

Appendix E: Pottawattamie County, IA (78-I029-112)

- ing_78-i029-112_cs56b-ingios01_2022_10_26_111637
- ing_78-i029-112_cs56b-ingios01_2022_10_26_113325

Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_111637

Project:	Pottawattamie County I-29	Date and Time:	10/26/2022 11:16:37 AM	Machine ID:	Ingios01
Description:	CO G12 I/C .4 MI N OF N JCT I-880	Mapping Duration (hrs):	0.188	Operator:	Ingios
Location:	Pottawattamie County IA I-29	No. of Measurements:	13281	Machine Operator ID:	582
Review Status:	Review Required	Map Type:	Verification Map	State Plane:	6 IOWA Council Bluffs
		Map Layer:	Subgrade Top	Segment:	County Rd G12

Map Summary

Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
XMV	No												
Resilient Modulus	No												
k-value	Yes	32.2	46.4	0.4	100.0	35.0	90.0	165.0	37.4	41.6	-65.0	-10.0	65.0
Moisture Content	No												

Mapped Area		Pass Count					Elevation (ft)			Velocity (fps)		
square feet	acres	10th percentile	Median	cov(%)	% >= TV	Target Value	min.	avg.	max.	min.	avg.	max.
13281	0.305	1	1	45.4	100.0	0	998.87	1007.62	1015.69	4.3	5.1	6.9

Materials

name	id	% of total	area-square ft	area-acres	tl-xmv	tl-Mr	tl-k value	tl-w%
Subgrade_Class 10 (Clay)_IADOT	24005	100.0	13281	0.305	100.0	3000.0	100.0	20.5

Blobs

parameter	min. area(ft^2)	# of blobs	blob area(ft^2)	% of map	lower bound-tv	upper bound-tv	poly-tol.
k-value	1000.0	1	8278	62.3	none	0.0	4.0

Lift Thickness

25th percentile (in.)	Median (in.)	75th percentile (in.)	Target Value (in.)
0.0	0.0	0.0	6.0

Station

Start	End
1883+00	1880+50

Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_111637

Project:	Pottawattamie County I-29	Date and Time:	10/26/2022 11:16:37 AM	Machine ID:	Ingios01
Description:	CO G12 I/C .4 MI N OF N JCT I-880	Mapping Duration (hrs):	0.188	Operator:	Ingios
Location:	Pottawattamie County IA I-29	No. of Measurements:	13281	Machine Operator ID:	582
Review Status:	Review Required	Map Type:	Verification Map	State Plane:	6 IOWA Council Bluffs
		Map Layer:	Subgrade Top	Segment:	County Rd G12

QUALITY ANALYSIS SUMMARY - k-Value

Quality Value	Criteria
46.4	CQI >= 95
32.2	80% of k-Value MVs >= 100
41.6	COV <= 30
62.3	% i-Score Blob Area >= 1000 ft ²
0.0	Lift Thickness Median Value (in.)
1	Pass Count >= 0

Compaction Quality Index(CQI): Relative compaction quality index based on the percentage of the geospatial area that meets the minimum target values and accounts for the uniformity of compaction. The default minimum target CQI is 95% using a uniformity weight factor of 50%.

Percent Passing Target Values: Number of geospatial grid points from the output that meet or exceed the target value (TV) for the selected material. Level I target % Passing TV = 80%. Level II target % Passing TV = 90%.

Coefficient of Variation (COV): Calculated from the ratio of the standard deviation to the mean based on the measurement values (MVs) reported at each grid point of the mapping area. Description of COV ranges: <= 20% = Low Variability; 20 to 40% = Moderate Variability; > 40% = High Variability. The default target COV is <= 30%.

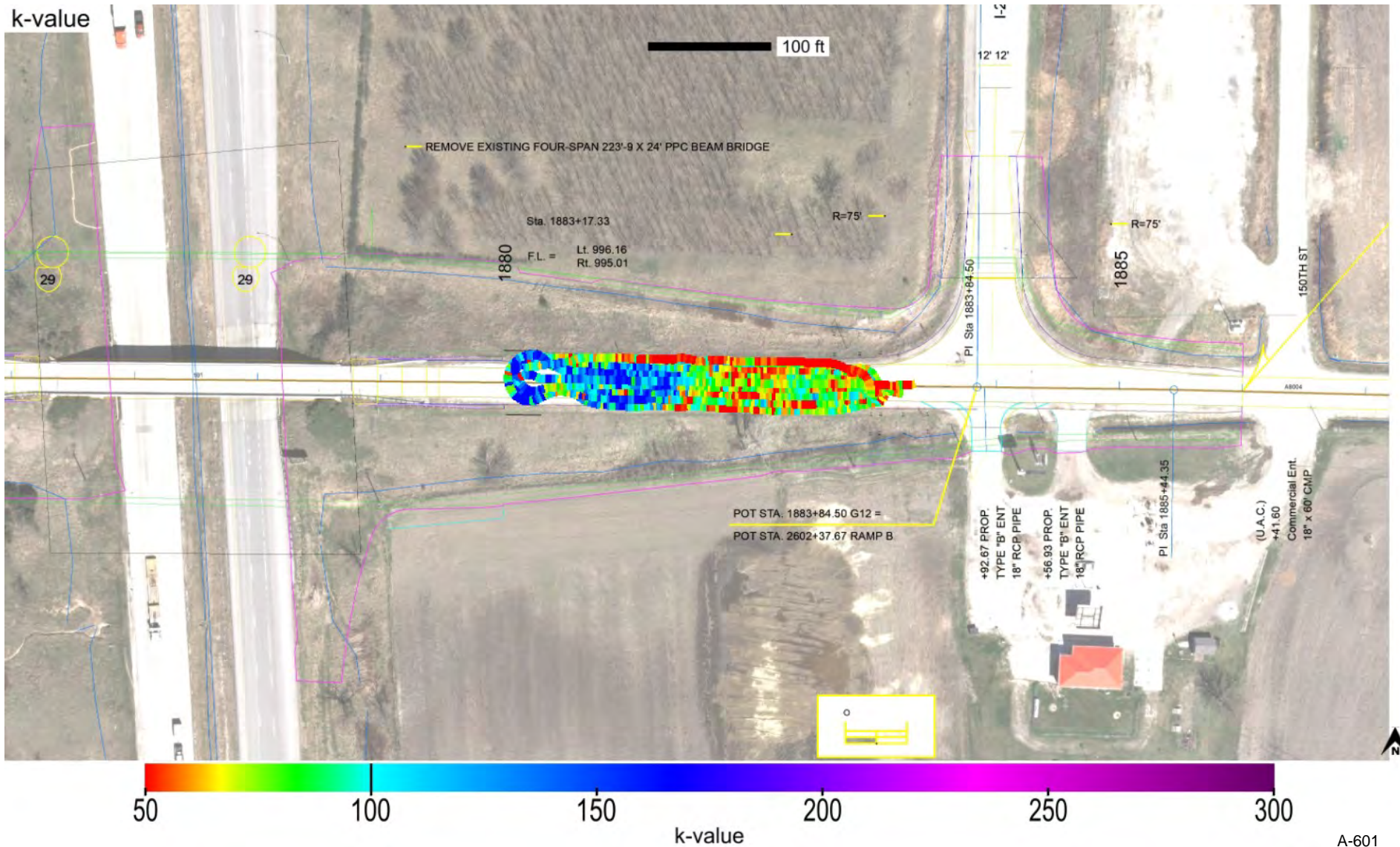
i-Score Blob (%): The percentage of the map area analyzed with contiguous blob areas with MVs < TV. Control Level 1 >= 100 sq. ft.; Control Level 2 >= 200 sq. ft.; Control Level 3 >= 500 sq. ft.; Control Level 4 >= 1,000 sq. ft.; Control Level 5 >= 2,000 sq. ft.

Lift thickness: Green: 75th percentile value <= TV; Yellow: median value <= TV and 75th percentile > TV; Red: median value (50th percentile) > TV.

