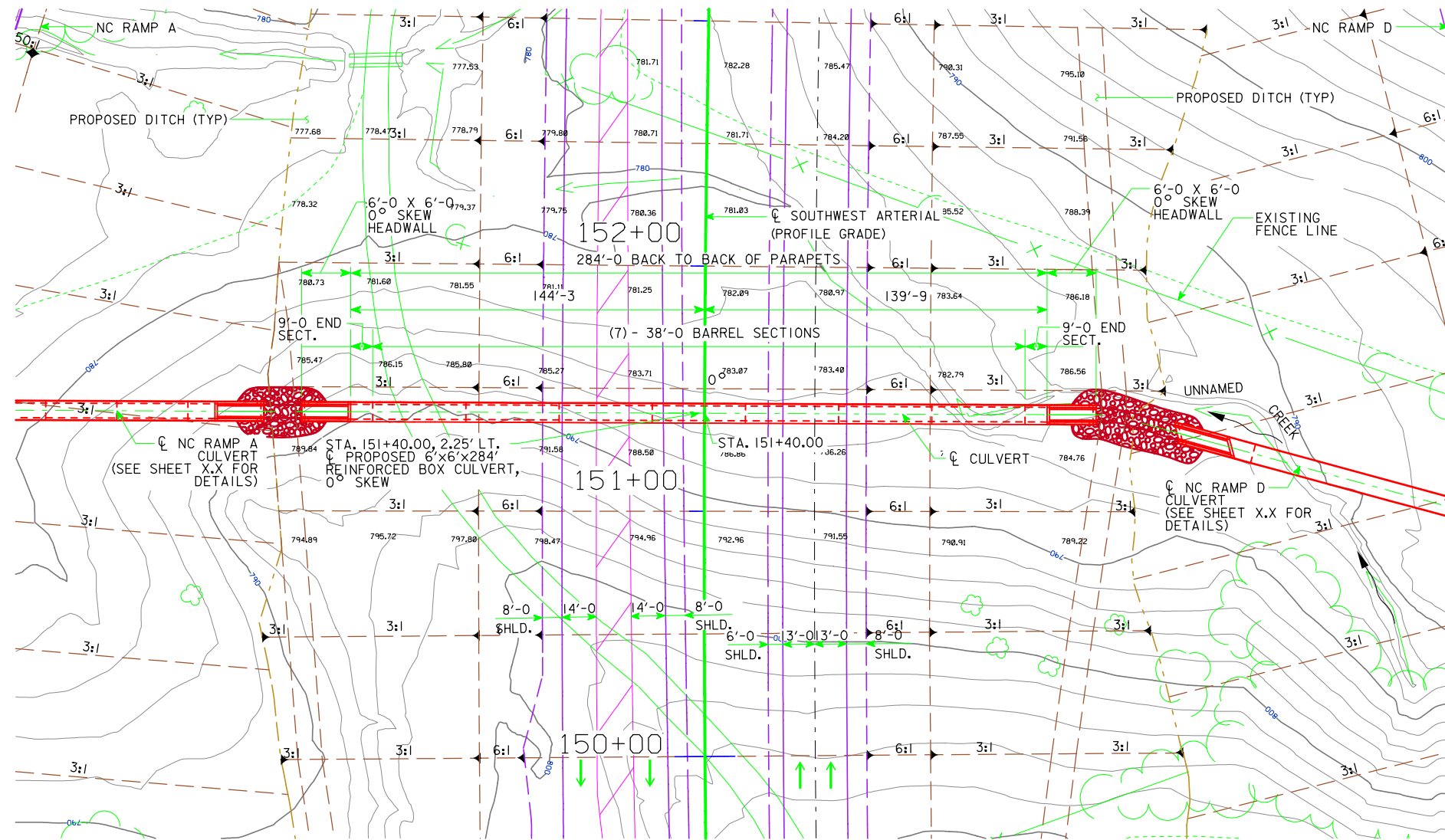
SW ARTERIAL OVER UNNAMED CREEK  
T-88N, R-2E  
SECTION 4  
TABLE MOUND TWP.  
DUBUQUE COUNTY  
CITY OF DUBUQUE  
LAT. 42.4667893°  
LONG. -90.7373145°

**TRAFFIC ESTIMATE**

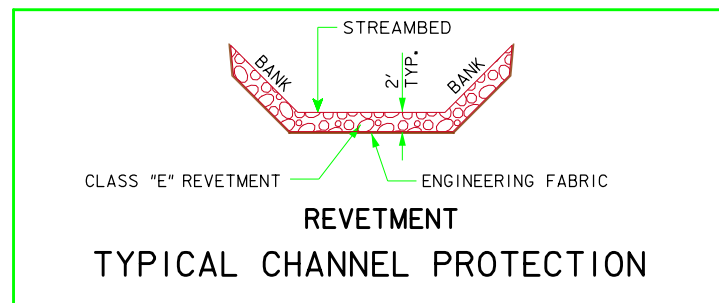
2015	AADT	NA	V.P.D.
	TRUCKS	NA	%
2030	AADT	21,100	V.P.D.
	TRUCKS	7	%

**PLAN NOTES:**

1. SEE CROSS SECTIONS FOR ADDITIONAL APPROACH SECTION INFORMATION.
2. SEE SHEET A.02 FOR UTILITY LEGEND
3. ALL UNITS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE
4. SEE 'J' SHEETS FOR STAGING DETAILS
5. SEE 'D' SHEETS FOR ADDITIONAL PIPE INFORMATION
6. RIPRAP AND CHANNEL SHAPING TO EXTEND FROM CULVERT TO CULVERT AS SHOWN.

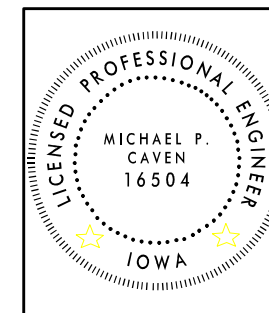


**SITUATION PLAN**



**ESTIMATED REVTMENT QUANTITIES**

LOCATION	REVTMENT CL. "E" (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
INLET	XX	XX	XX
OUTLET	XX	XX	XX
TOTALS	XX	XX	XX



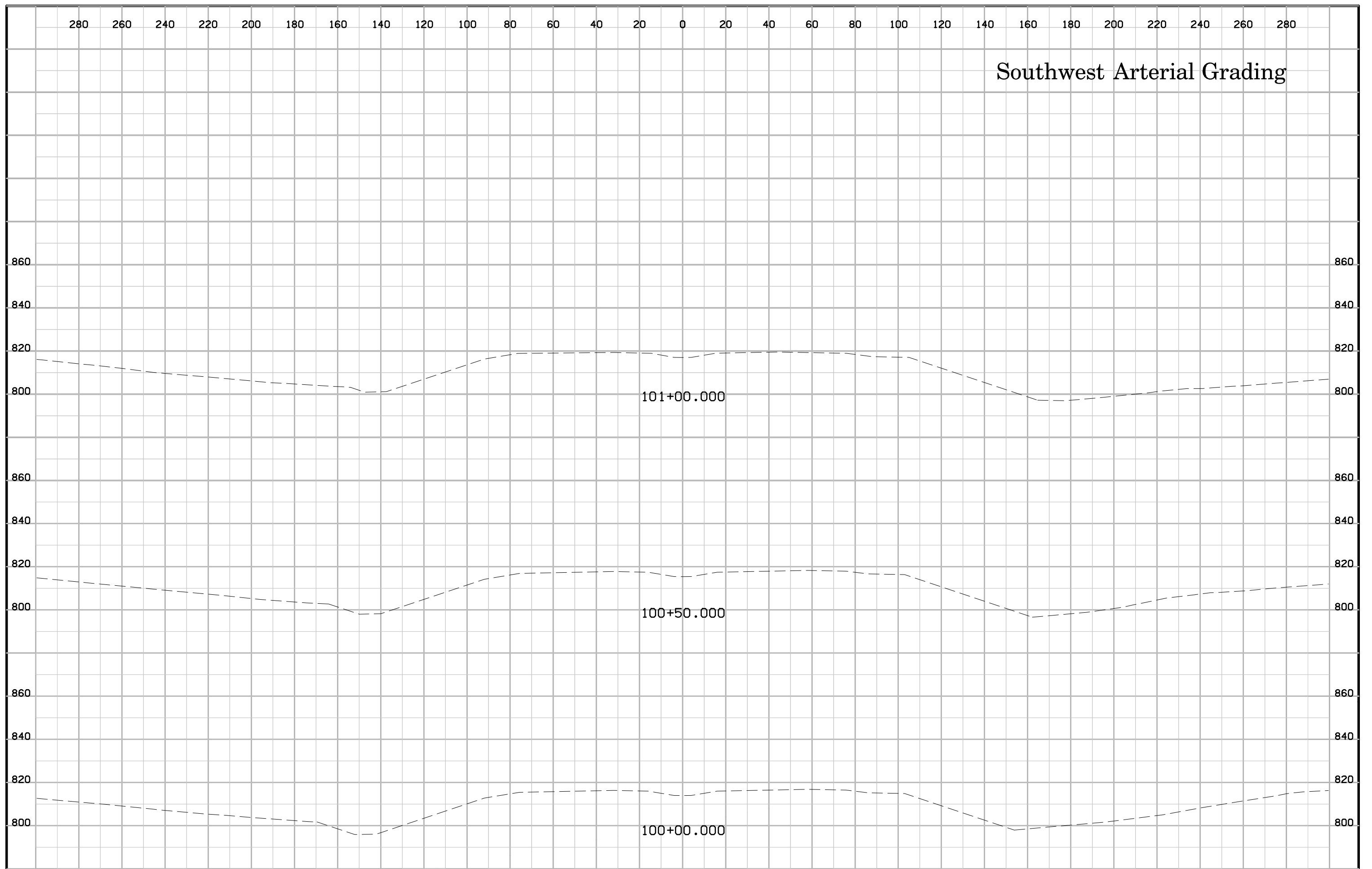
I hereby certify that this Engineering document was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

Date \_\_\_\_\_

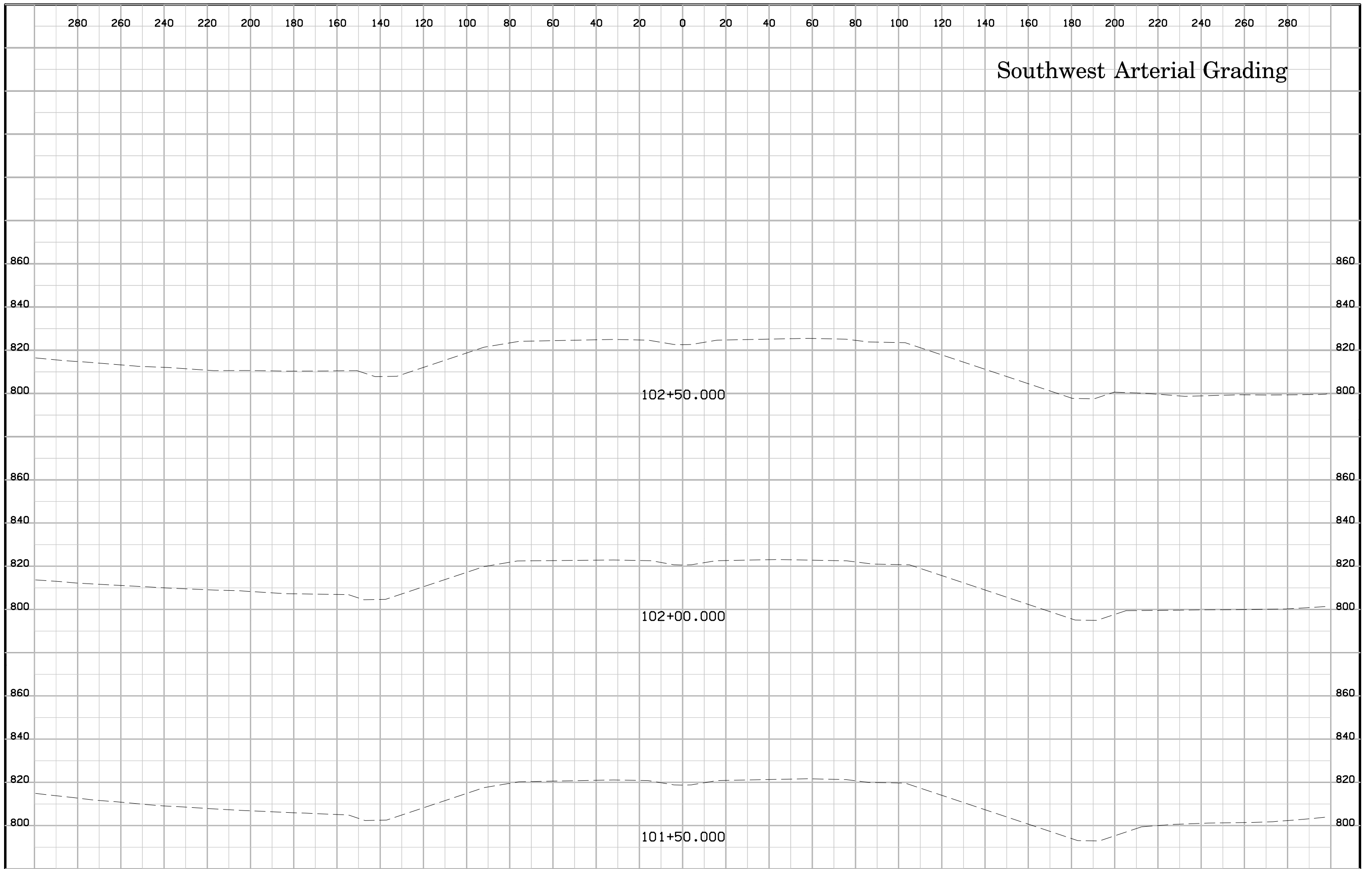
License number 16504  
My license renewal date is December 31, 2016  
Pages or sheets covered by this seal: \_\_\_\_\_

DESIGN FOR 0° SKEW  
**6'x6'x284' REINFORCED CONCRETE BOX CULVERT**  
**SITUATION PLAN**  
STA. 151+40.00 JULY, 2015  
**DUBUQUE COUNTY**  
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION  
DESIGN SHEET NO. OF FILE NO. DESIGN NO.

# Southwest Arterial Grading

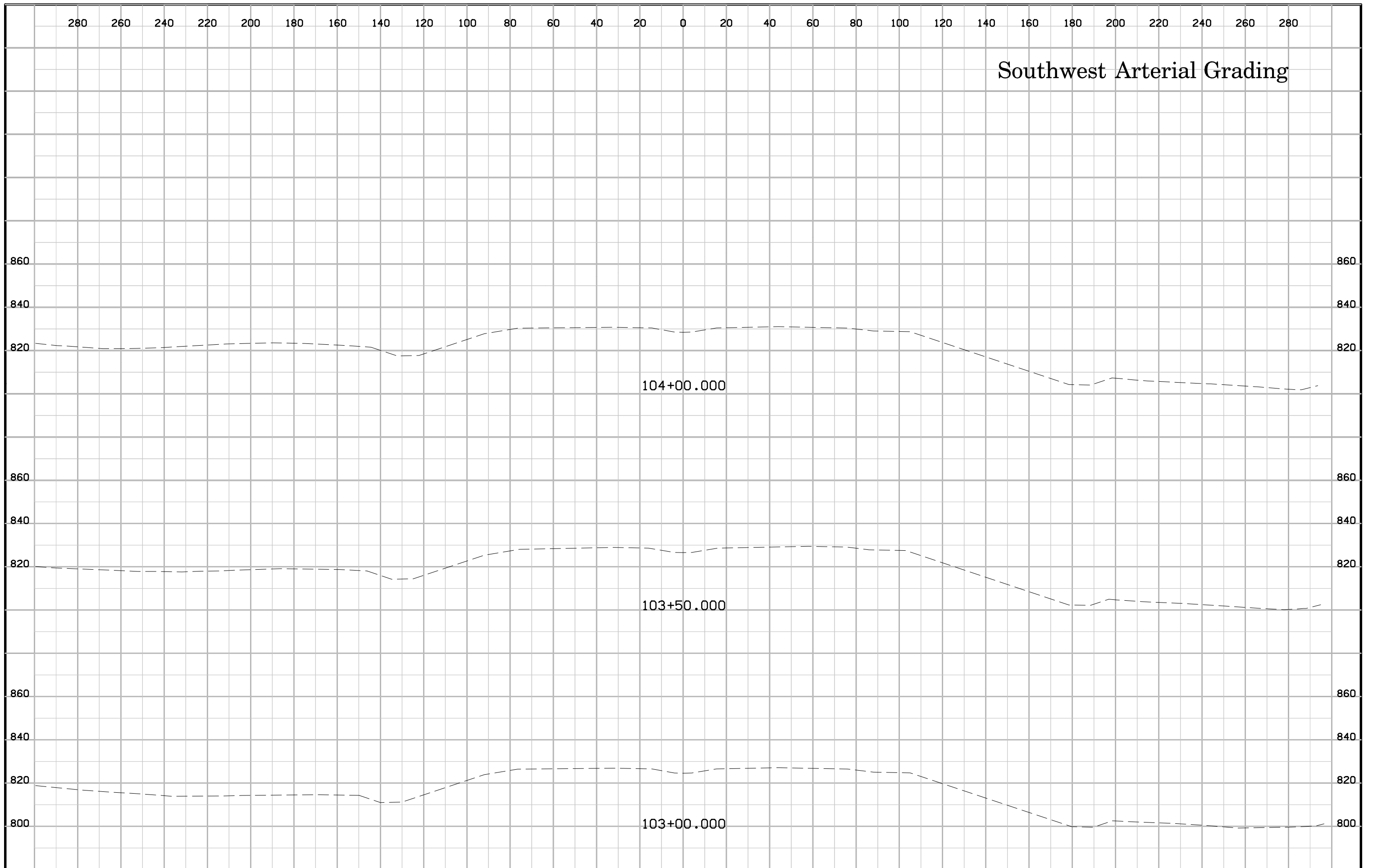


# Southwest Arterial Grading

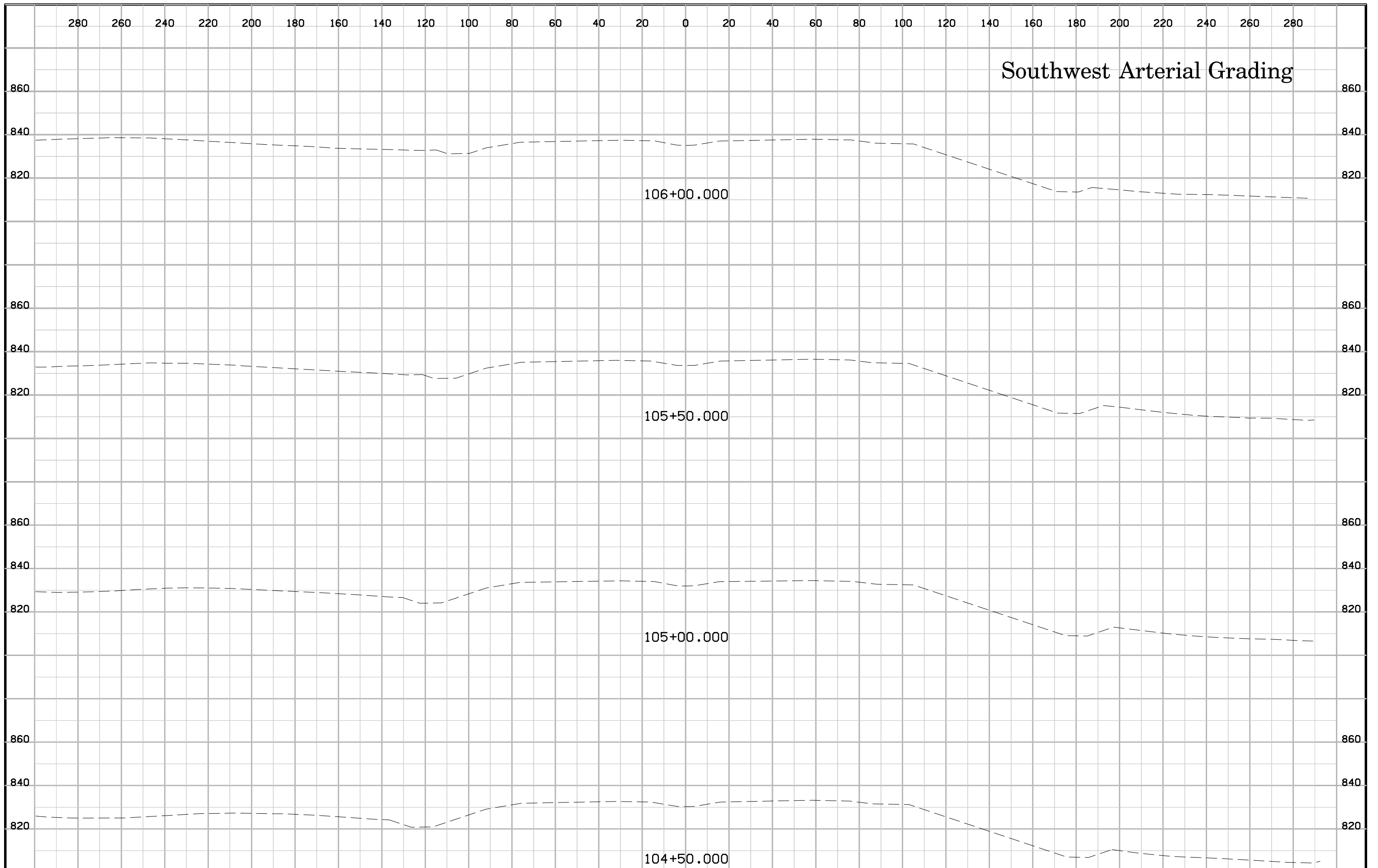




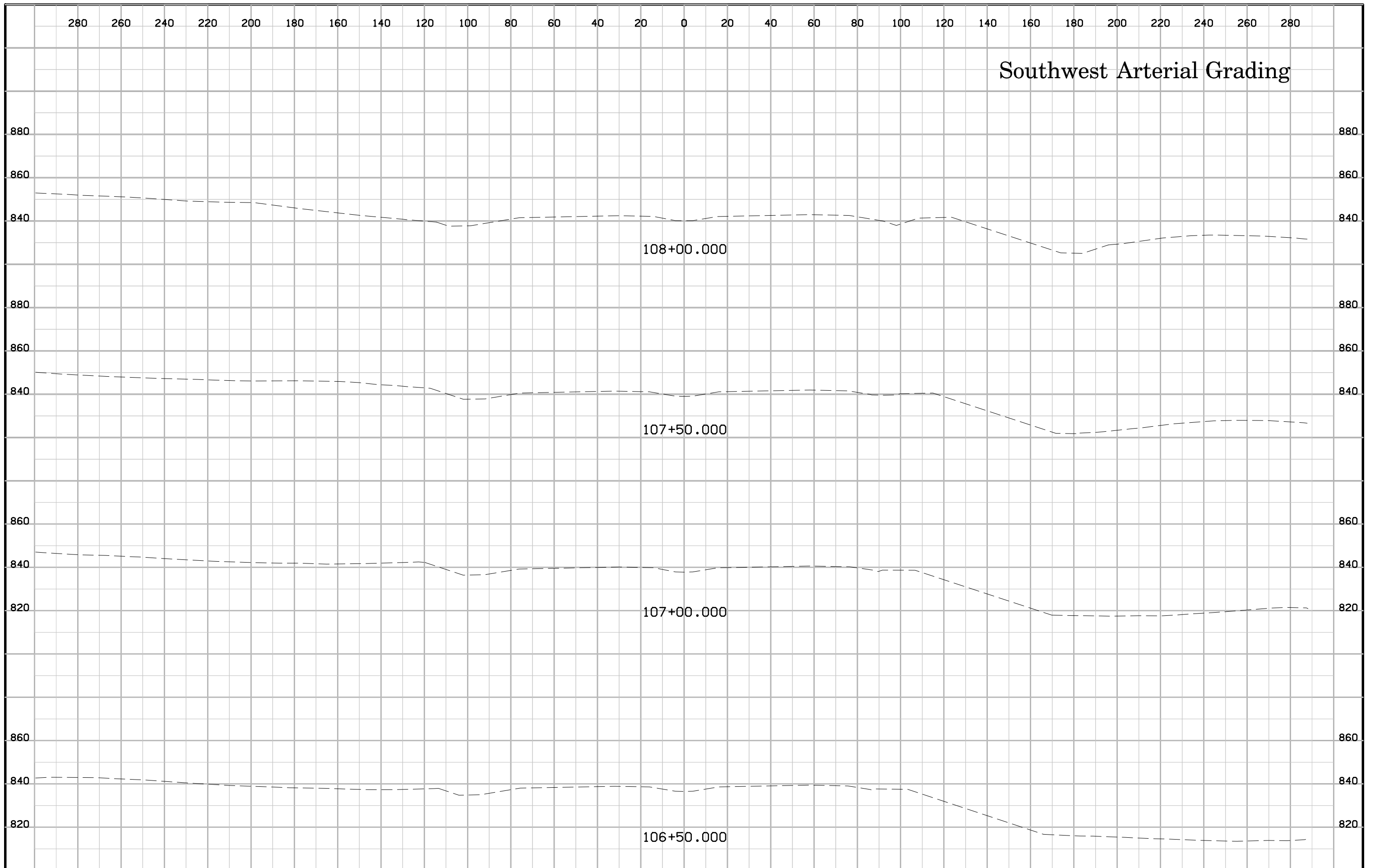
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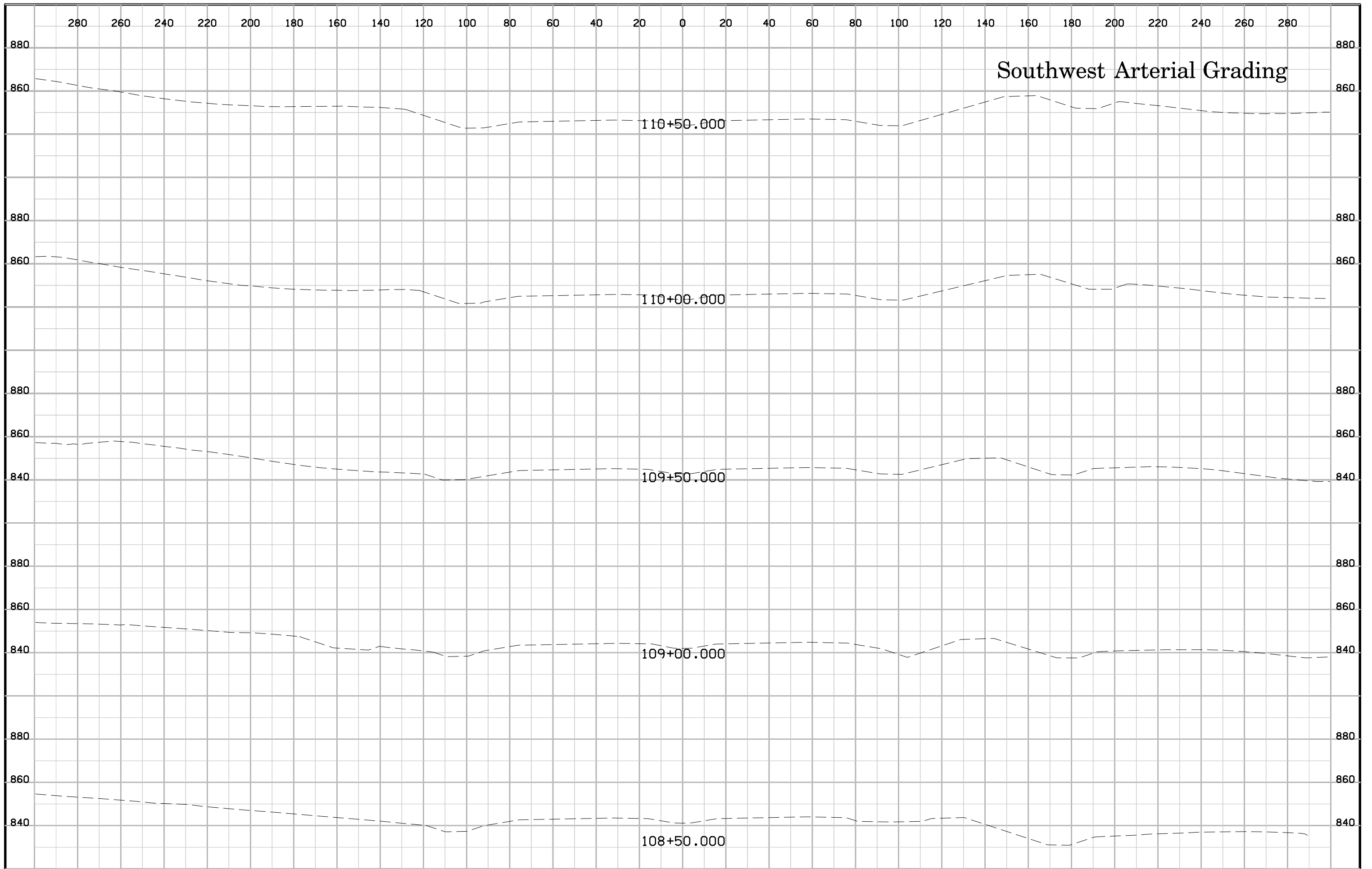


# Southwest Arterial Grading



# Southwest Arterial Grading





# Southwest Arterial Grading

110+50.000

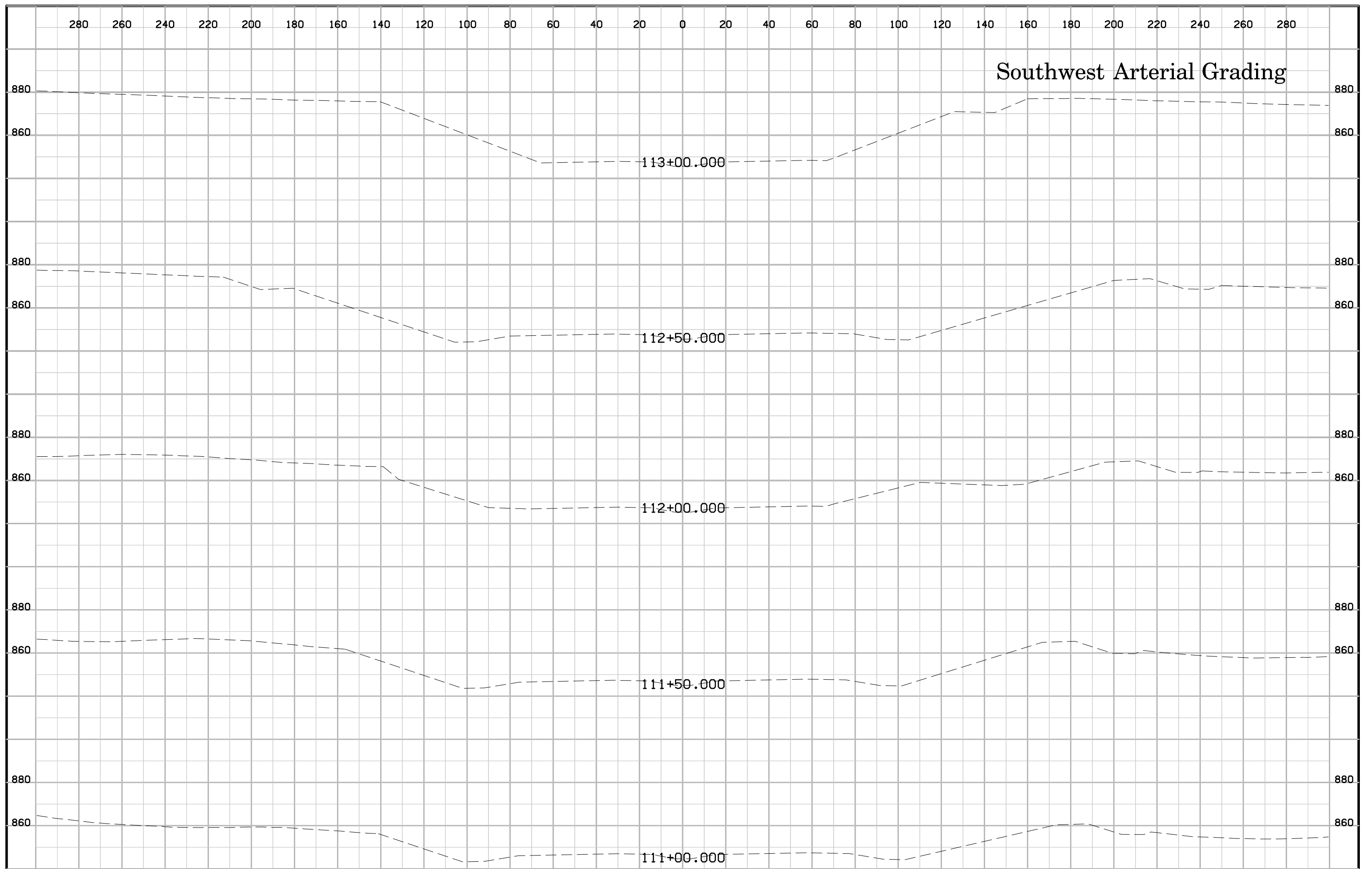
110+00.000

109+50.000

109+00.000

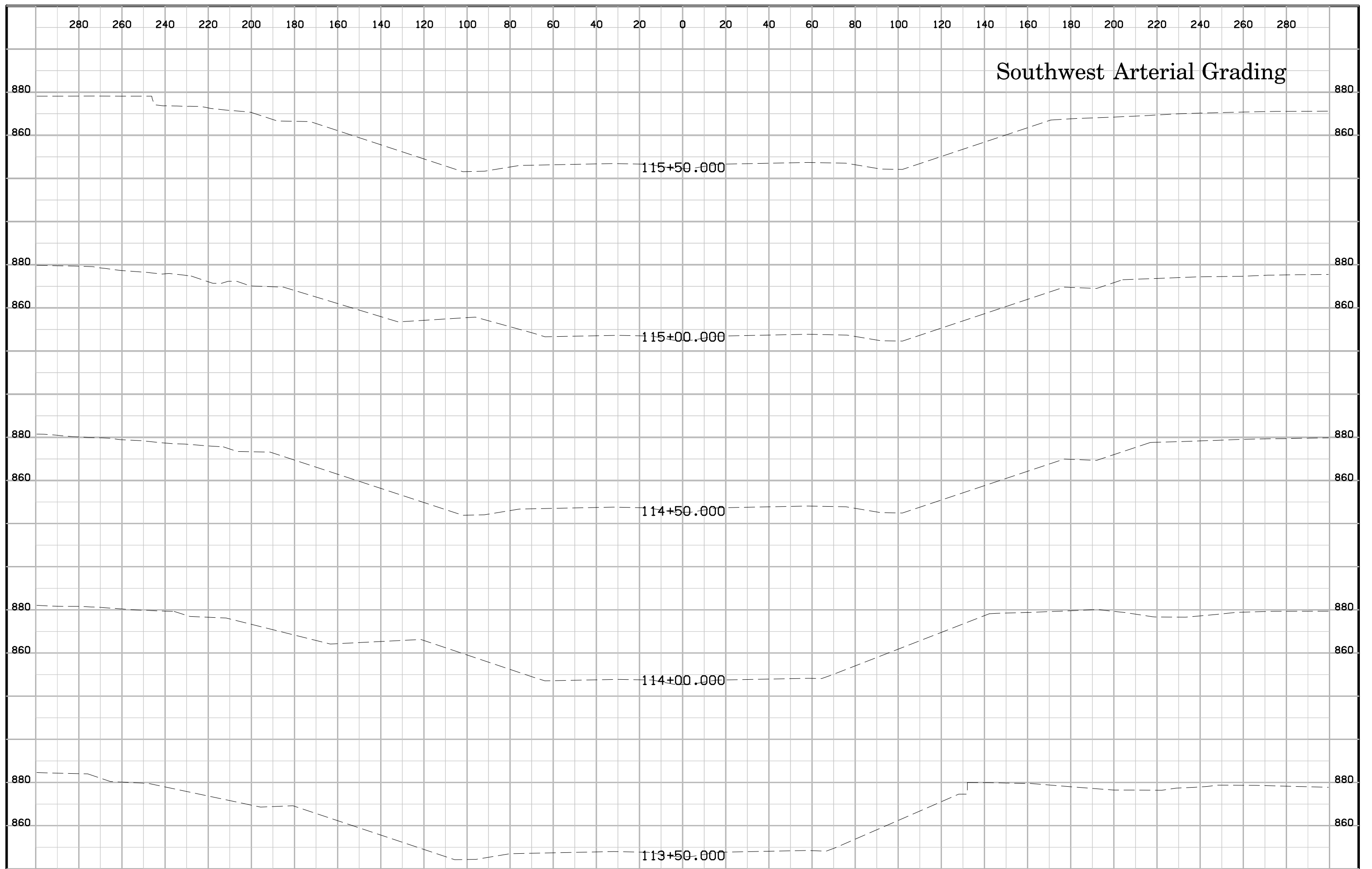
108+50.000

# Southwest Arterial Grading

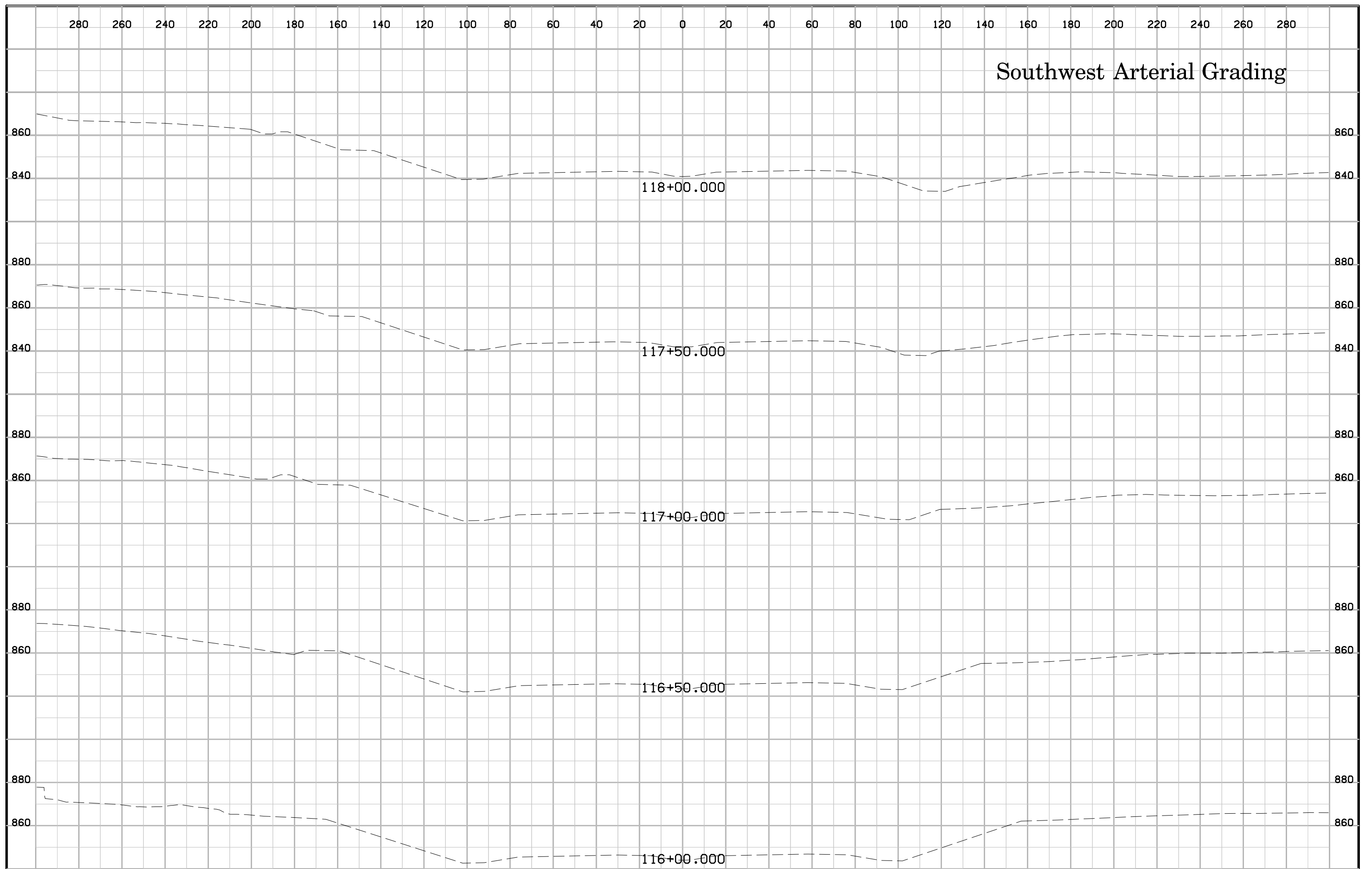




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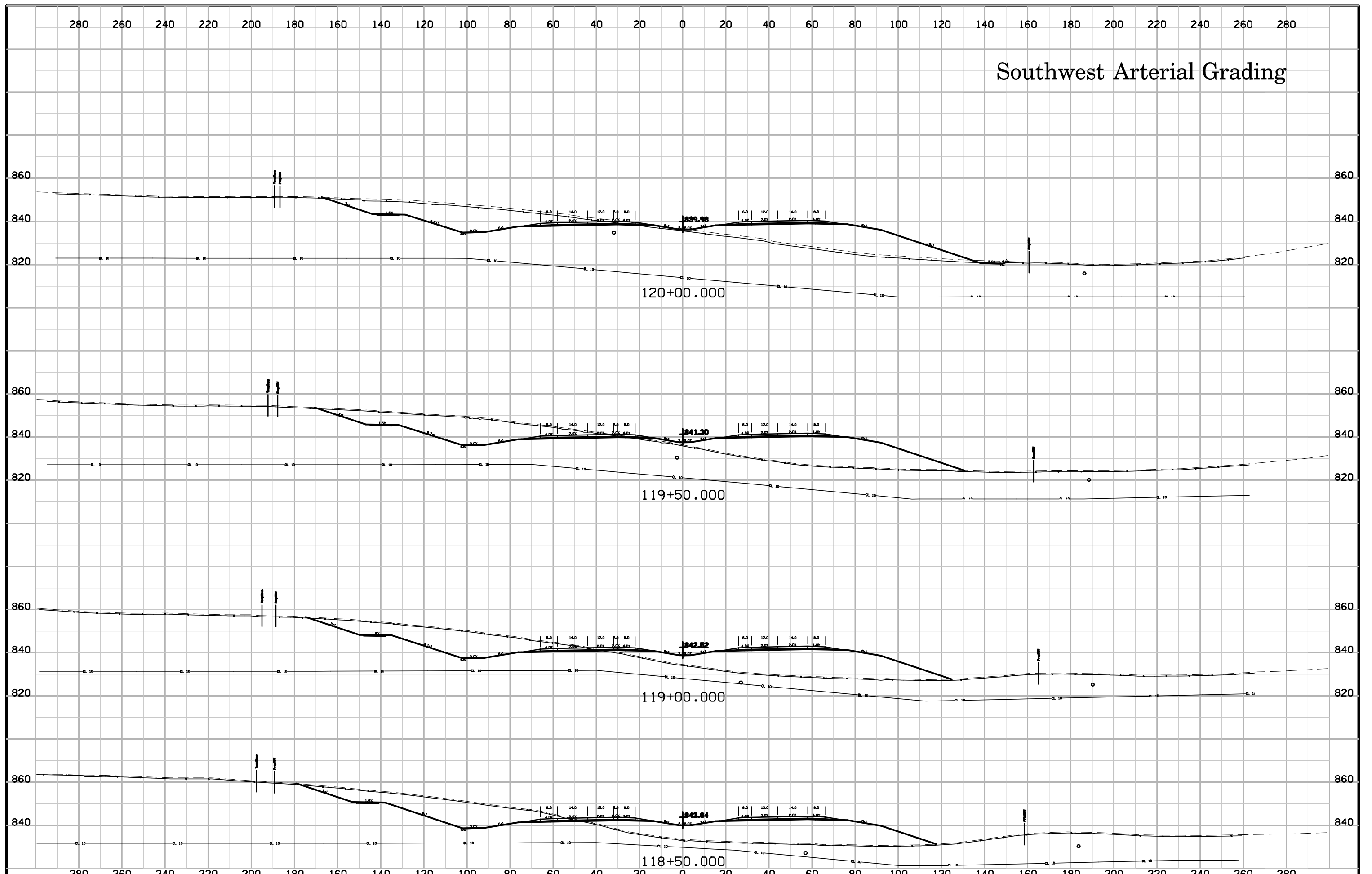


