



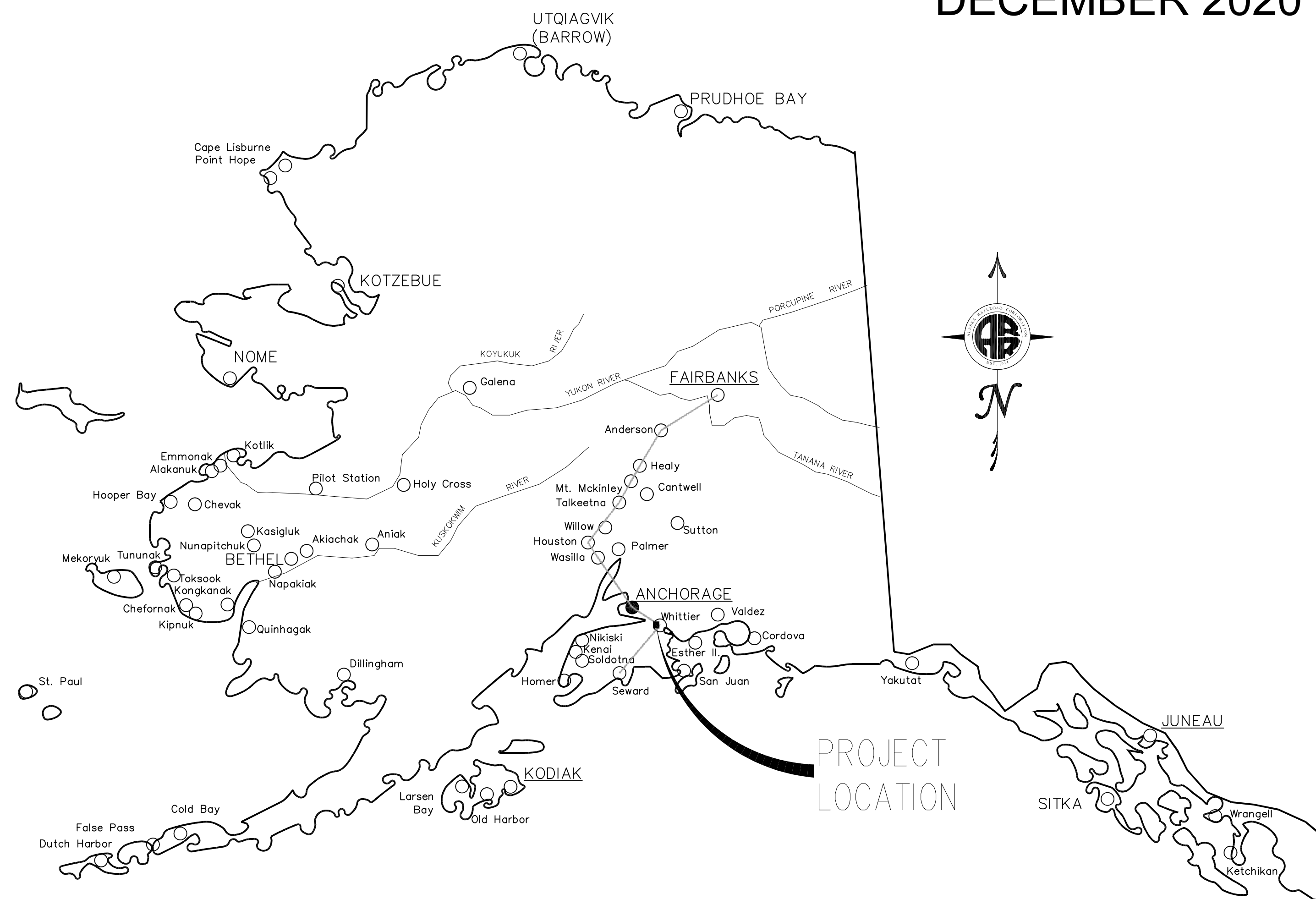
ALASKA RAILROAD CORPORATION
ENGINEERING SERVICES

P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

WHITTIER TUNNEL

GEOMETRY DATA & DEFLECTION OVERLAY

DECEMBER 2020



ALASKA MAP

NOT TO SCALE

INDEX OF DRAWINGS

SHEET	TITLE
1	COVER SHEET
2	CONTROL SHEET AND LEGEND
3-25	GEOMETRY DATA AND DEFLECTION OVERLAY

CONSULTANT:



ALL POINTS NORTH LLC
 P.O. BOX 4207
 PALMER, AK 99645-4207
 (907) 746-4185
 www.allpointsnorth.us

REV.	DATE	BY	REVISION

ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500		
PROJECT : WHITTIER TUNNEL GEOMETRY DATA AND DEFLECTION OVERLAY		
TITLE: COVER SHEET		
DESIGNED BY: MAS	SCALE : AS NOTED	AFE NO.: AFENUM
DRAWN BY: RGJ	DATE : 12-22-2020	ACAD FILE: ?DWG
CHECKED BY: BAO		DWG NO.
APPROVED BY: IT		1 OF 25

PND DATA - SECONDARY PROJECT CONTROL CENTERLINE POINTS - SPCS							
POINT NO	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION	PANEL NO.
417	2482202.42	1854155.52	142.61	132+33.78	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	BV-16
418	2482112.05	1854440.60	141.10	135+32.84	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	511-15
419	2482021.60	1854726.05	139.43	138+32.28	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	512-15
420	2481931.00	1855011.79	137.74	141+32.03	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	513-19
421	2481840.54	1855297.47	136.09	144+31.70	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	514-18
422	2481749.92	1855583.40	134.44	147+31.64	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	516-19
423	2481665.83	1855848.82	132.89	150+10.07	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	516-46
424	2481568.76	1856155.18	131.11	153+31.44	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	521-10
425	2481478.56	1856439.81	129.40	156+30.01	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	522-11
426	2481388.16	1856725.44	127.78	159+29.61	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	524-2
427	2481297.94	1857010.44	126.12	162+28.55	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	525-4
428	2481207.53	1857296.02	124.40	165+28.10	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	533-4
429	2481117.07	1857581.84	122.76	168+27.90	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	535-7
430	2481026.77	1857866.91	121.10	171+26.92	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	531-3
431	2480936.58	1858151.96	119.46	174+25.91	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	532-6
432	2480846.17	1858437.70	117.80	177+25.60	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	534-36
433	2480755.82	1858723.17	116.12	180+25.02	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	536-36
434	2480665.41	1859008.76	114.43	183+24.59	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	537-36
435	2480574.84	1859294.86	112.81	186+24.68	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	541-38
436	2480484.44	1859580.54	111.12	189+24.33	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	542-39
437	2480393.53	1859867.70	109.40	192+25.53	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	544-27
438	2480302.75	1860154.87	107.75	195+26.71	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	545-27
439	2480212.28	1860441.05	106.15	198+26.82	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	546-26
440	2480121.49	1860728.32	104.45	201+28.12	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	551-29
441	2480030.83	1861015.04	102.77	204+28.84	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	552-30
442	2479940.08	1861301.74	101.08	207+29.55	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	554-19
443	2479849.36	1861588.32	99.35	210+30.15	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	555-22
444	2479758.64	1861874.90	97.70	213+30.74	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	556-22
445	2479667.96	1862161.51	96.08	216+31.36	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	562-21
446	2479577.27	1862448.03	94.42	219+30.89	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	563-22
447	2479486.37	1862735.11	92.76	222+33.02	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	565-8
448	2479395.60	1863021.80	91.10	225+33.73	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	566-7
449	2479304.97	1863308.27	89.42	228.34.20	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	567-7
450	2479214.36	1863594.75	87.78	231+34.67	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	571-10
451	2479123.57	1863881.87	86.02	234+35.80	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	572-8
452	2479032.84	1864168.54	84.41	237+36.49	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	573-6
453	2478942.21	1864455.02	82.76	240+36.95	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	574-36
454	2478851.53	1864741.64	81.10	243+37.58	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	575-36
455	2478760.72	1865028.65	79.35	246+38.61	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	576-36
456	2478670.14	1865315.07	77.68	249+39.01	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	581-38
457	2478579.14	1865602.57	76.02	252+40.57	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	583-10
458	2478488.42	1865889.30	74.38	255+41.32	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	584-40
459	2478397.73	1866175.93	72.70	258+41.95	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	585-40
460	2478306.98	1866462.74	71.04	261+42.78	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	587-2
461	2478216.34	1866749.39	69.24	264+43.41	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	588-2
465	2478177.73	1866871.33	68.60	265+43.32	0.00	SET MAG NAIL W/ FLASHER: PND CONTROL POINT	588-19

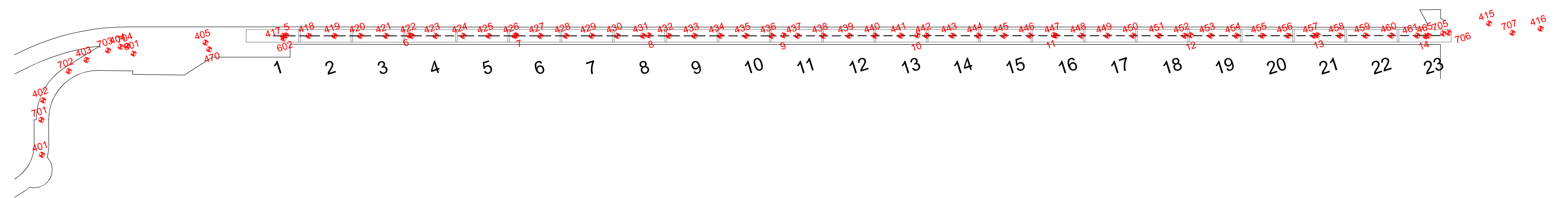
PND DATA - SET PRIMARY CONTROL - SPCS						
POINT NO	NORTHING	EASTING	ELEVATION	STATION	OFFSET	DESCRIPTION
5	2482199.12	1854188.66	143.02	132+66.36	6.87 L	SET BC: PND WT CP5 LS7624 2015
6	2481765.71	1855555.50	135.29	147+00.27	6.63 L	SET BC: PND WT CP6 LS7624 2015
7	2481389.01	1856744.41	128.38	159+47.44	6.54 L	SET BC: PND WT CP7 LS7624 2015
8	2480922.75	1858217.20	119.70	174+92.28	6.50 L	SET BC: PND WT CP8 LS7624 2015
9	2480448.76	1859715.07	111.12	190+63.35	6.59 L	SET BC: PND WT CP9 LS7624 2015
10	2479978.85	1861200.30	102.38	206+21.14	6.35 L	SET BC: PND WT CP10 LS7624 2015
11	2479499.04	1862716.41	93.54	222+11.37	6.43 L	SET BC: PND WT CP11 LS7624 2015
12	2479018.63	1864234.56	84.78	238+03.72	6.36 L	SET BC: PND WT CP12 LS7624 2015
13	2478573.28	1865641.79	76.54	252+79.73	6.25 L	SET BC: PND WT CP13 LS7624 2015
14	2478179.84	1866840.75	69.24	265+41.53	7.222 R	SET BC: PND WT CP14 LS7624 2015

PND - RECOVERED PROJECT CONTROL - SPCS			
POINT NO	NORTHING	EASTING	DESCRIPTION
1	2480710.67	1849425.01	FD BC[9108-S]: USKH 2008
2	2481461.82	1850569.38	FD BC[9108-S]: USKH 2008
3	2477478.41	1869452.99	FD AM[9108-S]: USKH 2008
4	2478046.66	1871422.63	FD BC[9108-S]: USKH 2008

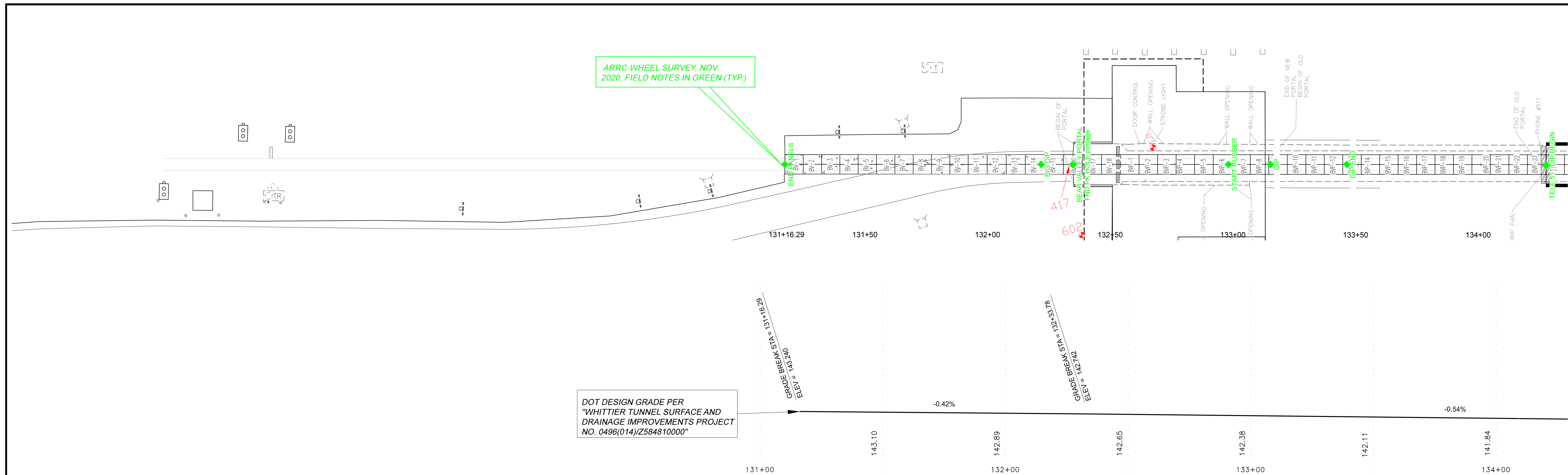
PND - RECOVERED DOT MONUMENTS - SPCS			
POINT NO	NORTHING	EASTING	DESCRIPTION
705	2478150.21	1867044.04	FD AC/BX[DOT]: PC 8+152.397 [6504-S] 2000
706	2478137.68	1867106.44	FD AC/BX[DOT]: PT 8+171.852 [6504-S] 2000
707	2477912.52	1867815.57	FD AC/BX[DOT]: PT 8+396.658 [6504-S] 2000

NOTES

- HORIZONTAL DATUM IS ALASKA STATE PLANE COORDINATE SYSTEM ZONE 4, NAD83(CORS 96) (EPOCH 2003), U.S. SURVEY FEET PER STATE OF ALASKA, D.O.T PROJECT "WHITTIER TUNNEL SURFACE AND DRAINAGE IMPROVEMENTS PROJECT NO. 0496(014)/Z584810000" DATED APRIL 2018.
- BASEMAP DATA PER STATE OF ALASKA, D.O.T PROJECT "WHITTIER TUNNEL SURFACE AND DRAINAGE IMPROVEMENTS PROJECT NO. 0496(014)/Z584810000" DATED APRIL 2018 PROVIDED BY PND ENGINEERS, INC.
- TRAIN GEOMETRY DATA PER 2019 ALASKA RAILROAD CORPORATION DATA PROVIDED BY THE ARRC.
- GROUND PENETRATION RADAR DATA PER SHEETS 62-64 OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES REPORT "EVALUATION OF THE TRAIN SIGNAL AND RAIL SYSTEMS FOR THE ANTON ANDERSON MEMORIAL TUNNEL" PROJECT #FHWA-AK-RD-14-06 DATED JULY 2014