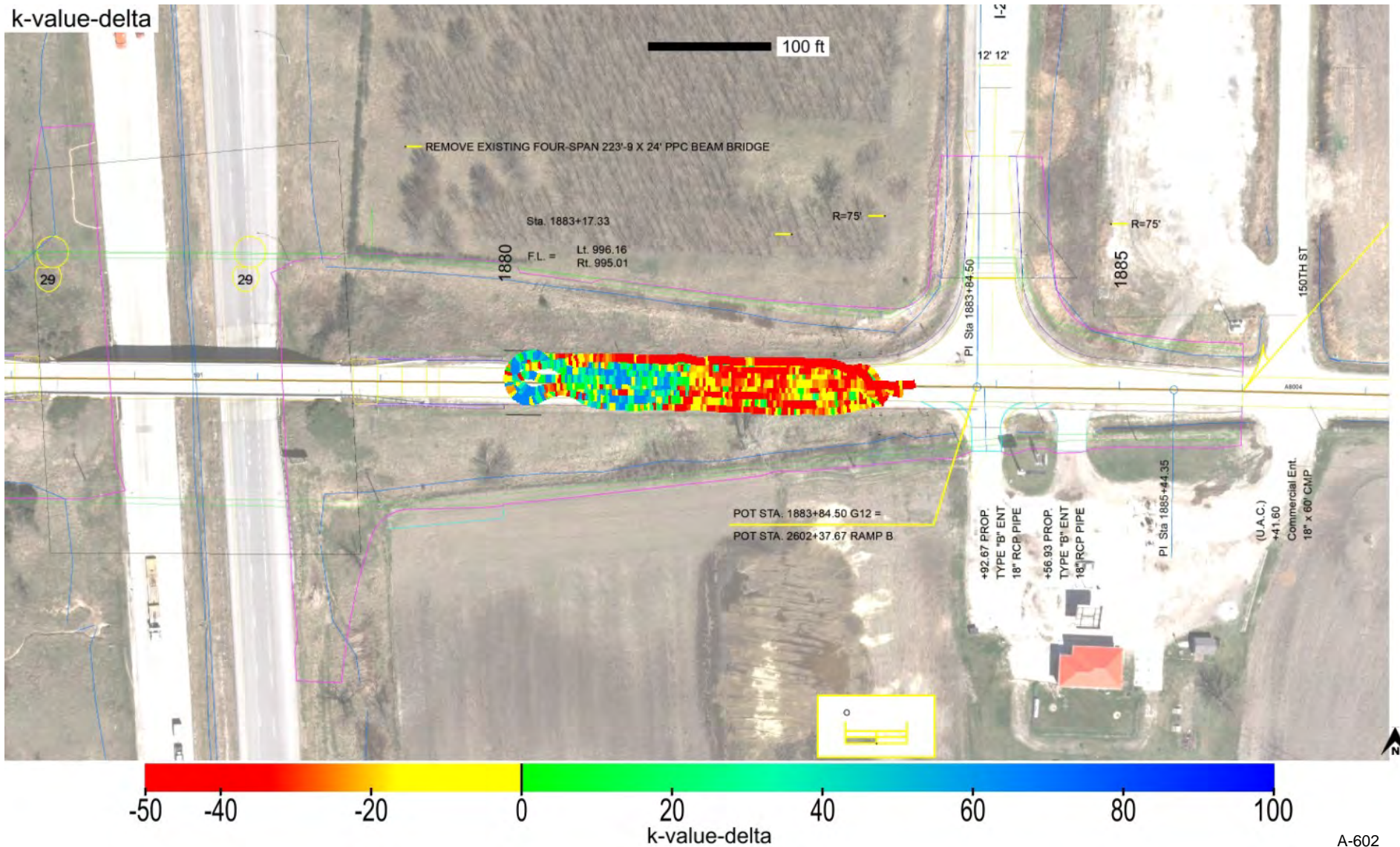
Pass Count: Green: 10th percentile value >= TV; Yellow: 10th percentile value >= TV and cov% > 50%; Red: 10th percentile value < TV.

Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_111637 Map Type: Verification Map Map Layer: Subgrade Top

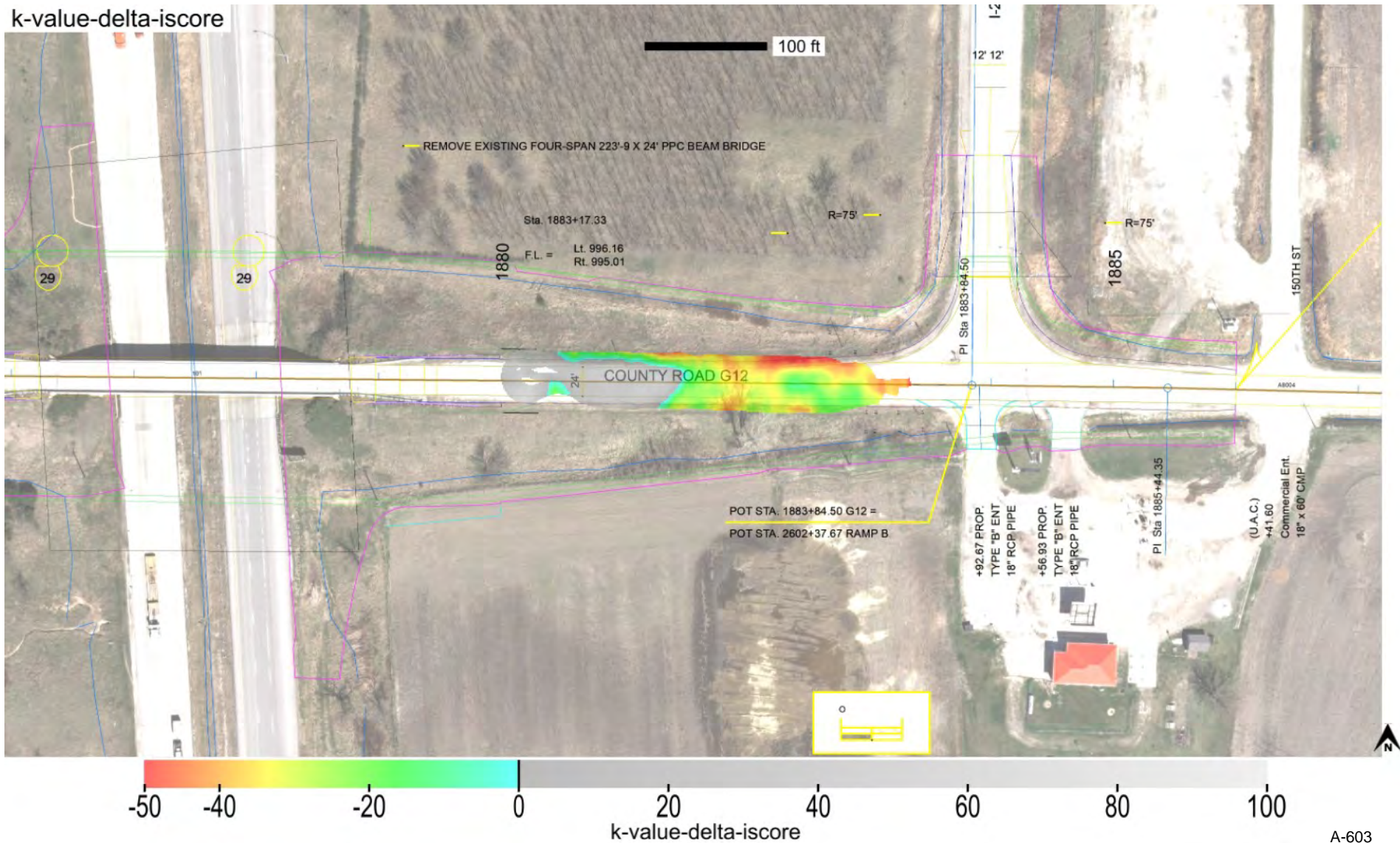
Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
k-value	Yes	32.2	46.4	0.4	100.0	35.0	90.0	165.0	37.4	41.6	-65.0	-10.0	65.0



Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
k-value	Yes	32.2	46.4	0.4	100.0	35.0	90.0	165.0	37.4	41.6	-65.0	-10.0	65.0

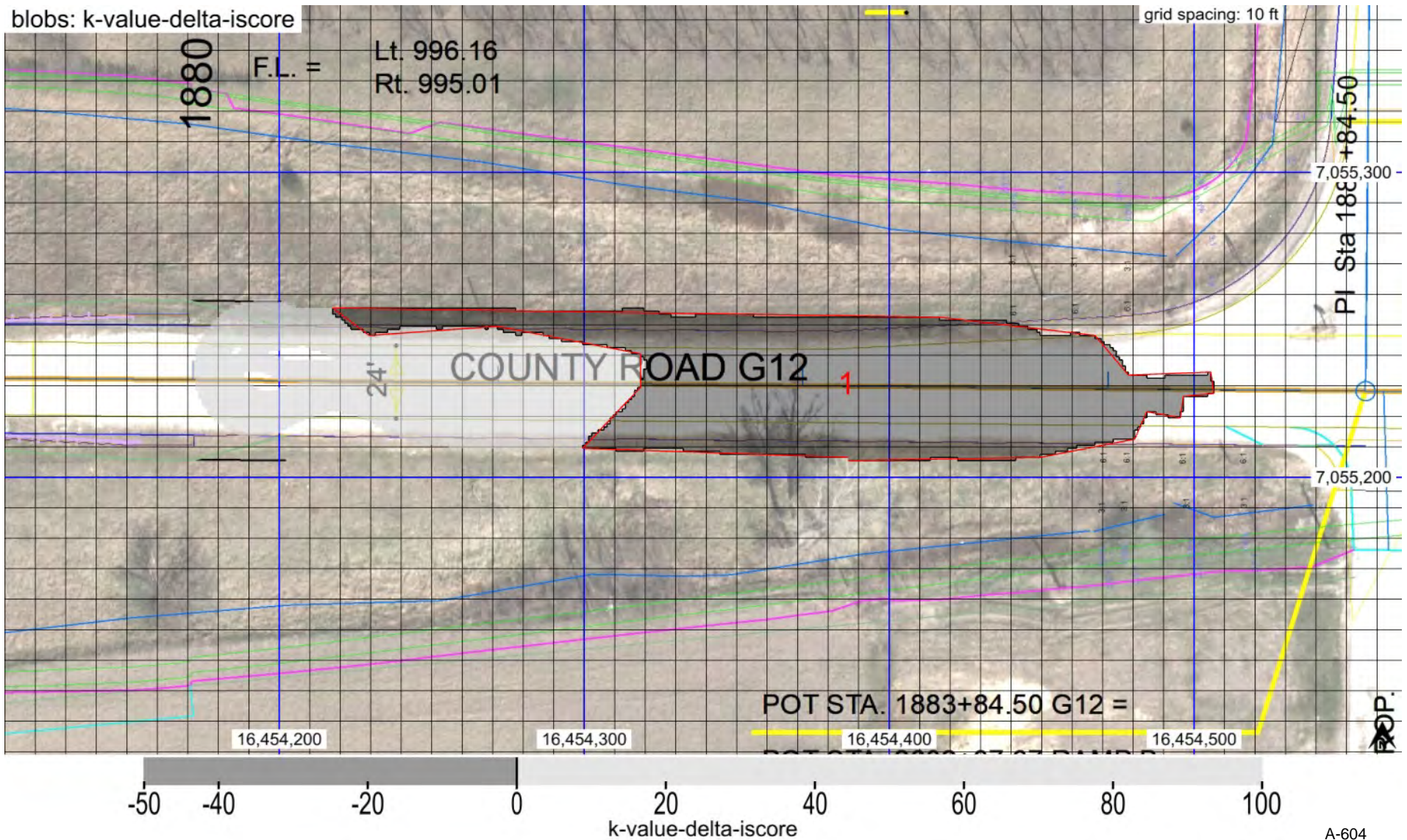


Parameter	Measured	% Passing	Calc. TV	min.-delta	avg.-delta	max.-delta	min.-delta-iscore	avg.-delta-iscore	max.-delta-iscore
k-value	Yes	32.2	100.0	-65.0	-10.0	65.0	-57.5	-9.4	54.5



Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_111637 Map Type: Verification Map Map Layer: Subgrade Top

min. area(ft^2)	# of blobs	blob area(ft^2)	% of map	lower bound-tv	upper bound-tv	poly-tol.
1000	1	8278	62.3	none	0.0	4.0



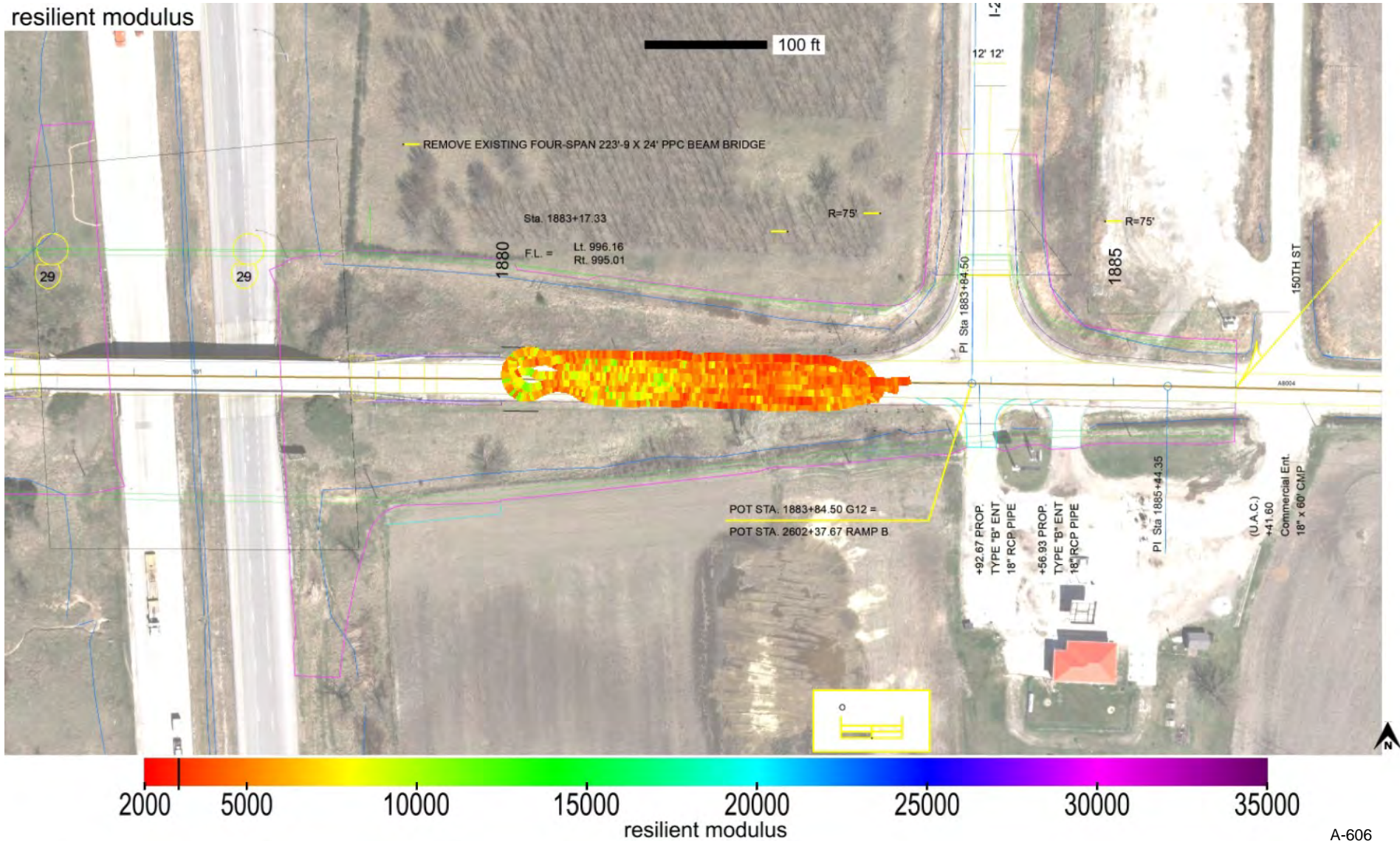
Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_111637 Map Type: Verification Map Map Layer: Subgrade Top

blob: k-value-delta-iscore

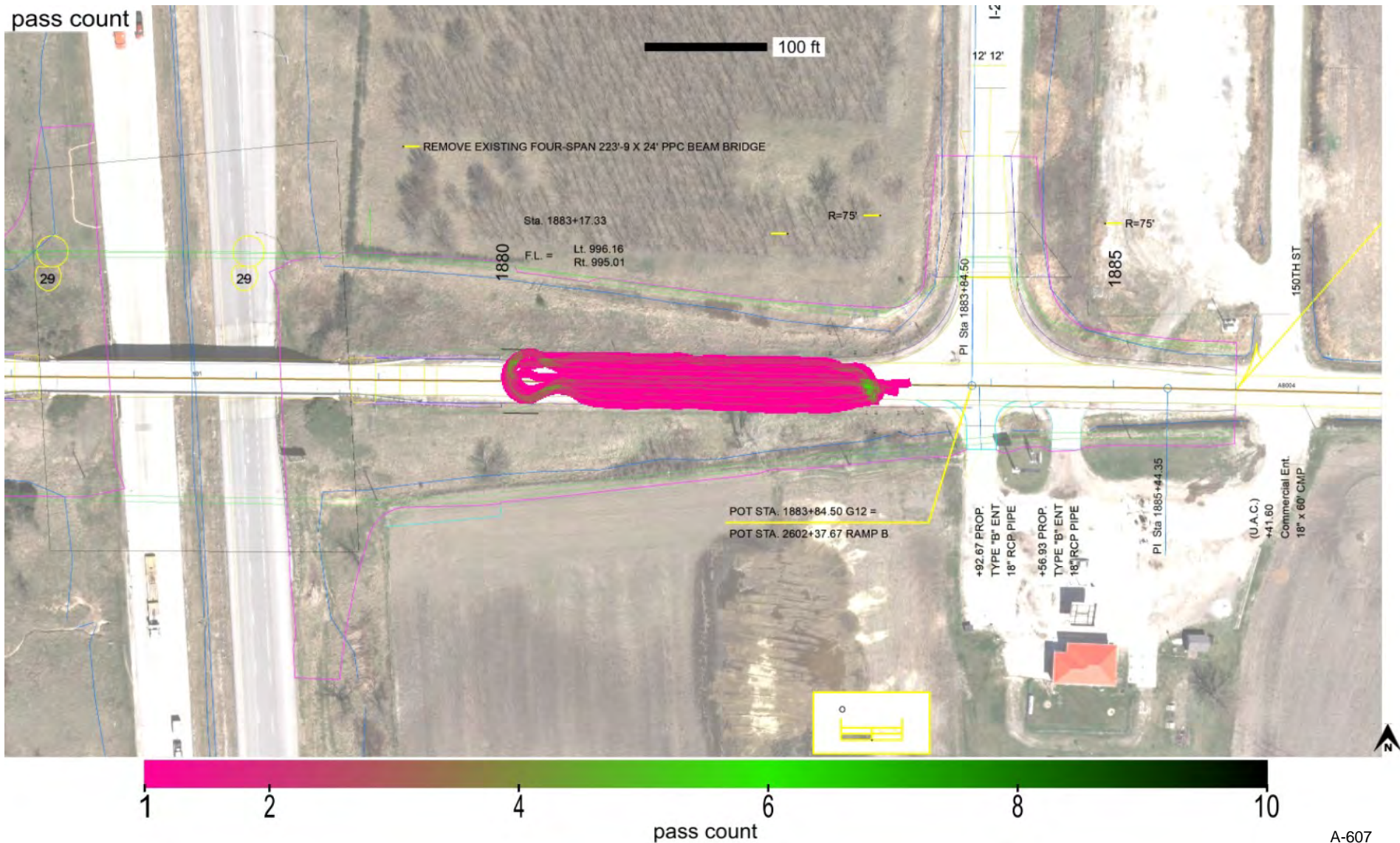
Blob #	Area (ft^2)	% of blobs area	# b.p.	min.-delta-iscore	avg.-delta-iscore	max.-delta-iscore
1	8278	100.0	18	-57.5	-28.8	0.0

Point	Easting (ft)	Northing (ft)
1	16454386	7055206
2	16454450	7055206
3	16454480	7055212
4	16454484	7055222
5	16454496	7055220
6	16454496	7055226
7	16454506	7055228
8	16454506	7055234
9	16454478	7055234
10	16454468	7055246
11	16454416	7055252
12	16454218	7055256
13	16454230	7055246
14	16454272	7055250
15	16454318	7055240
16	16454318	7055230
17	16454300	7055210
18	16454386	7055206

