

March 7, 2008

Michael D. Weeks, P.E.
Project Engineer
TranSystems Corporation
5747 Perimeter Drive, Suite 240
Dublin, Ohio 43017

Re: **SCI-823-6.81, Portsmouth Bypass Project, PID 19415**
Addendum to Report: Rock Cut Slopes Phase 1 – Stage 1
DLZ Job No.: 0121-3070.03
Document # 111

Dear Mr. Weeks:

DLZ has reviewed ODOT-Office of Geotechnical Engineering's (OGE's) Stage I review comments (dated January 31, 2007) for Phase 1 of the SCI-823 project. In compliance with the review comments, DLZ has added and modified the cross sections for the Rock Cut Slopes report in selected areas.

Summary of Cross Section Modifications and Additions:

- The cross section for TR234 Ramp D, station 386+00 was modified to reflect an alignment change. The cross section is included in this addendum.
- The cross sections illustrating the rock cut slope recommendations for TR234 (Shumway Hollow Road) are included.
- Two labeling errors were corrected in Rock Cut #11. Two rock cut slope recommendations for two different design units were modified to reflect GB-3. Cross-sections that reflect these modifications for Rock Cut #11 from station 417+00 to station 432+00 are included in this addendum.
- Rock cut slope recommendations for Rock Cut #15 were modified to reflect GB-3. Cross sections that reflect these modifications for Rock Cut #15 from station 508+50 to station 519+00 are included in this addendum.
- A cross section of an example rock cut illustrating the different bench types is included for use in the design plans.

We appreciate having the opportunity to be of service to you on this project. Please do not hesitate to call if you have any questions concerning this addendum.

Michael D. Weeks, P.E.
February 4, 2008
Page 2

Sincerely,

DLZ OHIO, INC.

Eric Tse, P.E.
Senior Geotechnical Engineer

Andrew Jalbrzikowski
Geologist

Brian Mott
Senior Geologist, P.G.

Encl: As noted

cc: file

amj

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Report of:

Rock Cut Slopes Addendum
Portsmouth Bypass
Project SCI-823-6.81
Phase 1 – Stage I
Scioto County, Ohio

DLZ Ohio, Inc.
6121 Huntley Road
Columbus, OH 43229
Phone: (614) 888-0040
Fax: (614) 436-0161

DLZ Job No. 0121-3070.03
PID 19415

February 4, 2008



Prepared for:
TransSystems Corporation
5747 Perimeter Drive, Suite 240
Dublin, Ohio 43017



Ohio Department of Transportation
District 9
650 Eastern Avenue
Chillicothe, Ohio 45601

Prepared by:

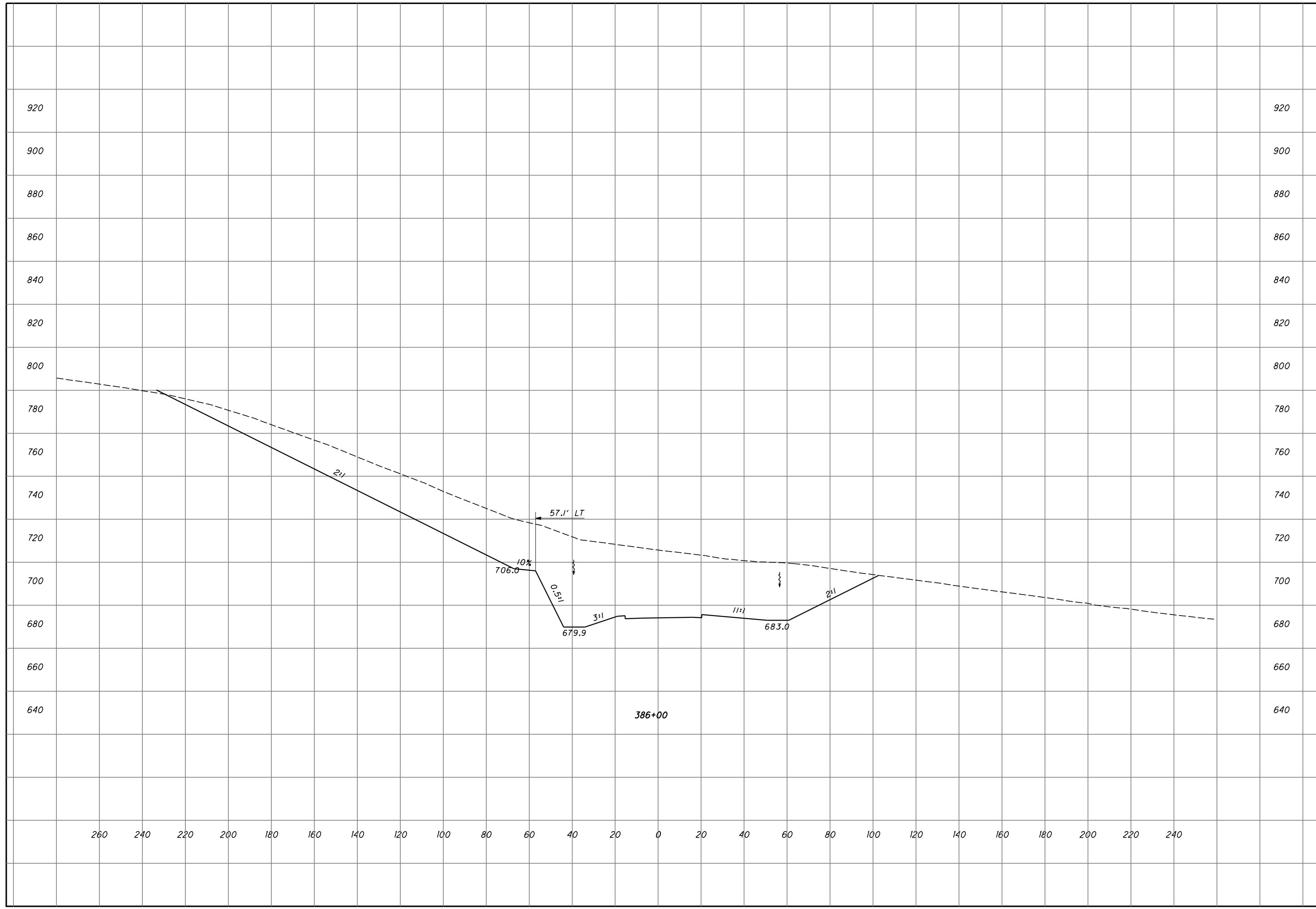


Rock Cut Slope Cross Section

TR 234 Ramp D Station 386+00

ROCK CUT RECOMMENDATIONS
CROSS SECTION - TR234 RAMP D - STA 386+00

SCI-823-6.81

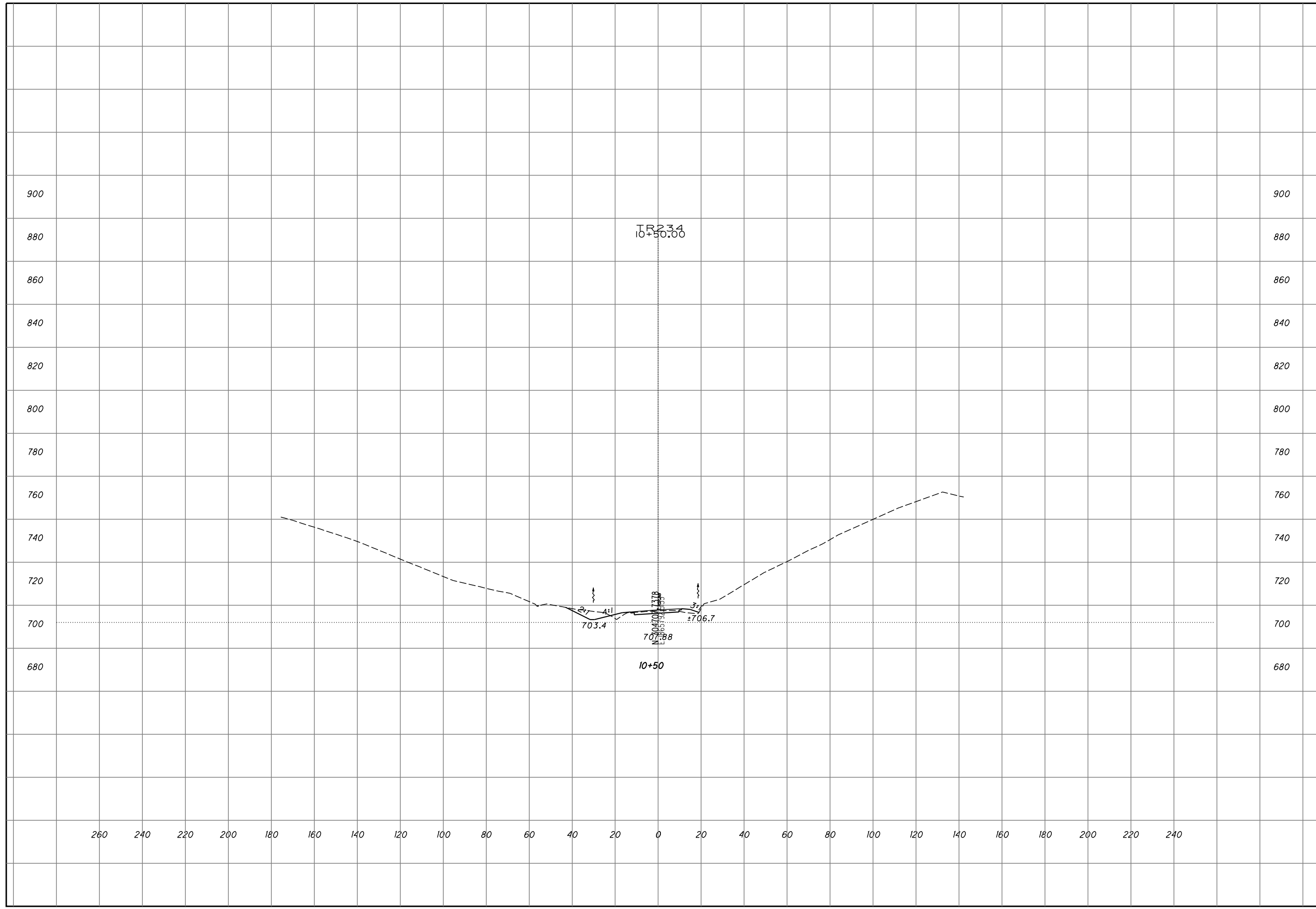


Rock Cut Slope Cross Sections

TR 234 – Shumway Hollow Road

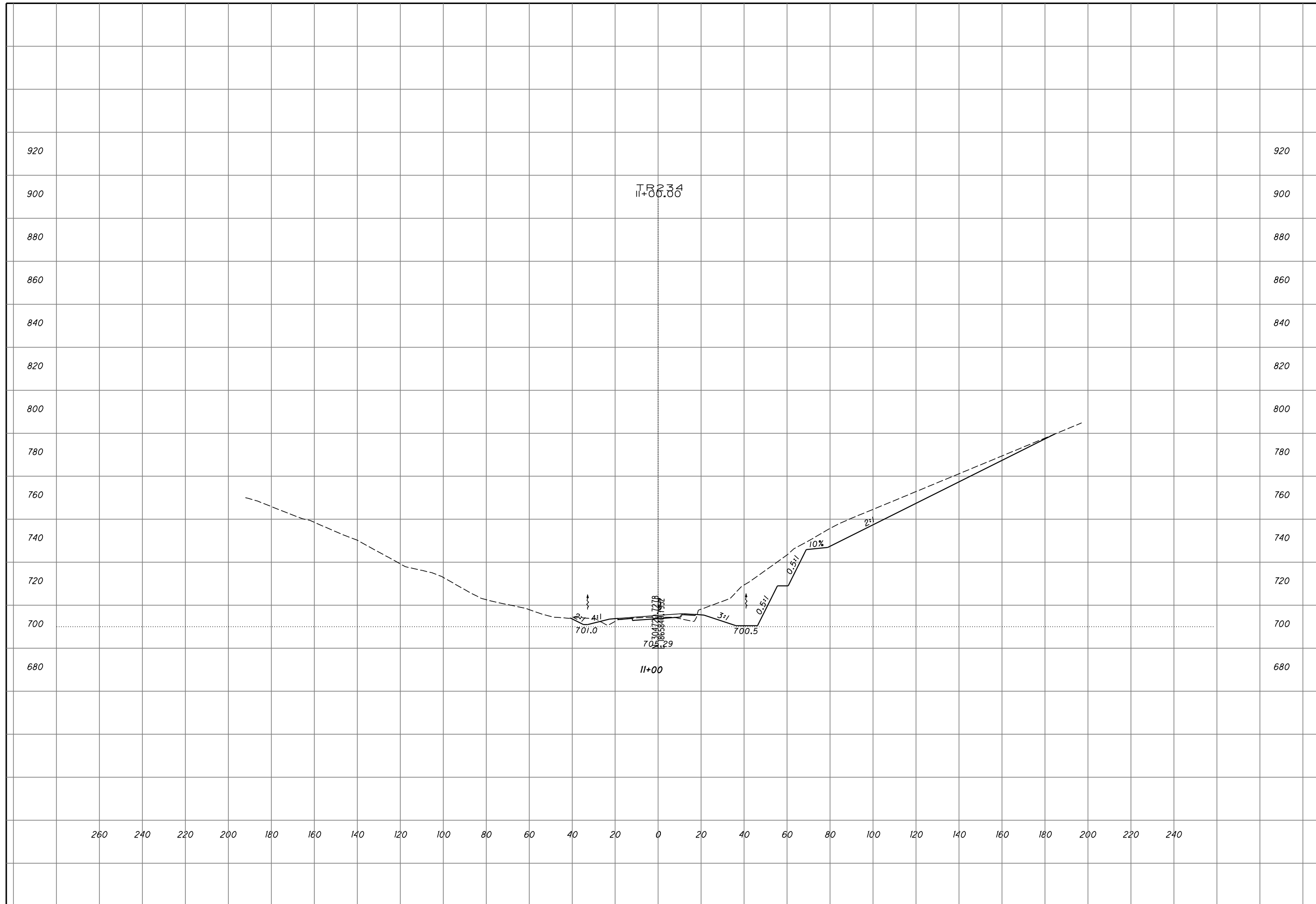
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SCI-823-6.81



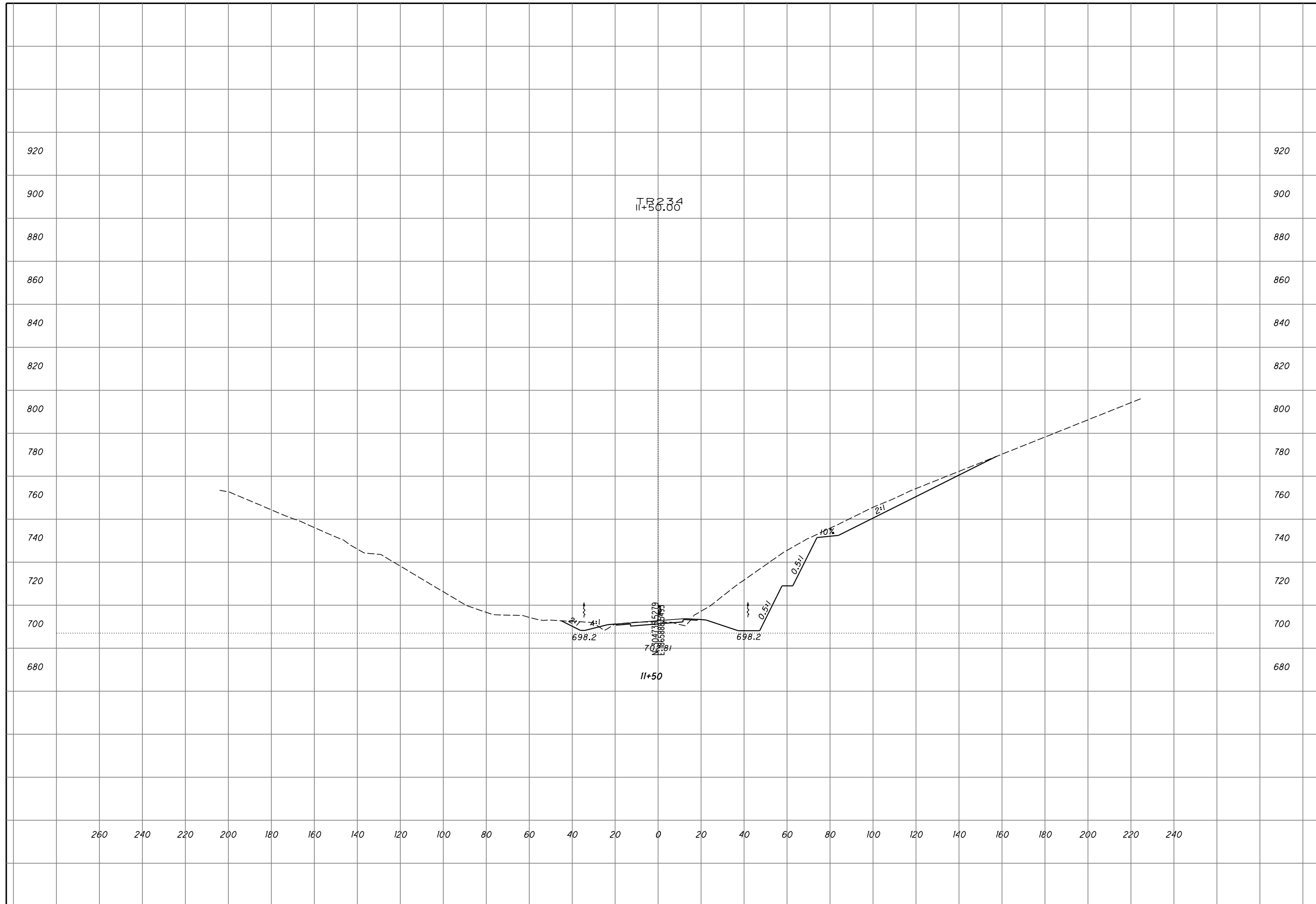
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SCI-823-6.81



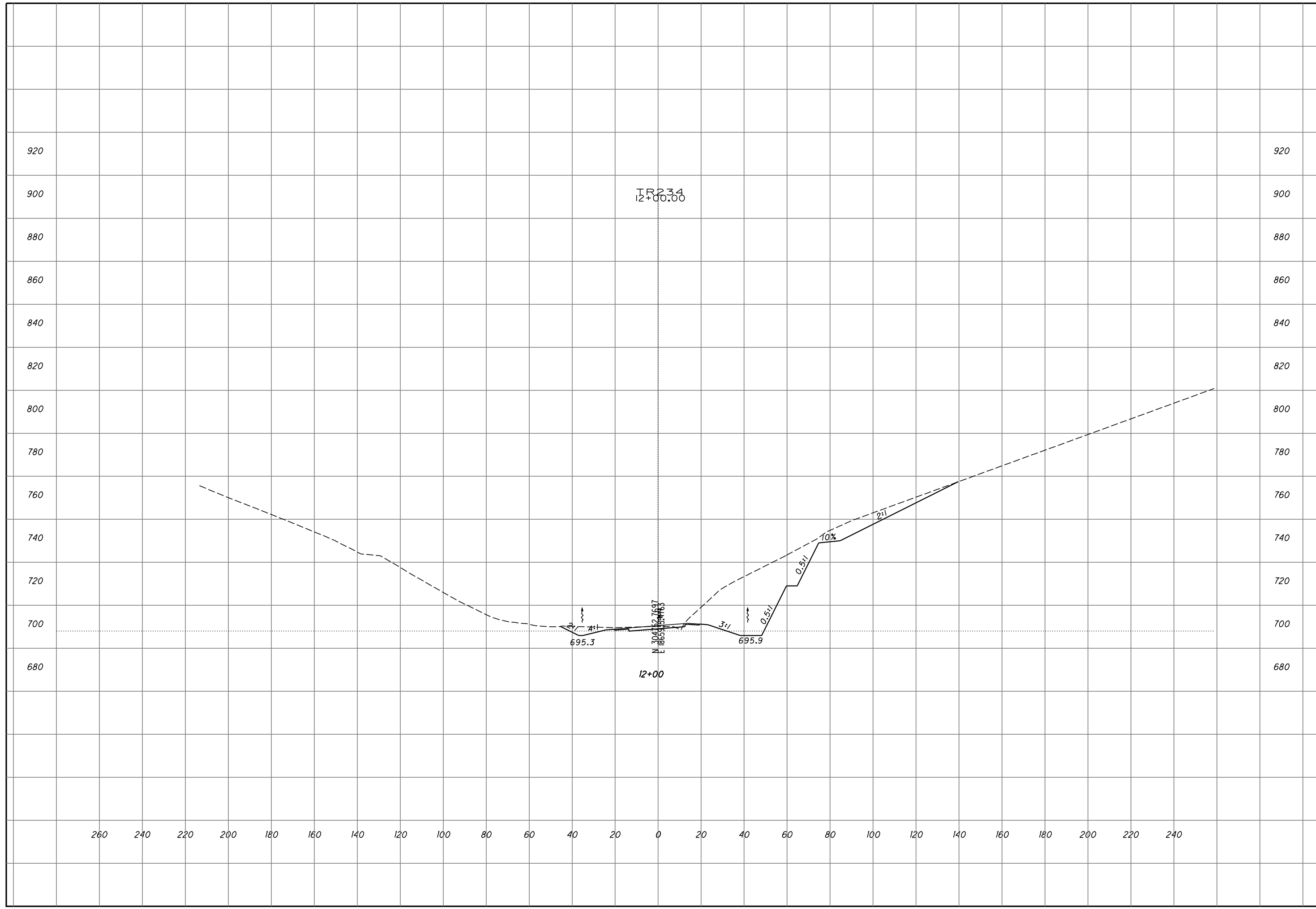
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SCI-823-6.81



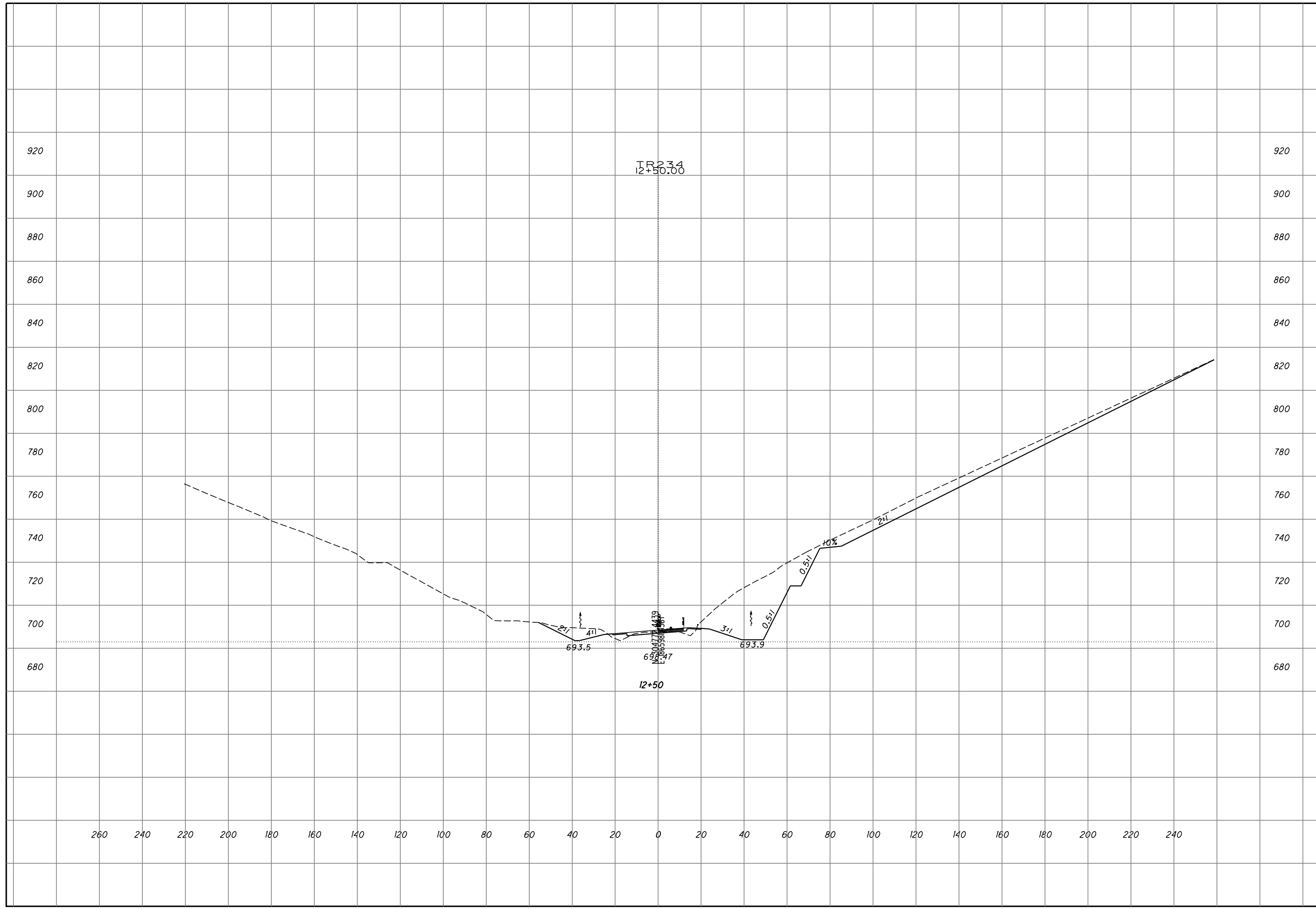
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SCI-823-6.81



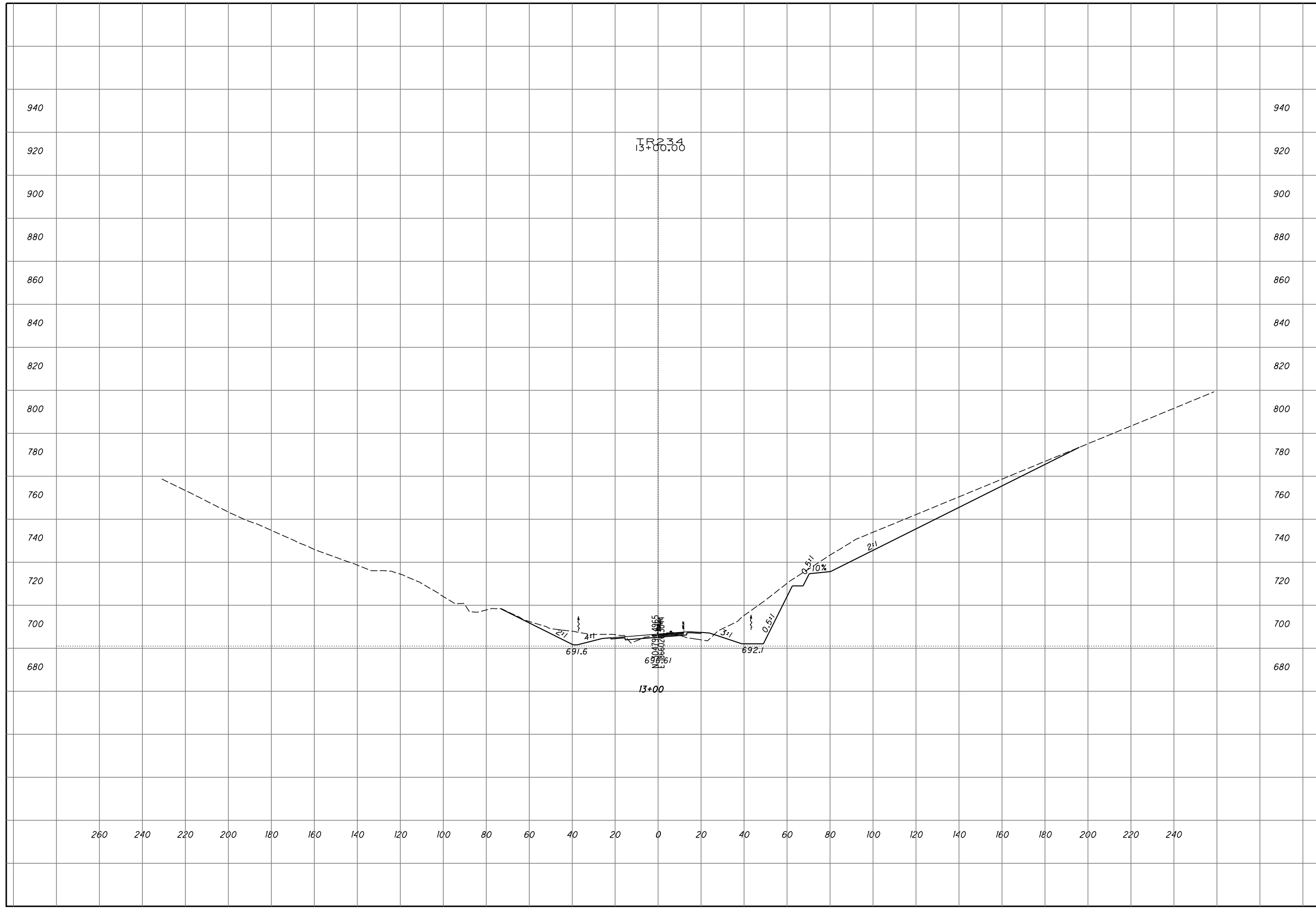
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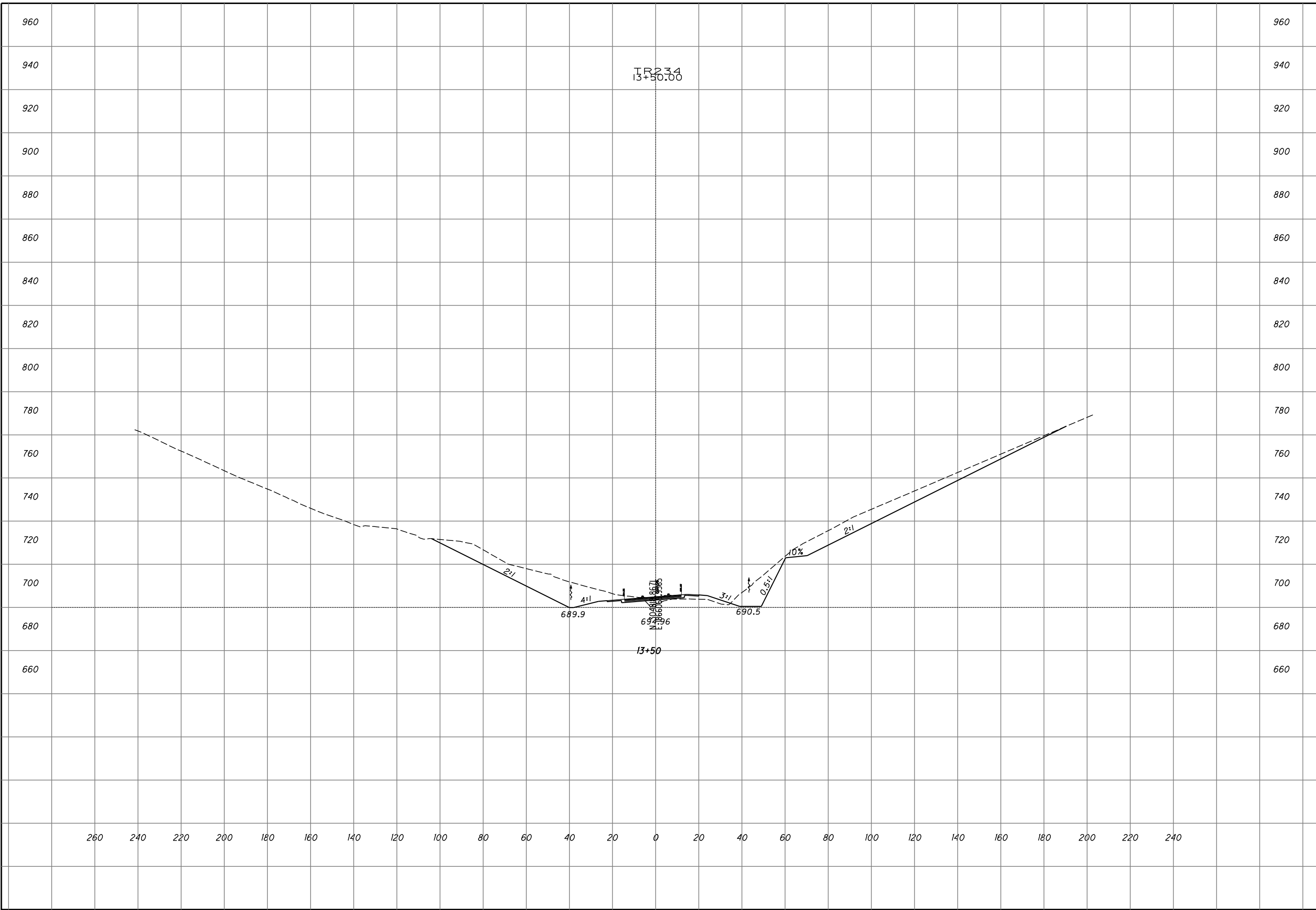
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**ROCK CUT RECCOMENDATIONS
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SCI-823-6.81





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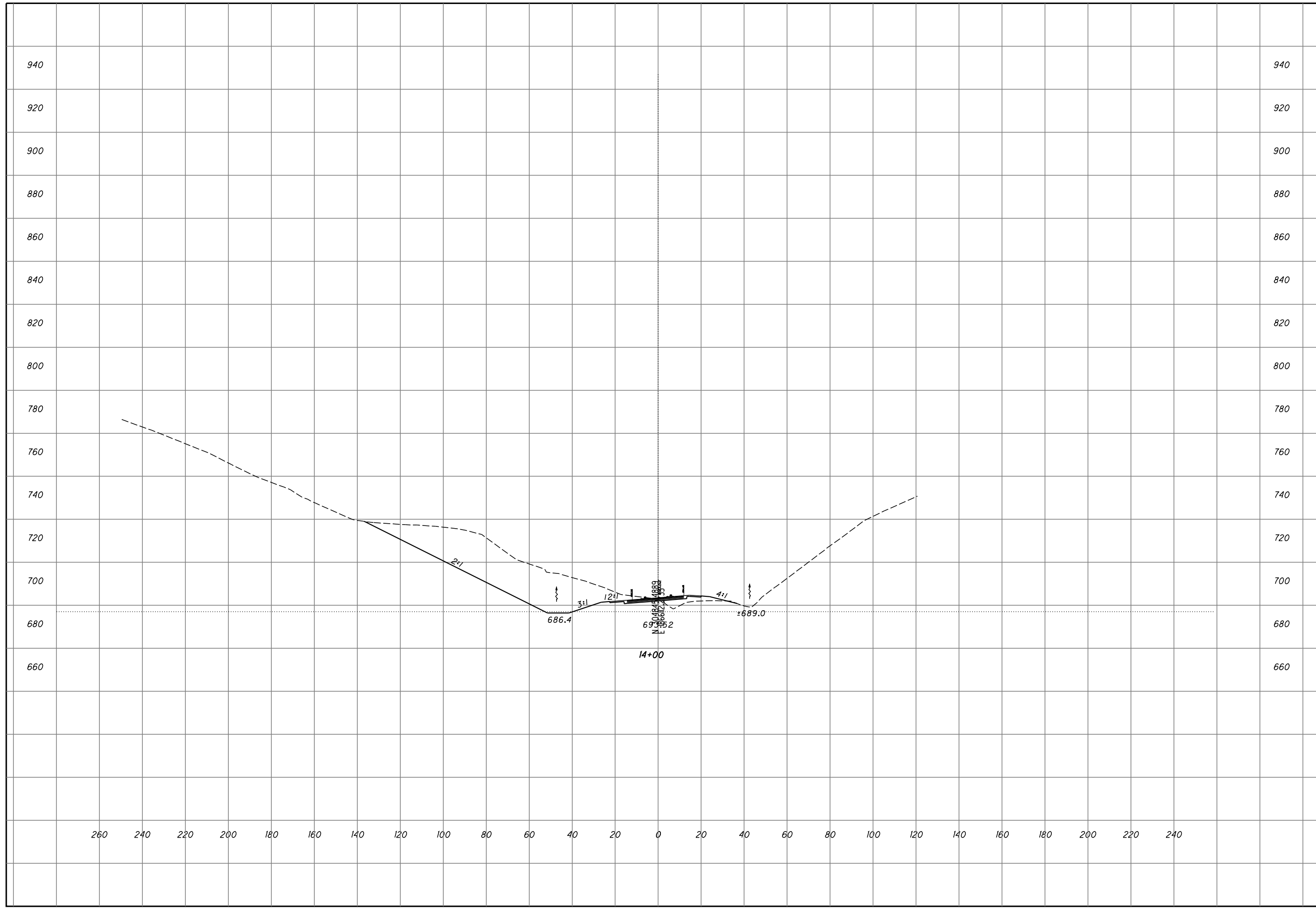
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SCI-823-6.81