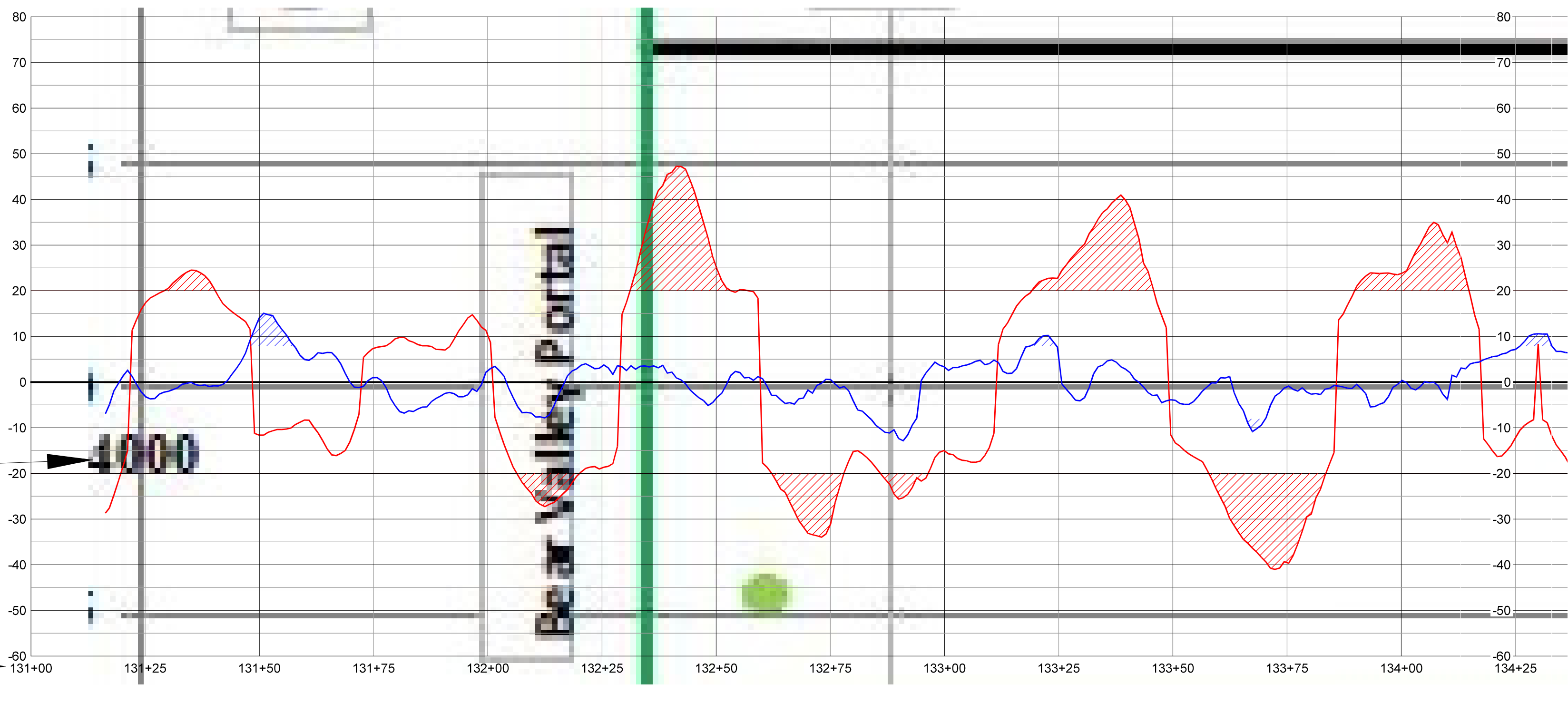


	CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80	SCALE	1" : 1000 FEET	
	PROJECT	ARRC WHITTIER TUNNEL			DATE	12/22/2020	
	SHEET TITLE	CONTROL SHEET AND LEGEND				SHEET NO	2 OF 25
	SYM.	REVISIONS	DATE	BY			



NOTES

- 1) HORIZONTAL DATUM IS ALASKA STATE PLANE COORDINATE SYSTEM ZONE 4, NAD83(CORS 96) (EPOCH 2003), U.S. SURVEY FEET PER STATE OF ALASKA, D.O.T PROJECT "WHITTIER TUNNEL SURFACE AND DRAINAGE IMPROVEMENTS PROJECT NO. 0496(014)/Z584810000" DATED APRIL 2018.
- 2) BASEMAP AND PROFILE DATA PER STATE OF ALASKA, D.O.T PROJECT "WHITTIER TUNNEL SURFACE AND DRAINAGE IMPROVEMENTS PROJECT NO. 0496(014)/Z584810000" DATED APRIL 2018 PROVIDED BY PND ENGINEERS, INC.
- 3) TRAIN GEOMETRY DATA PER 2019 ALASKA RAILROAD CORPORATION DATA PROVIDED BY THE ARRC. NOTE: UNITS FOR THIS DATA ARE UNKNOWN, VALUES OVER +/- 20 FOR TRACK DIP HATCHED IN RED, VALUES OF +/- 8 FOR TRACK TWIST HATCHED IN BLUE.
- 4) GROUND PENETRATING RADAR DATA PER SHEETS 62-64 OF ALASKA DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES REPORT "EVALUATION OF THE TRAIN SIGNAL AND RAIL SYSTEMS FOR THE ANTON ANDERSON MEMORIAL TUNNEL" PROJECT #FHWA-AK-RD-14-06 DATED JULY 2014

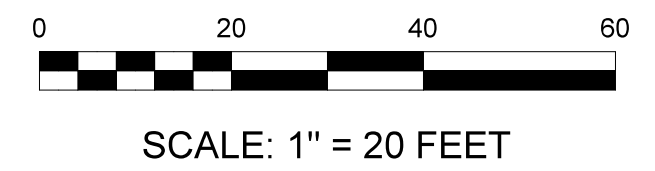


GROUND PENETRATING RADAR LEGEND

- Left Rail
 - Right Rail
 - < 1 in
 - 1 - 2 in
 - ≥ 2 in
- NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3

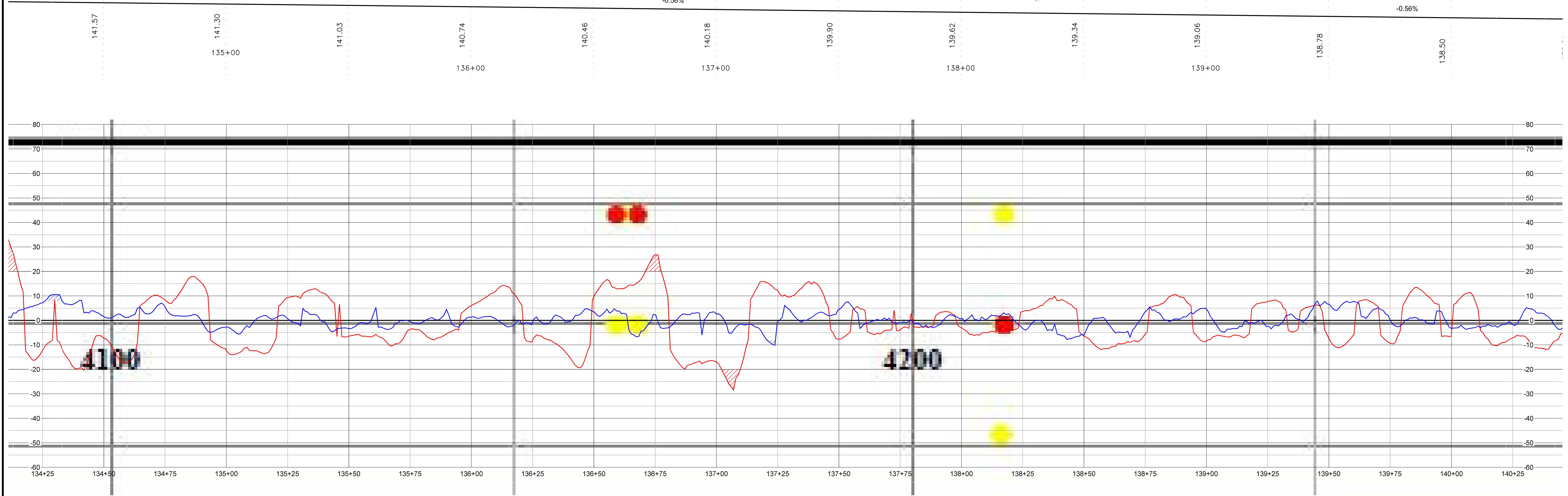
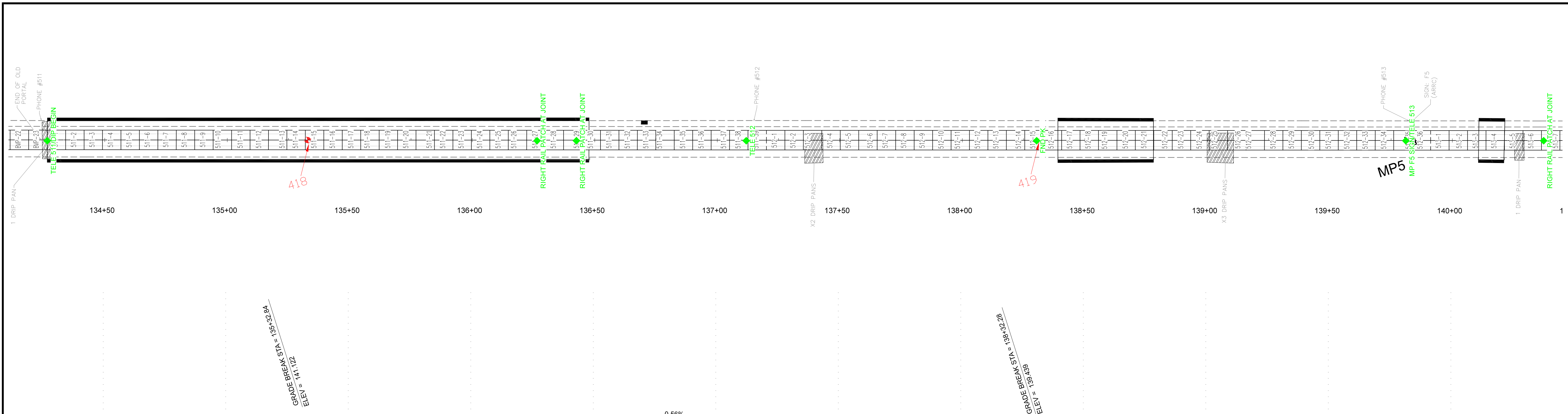


SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	12/22/2020
SHEET NO	3 OF 25



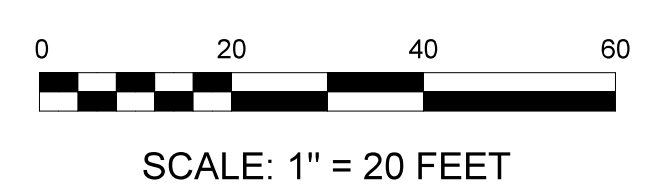
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

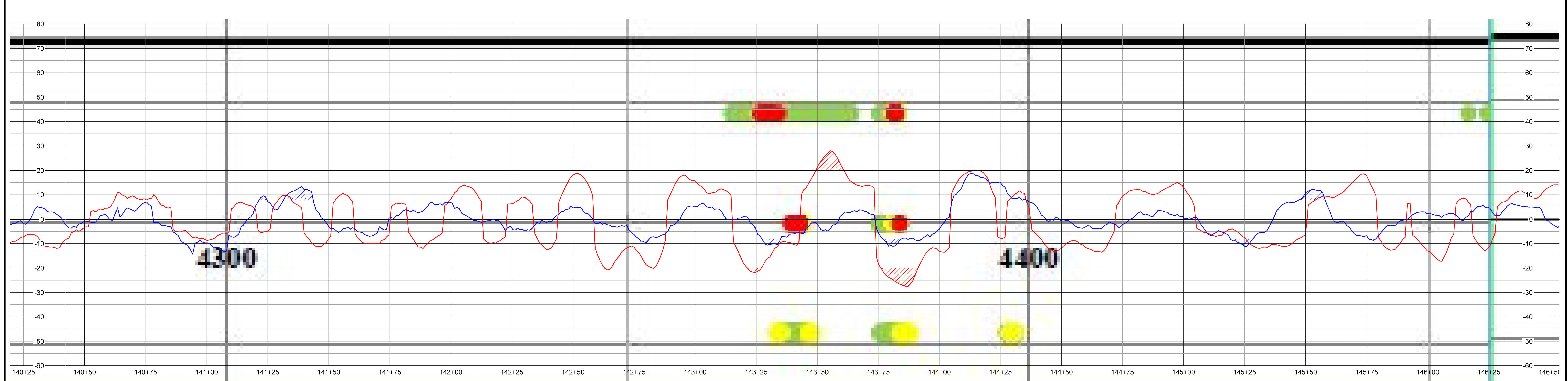
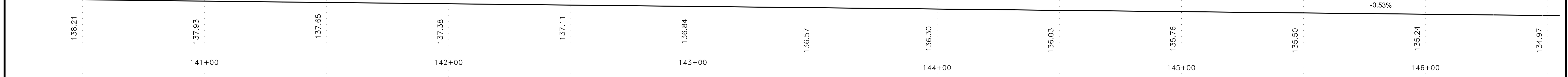
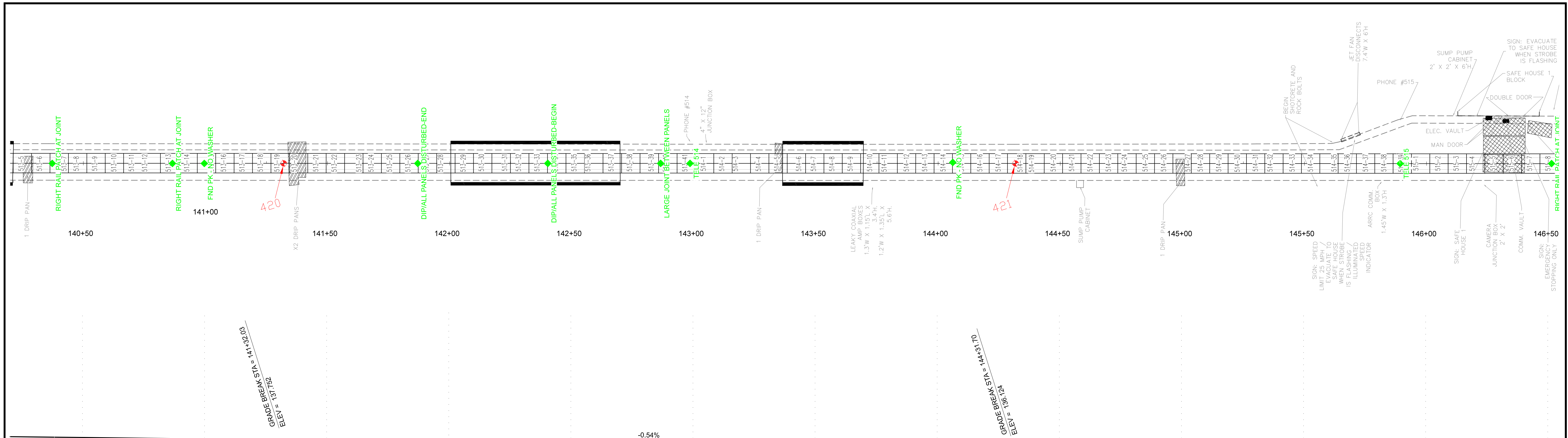


SYM.	REVISIONS	DATE	BY



CLIENT **ALASKA RAILROAD CORPORATION** JOB NUMBER **20-80**
 PROJECT **ARRC WHITTIER TUNNEL**
 SHEET TITLE **GEOMETRY DATA AND DEFLECTION OVERLAY**