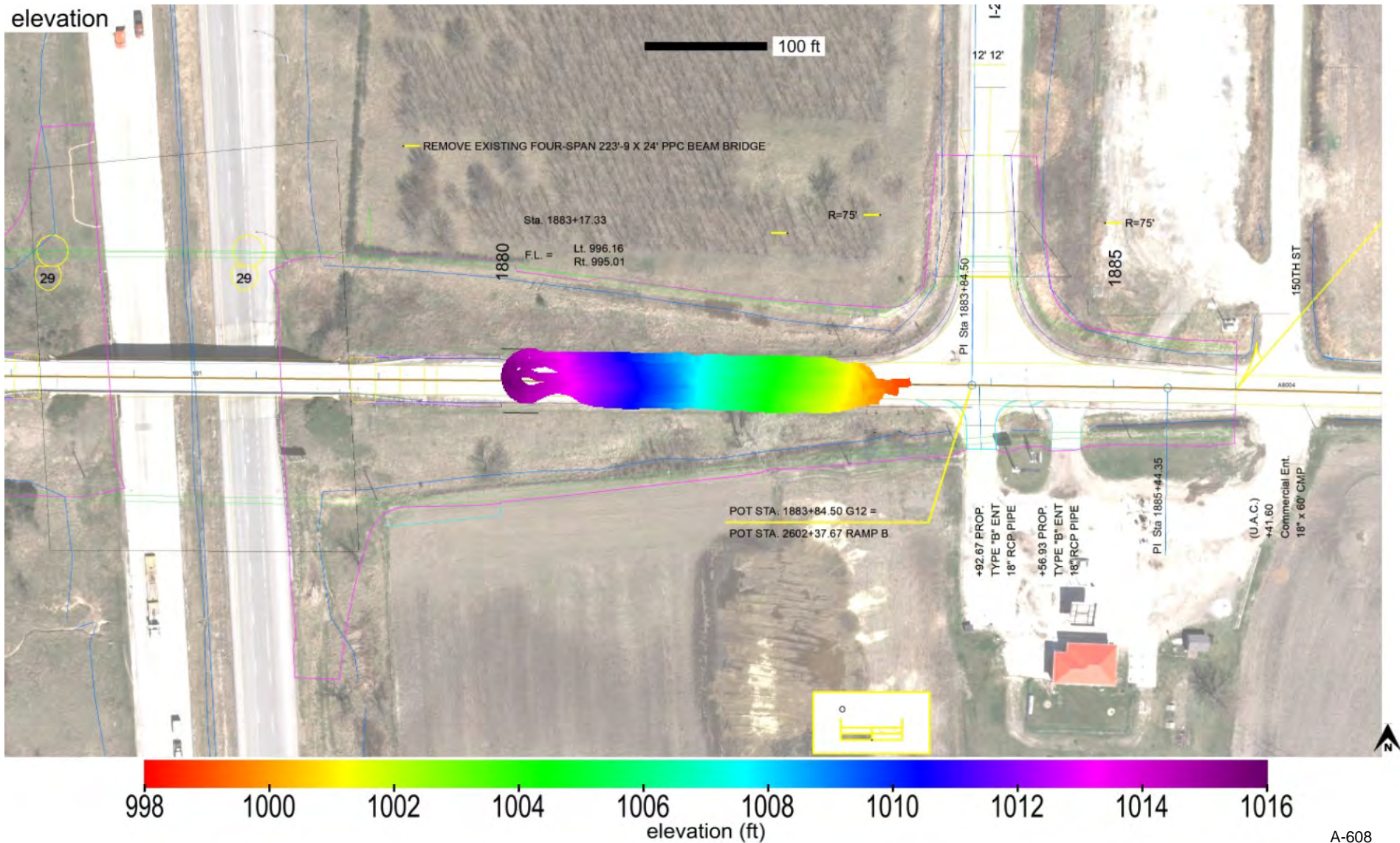
Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
resilient modulus	Yes	99.0	119.1	0.7	3000.0	2746.7	5603.3	11000.0	1661.7	29.7	-253.3	2603.3	8000.0



10th percentile	Median	cov(%)	% >= TV	Target Value
1	1	45.4	100.0	0

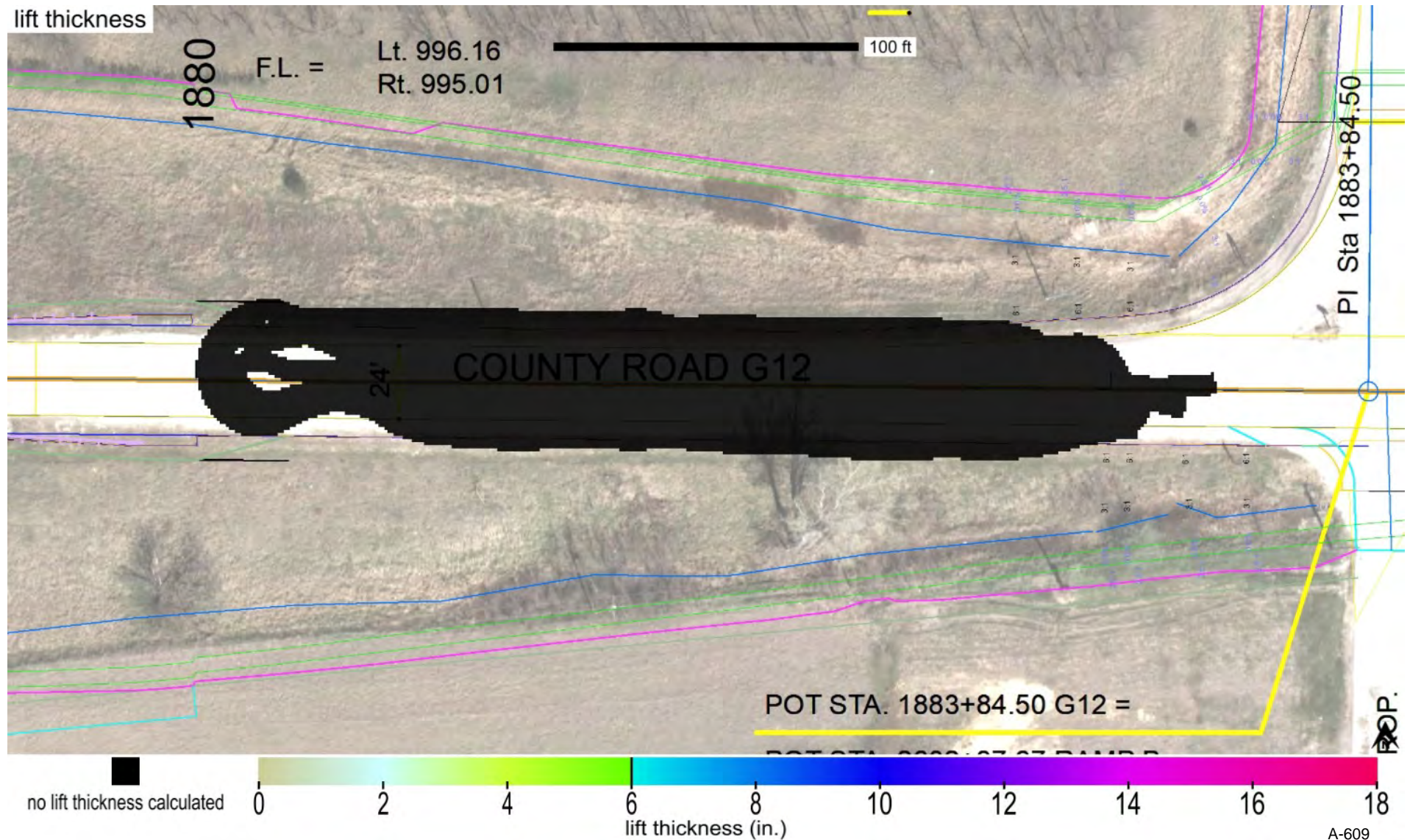


minimum	average	maximum
998.87	1007.62	1015.69



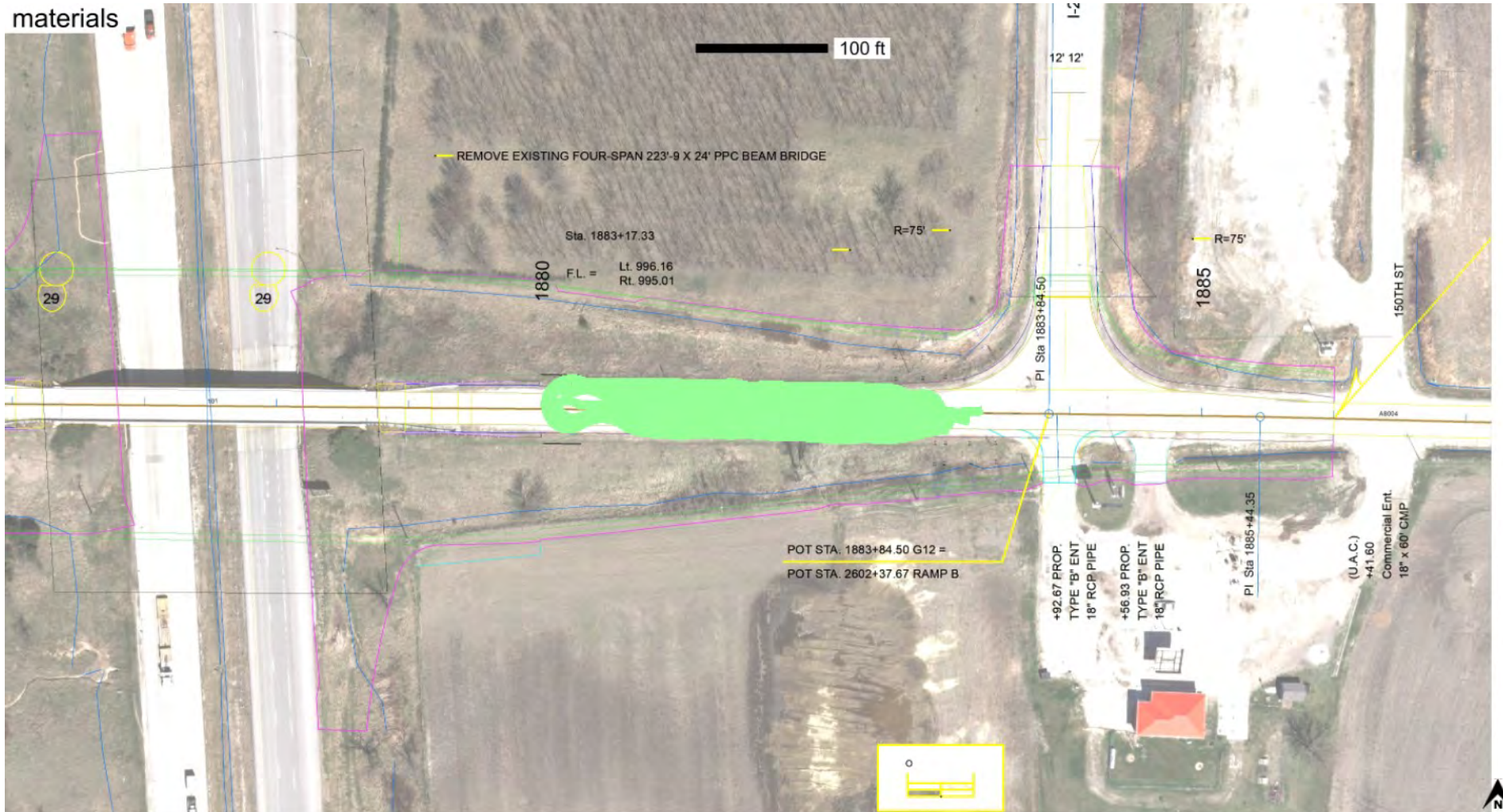
Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_111637 Map Type: Verification Map Map Layer: Subgrade Top