7
32

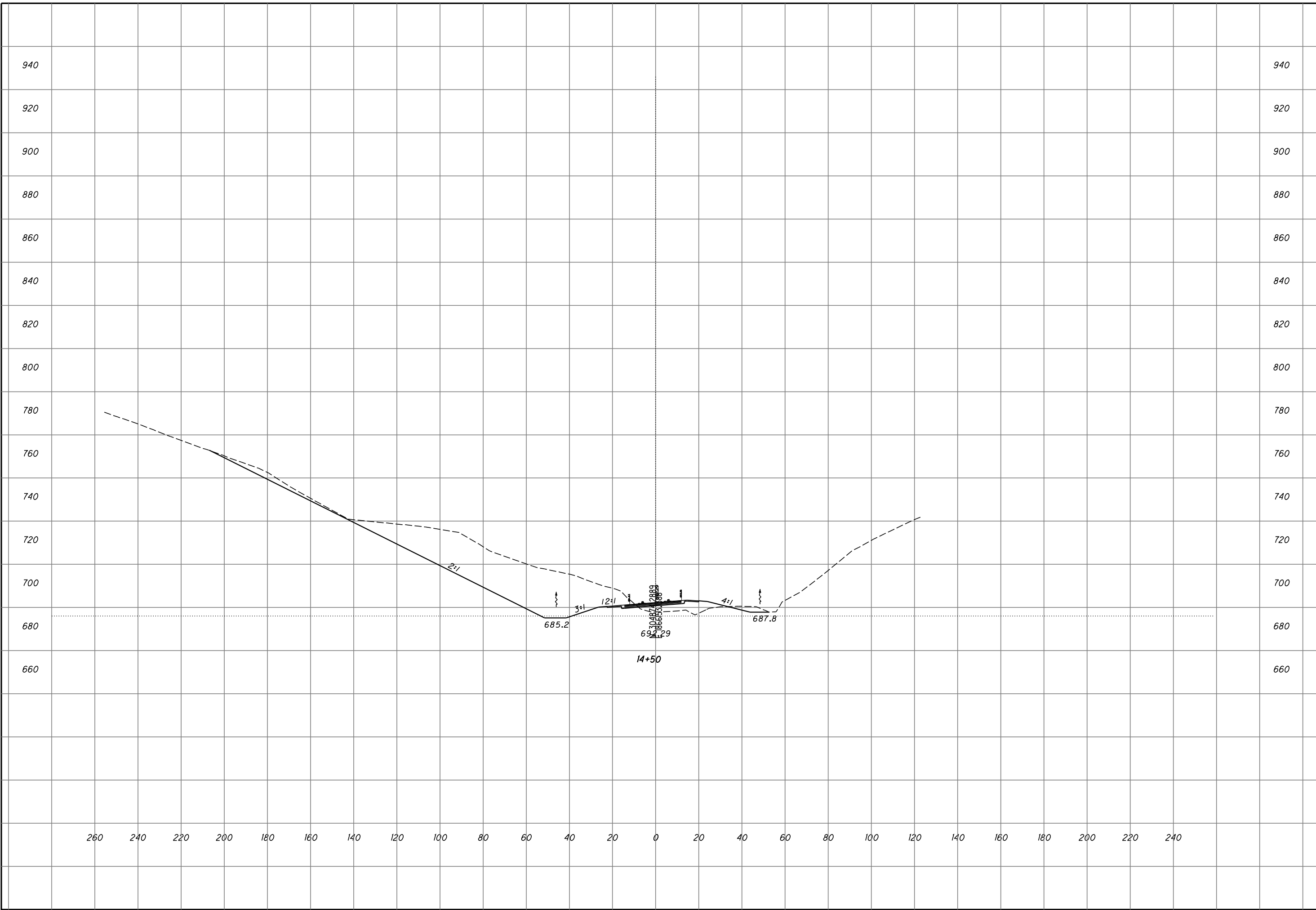
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SCI-823-6.81



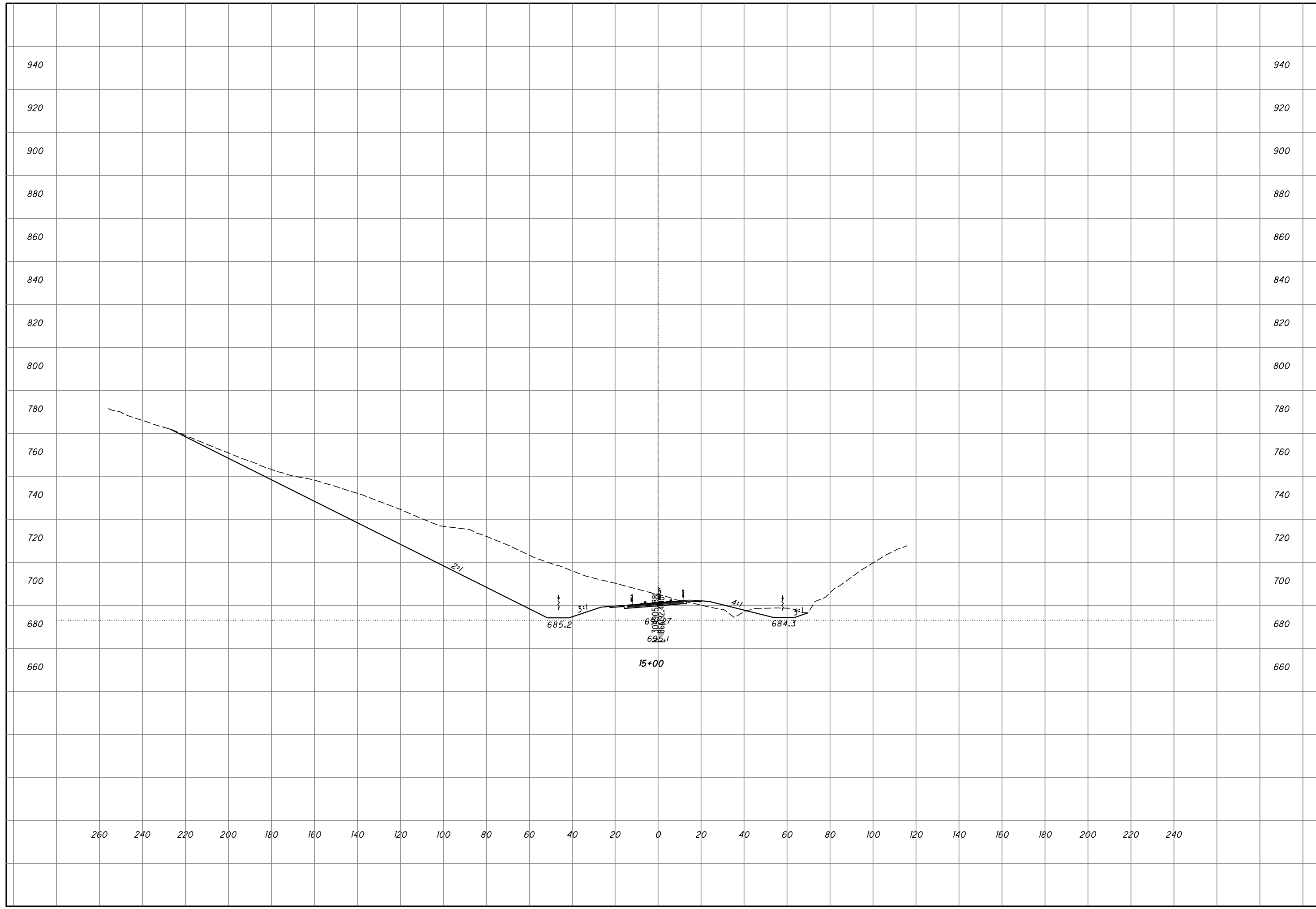
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SCI-823-6.81



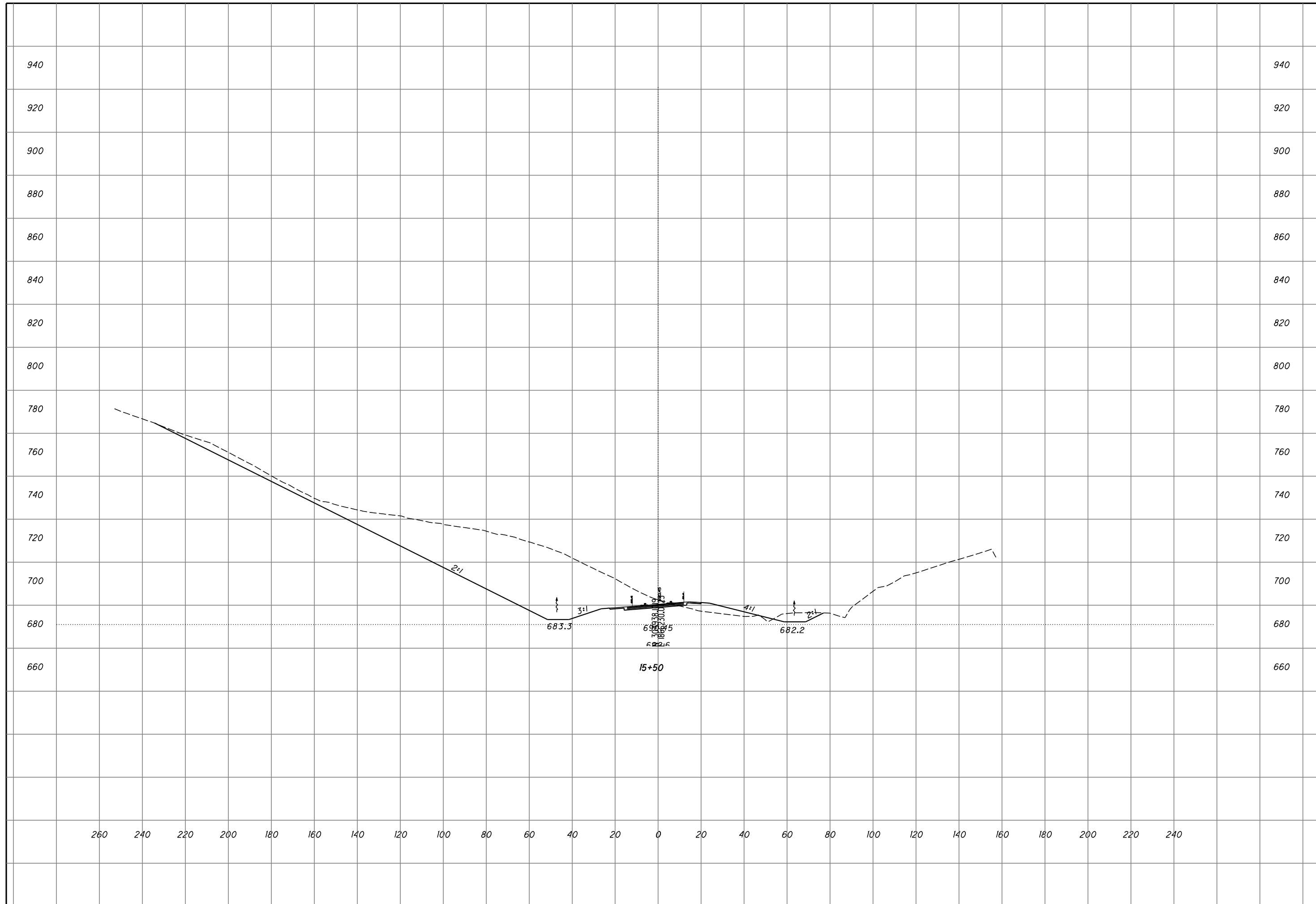
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SCI-823-6.81



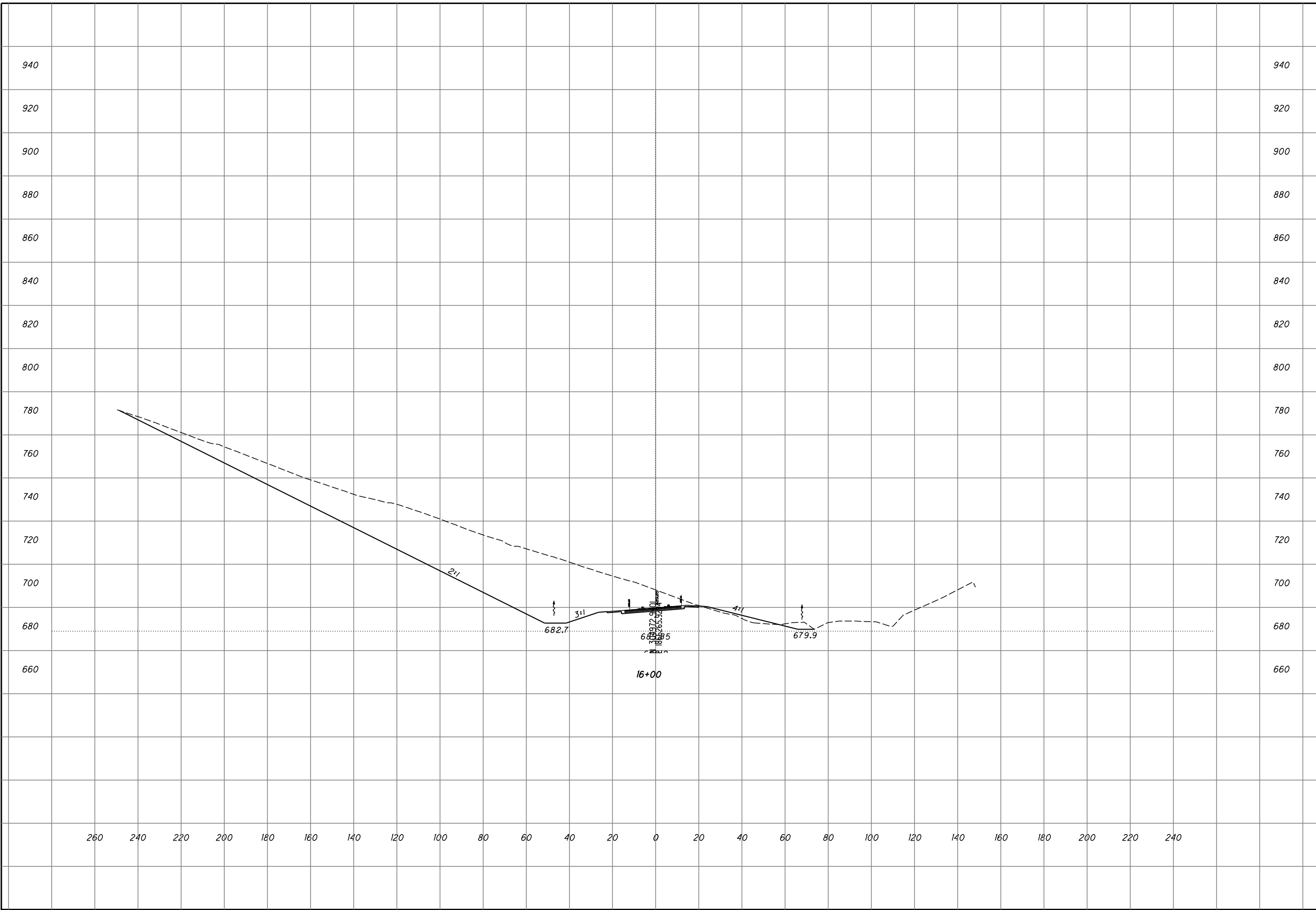
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SCI-823-6.81



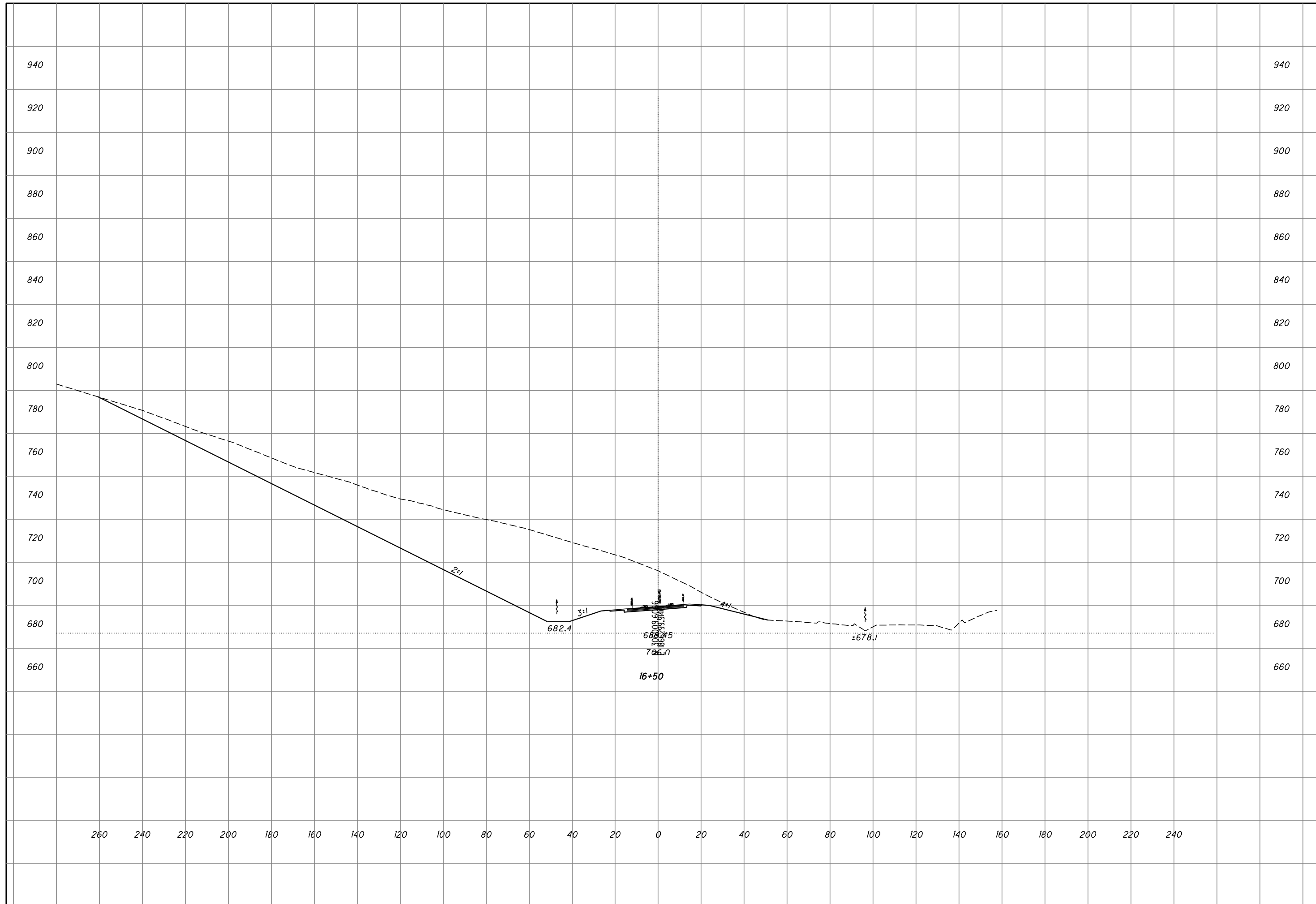
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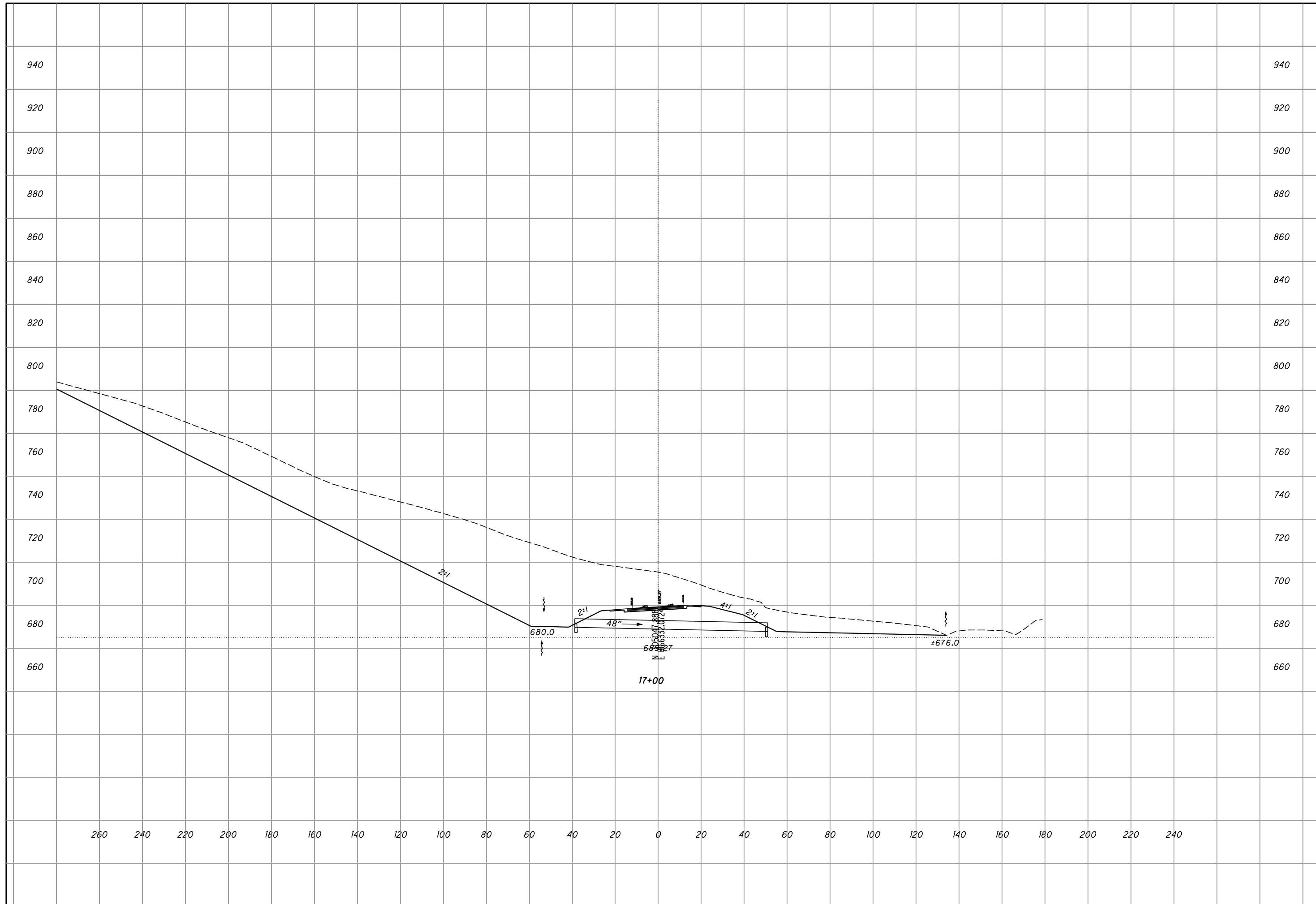
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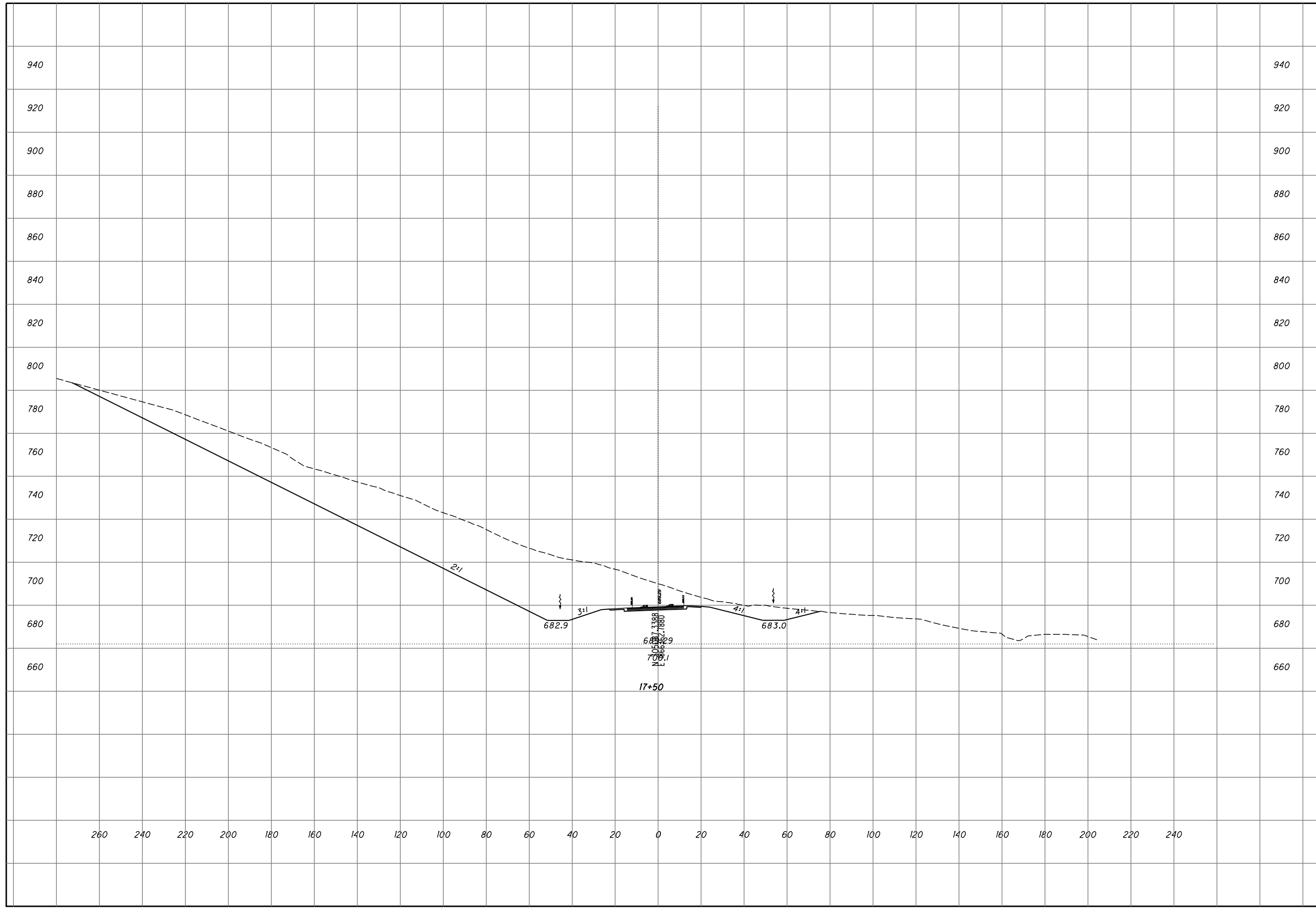
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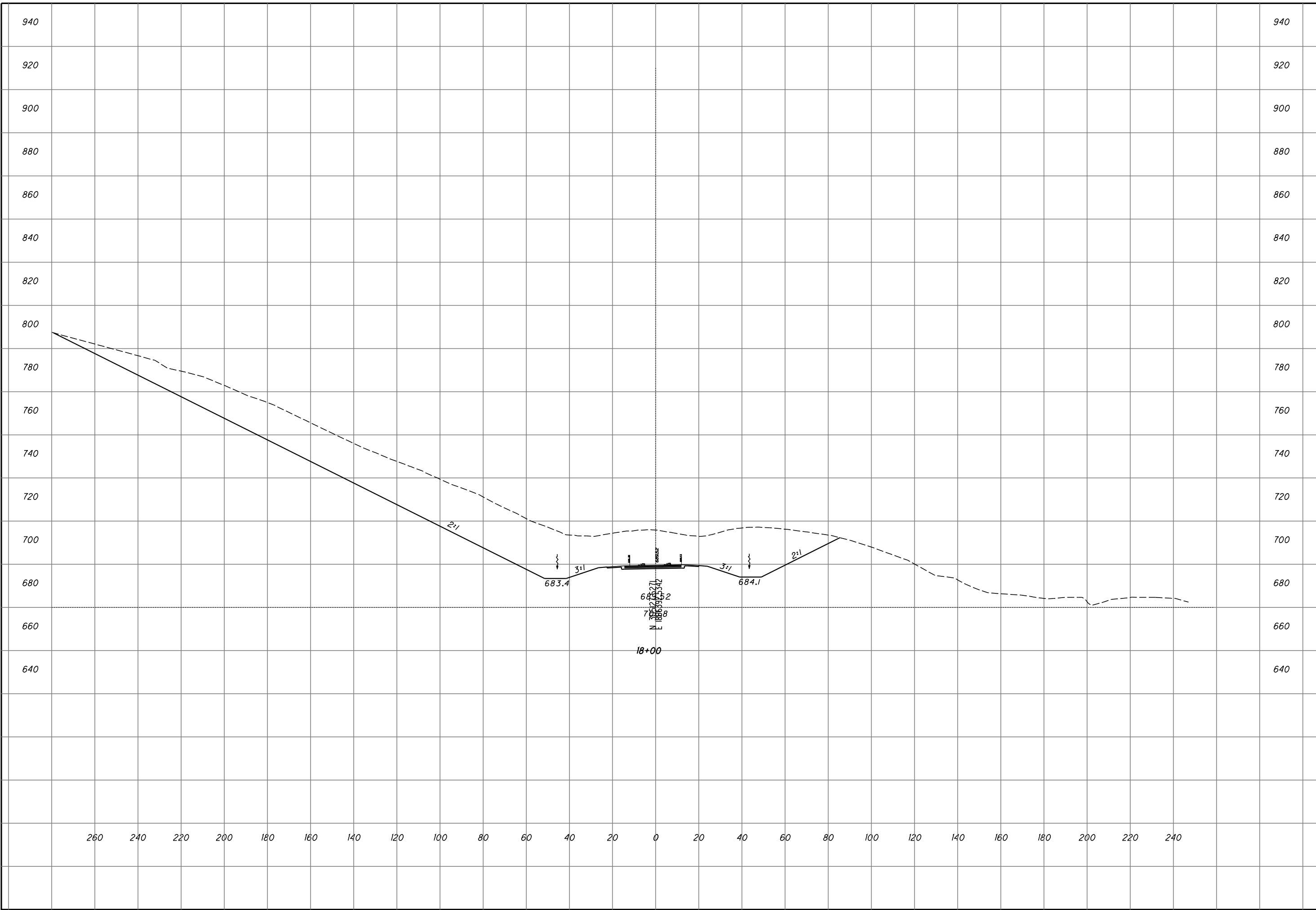
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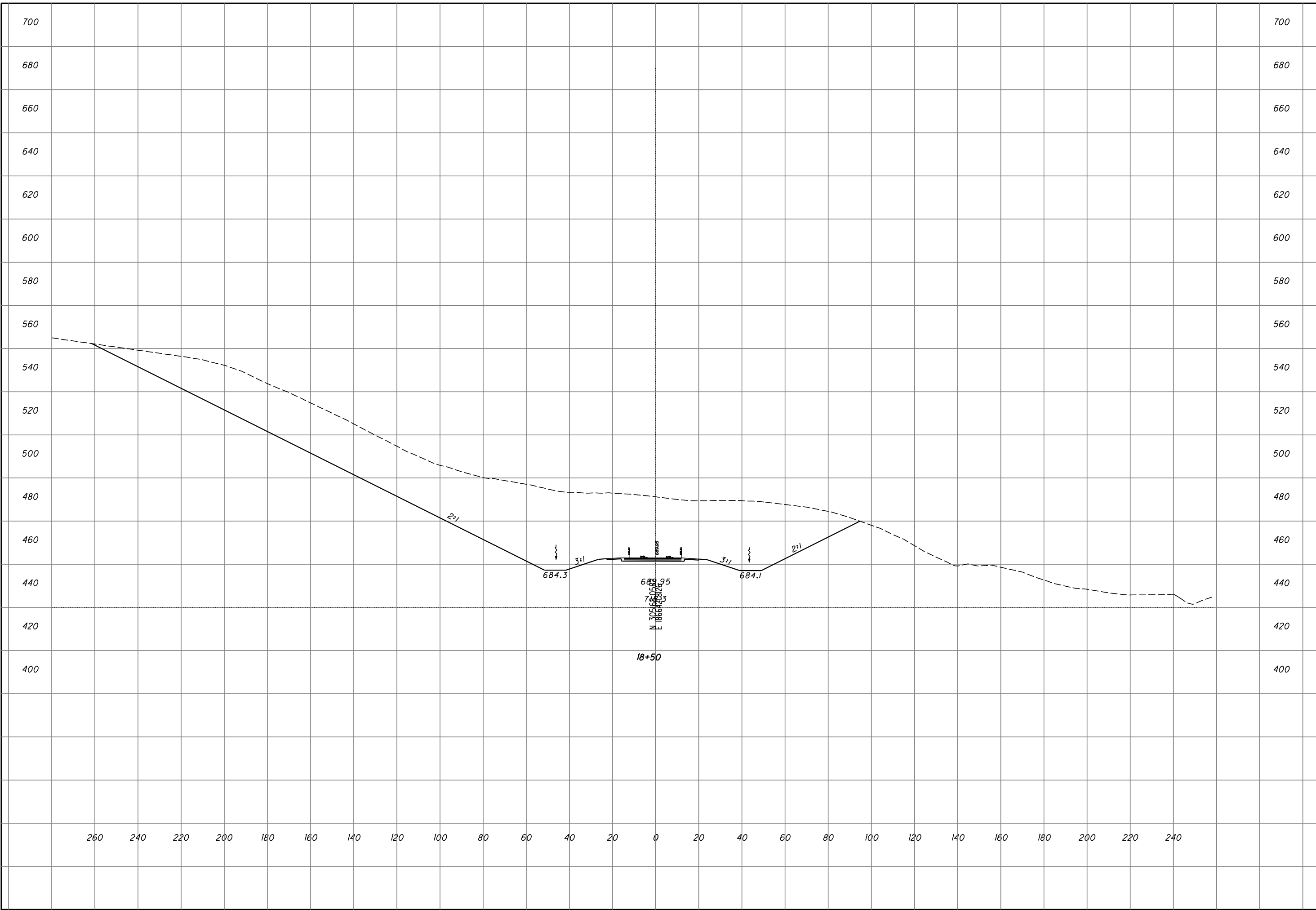




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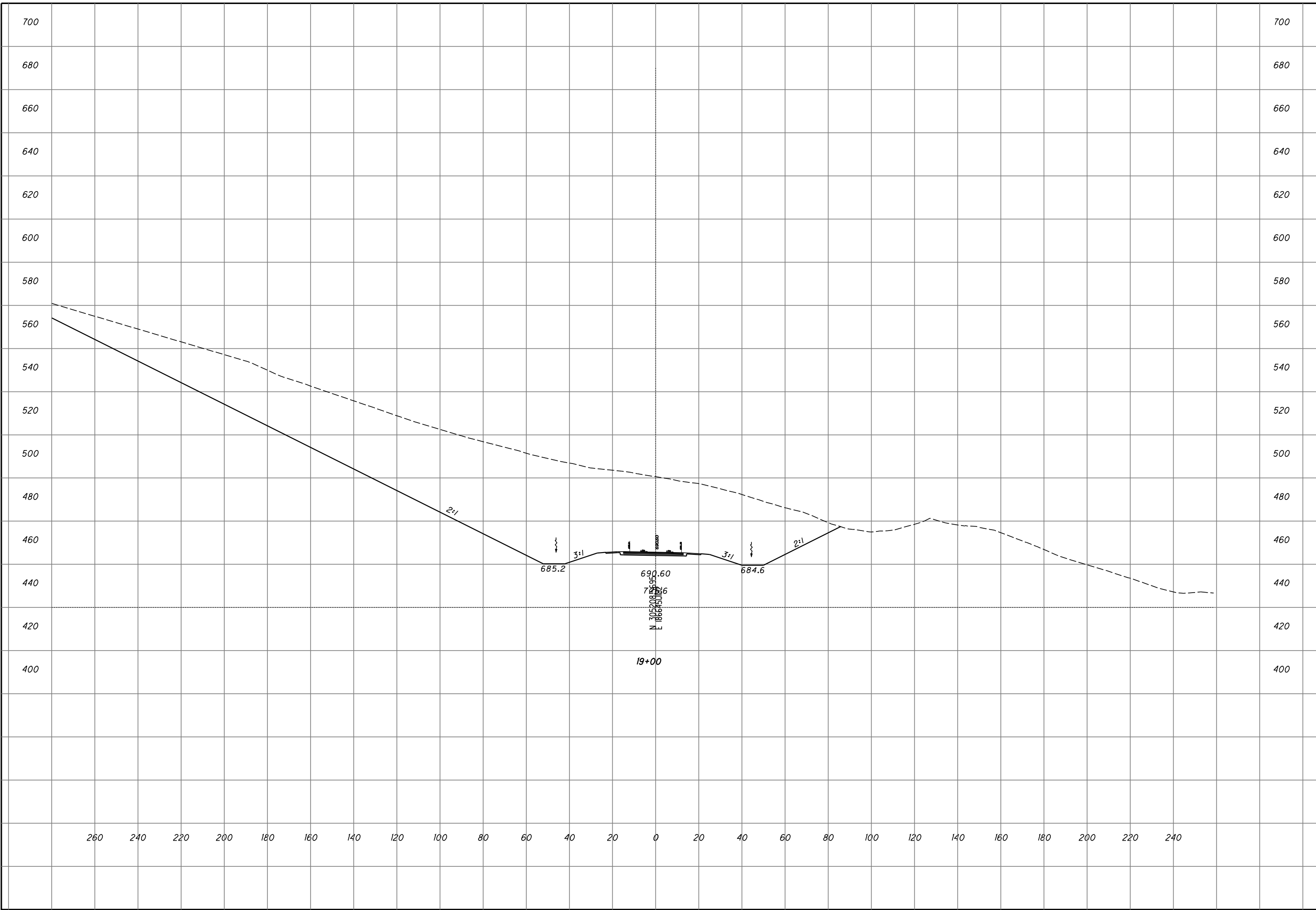


ROCK CUT RECOMMENDATIONS
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SCI-823-6.81