SCALE
1" : 20 FEET
 DATE **12/22/2020**
 SHEET NO
4 OF 25



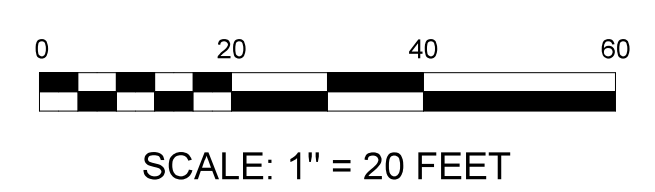
GROUND PENETRATING RADAR LEGEND

— Left Rail
 — Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

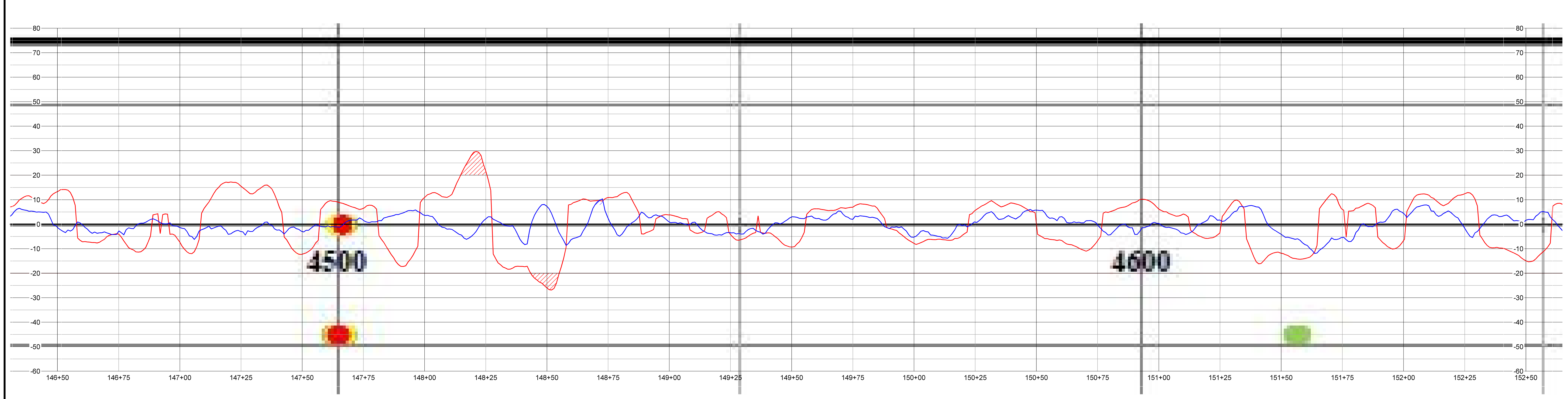
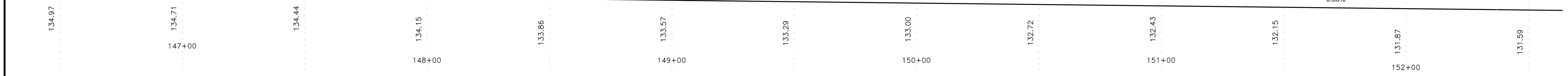
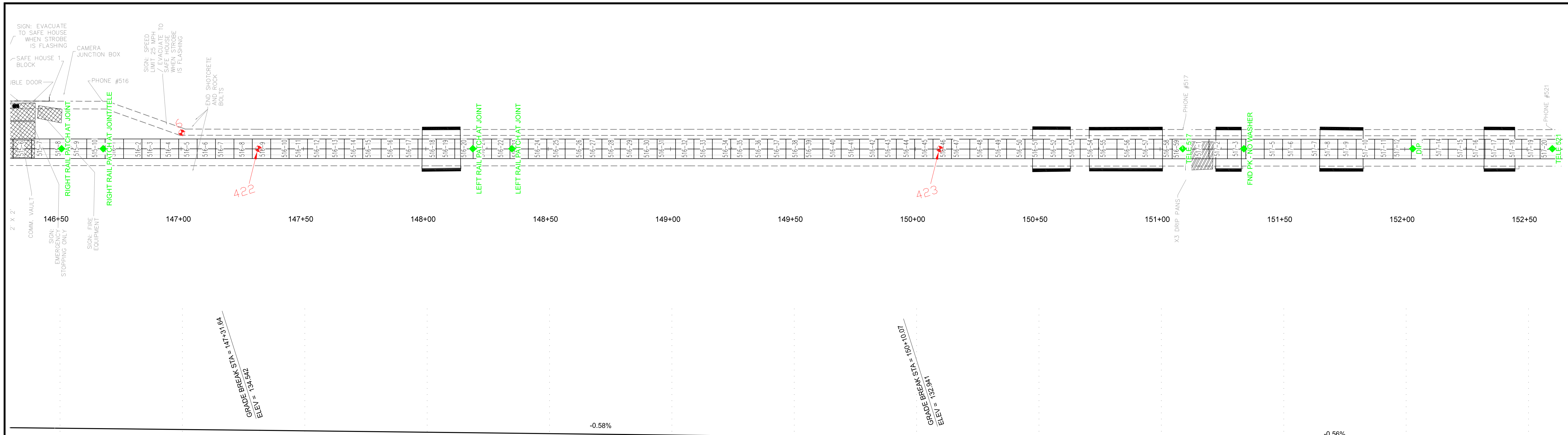


SYM.	REVISIONS	DATE	BY



CLIENT: ALASKA RAILROAD CORPORATION JOB NUMBER: 20-80
 PROJECT: ARRC WHITTIER TUNNEL
 SHEET TITLE: GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE: 1" : 20 FEET
 DATE: 12/22/2020
 SHEET NO: 5 OF 25



GROUND PENETRATING RADAR LEGEND

- Left Rail
- Right Rail
- < 1 in
- 1 - 2 in
- ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3



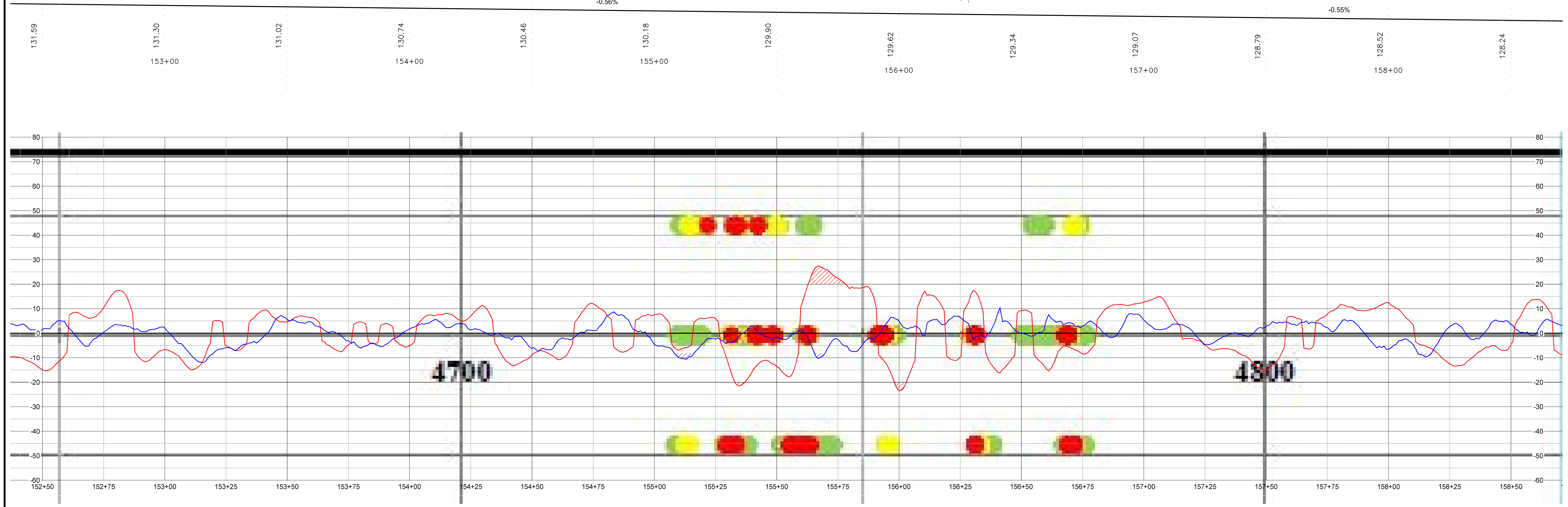
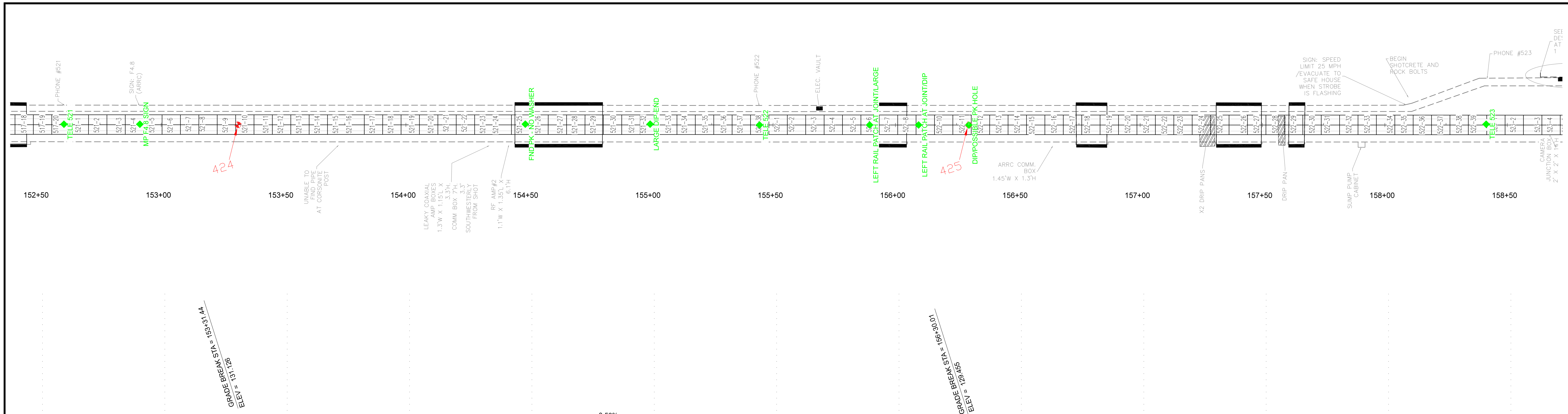
SCALE: 1" = 20 FEET

SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	12/22/2020
SHEET NO	6 OF 25



GROUND PENETRATING RADAR LEGEND

- Left Rail
- Right Rail
- < 1 in
- 1 - 2 in
- ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3



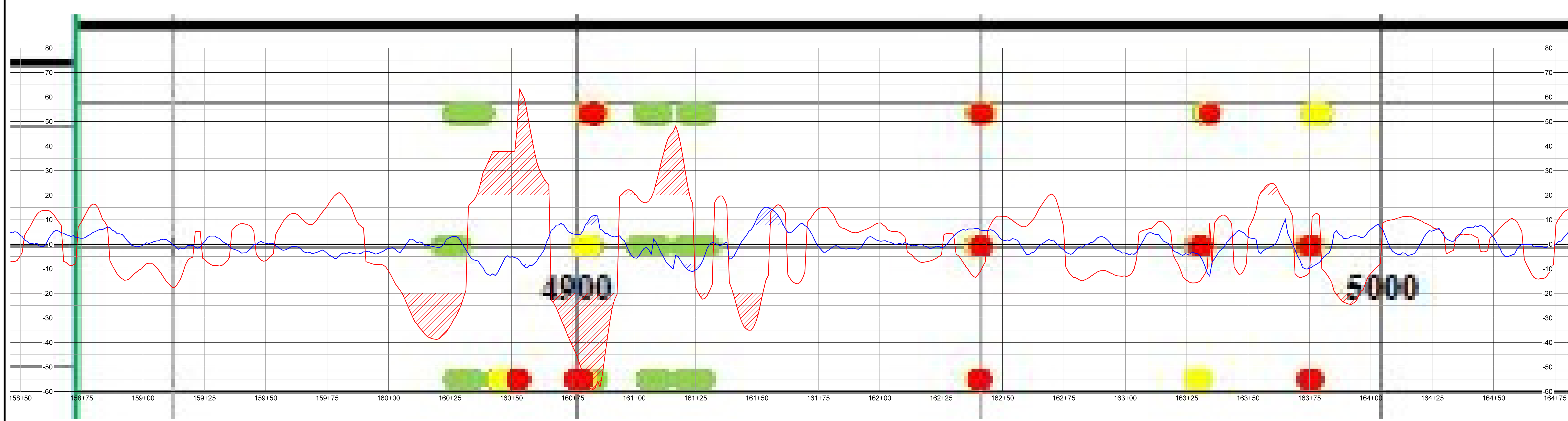
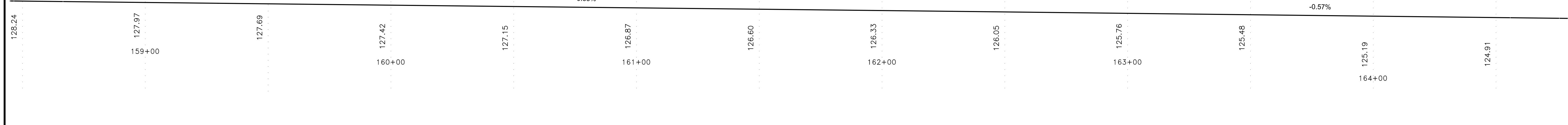
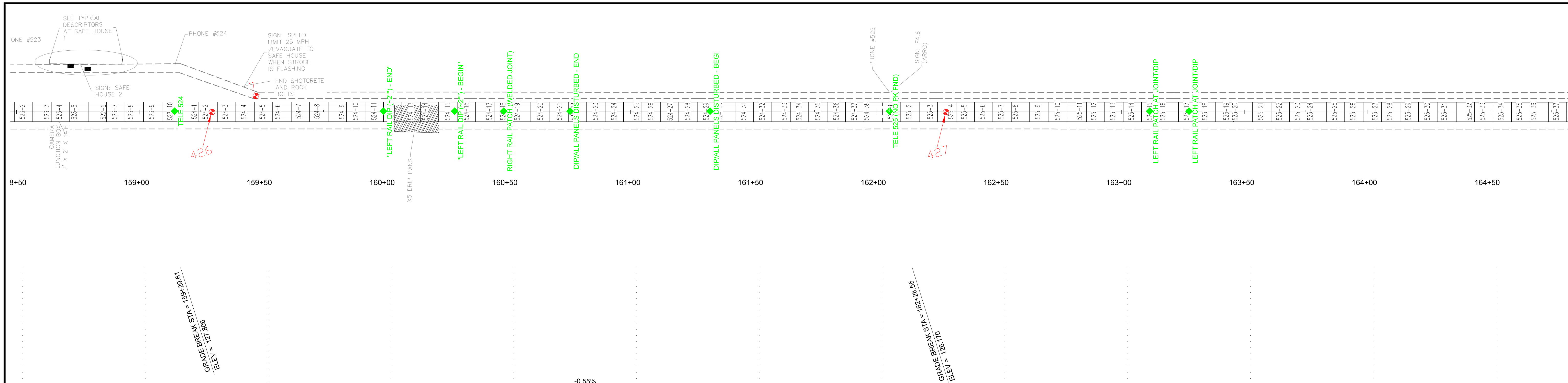
SCALE: 1" = 20 FEET

SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	12/22/2020
SHEET NO	7 OF 25



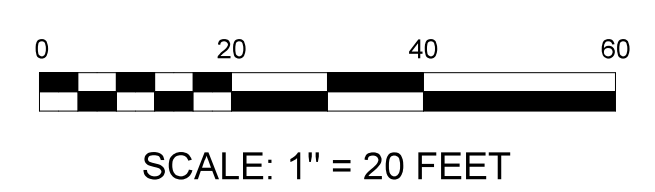
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