25th percentile (in.)	Median (in.)	75th percentile (in.)	Target Value (in.)
0.0	0.0	0.0	6.0



This report is only for use of the client named and it cannot be relied upon by any other person or entity.

name	id	% of total	area-square ft	area-acres	tl-xmv	tl-Mr	tl-k value	tl-w%
Subgrade_Class 10 (Clay)_IADOT	24005	100.0	13281	0.305	100.0	3000.0	100.0	20.5



 Subgrade_Class 10 (Clay)_IADOT



A-611

Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_113325

Project:	Pottawattamie County I-29	Date and Time:	10/26/2022 11:33:25 AM	Machine ID:	Ingios01
Description:	CO G12 I/C .4 MI N OF N JCT I-880	Mapping Duration (hrs):	0.265	Operator:	Ingios
Location:	Pottawatamie County IA I-29	No. of Measurements:	13921	Machine Operator ID:	582
Review Status:	Review Required	Map Type:	Verification Map	State Plane:	6 IOWA Council Bluffs
		Map Layer:	Subgrade Top	Segment:	County Rd G12

Map Summary

Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
XMV	No												
Resilient Modulus	No												
k-value	Yes	37.3	50.3	0.4	100.0	35.0	94.1	165.0	41.4	43.9	-65.0	-5.9	65.0
Moisture Content	No												

Mapped Area		Pass Count					Elevation (ft)			Velocity (fps)		
square feet	acres	10th percentile	Median	cov(%)	% >= TV	Target Value	min.	avg.	max.	min.	avg.	max.
13921	0.320	1	2	47.0	100.0	0	998.47	1007.50	1015.73	4.3	5.1	7.3

Materials

name	id	% of total	area-square ft	area-acres	tl-xmv	tl-Mr	tl-k value	tl-w%
Subgrade_Class 10 (Clay)_IADOT	24005	100.0	13921	0.320	100.0	3000.0	100.0	20.5

Blobs

parameter	min. area(ft^2)	# of blobs	blob area(ft^2)	% of map	lower bound-tv	upper bound-tv	poly-tol.
k-value	1000.0	1	8196	58.9	none	0.0	4.0

Lift Thickness

25th percentile (in.)	Median (in.)	75th percentile (in.)	Target Value (in.)
-2.0	-0.9	0.2	6.0

Station

Start	End
1883+00	1880+50

Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_113325

Project:	Pottawattamie County I-29	Date and Time:	10/26/2022 11:33:25 AM	Machine ID:	Ingios01
Description:	CO G12 I/C .4 MI N OF N JCT I-880	Mapping Duration (hrs):	0.265	Operator:	Ingios
Location:	Pottawattamie County IA I-29	No. of Measurements:	13921	Machine Operator ID:	582
Review Status:	Review Required	Map Type:	Verification Map	State Plane:	6 IOWA Council Bluffs
		Map Layer:	Subgrade Top	Segment:	County Rd G12

QUALITY ANALYSIS SUMMARY - k-Value

Quality Value	Criteria
50.3	CQI >= 95
37.3	80% of k-Value MVs >= 100
43.9	COV <= 30
58.9	% i-Score Blob Area >= 1000 ft ²
-0.9	Lift Thickness Median Value (in.)
1	Pass Count >= 0

Compaction Quality Index(CQI): Relative compaction quality index based on the percentage of the geospatial area that meets the minimum target values and accounts for the uniformity of compaction. The default minimum target CQI is 95% using a uniformity weight factor of 50%.

Percent Passing Target Values: Number of geospatial grid points from the output that meet or exceed the target value (TV) for the selected material. Level I target % Passing TV = 80%. Level II target % Passing TV = 90%.

Coefficient of Variation (COV): Calculated from the ratio of the standard deviation to the mean based on the measurement values (MV) reported at each grid point of the mapping area. Description of COV ranges: <= 20% = Low Variability; 20 to 40% = Moderate Variability; > 40% = High Variability. The default target COV is <= 30%.

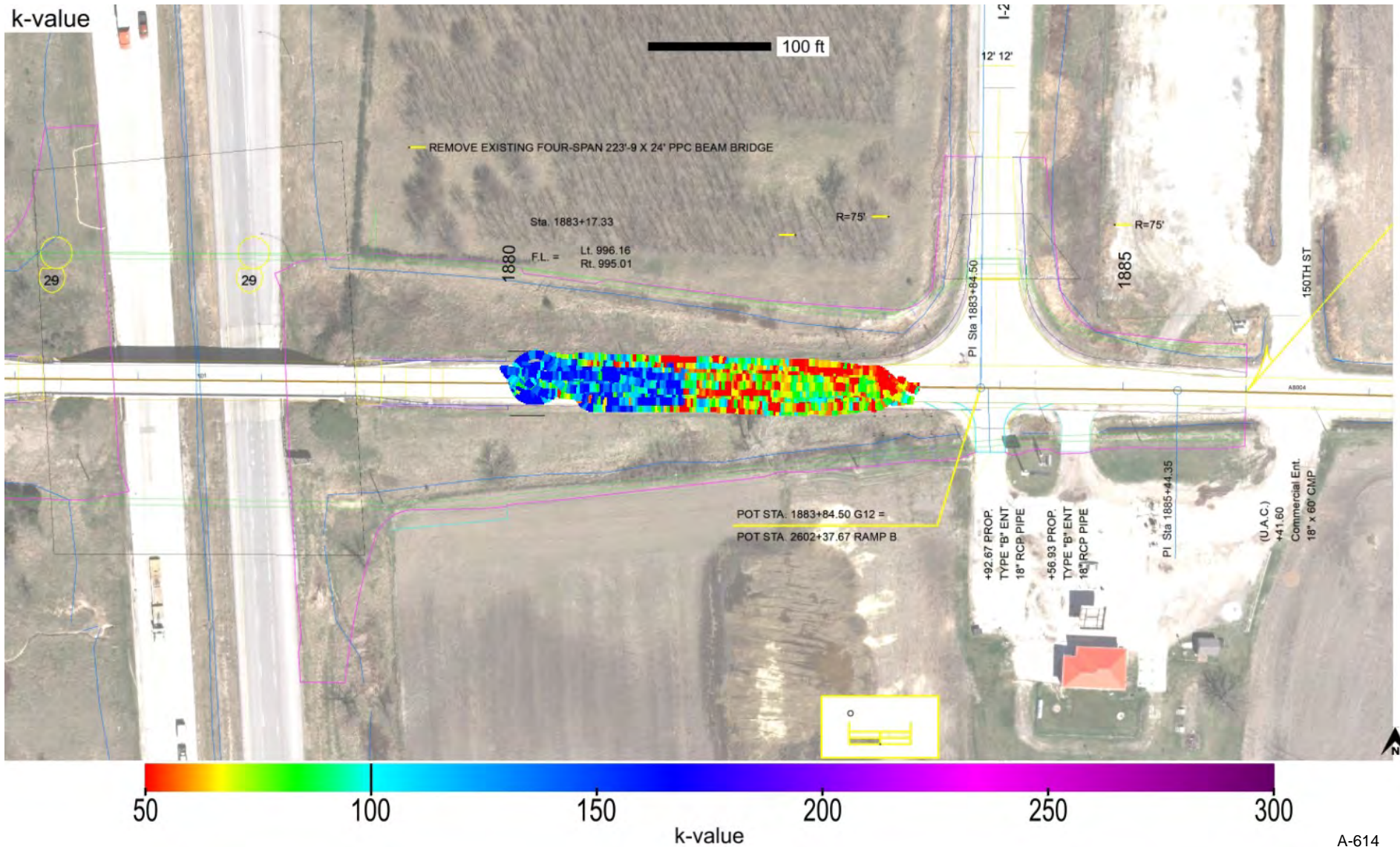
i-Score Blob (%): The percentage of the map area analyzed with contiguous blob areas with MVs < TV. Control Level 1 >= 100 sq. ft.; Control Level 2 >= 200 sq. ft.; Control Level 3 >= 500 sq. ft.; Control Level 4 >= 1,000 sq. ft.; Control Level 5 >= 2,000 sq. ft.

Lift thickness: Green: 75th percentile value <= TV; Yellow: median value <= TV and 75th percentile > TV; Red: median value (50th percentile) > TV.

Pass Count: Green: 10th percentile value >= TV; Yellow: 10th percentile value >= TV and cov% > 50%; Red: 10th percentile value < TV.

Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_113325 Map Type: Verification Map Map Layer: Subgrade Top

Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
k-value	Yes	37.3	50.3	0.4	100.0	35.0	94.1	165.0	41.4	43.9	-65.0	-5.9	65.0



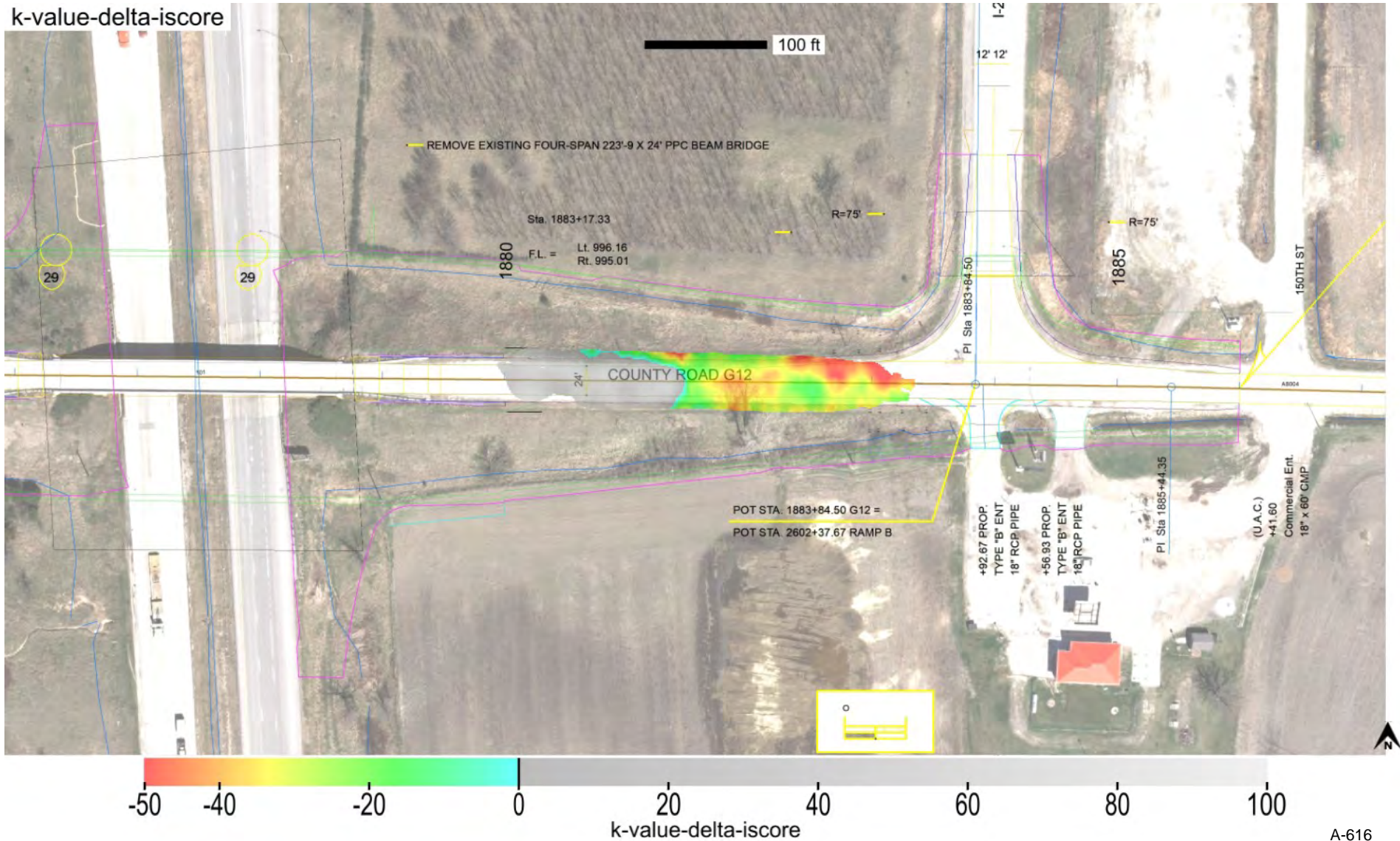
Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_113325 Map Type: Verification Map Map Layer: Subgrade Top

Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
k-value	Yes	37.3	50.3	0.4	100.0	35.0	94.1	165.0	41.4	43.9	-65.0	-5.9	65.0

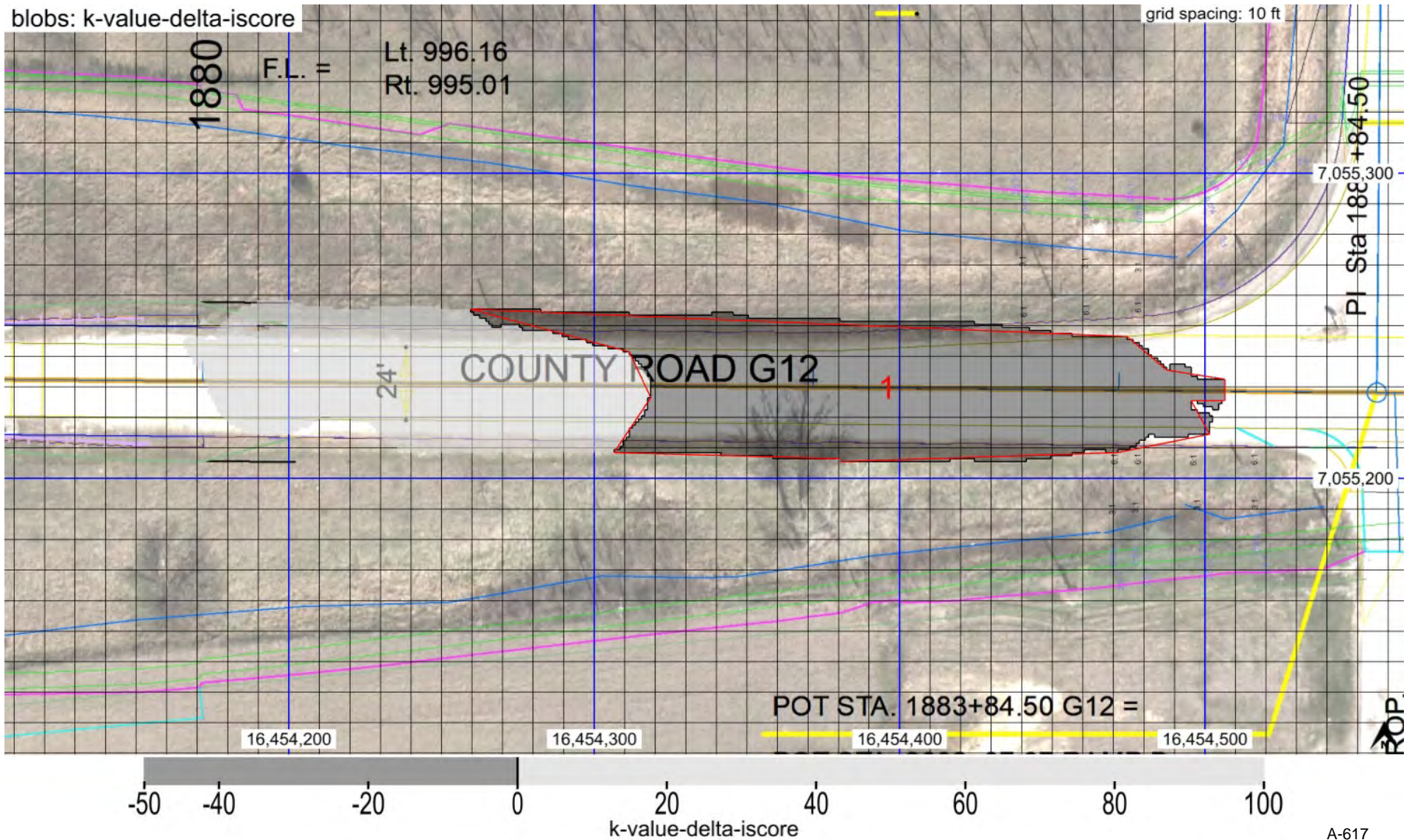


Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_113325 Map Type: Verification Map Map Layer: Subgrade Top

Parameter	Measured	% Passing	Calc. TV	min.-delta	avg.-delta	max.-delta	min.-delta-iscore	avg.-delta-iscore	max.-delta-iscore
k-value	Yes	37.3	100.0	-65.0	-5.9	65.0	-54.2	-5.6	64.2



min. area(ft^2)	# of blobs	blob area(ft^2)	% of map	lower bound-tv	upper bound-tv	poly-tol.
1000	1	8196	58.9	none	0.0	4.0