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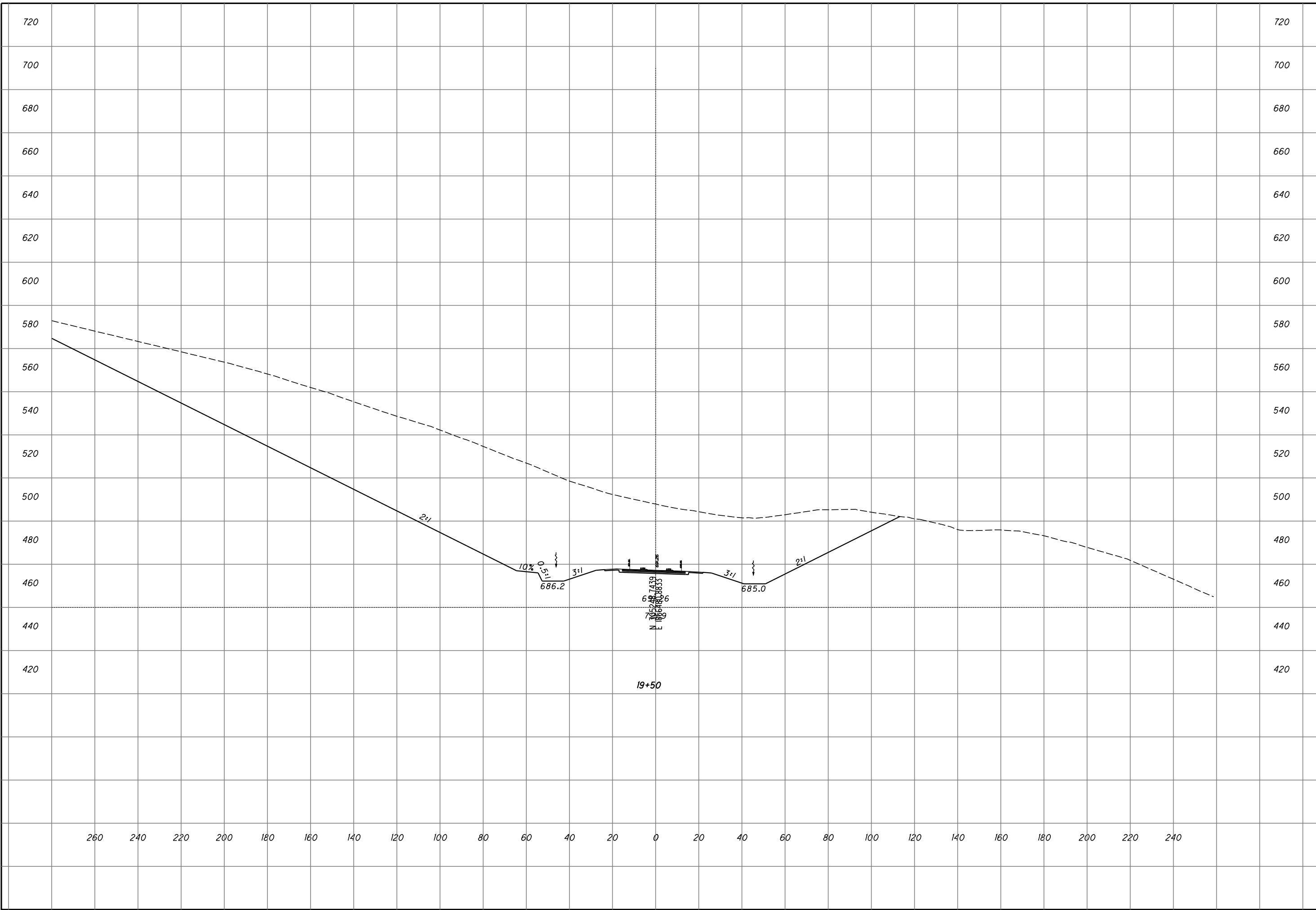
17
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CROSS SECTION TR234 - STA 19+00**

SCI-823-6.81



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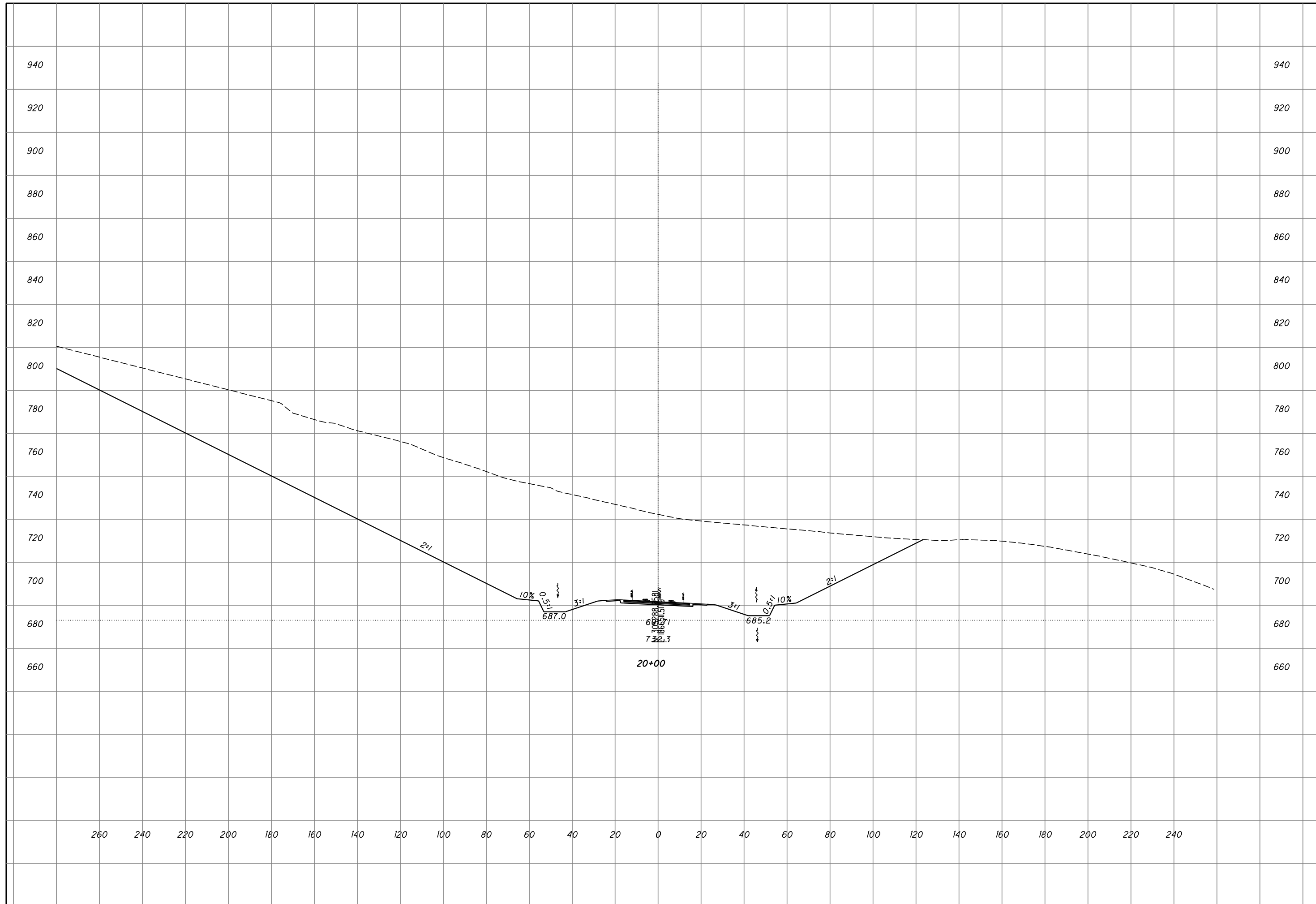
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SCI-823-6.81

19
32

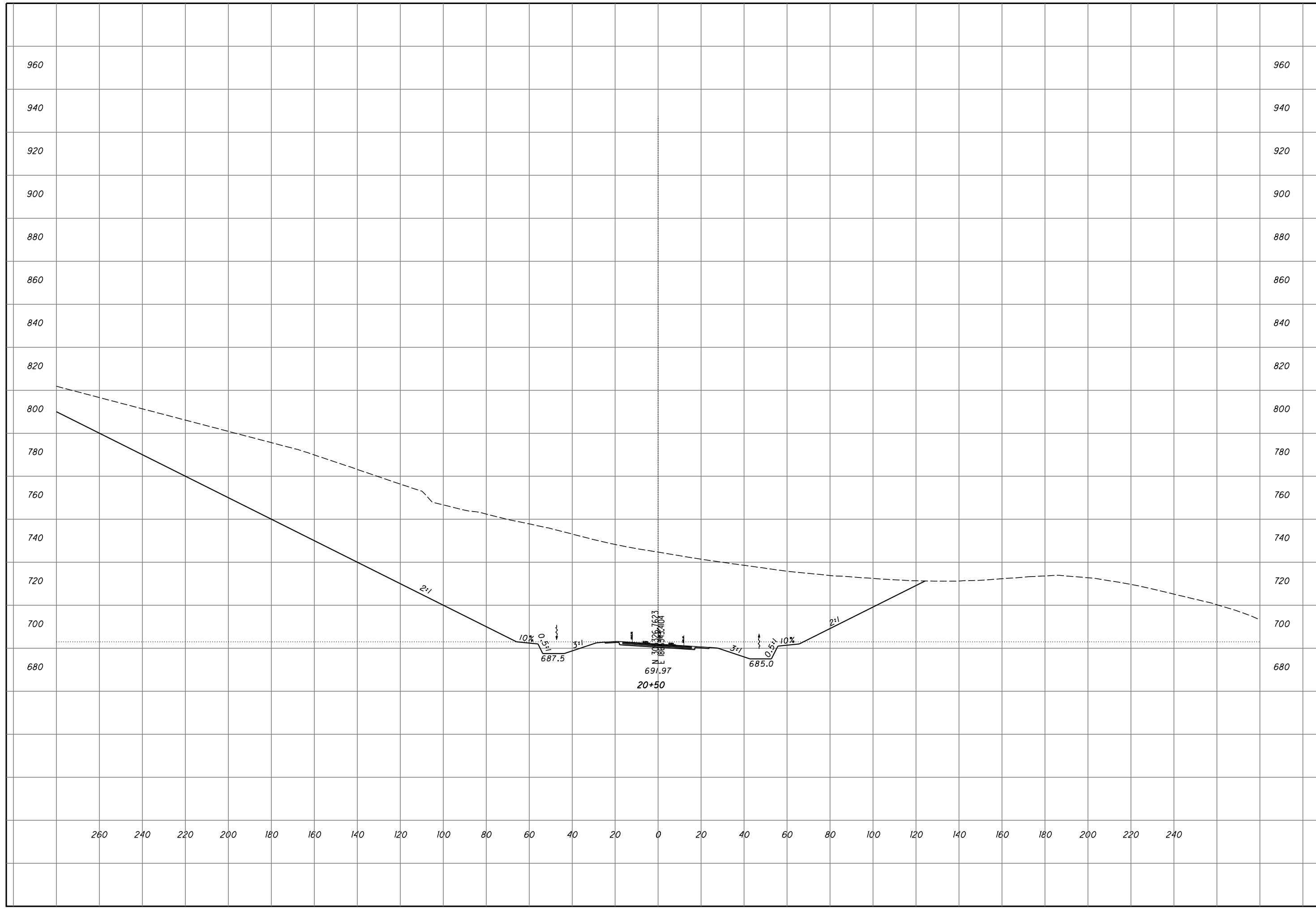
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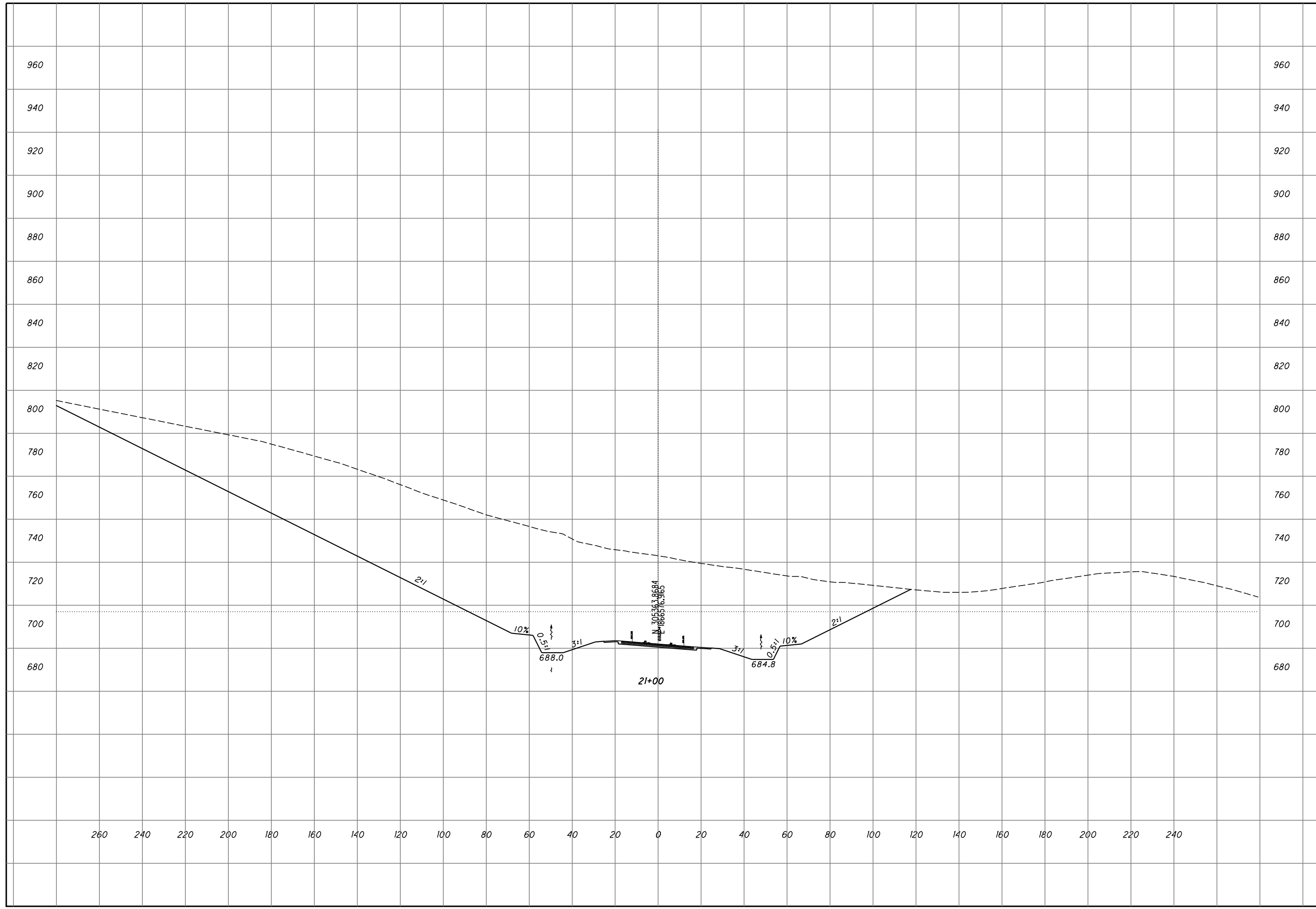
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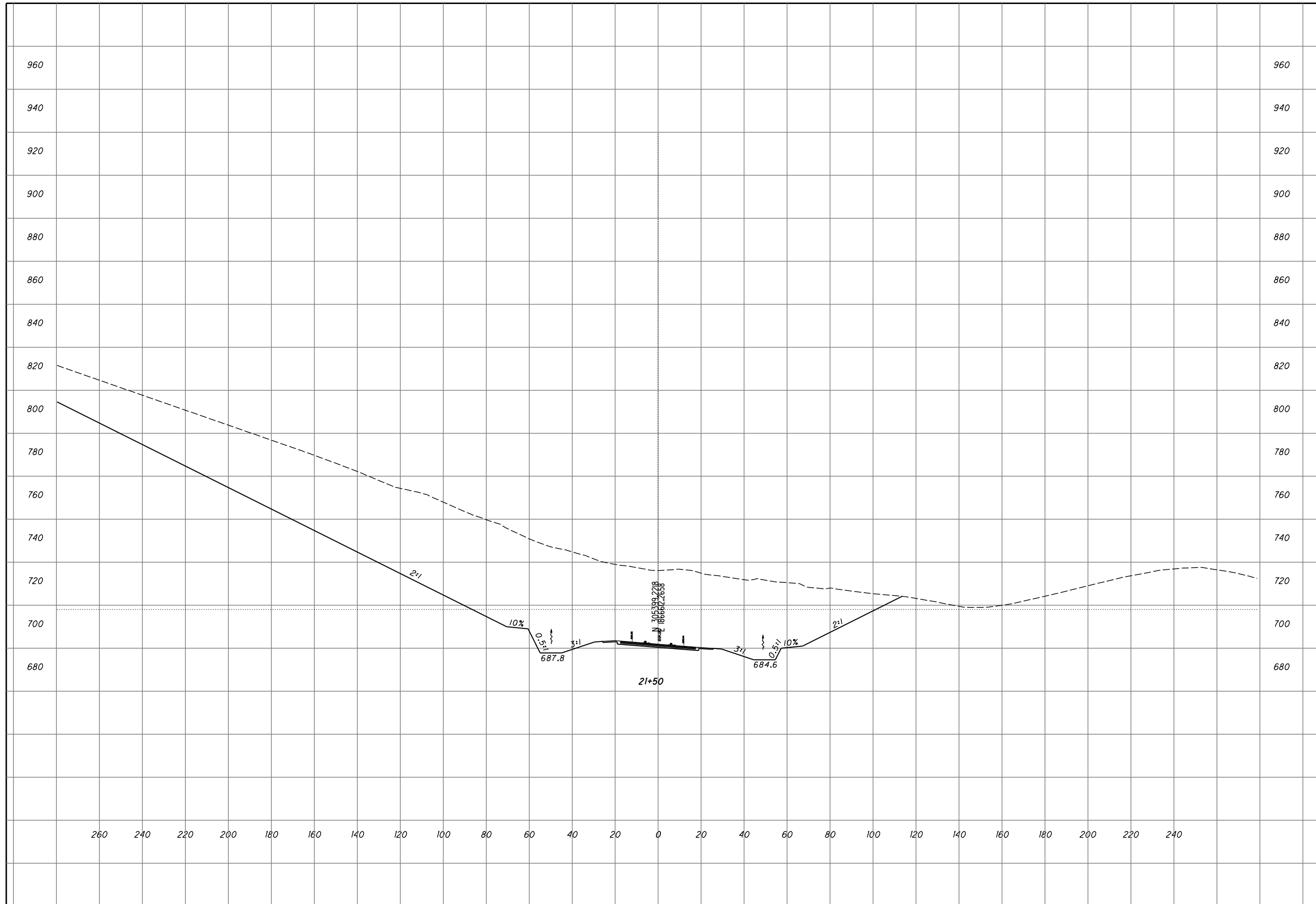
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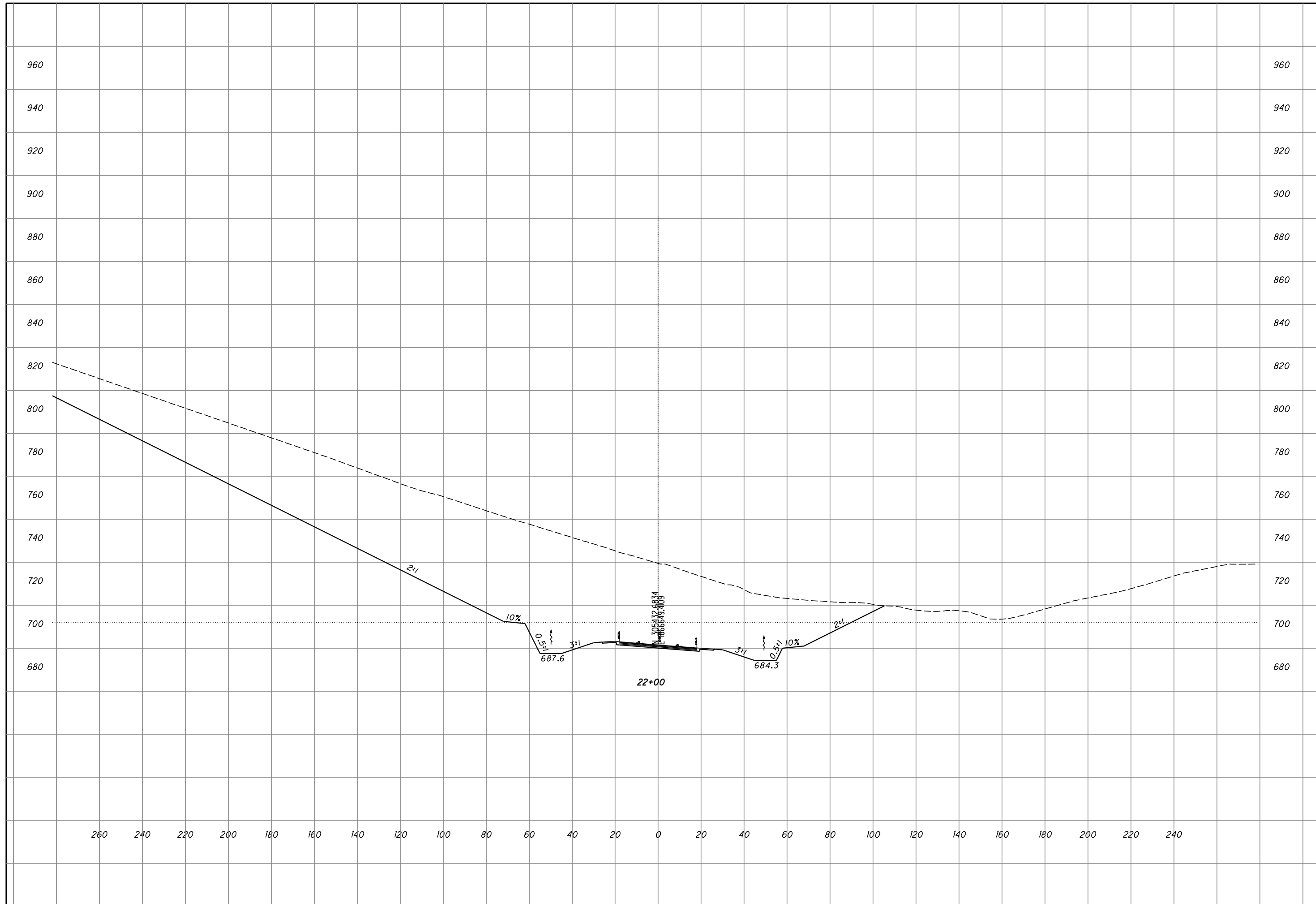
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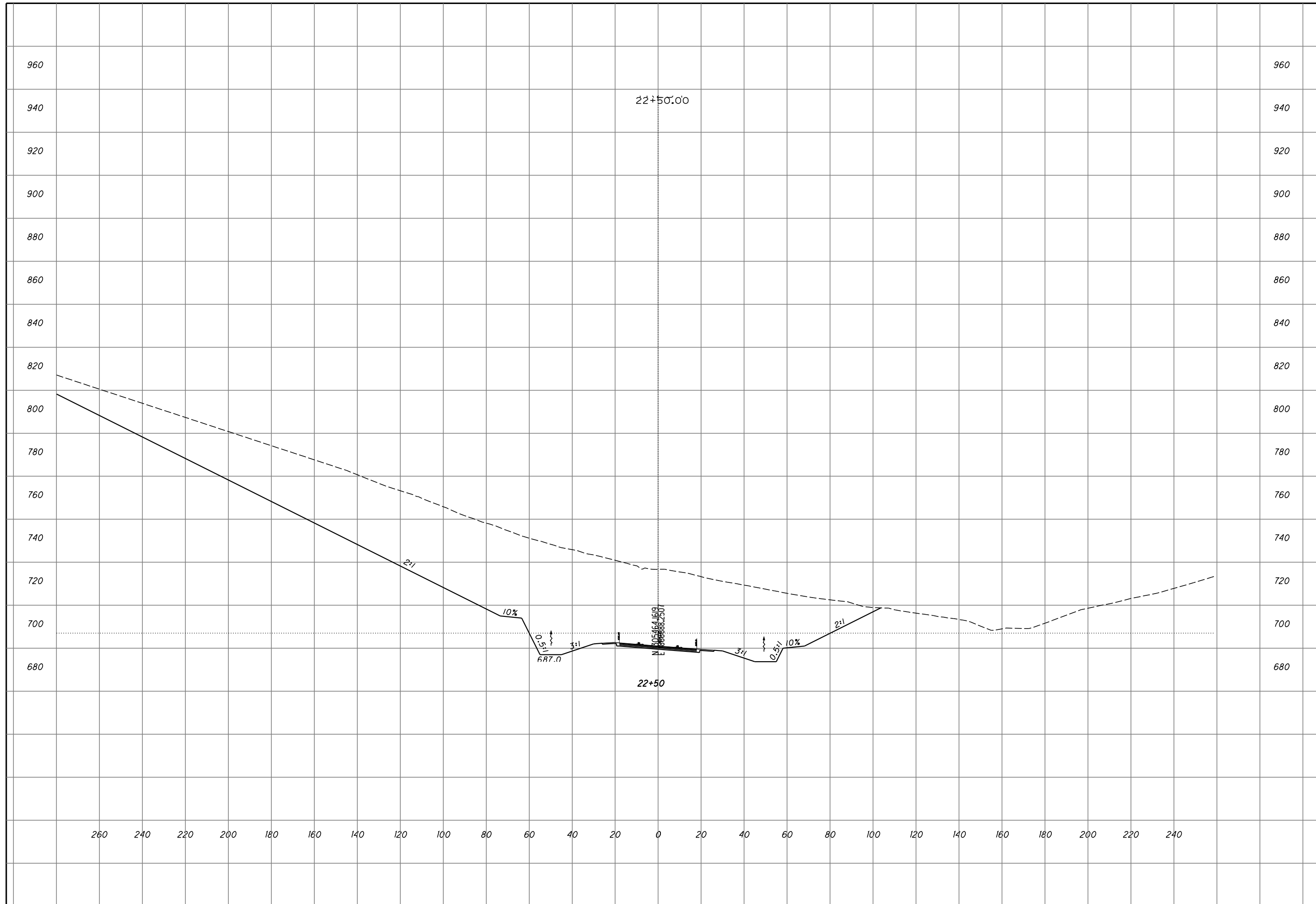
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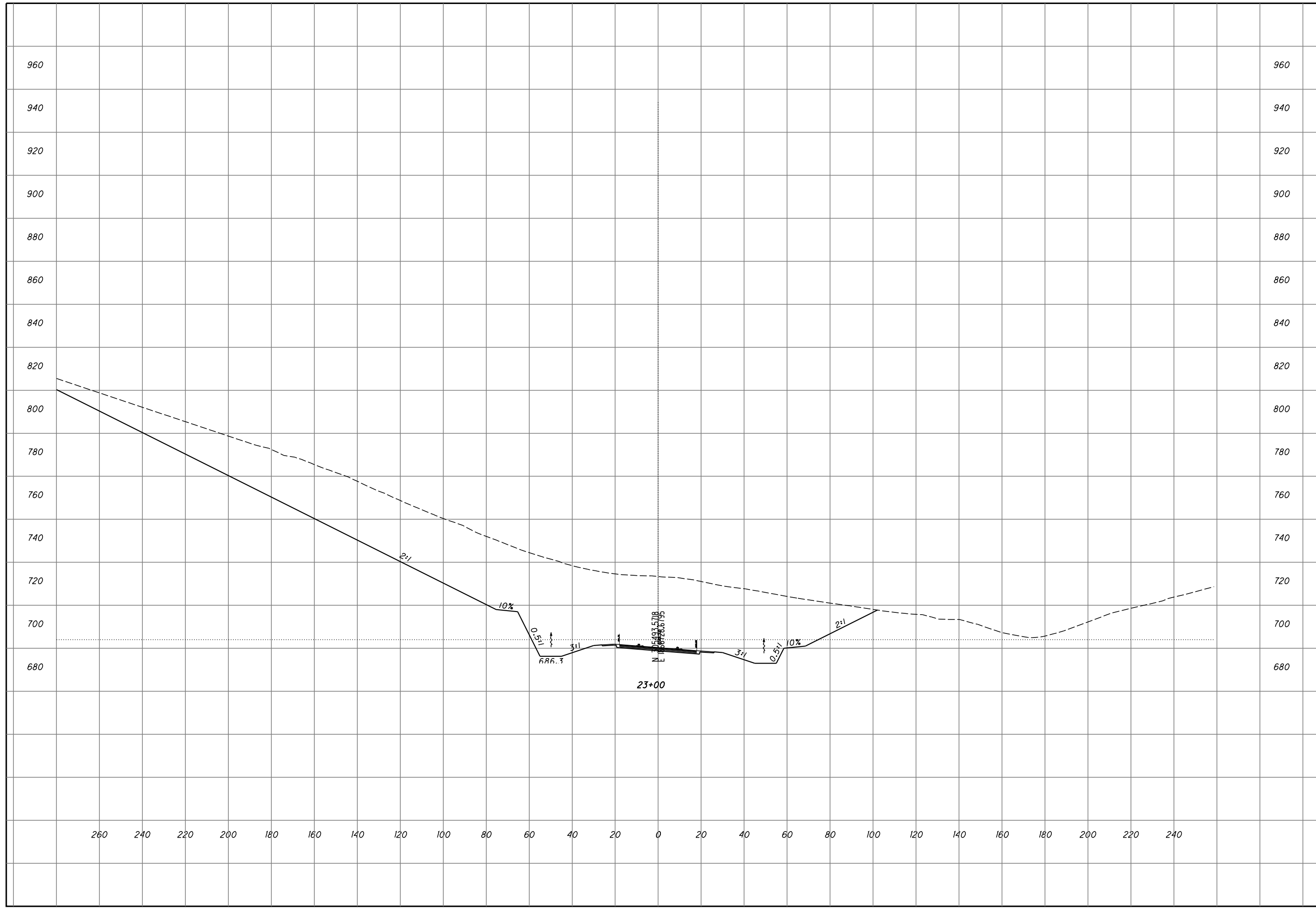
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SCI-823-6.81



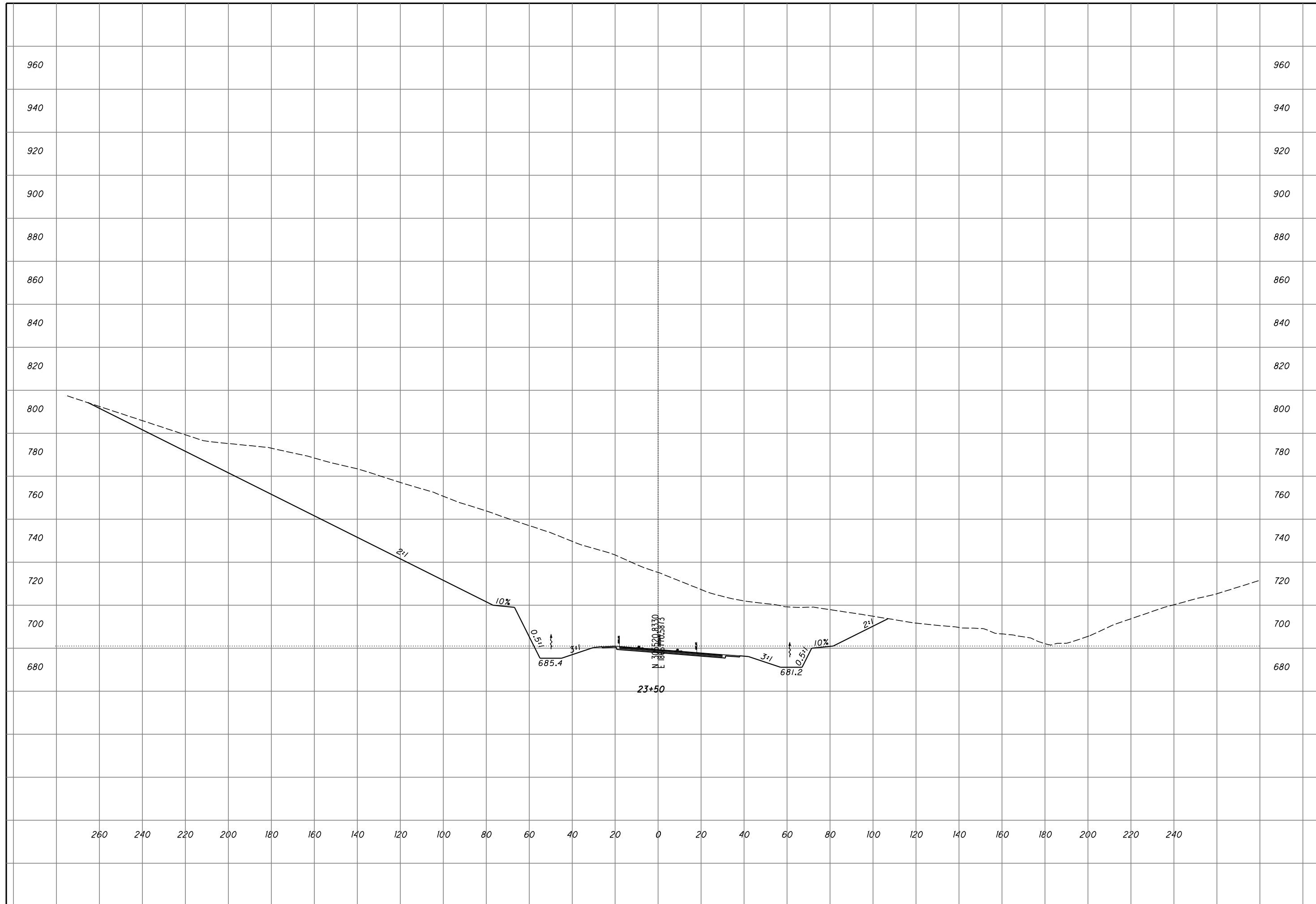
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SCI-823-6.81