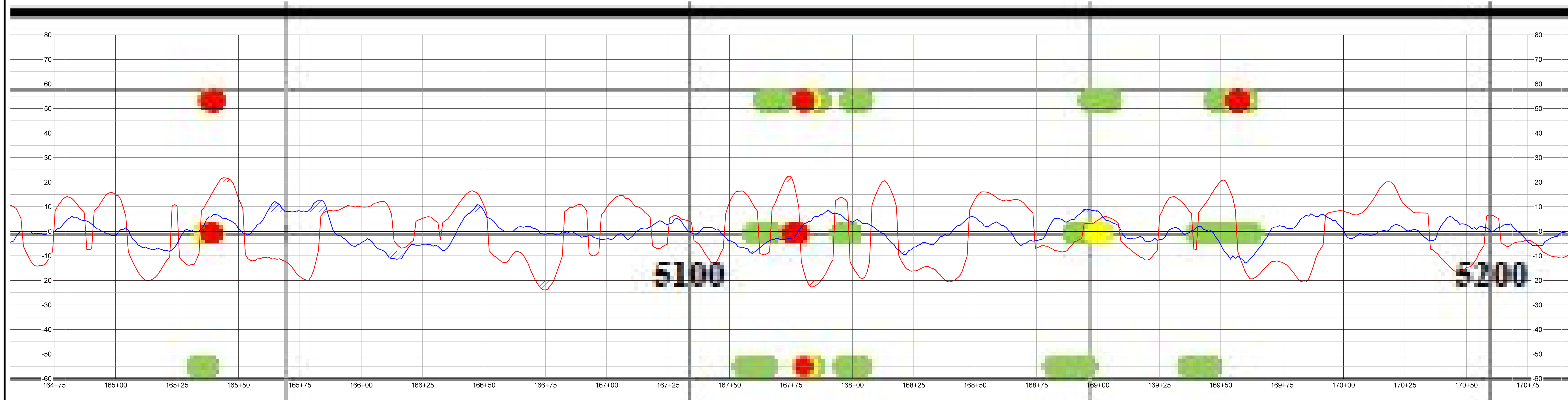
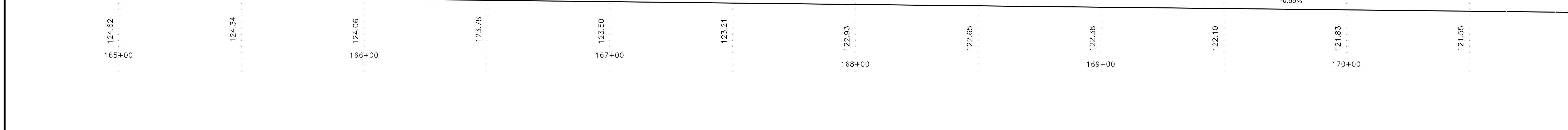
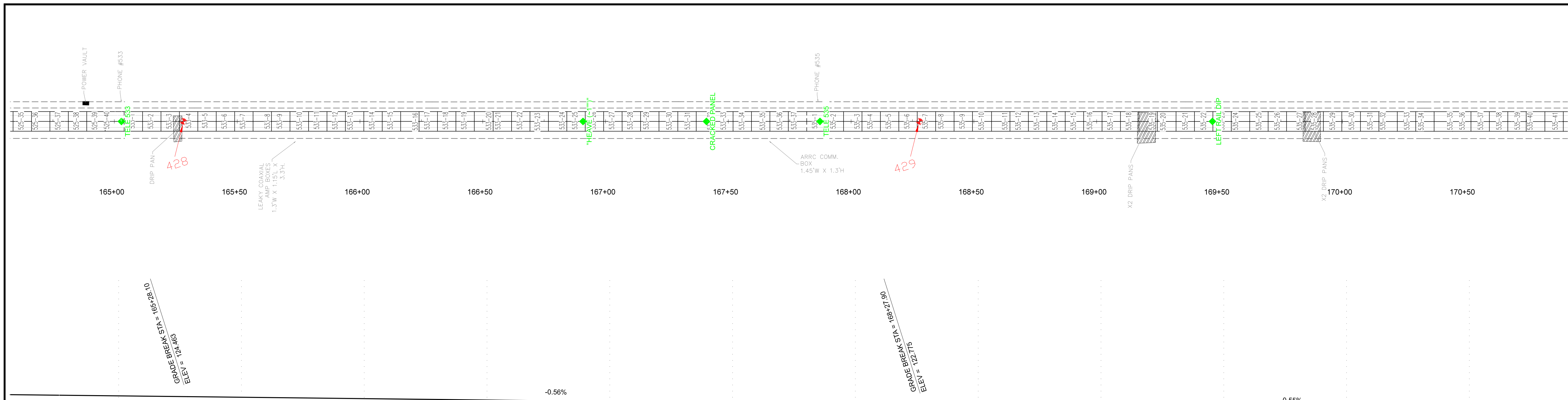


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 8 OF 25



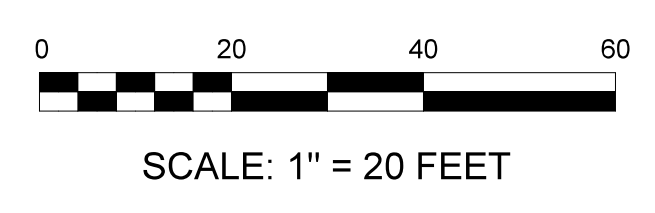
GROUND PENETRATING RADAR LEGEND

█ Left Rail █ Right Rail ● < 1 in ● 1 - 2 in ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

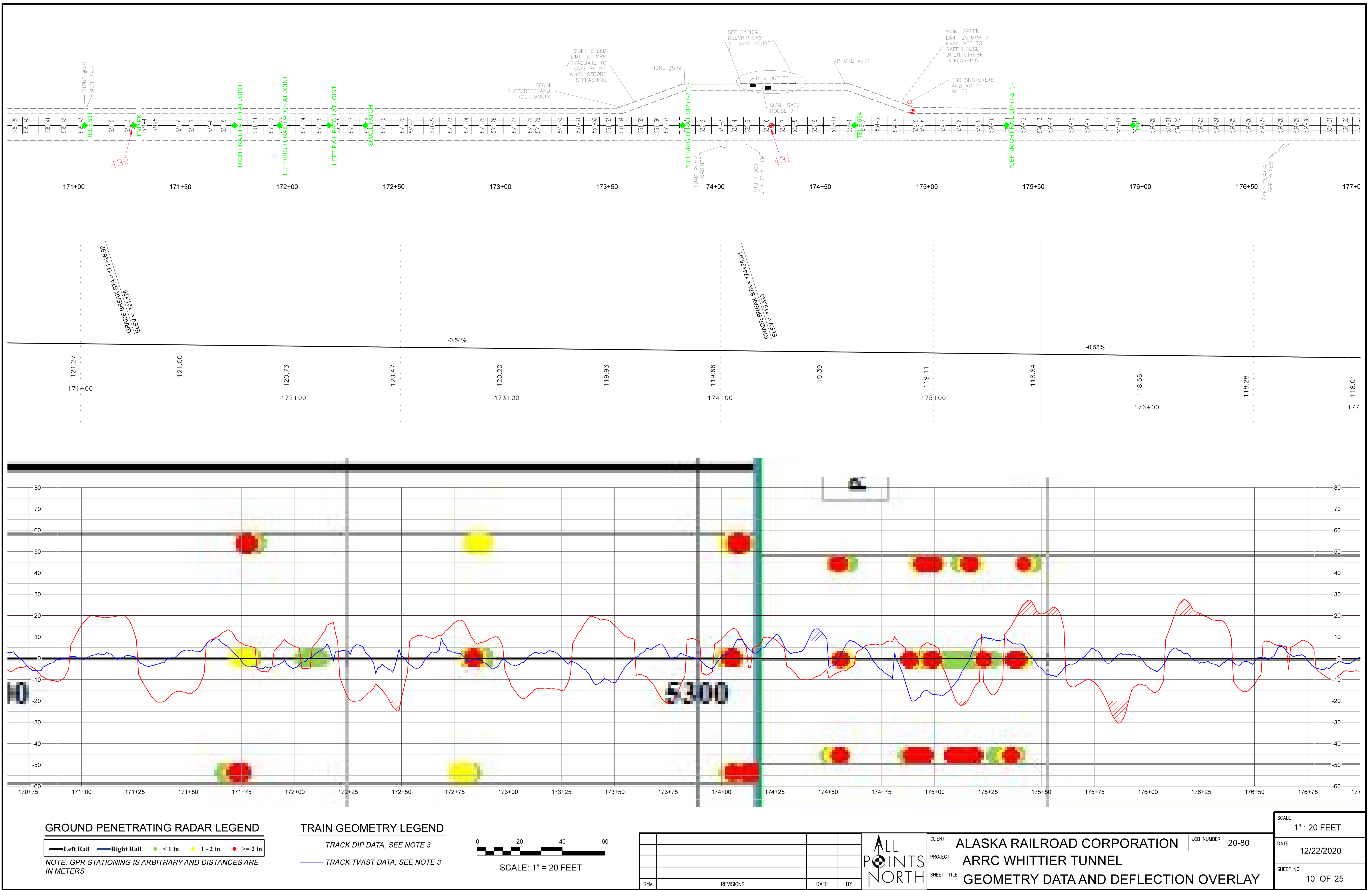


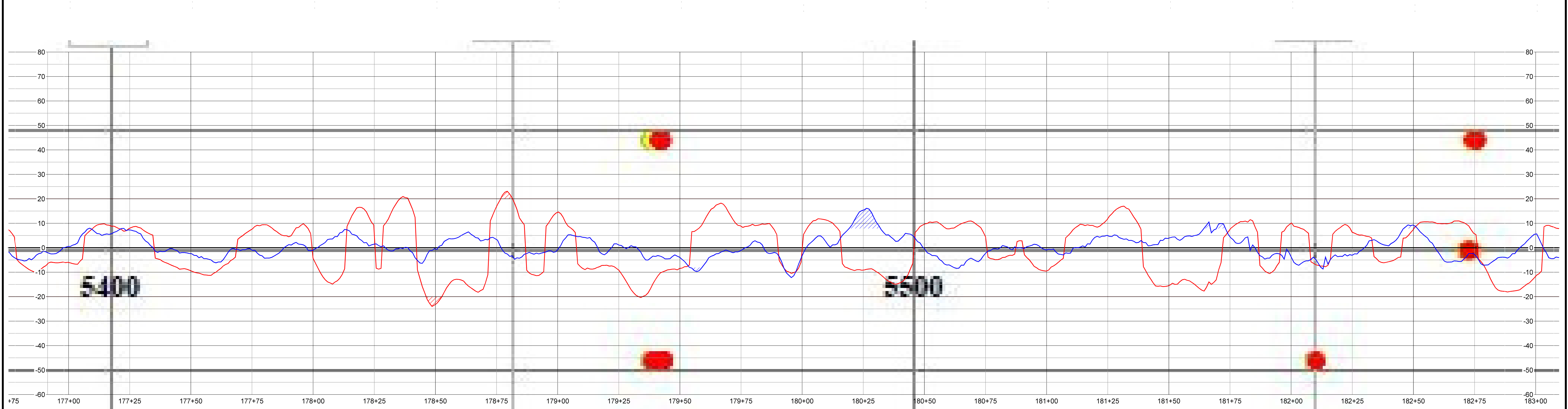
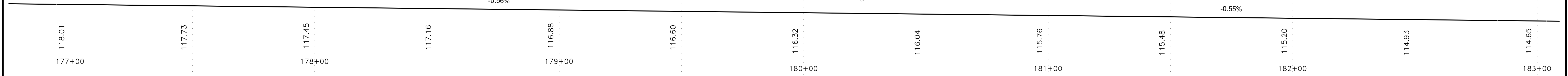
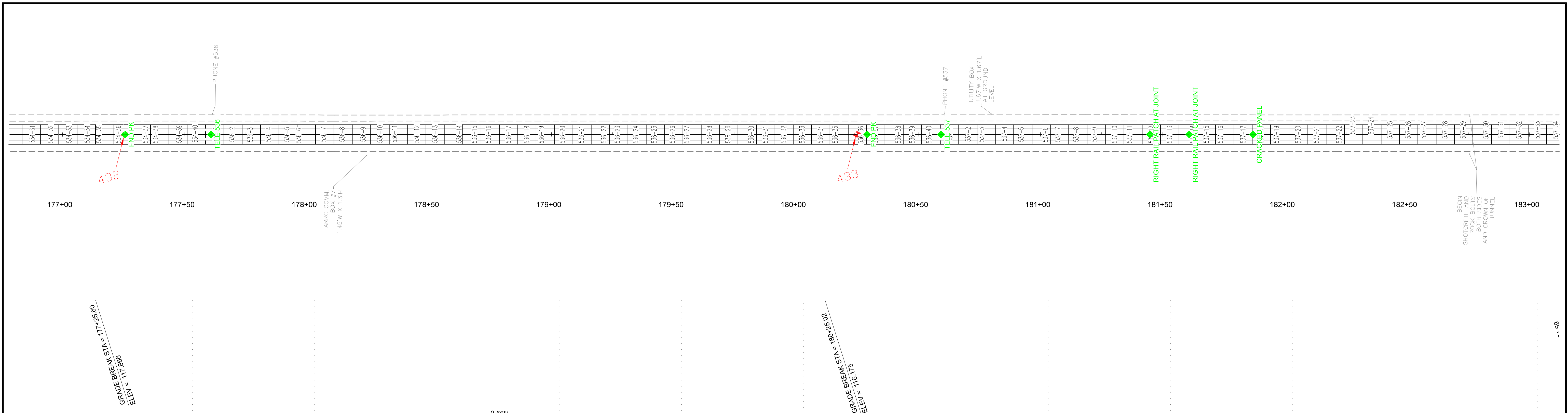
SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 9 OF 25





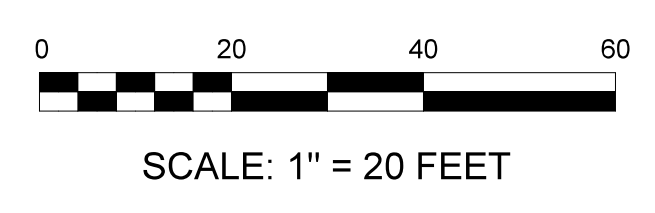
GROUND PENETRATING RADAR LEGEND

— Left Rail
 — Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

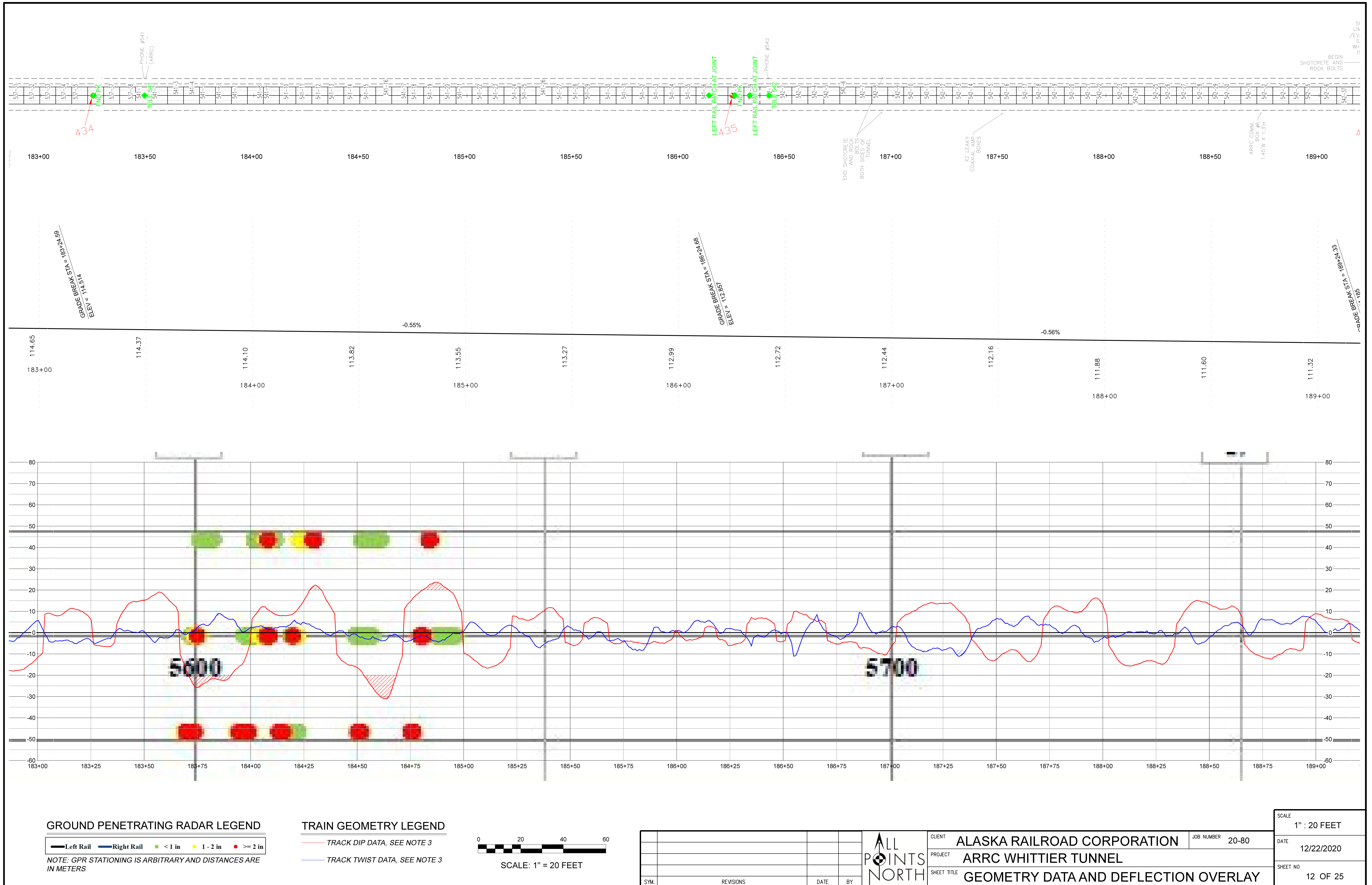


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 11 OF 25



GROUND PENETRATING RADAR LEGEND

- Left Rail
- Right Rail
- < 1 in
- 1 - 2 in
- ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3