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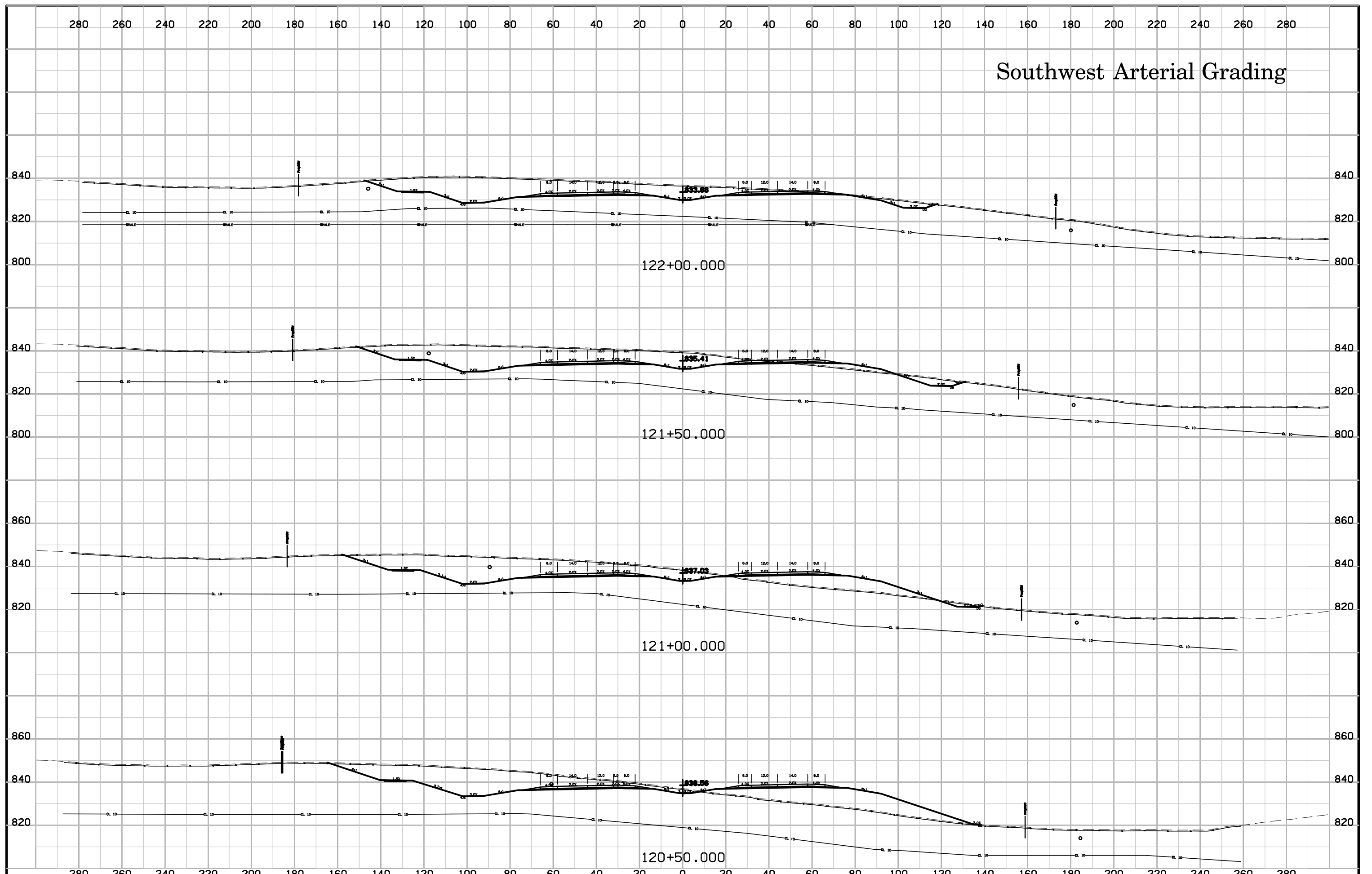


FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>W.9</b>
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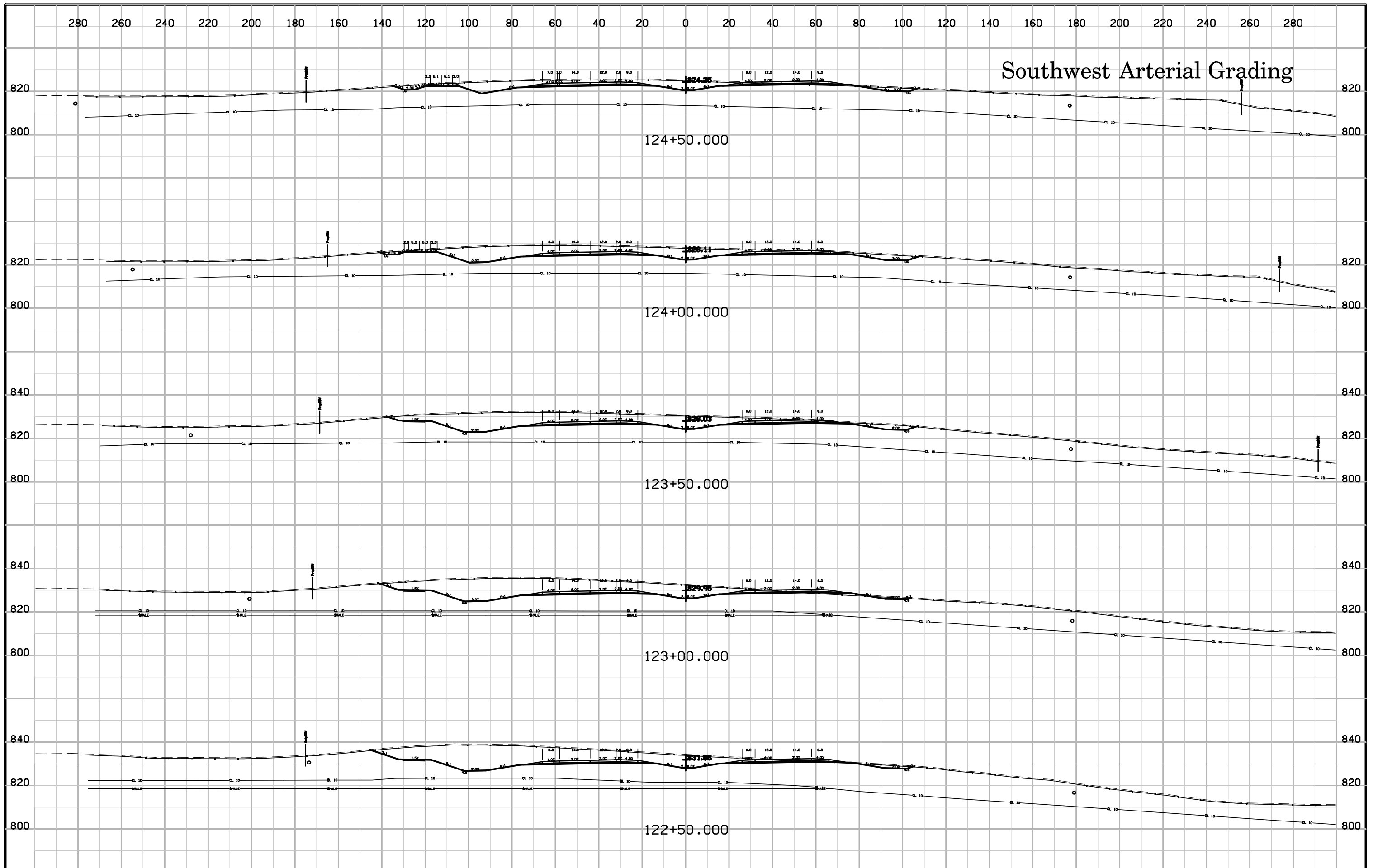
# Southwest Arterial Grading



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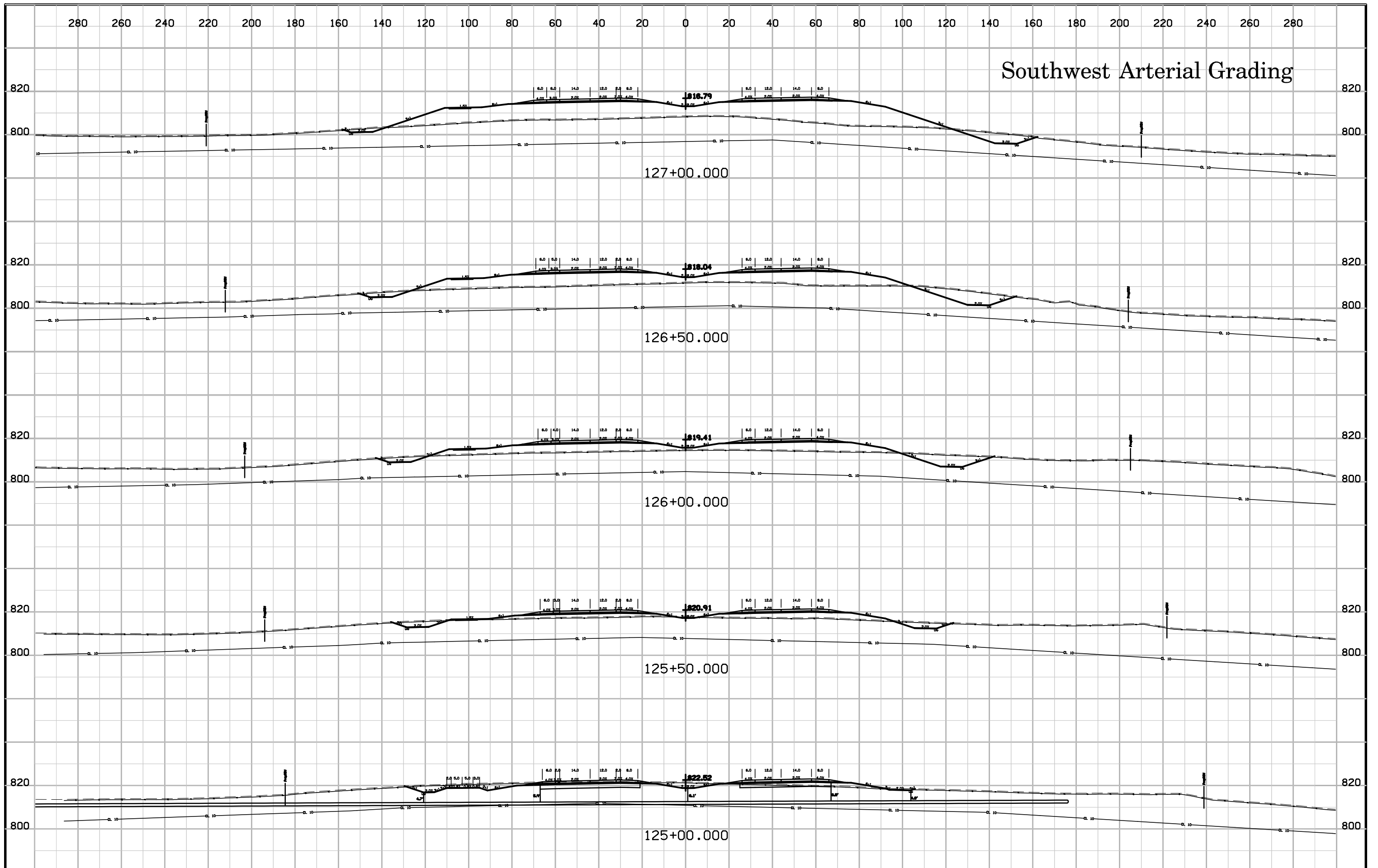


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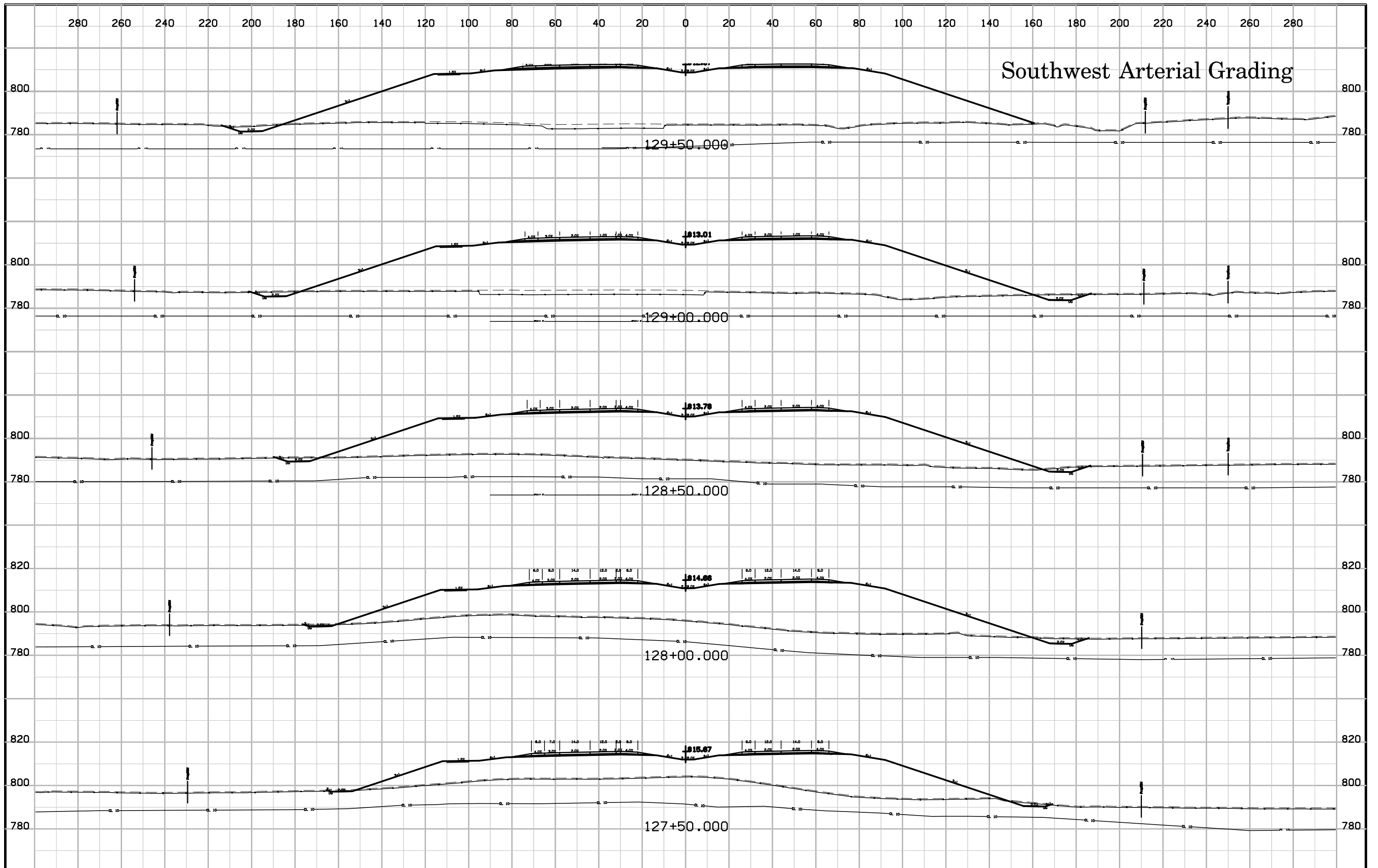




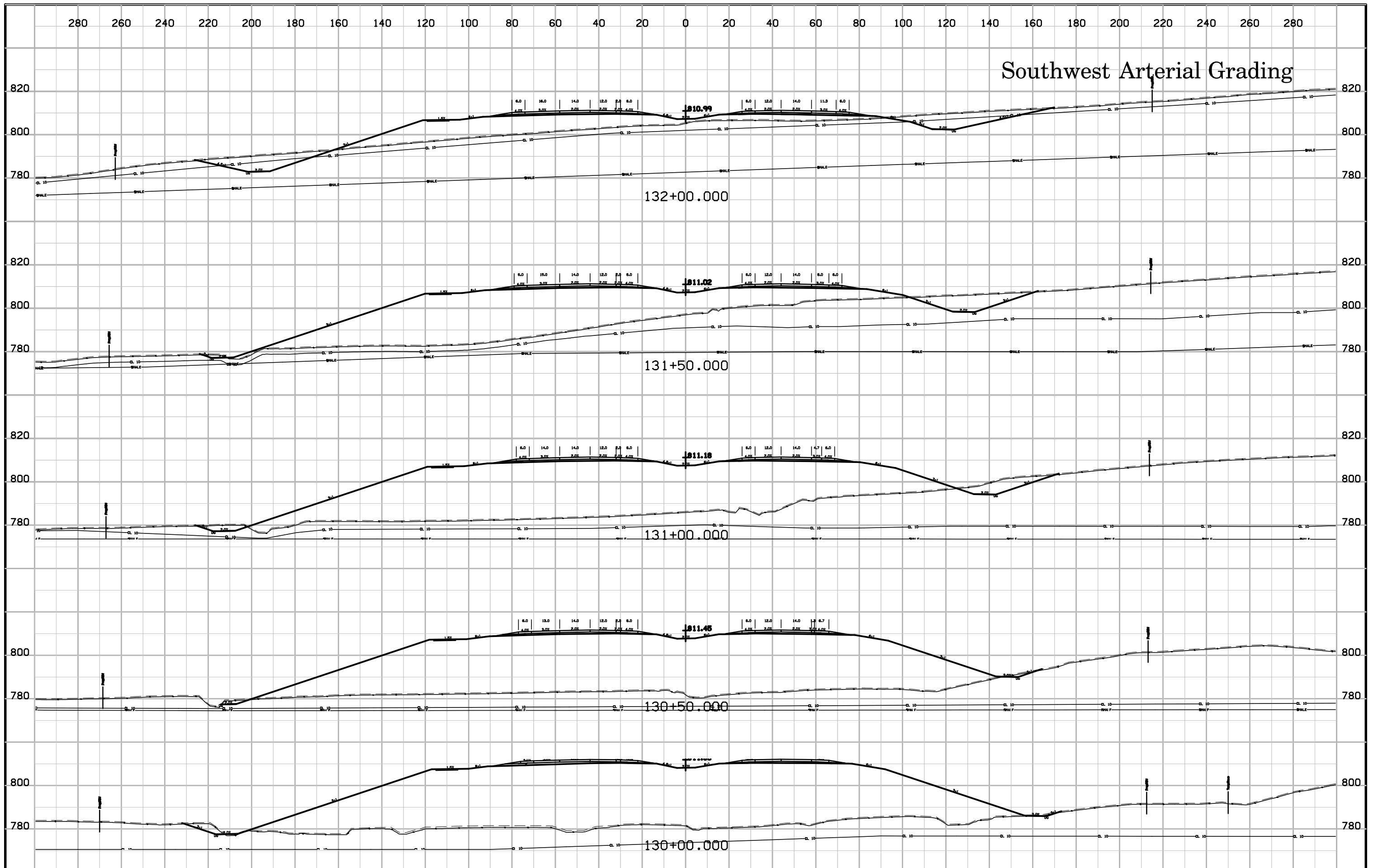
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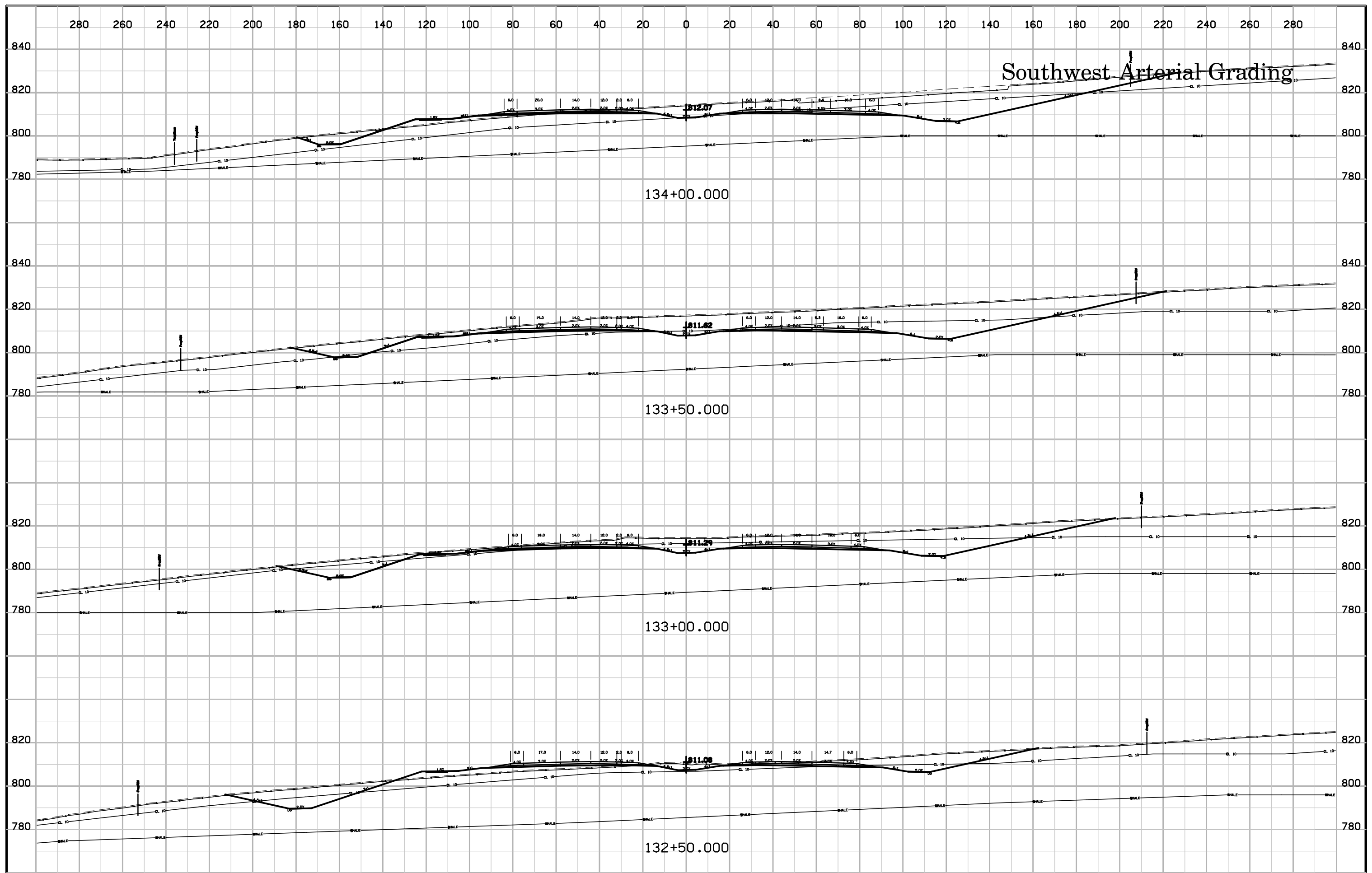


# Southwest Arterial Grading



# Southwest Arterial Grading





Southwest Arterial Grading

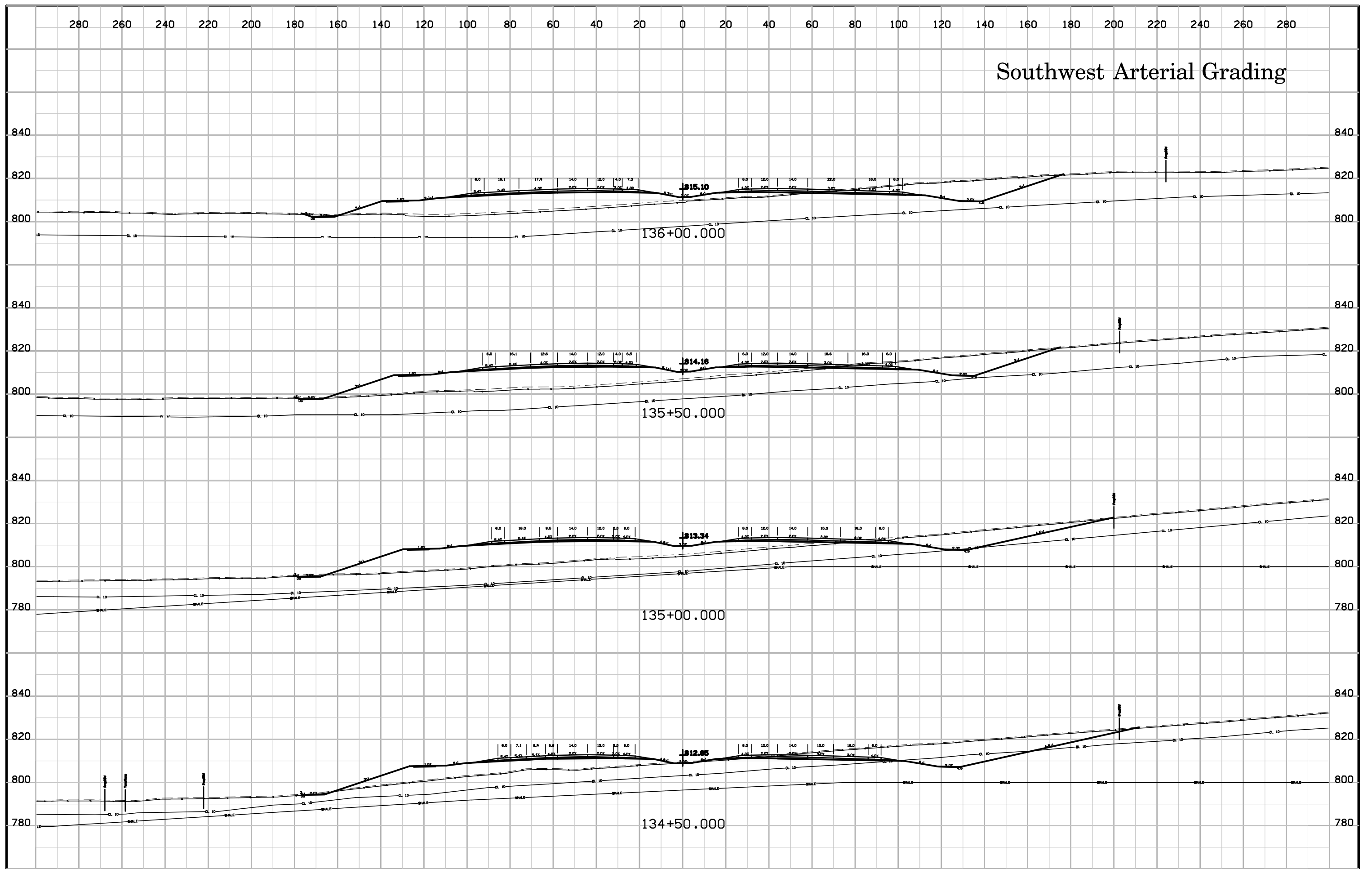
134+00.000

133+50.000

133+00.000

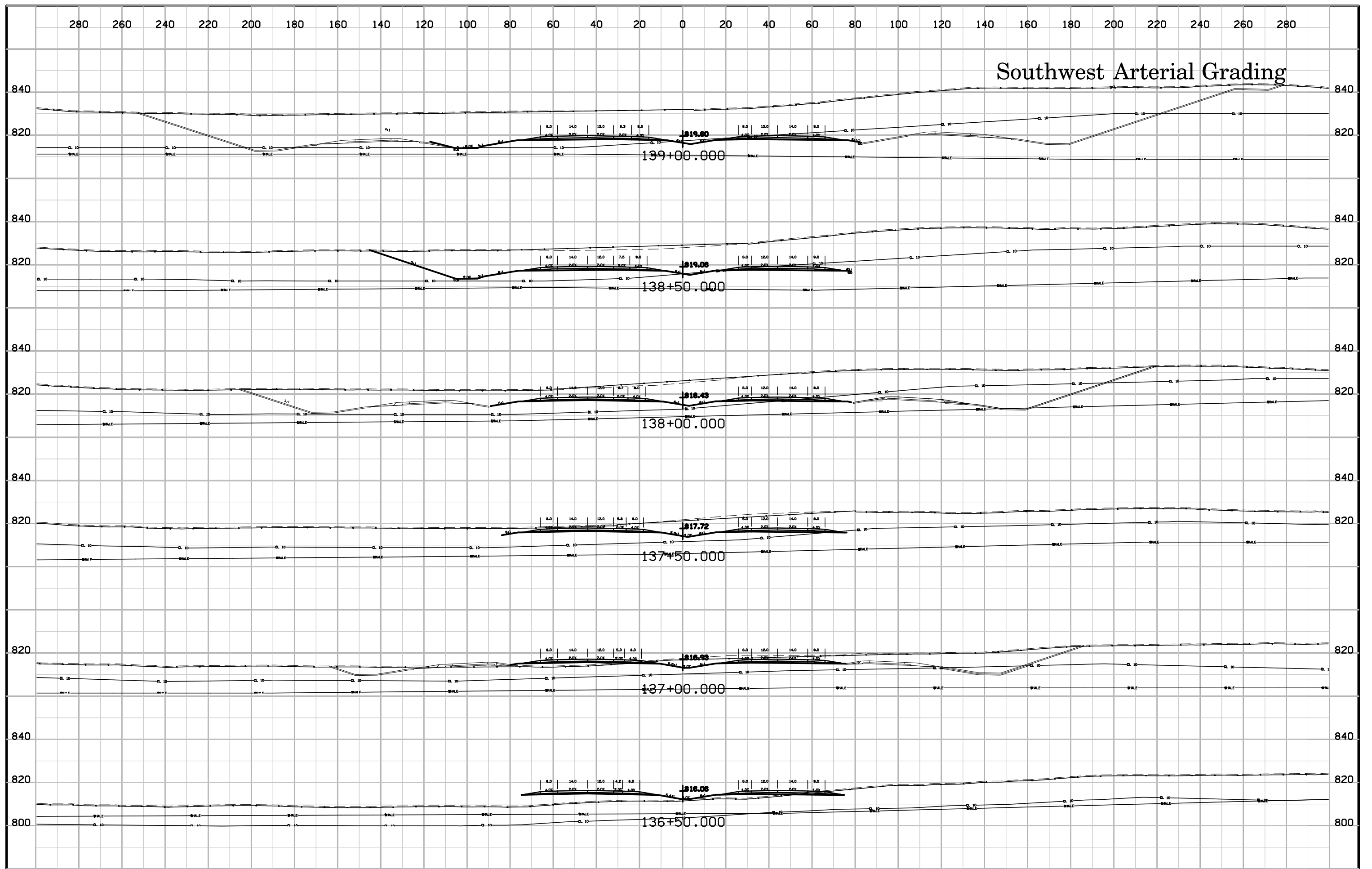
132+50.000

# Southwest Arterial Grading

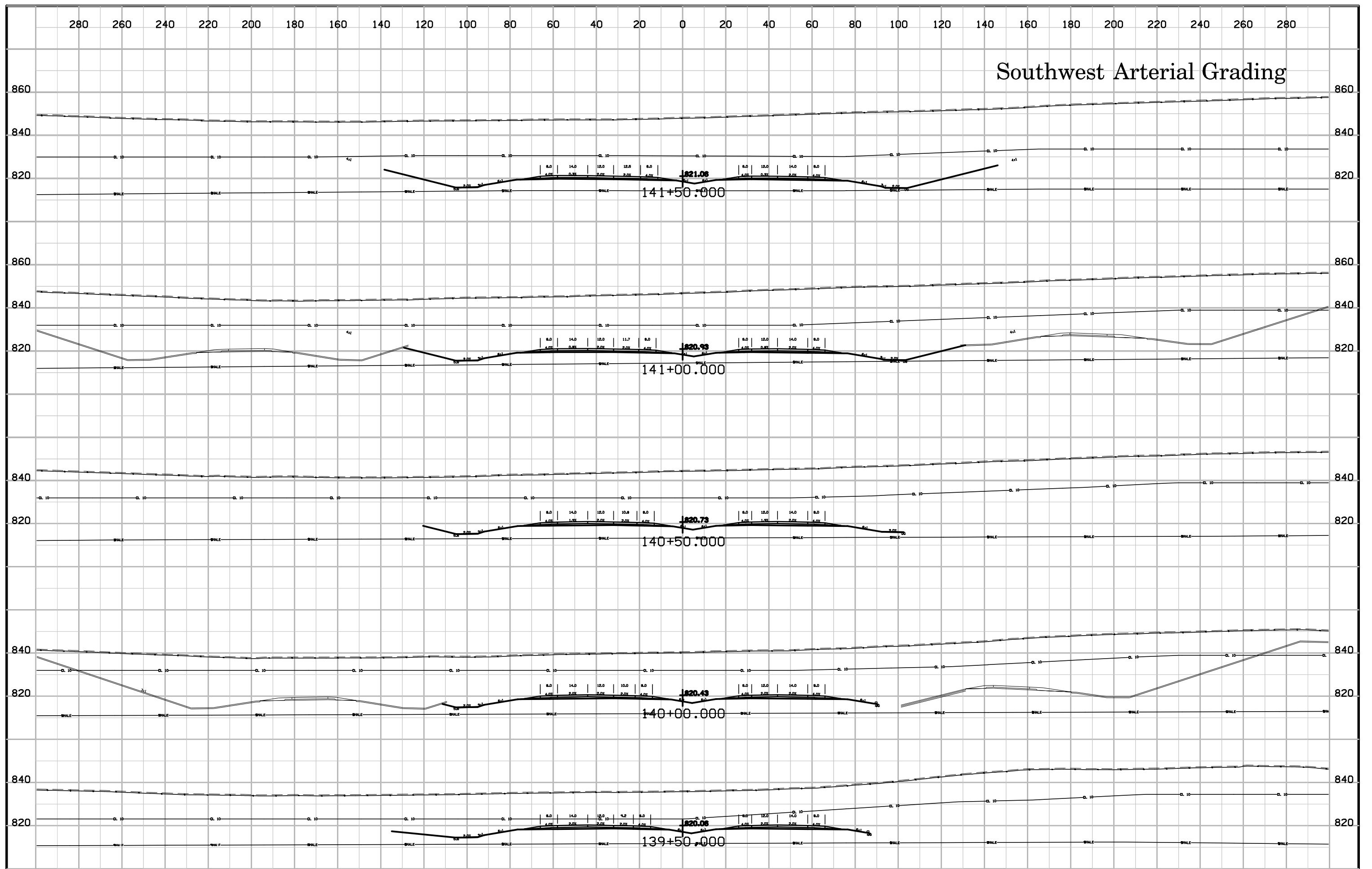




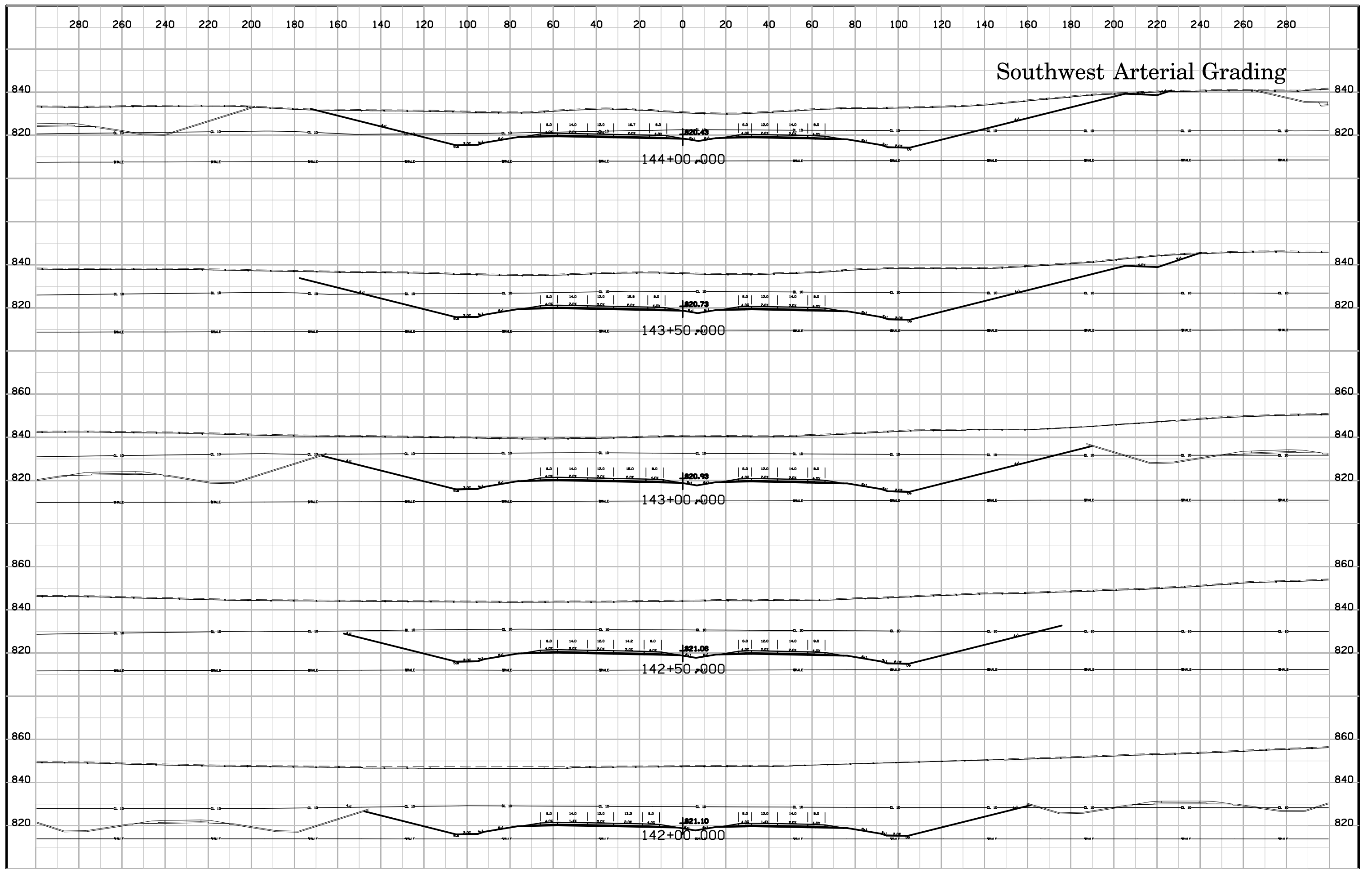
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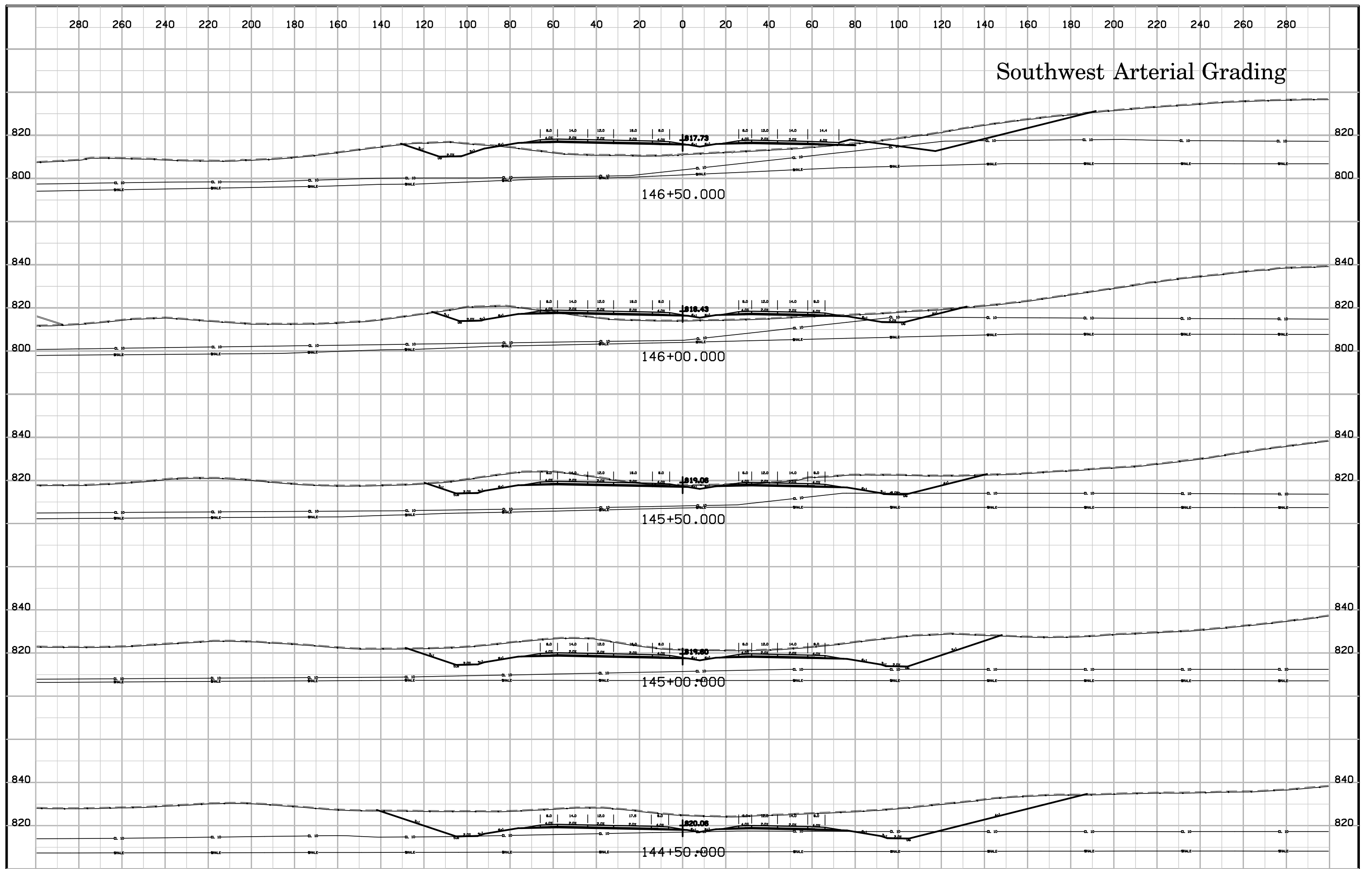
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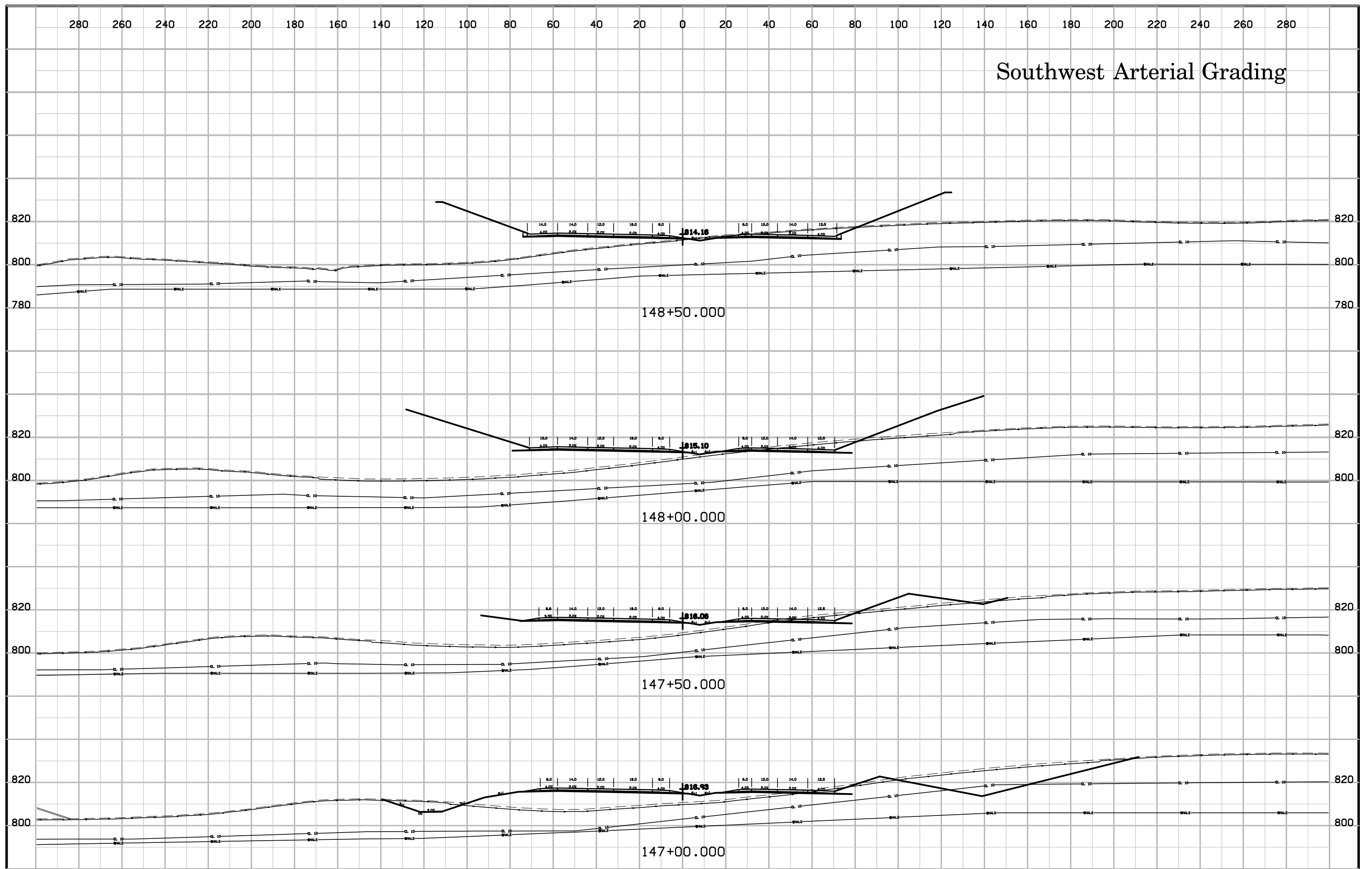
# Southwest Arterial Grading