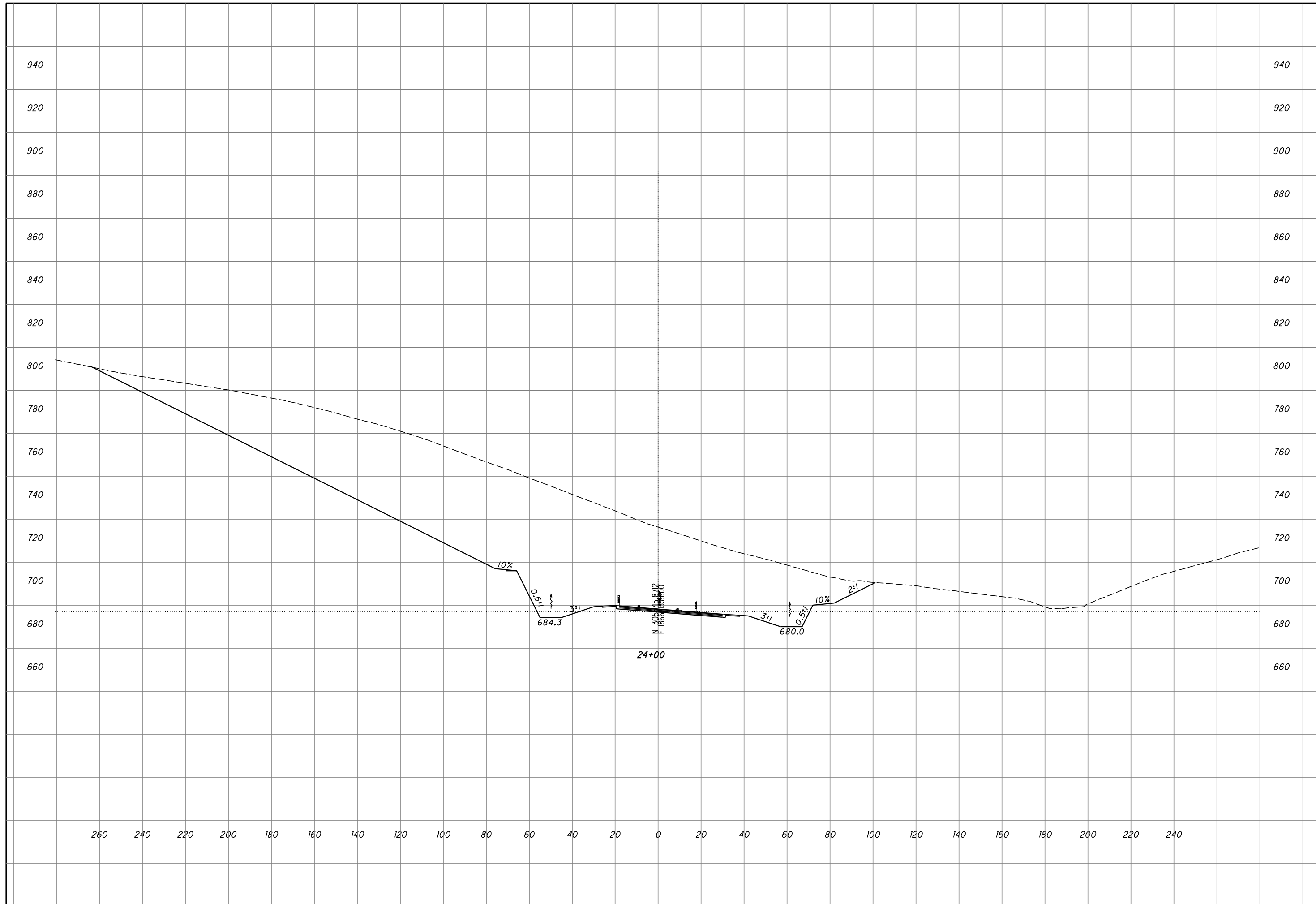
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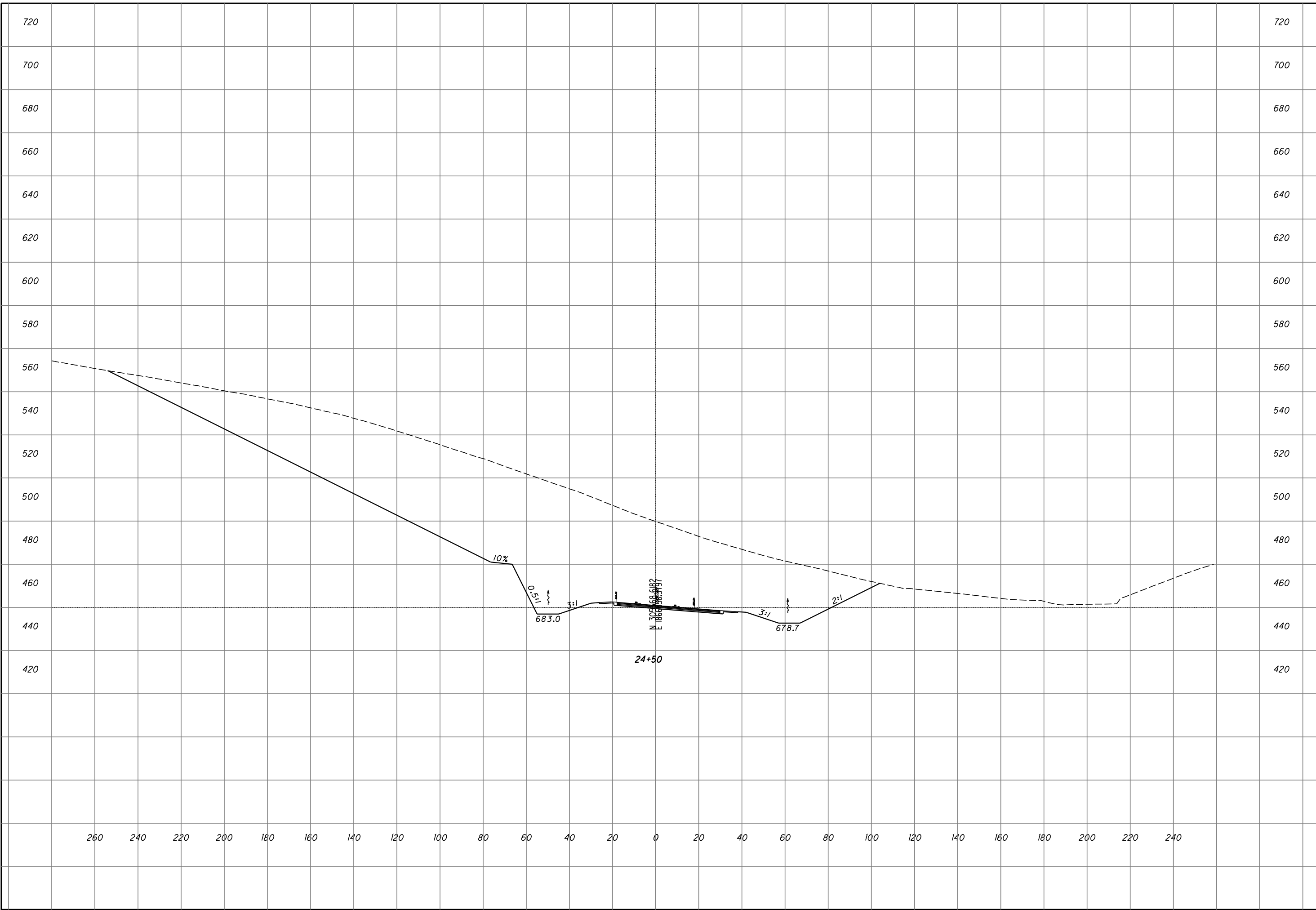
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SCI-823-6.81



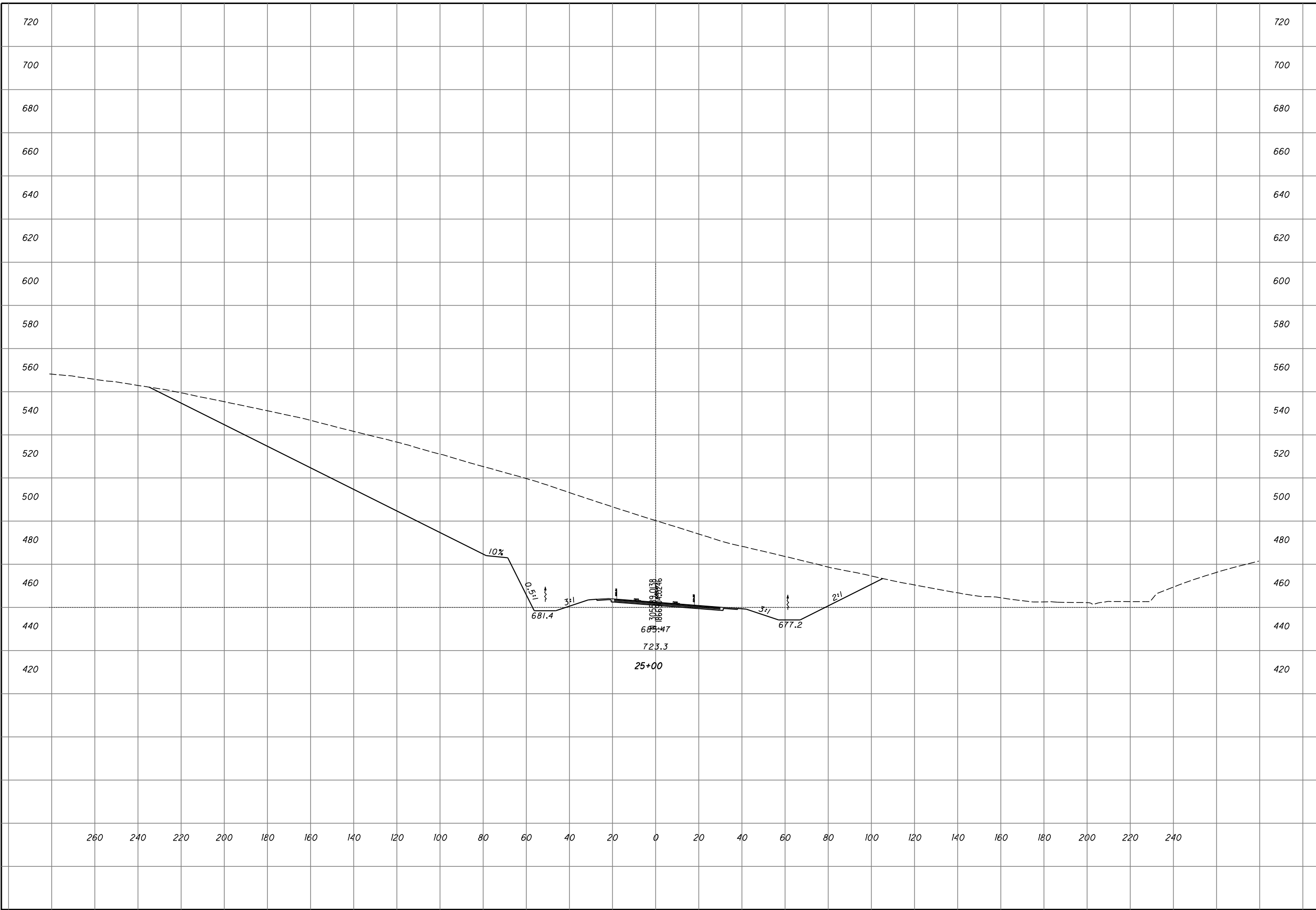


AMJ
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ROCK CUT RECCOMENDATIONS
CROSS SECTION TR234 - STA 24+50
SCI-823-6.81
 29
 32

ROCK CUT RECCOMENDATIONS
 CROSS SECTION TR234 - STA 25+00

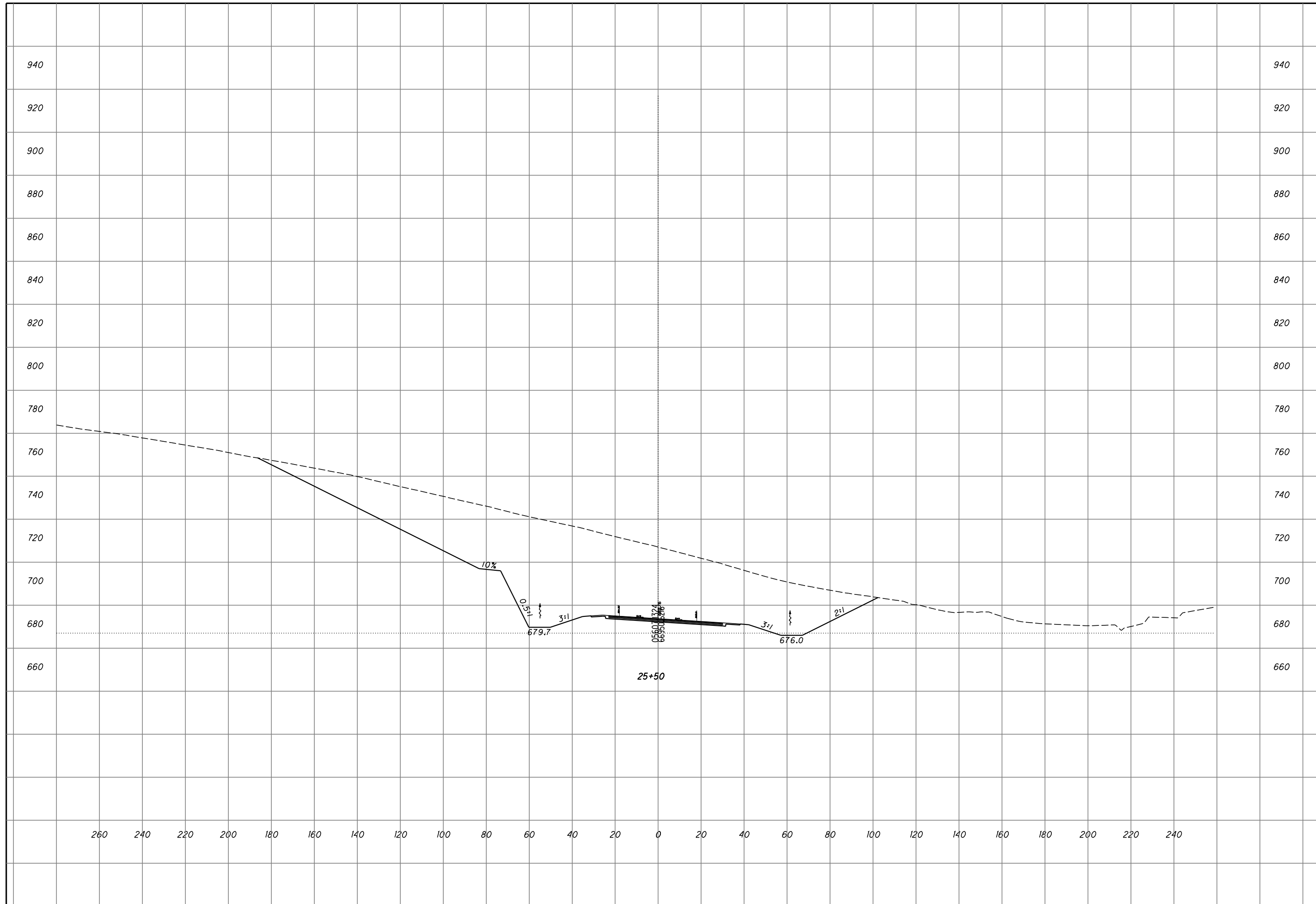
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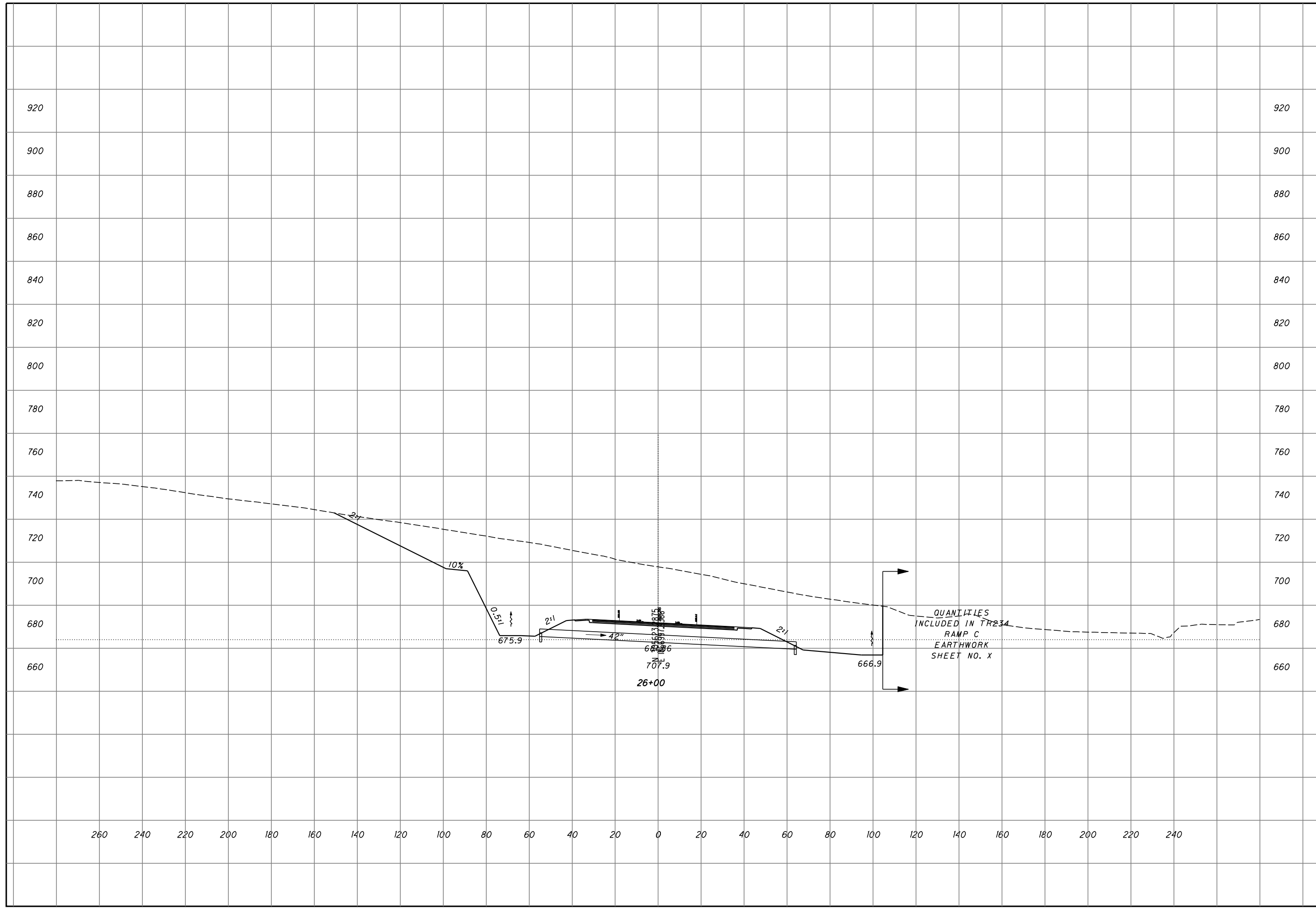
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SCI-823-6.81



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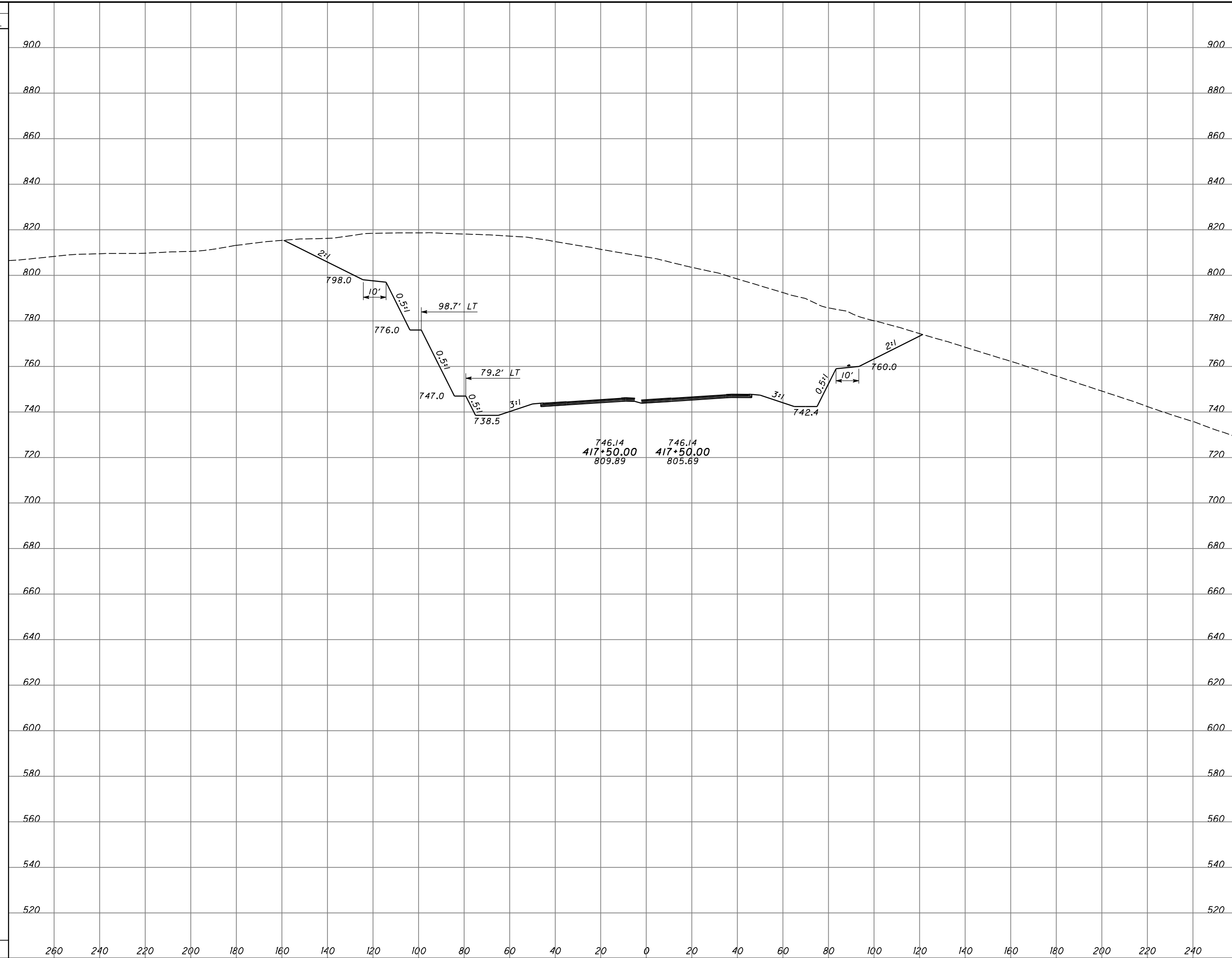
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Rock Cut Slope Cross Sections

Rock Cut #11 Station 417+00 to Station 432+00

SEEDING
END WIDTH SQ. YDS.



END AREA		VOLUME	
CUT	FILL	CUT	FILL

ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 417+50

SC1-823-6.81

6
109

SEEDING

END WIDTH

SO. YDS.

END AREA

CUT

FILL

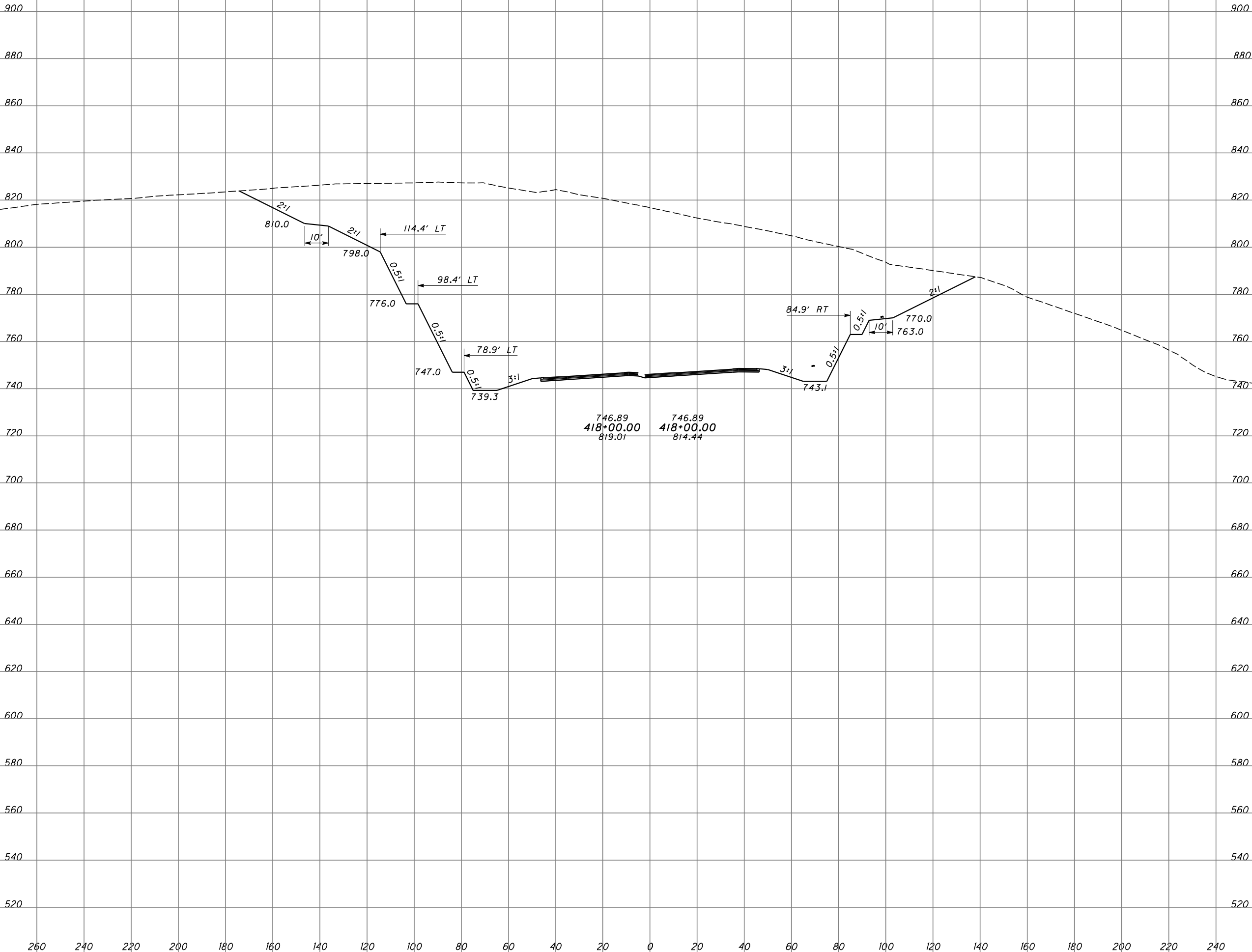
VOLUME

CUT

FILL

CALCULATED

CHECKED



ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 418+00

SCI-823-6.81

7
109

SEEDING

END WIDTH

SQ. YDS.

END AREA

CUT

FILL

VOLUME

CUT

FILL

CALCULATED

CHECKED

900

900

880

880

860

860

840

840

820

820

800

800

780

780

760

760

740

740

720

720

700

700

680

680

660

660

640

640

620

620

600

600

580

580

560

560

540

540

520

520

260

240

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40

20

0

20

40

60

80

100

120

140

160

180

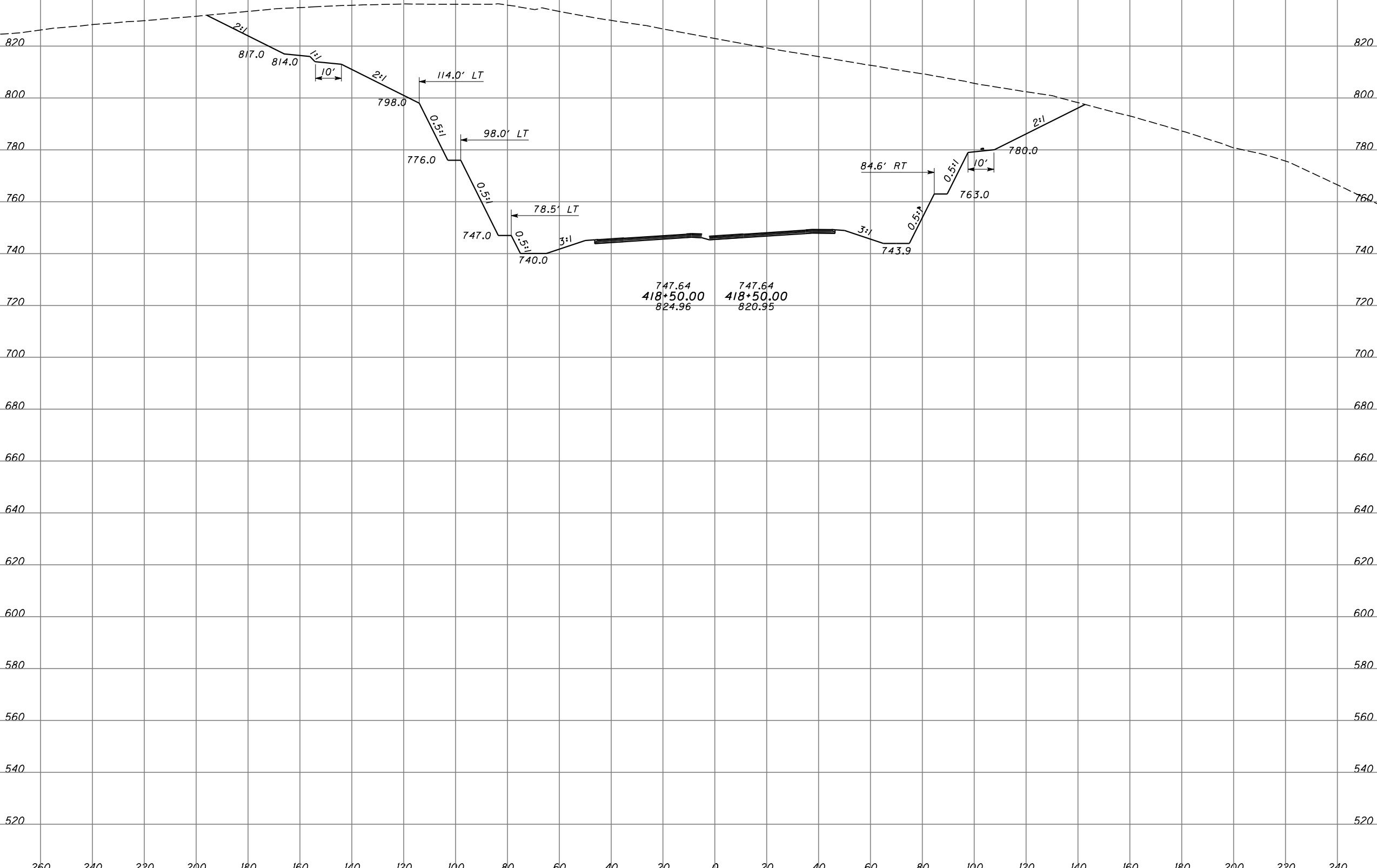
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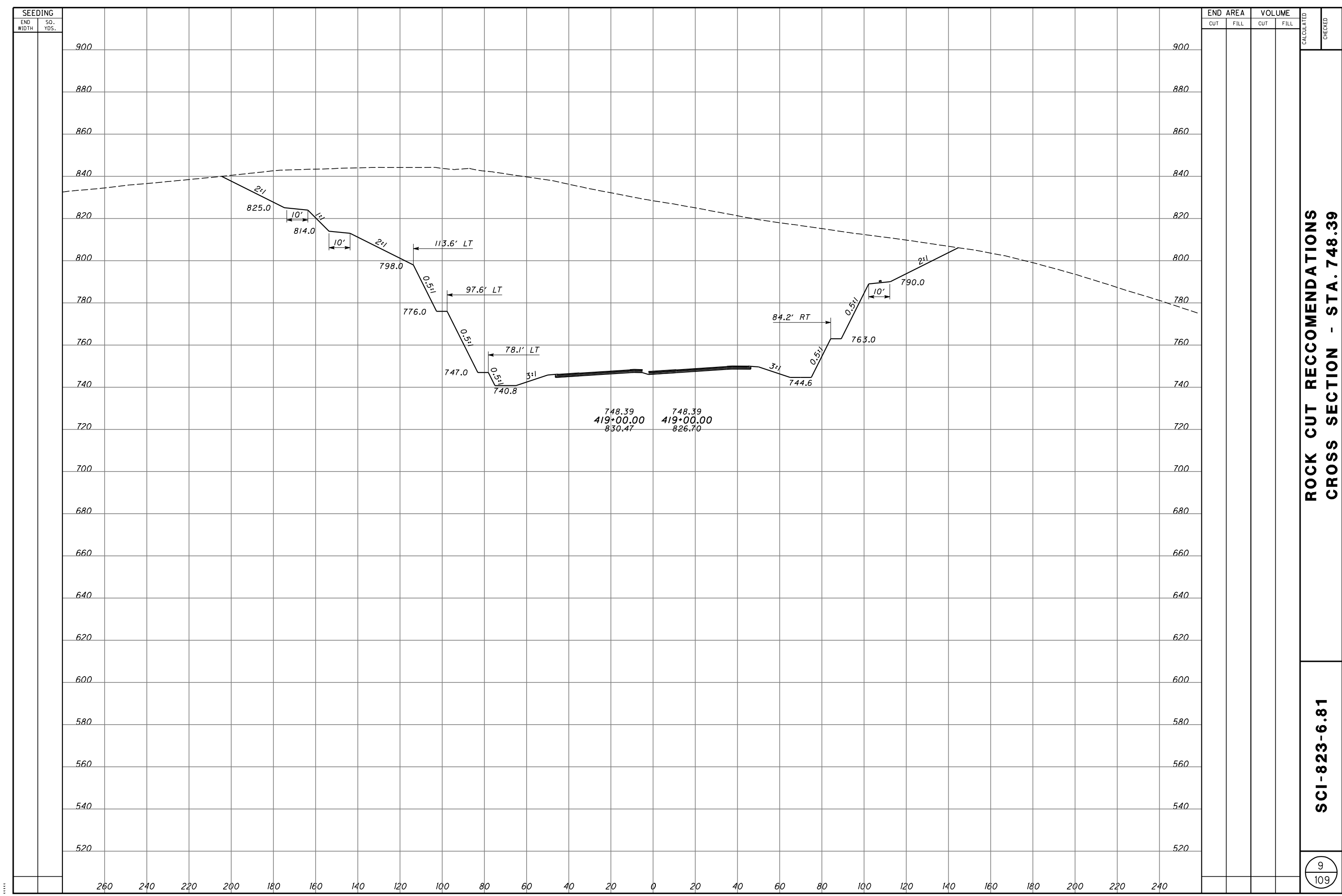
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ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 474.64

SCI-823-6.81

8
109

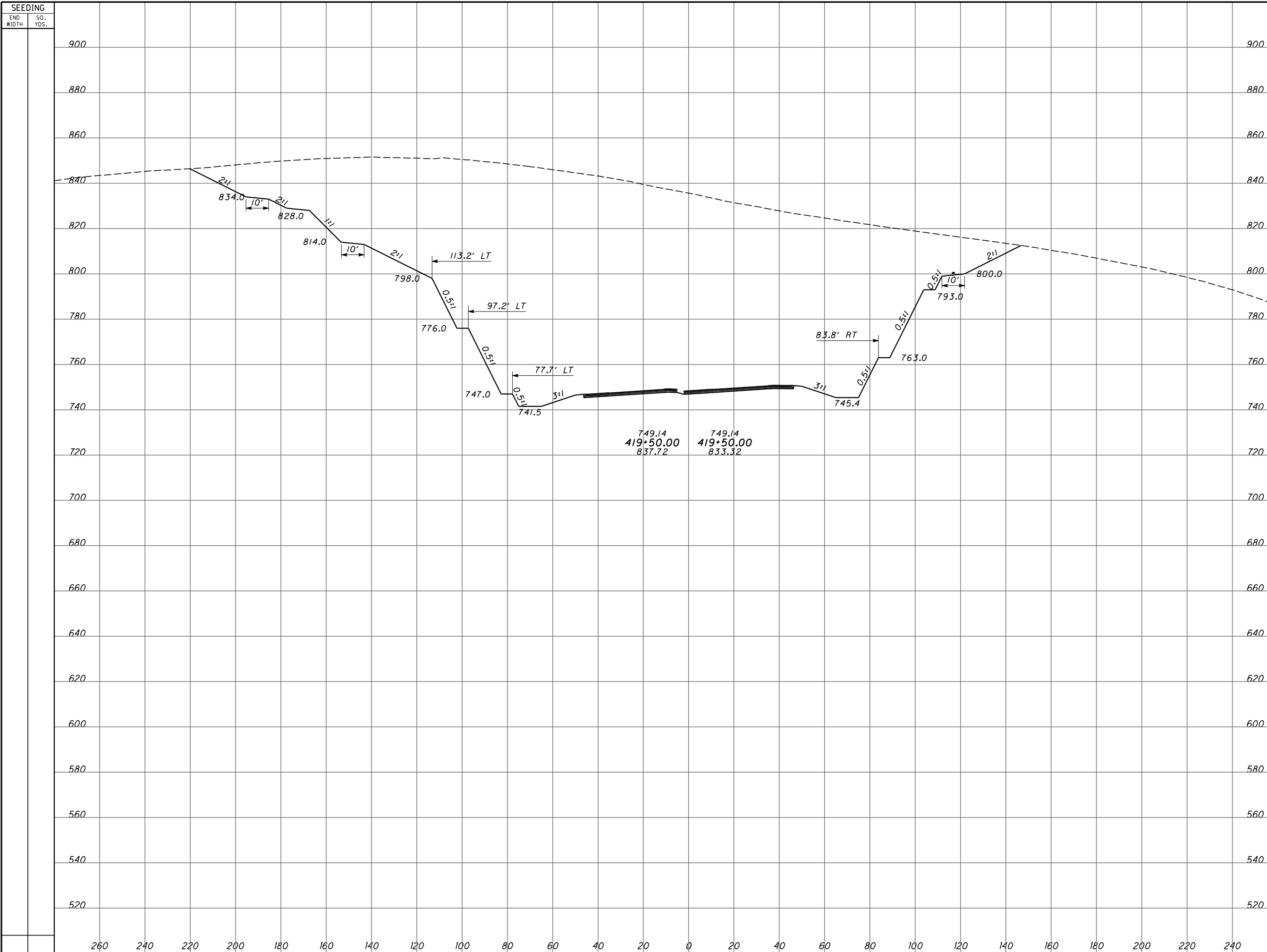


SEEDING	
END WIDTH	SO. YDS.

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 748.39**

SCI-823-6.81



ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 419+50

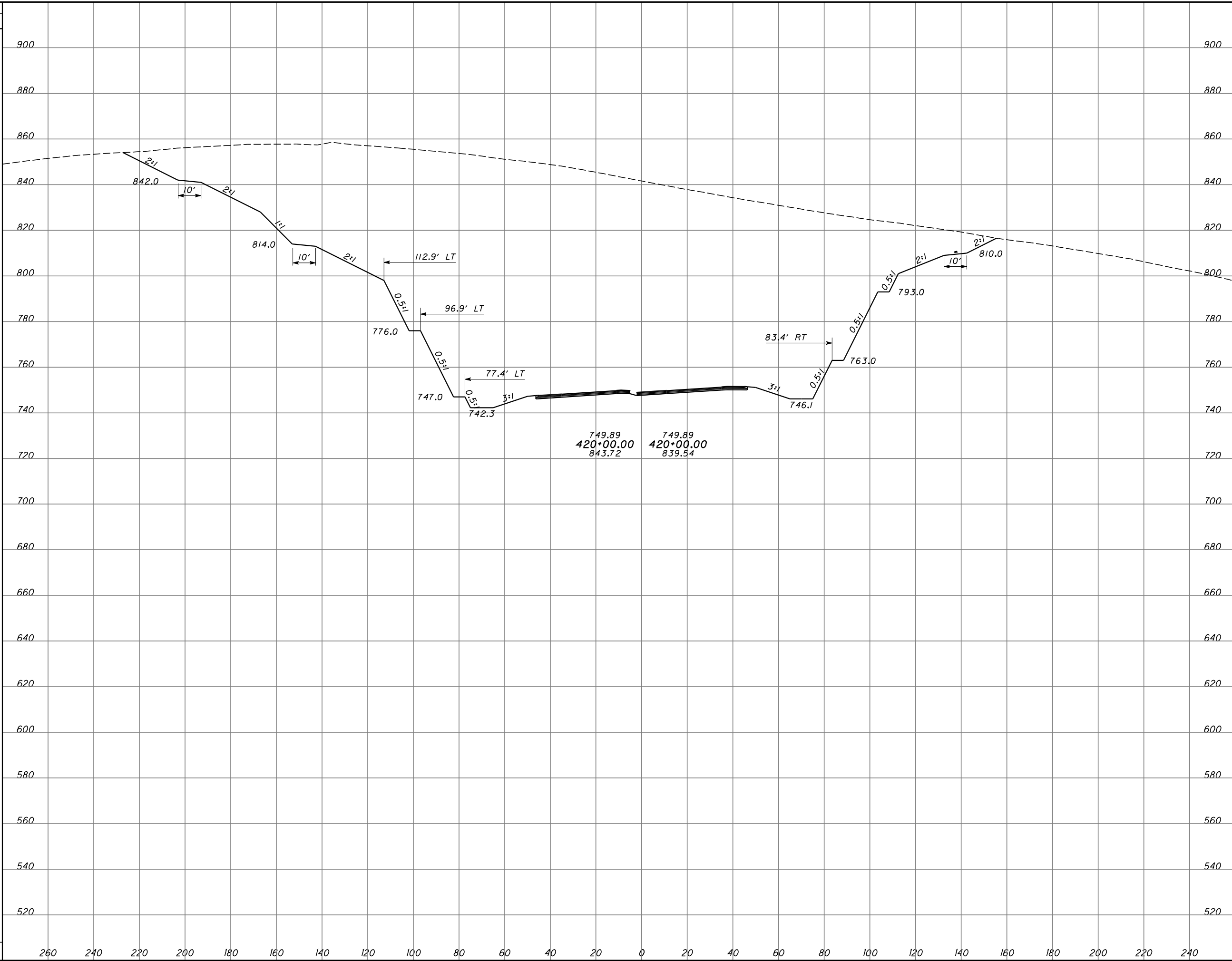
SCI-823-6.81

CALCULATED
 CHECKED

10
 109

SEEDING

END WIDTH	SO. YDS.