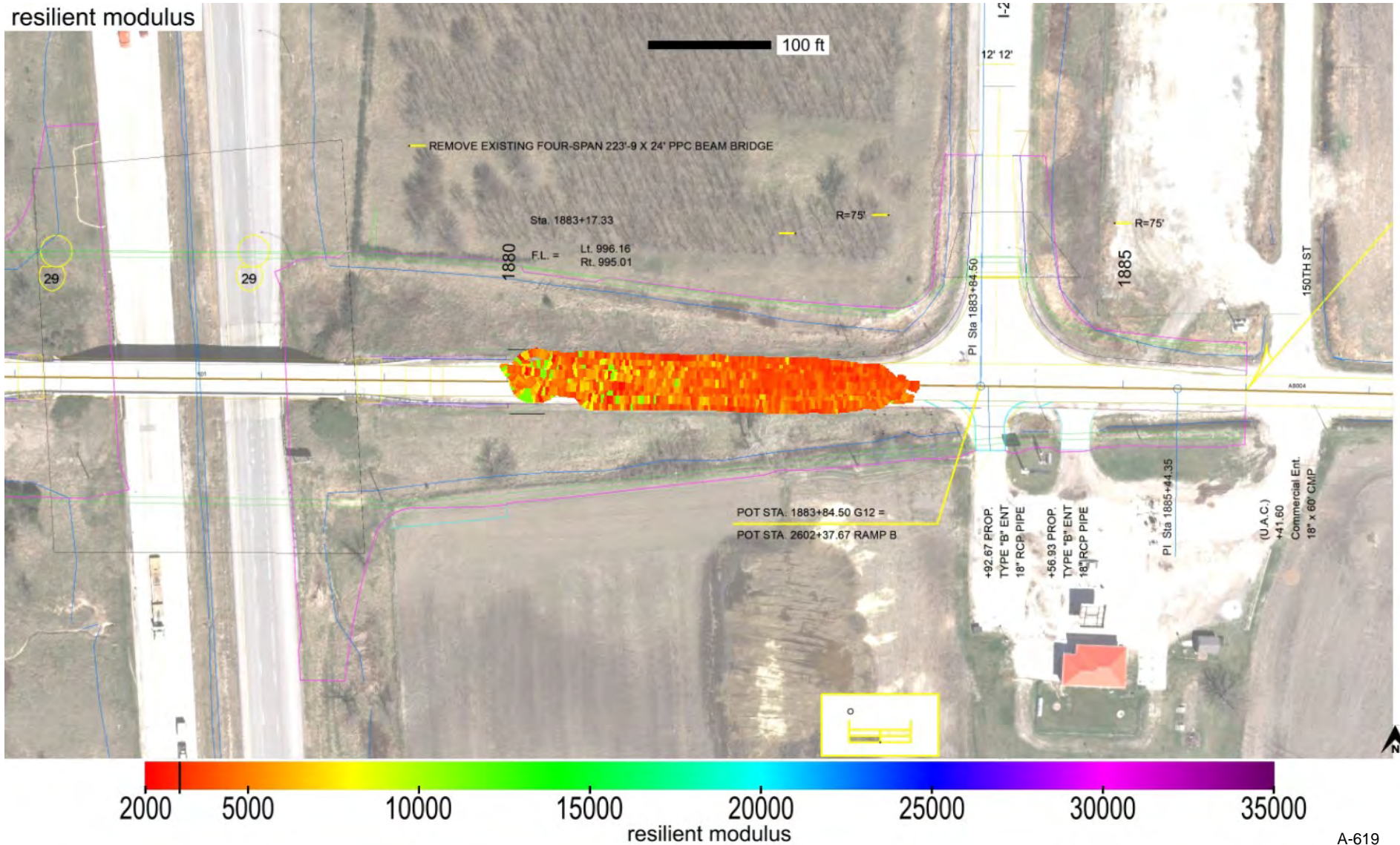
Map ID: ing_78-i029-112_cs56b-ingios01_2022_10_26_113325 Map Type: Verification Map Map Layer: Subgrade Top

blob: k-value-delta-iscore

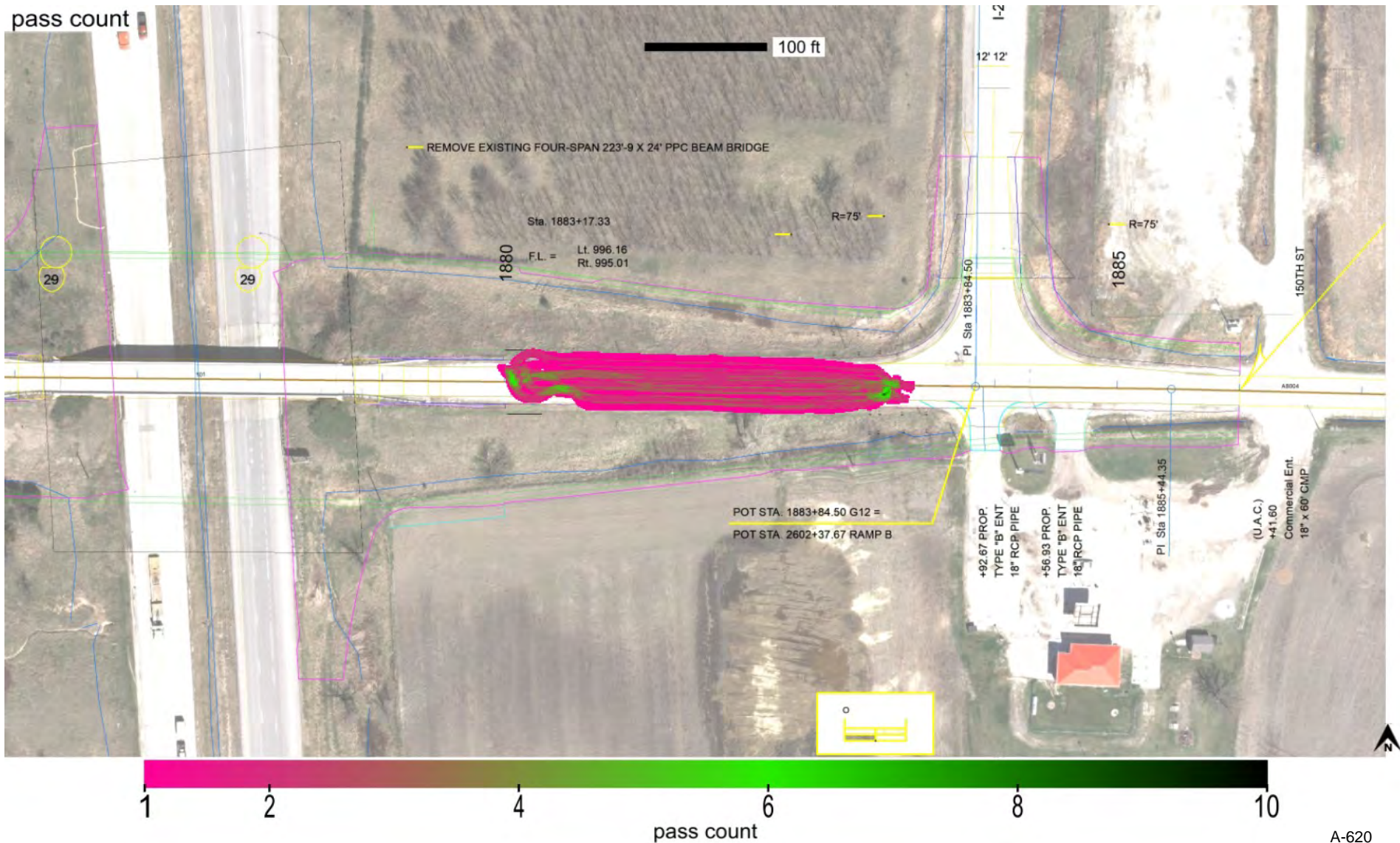
Blob #	Area (ft^2)	% of blobs area	# b.p.	min.-delta-iscore	avg.-delta-iscore	max.-delta-iscore
1	8196	100.0	13	-54.2	-30.9	0.0

Point	Easting (ft)	Northing (ft)
1	16454380	7055206
2	16454472	7055208
3	16454502	7055214
4	16454496	7055226
5	16454506	7055226
6	16454506	7055232
7	16454488	7055236
8	16454474	7055246
9	16454260	7055256
10	16454312	7055242
11	16454318	7055226
12	16454306	7055208
13	16454380	7055206

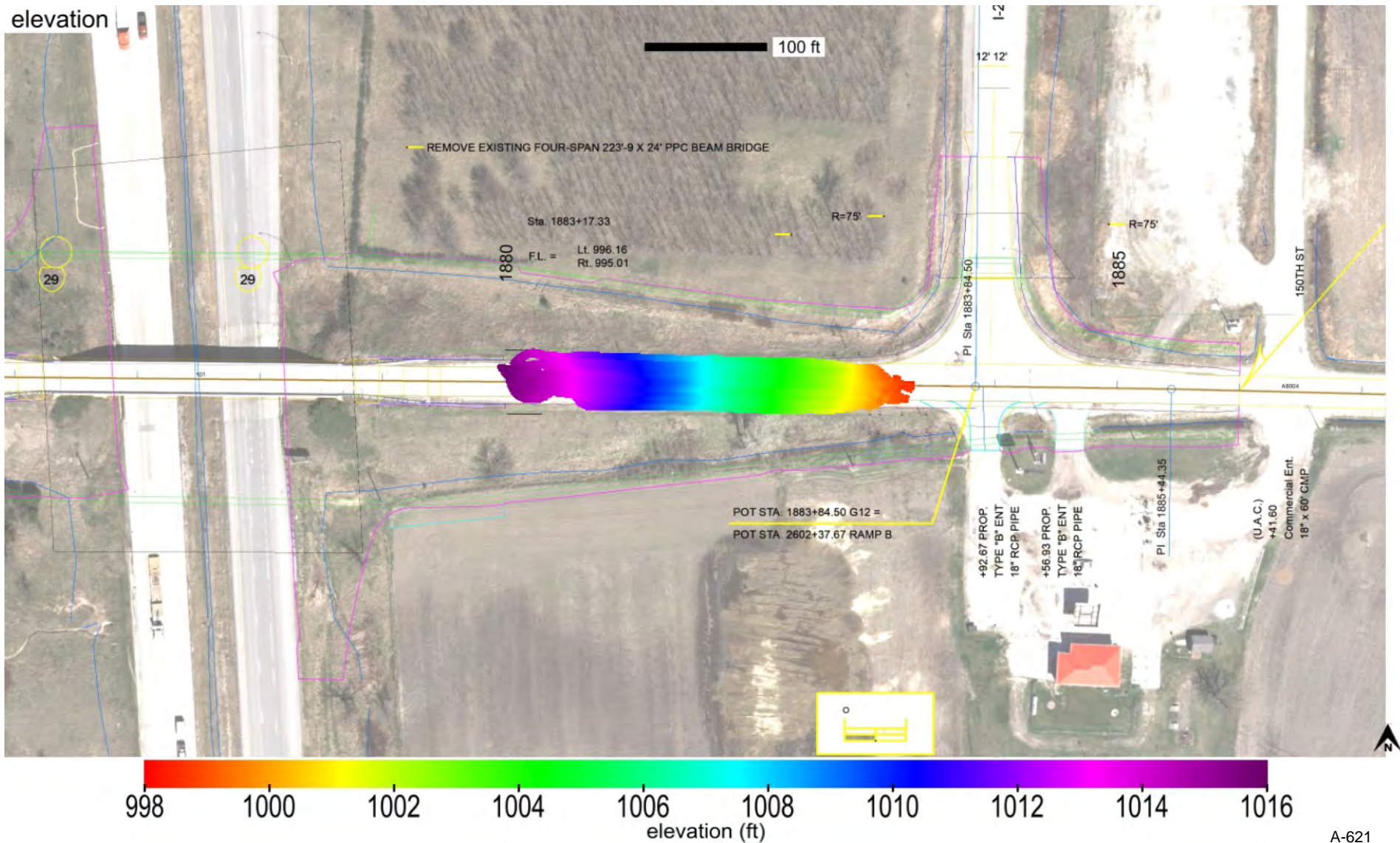
Parameter	Measured	% Passing	CQI	CI	Calc. TV	min.	avg.	max.	std. dev.	cov(%)	min.-delta	avg.-delta	max.-delta
resilient modulus	Yes	96.4	114.0	0.6	3000.0	2231.4	4713.9	11000.0	1642.4	34.8	-768.6	1713.9	8000.0