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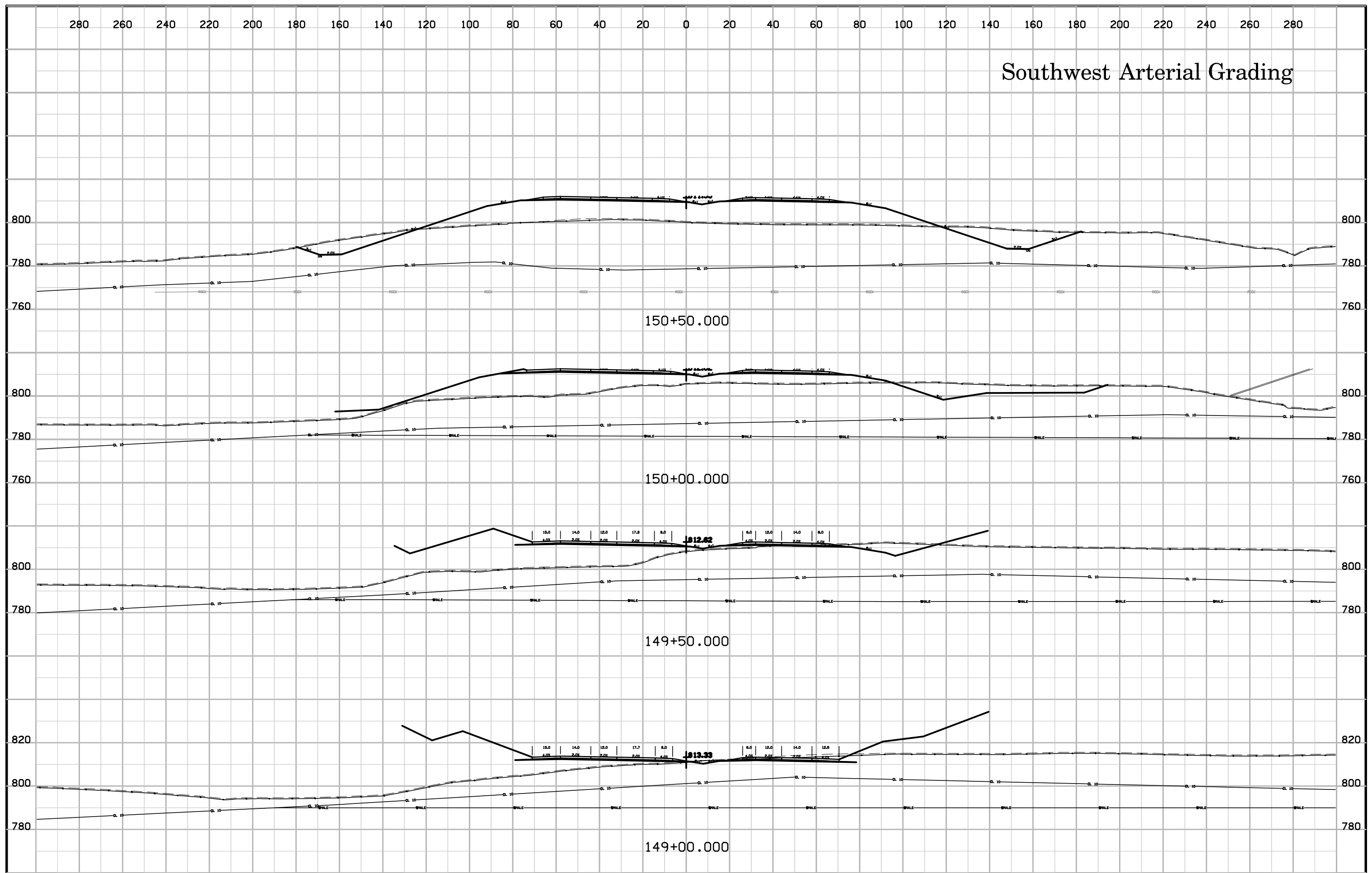


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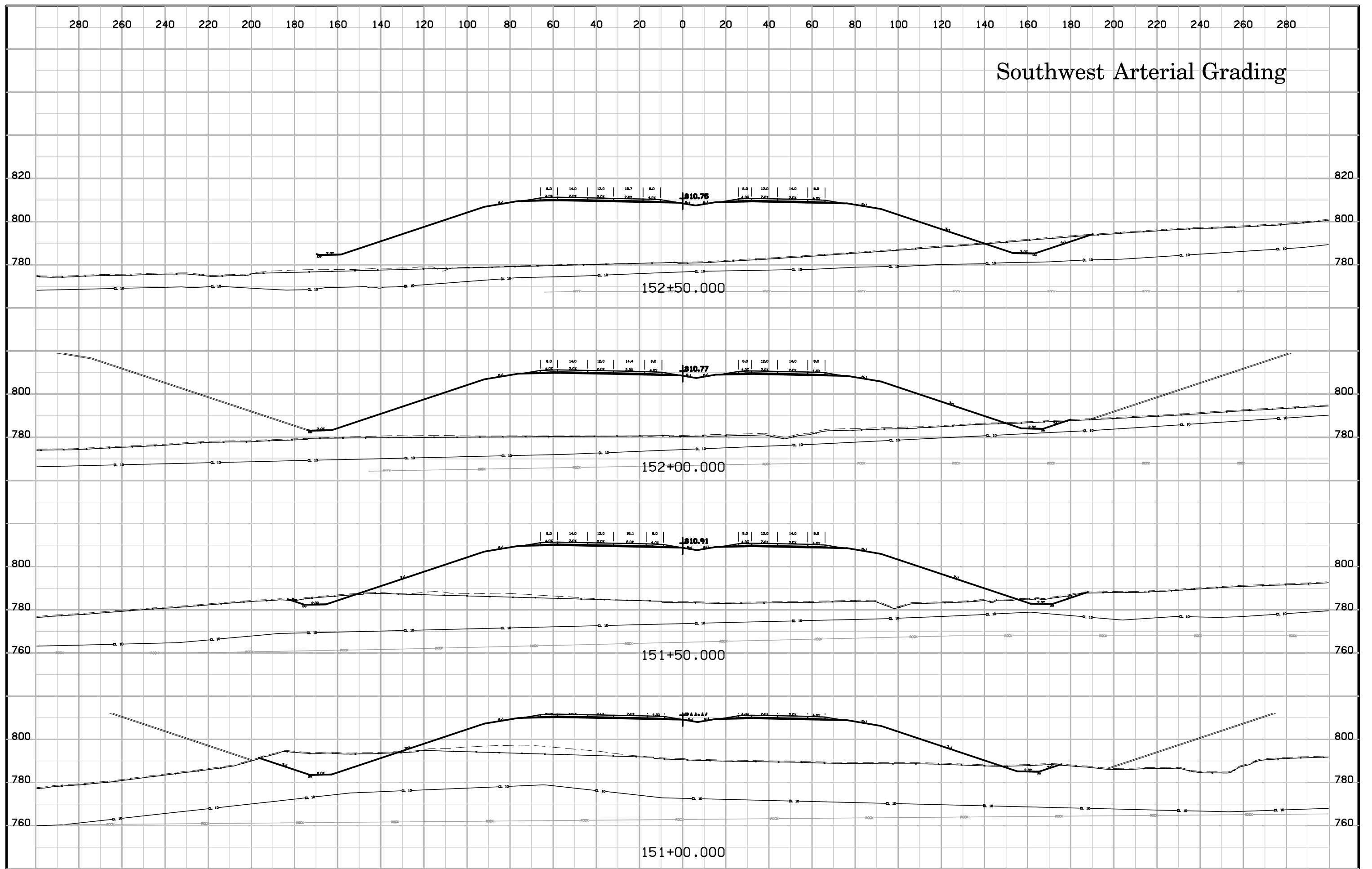




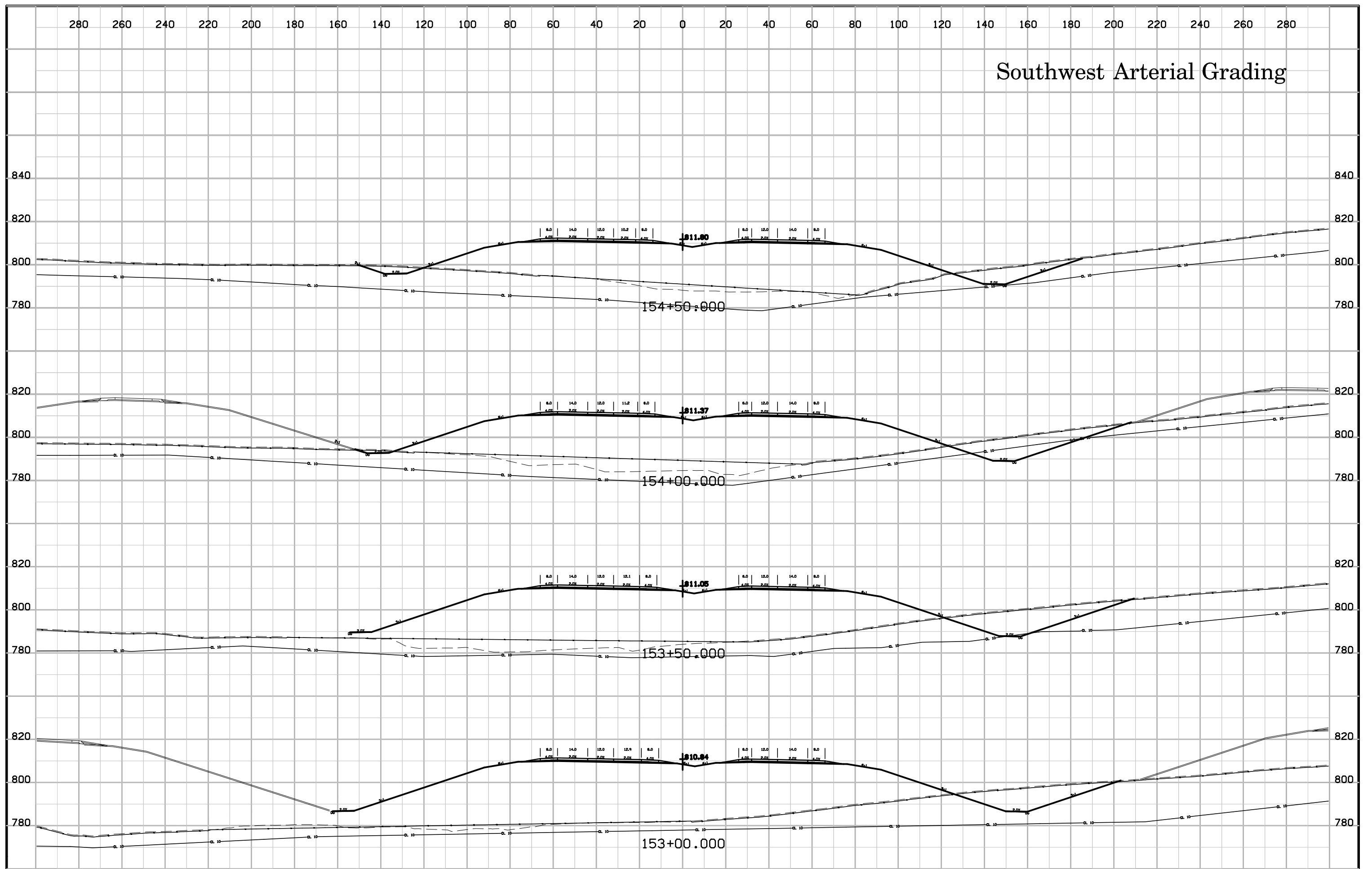
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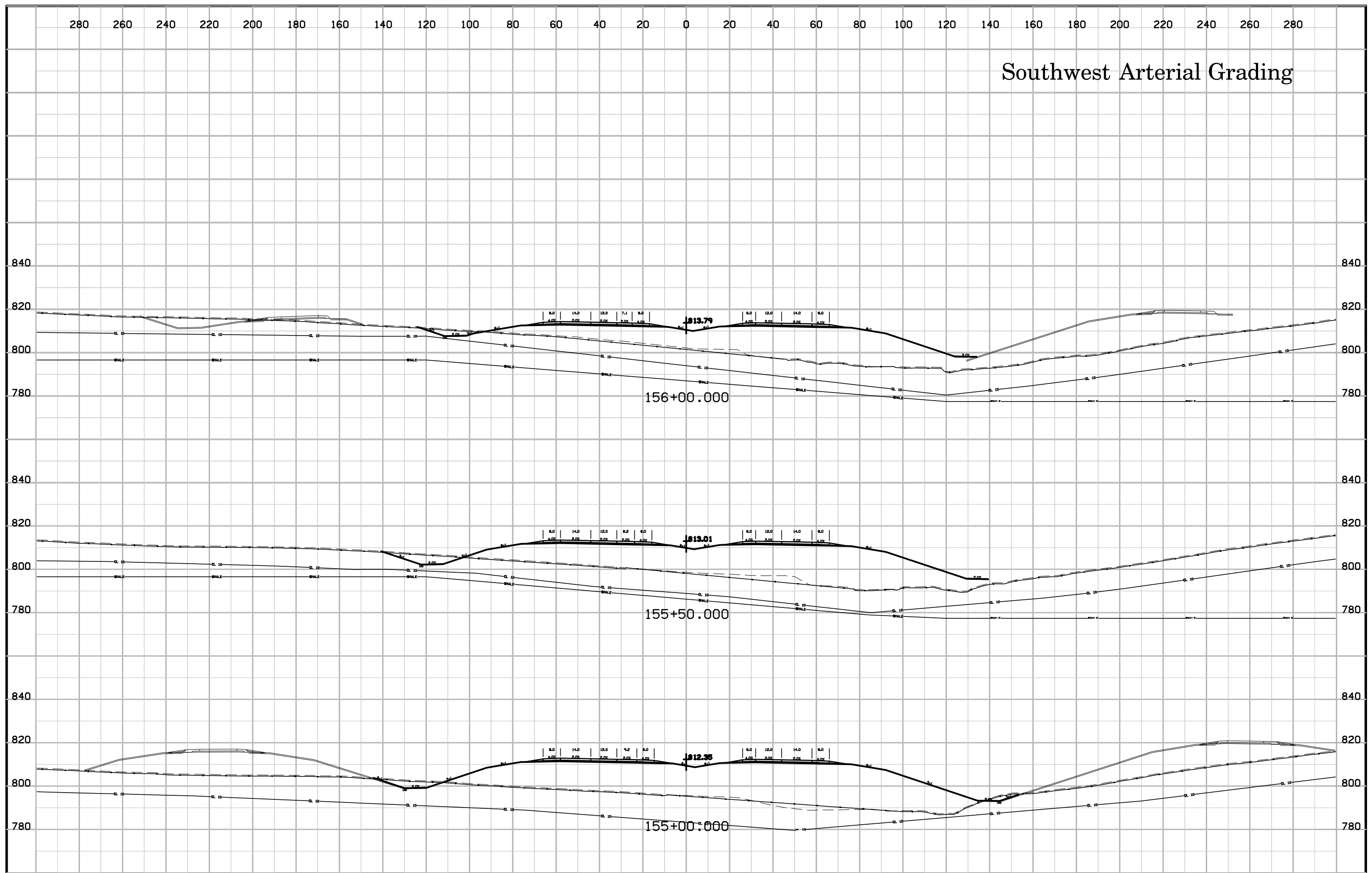
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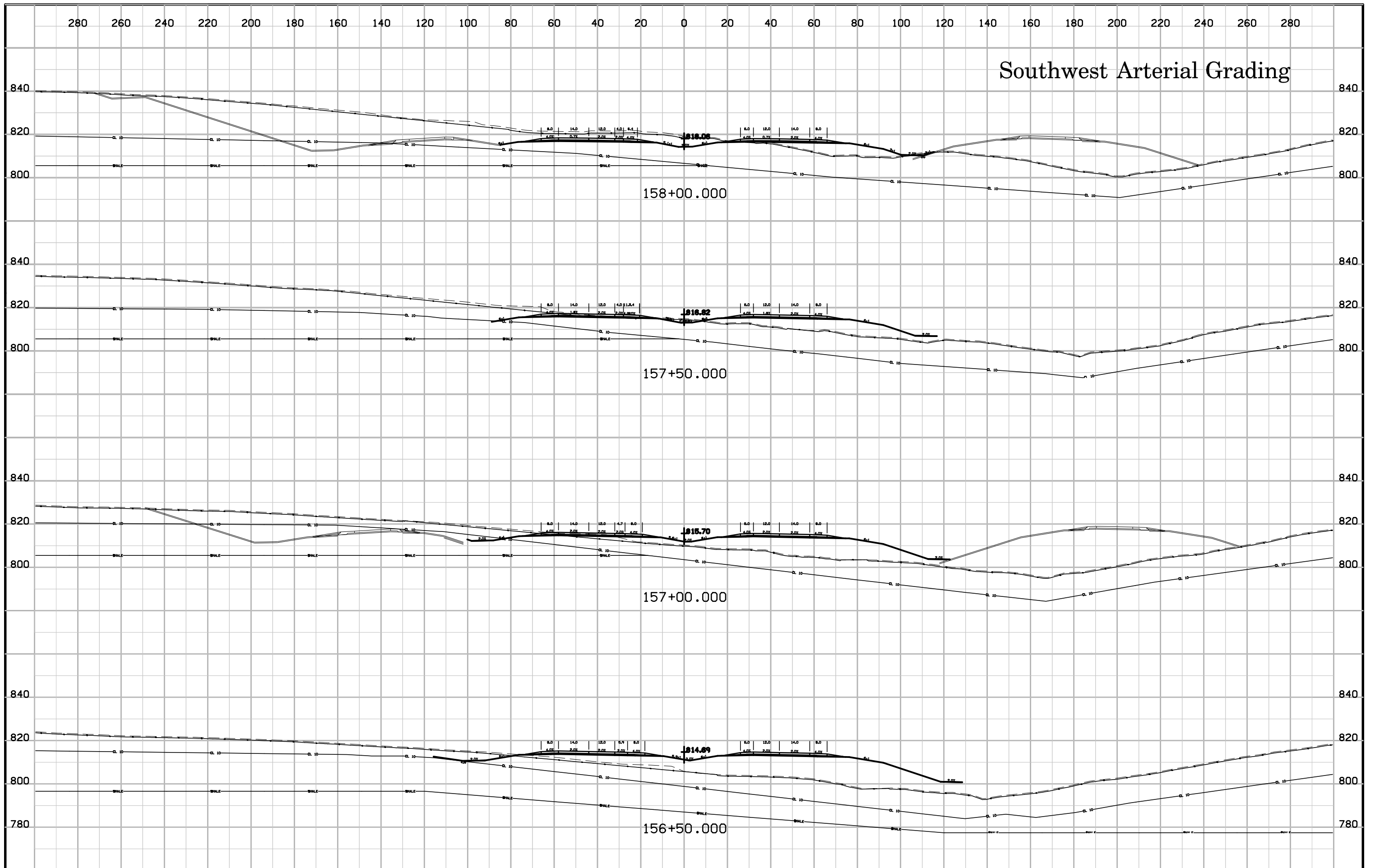
# Southwest Arterial Grading



# Southwest Arterial Grading

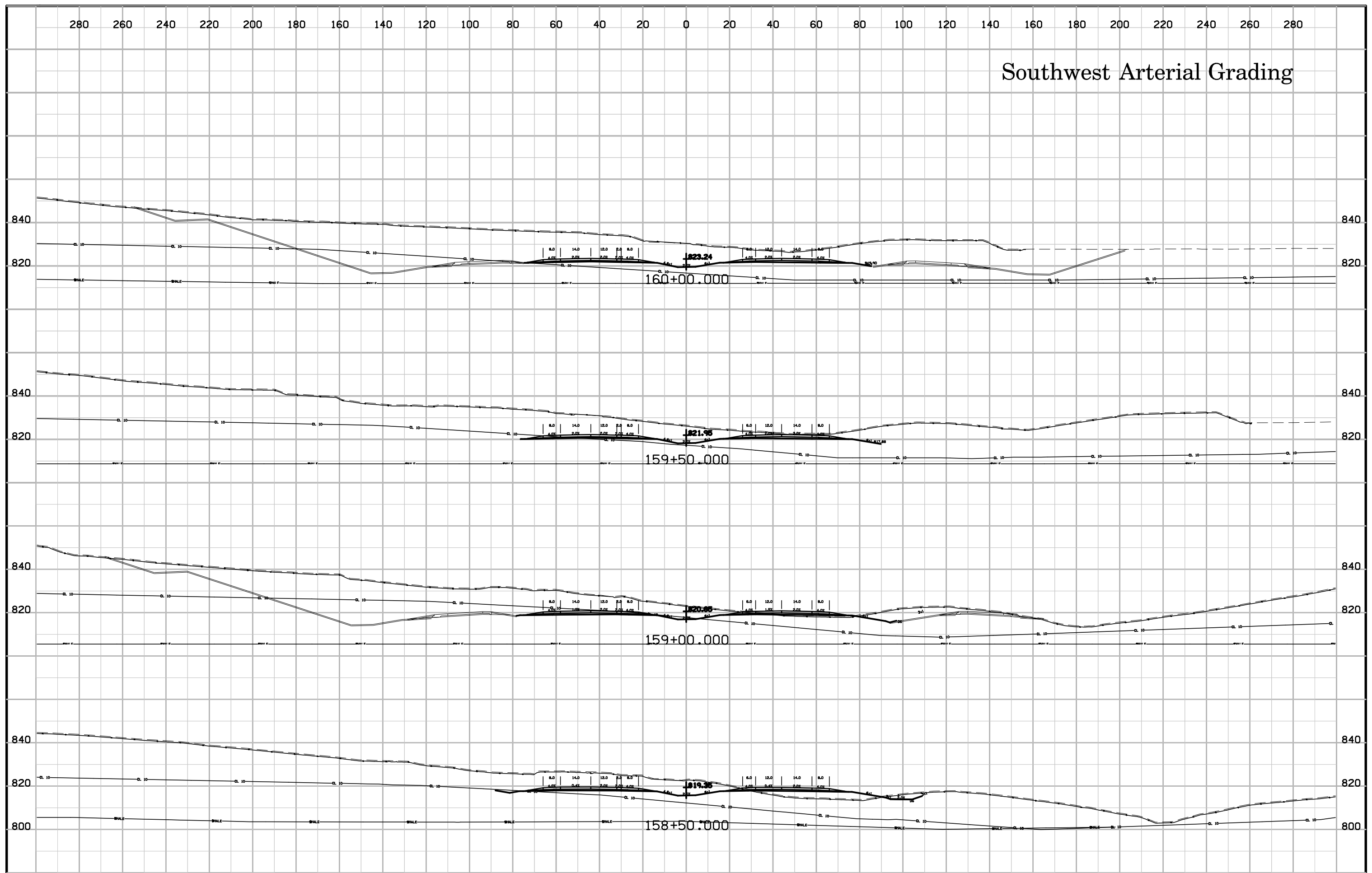


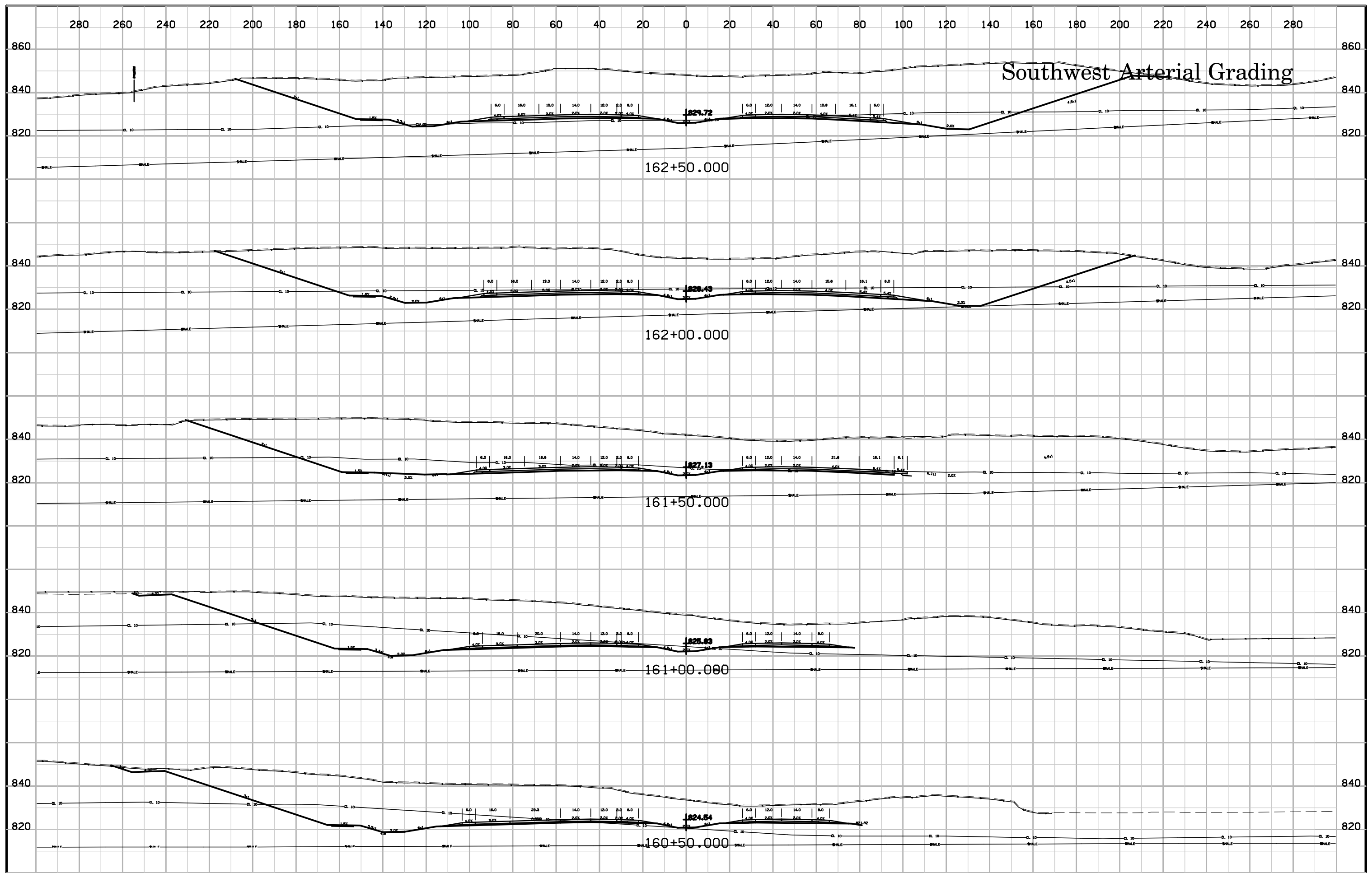
# Southwest Arterial Grading





# Southwest Arterial Grading





# Southwest Arterial Grading

162+50.000

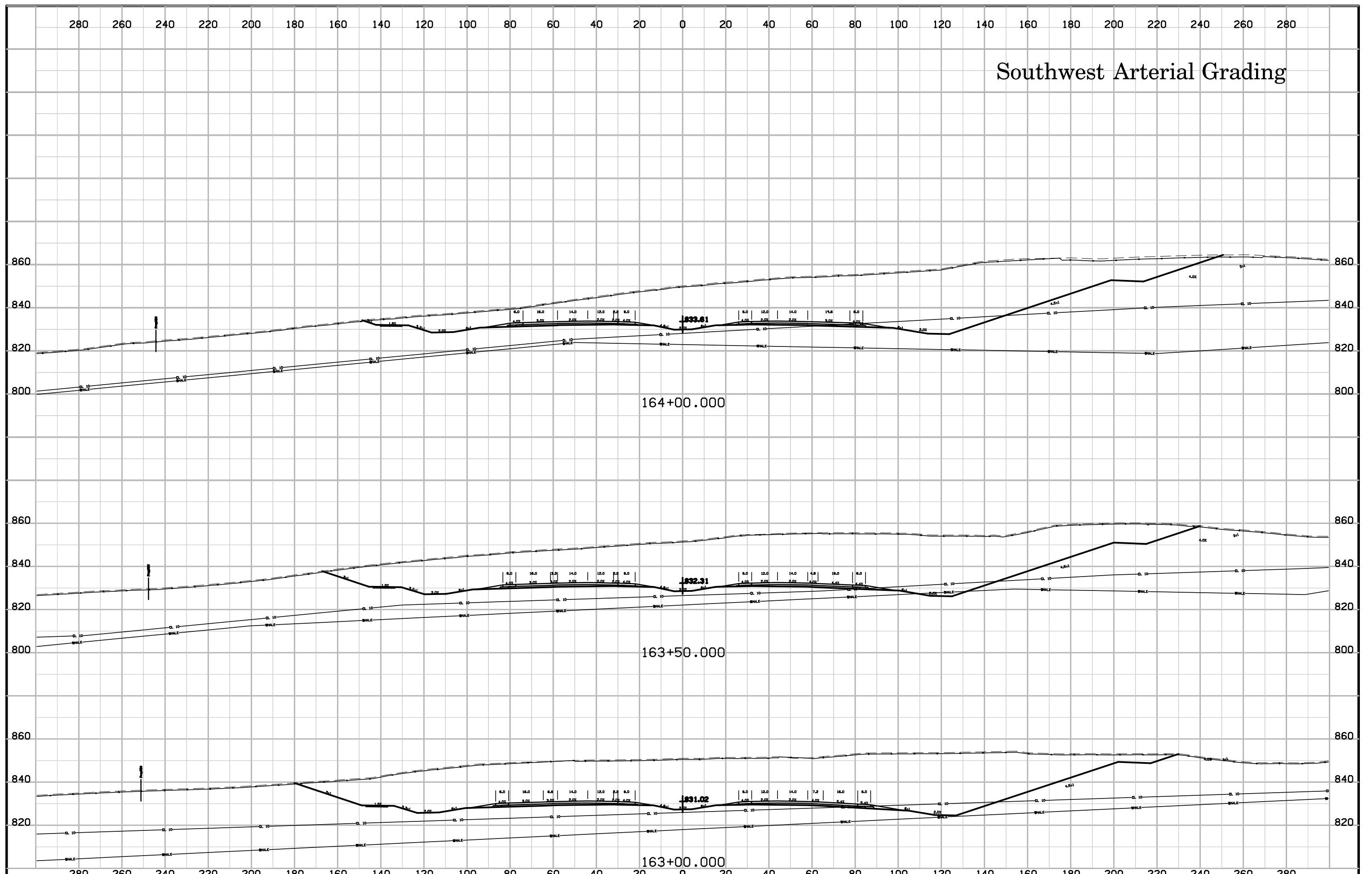
162+00.000

161+50.000

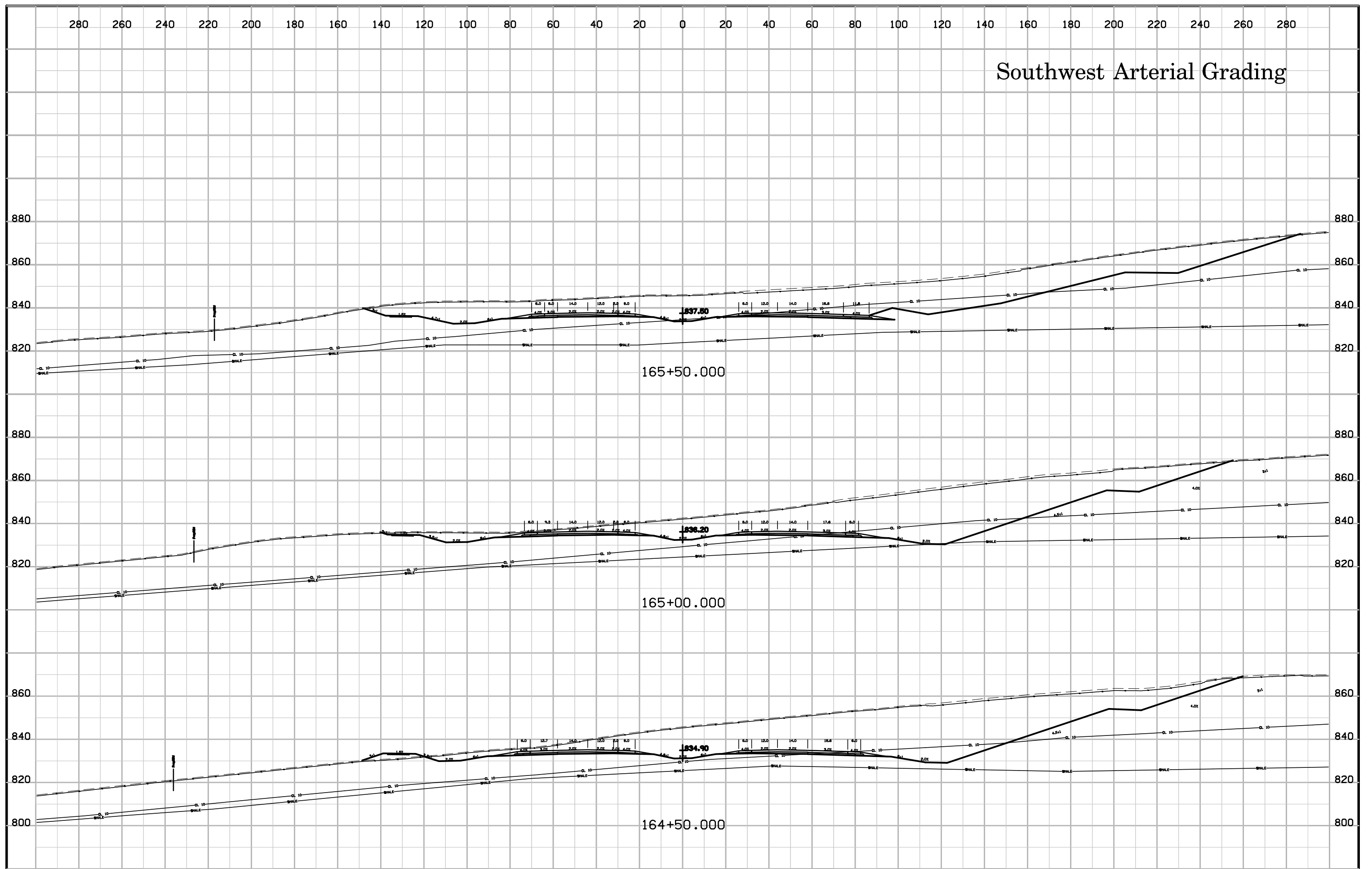
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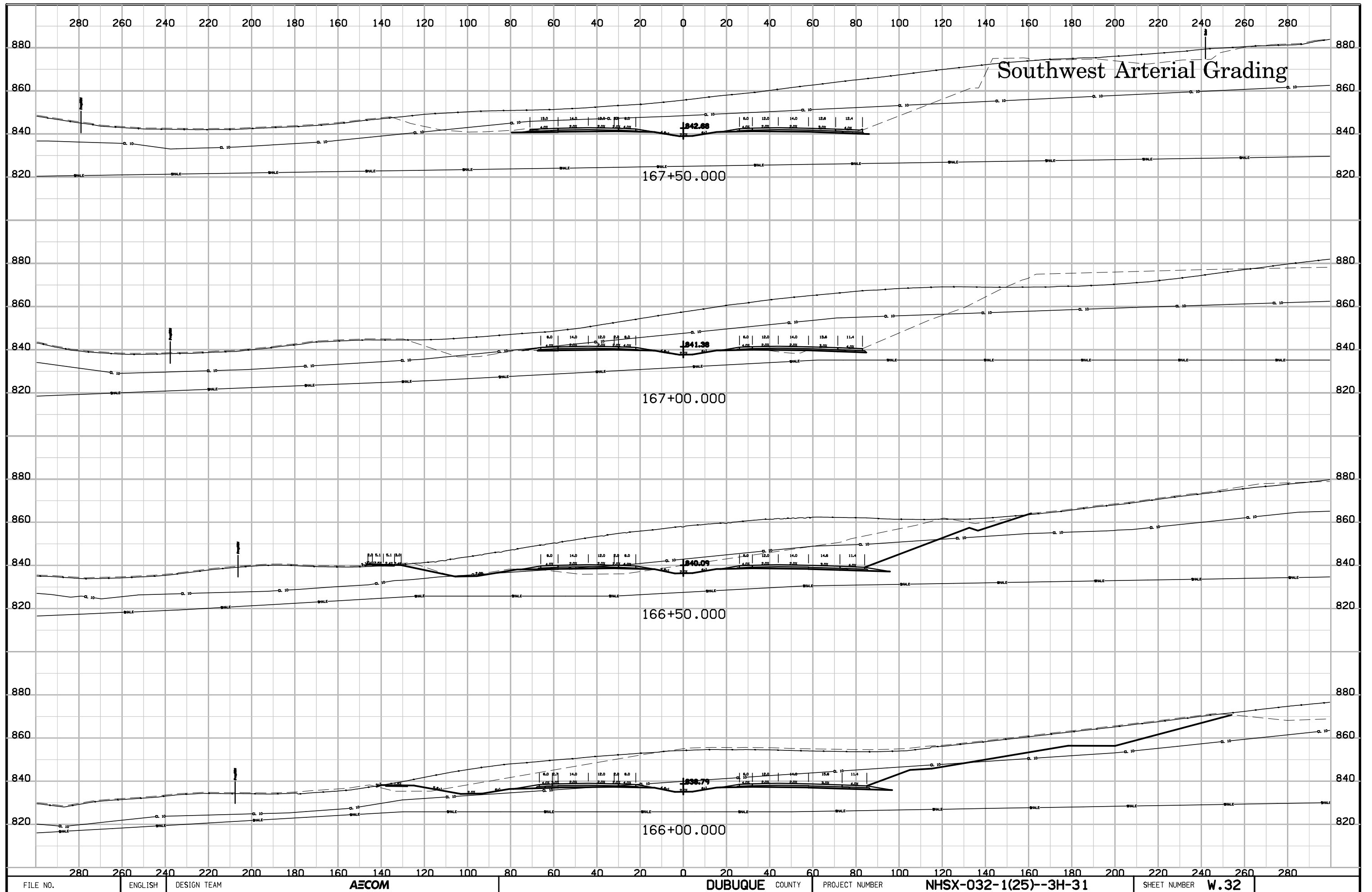
160+50.000