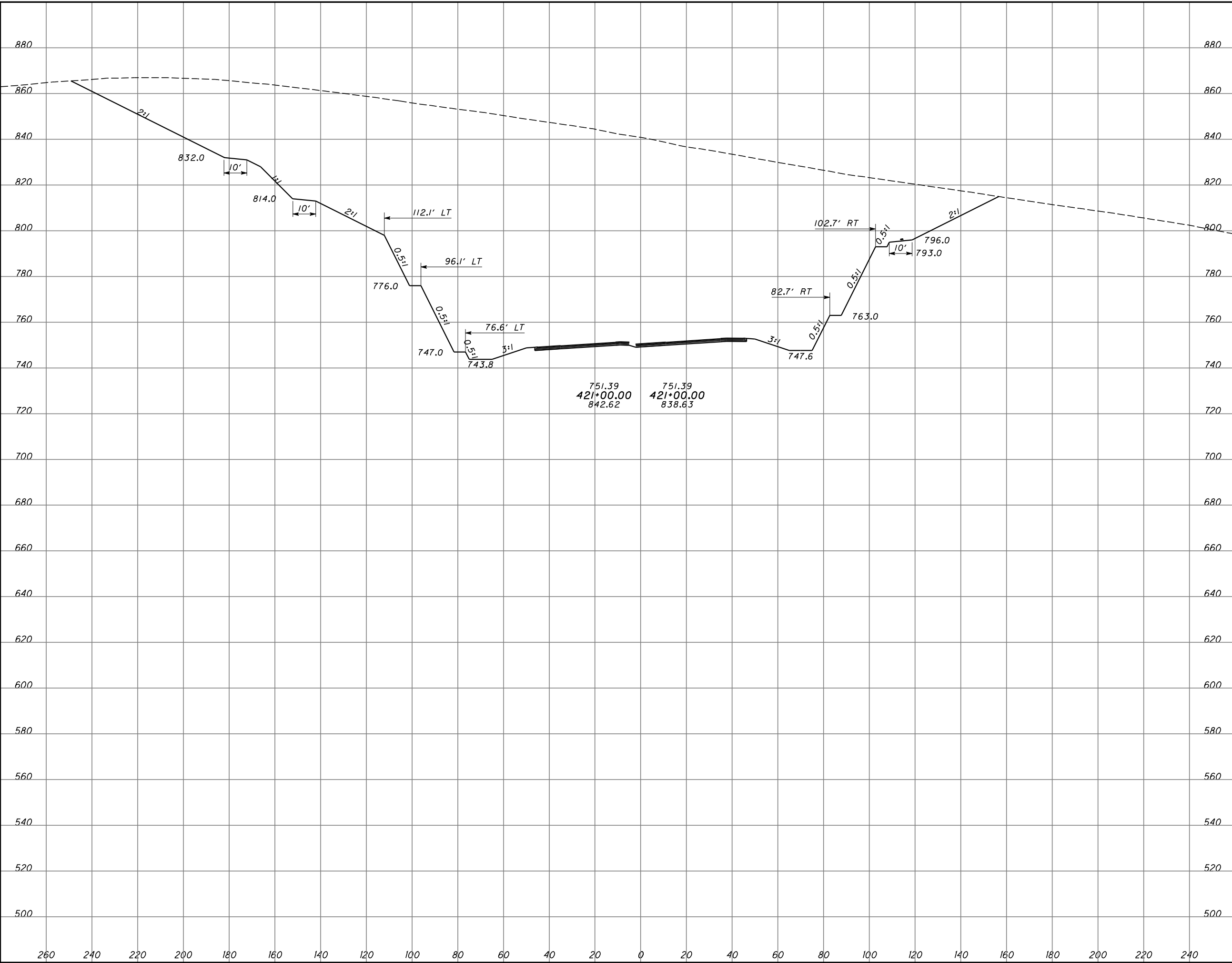
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CUT	FILL	CUT	FILL		

ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 420+00

SCI-823-6.81

SEEDING

END WIDTH	SQ. YDS.



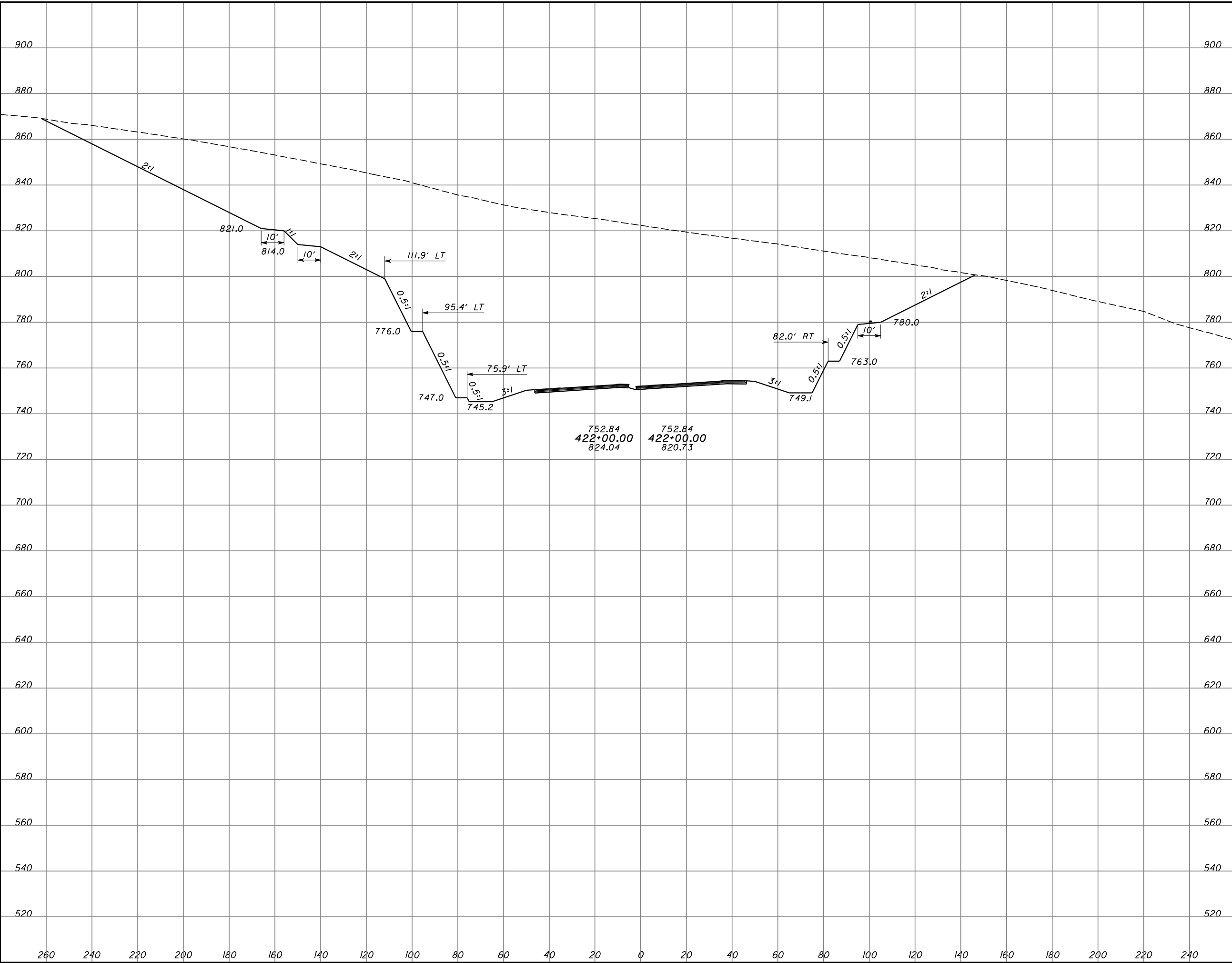
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CUT	FILL	CUT	FILL		

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 421+00**

SCI-823-6.81

SEEDING

END WIDTH	SO. YDS.



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 422+00

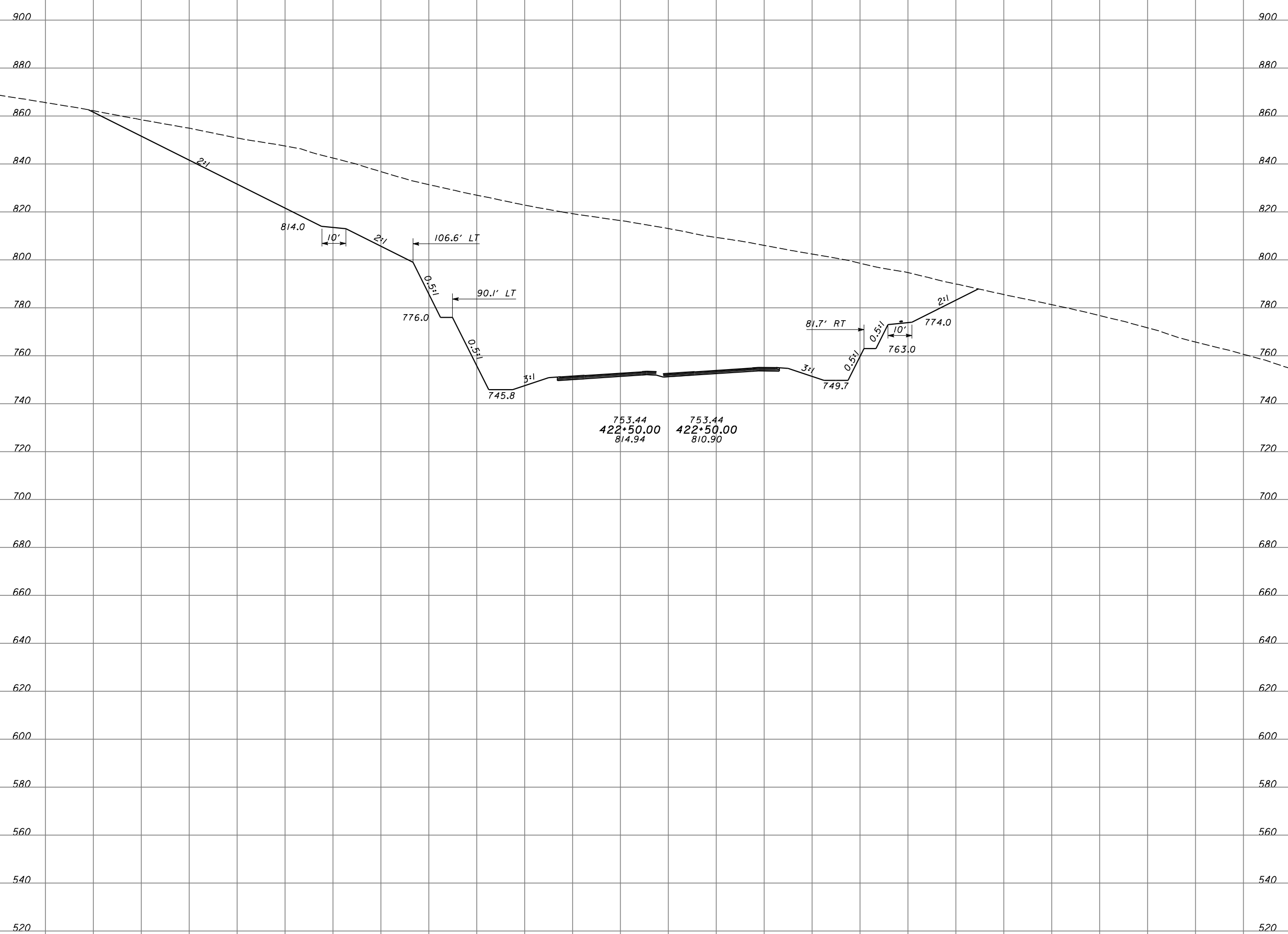
SCI-823-6.81

SEEDING

END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL

CALCULATED CHECKED

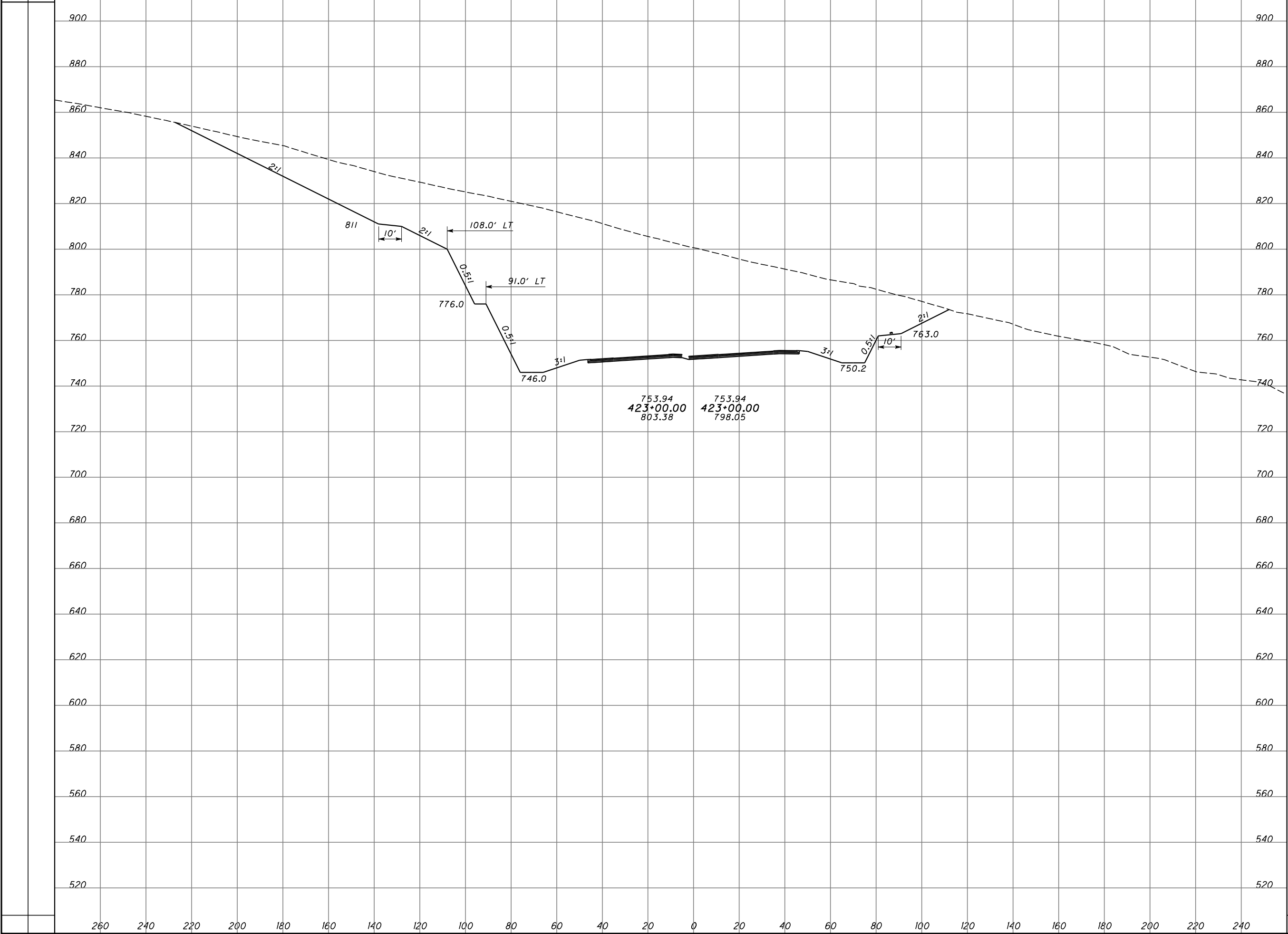


ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 422+50

SCI-823-6.81

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED



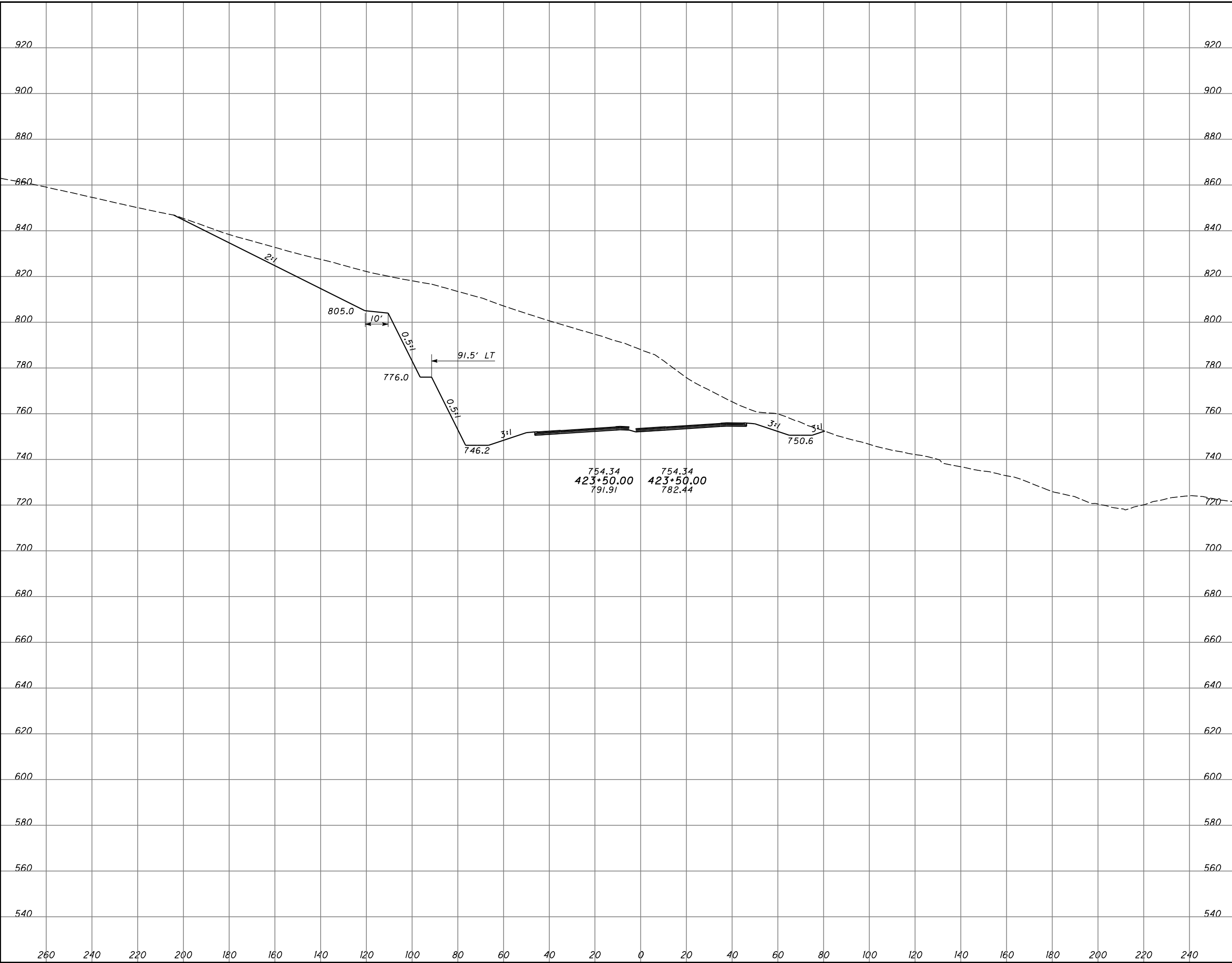
END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

**ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 423+00**

SCI-823-6.81

SEEDING

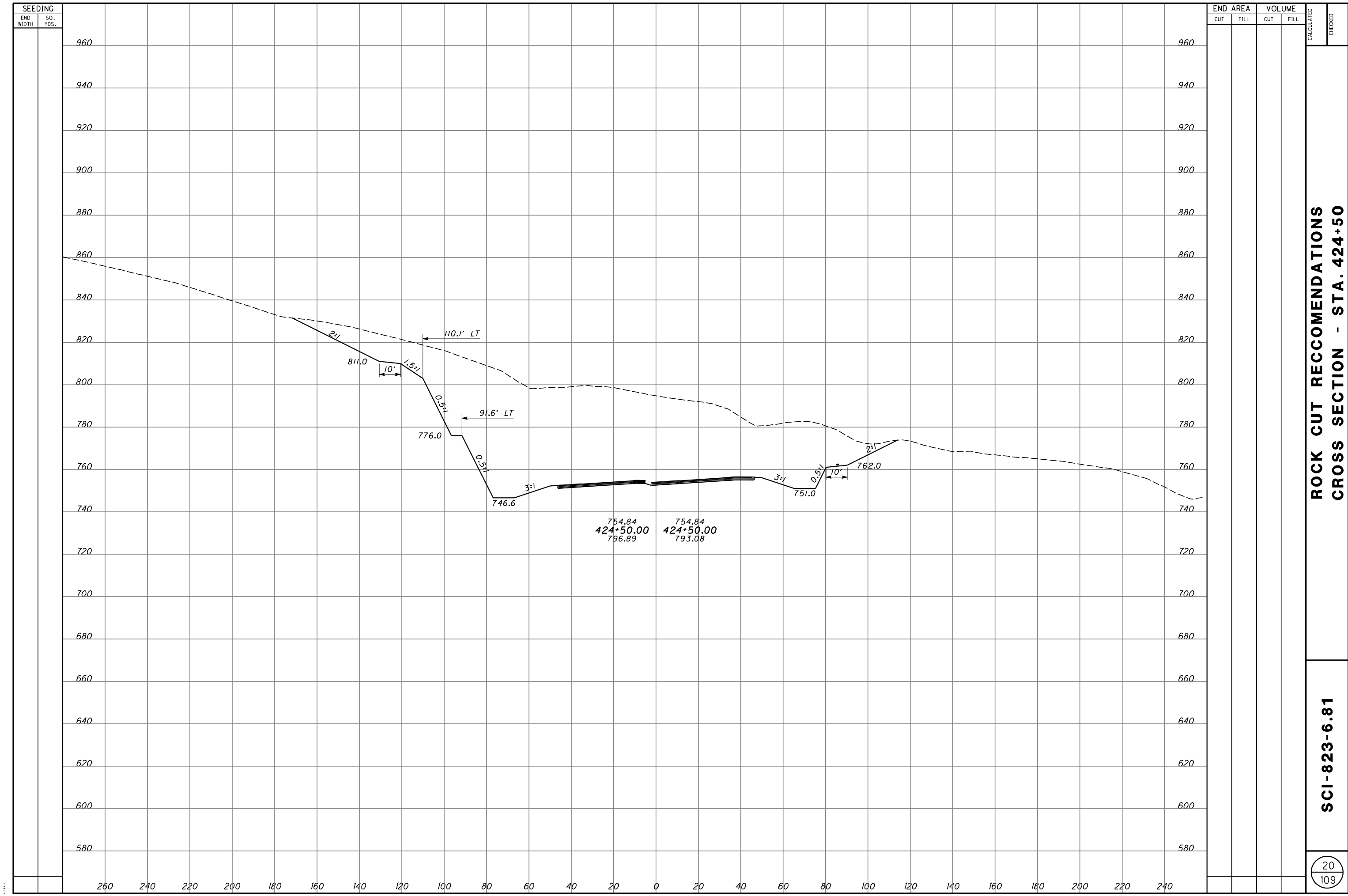
END WIDTH	SO. YDS.



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

**ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 423+50**

SCI-823-6.81



**ROCK CUT RECOMMENDATIONS
 CROSS SECTION - STA. 424+50**

SCI-823-6.81

SEEDING

END WIDTH	SQ. YDS.

END AREA

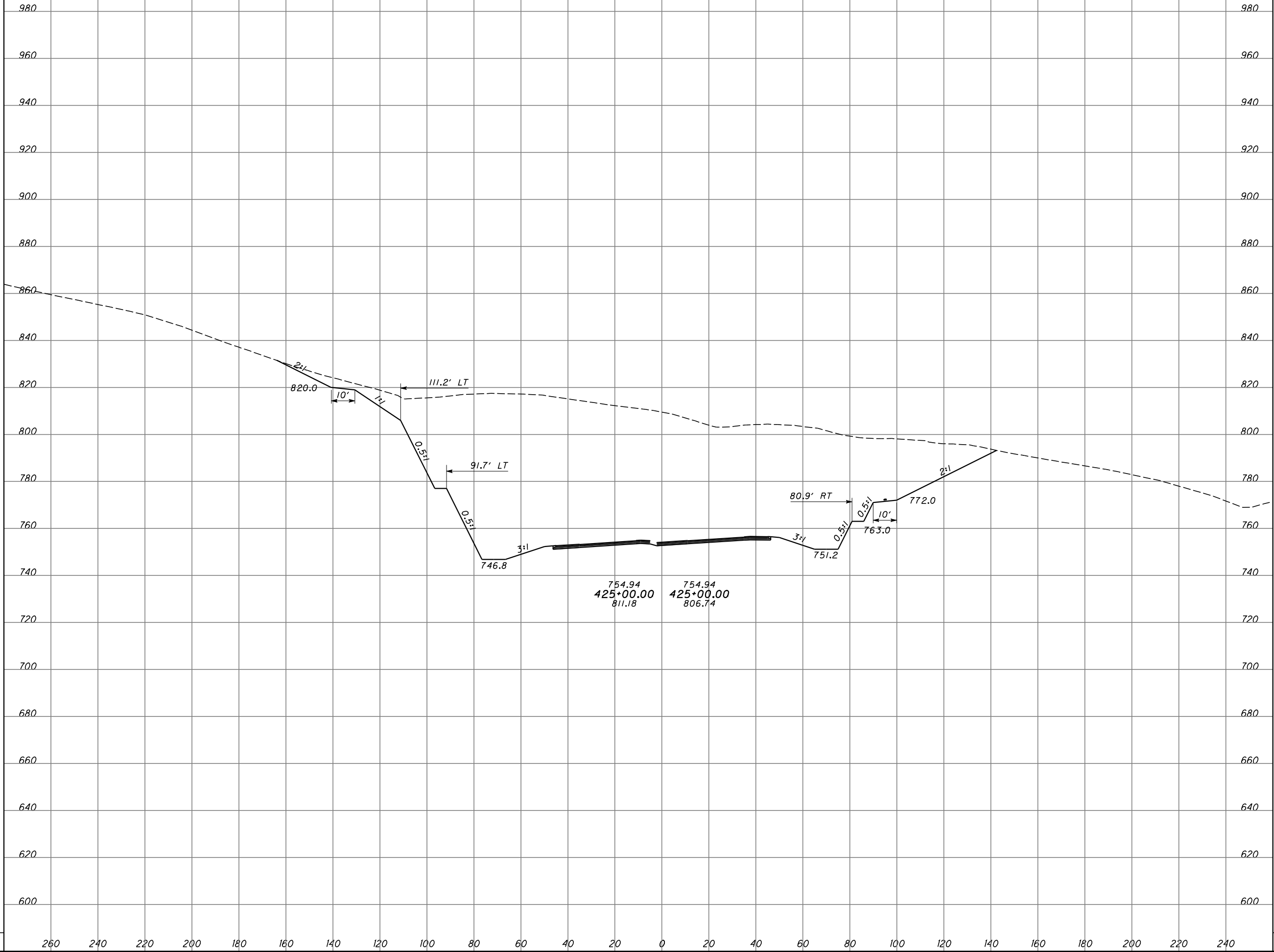
CUT	FILL

VOLUME

CUT	FILL

CALCULATED

CHECKED



**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 425+00**

SCI-823-6.81

SEEDING

END WIDTH SQ. YDS.