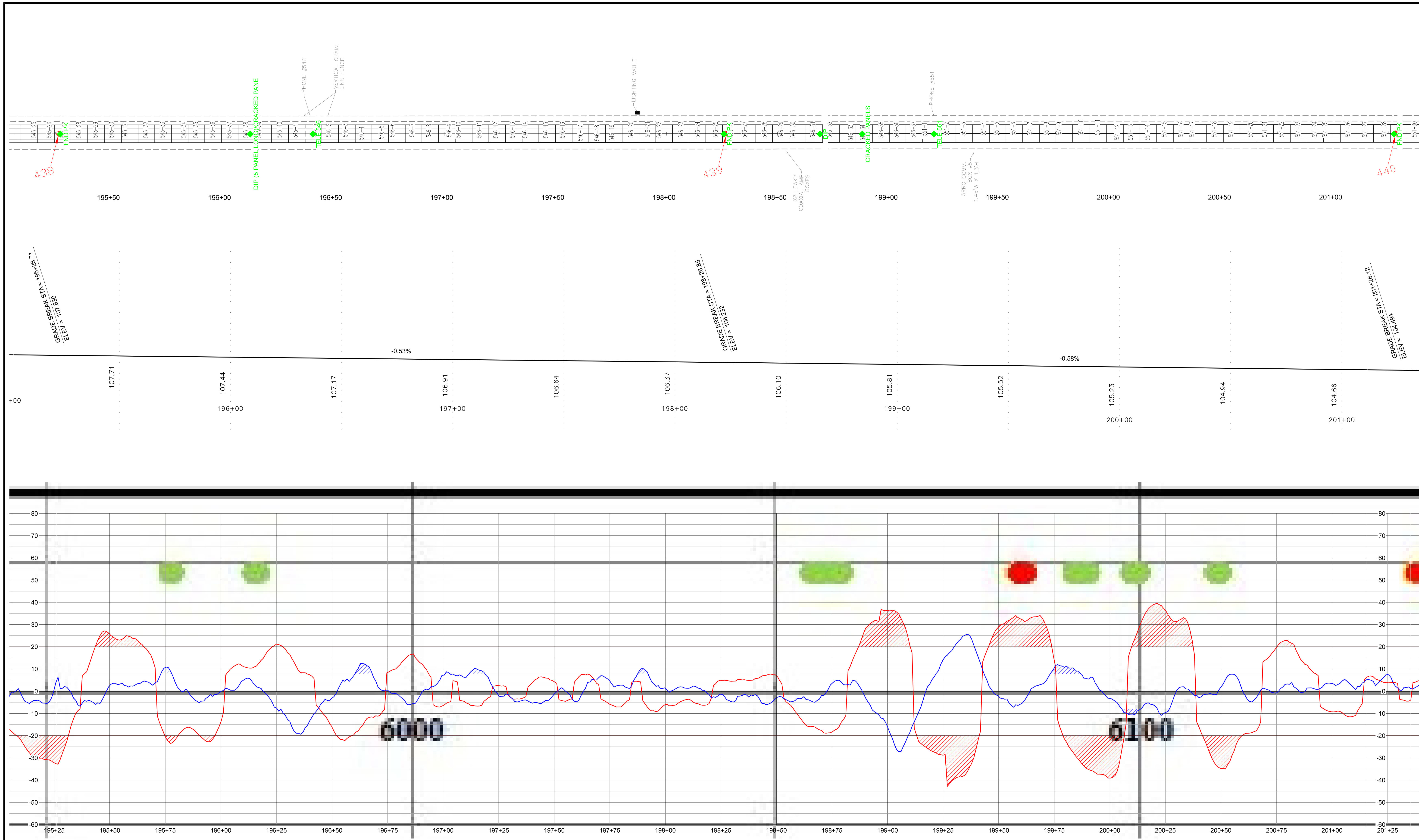
SCALE: 1" = 20 FEET

SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	12/22/2020
SHEET NO	12 OF 25



GROUND PENETRATING RADAR LEGEND

- Left Rail
- Right Rail
- < 1 in
- 1 - 2 in
- >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

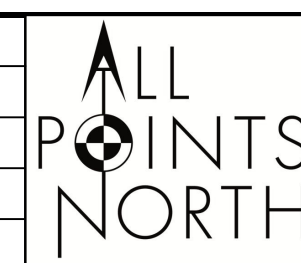
TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3



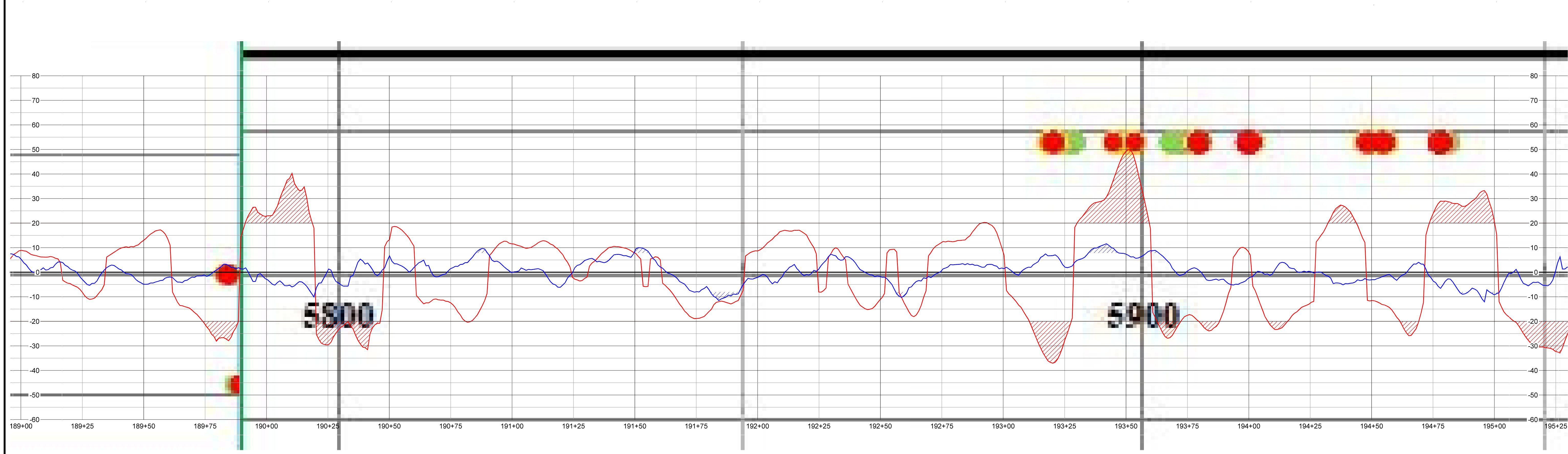
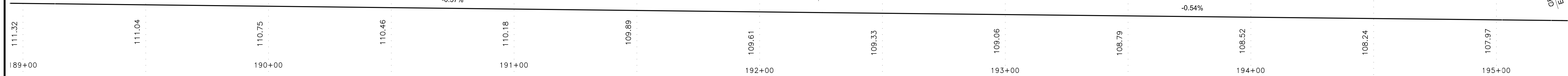
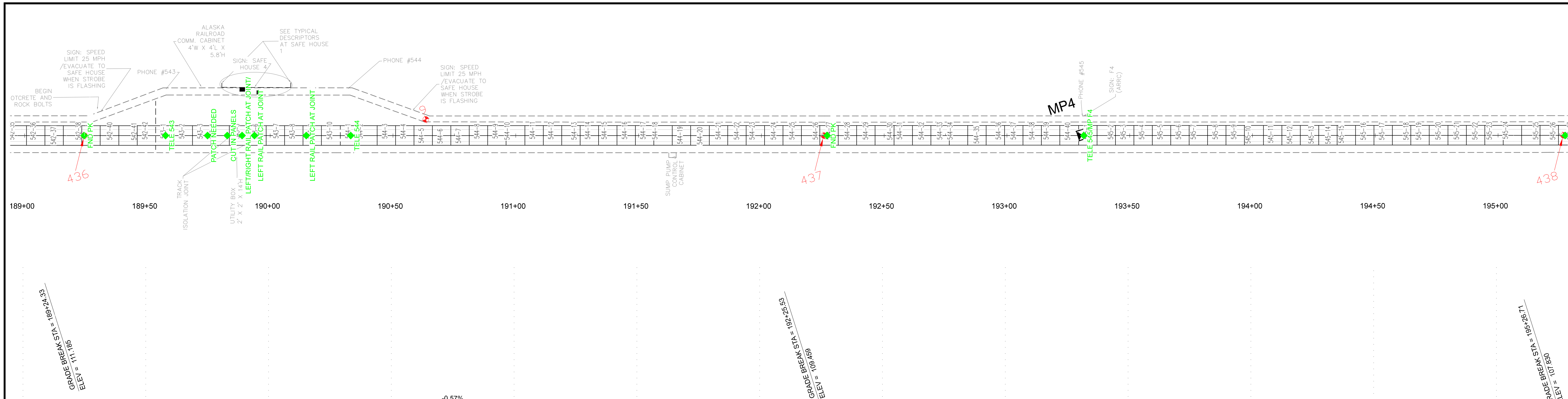
SCALE: 1" = 20 FEET

SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	10/22/2020
SHEET NO	14 OF 25



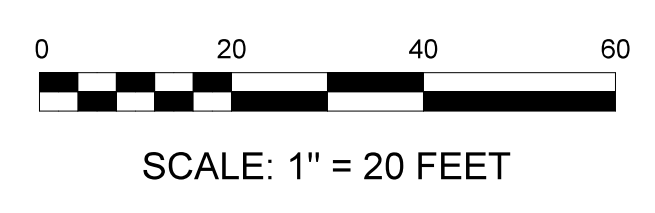
GROUND PENETRATING RADAR LEGEND

— Left Rail
 — Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

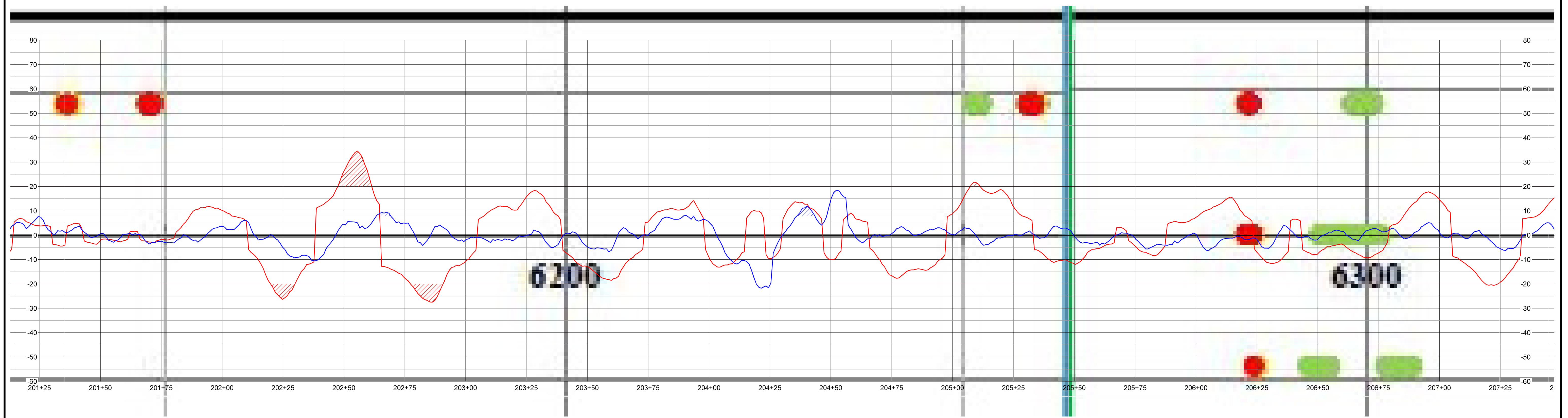
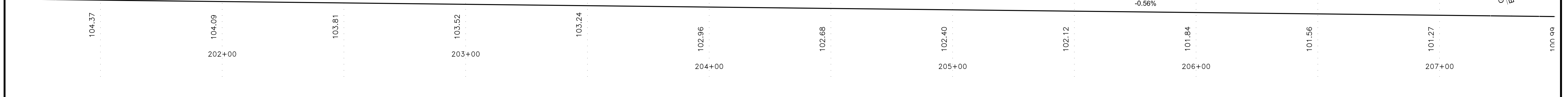
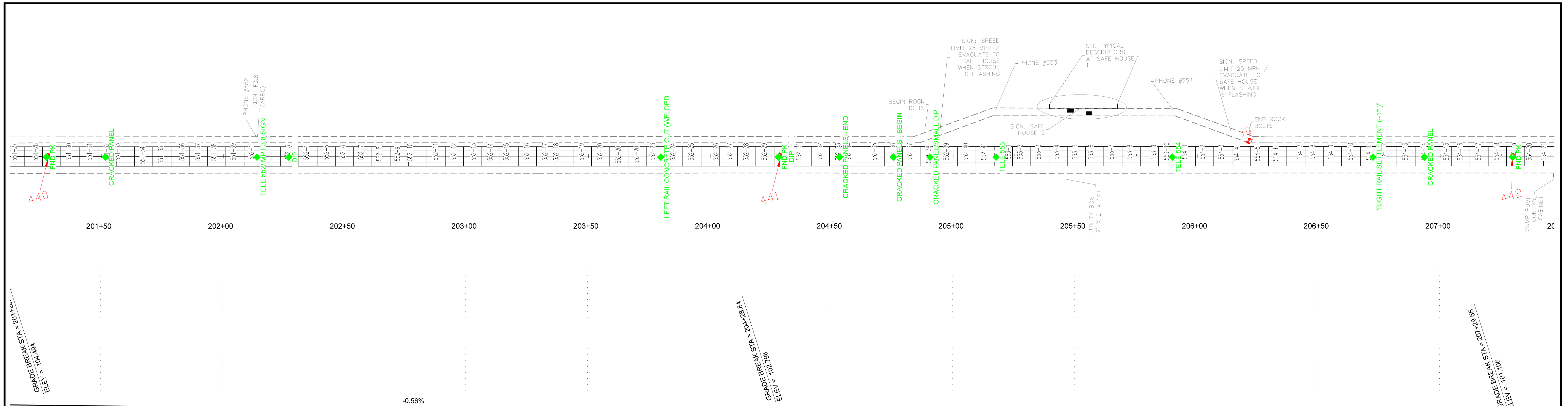


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" = 20 FEET
 DATE 10/22/2020
 SHEET NO 13 OF 25



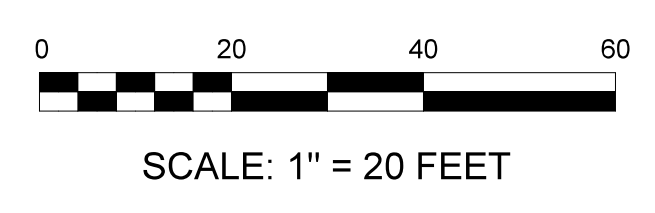
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