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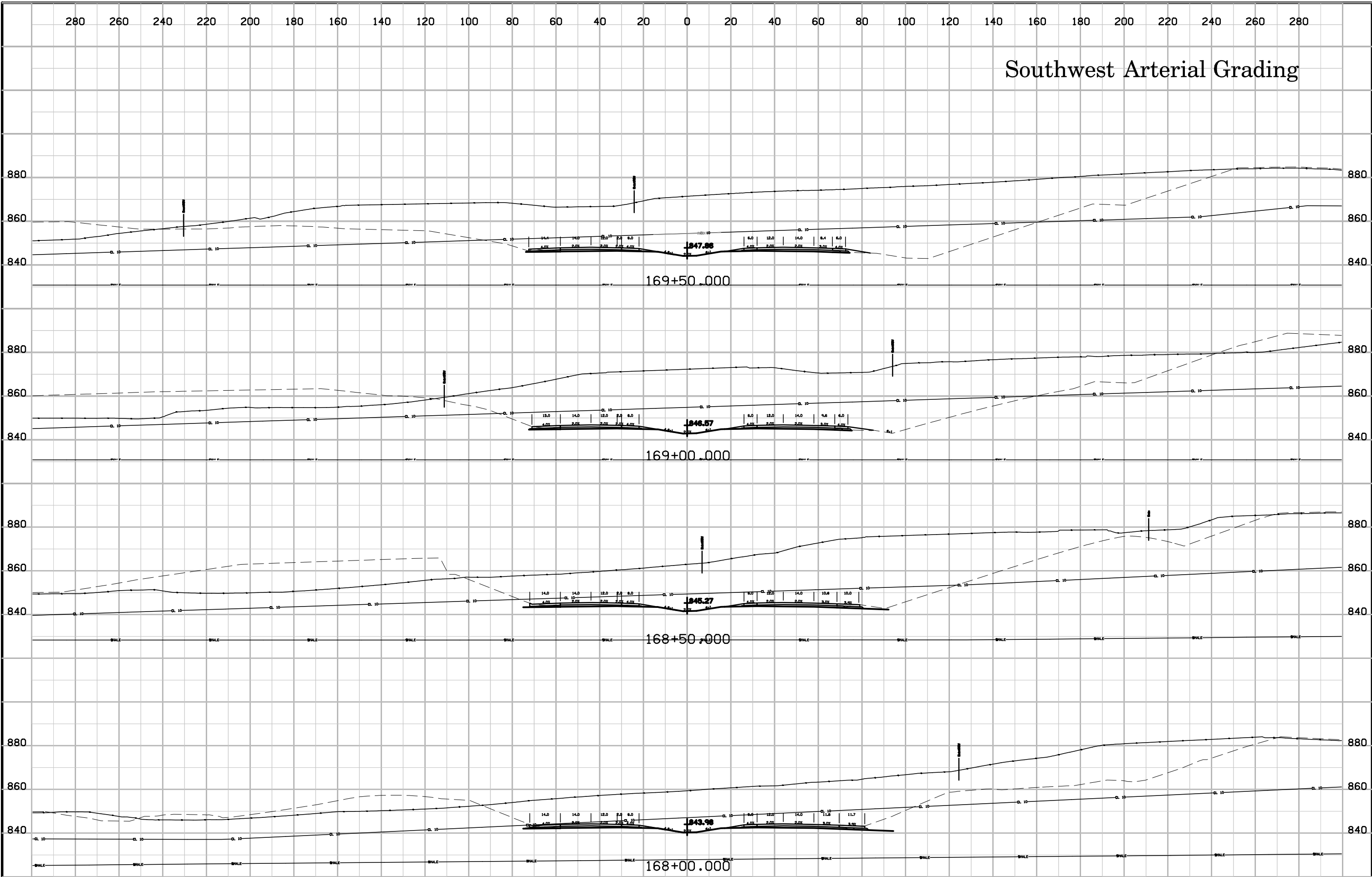


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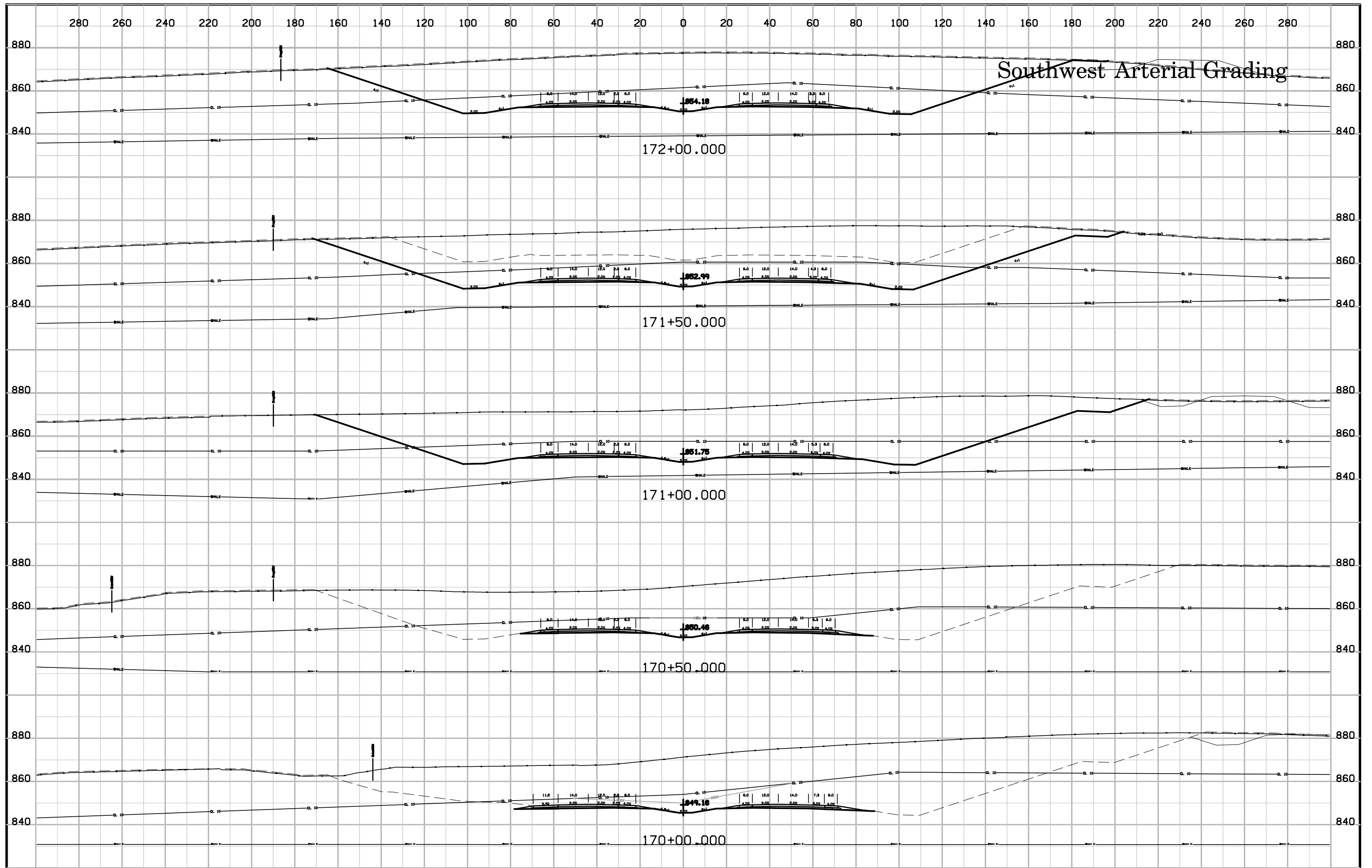


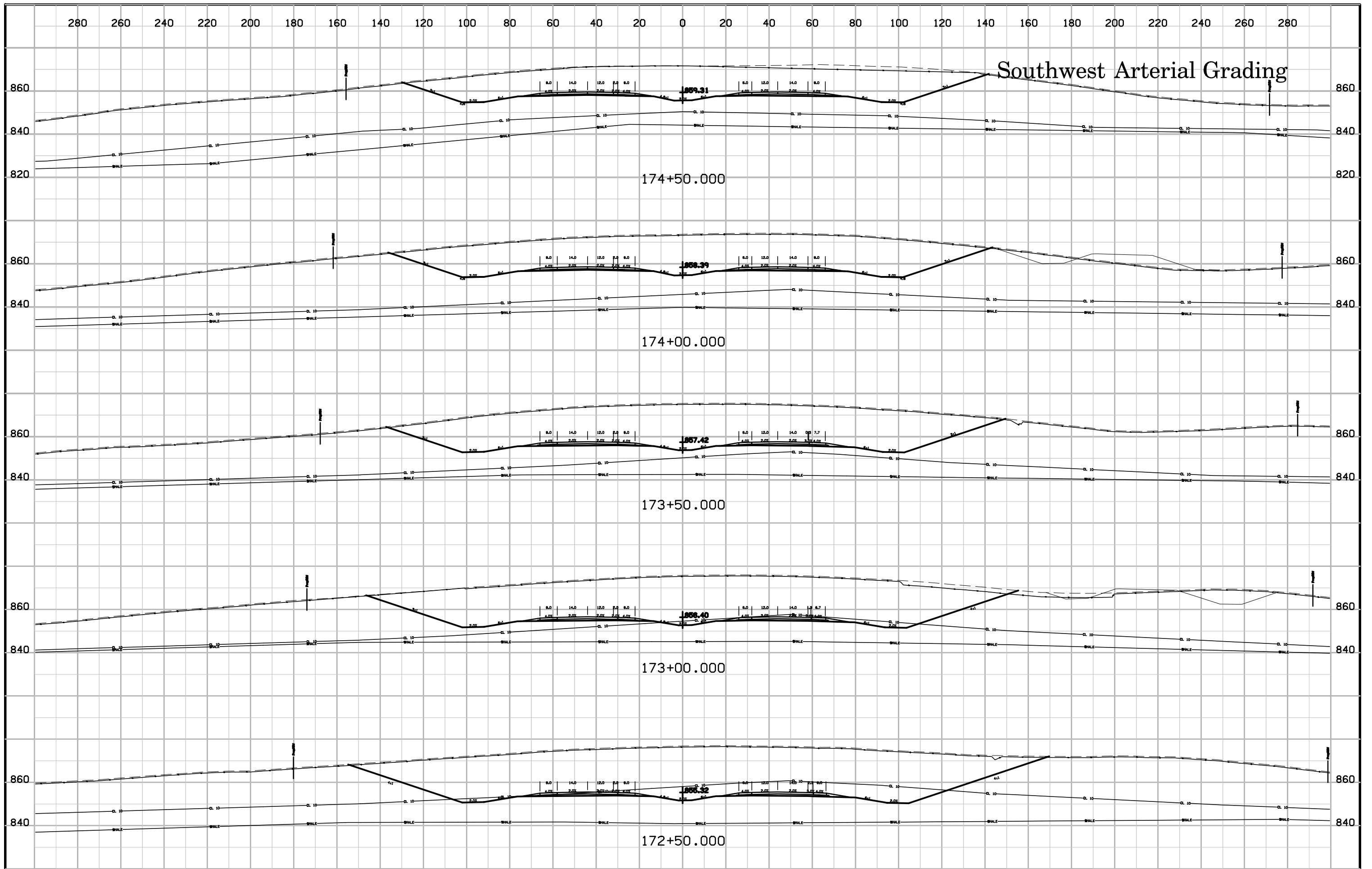


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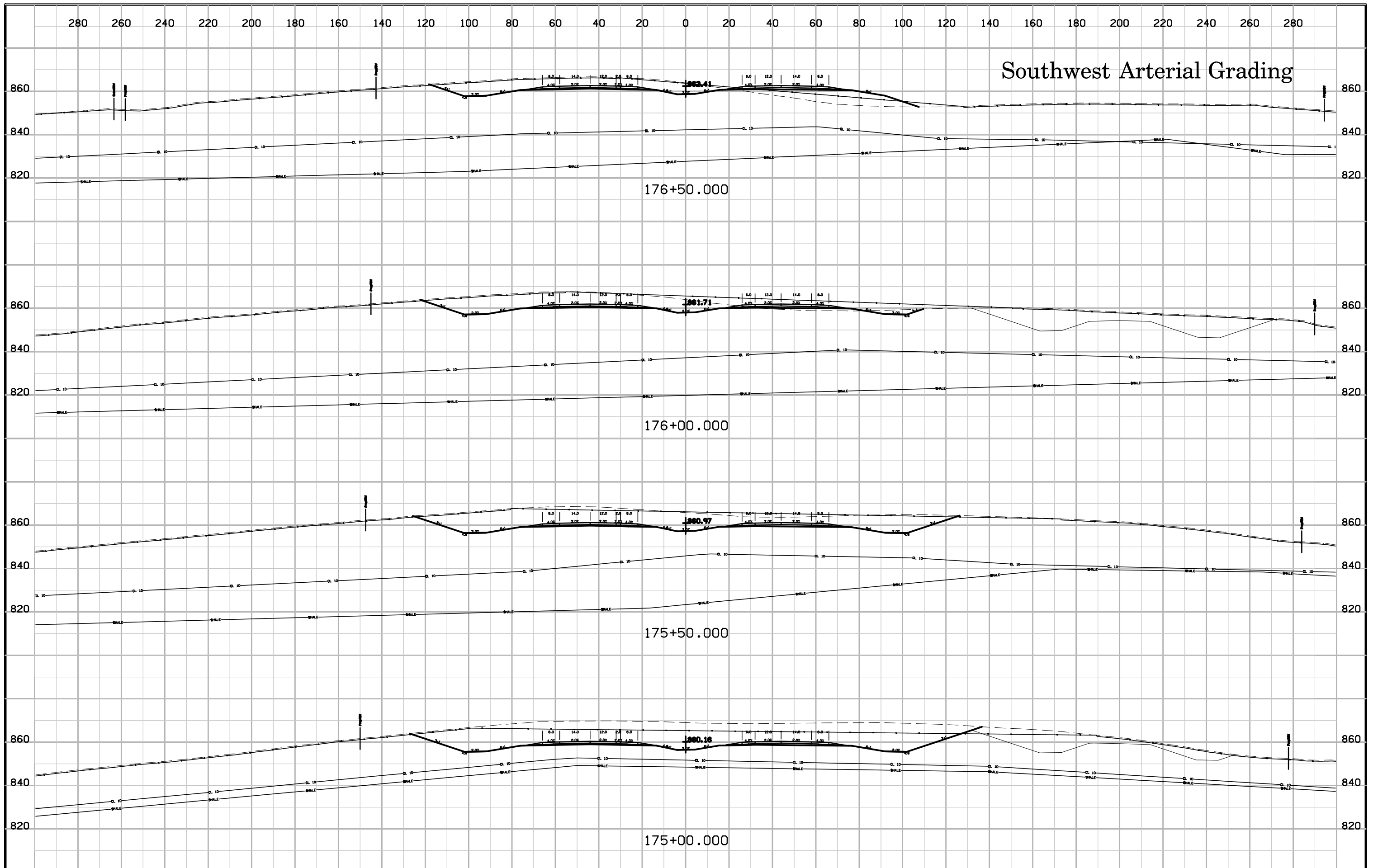




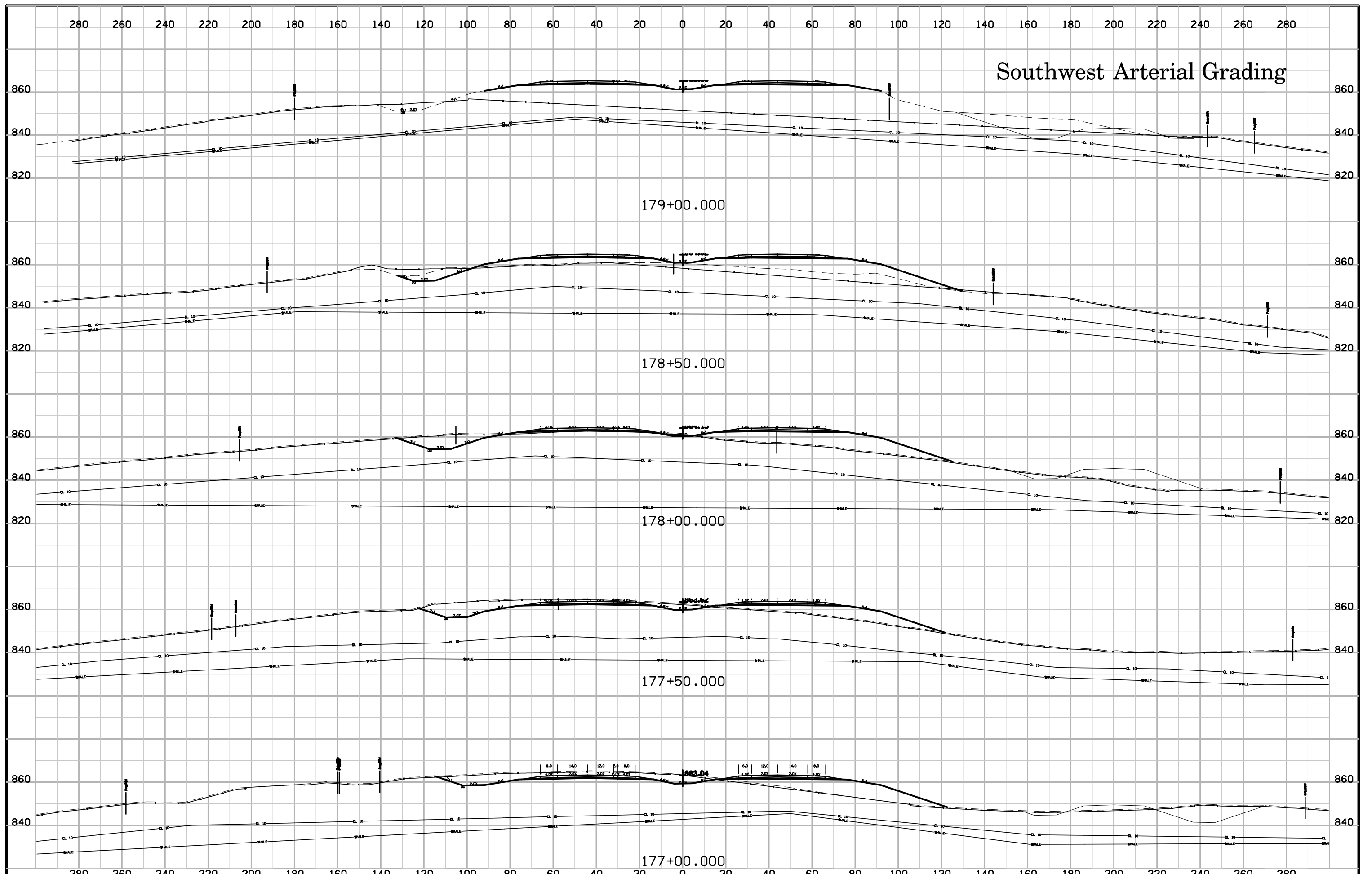




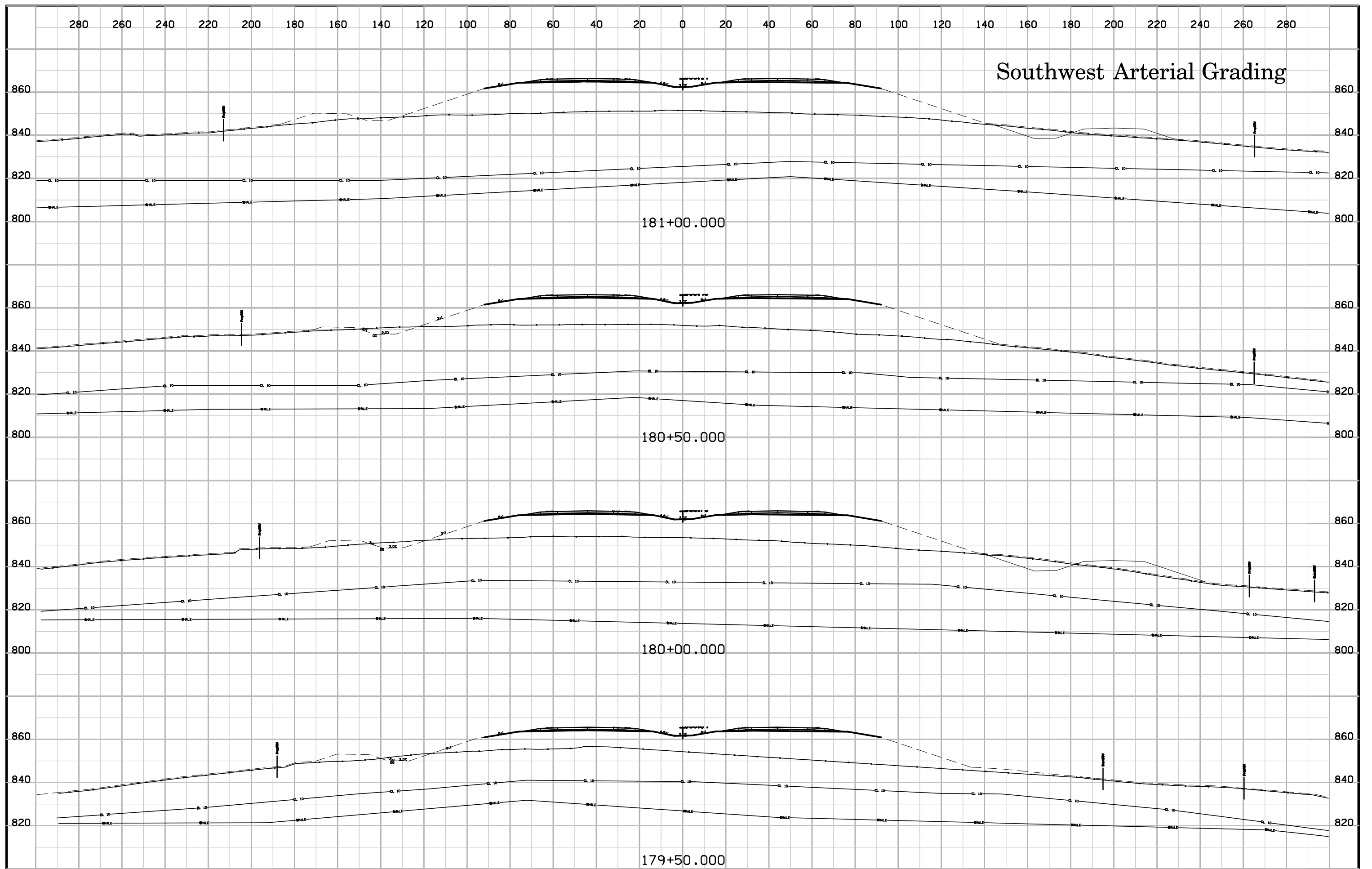
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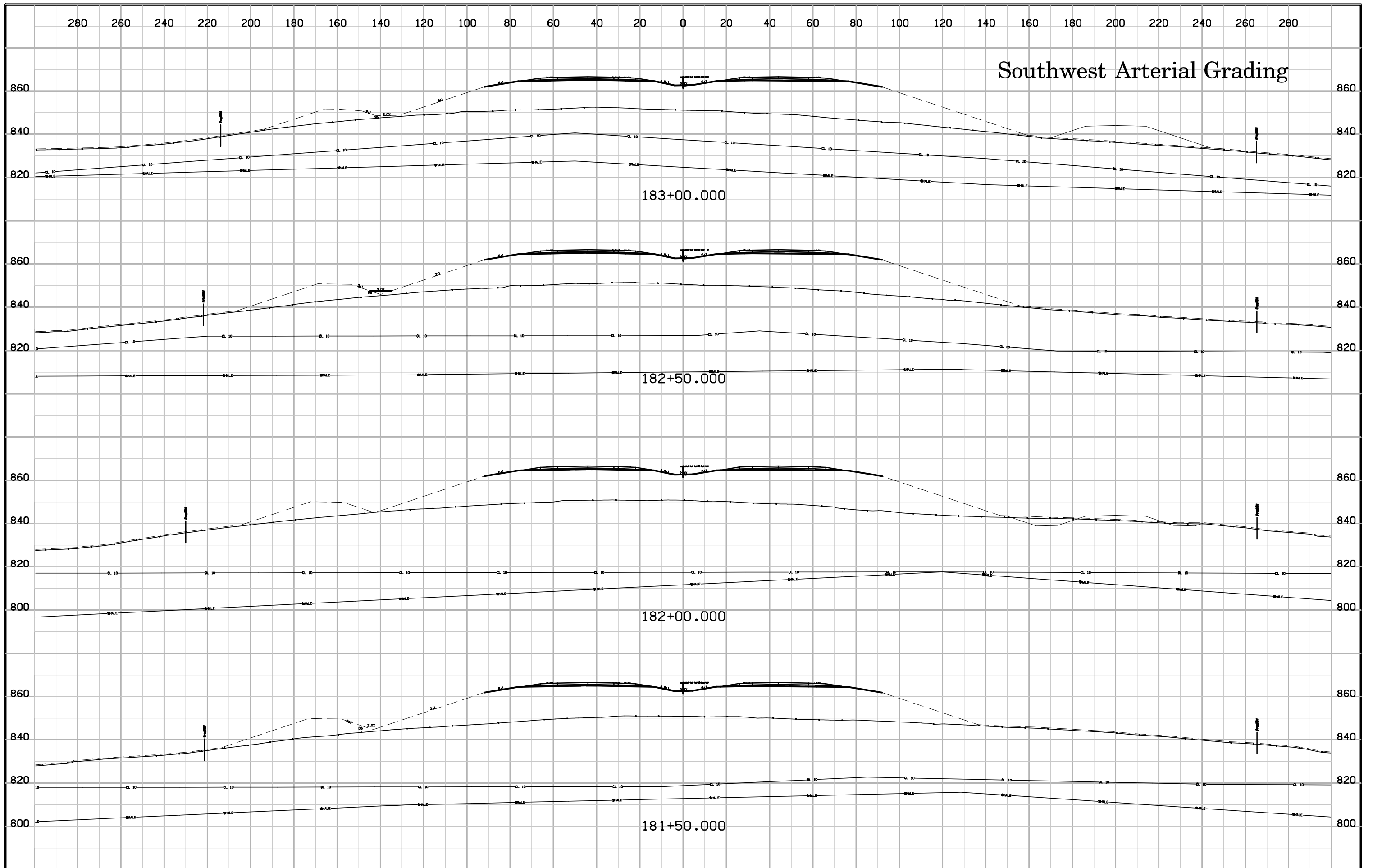
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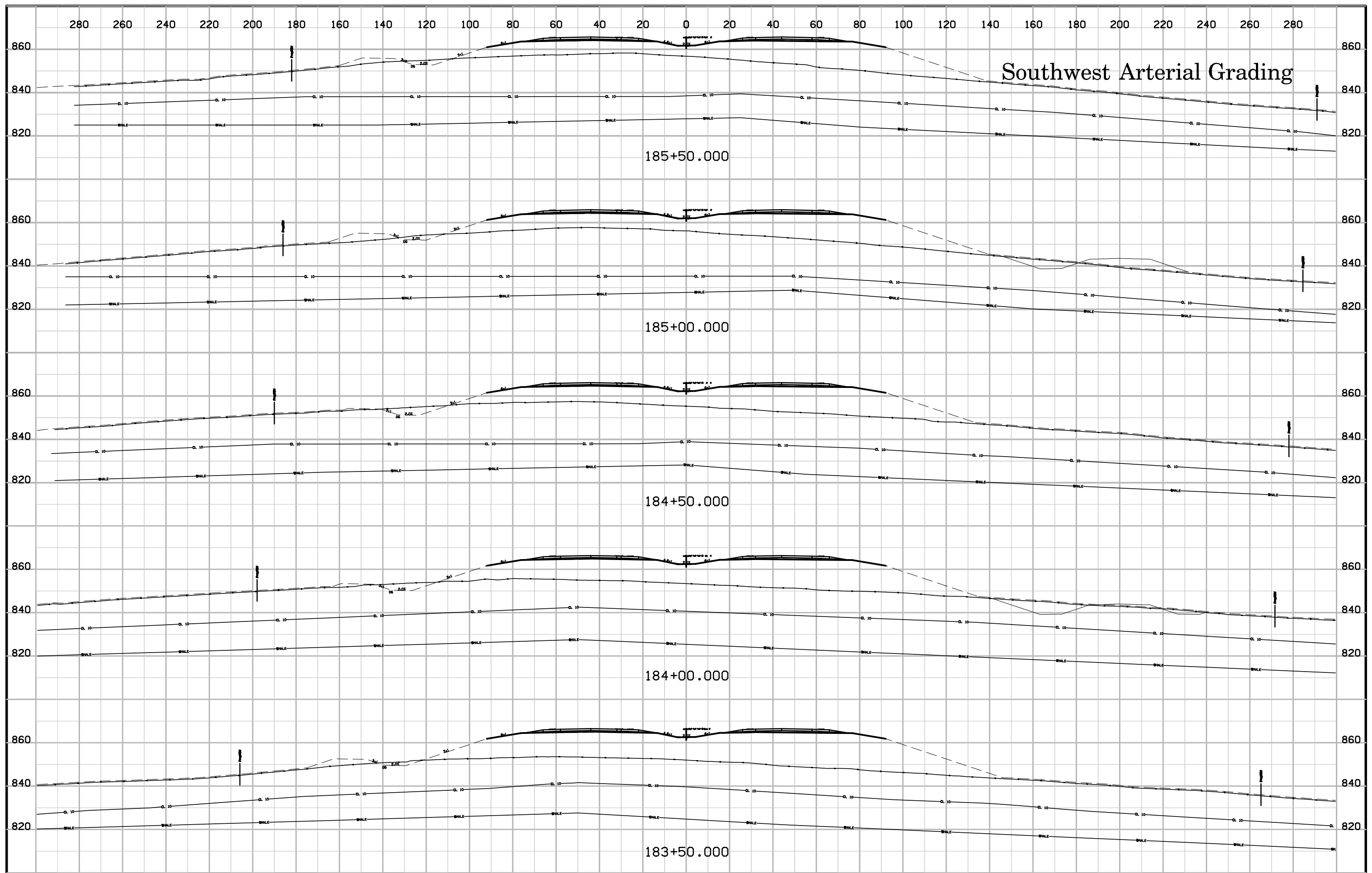


# Southwest Arterial Grading



# Southwest Arterial Grading

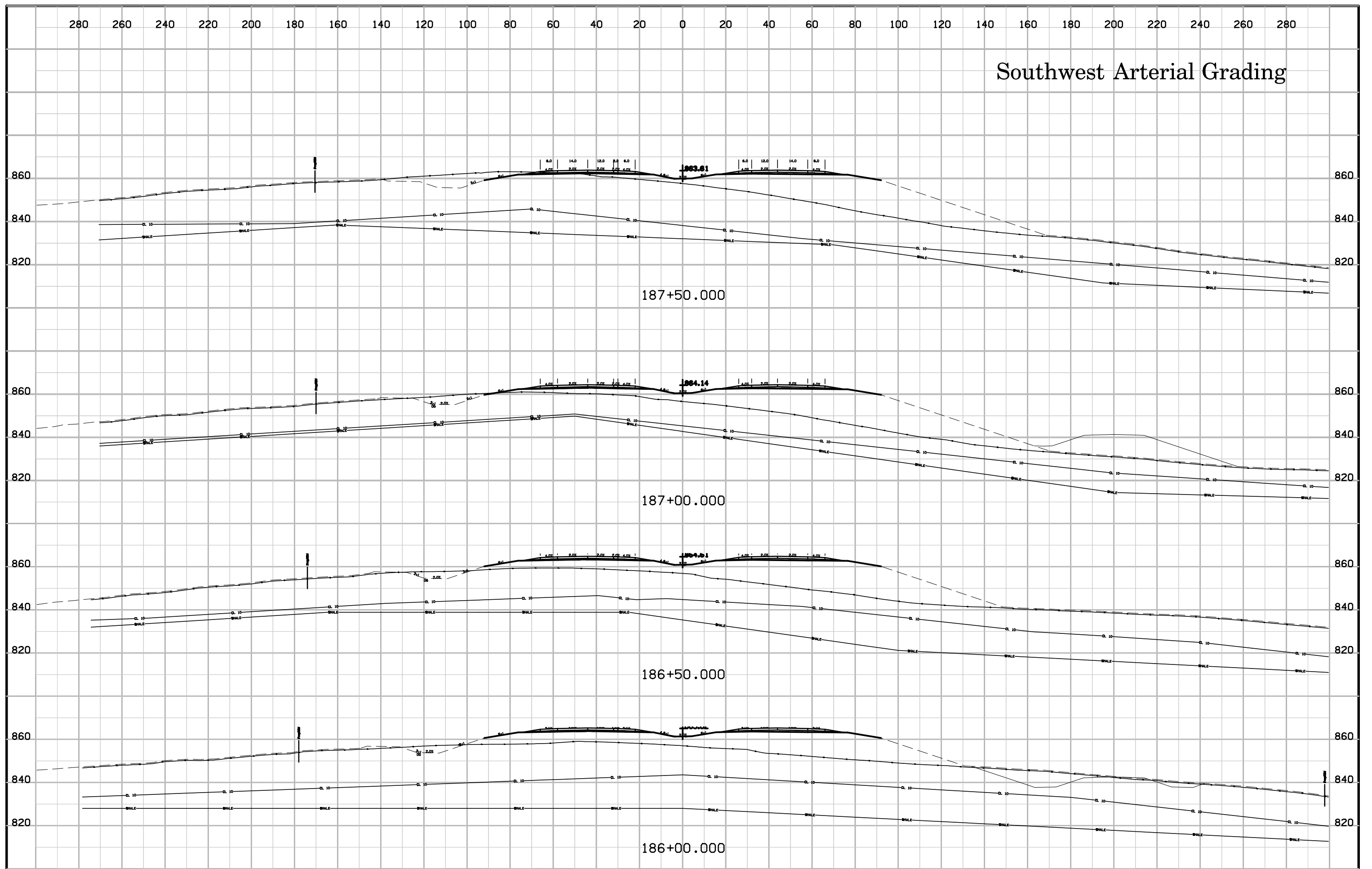




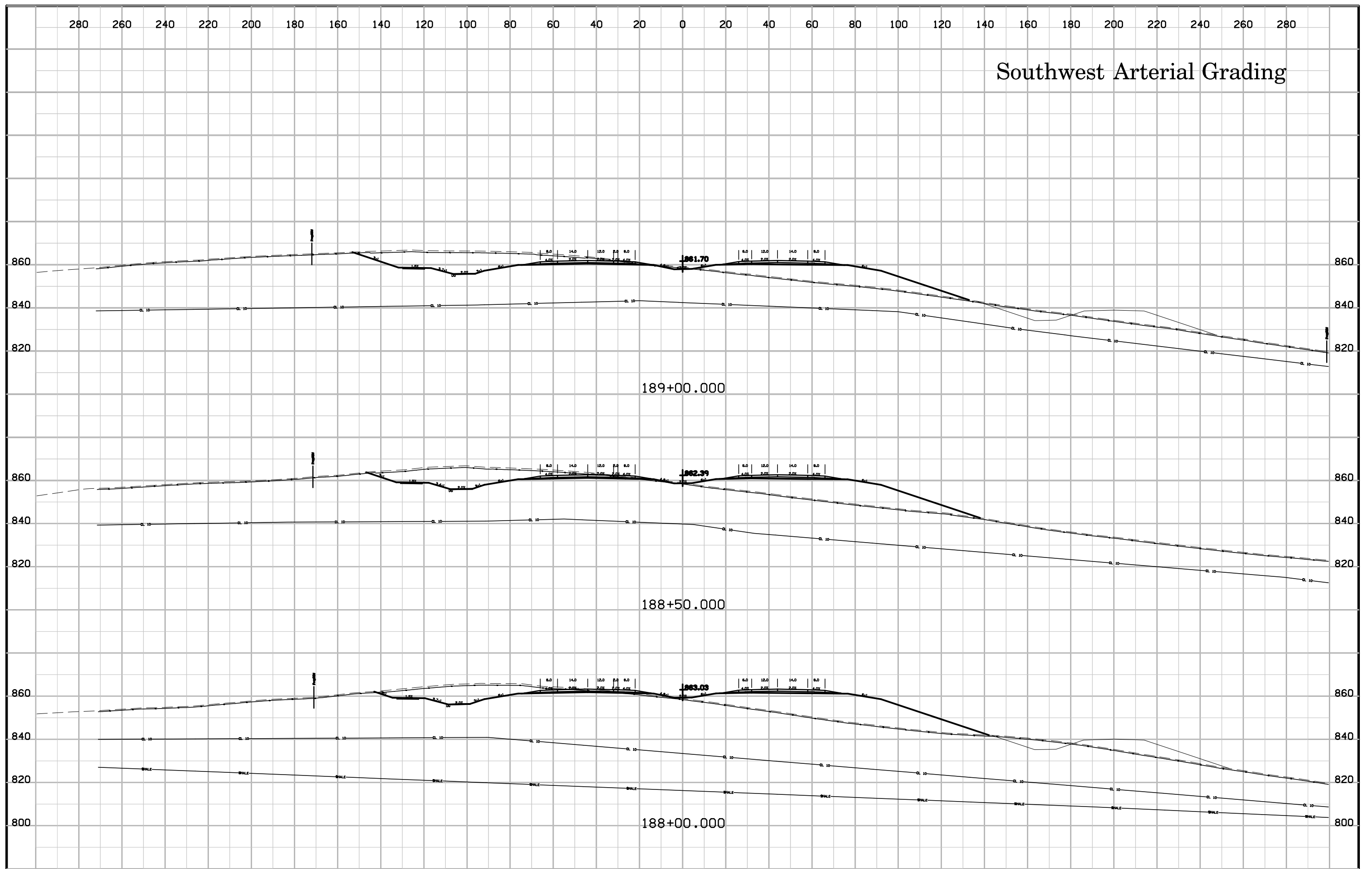
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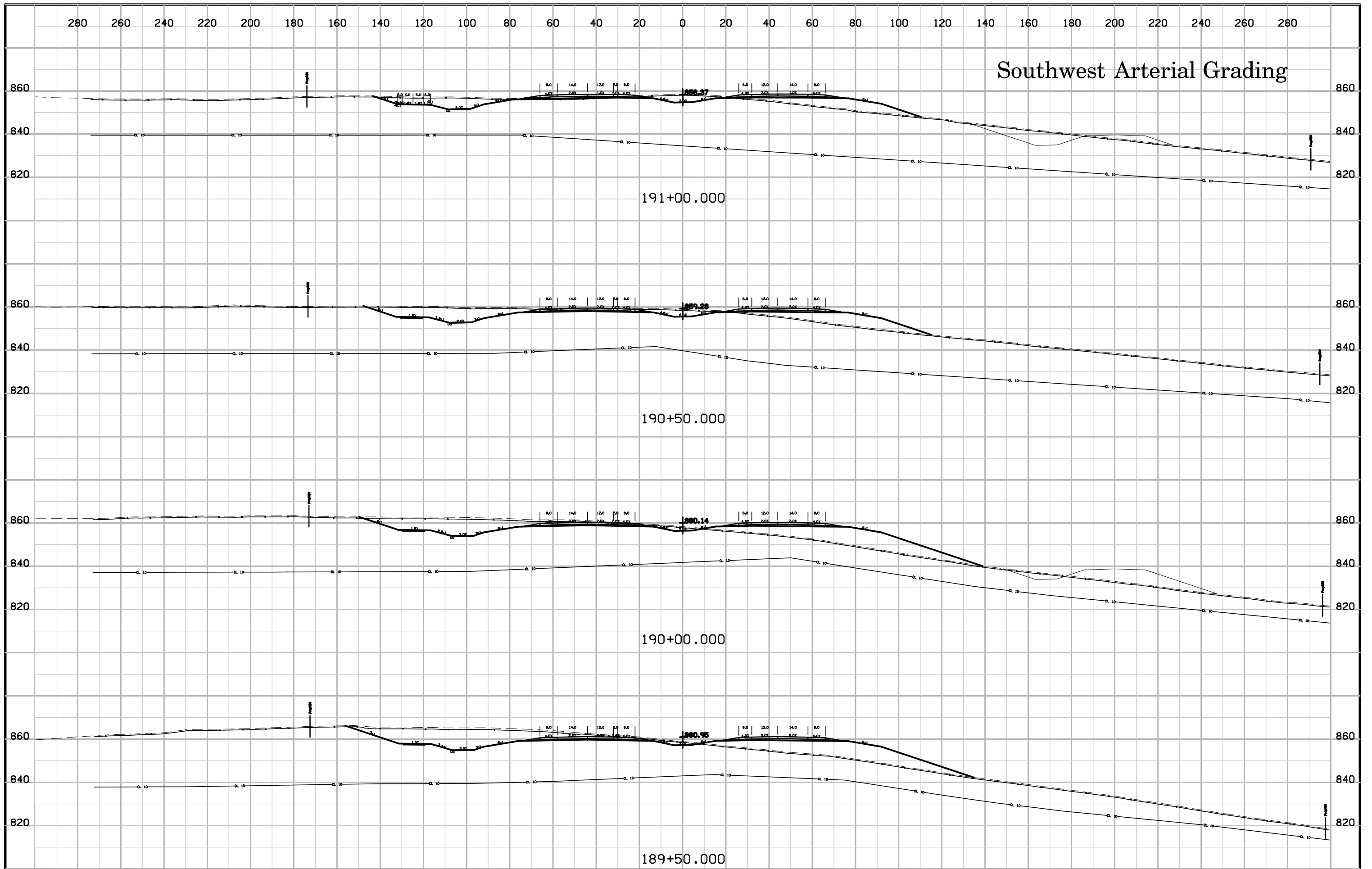
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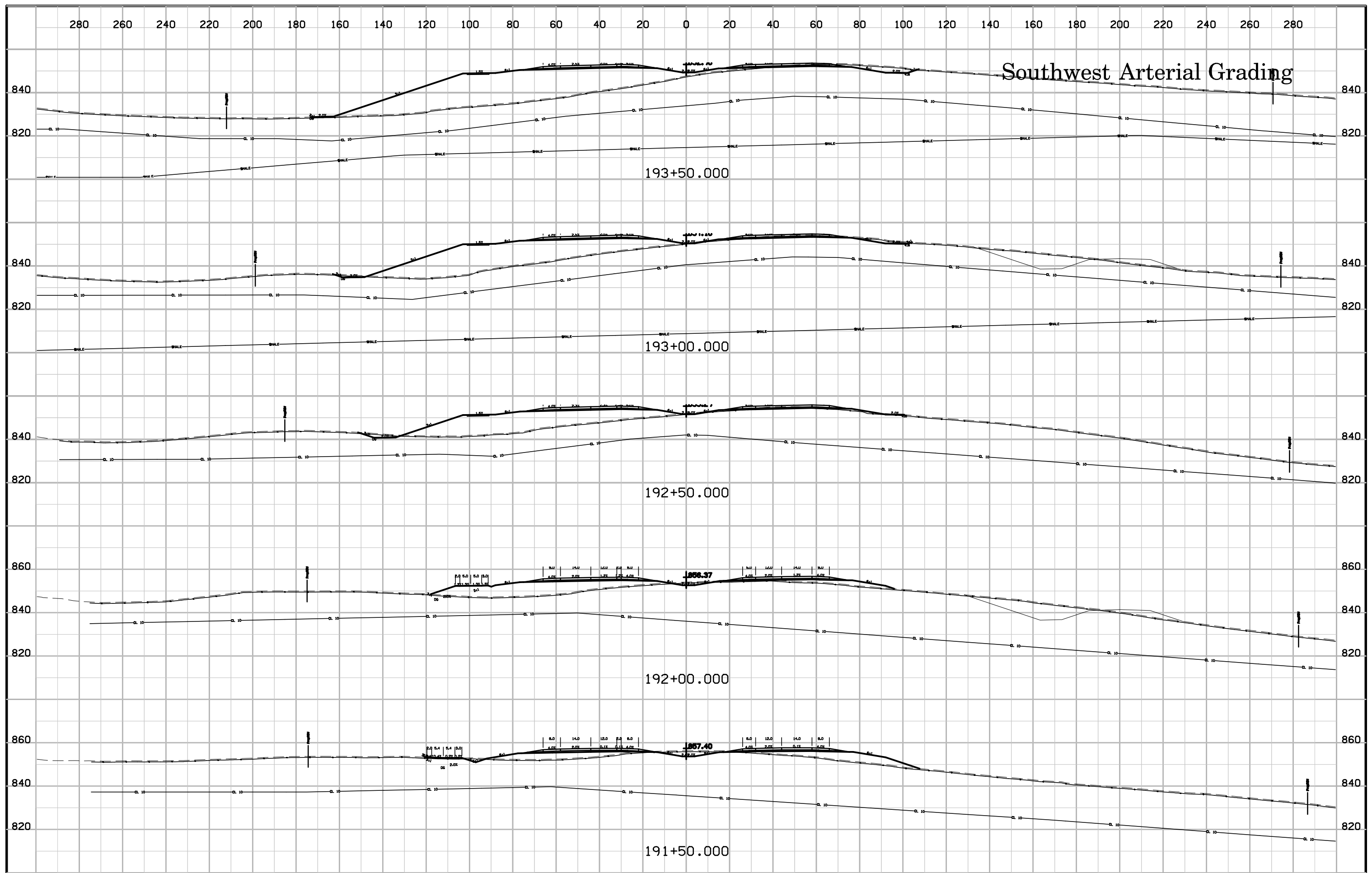