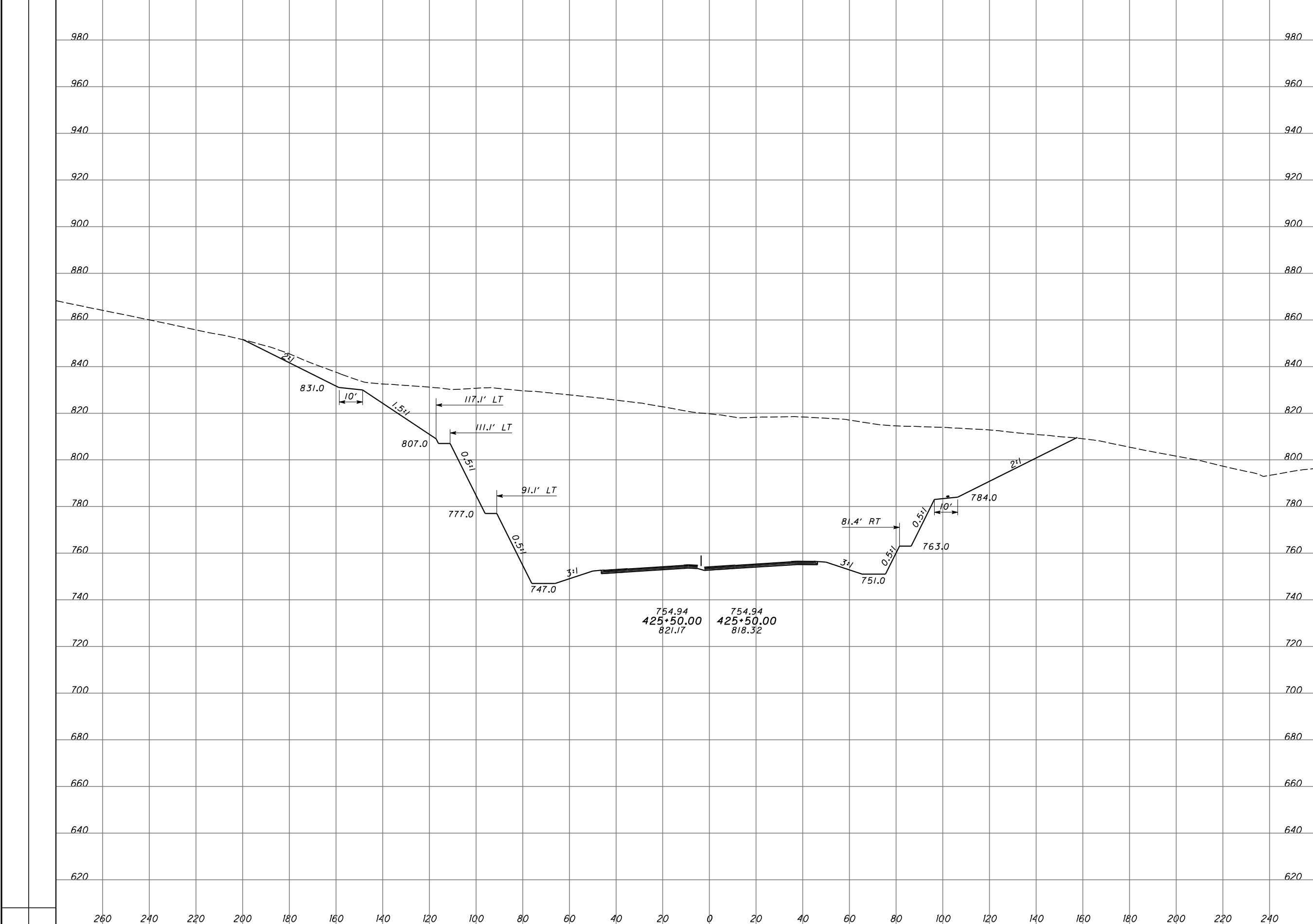
END AREA

CUT FILL

VOLUME

CUT FILL

CALCULATED CHECKED

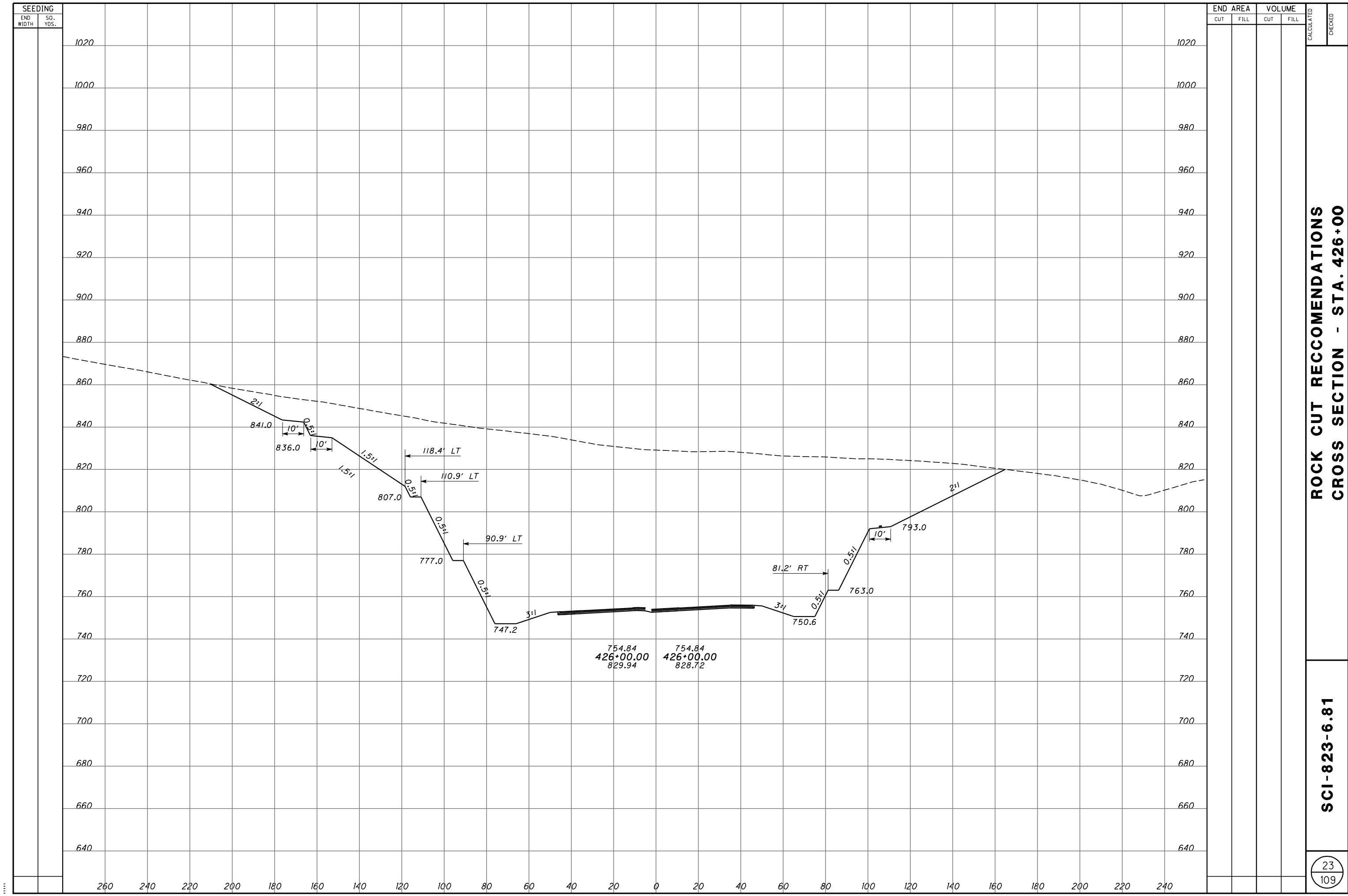


754.94
425+50.00
821.17

754.94
425+50.00
818.32

ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 425+00

SCI-823-6.81

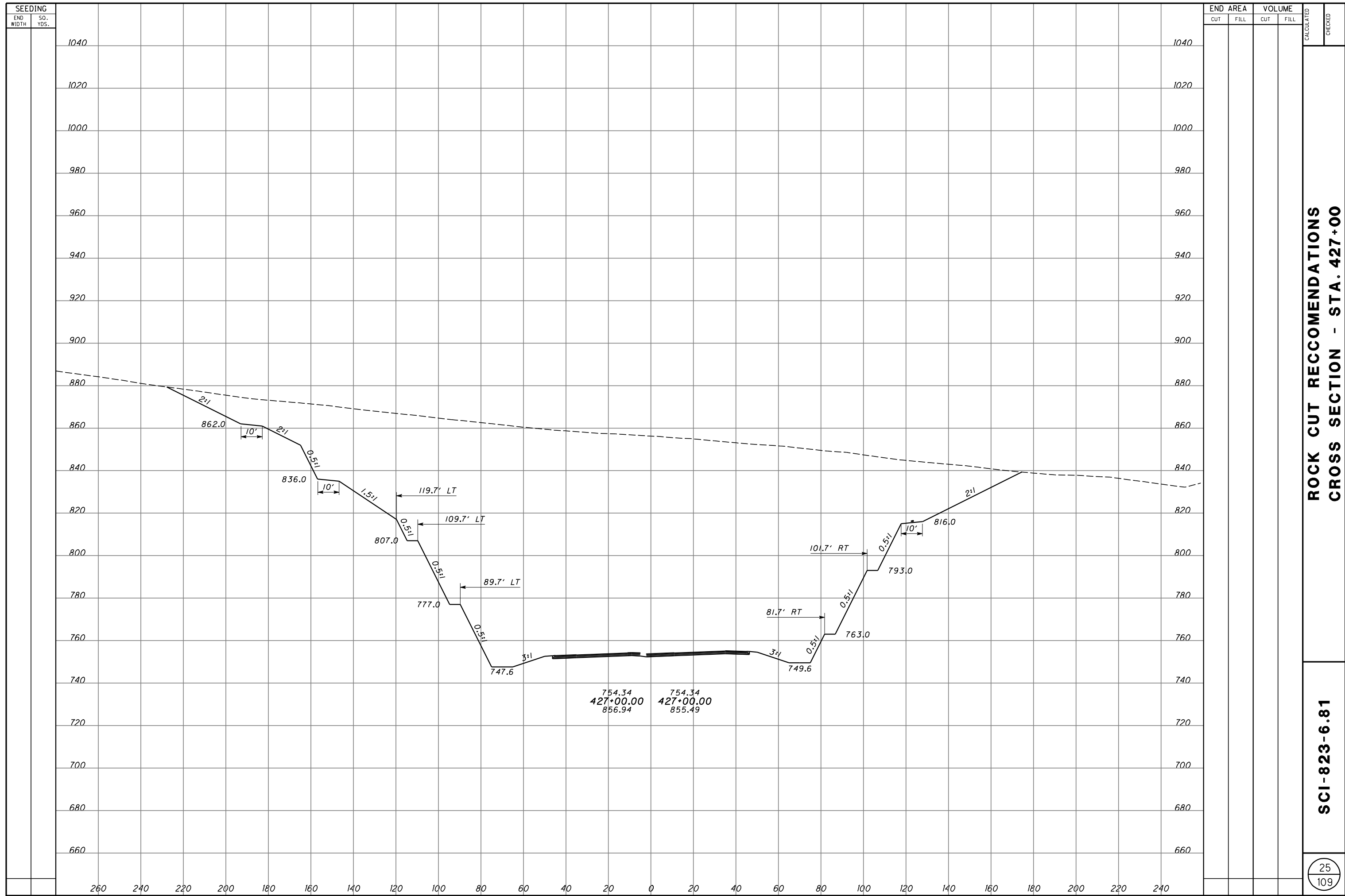


SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

**ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 426+00**

SCI-823-6.81



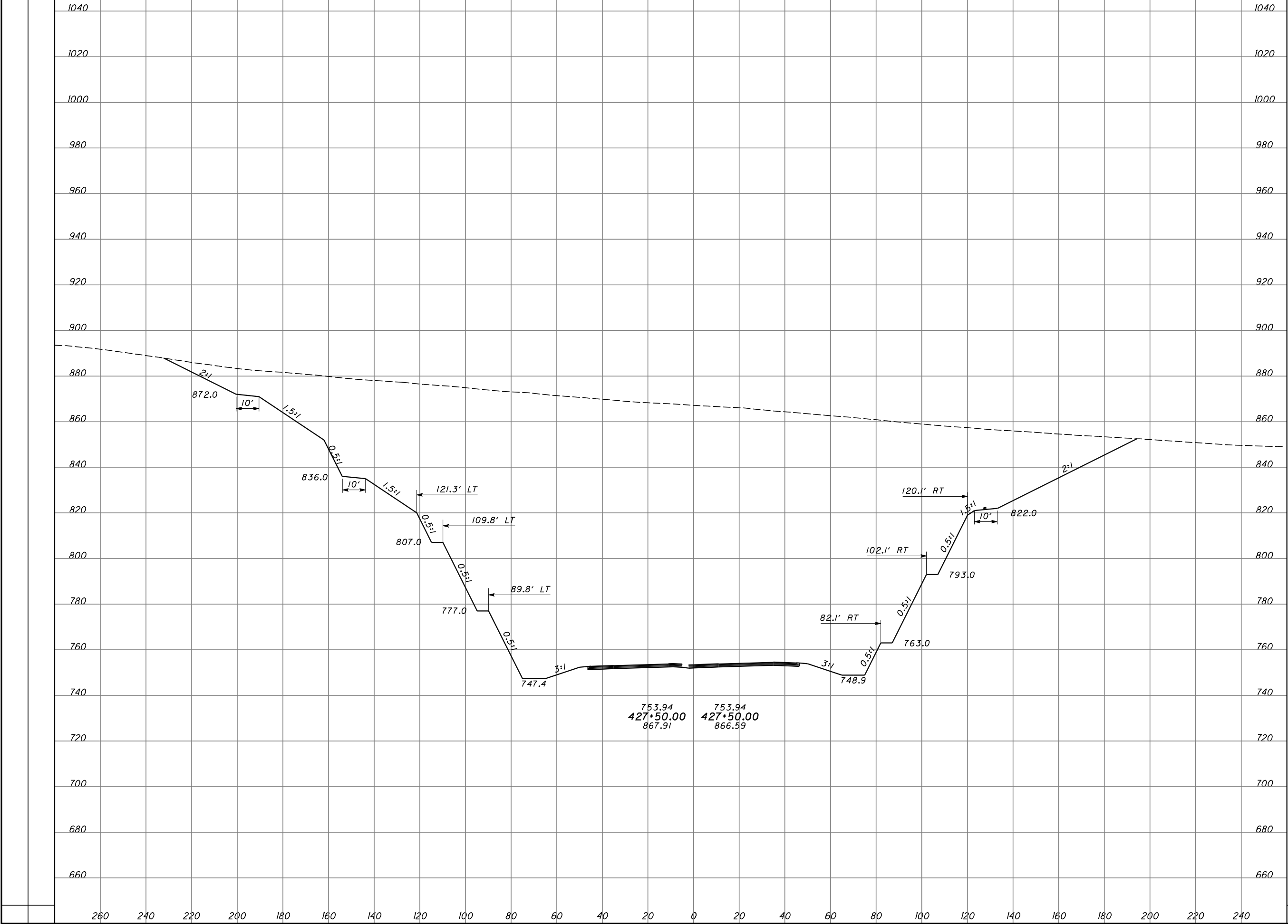
ROCK CUT RECOMMENDATIONS
 CROSS SECTION - STA. 427+00

SCI-823-6.81

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

**ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 427+50**



SCI-823-6.81

SEEDING

END WIDTH SQ. YDS.

END AREA

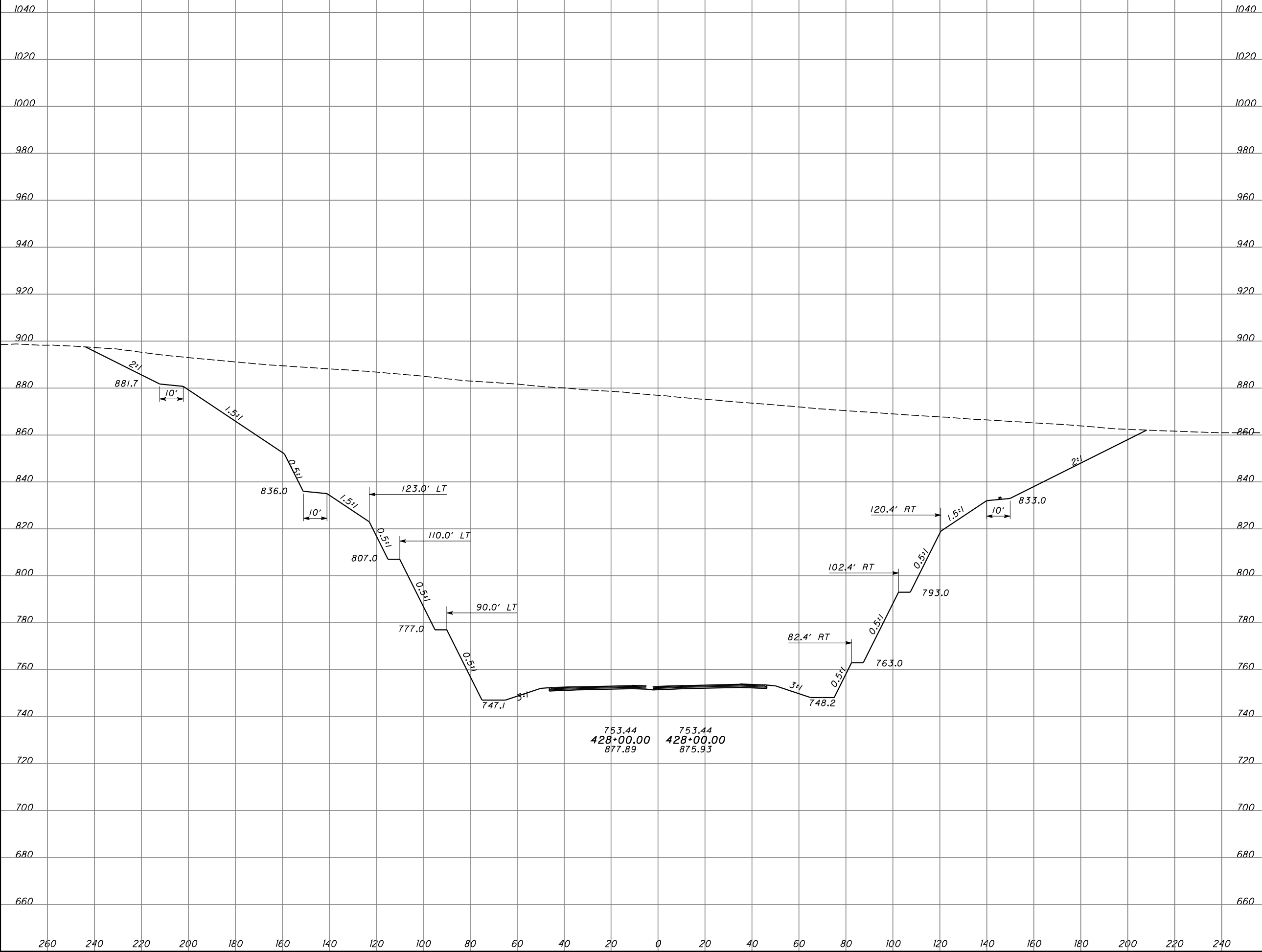
CUT FILL

VOLUME

CUT FILL

CALCULATED

CHECKED



753.44
428+00.00
877.89

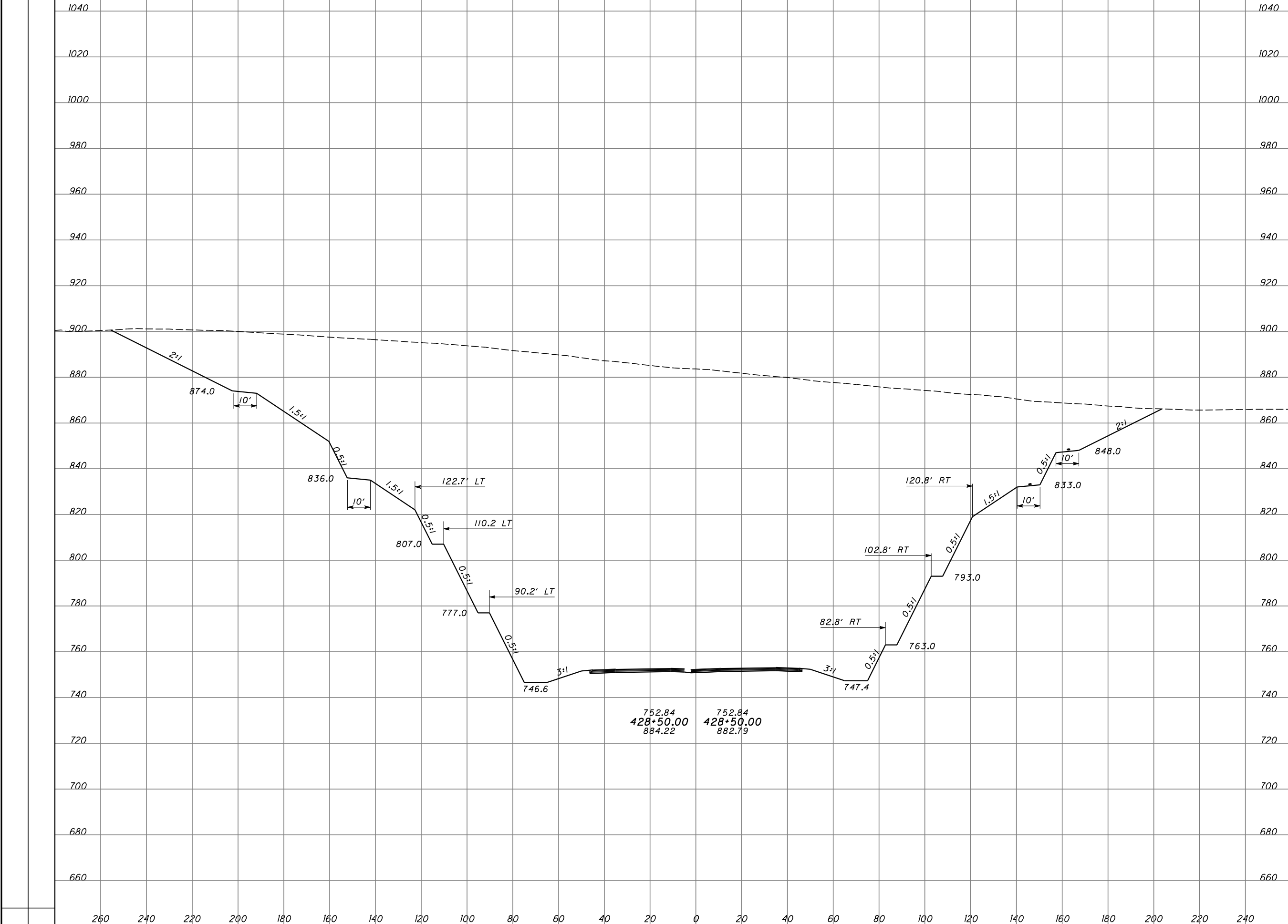
753.44
428+00.00
875.93

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 428+00**

SCI-823-6.81

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED



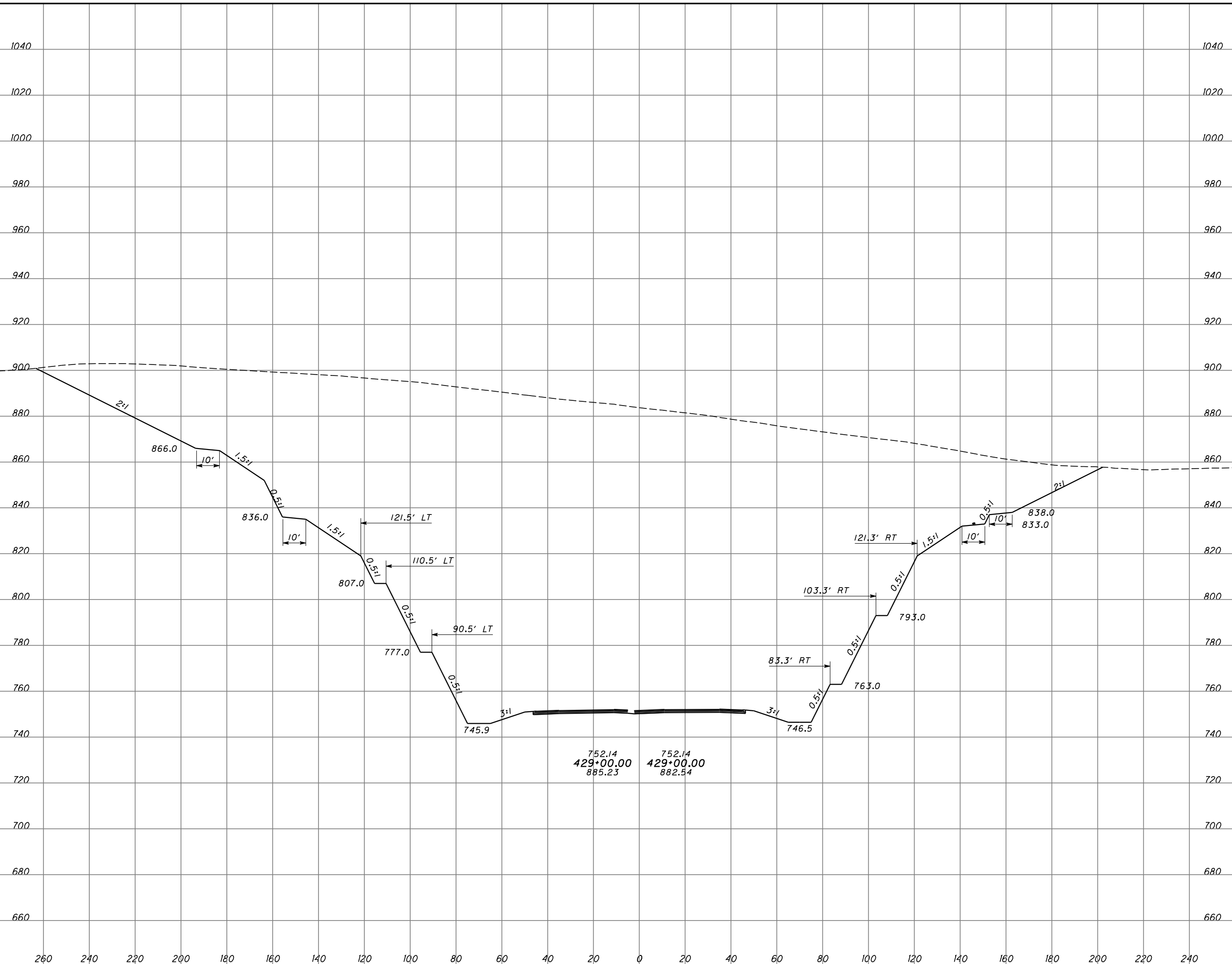
752.84
428+50.00
884.22

752.84
428+50.00
882.79

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 428+50**

SCI-823-6.81

SEEDING	
END WIDTH	SQ. YDS.



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

ROCK CUT RECOMMENDATIONS CROSS SECTION - STA. 429+00
SCI-823-6.81
29 109

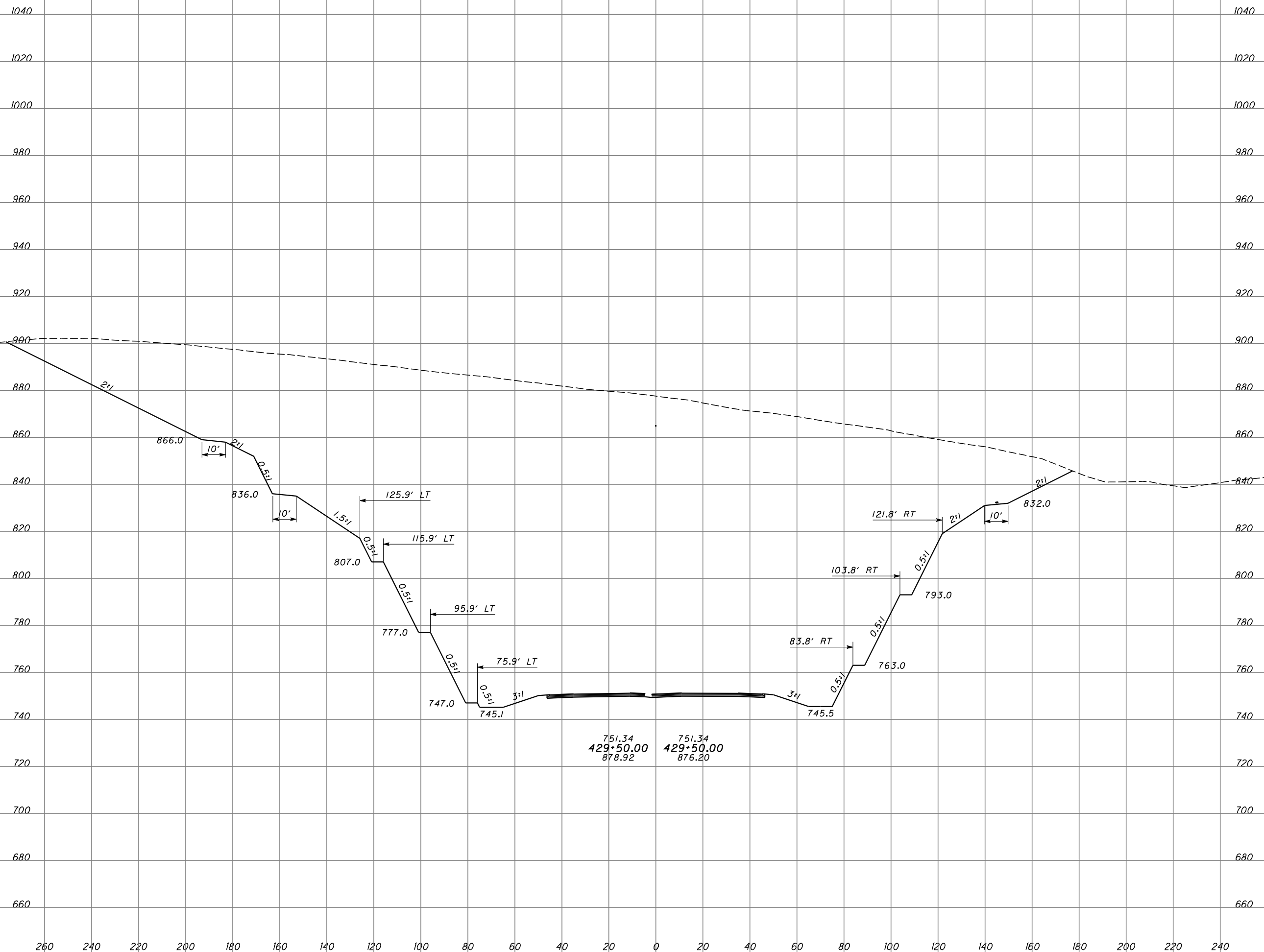
SEEDING

END WIDTH SQ. YDS.

END AREA VOLUME

CUT FILL CUT FILL

CALCULATED CHECKED



ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 429+50

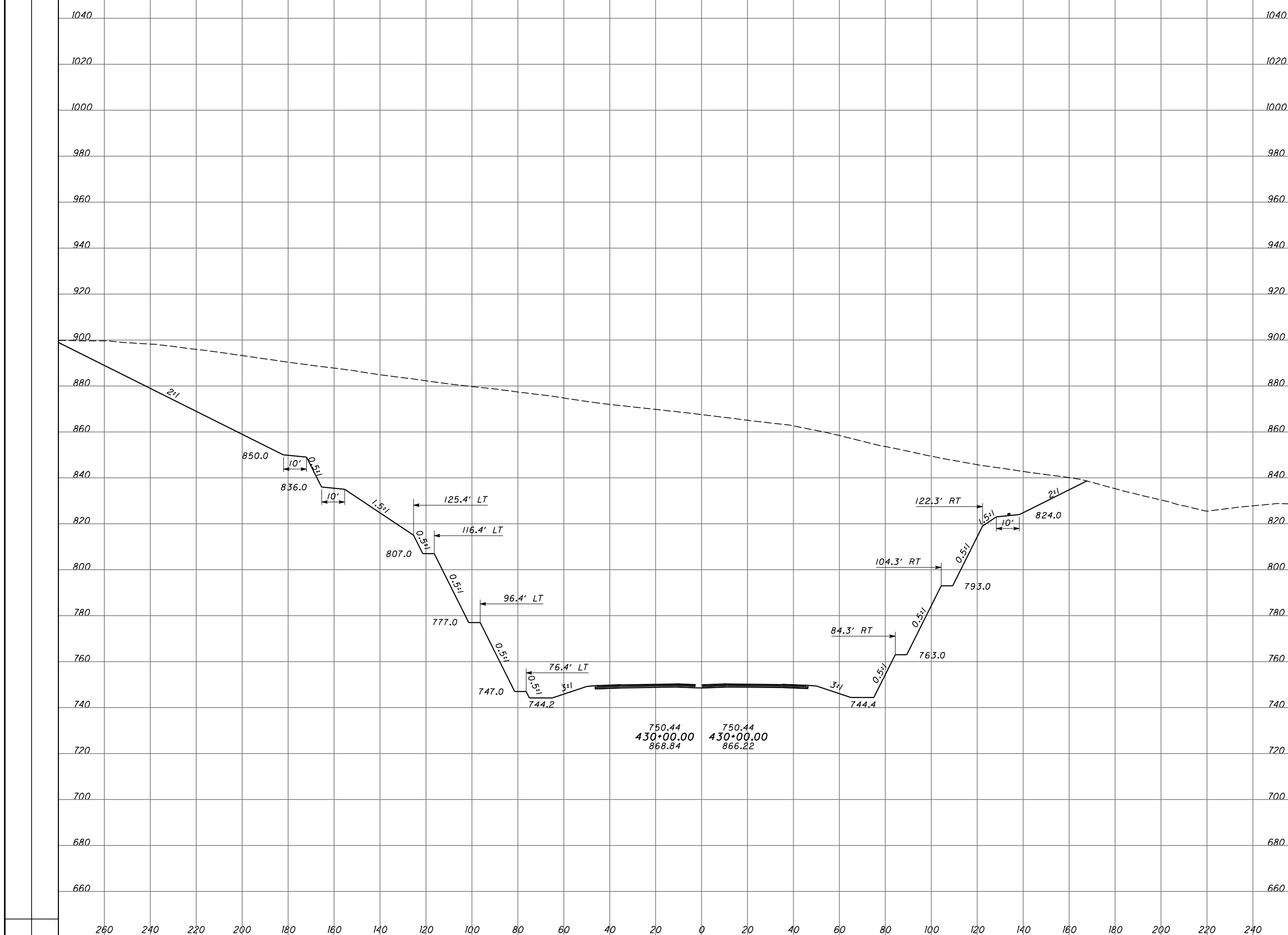
SCI-823-6.81

30
109

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME	
CUT	FILL	CUT	FILL

CALCULATED
CHECKED



750.44 750.44
430+00.00 430+00.00
868.84 866.22

ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 430+00

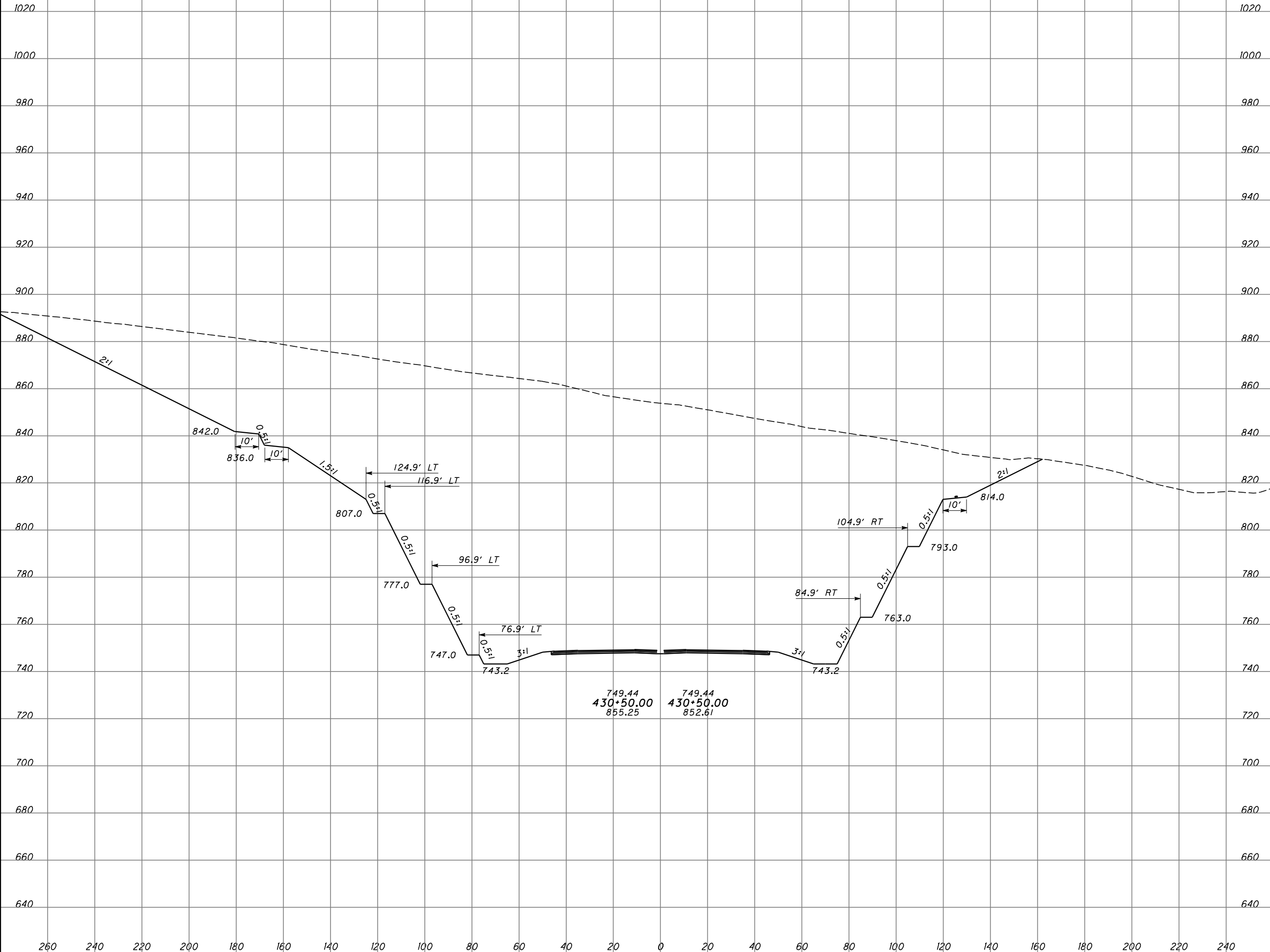
SCI-823-6.81

SEEDING

END WIDTH SQ. YDS.

END AREA VOLUME

CUT FILL CUT FILL CALCULATED CHECKED



749.44
430+50.00
855.25

749.44
430+50.00
852.61

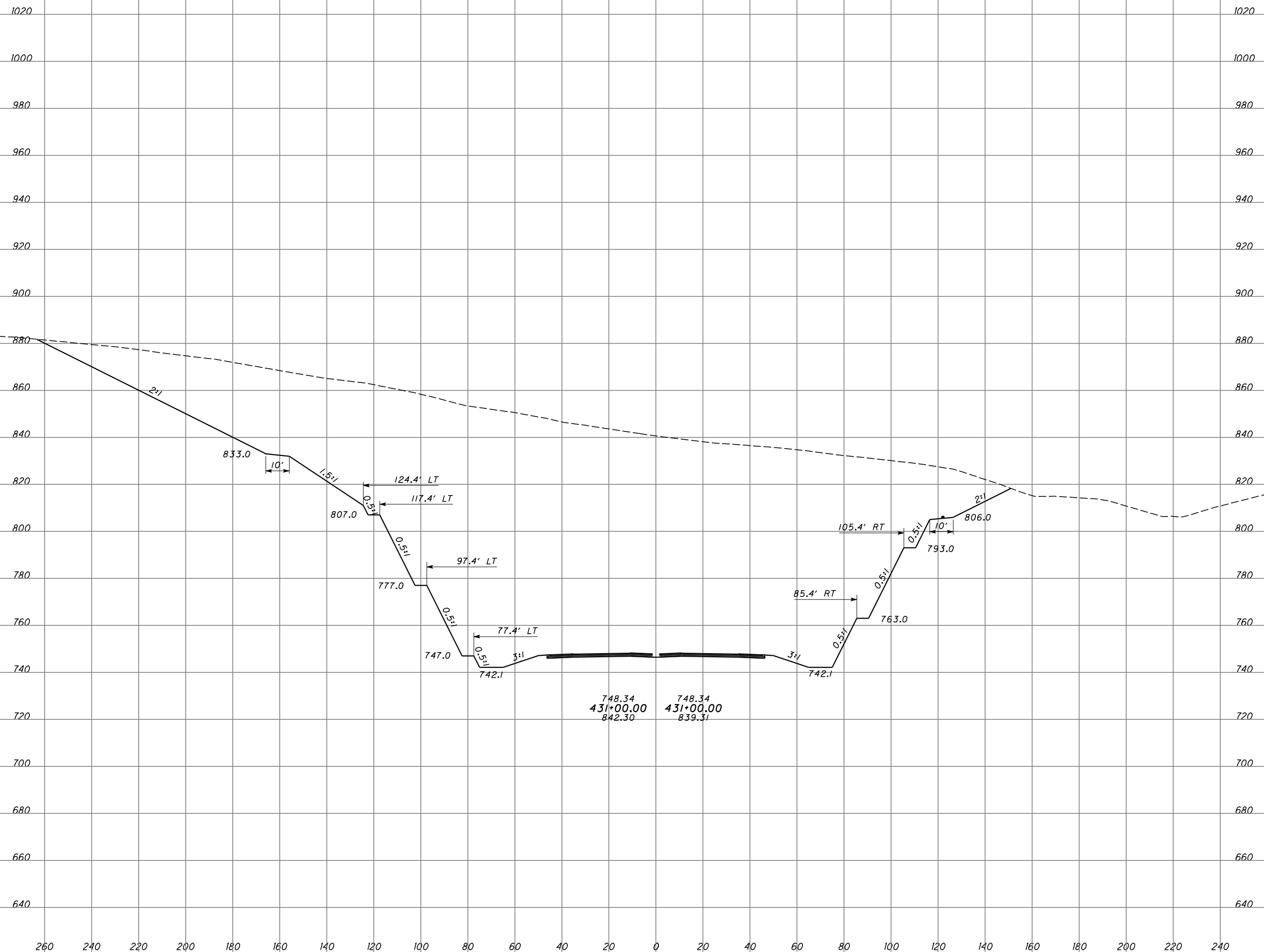
ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 430+50

SCI-823-6.81

32
109

SEEDING
END WIDTH SQ. YDS.

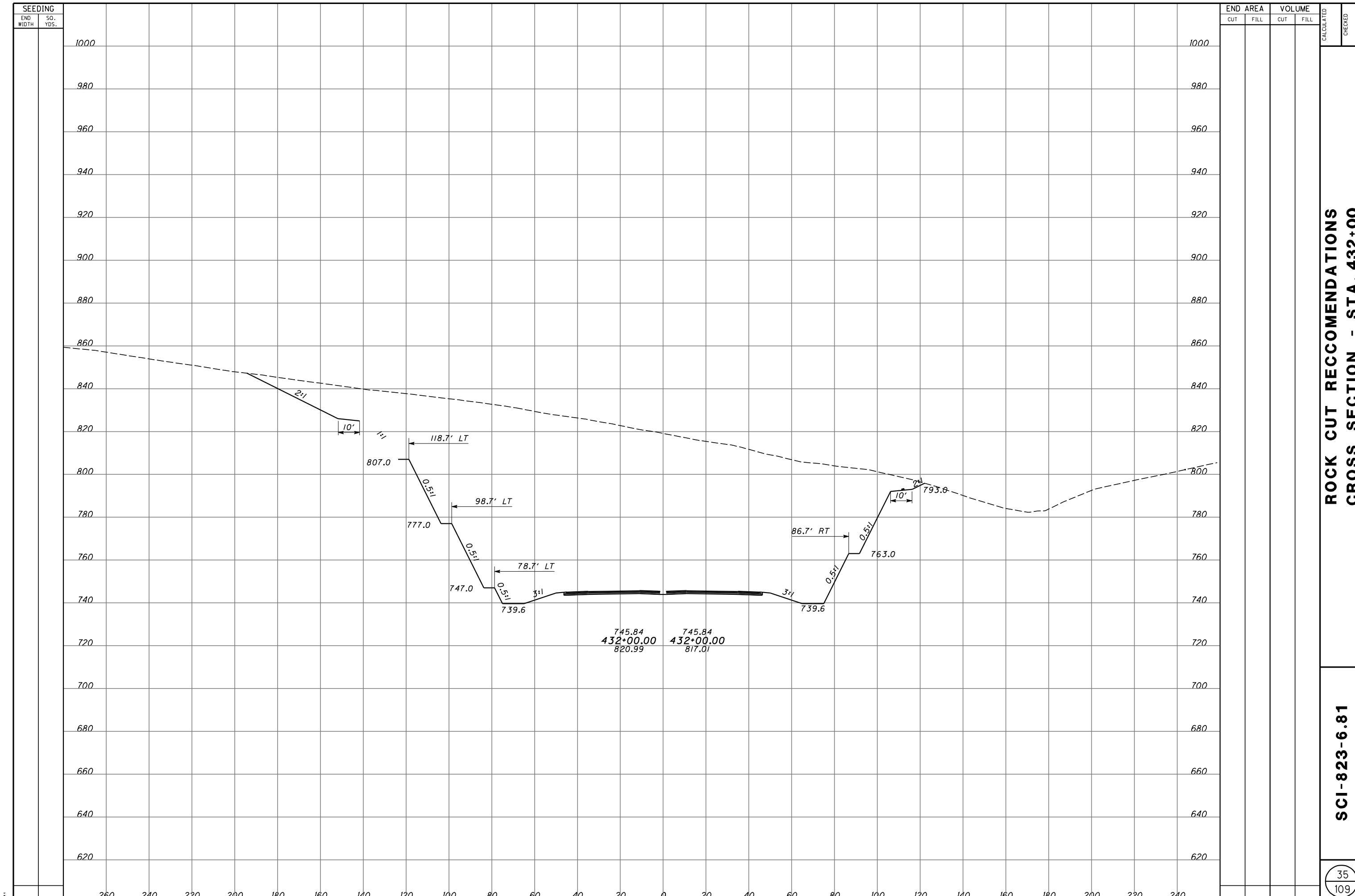
END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED



748.34	748.34
431+00.00	431+00.00
842.30	839.31

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 431+00**

SCI-823-6.81



SEEDING	
END WIDTH	SQ. YDS.