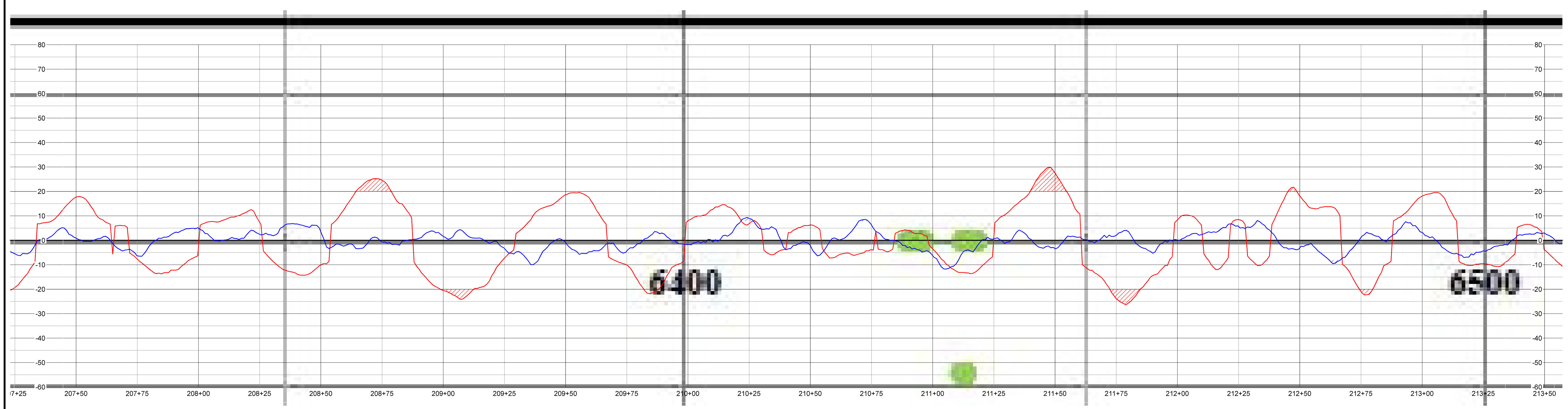
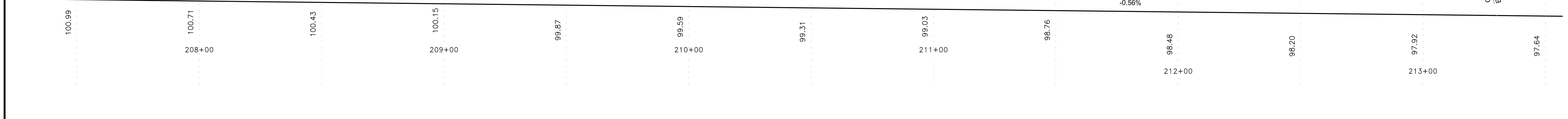
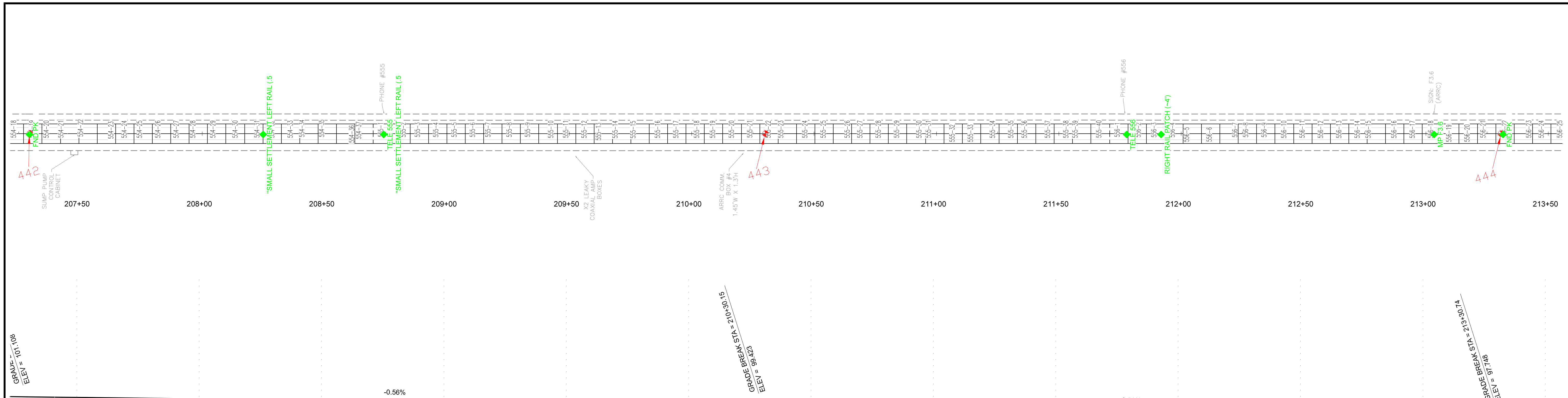


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 15 OF 25



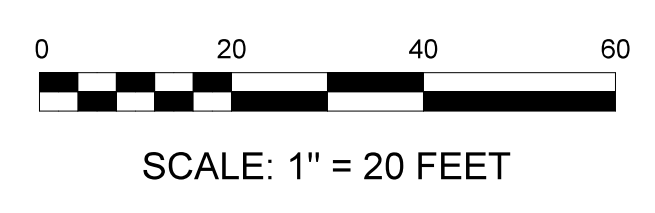
GROUND PENETRATING RADAR LEGEND

— Left Rail
 — Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

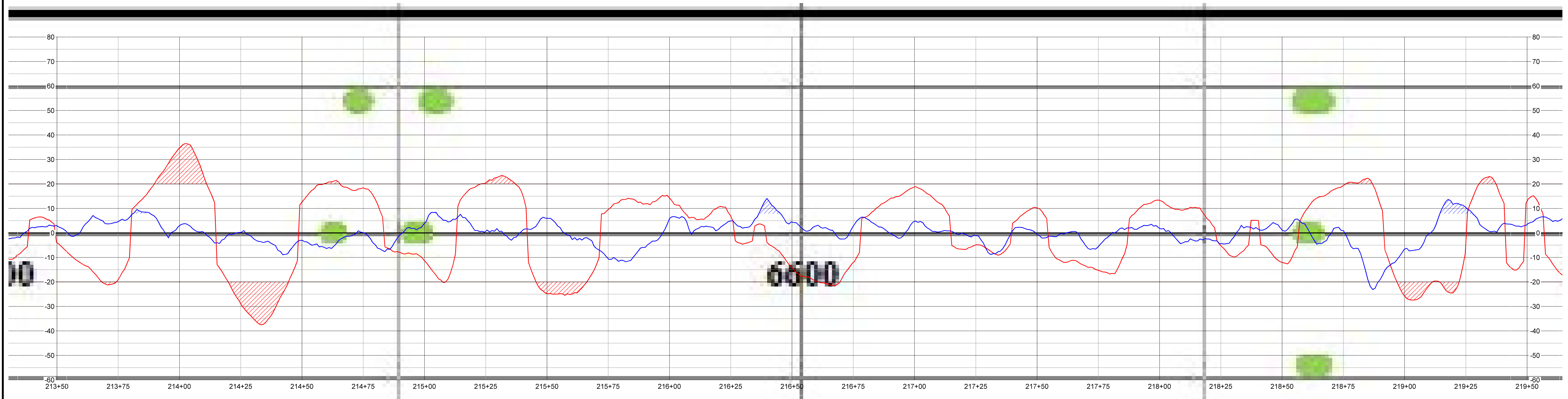
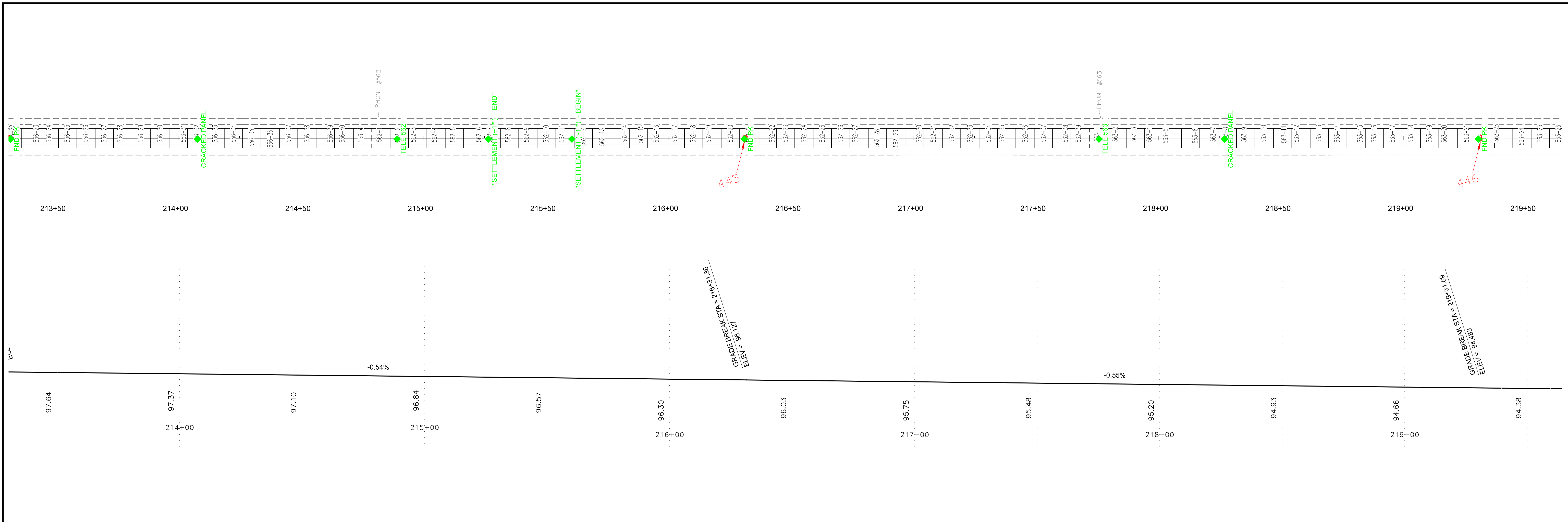


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 16 OF 25



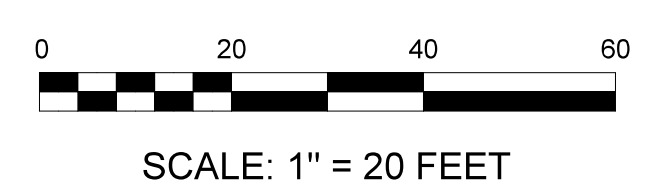
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 █ < 1 in
 █ 1 - 2 in
 █ >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

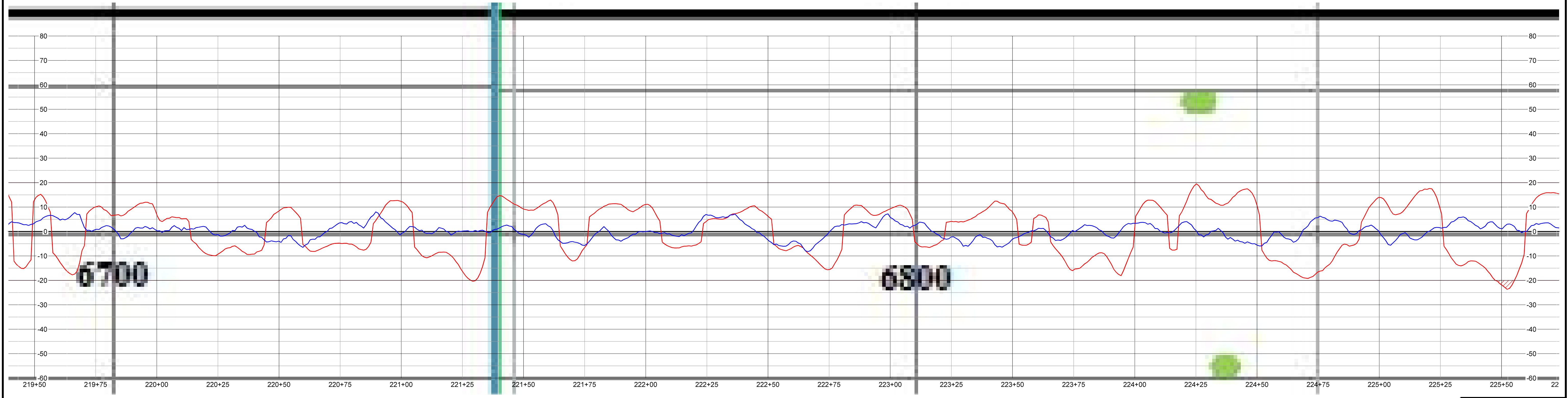
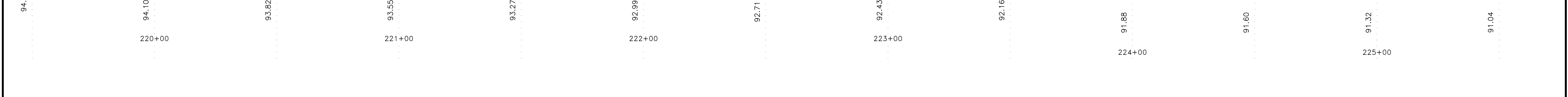
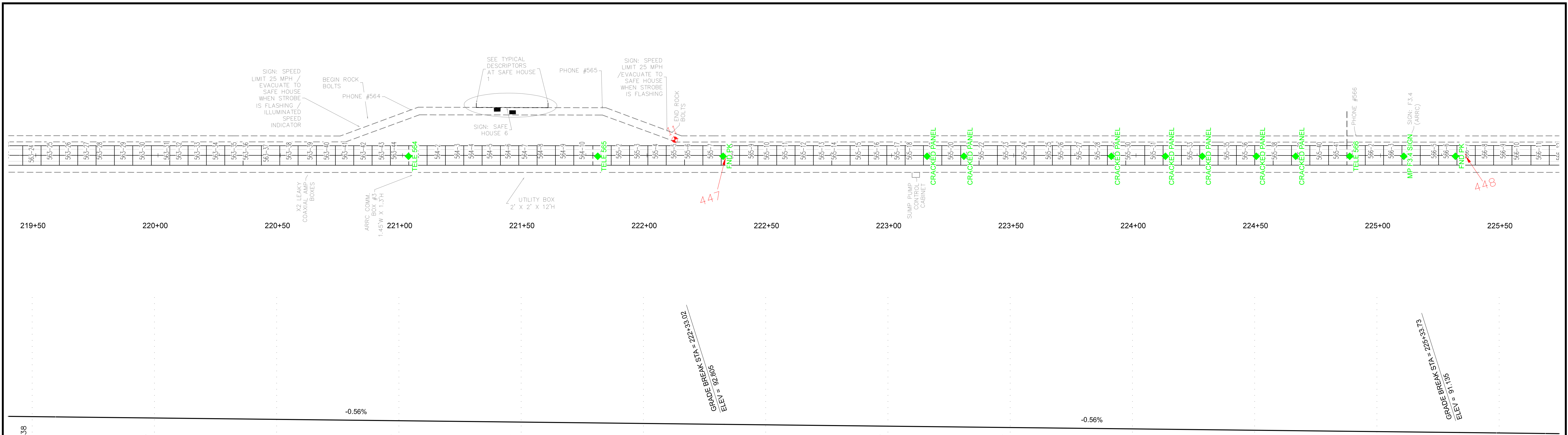


SYM.	REVISIONS	DATE	BY



CLIENT **ALASKA RAILROAD CORPORATION** JOB NUMBER **20-80**
 PROJECT **ARRC WHITTIER TUNNEL**
 SHEET TITLE **GEOMETRY DATA AND DEFLECTION OVERLAY**

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 17 OF 25



GROUND PENETRATING RADAR LEGEND

- Left Rail
- Right Rail
- < 1 in
- 1 - 2 in
- ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3