# Southwest Arterial Grading



# Southwest Arterial Grading





# Southwest Arterial Grading

193+50.000

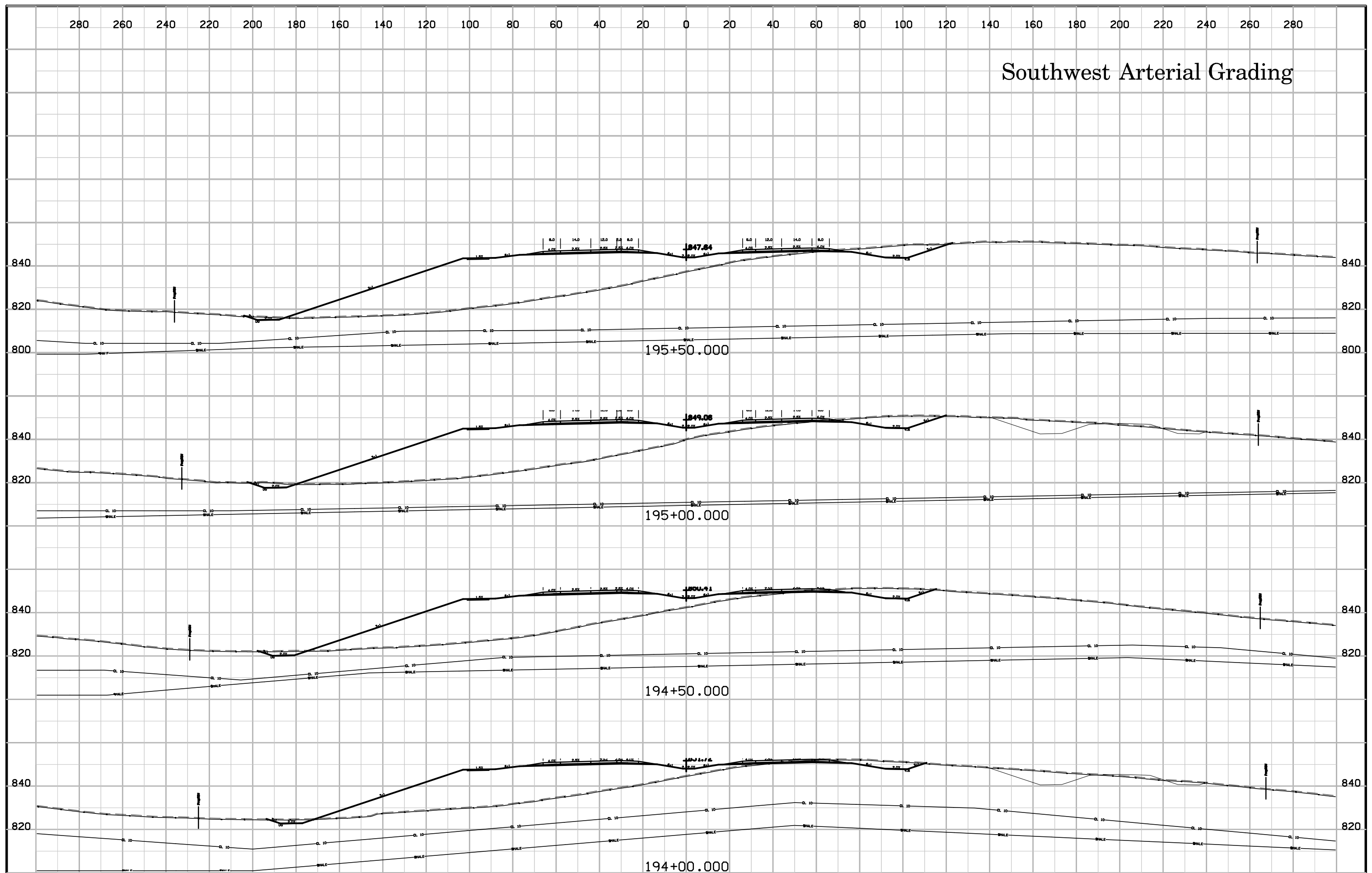
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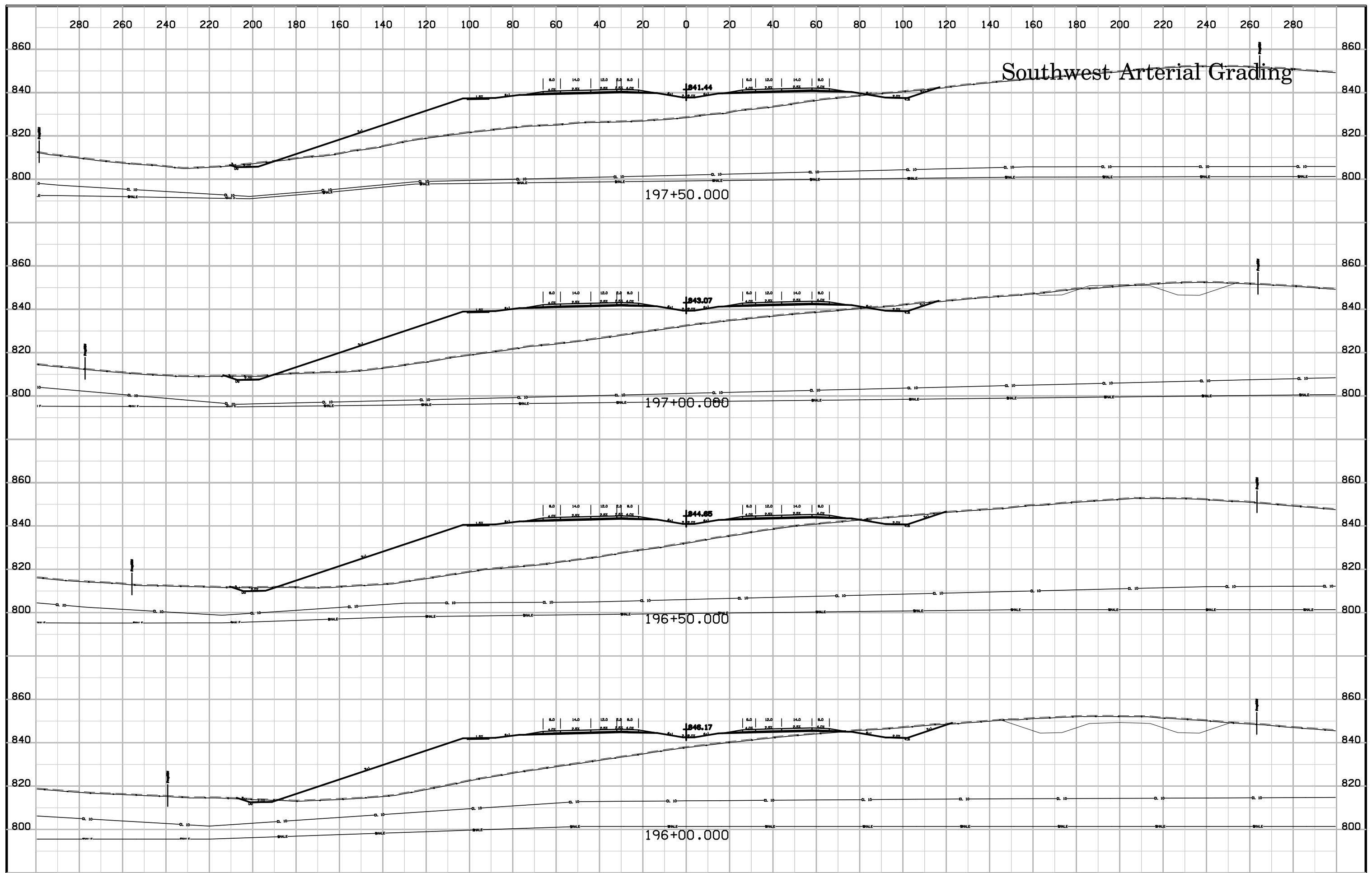
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192+00.000

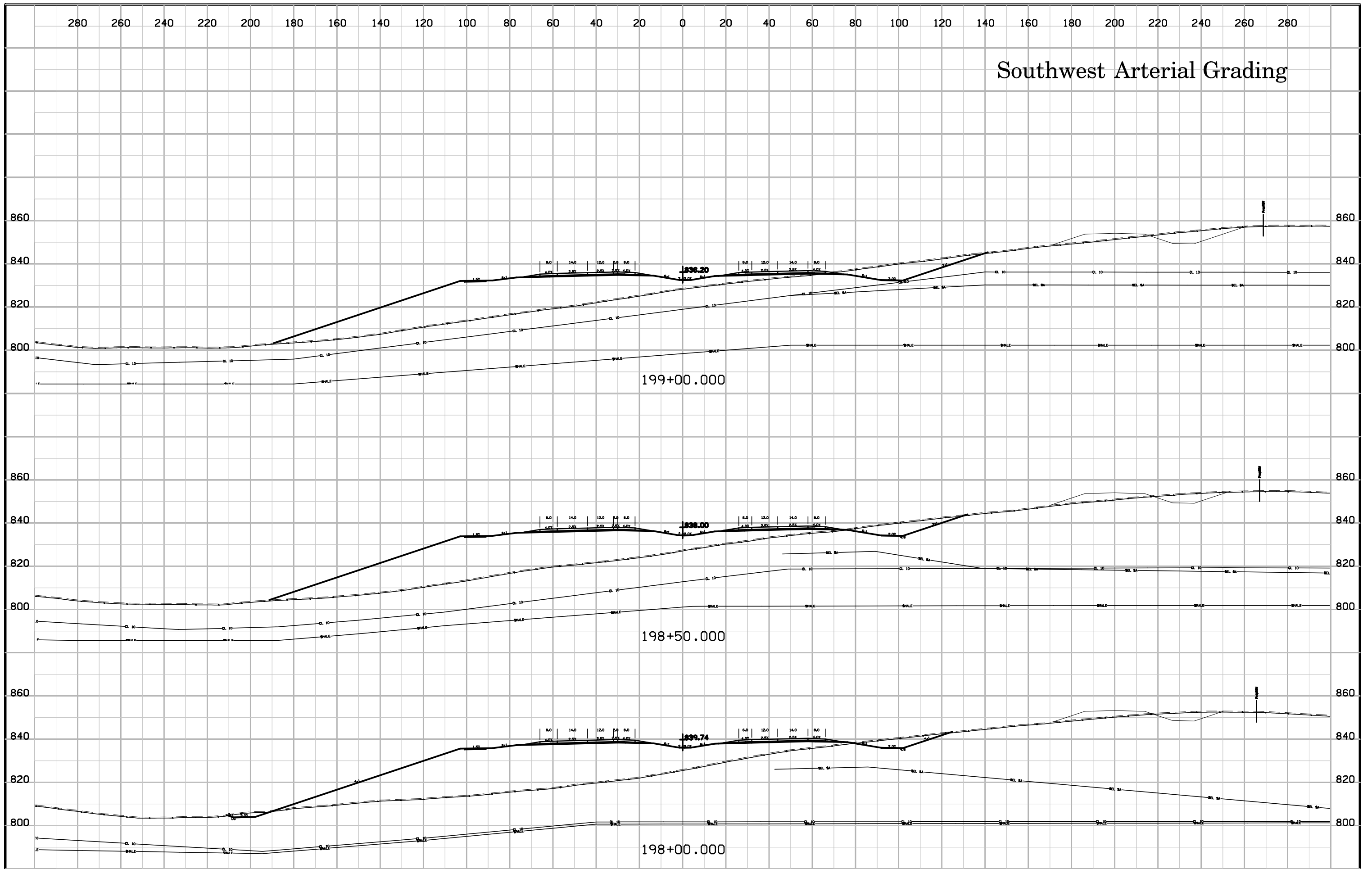
191+50.000

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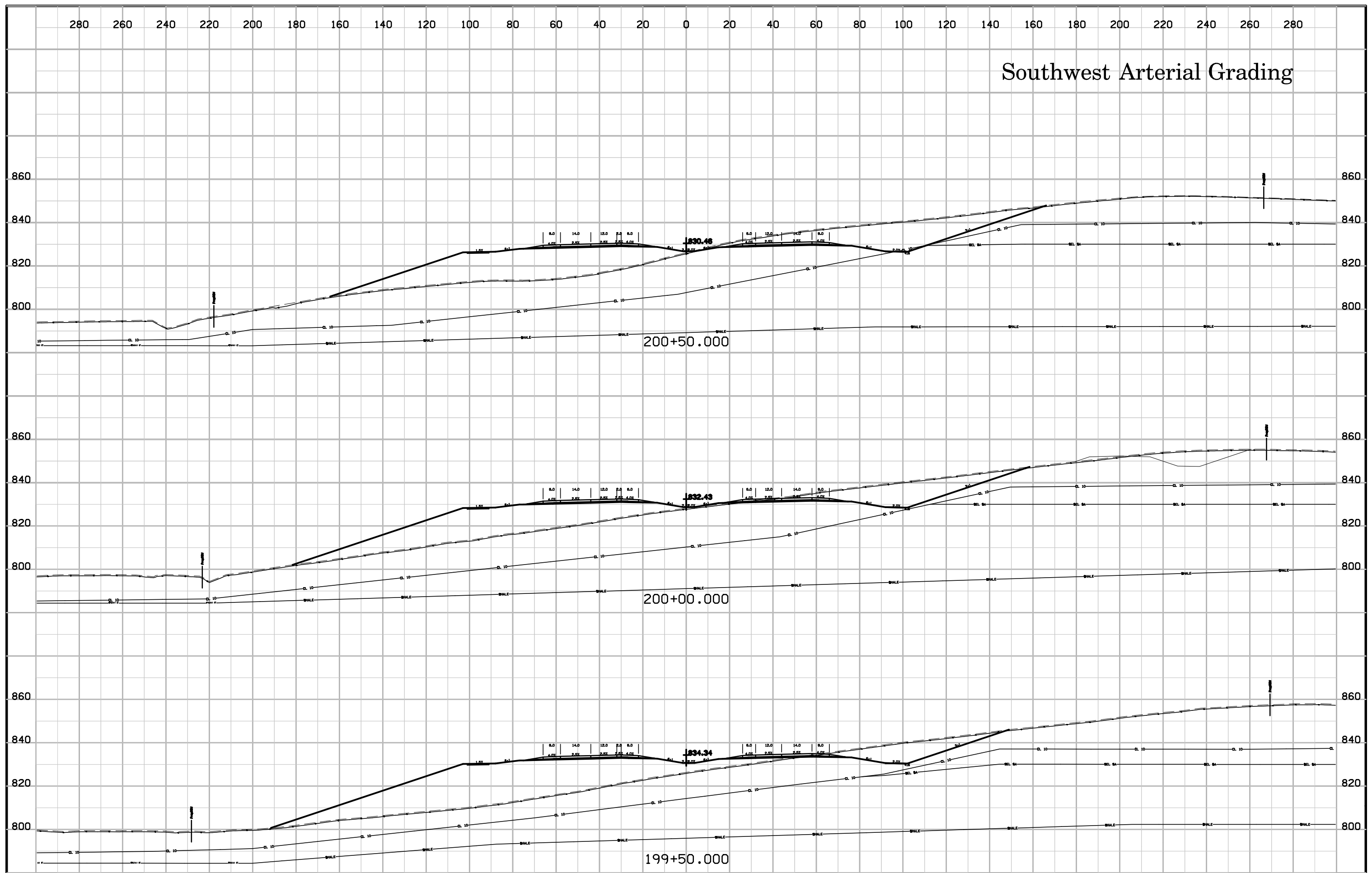


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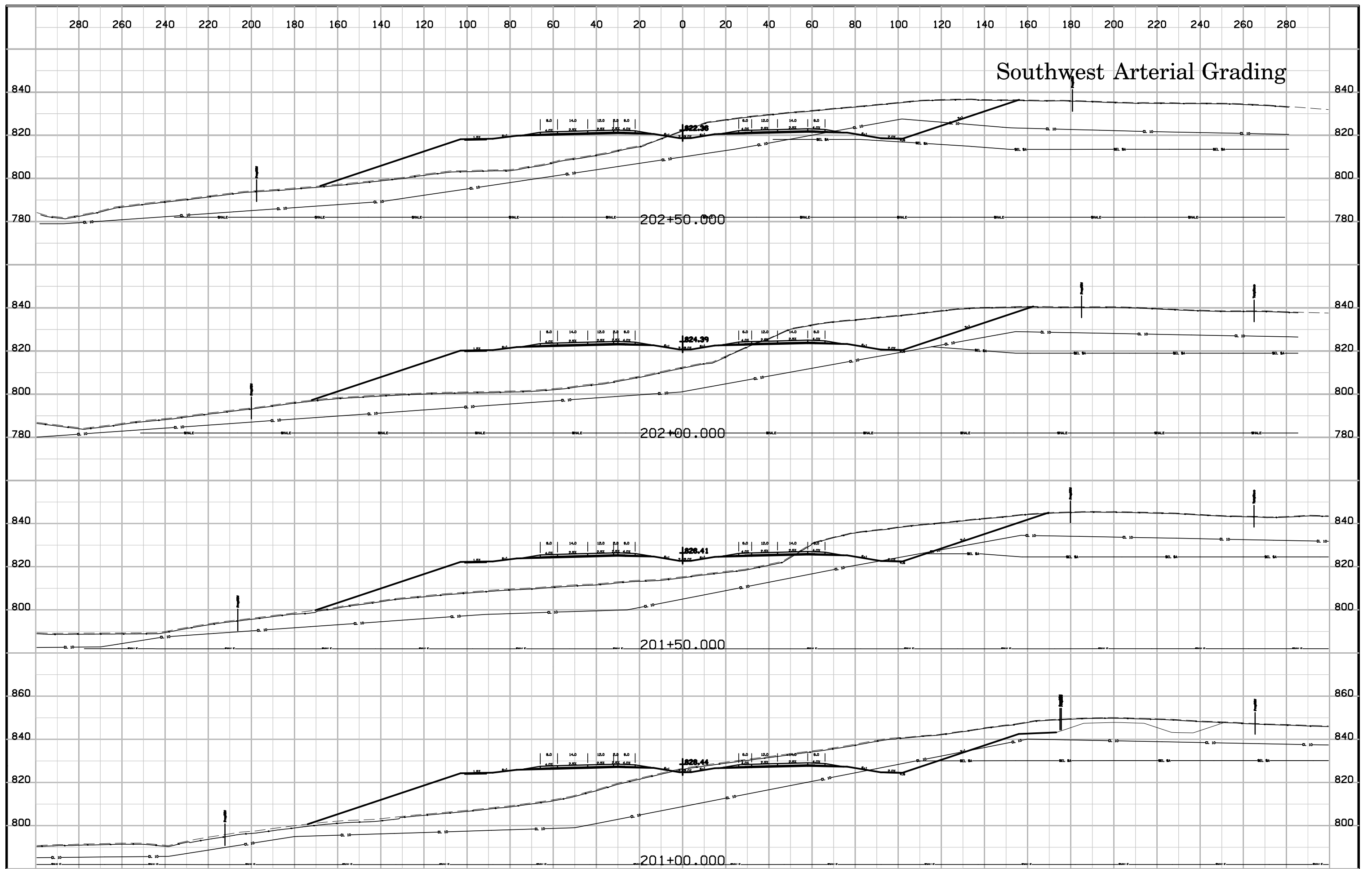


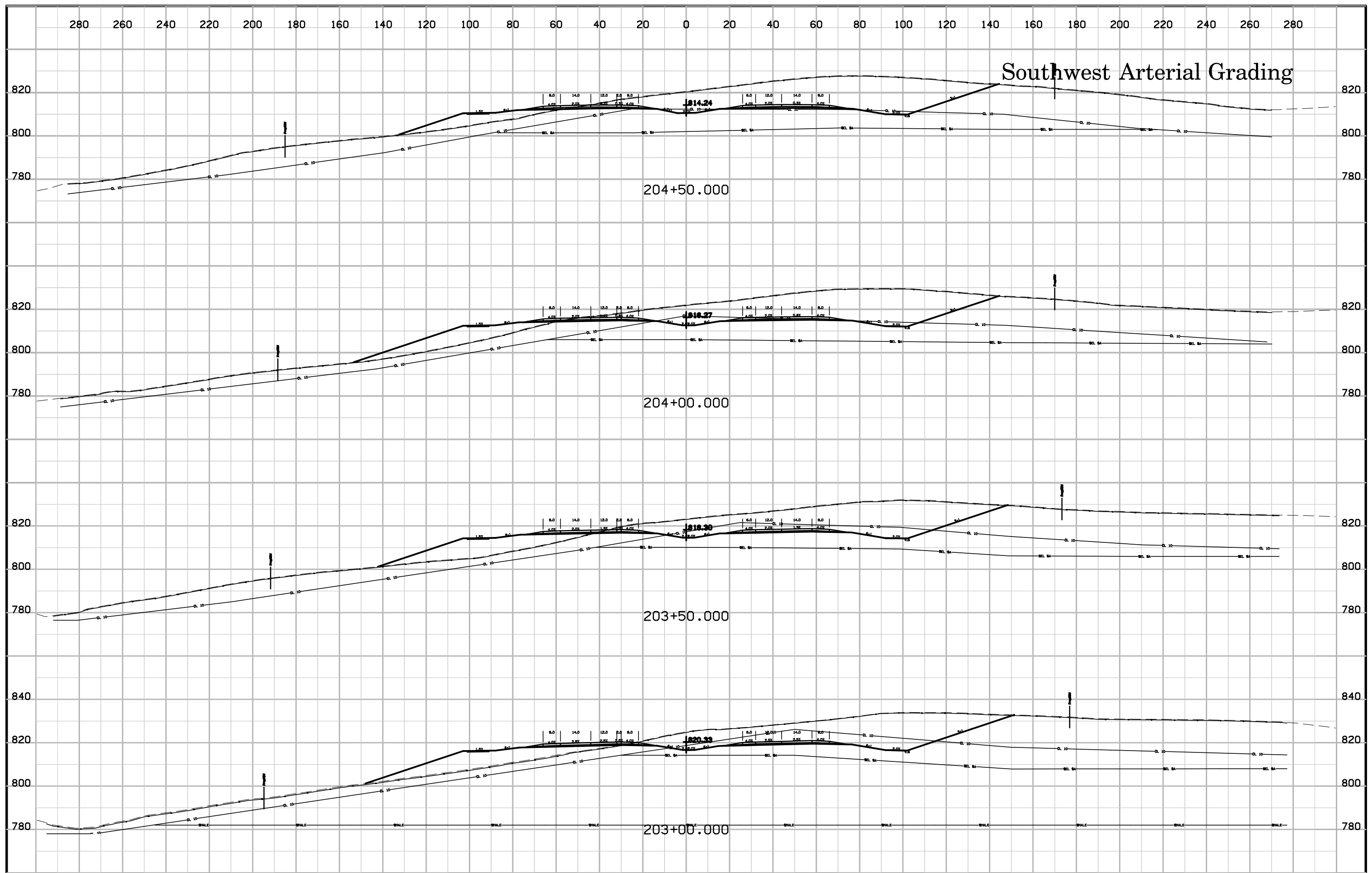


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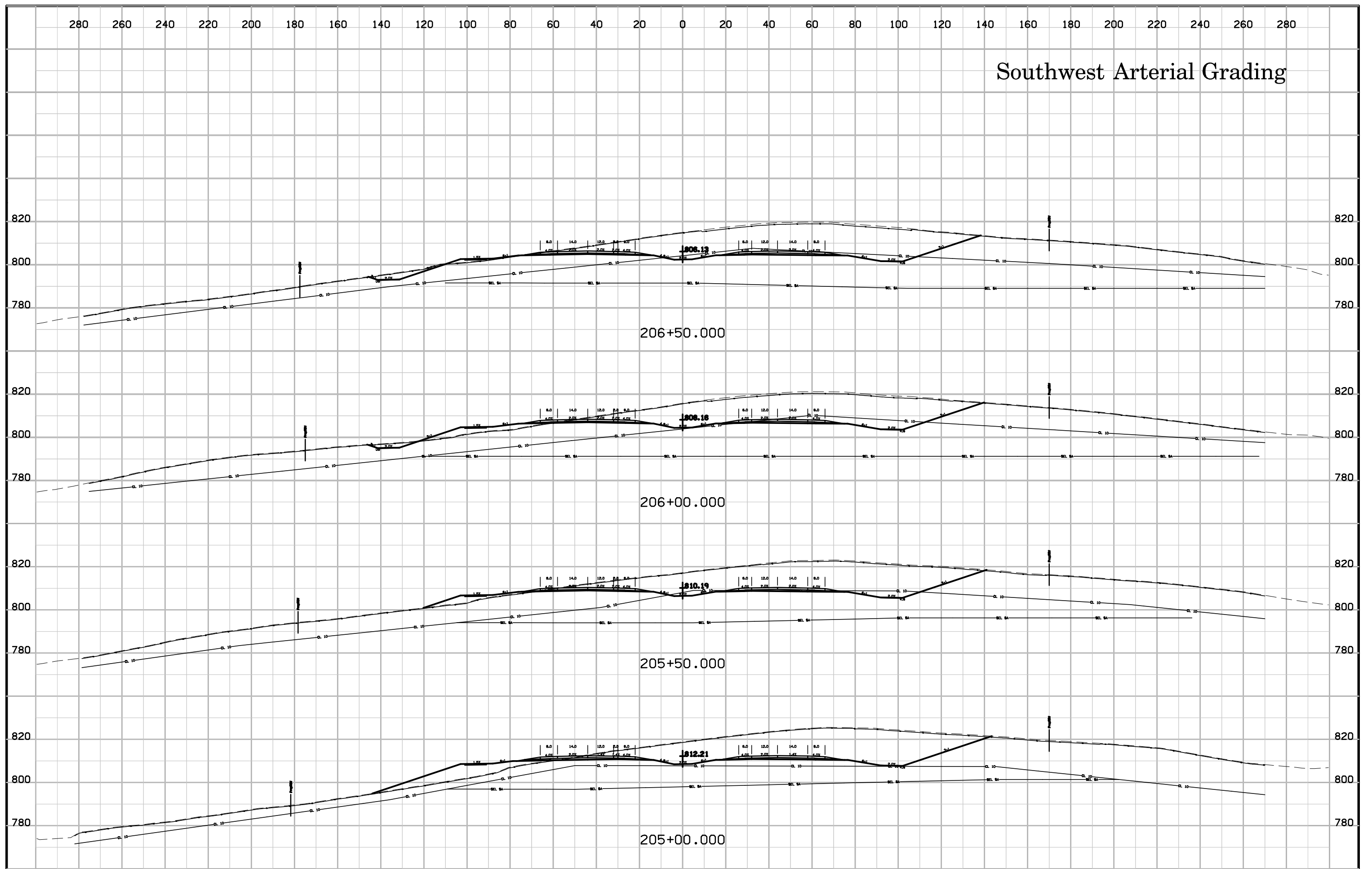


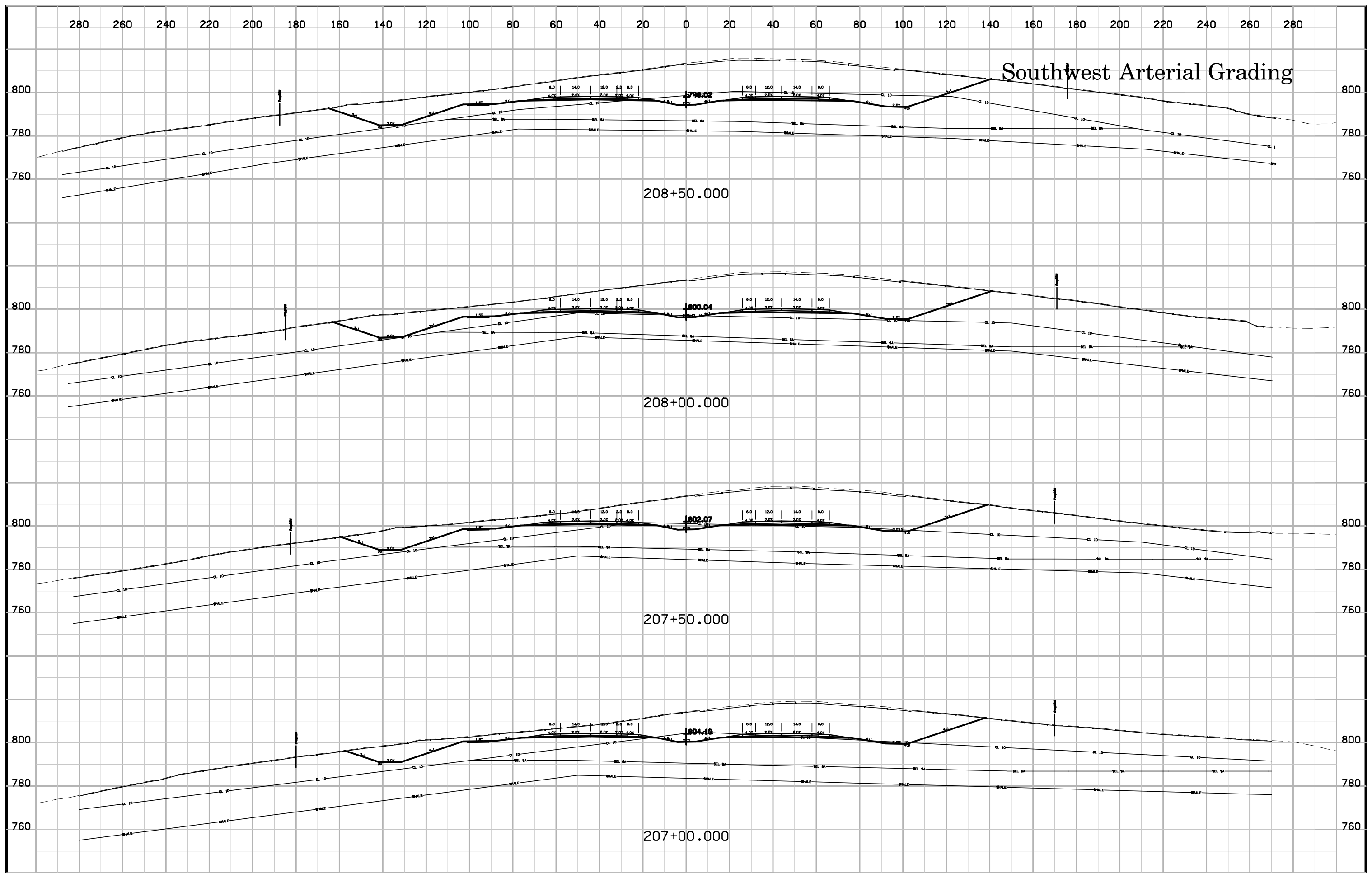
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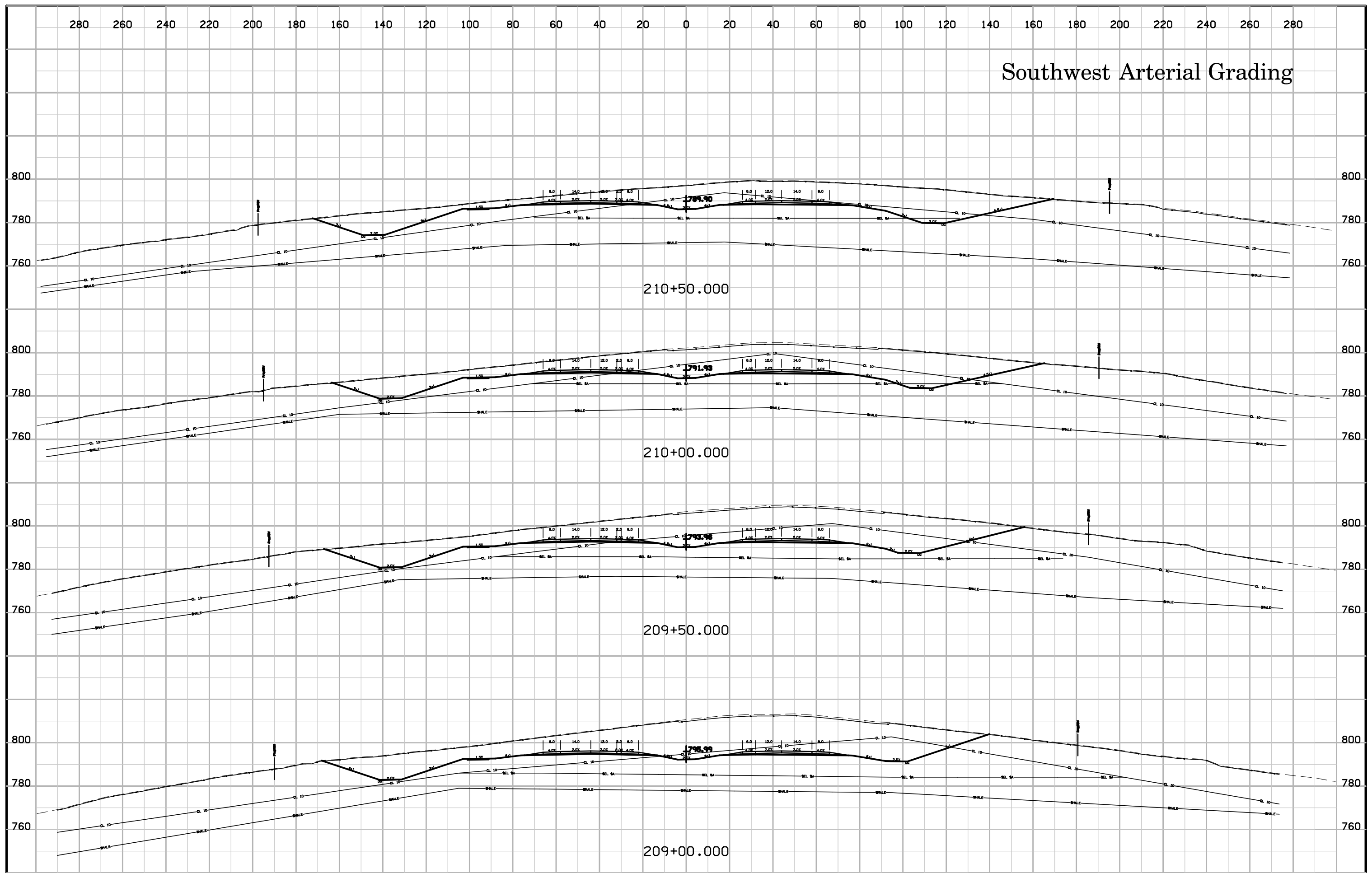


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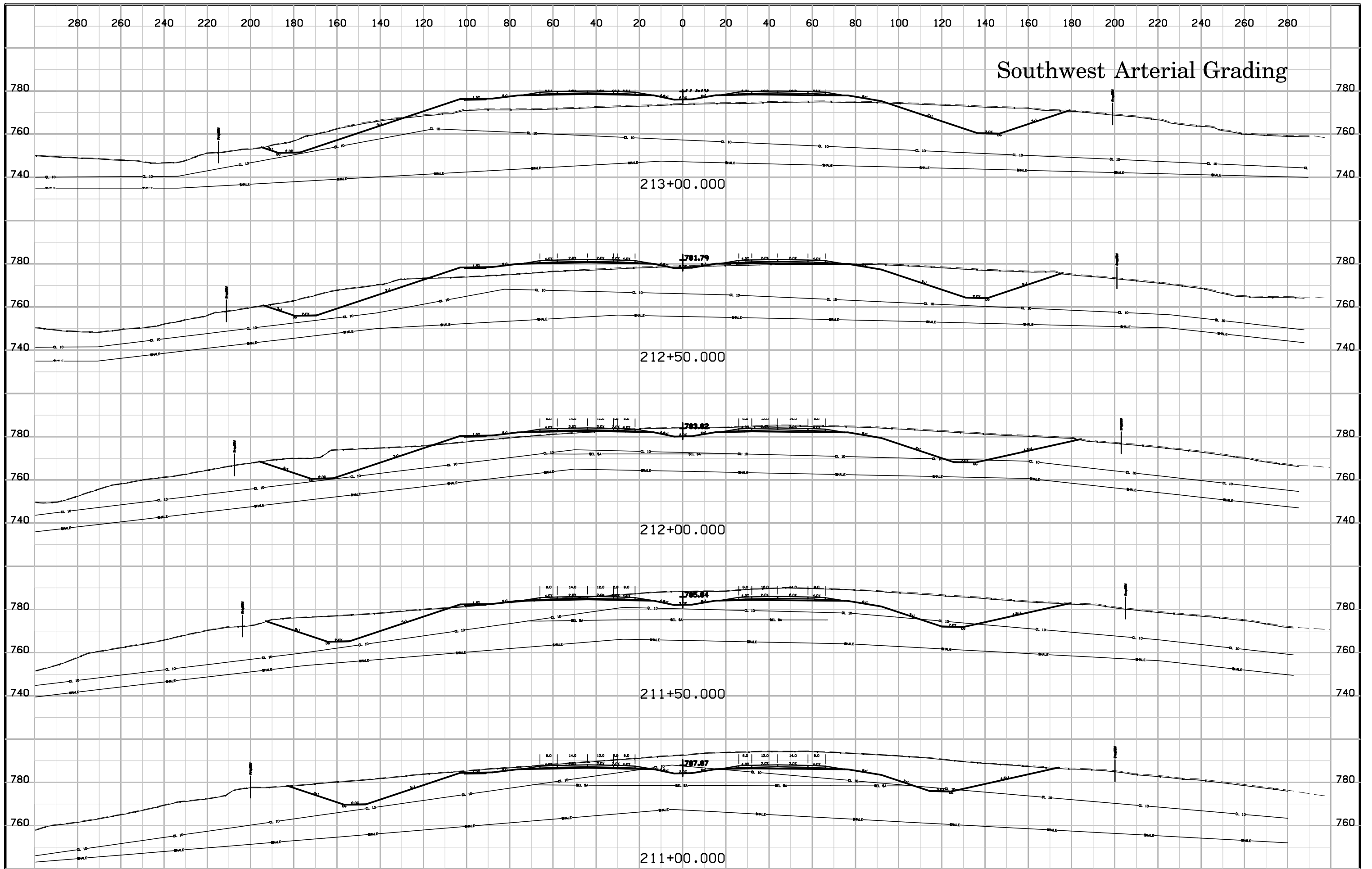




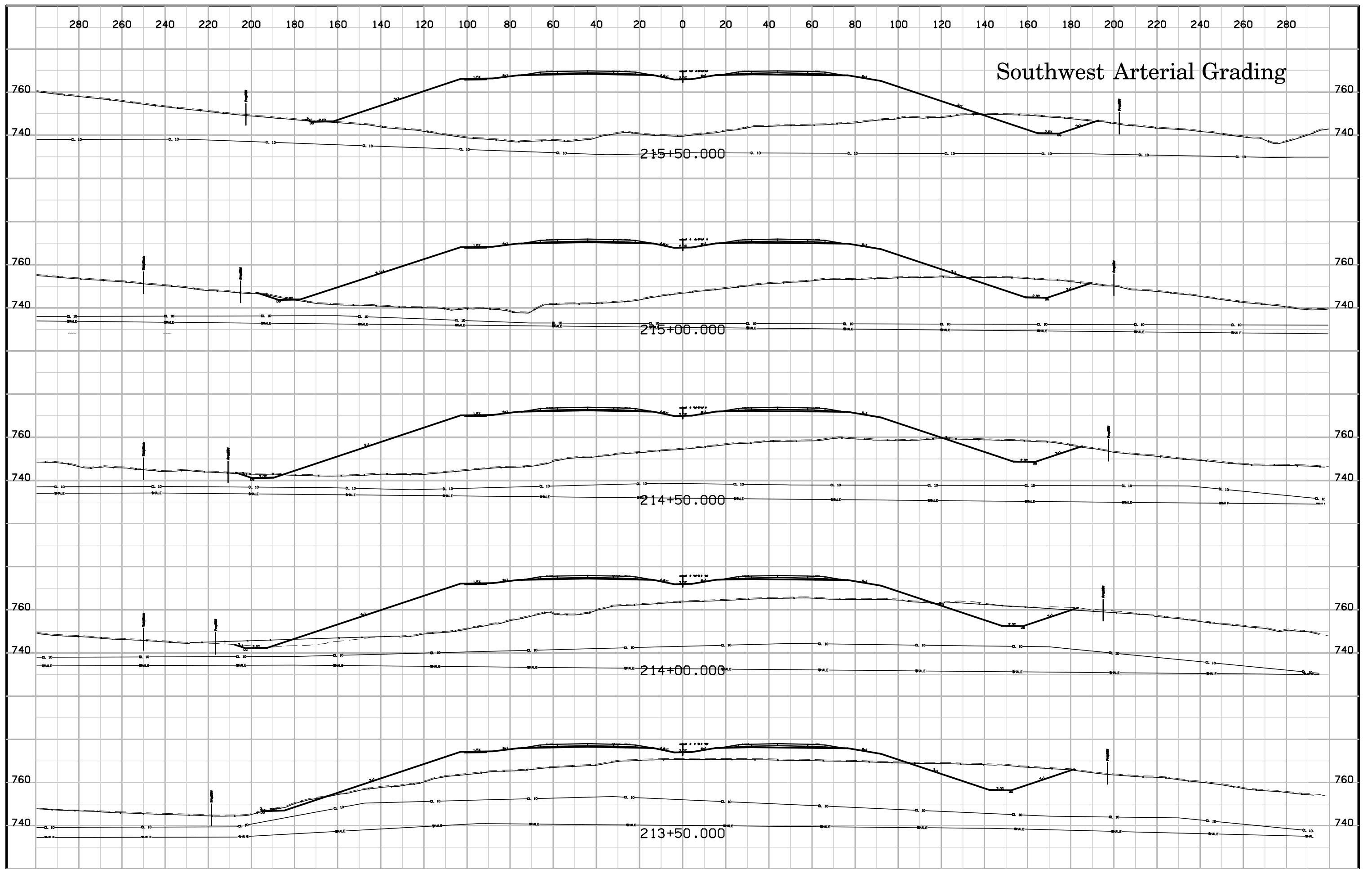
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# Southwest Arterial Grading