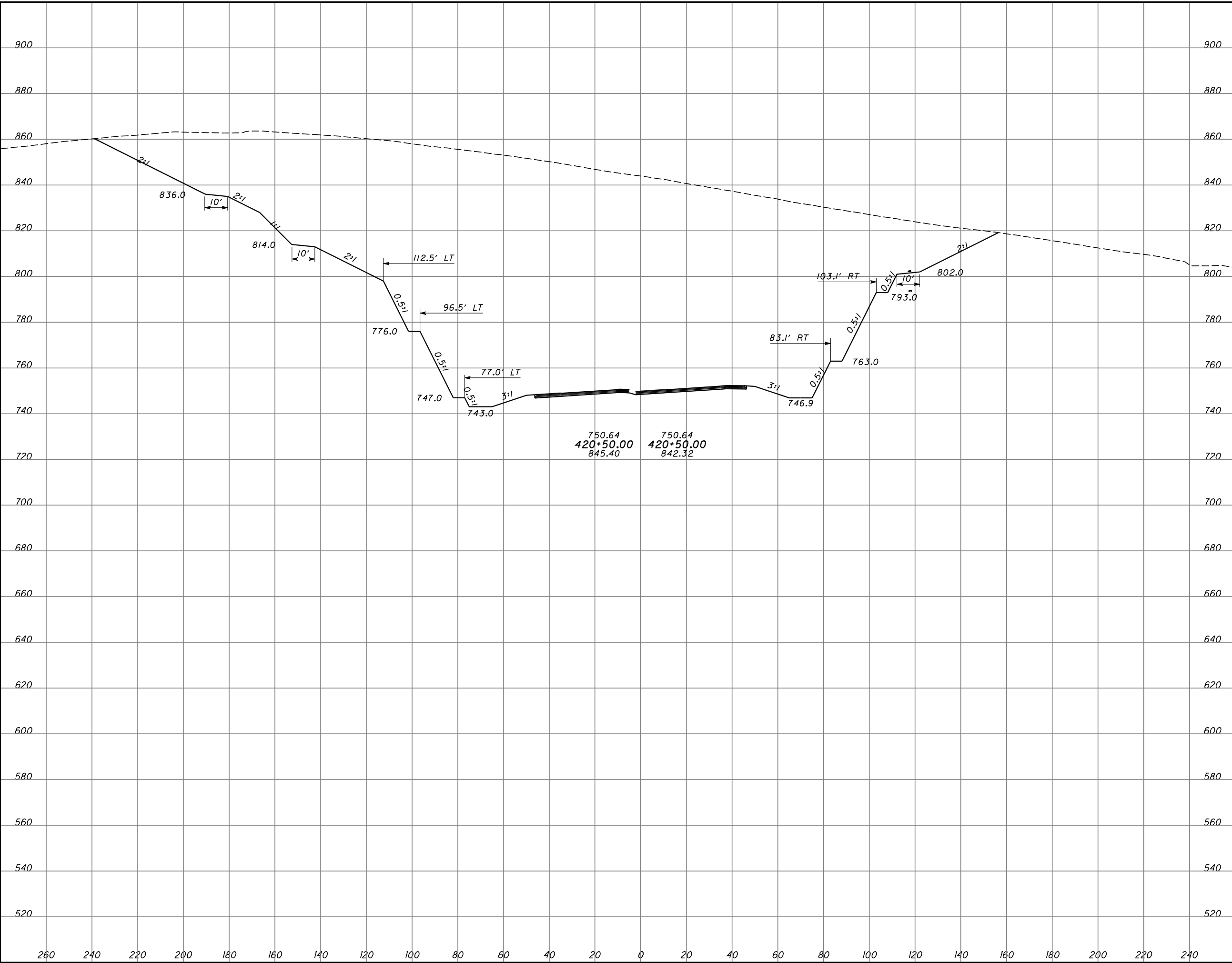
END AREA		VOLUME	
CUT	FILL	CUT	FILL

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 432+00**

SCI-823-6.81

SEEDING

END WIDTH	SO. YDS.



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 420+50**

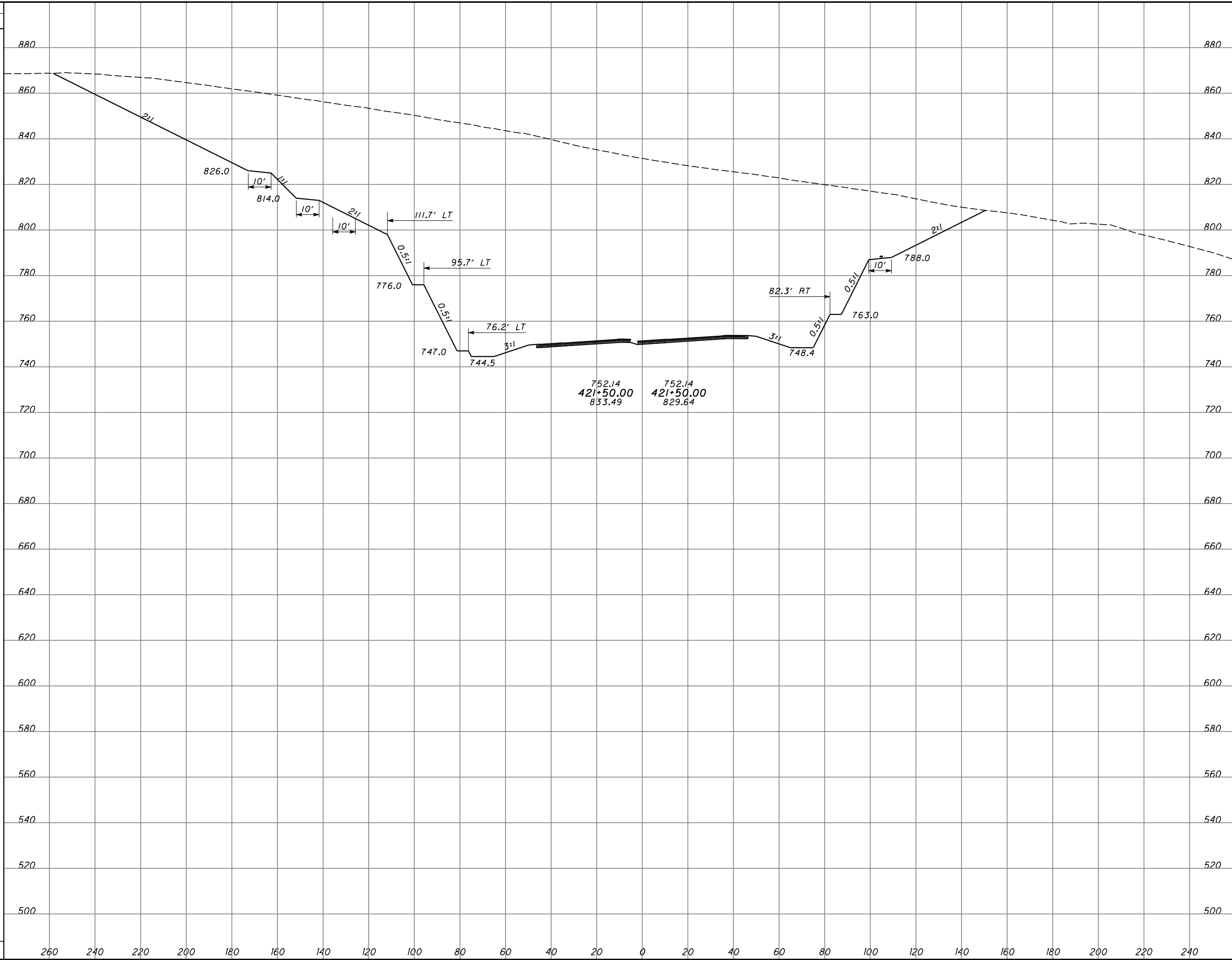
SCI-823-6.81

SEEDING

END WIDTH SQ. YDS.

END AREA VOLUME

CUT FILL CUT FILL CALCULATED CHECKED

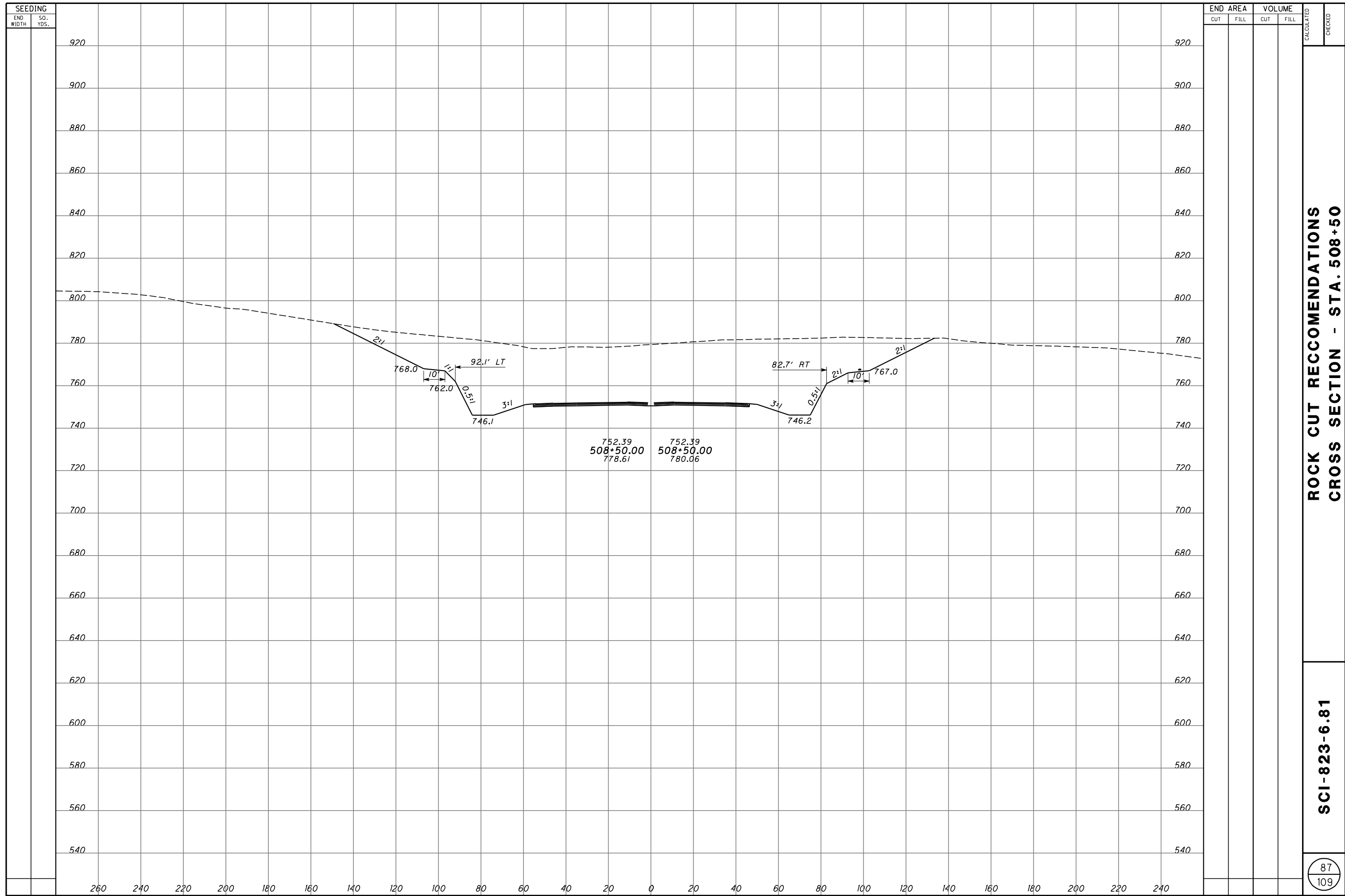


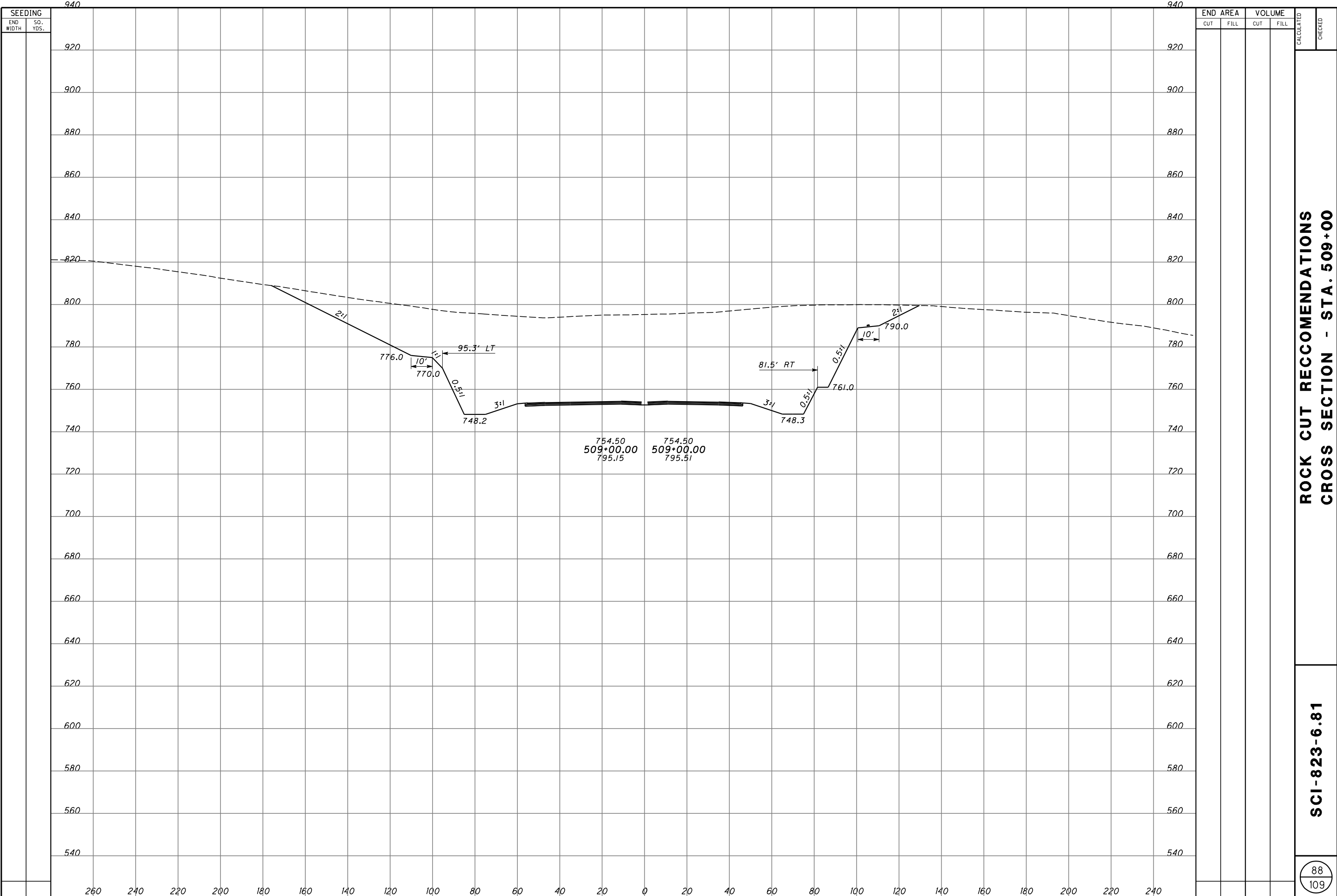
ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 421+50

SCI-823-6.81

Rock Cut Slope Cross Sections

Rock Cut #15 Station 508+50 to Station 519+00





SEEDING	
END WIDTH	SQ. YDS.

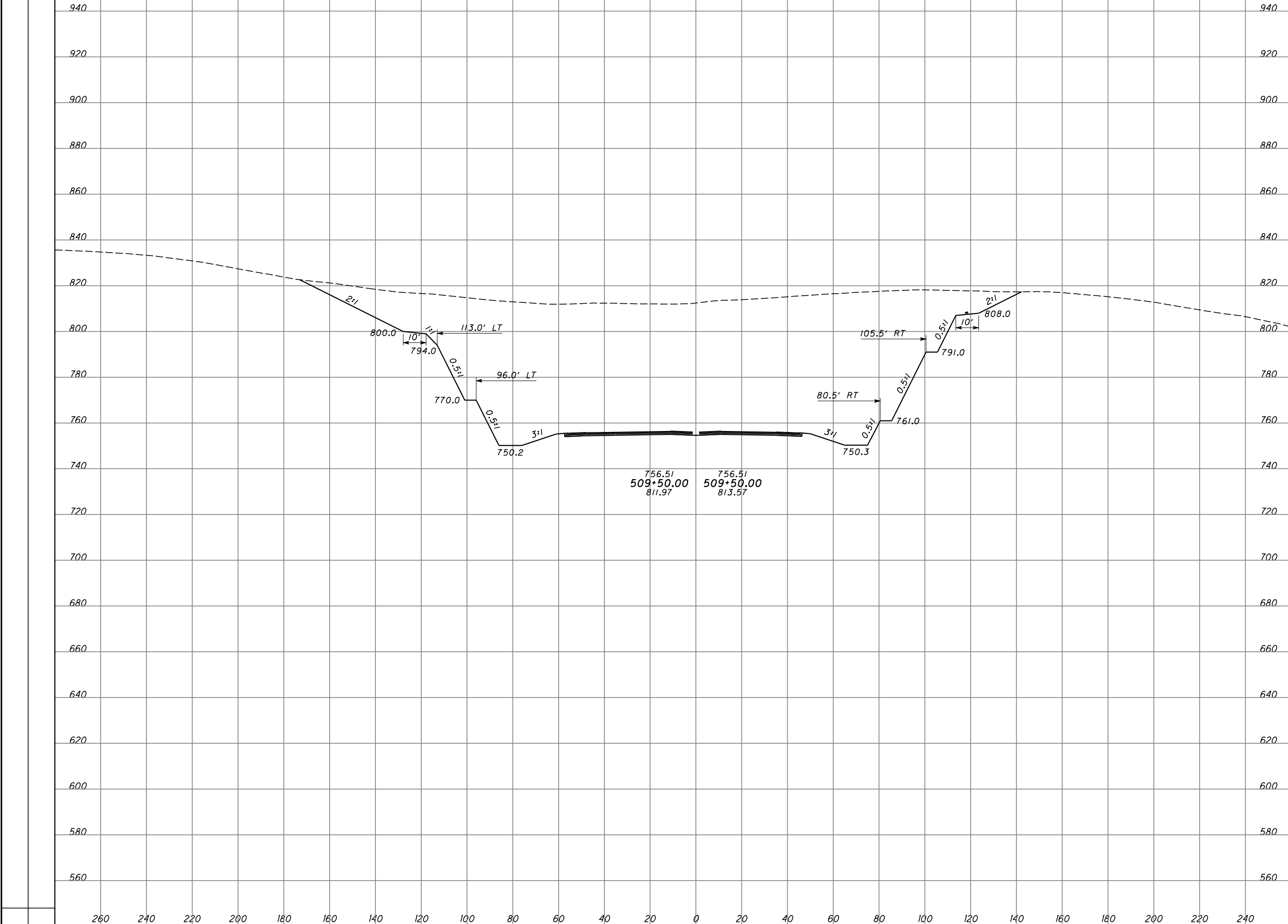
END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 509+00**

SCI-823-6.81

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED



**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 509+50**

SCI-823-6.81

SEEDING

END WIDTH SQ. YDS.

END AREA

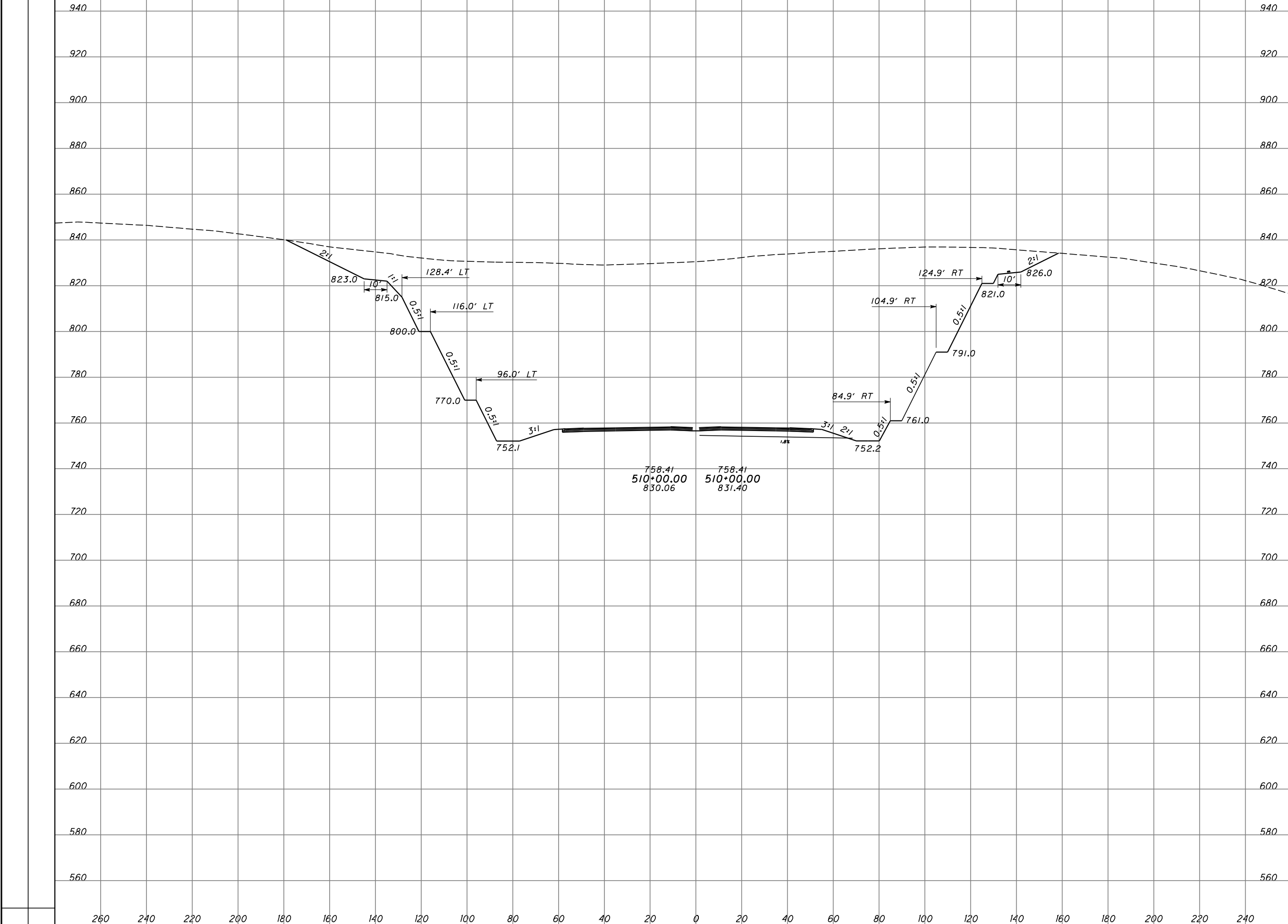
CUT FILL

VOLUME

CUT FILL

CALCULATED

CHECKED



ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 510+00

SCI-823-6.81

90
109

SEEDING

END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL

CALCULATED CHECKED

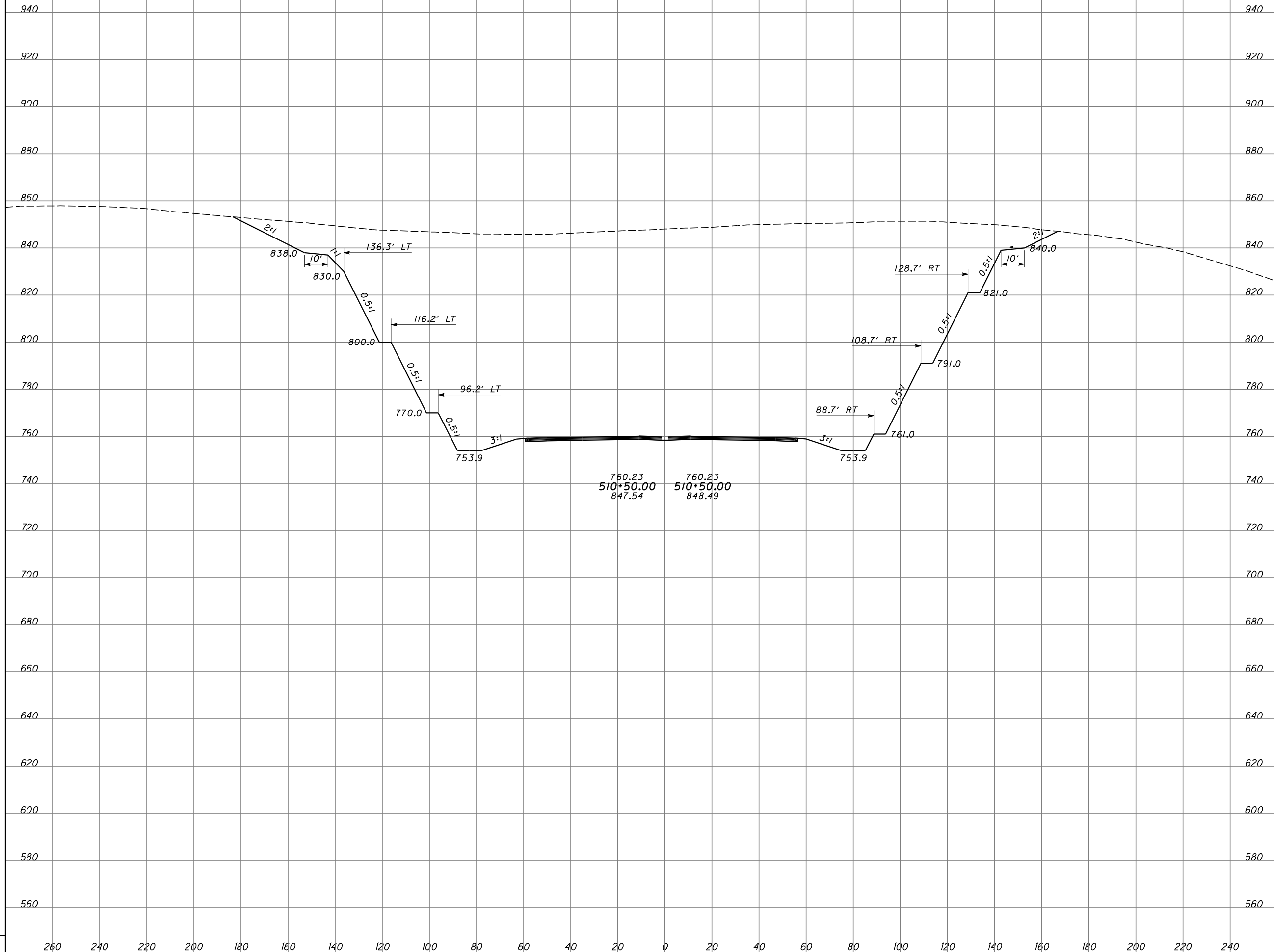
ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 510+50

SCI-823-6.81

91
109

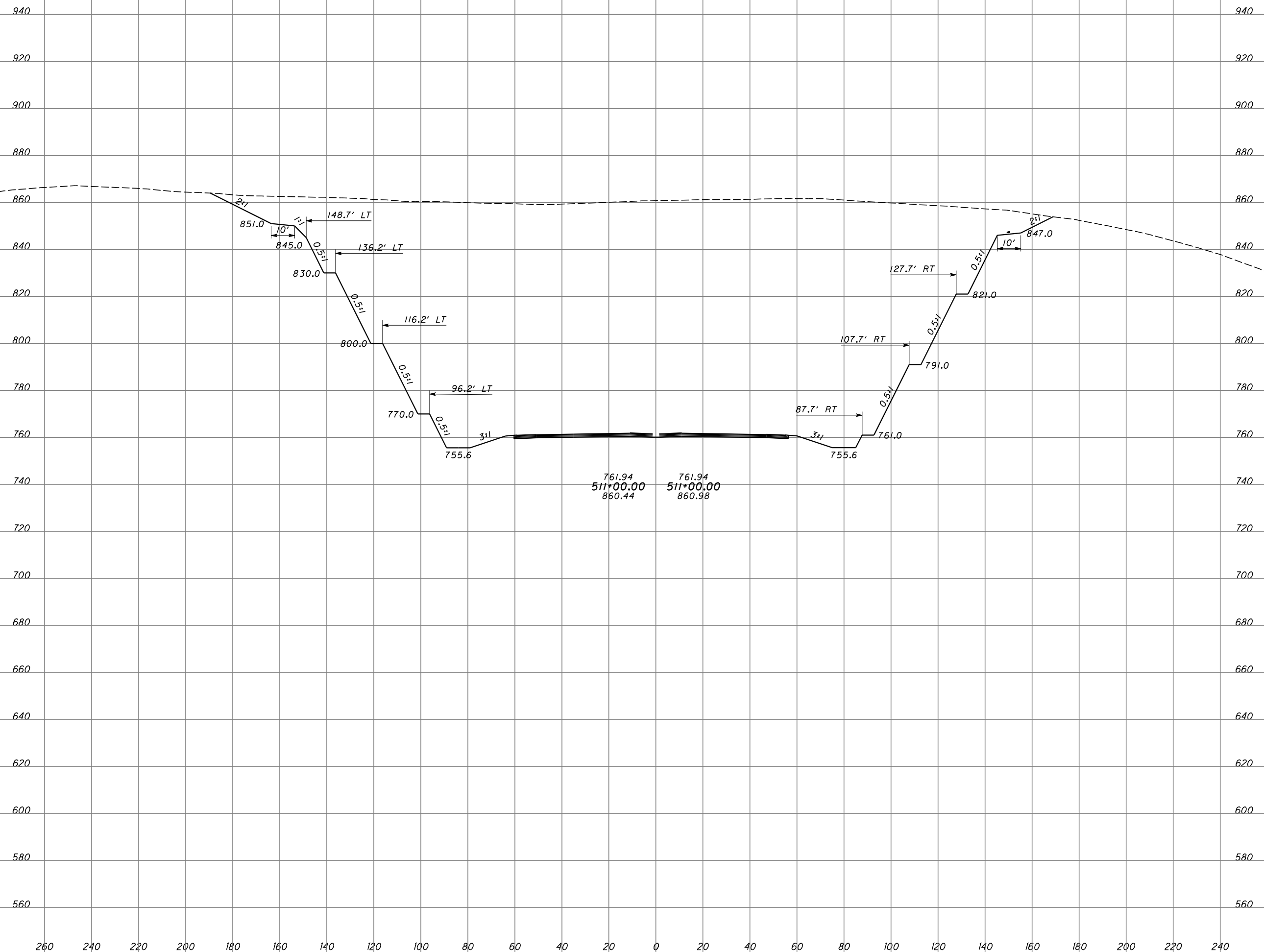
940
920
900
880
860
840
820
800
780
760
740
720
700
680
660
640
620
600
580
560