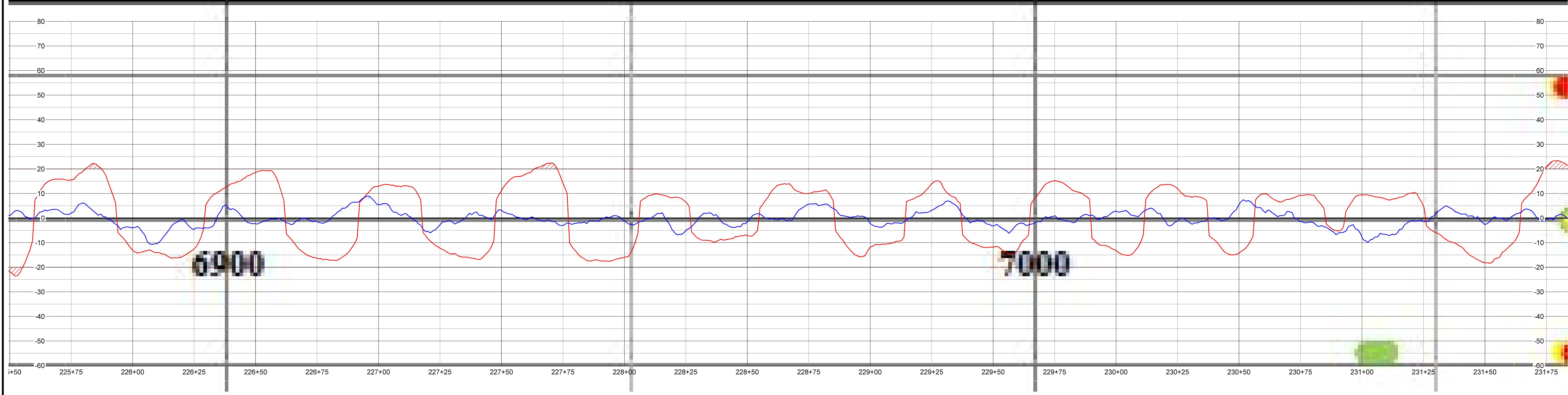
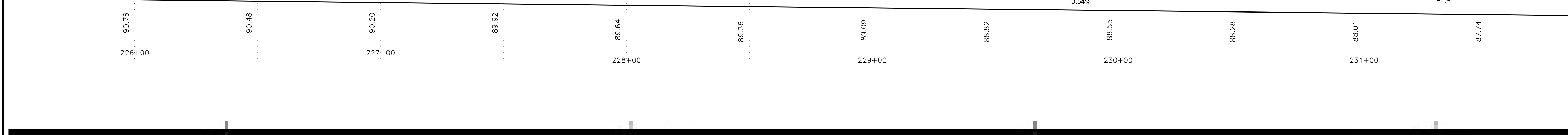
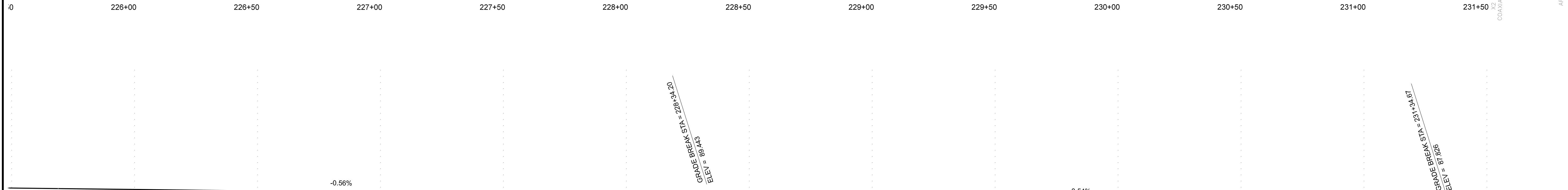
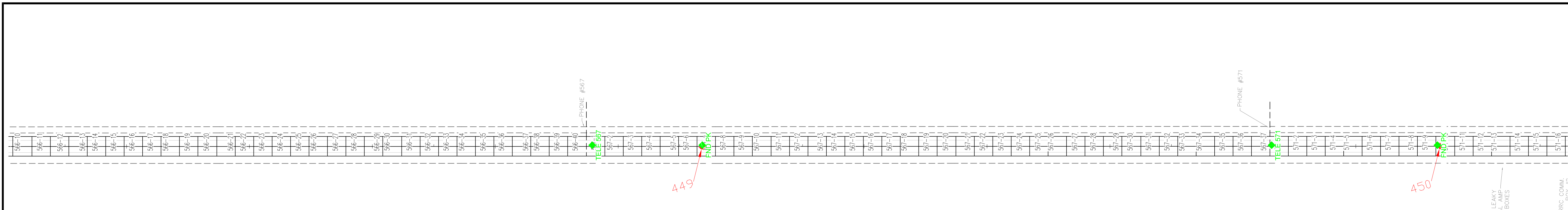
SCALE: 1" = 20 FEET

SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	12/22/2020
SHEET NO	18 OF 25



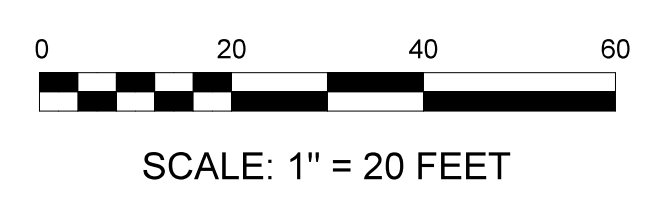
GROUND PENETRATING RADAR LEGEND

— Left Rail
 — Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

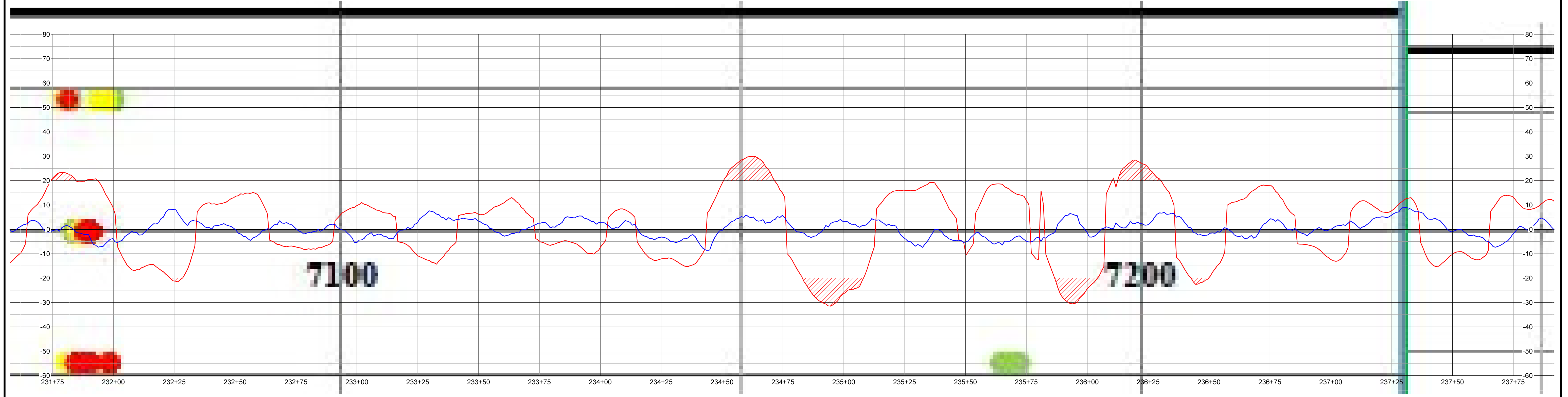
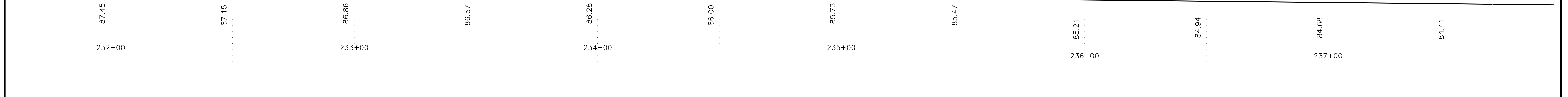
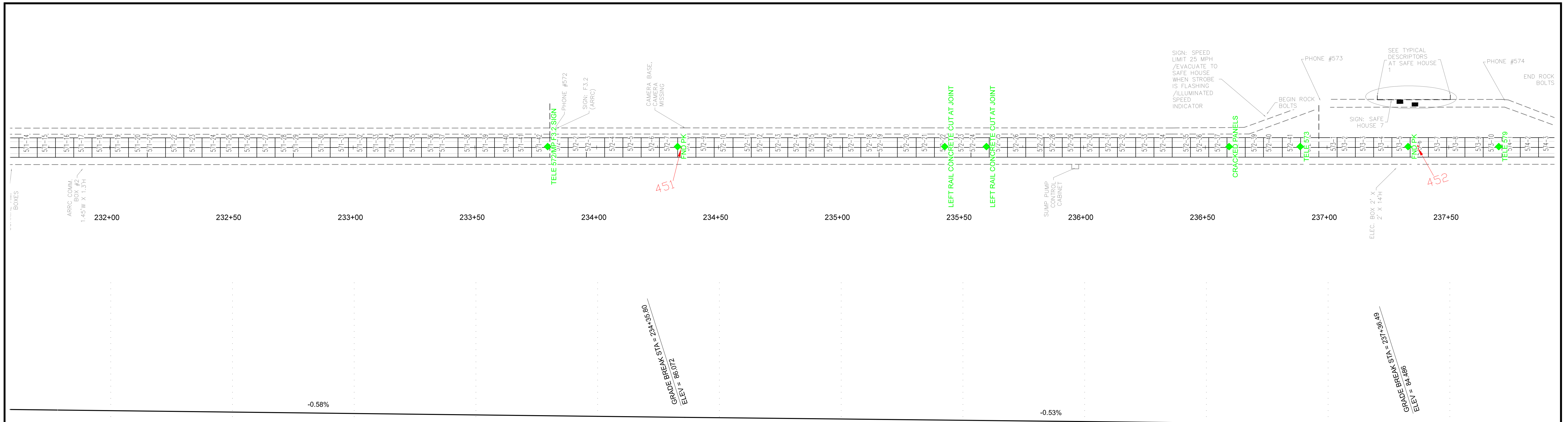


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 19 OF 25



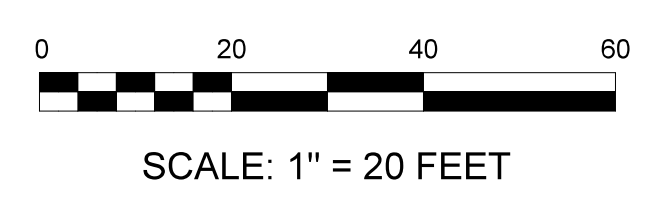
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

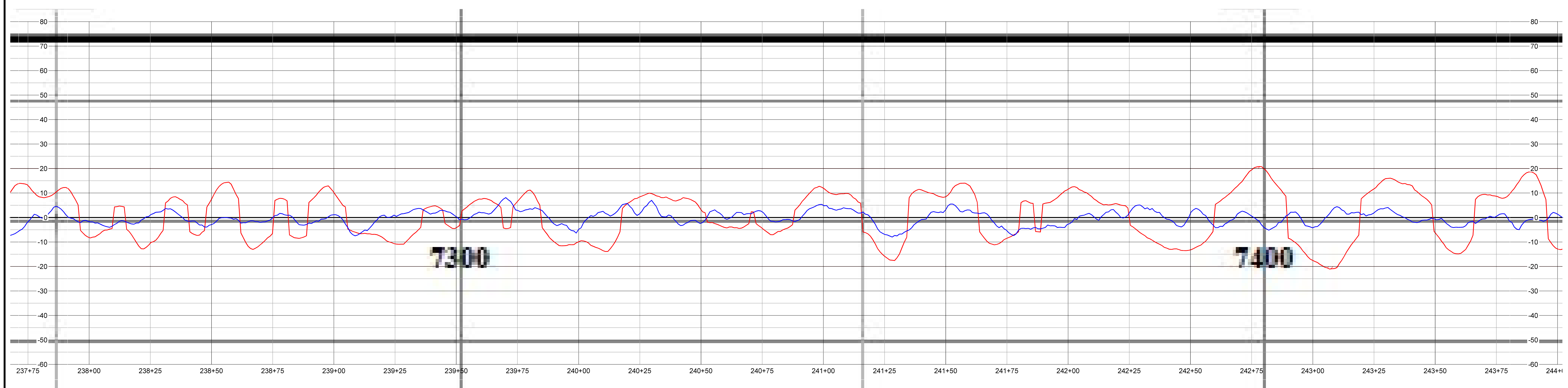
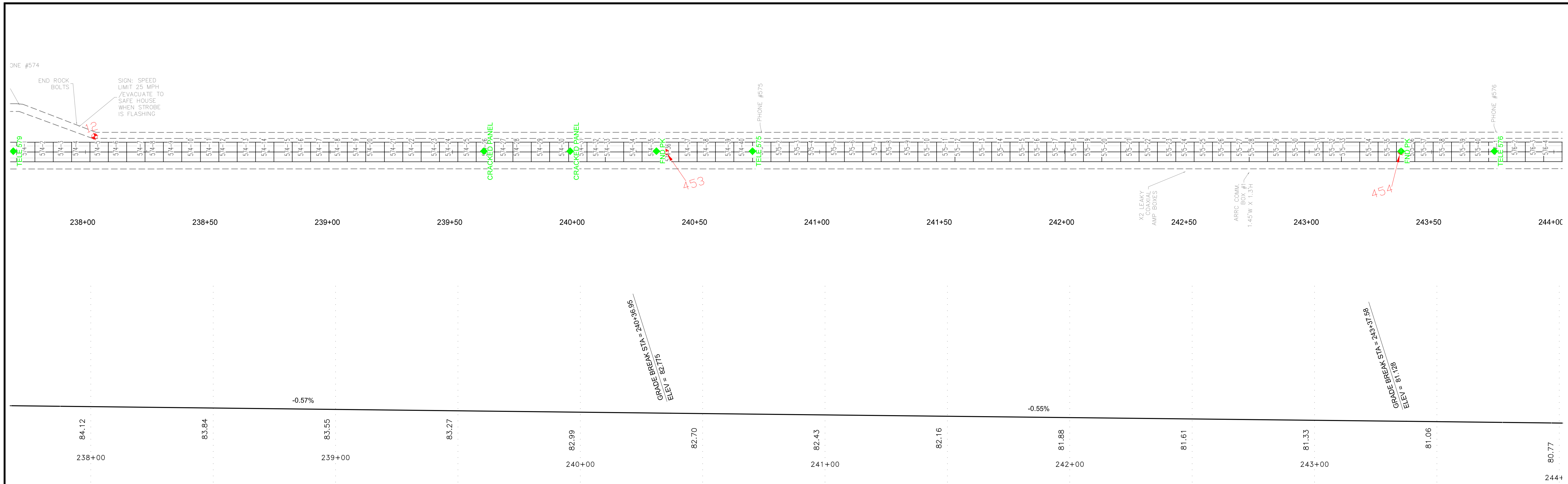


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 20 OF 25



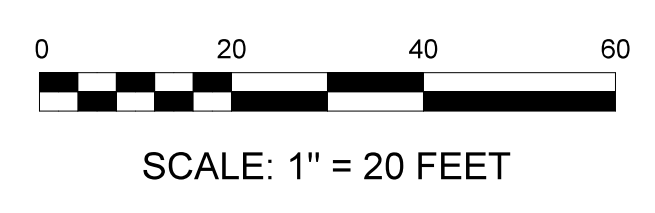
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

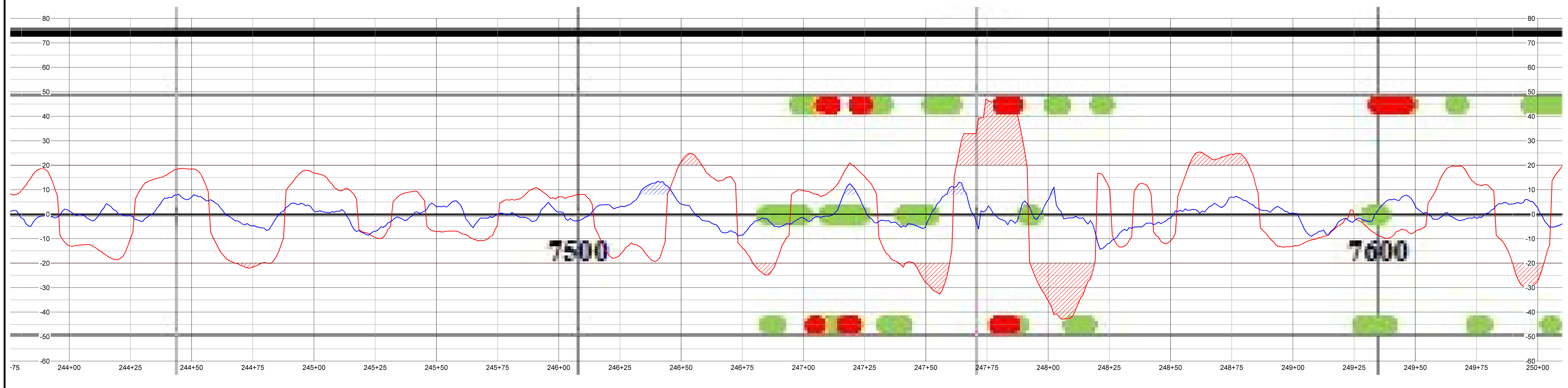
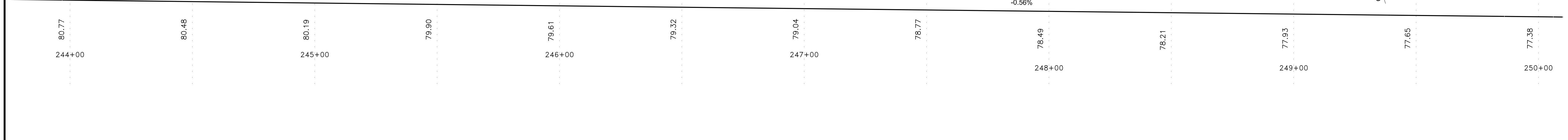
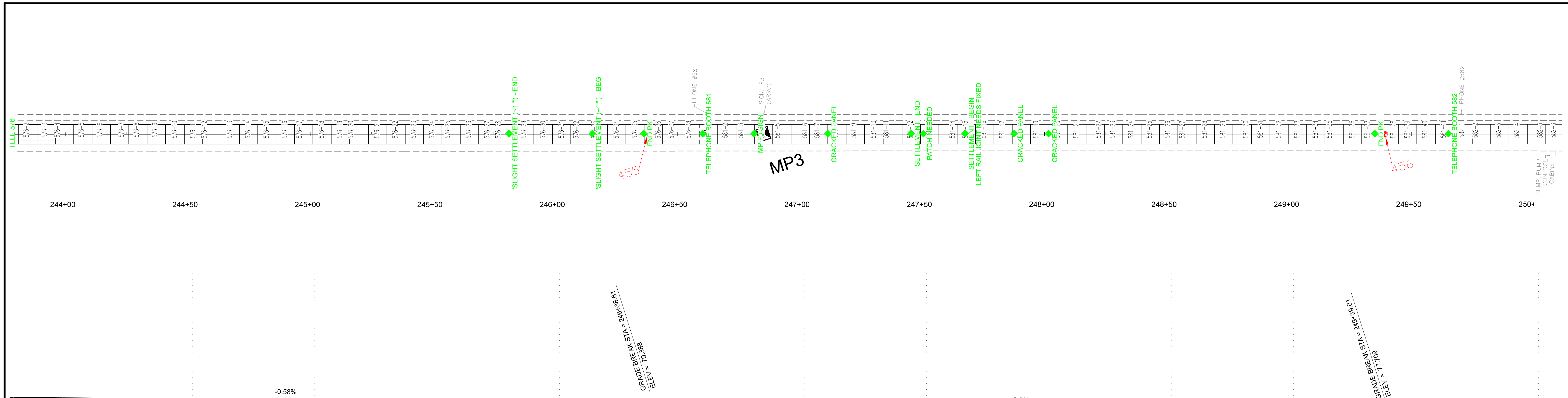