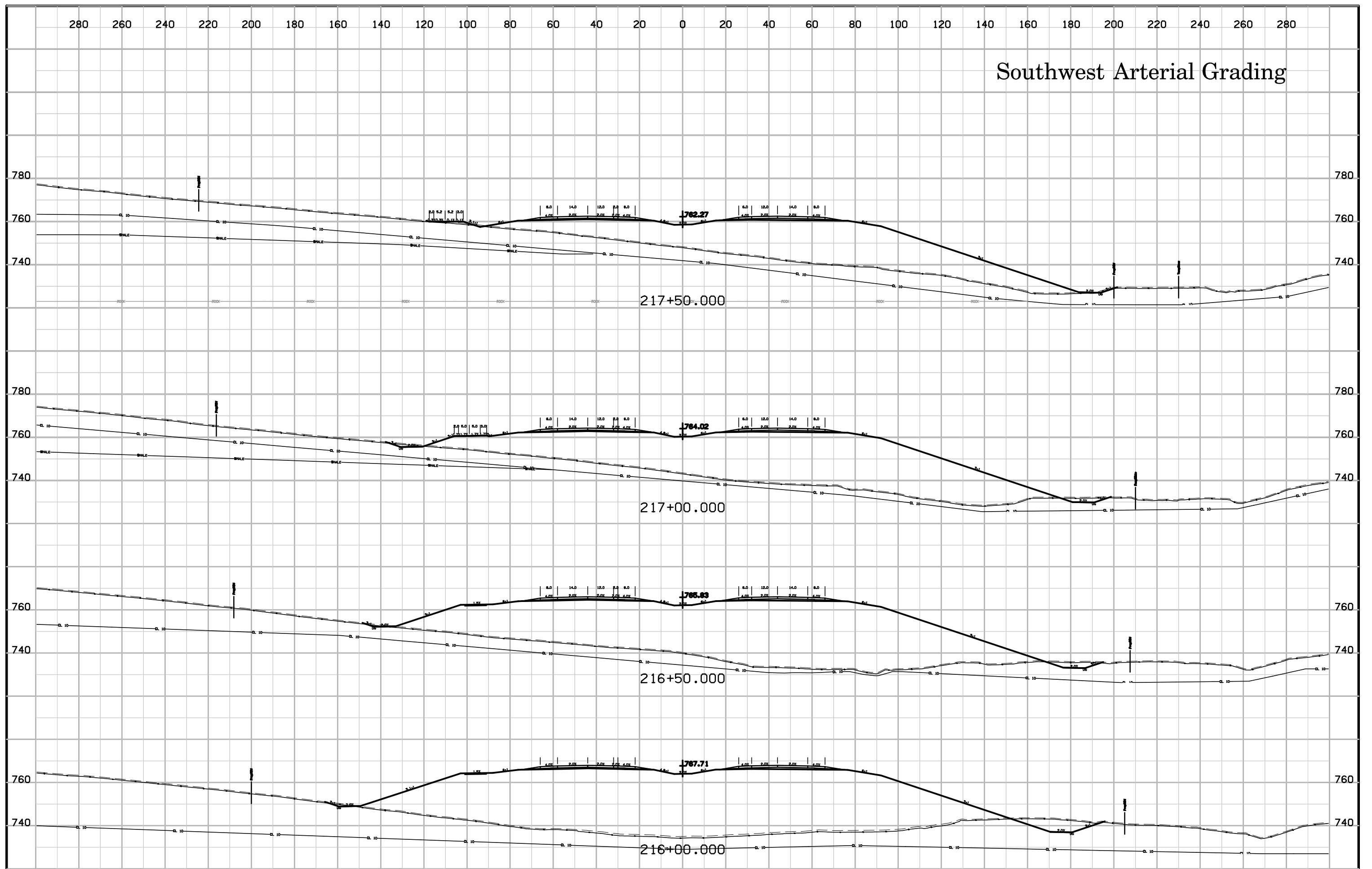


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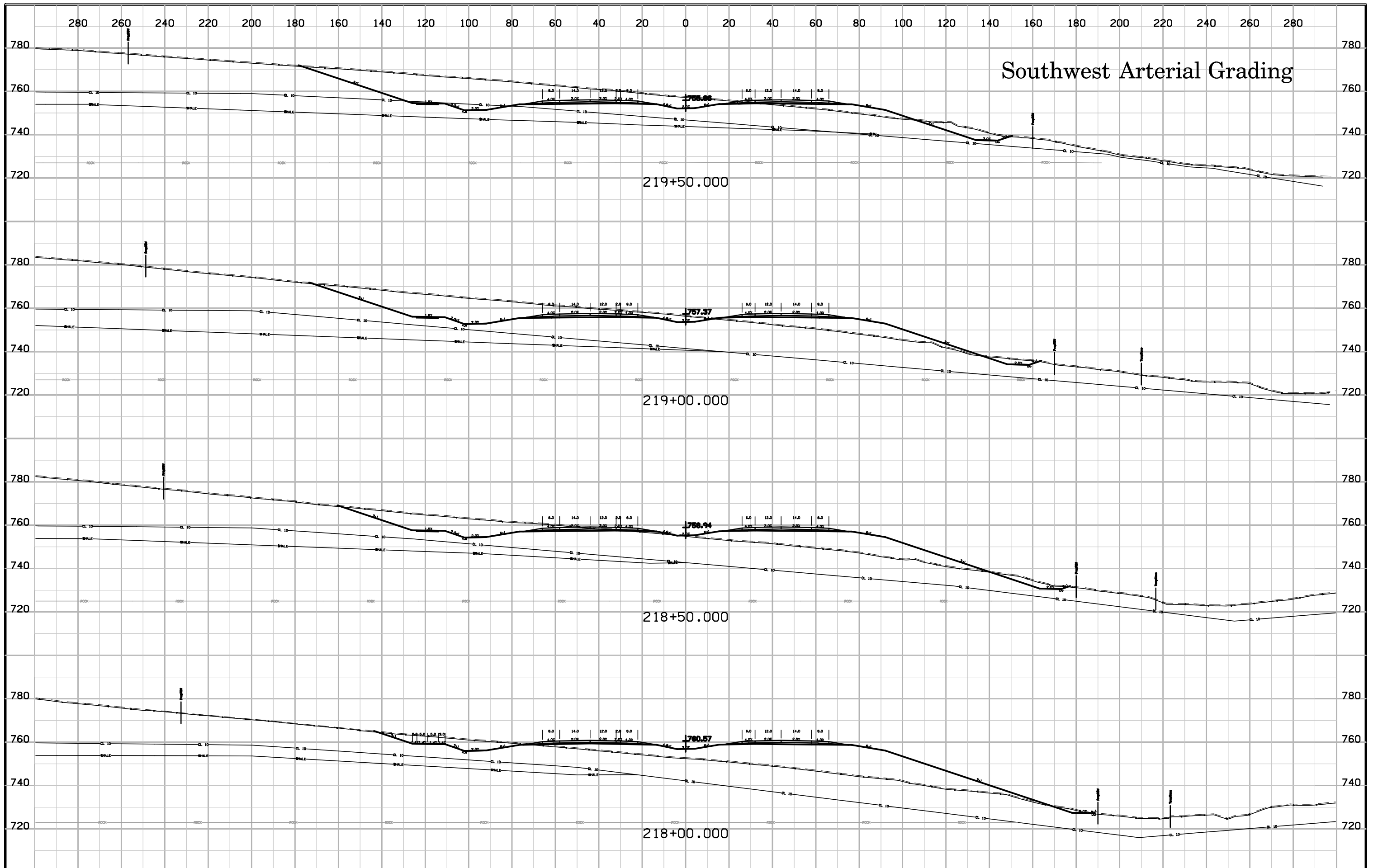




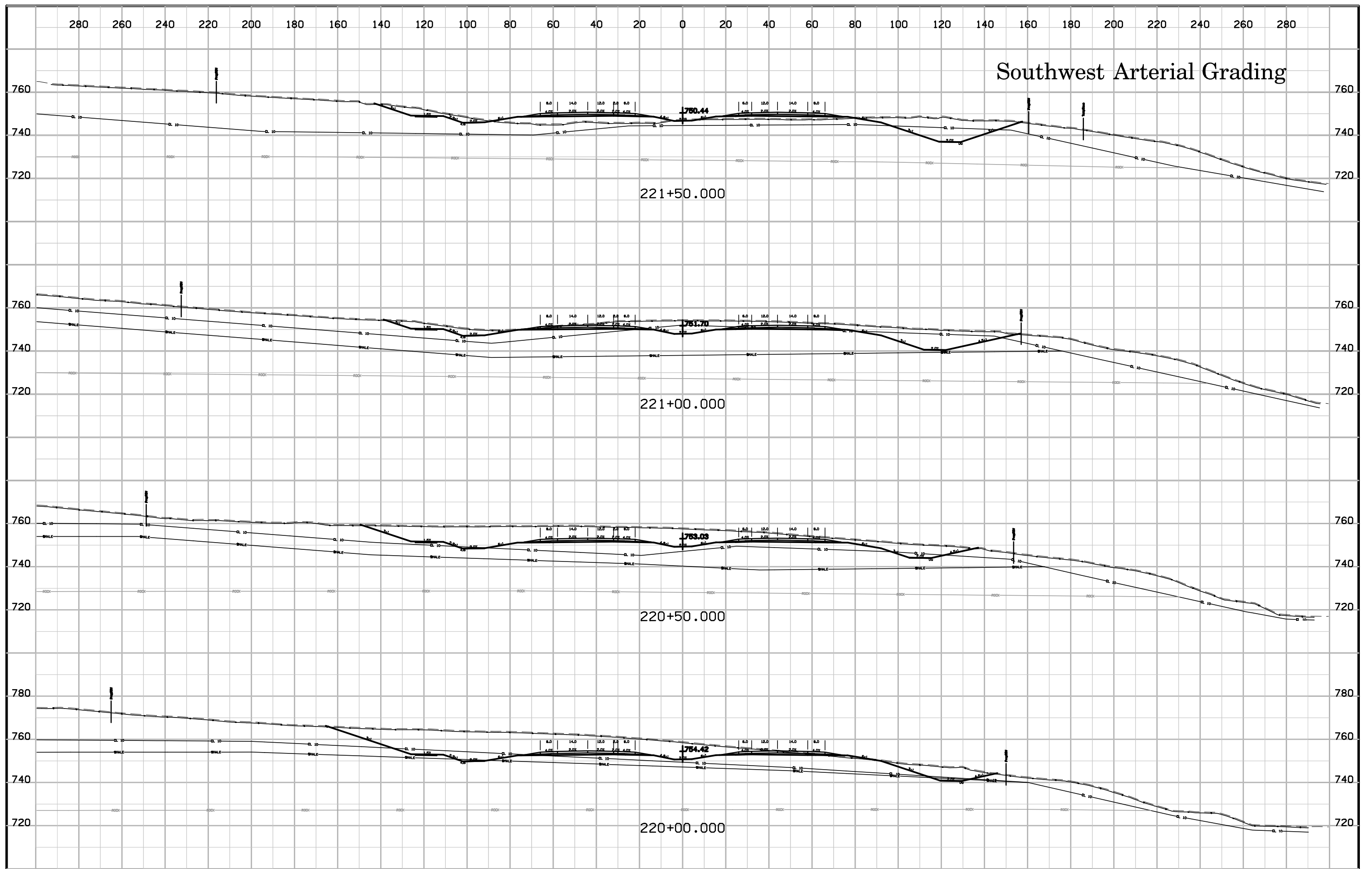
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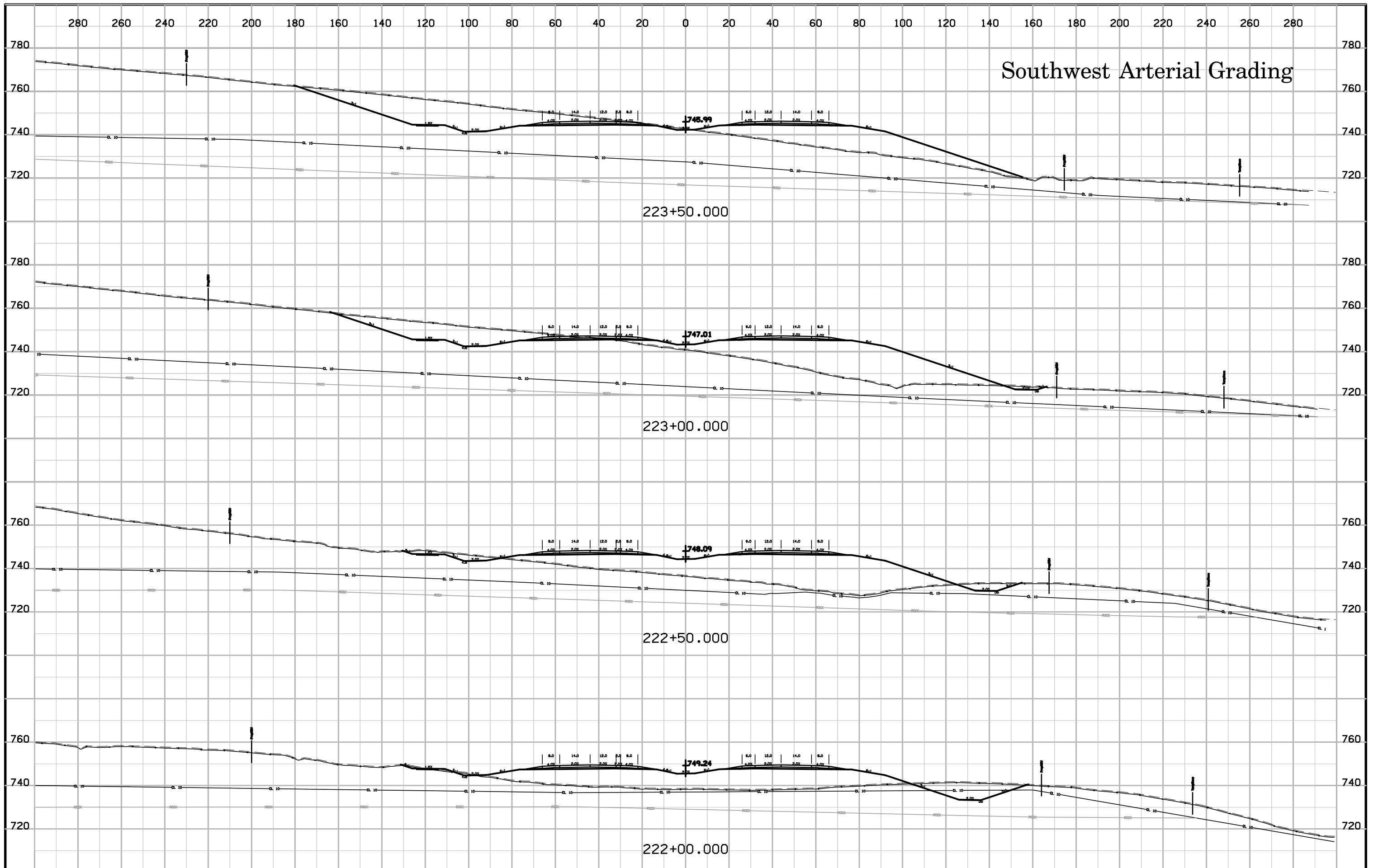
# Southwest Arterial Grading



# Southwest Arterial Grading



# Southwest Arterial Grading



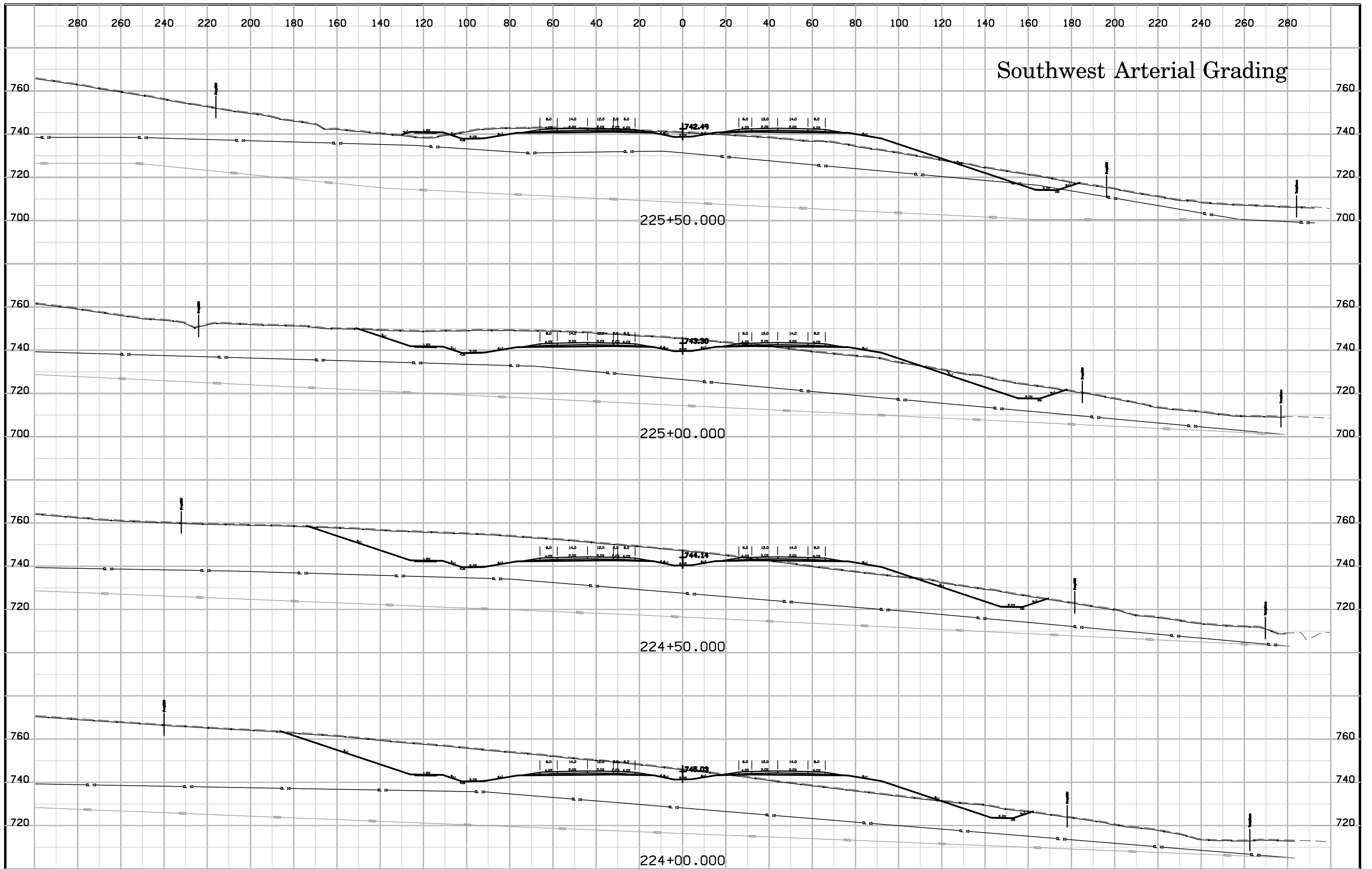
223+50.000

223+00.000

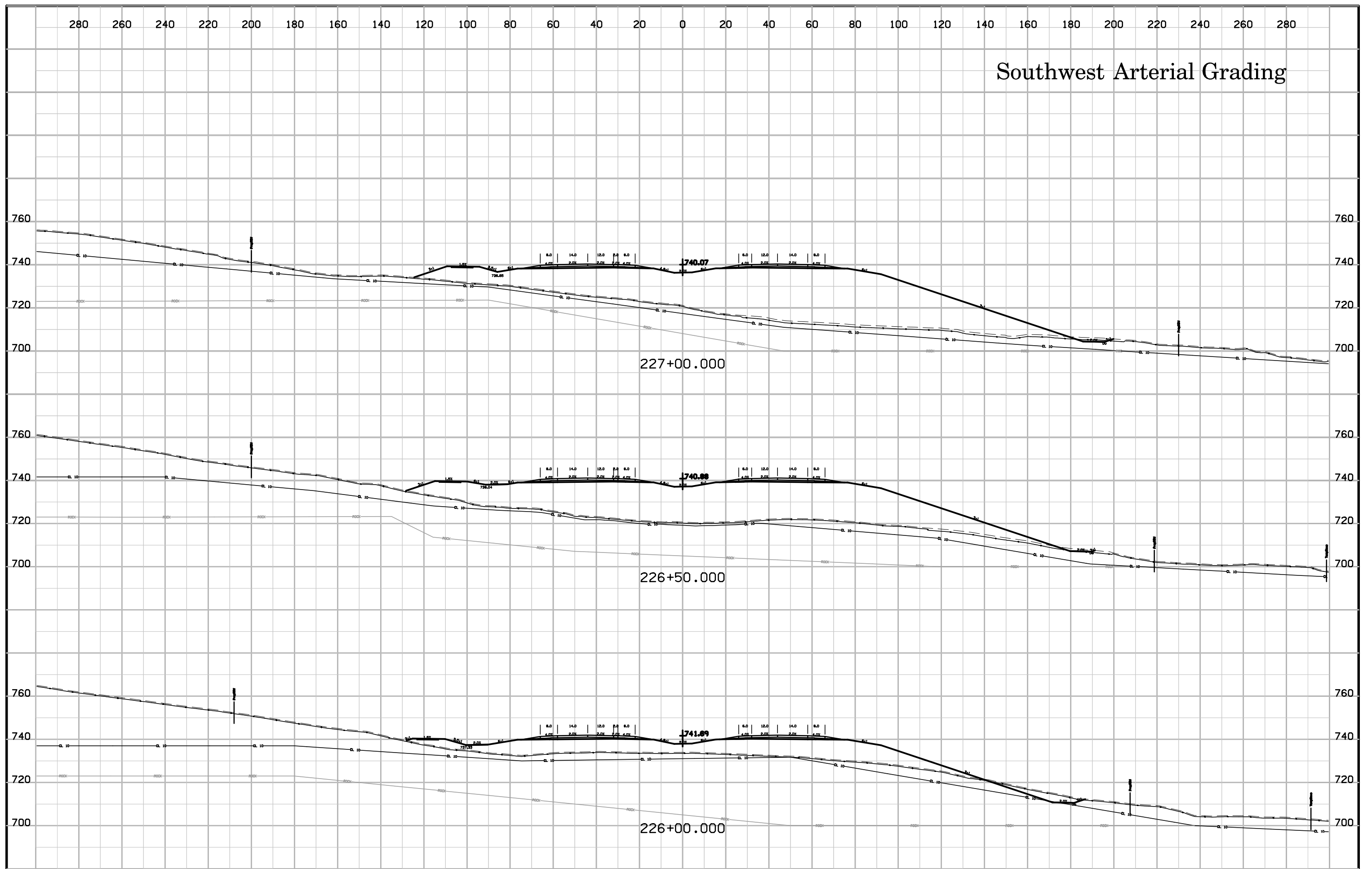
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222+00.000

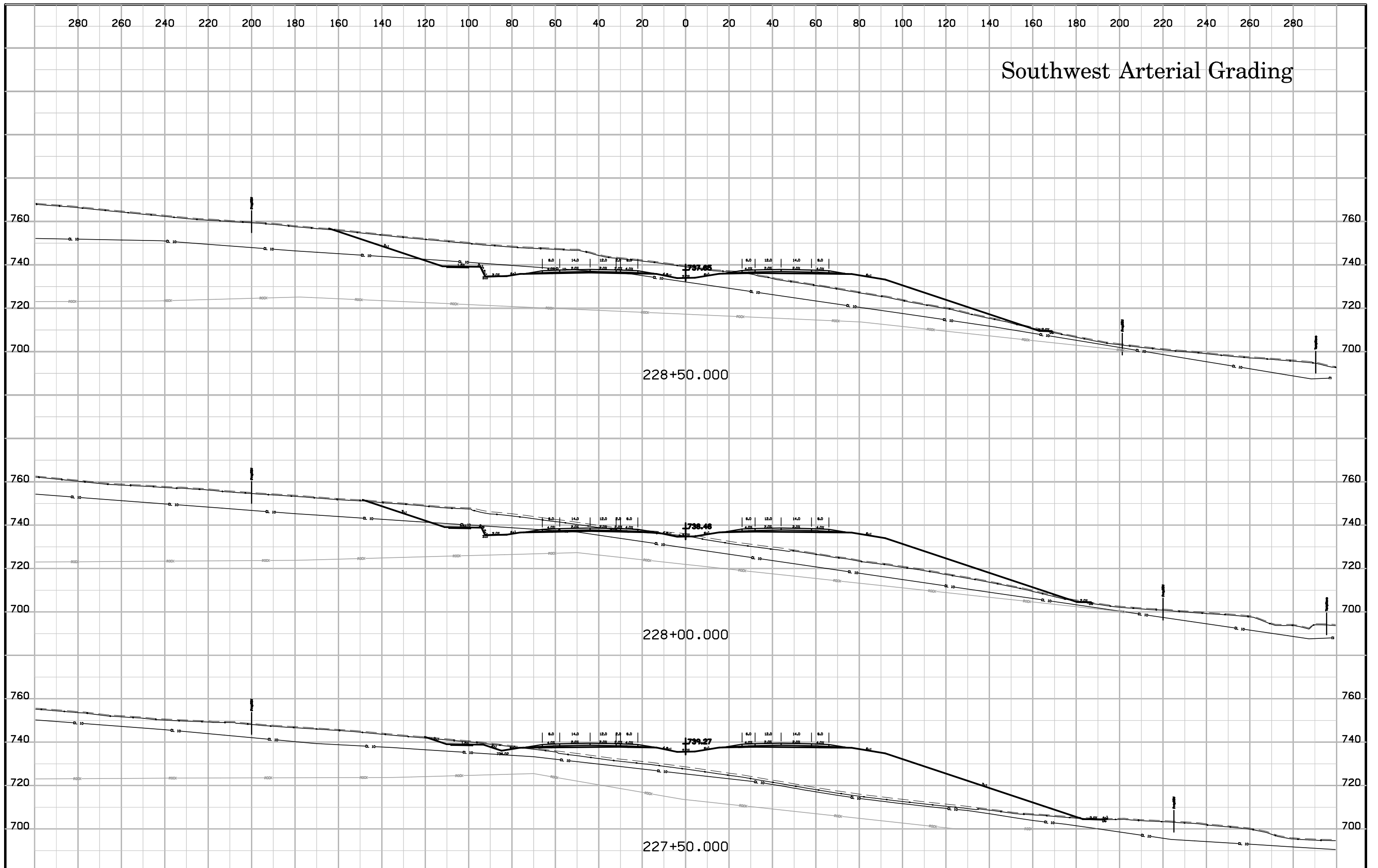
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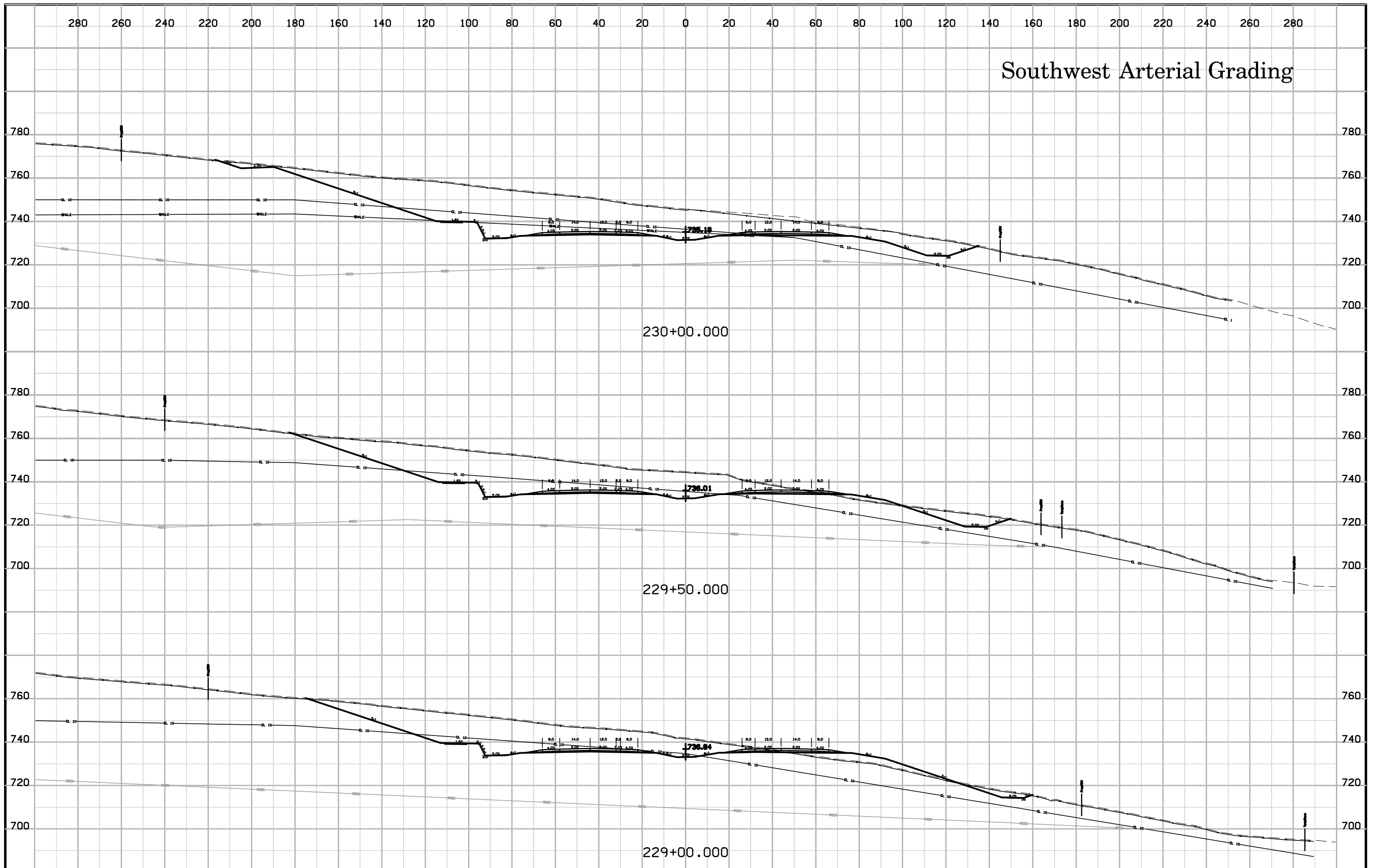
# Southwest Arterial Grading



# Southwest Arterial Grading

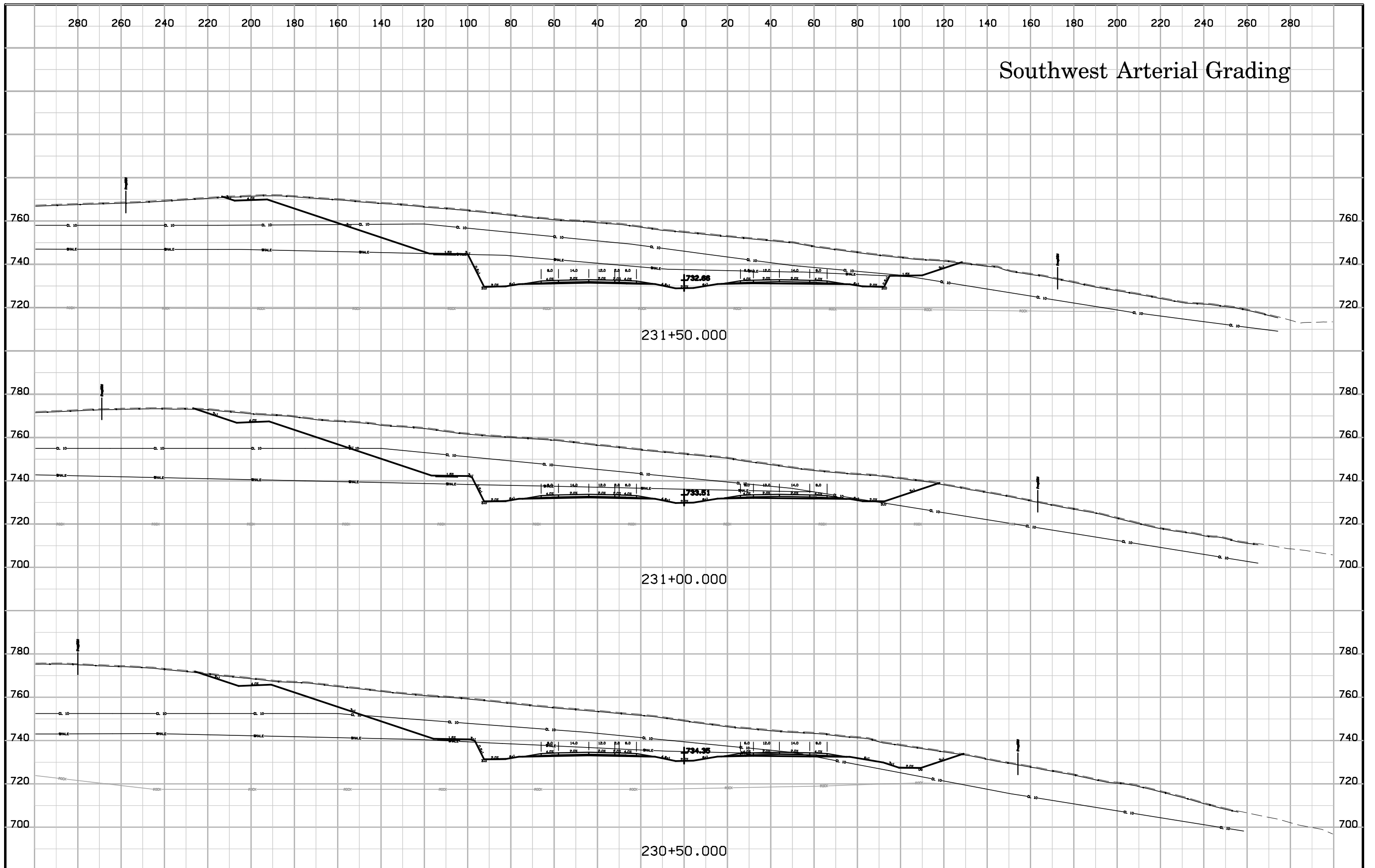


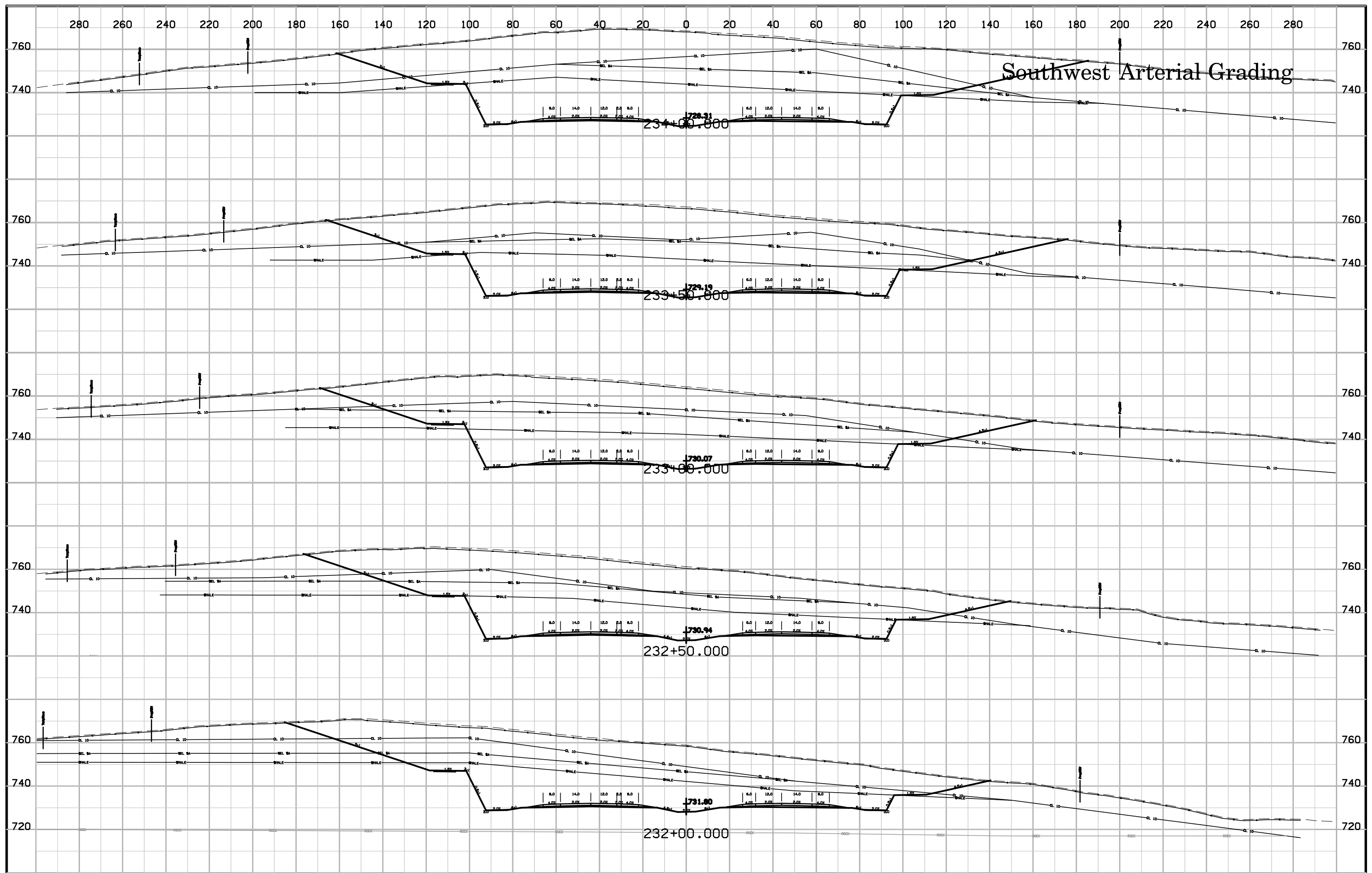
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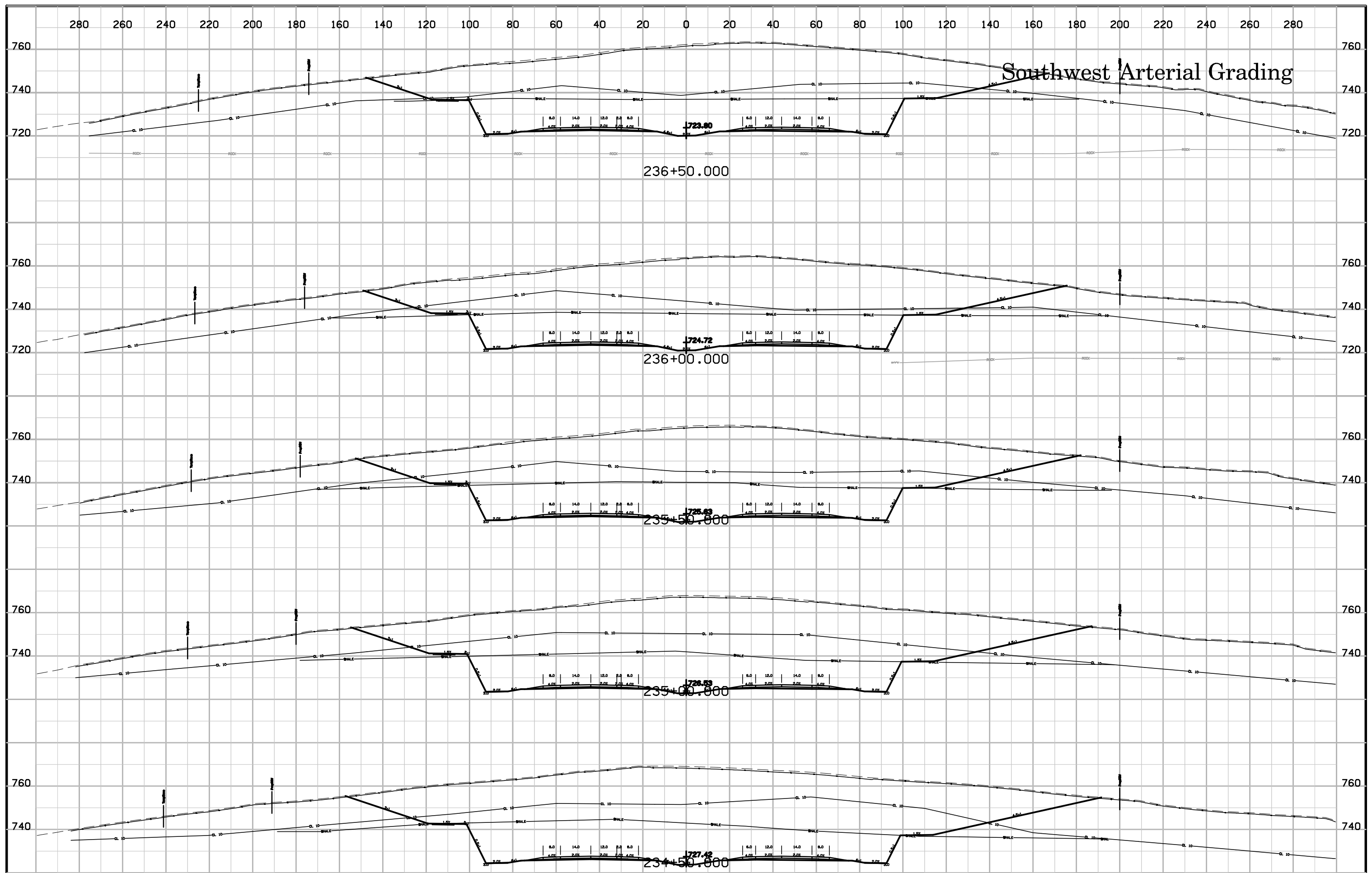