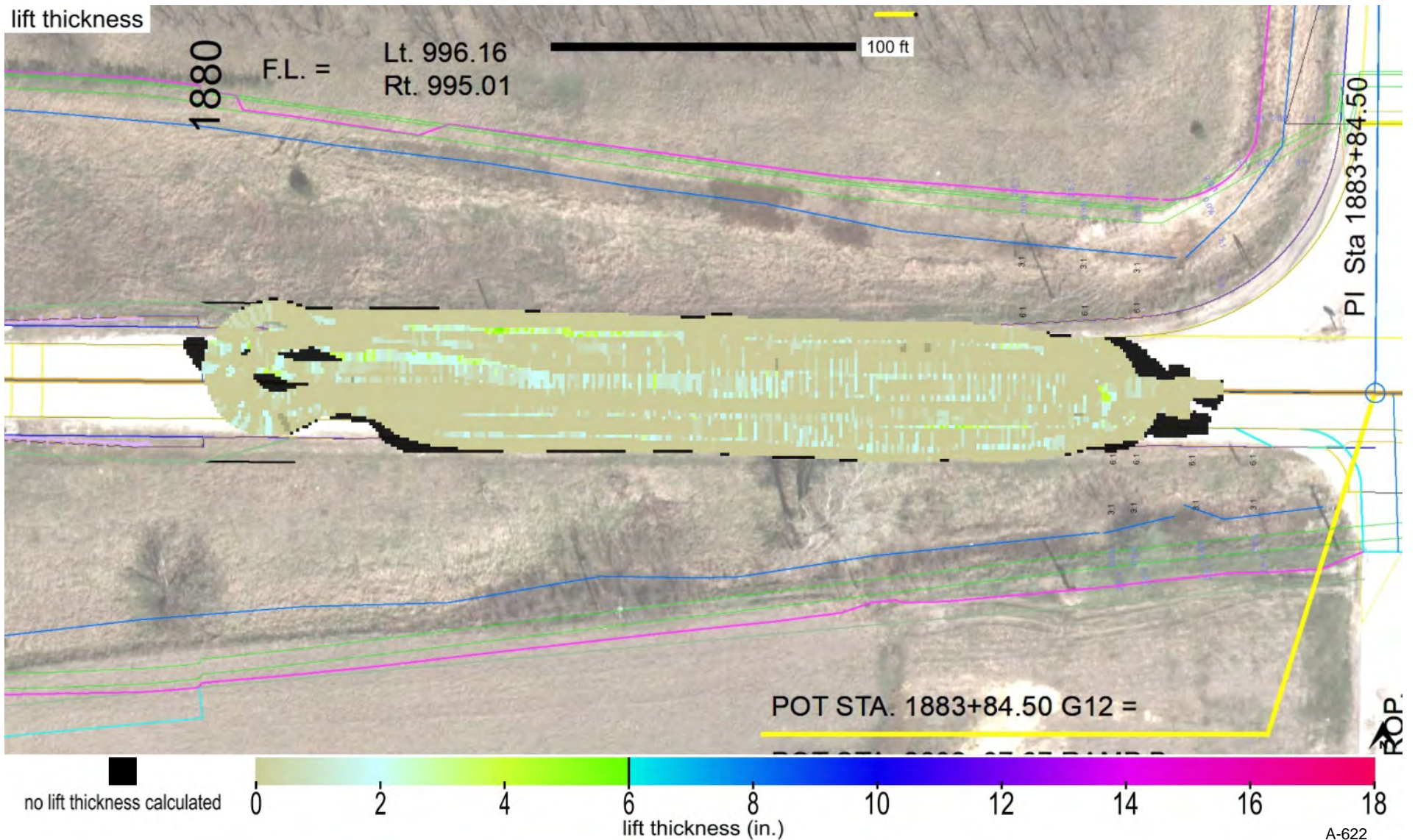
10th percentile	Median	cov(%)	% >= TV	Target Value
1	2	47.0	100.0	0



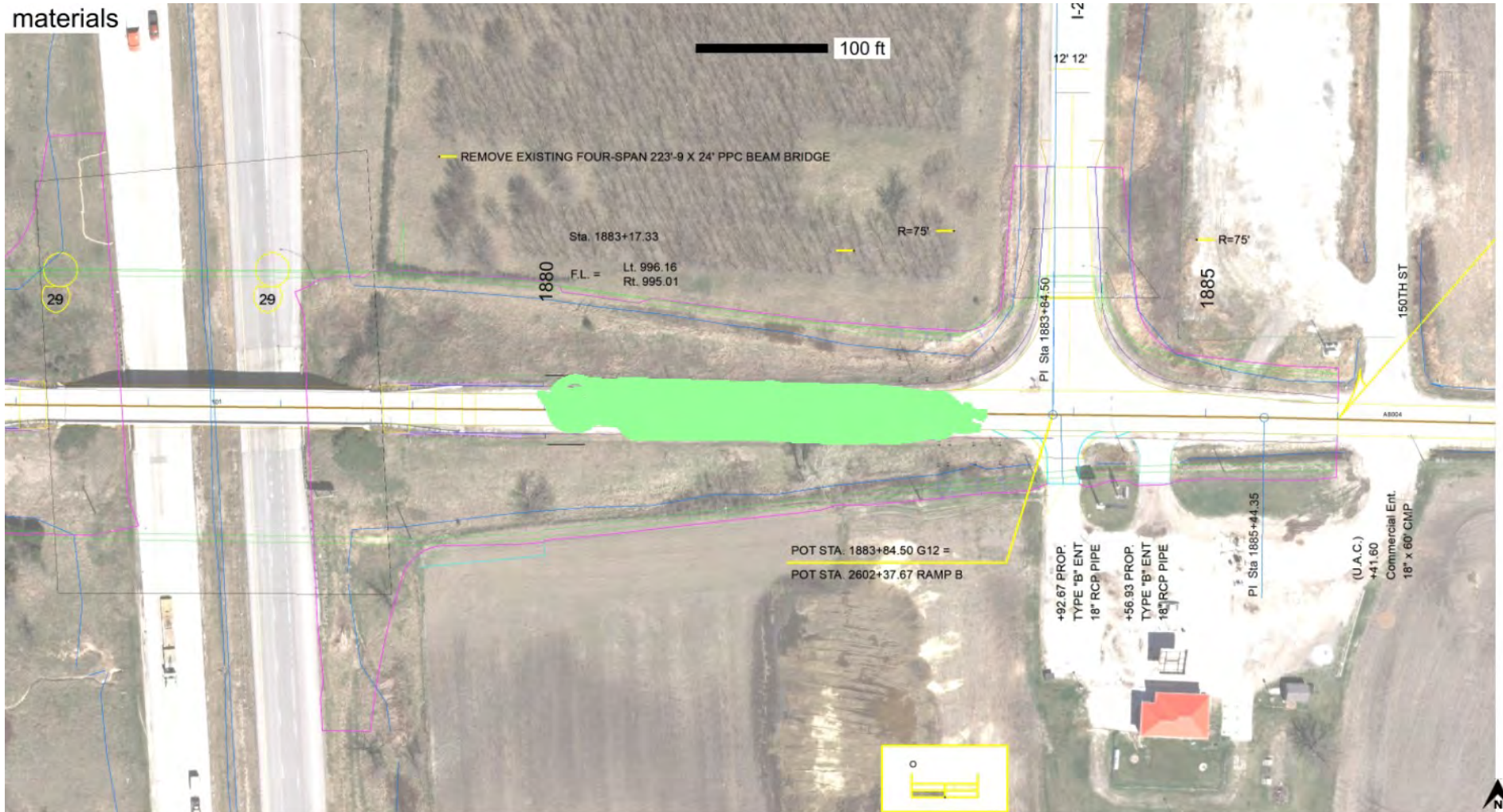
minimum	average	maximum
998.47	1007.50	1015.73



25th percentile (in.)	Median (in.)	75th percentile (in.)	Target Value (in.)
-2.0	-0.9	0.2	6.0



name	id	% of total	area-square ft	area-acres	tl-xmv	tl-Mr	tl-k value	tl-w%
Subgrade_Class 10 (Clay)_IADOT	24005	100.0	13921	0.320	100.0	3000.0	100.0	20.5



Subgrade_Class 10 (Clay)_IADOT