260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240



SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED

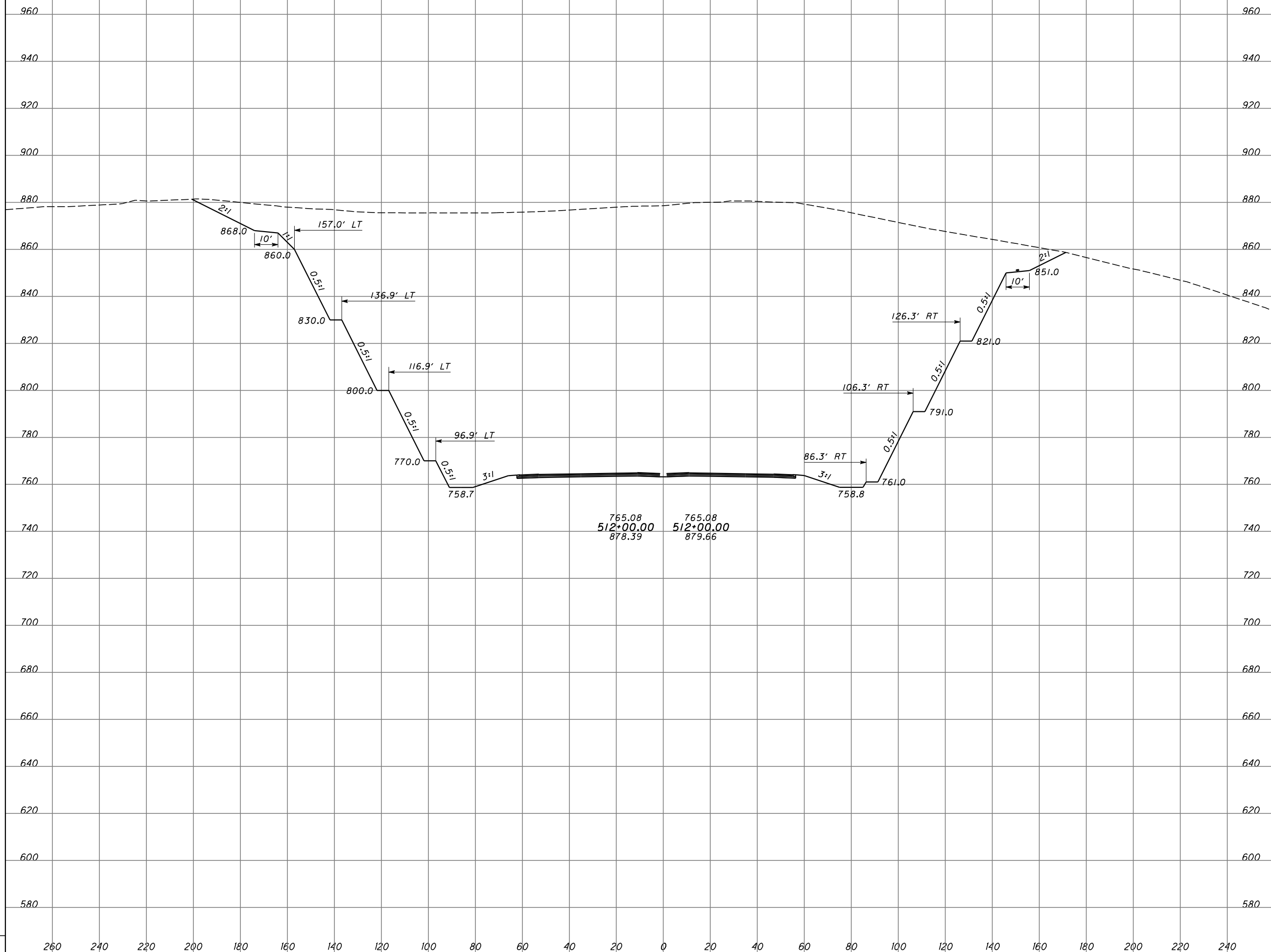


ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 511+00

SCI-823-6.81

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED

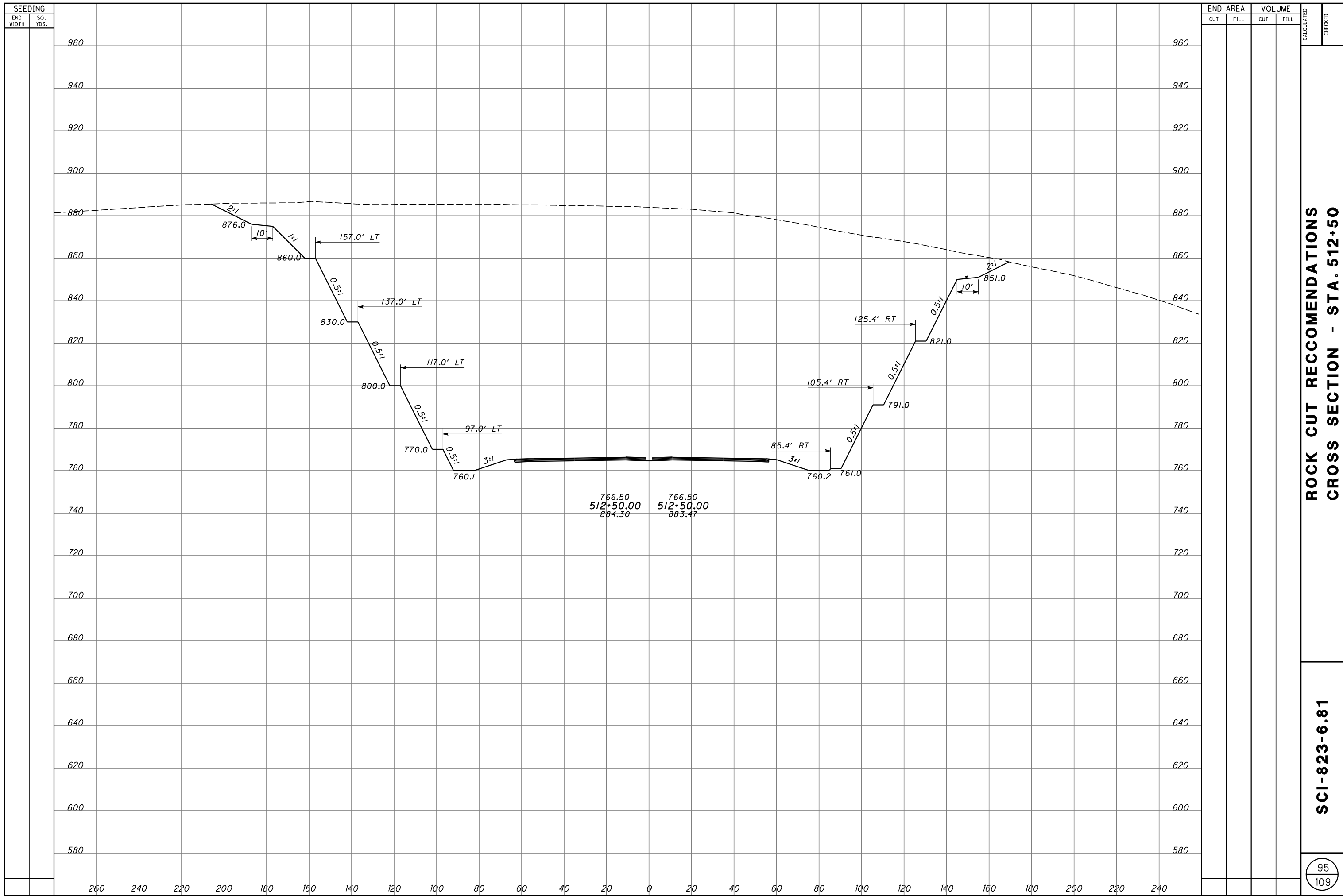


765.08 765.08
512+00.00 512+00.00
878.39 879.66

ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 512+00

SCI-823-6.81

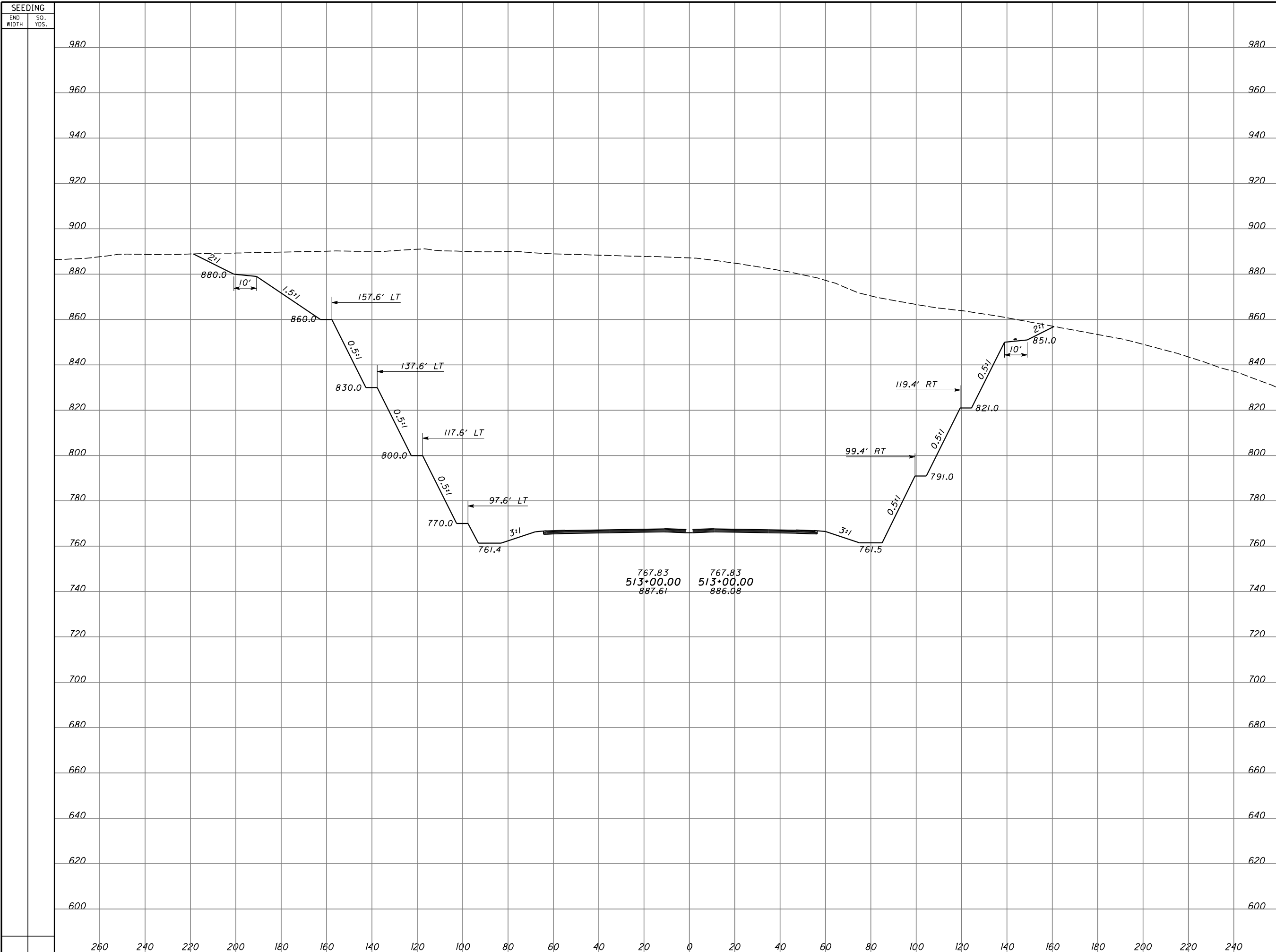
94
109



ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 512+50

SCI-823-6.81

95
109



767.83
 513+00.00
 887.61

767.83
 513+00.00
 886.08

**ROCK CUT RECOMMENDATIONS
 CROSS SECTION - STA. 513+00**

SCI-823-6.81

SEEDING

END WIDTH
SQ. YDS.

END AREA

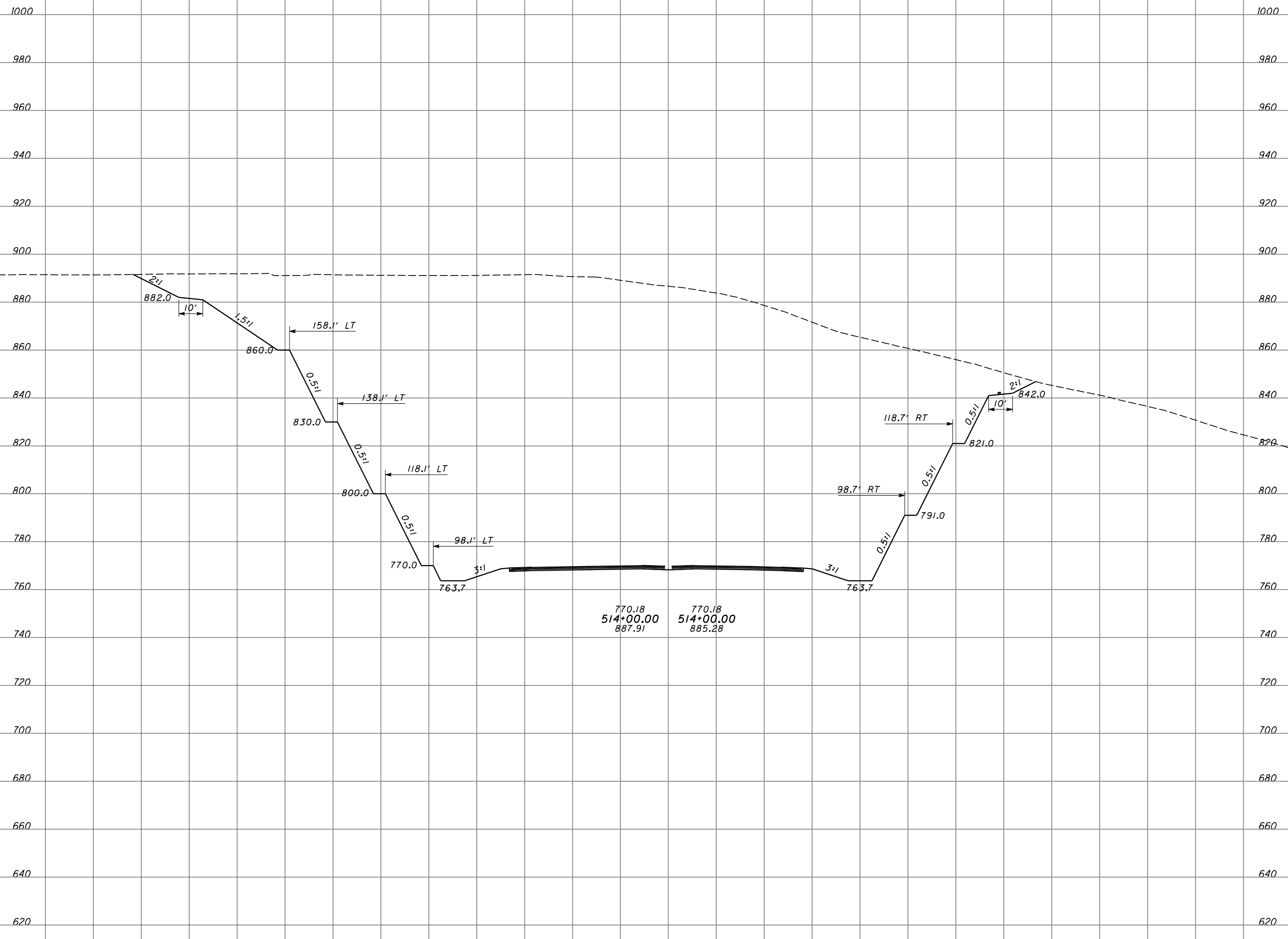
VOLUME

CUT FILL

CUT FILL

CALCULATED

CHECKED



ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 514+00

SCI-823-6.81

98
109

SEEDING

END WIDTH SQ. YDS.

END AREA

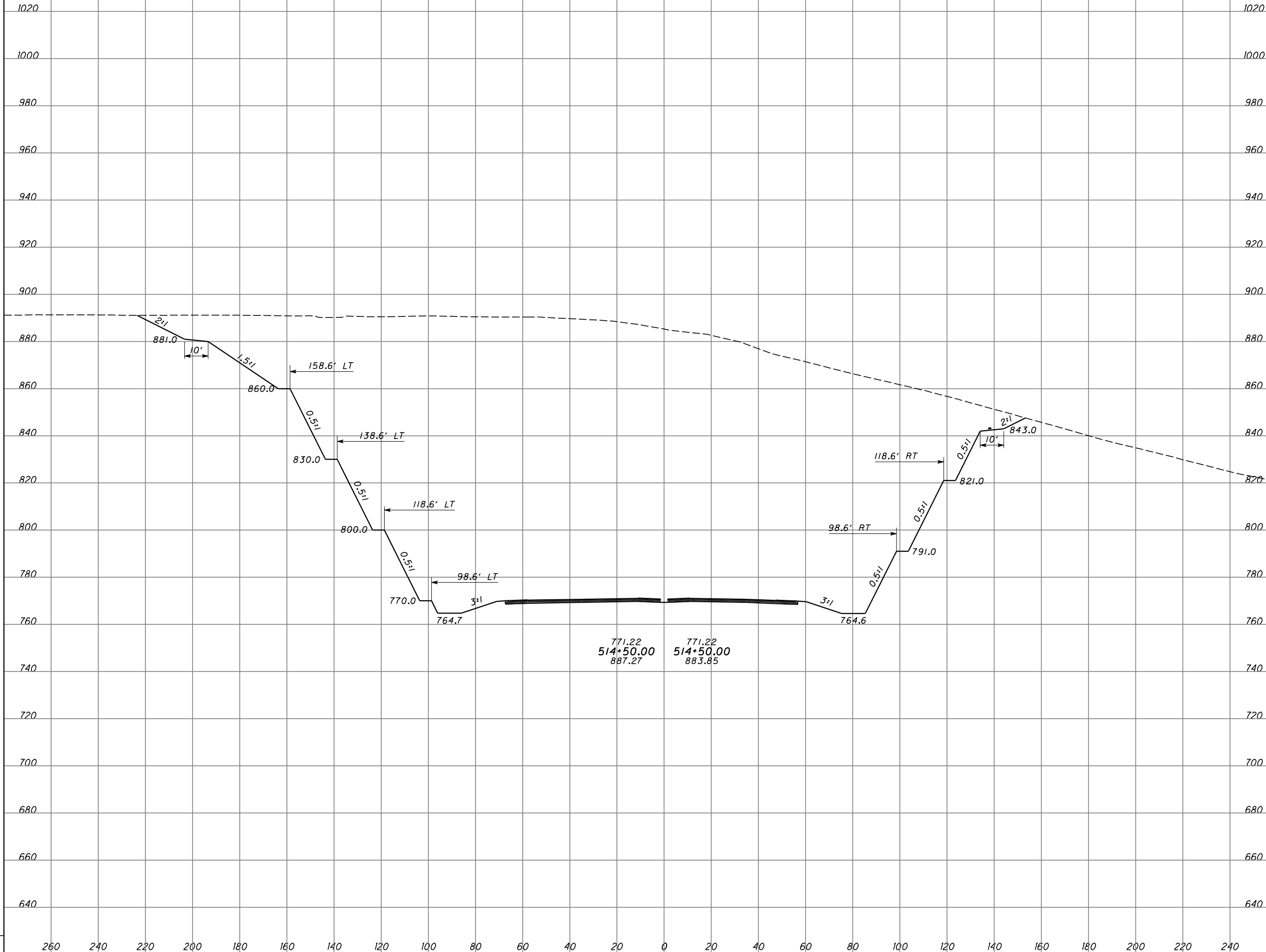
CUT FILL

VOLUME

CUT FILL

CALCULATED

CHECKED



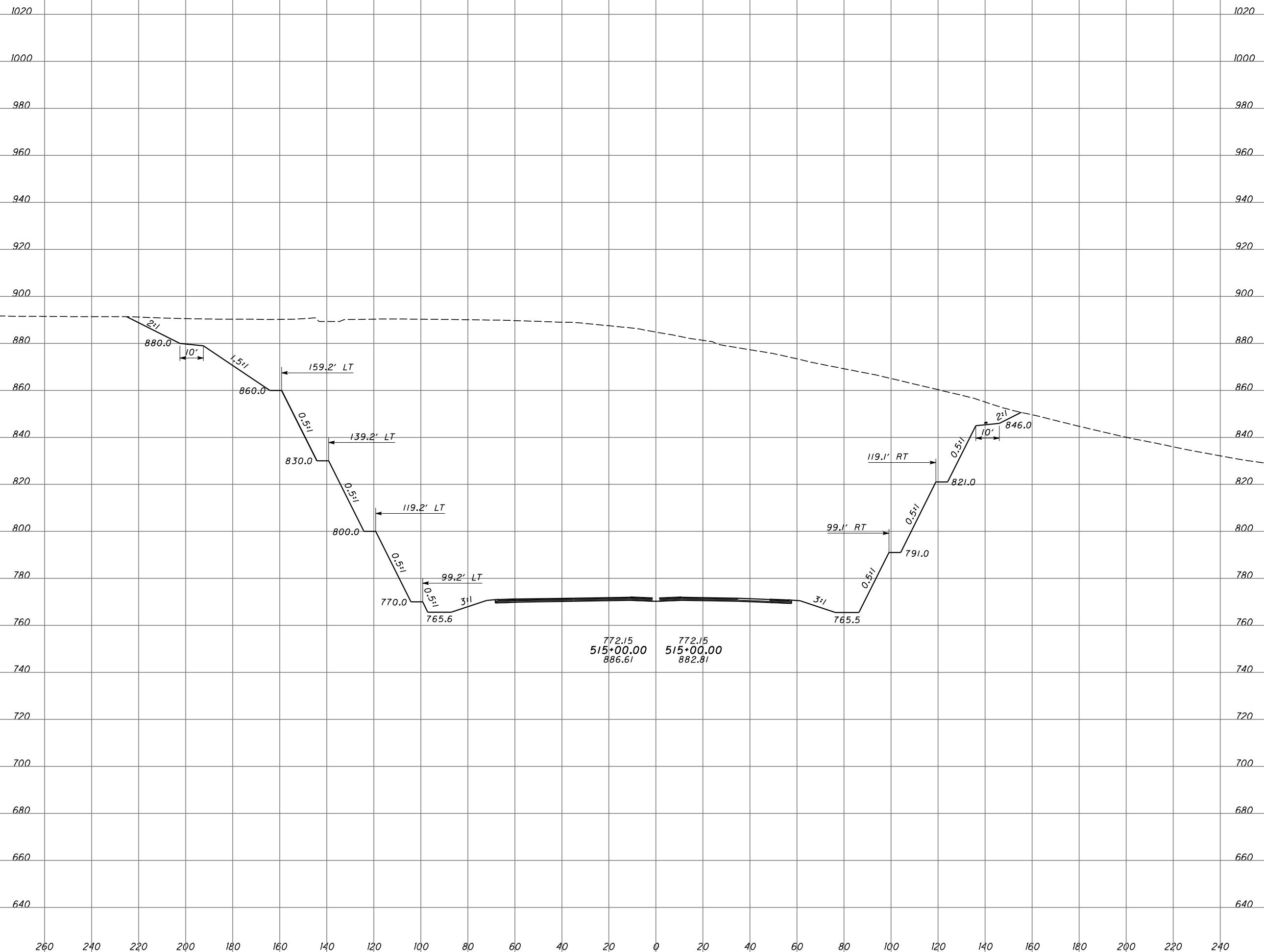
**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 514+50**

SCI-823-6.81

99
109

SEEDING	
END WIDTH	SQ. YDS.

END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

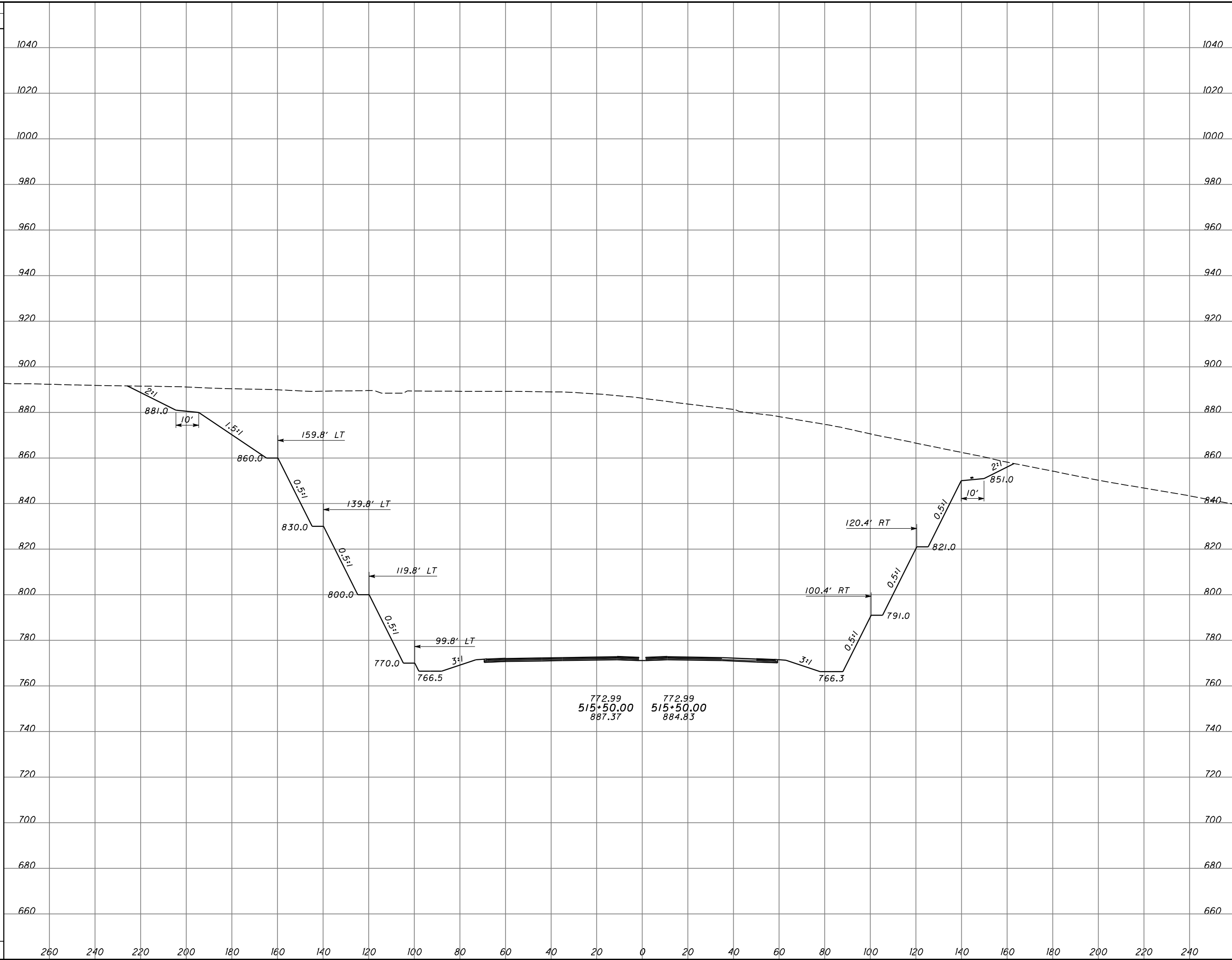


**ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 515+00**

SCI-823-6.81

100
109

SEEDING
END WIDTH
SQ. YDS.



END AREA		VOLUME		CALCULATED	CHECKED
CUT	FILL	CUT	FILL		

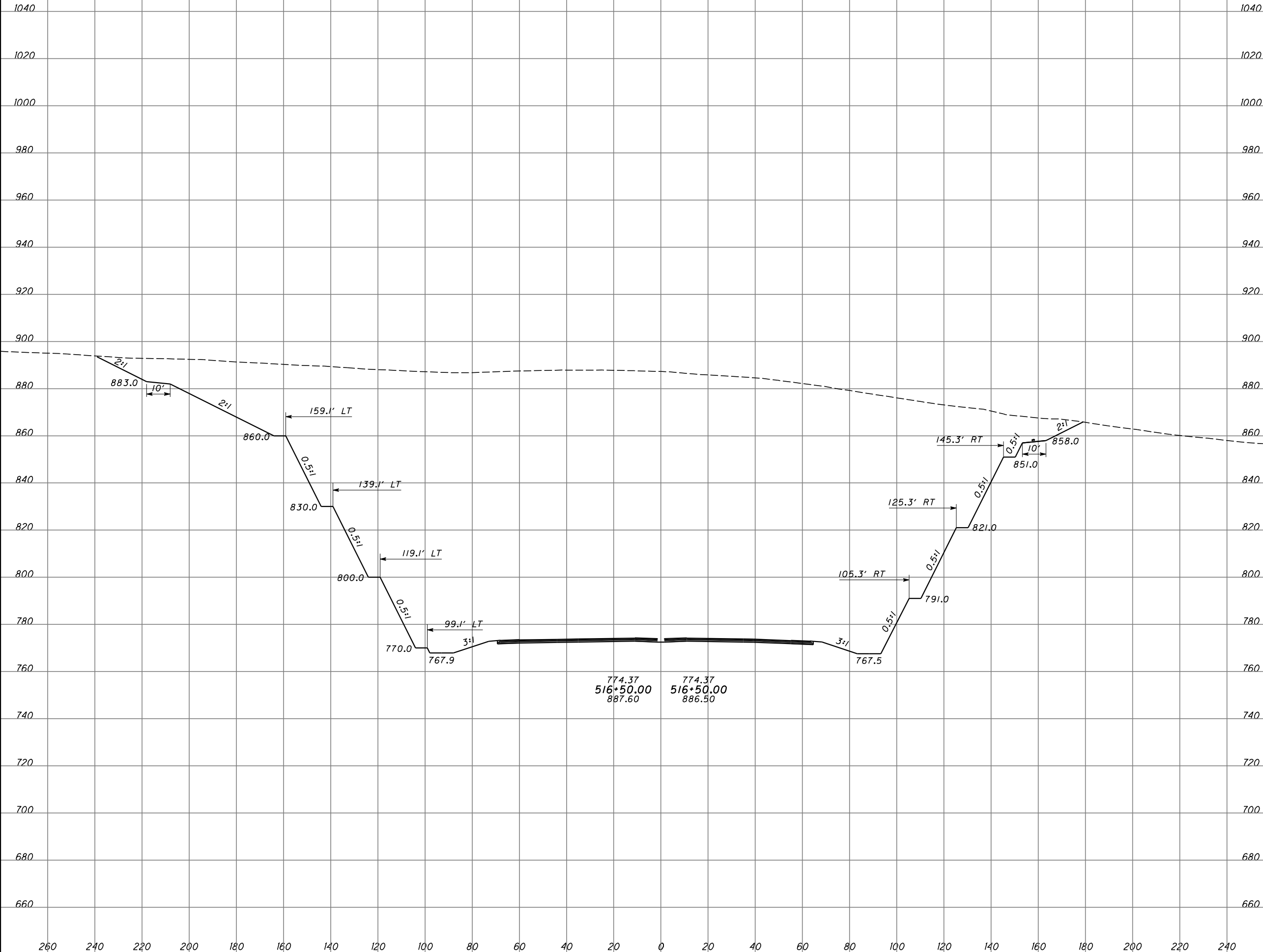
ROCK CUT RECOMMENDATIONS
CROSS SECTION - STA. 515+50

SCI-823-6.81

(101)
(109)

SEEDING
END WIDTH SQ. YDS.

END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED



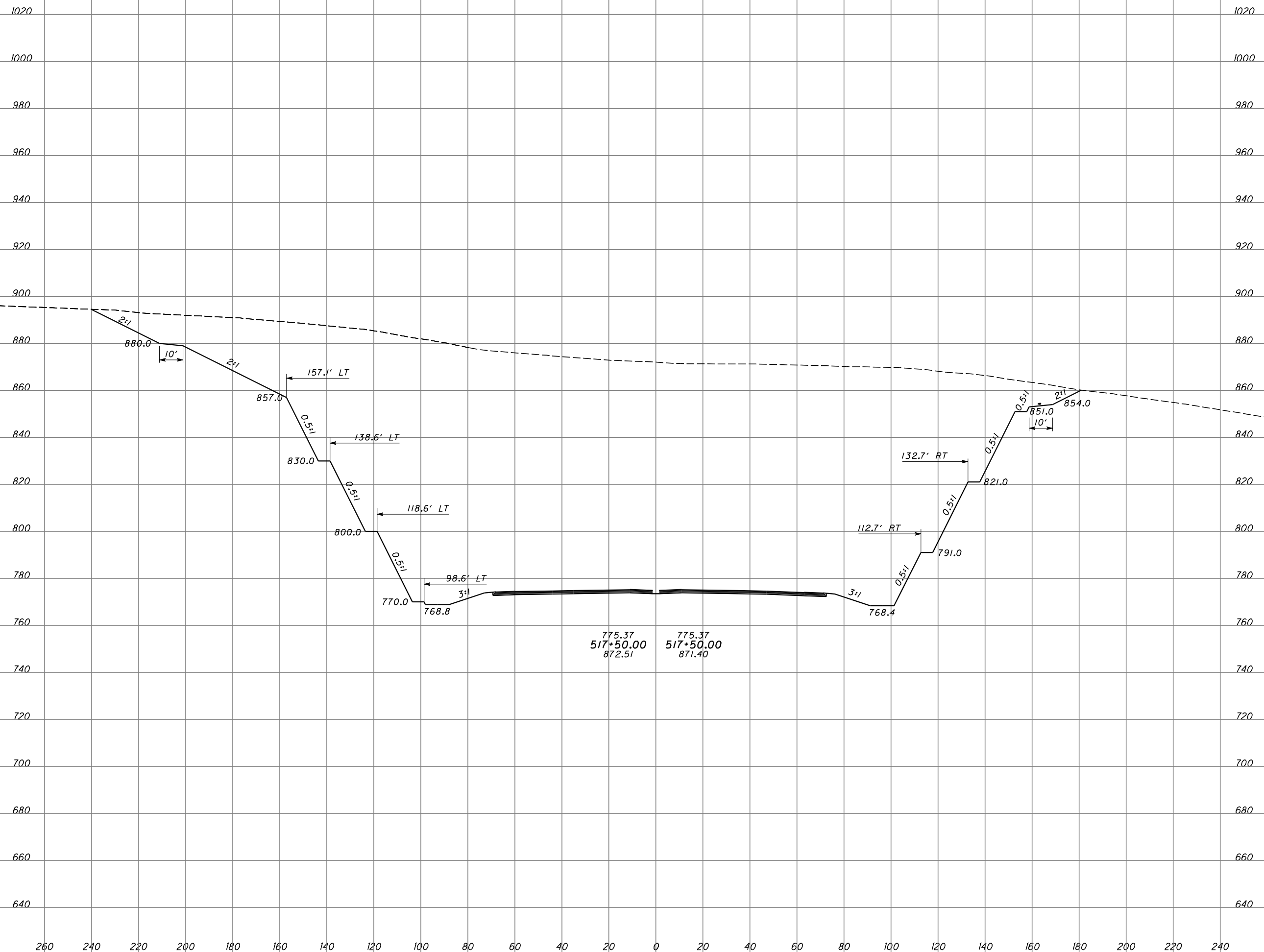
**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 516+50**

SCI-823-6.81

103
109

SEEDING
END WIDTH SQ. YDS.

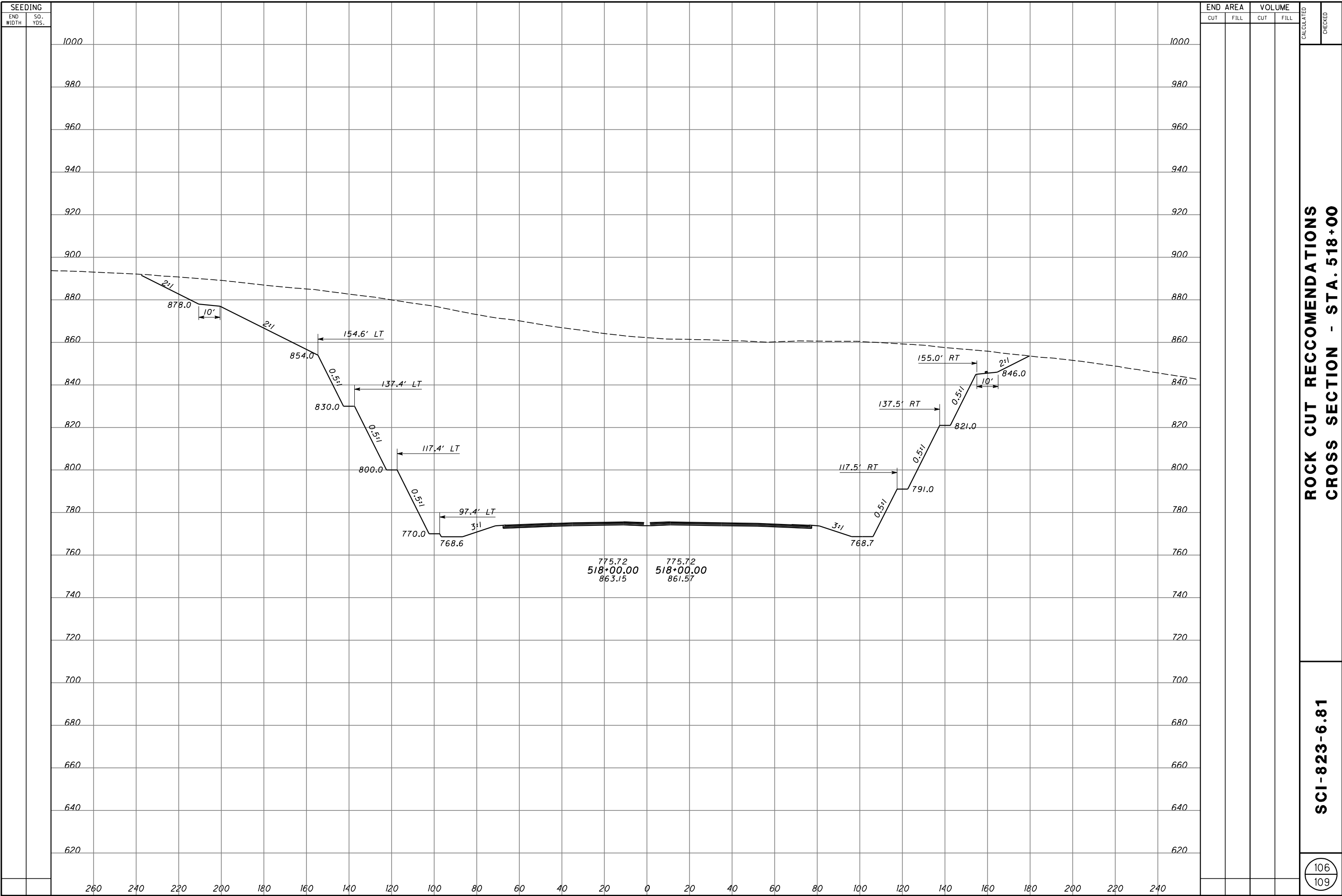
END AREA VOLUME
CUT FILL CUT FILL
CALCULATED CHECKED



**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 517+50**

SCI-823-6.81

105
109



**ROCK CUT RECCOMENDATIONS
CROSS SECTION - STA. 518+00**

SCI-823-6.81

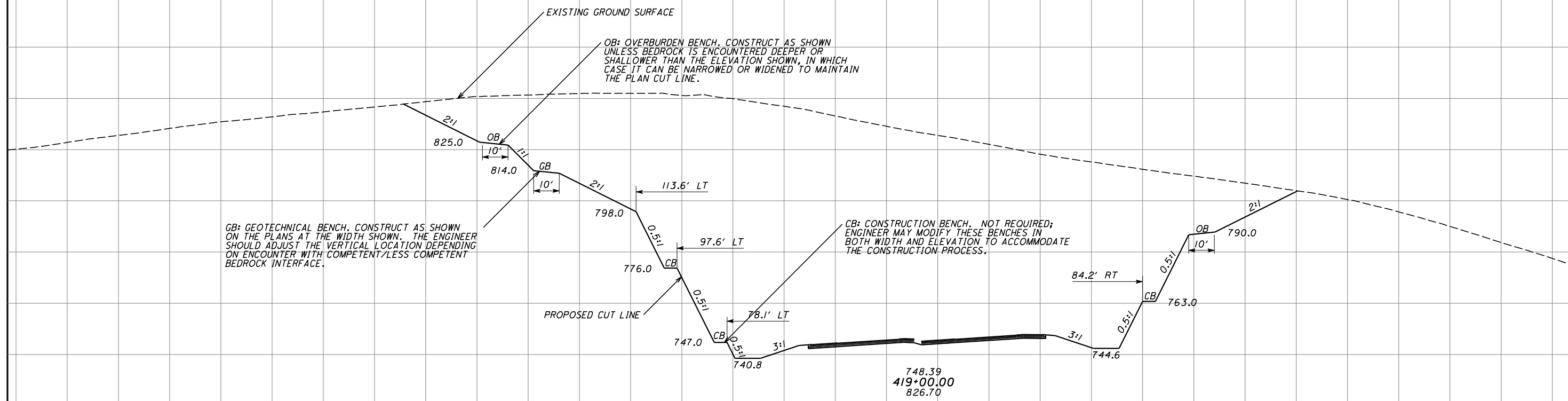
106
109

Rock Cut Slope Cross Section

Bench Types



ROCK CUT SLOPE RECCOMENDATIONS - BENCH TYPES



GB: GEOTECHNICAL BENCH. CONSTRUCT AS SHOWN ON THE PLANS AT THE WIDTH SHOWN. THE ENGINEER SHOULD ADJUST THE VERTICAL LOCATION DEPENDING ON ENCOUNTER WITH COMPETENT/LESS COMPETENT BEDROCK INTERFACE.

OB: OVERBURDEN BENCH. CONSTRUCT AS SHOWN UNLESS BEDROCK IS ENCOUNTERED DEEPER OR SHALLOWER THAN THE ELEVATION SHOWN, IN WHICH CASE IT CAN BE NARROWED OR WIDENED TO MAINTAIN THE PLAN CUT LINE.

CB: CONSTRUCTION BENCH. NOT REQUIRED; ENGINEER MAY MODIFY THESE BENCHES IN BOTH WIDTH AND ELEVATION TO ACCOMMODATE THE CONSTRUCTION PROCESS.