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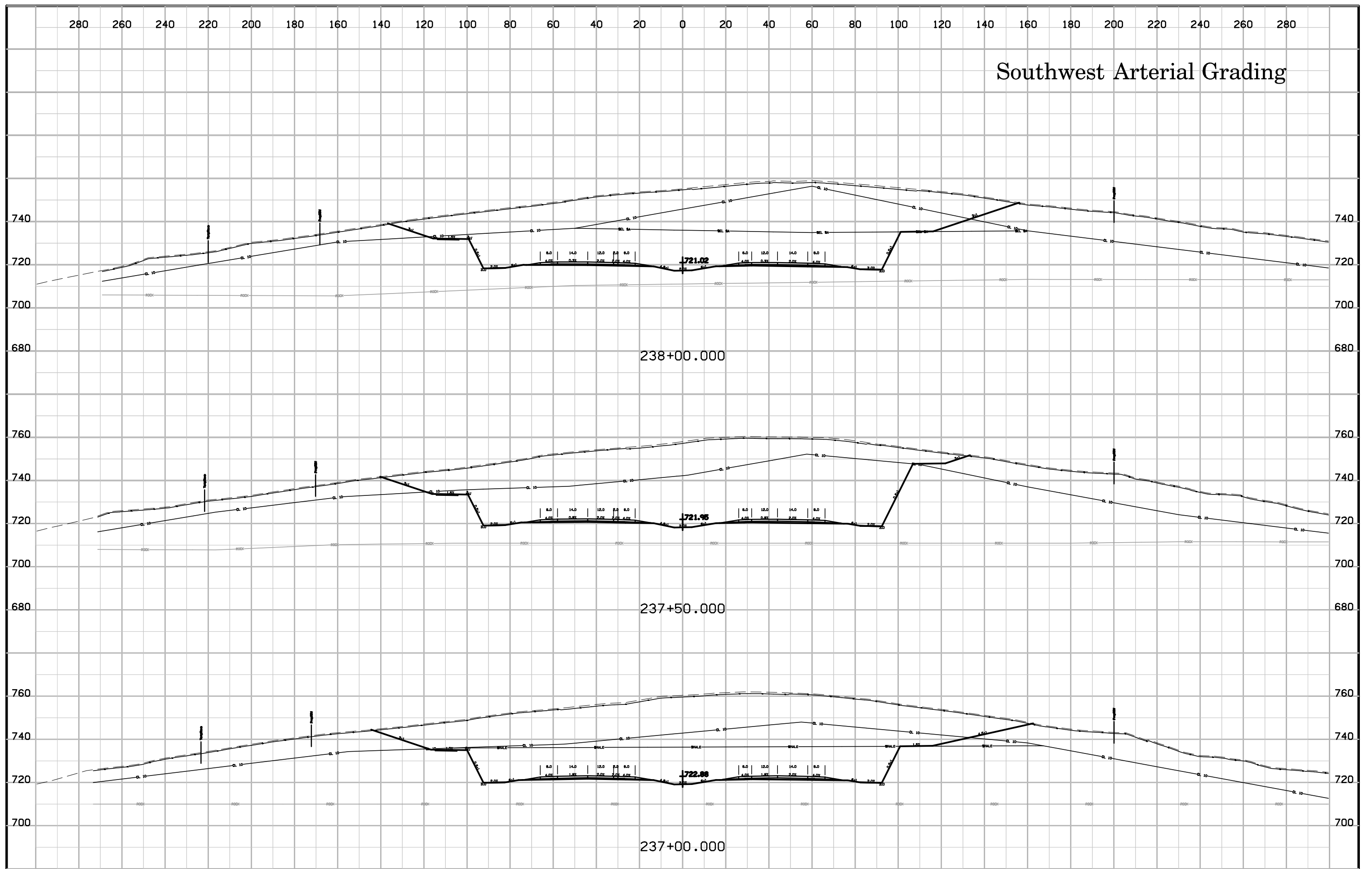




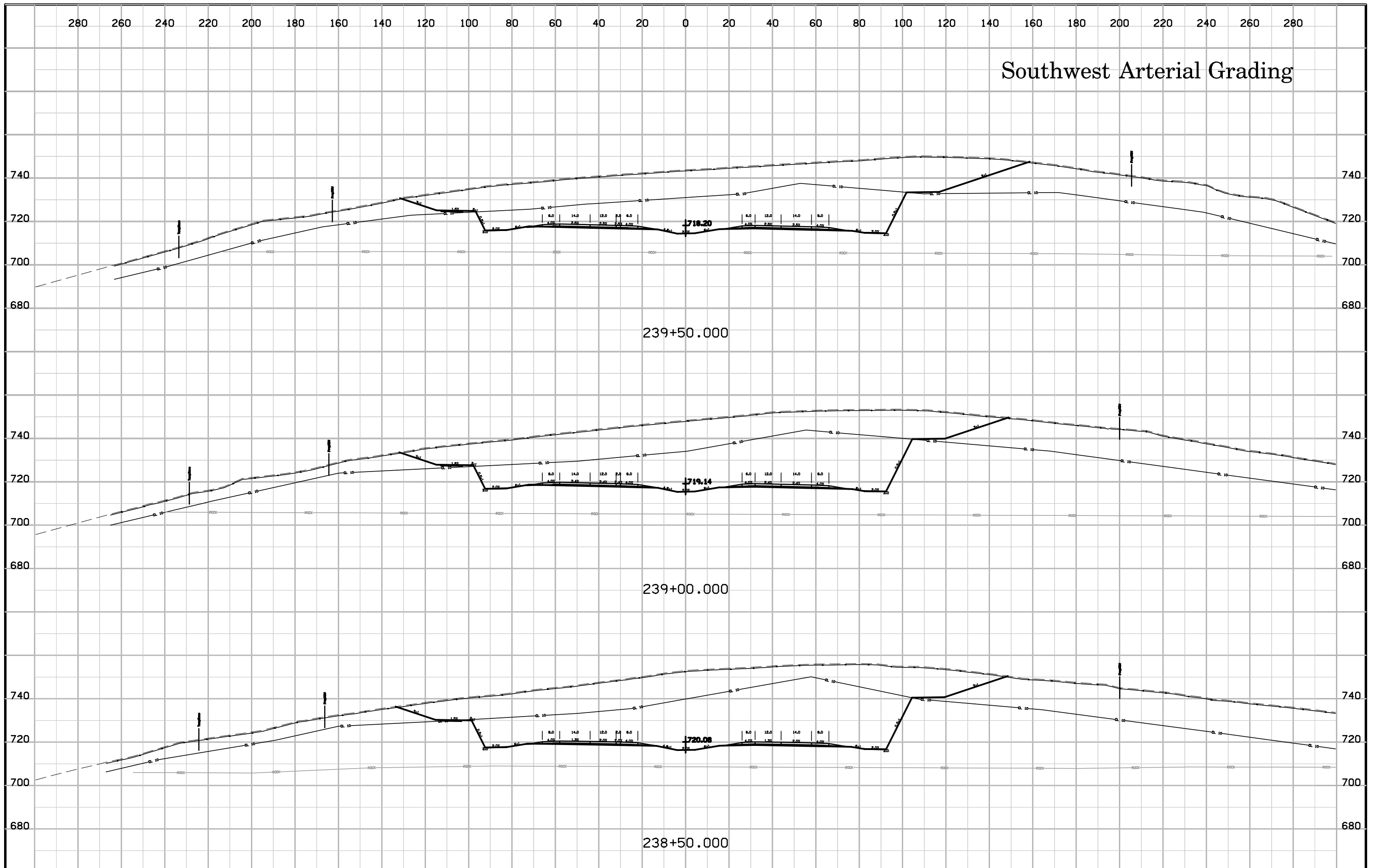
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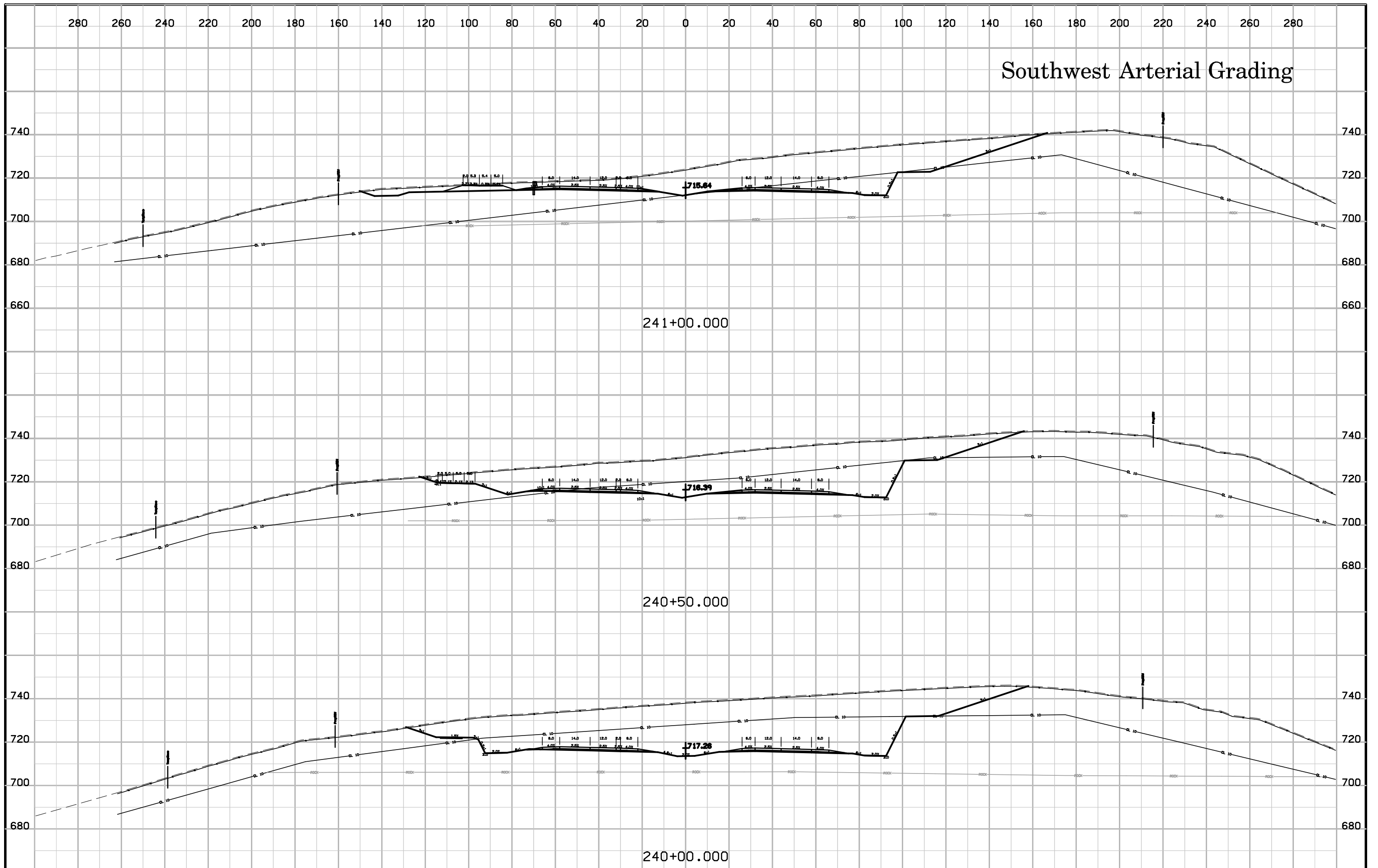
# Southwest Arterial Grading



# Southwest Arterial Grading

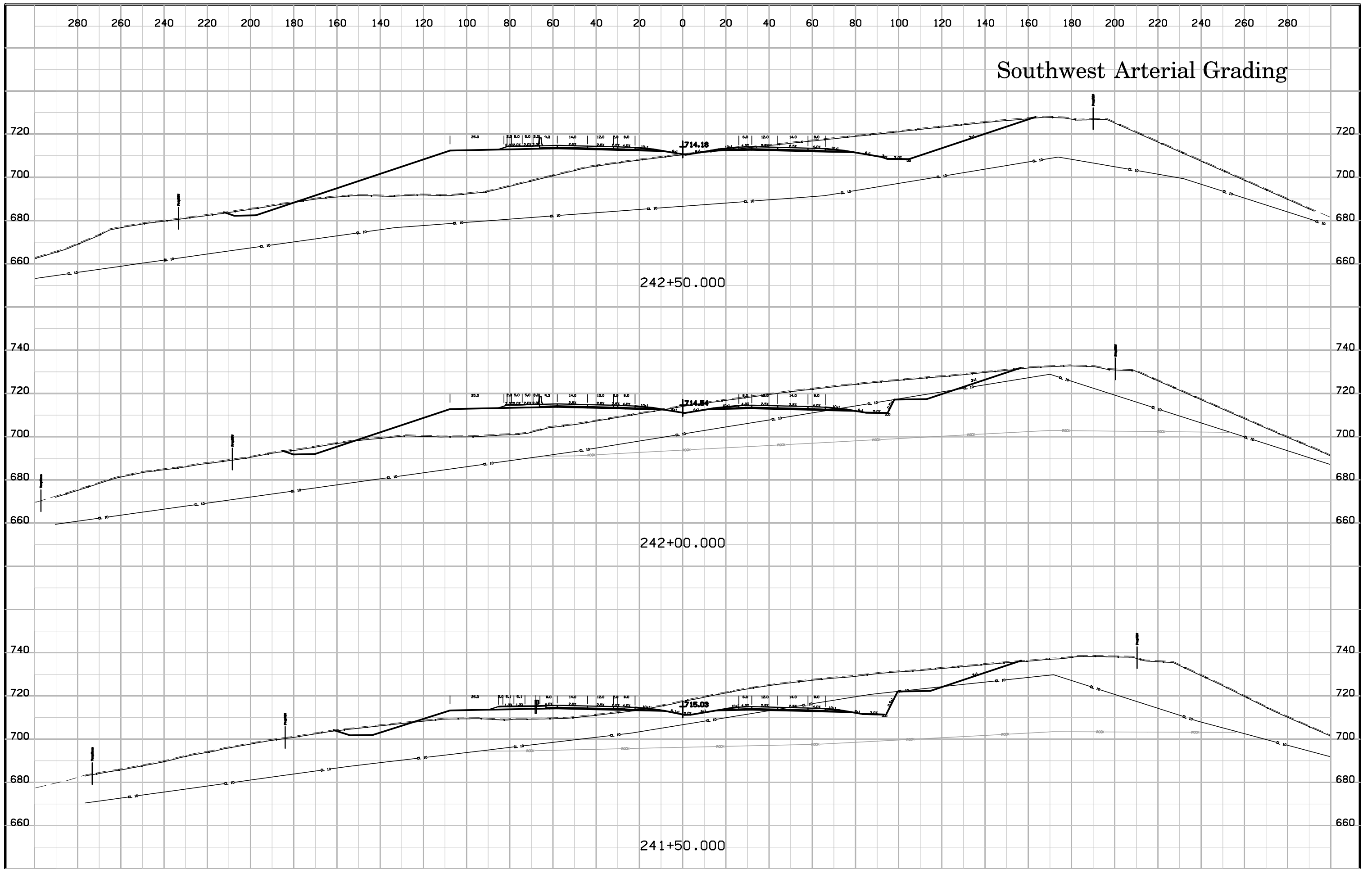


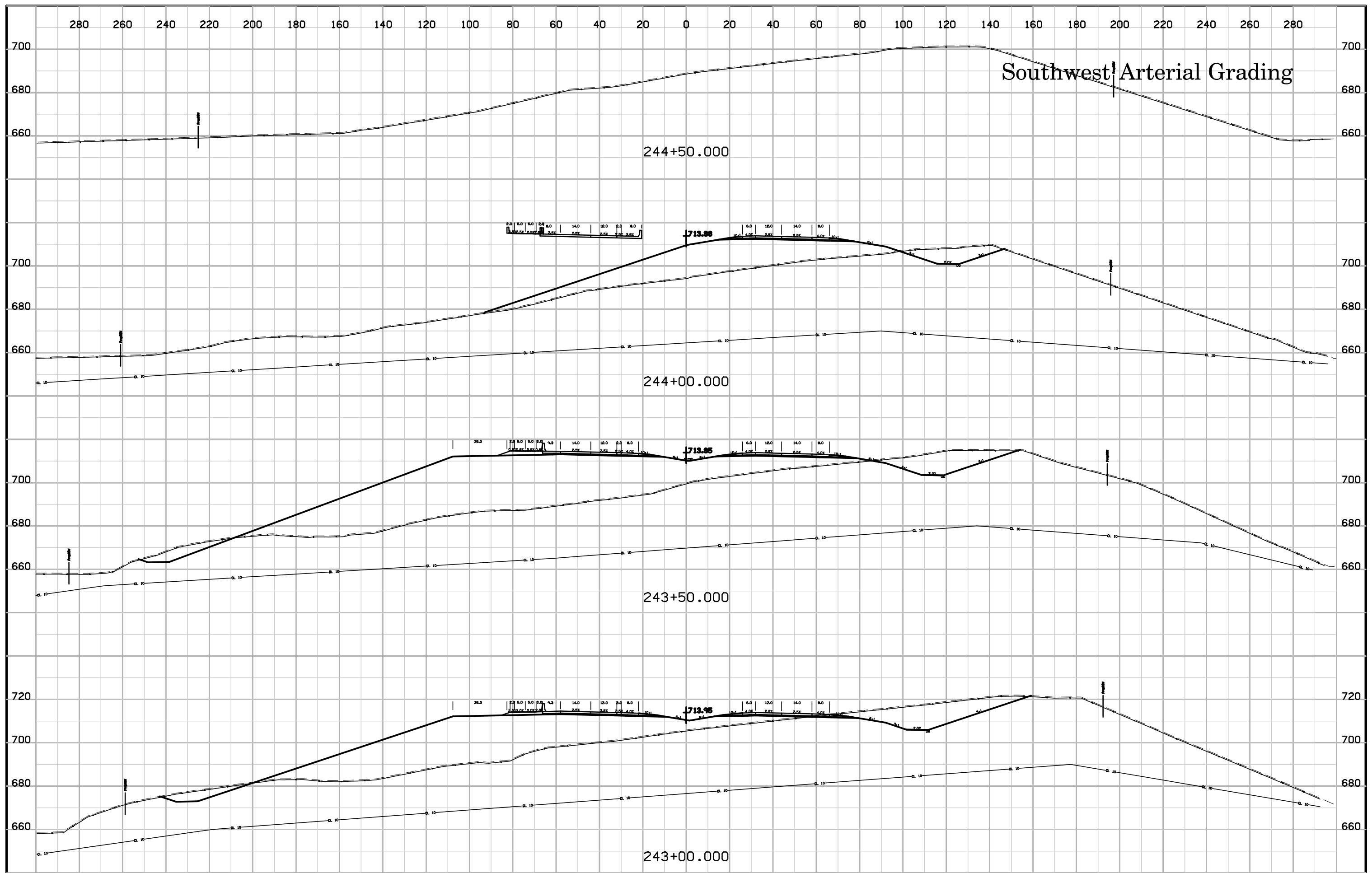
# Southwest Arterial Grading



FILE NO.	ENGLISH	DESIGN TEAM	<b>AECOM</b>	DUBUQUE COUNTY	PROJECT NUMBER	<b>NHSX-032-1(25)--3H-31</b>	SHEET NUMBER	<b>W.69</b>
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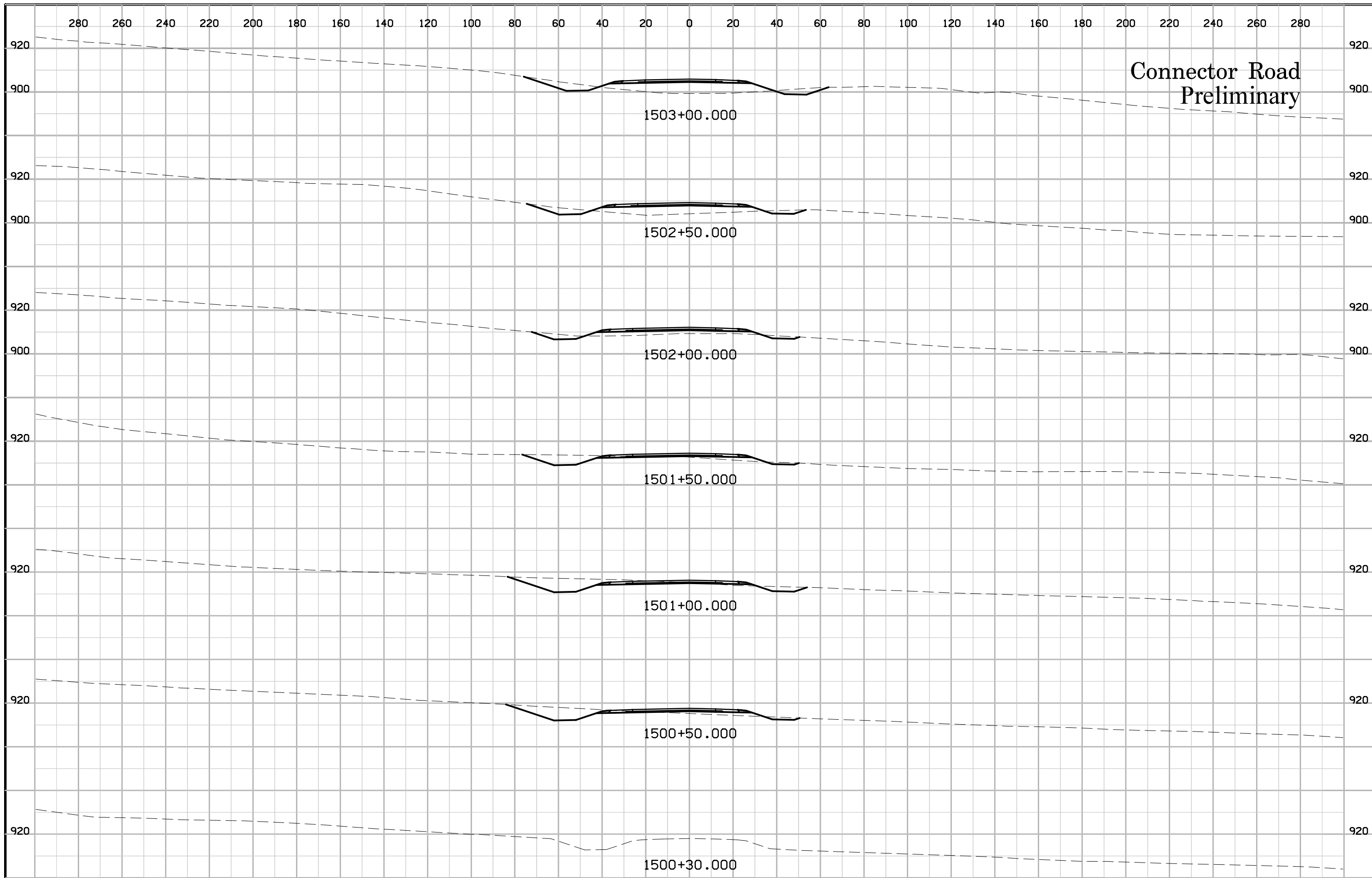
# Southwest Arterial Grading





# Southwest Arterial Grading





Connector Road  
Preliminary

1503+00.000

1502+50.000

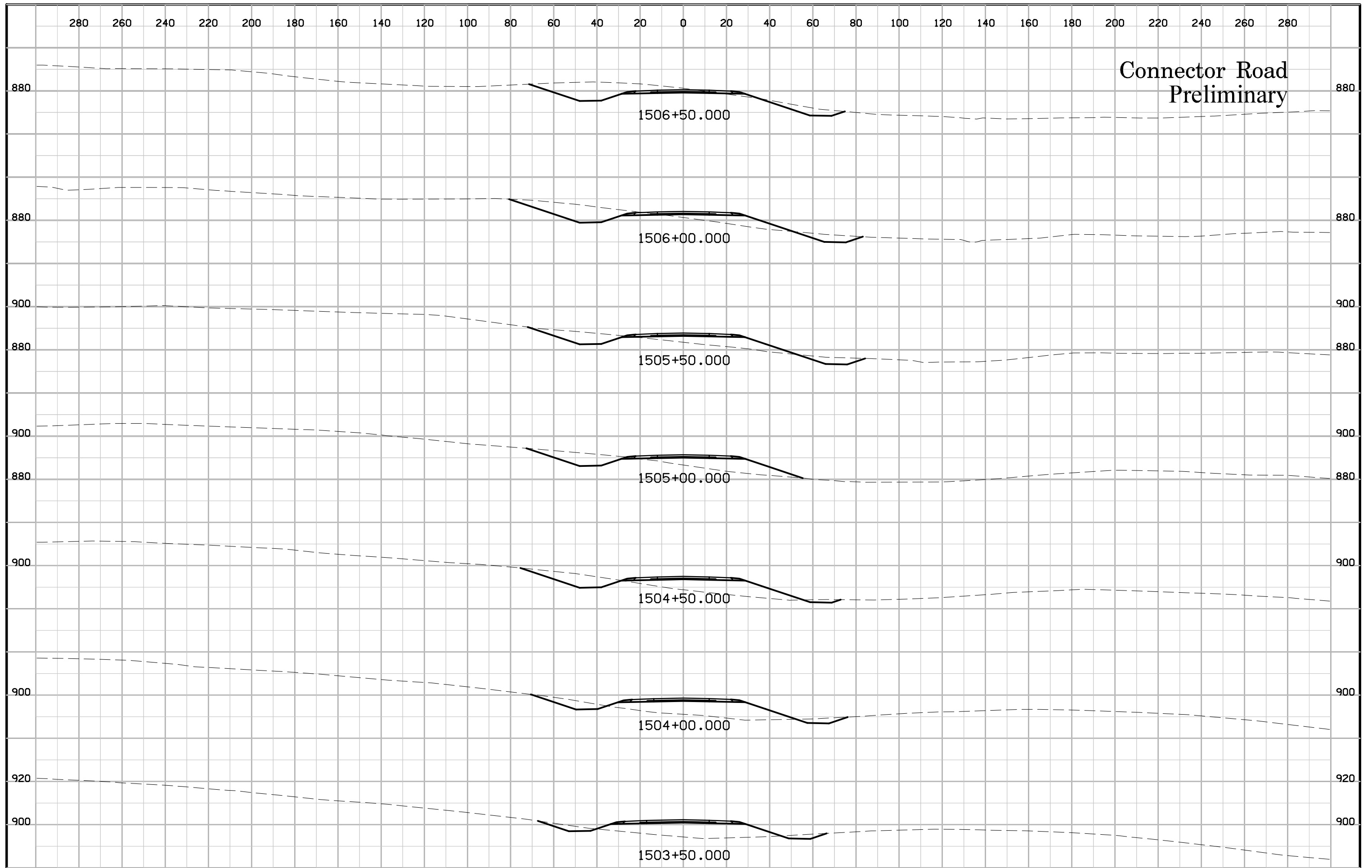
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1501+50.000

1501+00.000

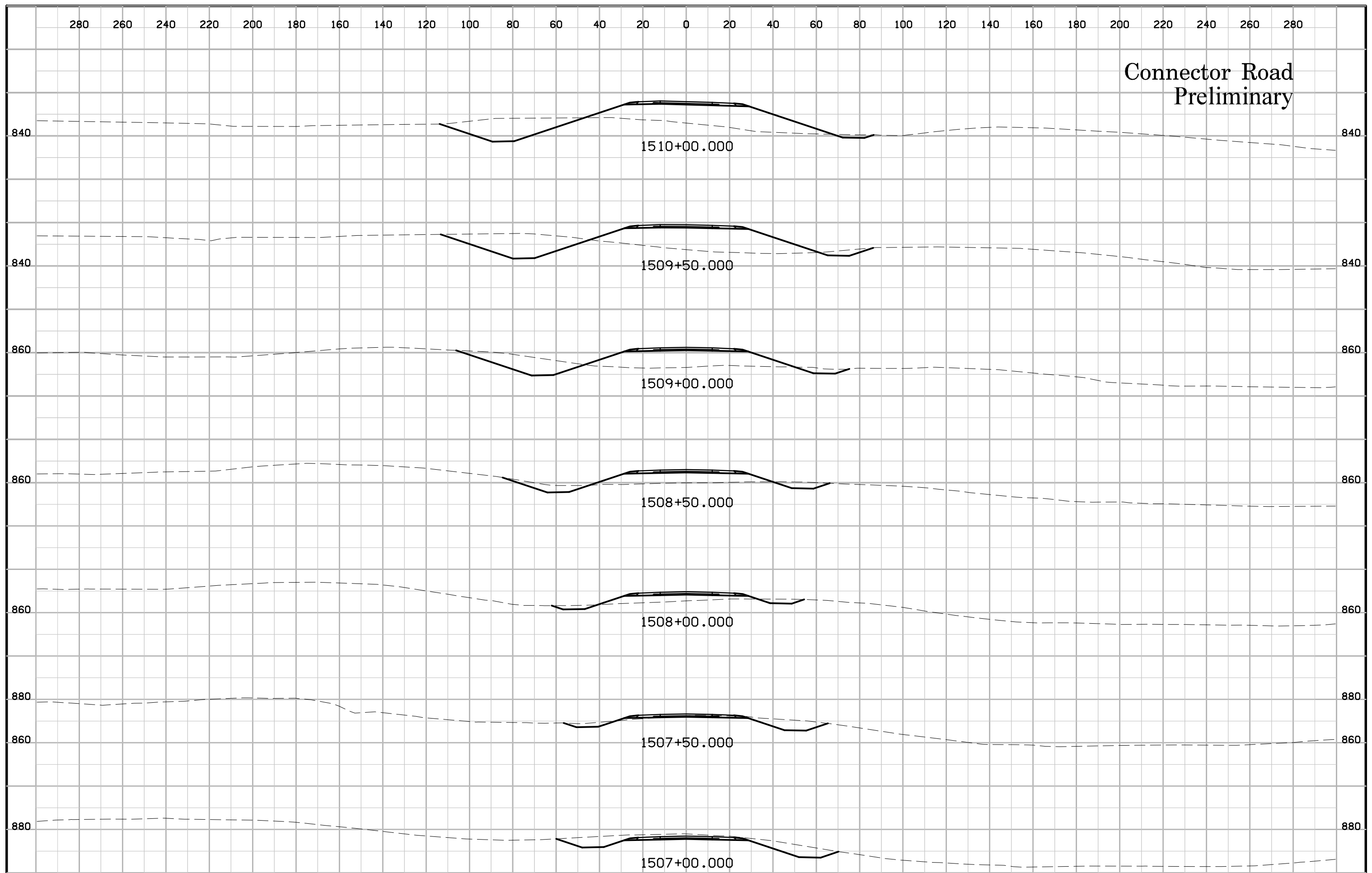
1500+50.000

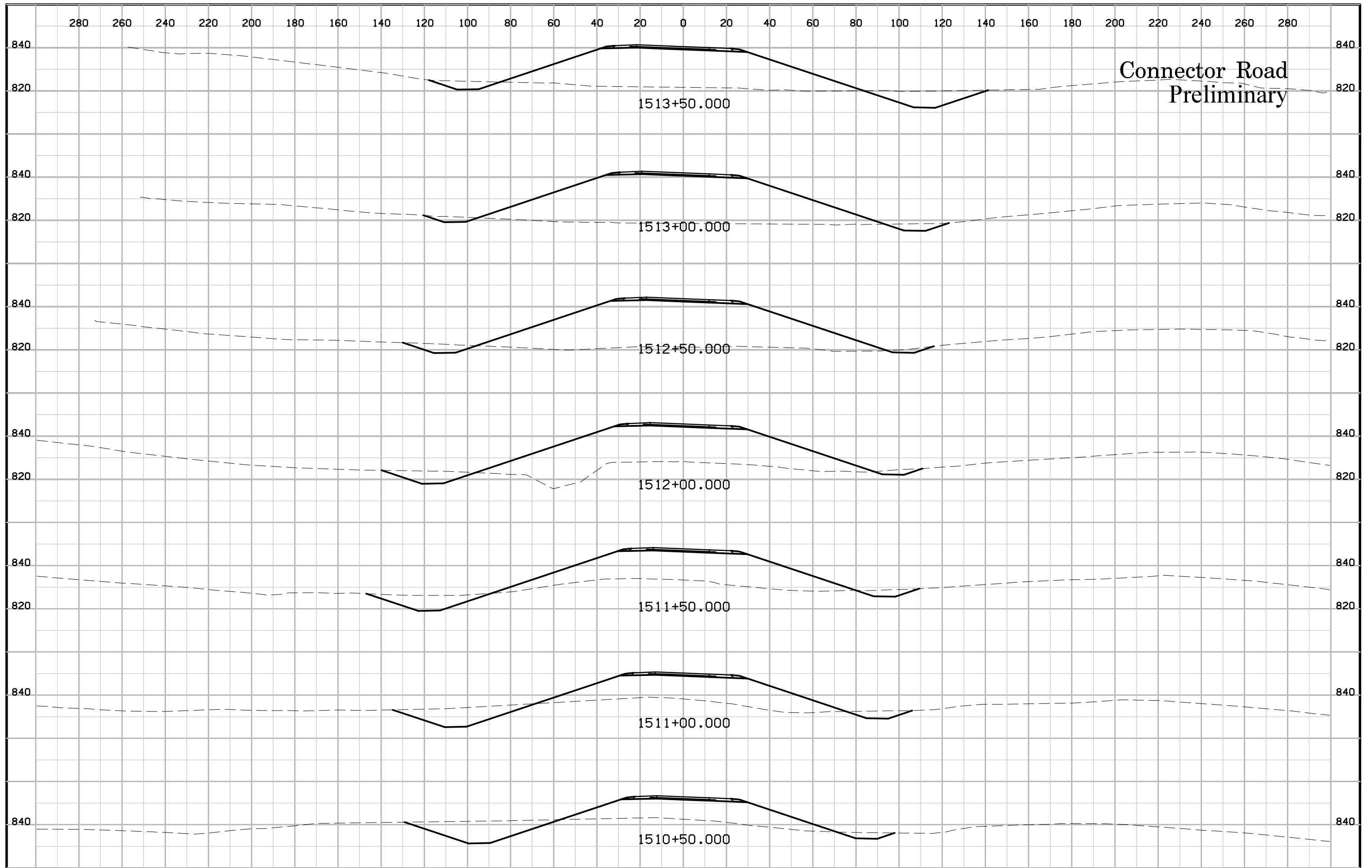
1500+30.000



Connector Road  
Preliminary

# Connector Road Preliminary





Connector Road  
Preliminary

1513+50.000

1513+00.000

1512+50.000

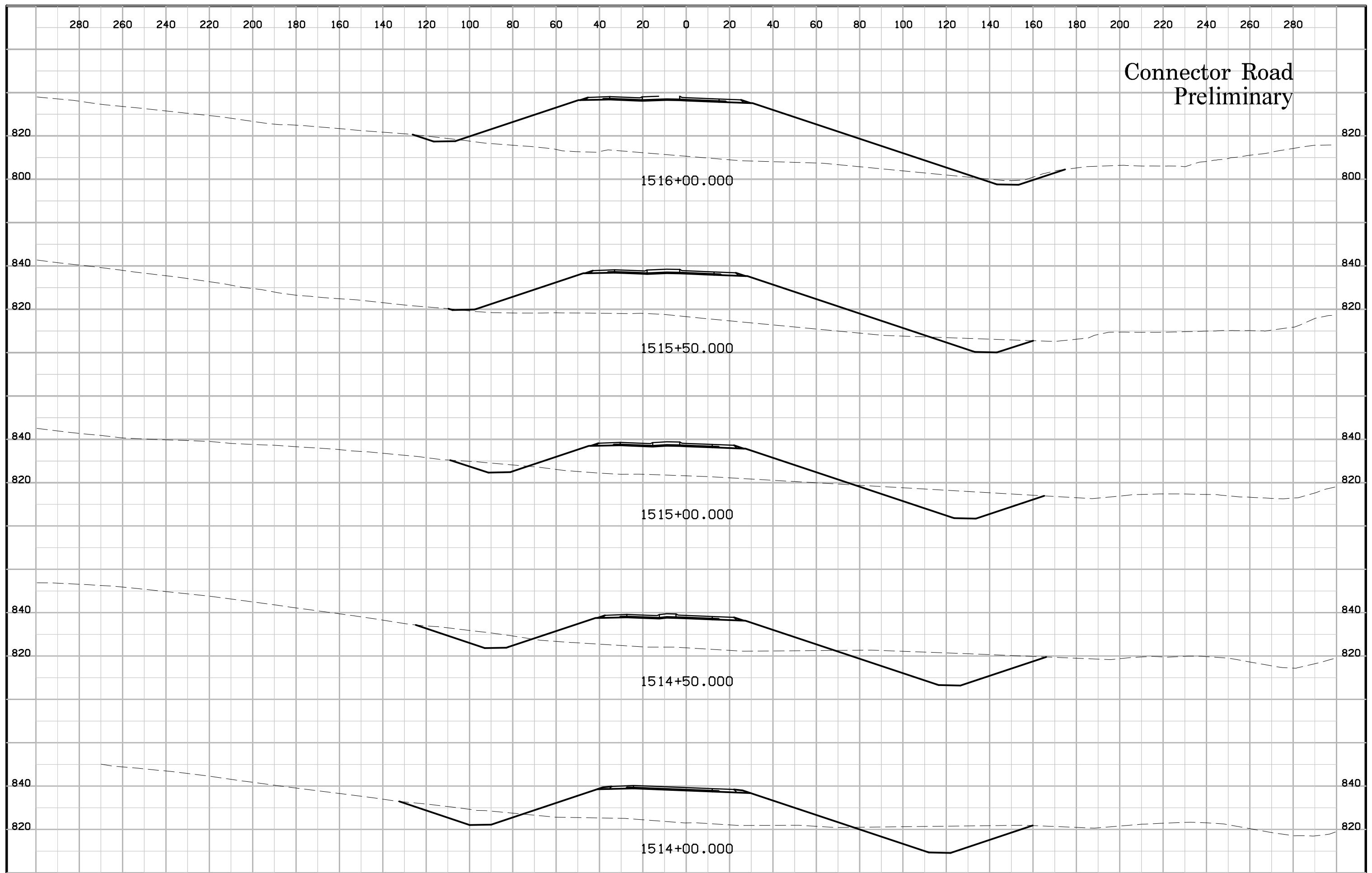
1512+00.000

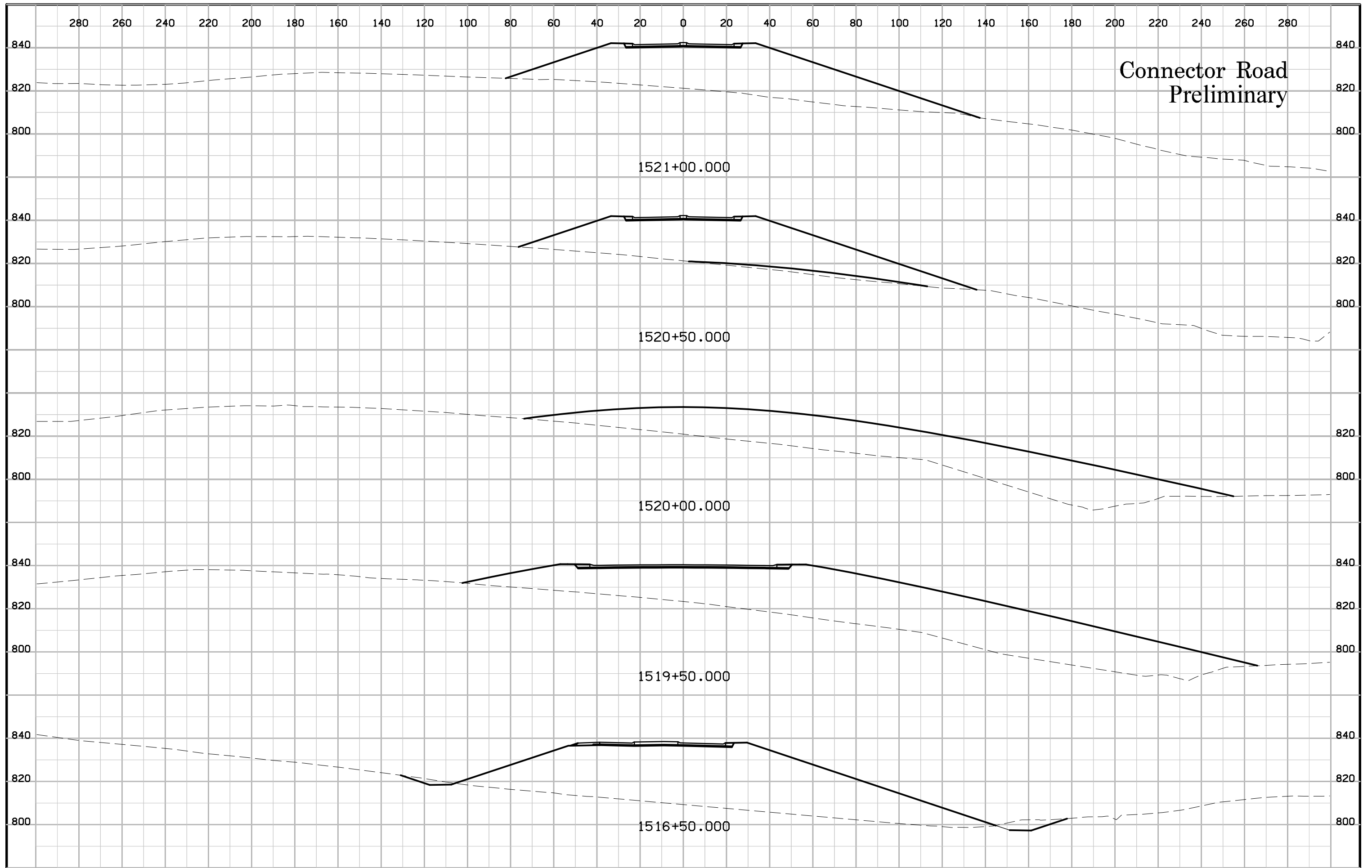
1511+50.000

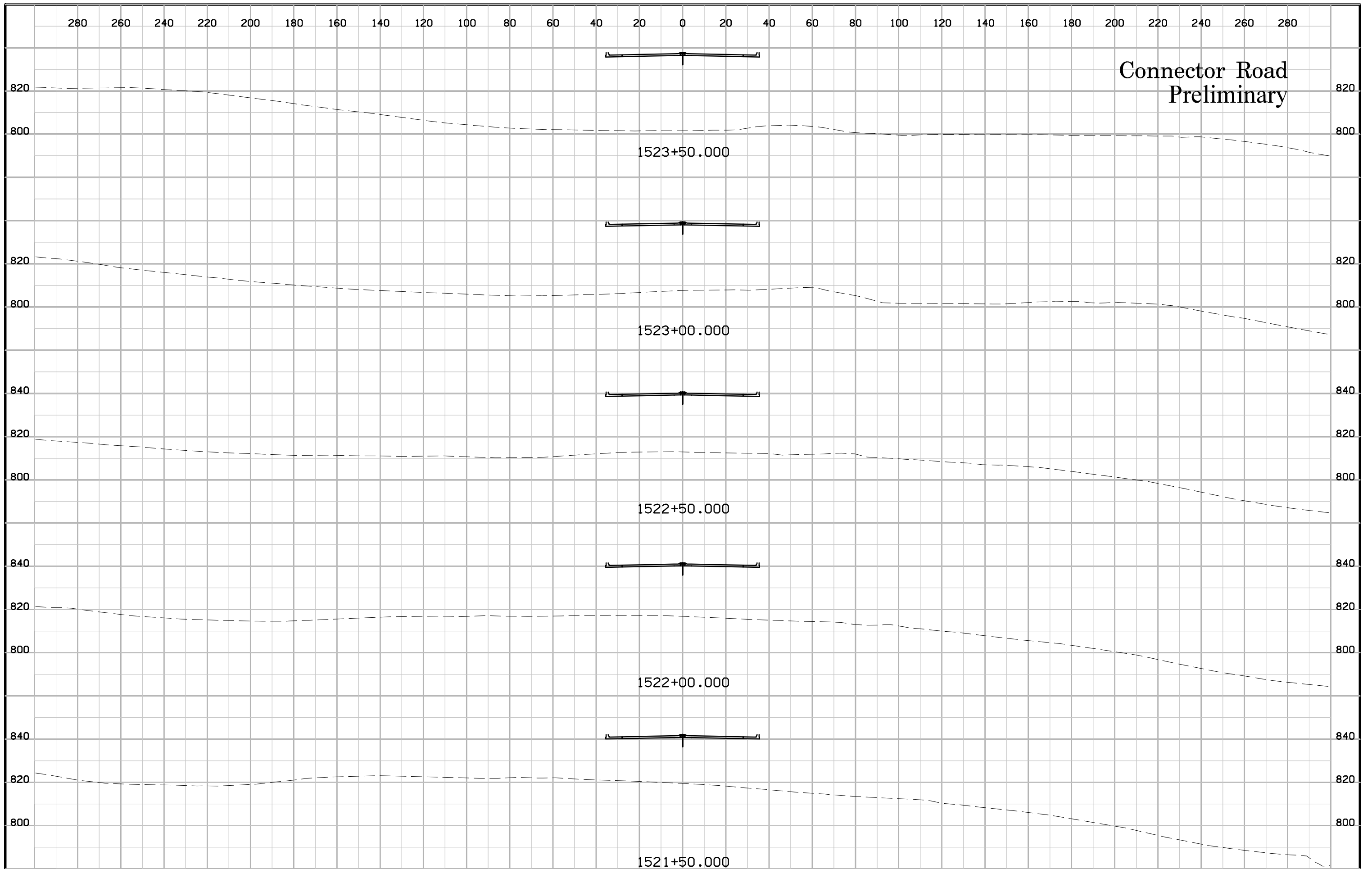
1511+00.000

1510+50.000

# Connector Road Preliminary







Connector Road  
Preliminary

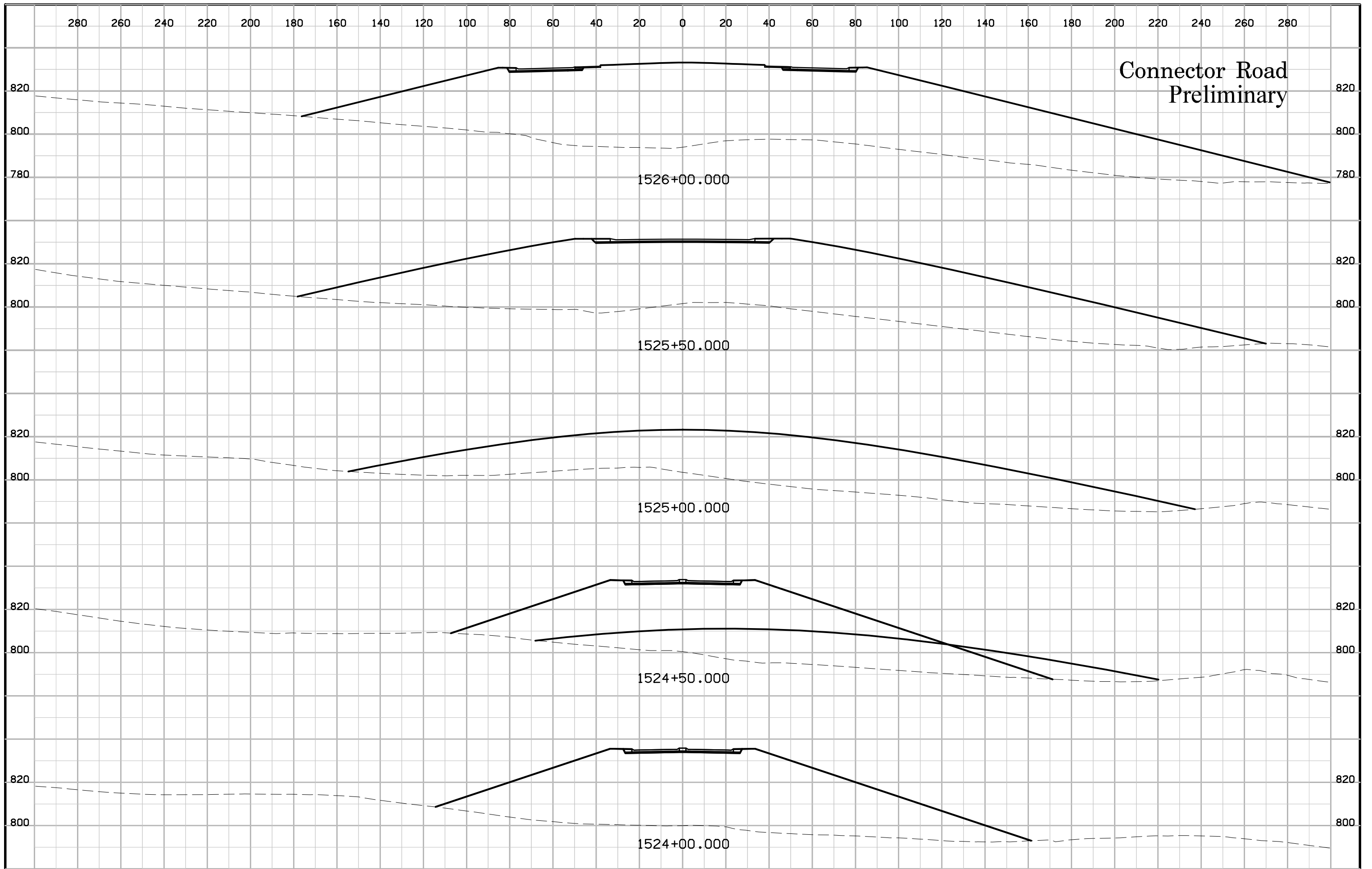
1523+50.000

1523+00.000

1522+50.000

1522+00.000

1521+50.000



Connector Road  
Preliminary

1526+00.000

1525+50.000

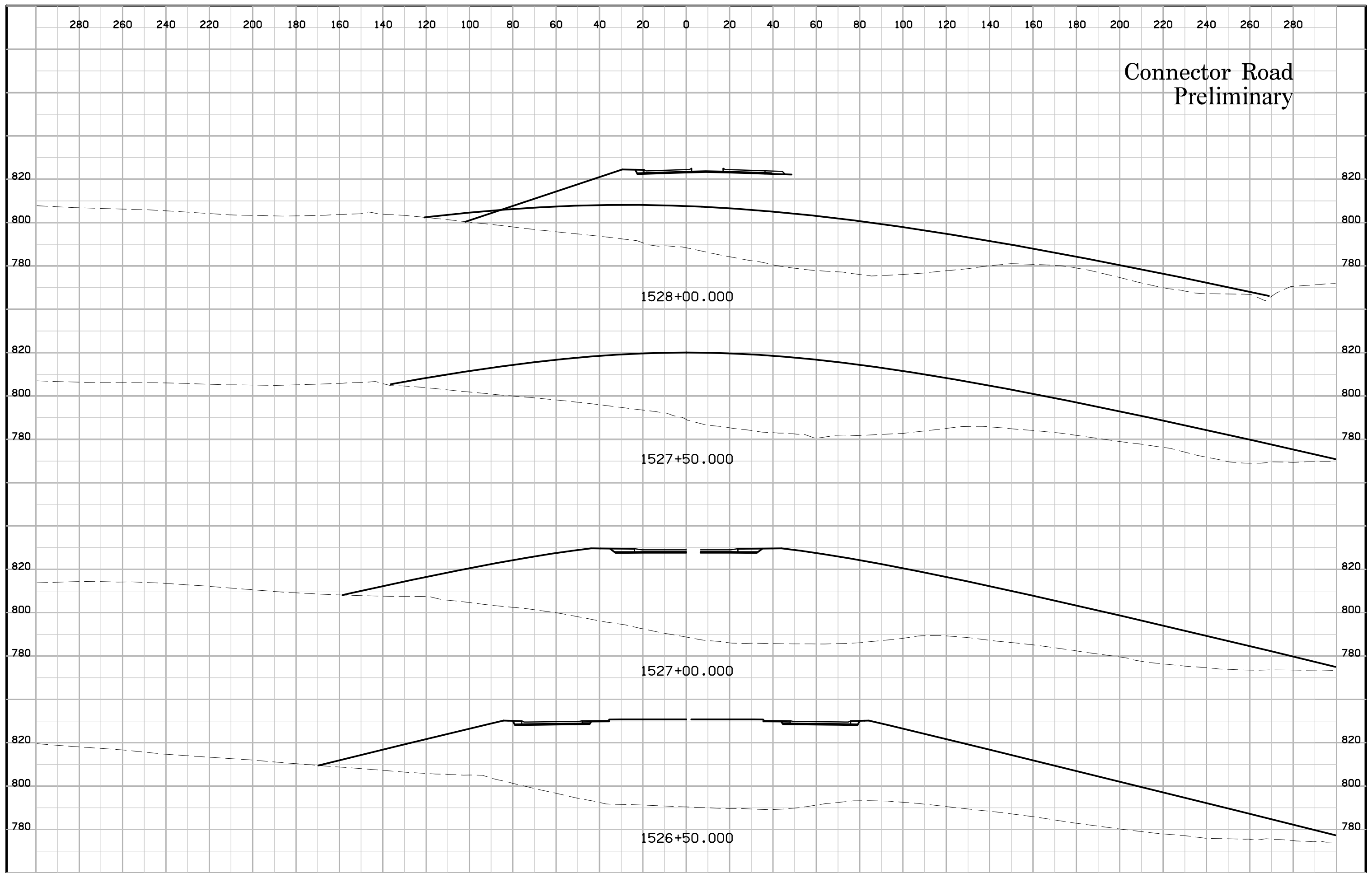
1525+00.000

1524+50.000

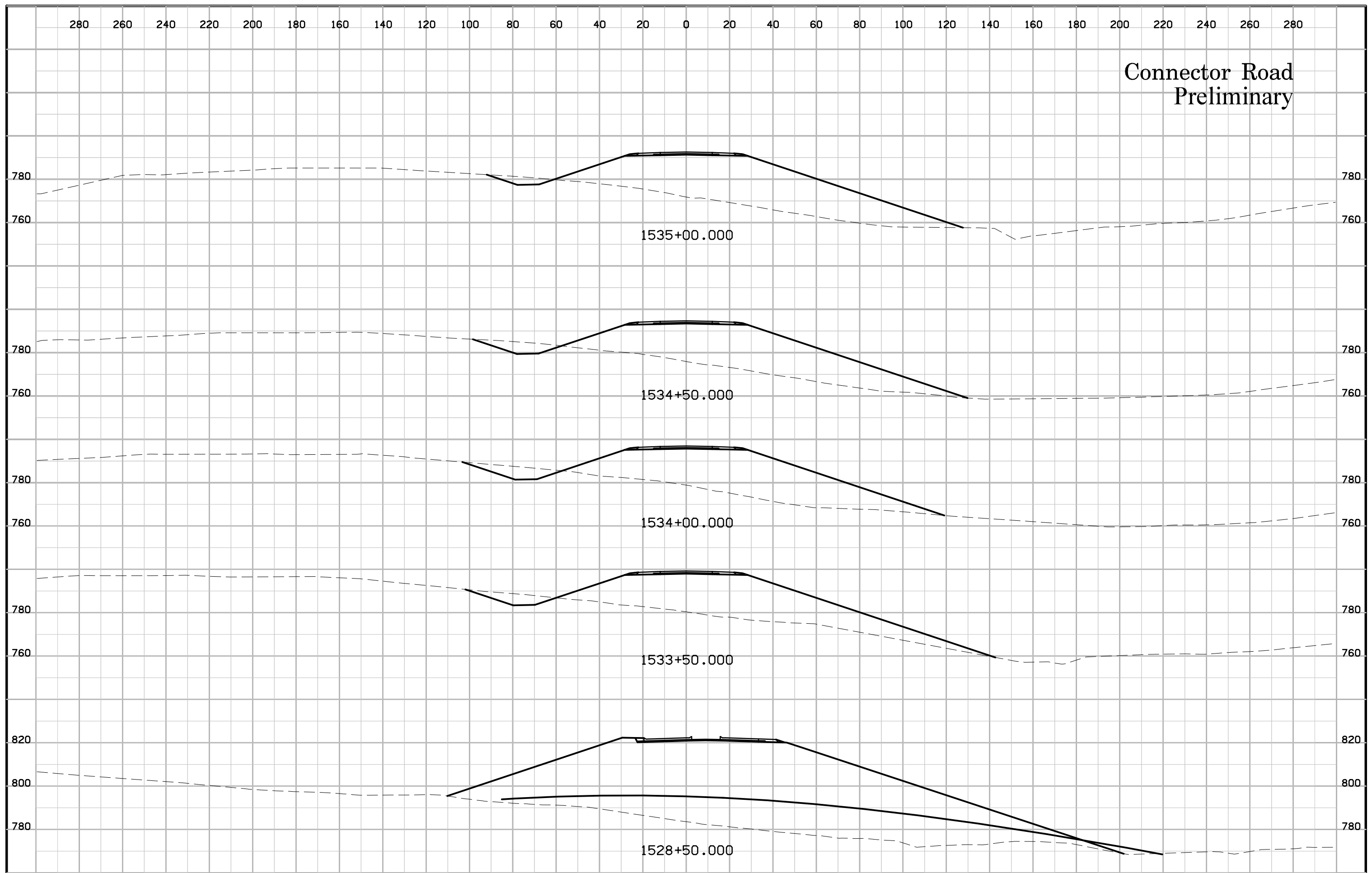
1524+00.000

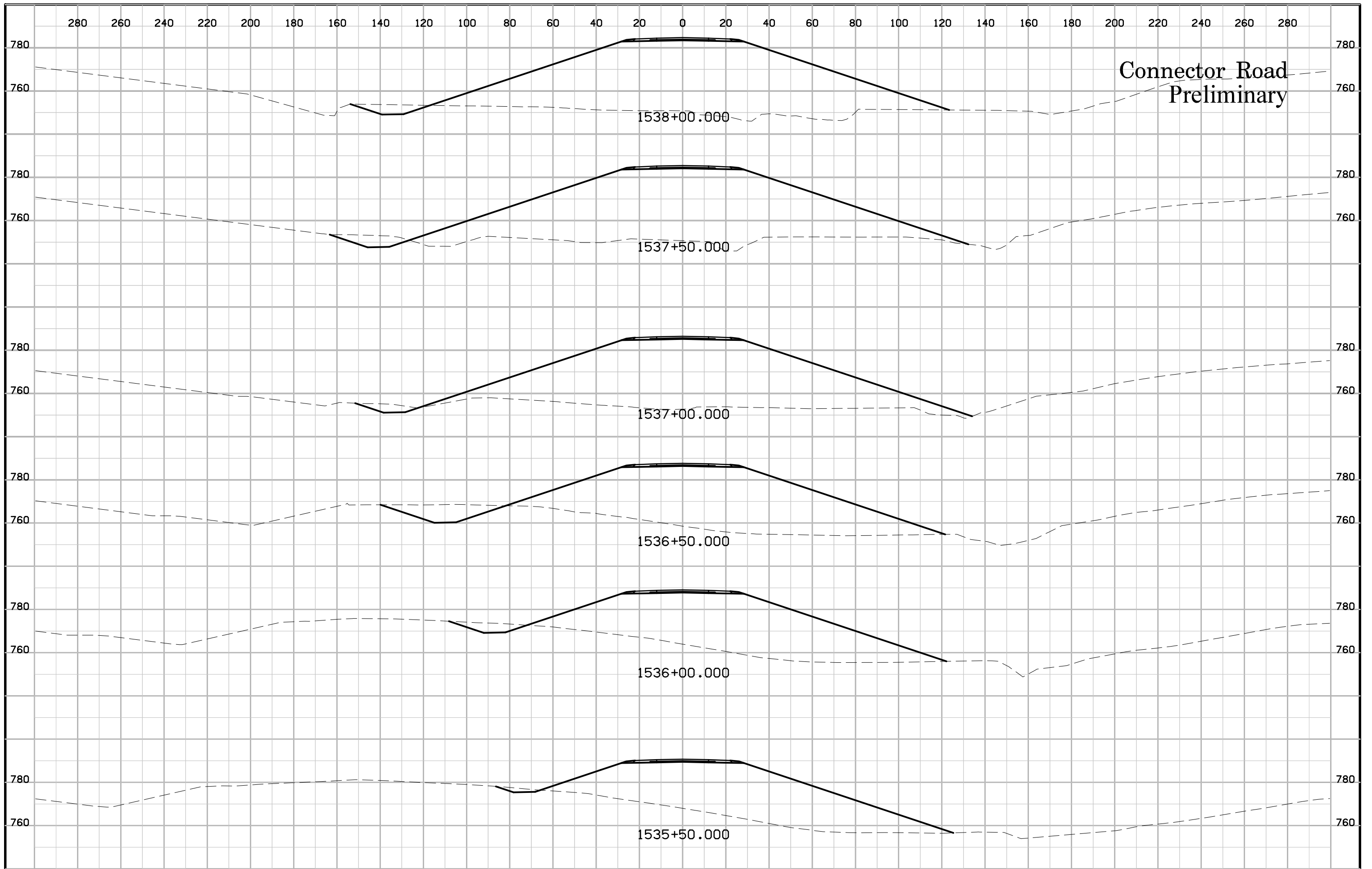


# Connector Road Preliminary



# Connector Road Preliminary





Connector Road  
Preliminary

1538+00.000

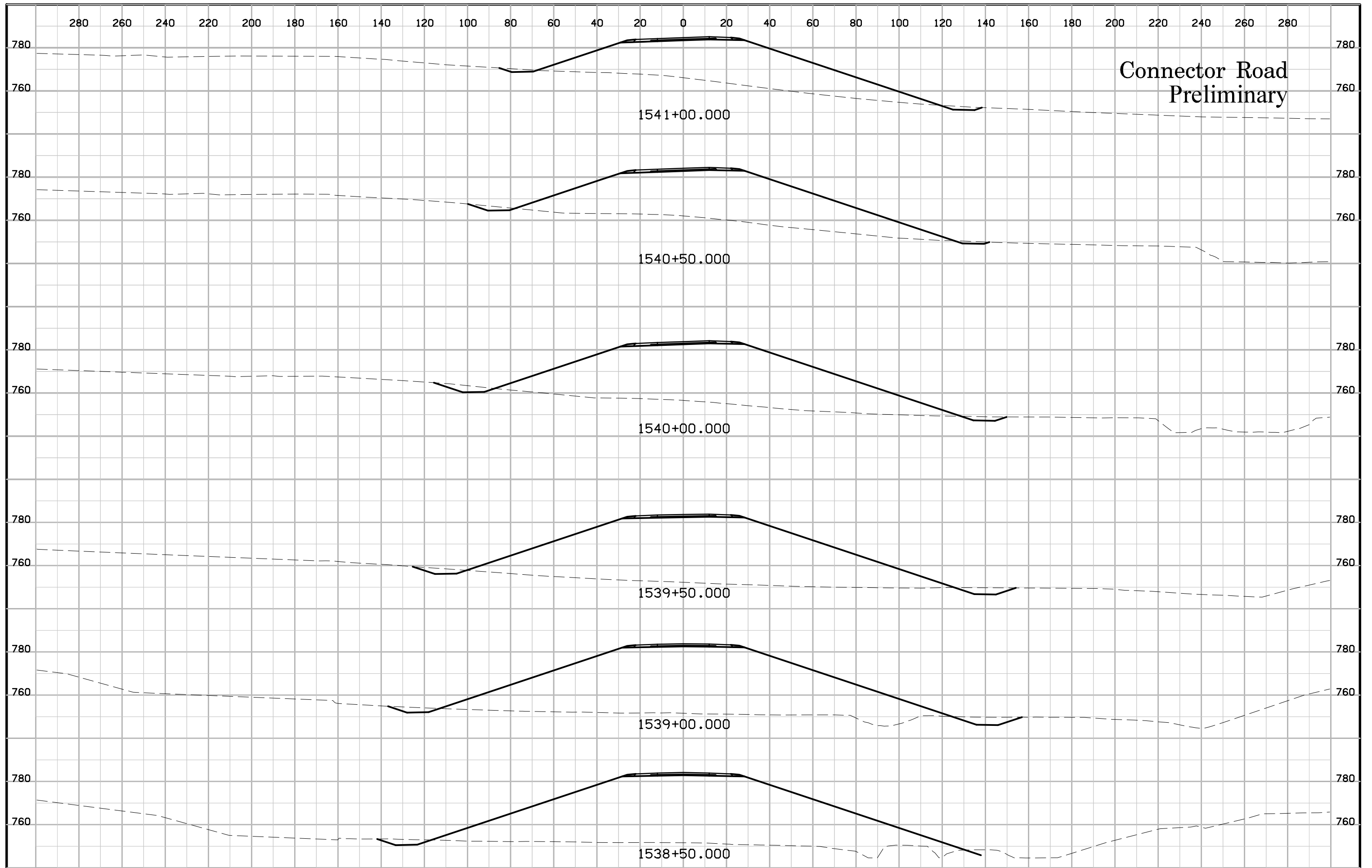
1537+50.000

1537+00.000

1536+50.000

1536+00.000

1535+50.000



Connector Road  
Preliminary

1541+00.000

1540+50.000

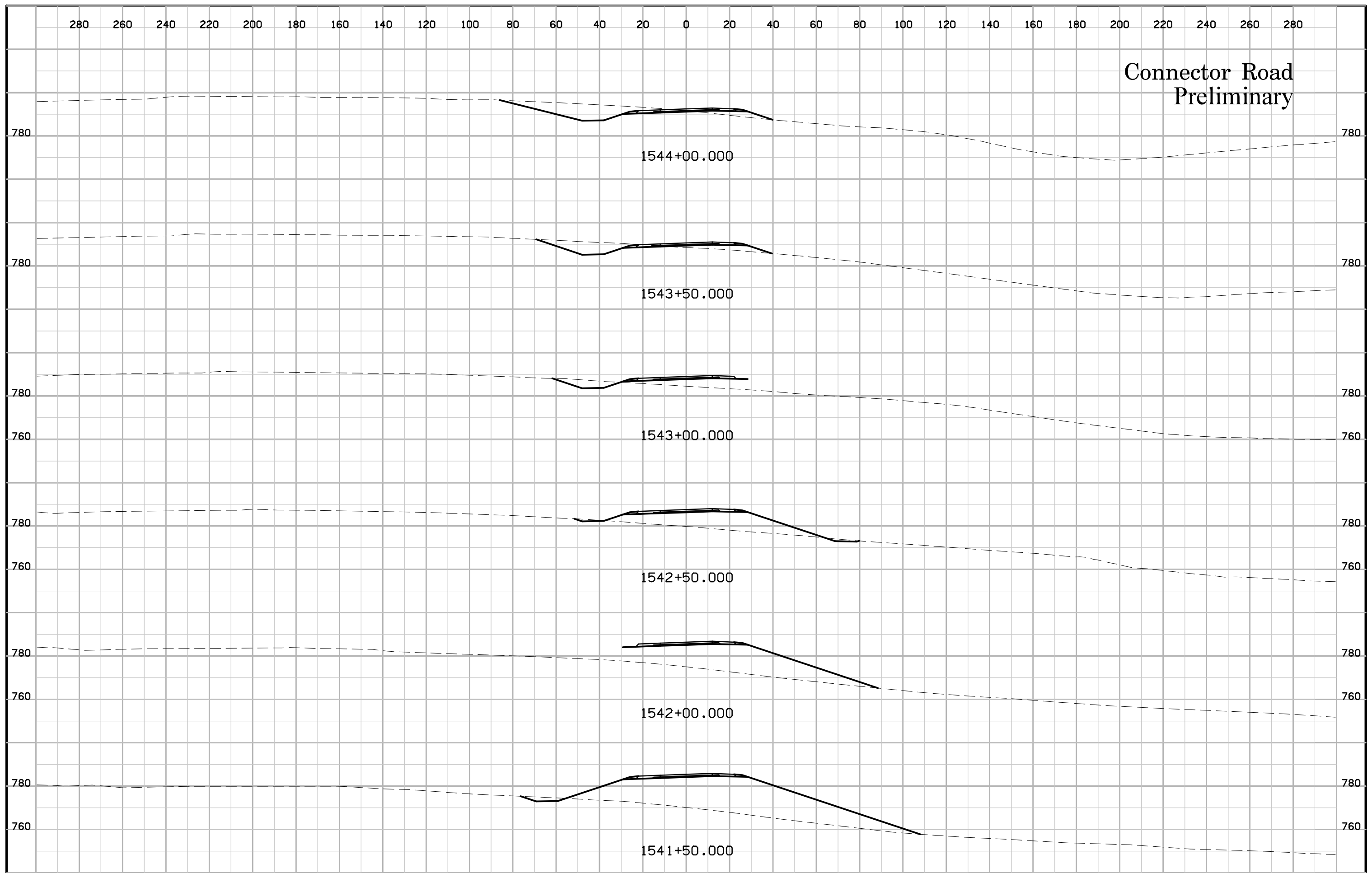
1540+00.000

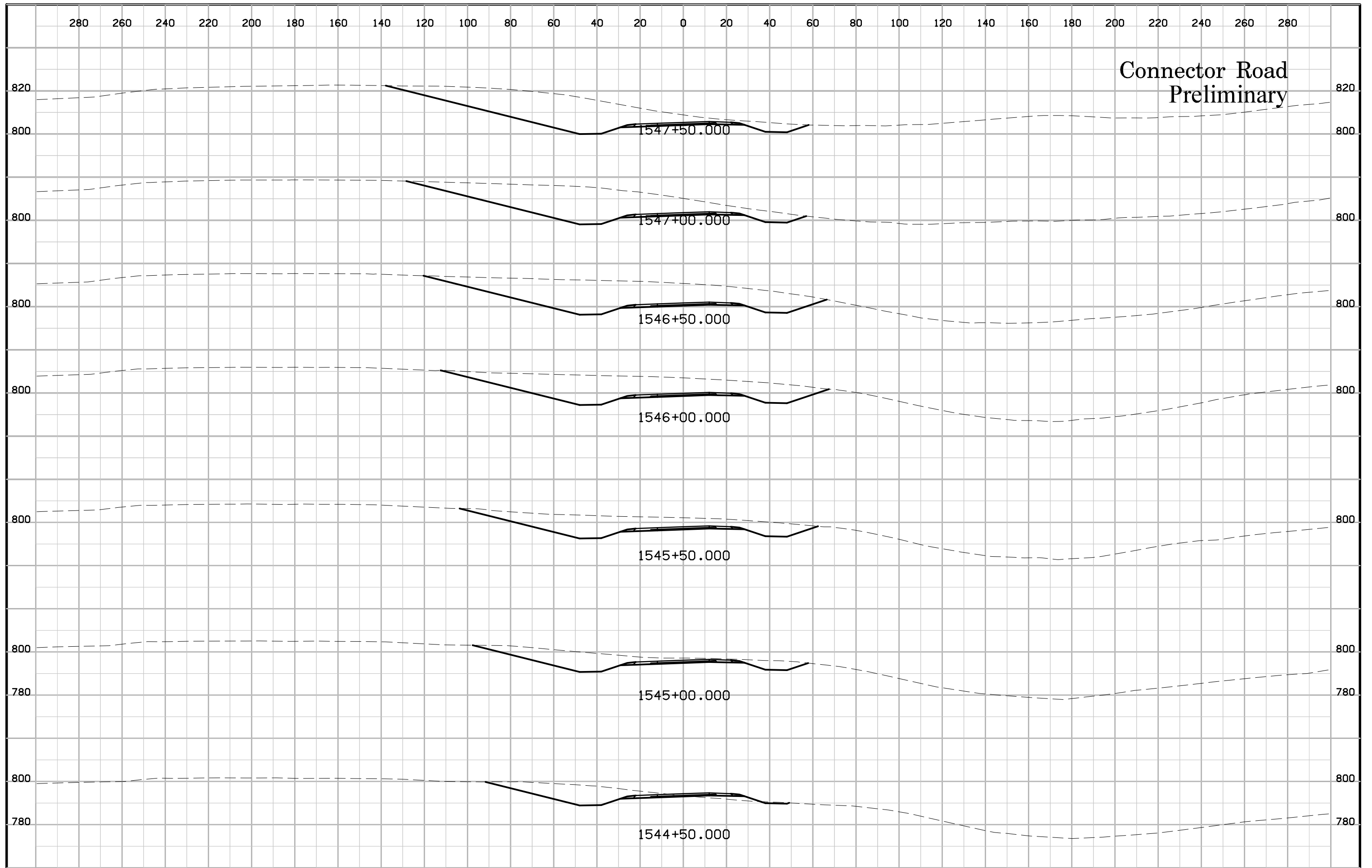
1539+50.000

1539+00.000

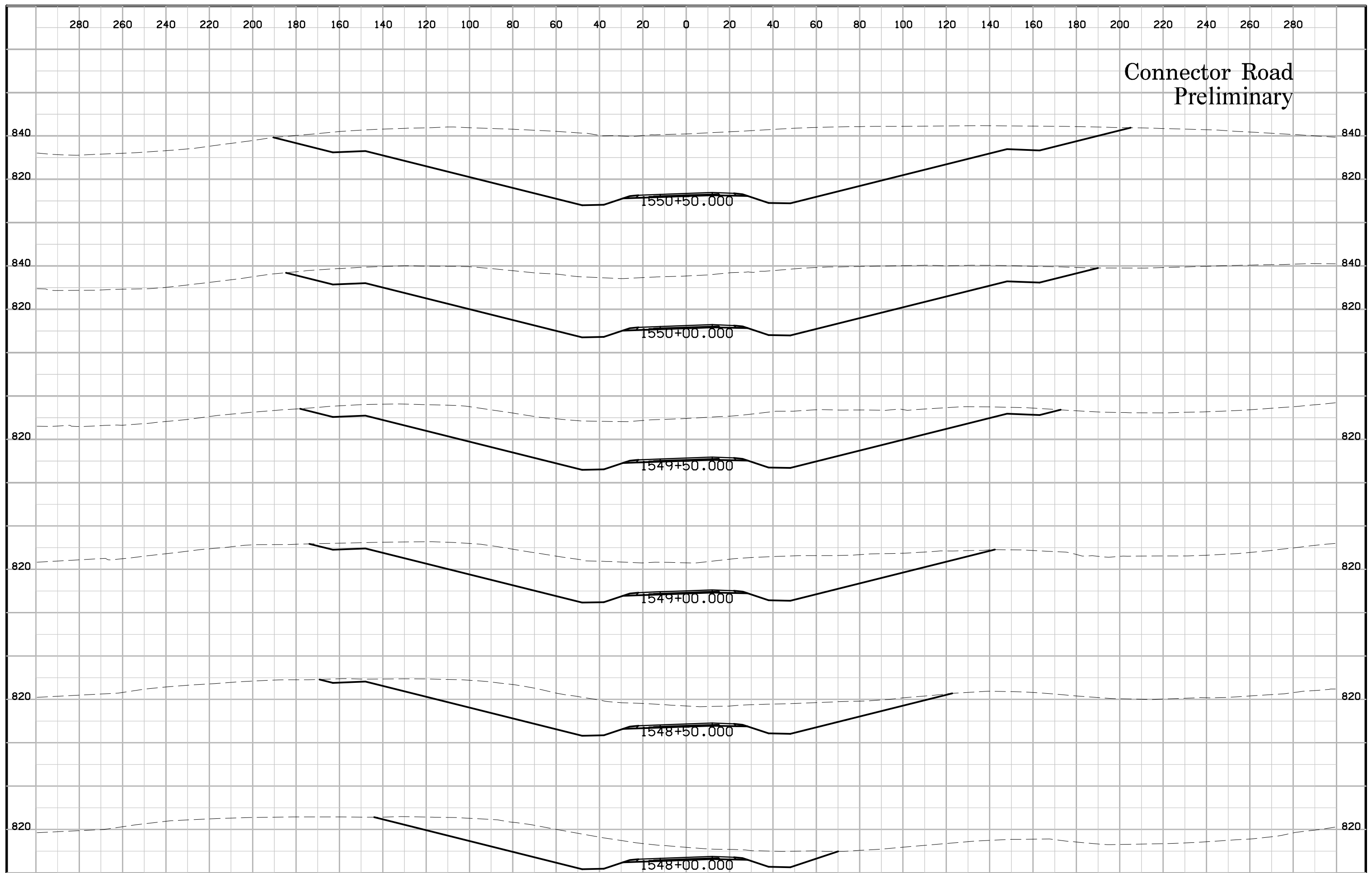
1538+50.000

# Connector Road Preliminary

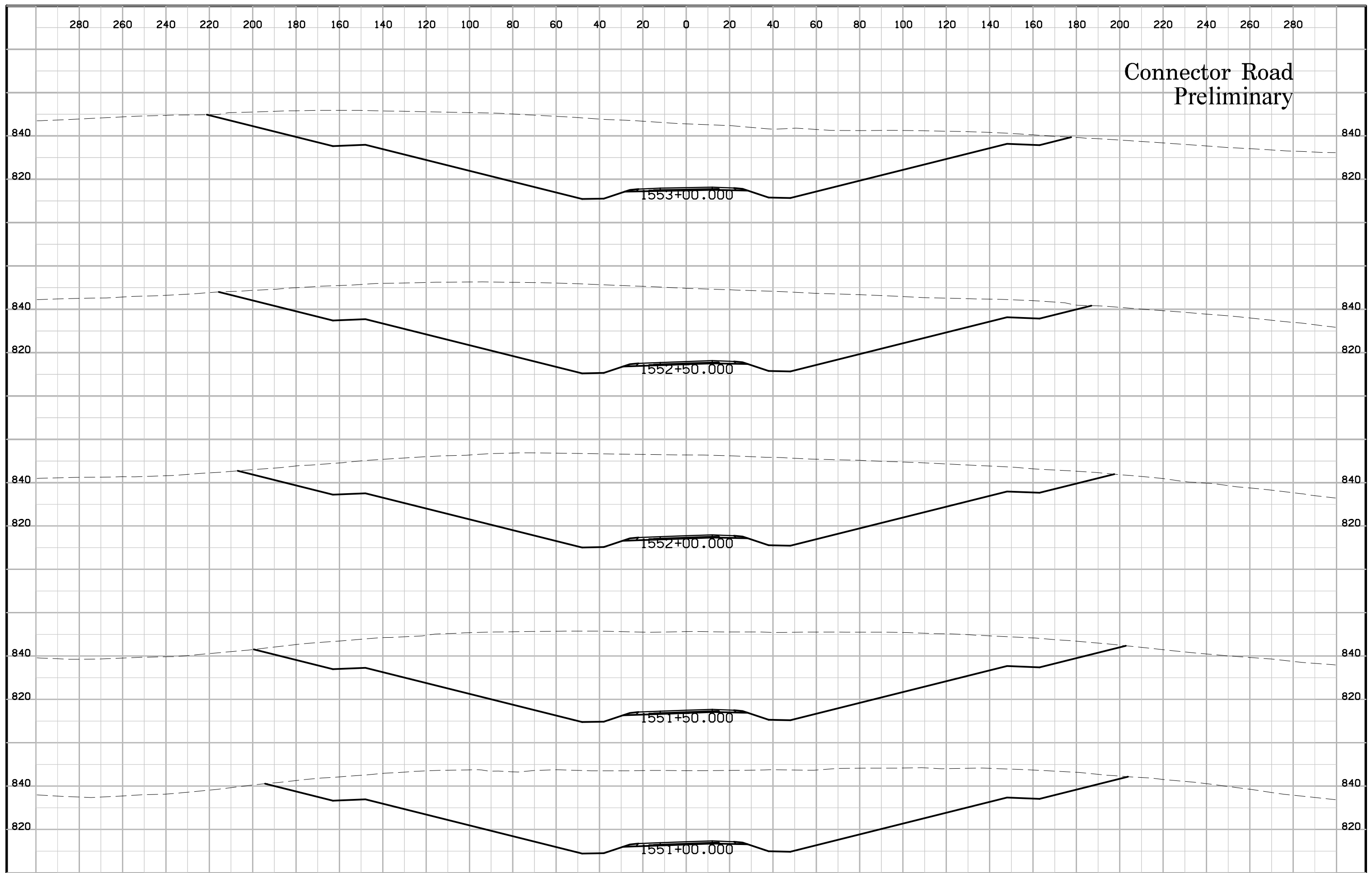




# Connector Road Preliminary

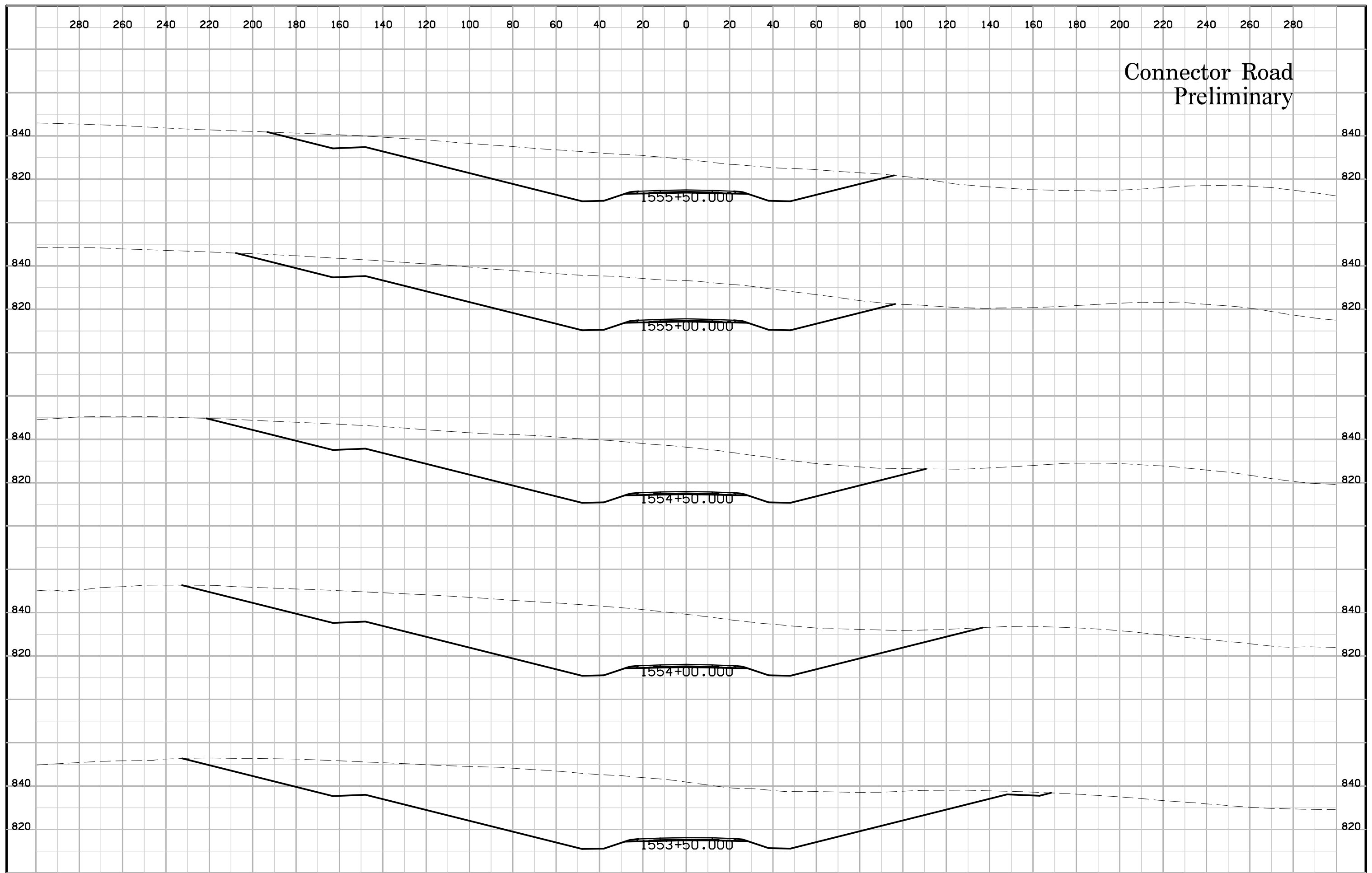


# Connector Road Preliminary

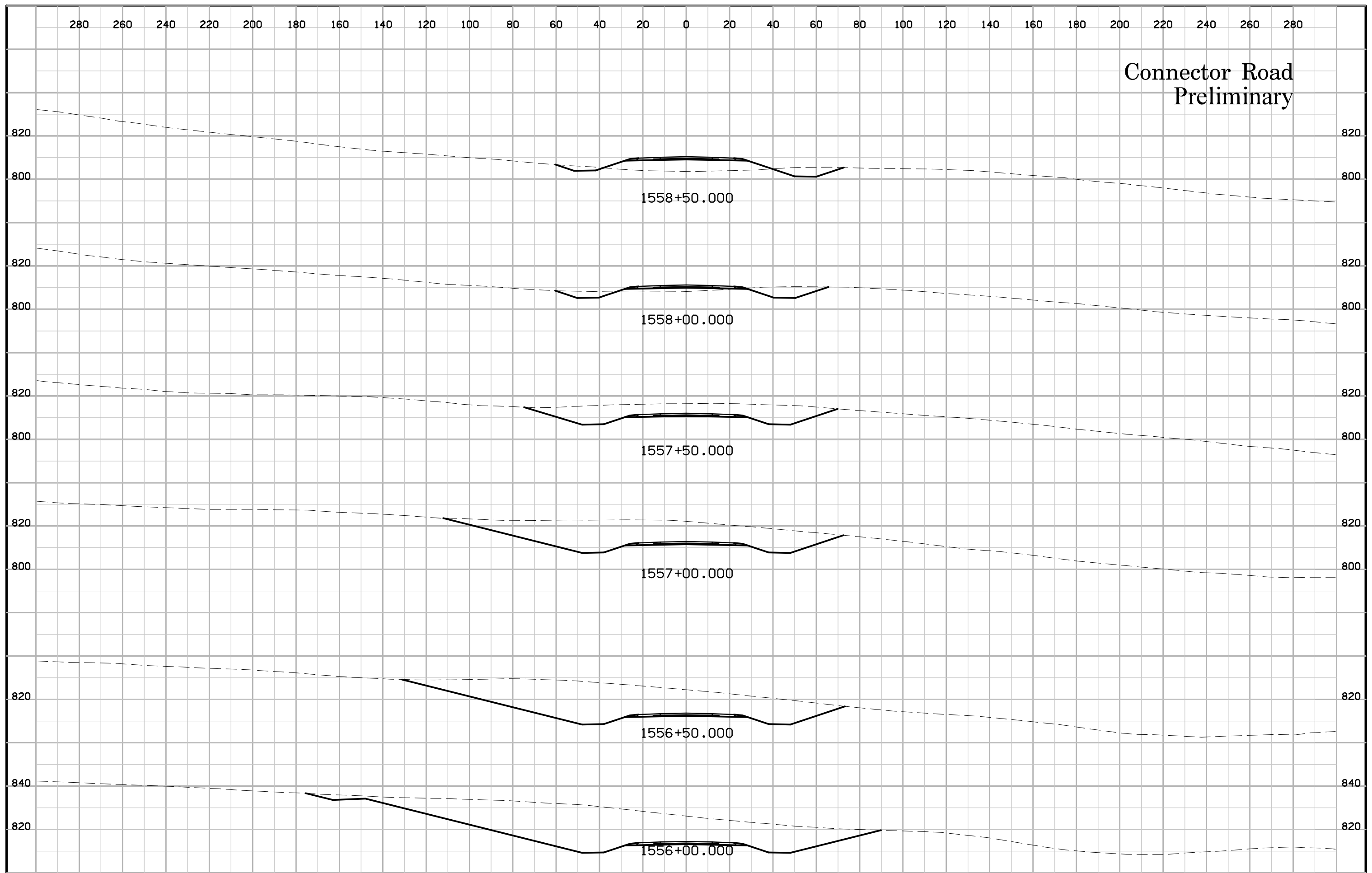




# Connector Road Preliminary



# Connector Road Preliminary



# Connector Road Preliminary