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE
 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 21 OF 25



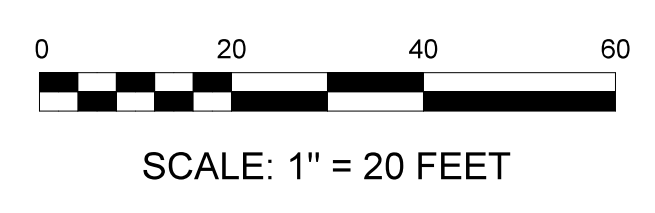
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 █ < 1 in
 █ 1 - 2 in
 █ >= 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

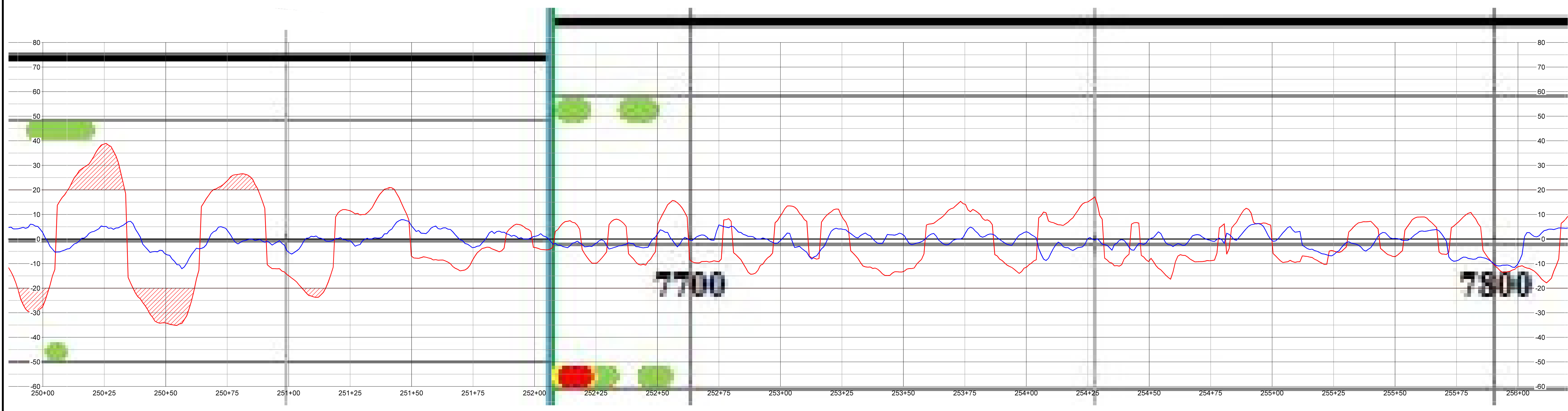
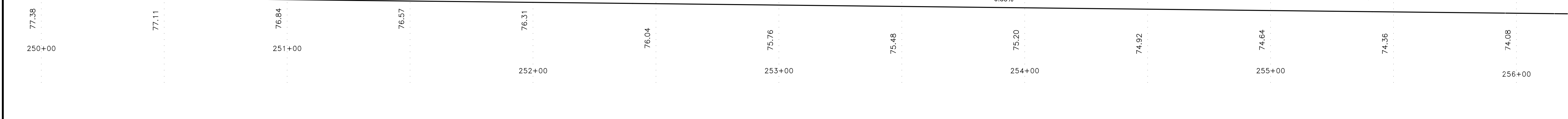
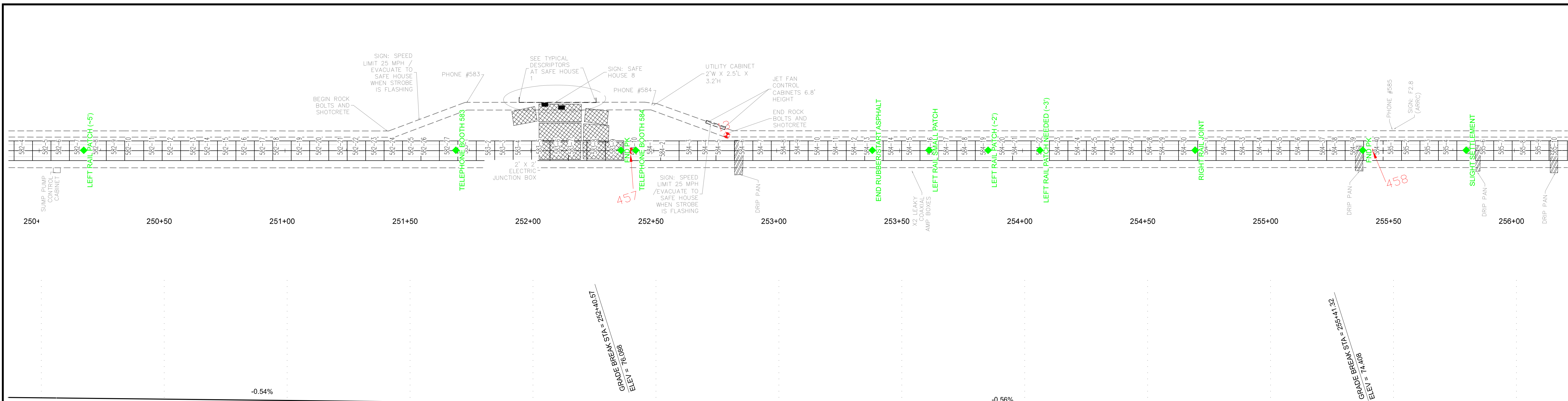


SYM.	REVISIONS	DATE	BY



CLIENT **ALASKA RAILROAD CORPORATION** JOB NUMBER **20-80**
 PROJECT **ARRC WHITTIER TUNNEL**
 SHEET TITLE **GEOMETRY DATA AND DEFLECTION OVERLAY**

SCALE
1" : 20 FEET
 DATE **12/22/2020**
 SHEET NO
22 OF 25



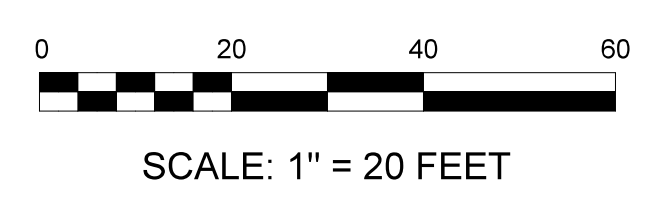
GROUND PENETRATING RADAR LEGEND

█ Left Rail
 █ Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

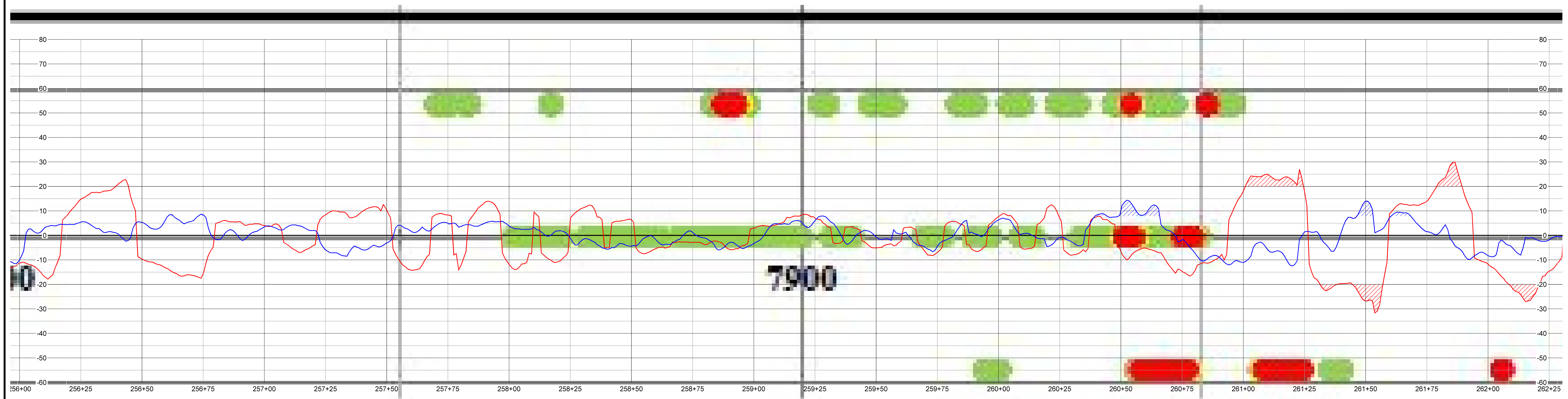
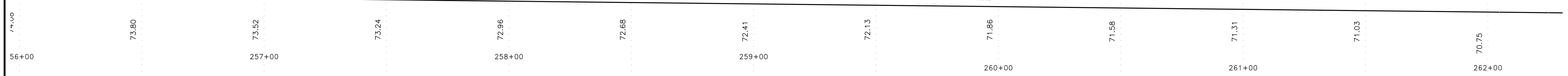
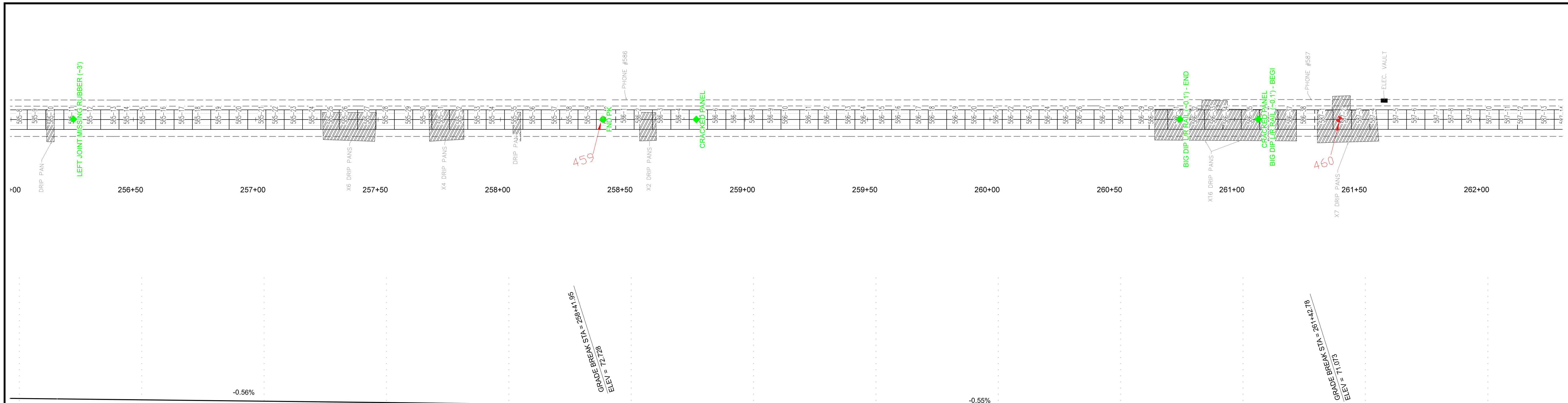


SYM.	REVISIONS	DATE	BY



CLIENT ALASKA RAILROAD CORPORATION JOB NUMBER 20-80
 PROJECT ARRC WHITTIER TUNNEL
 SHEET TITLE GEOMETRY DATA AND DEFLECTION OVERLAY

SCALE 1" : 20 FEET
 DATE 12/22/2020
 SHEET NO 23 OF 25



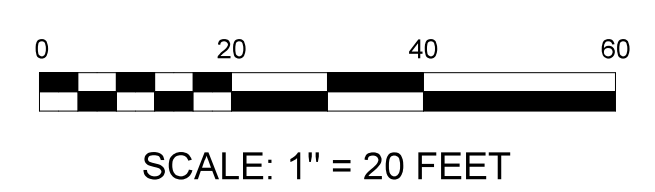
GROUND PENETRATING RADAR LEGEND

— Left Rail
 — Right Rail
 ● < 1 in
 ● 1 - 2 in
 ● ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

— TRACK DIP DATA, SEE NOTE 3
— TRACK TWIST DATA, SEE NOTE 3

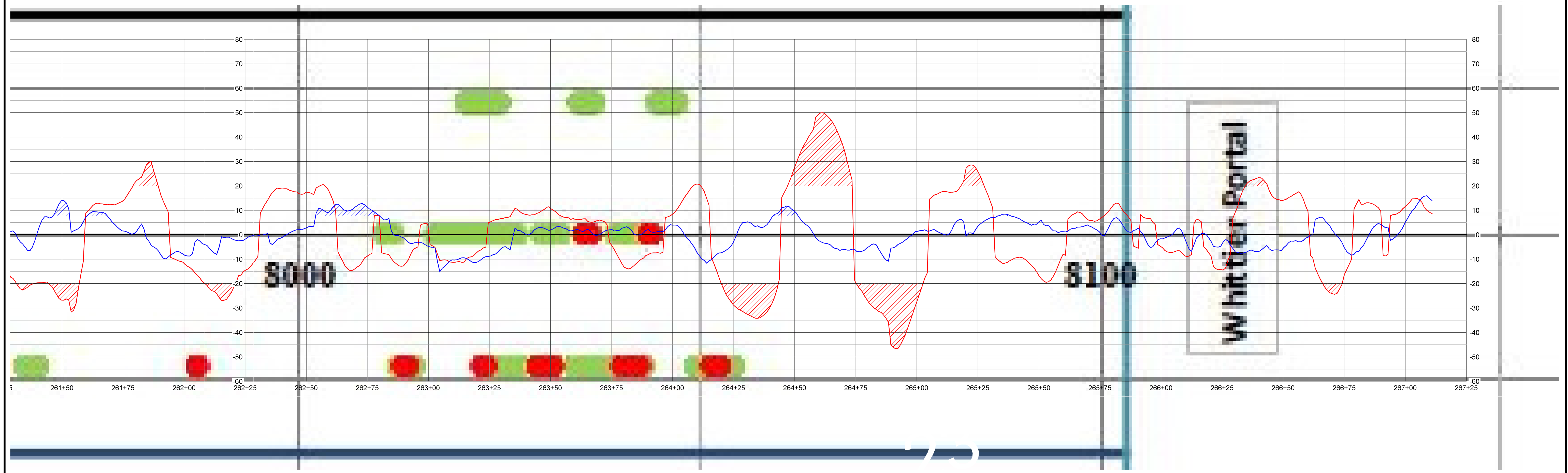
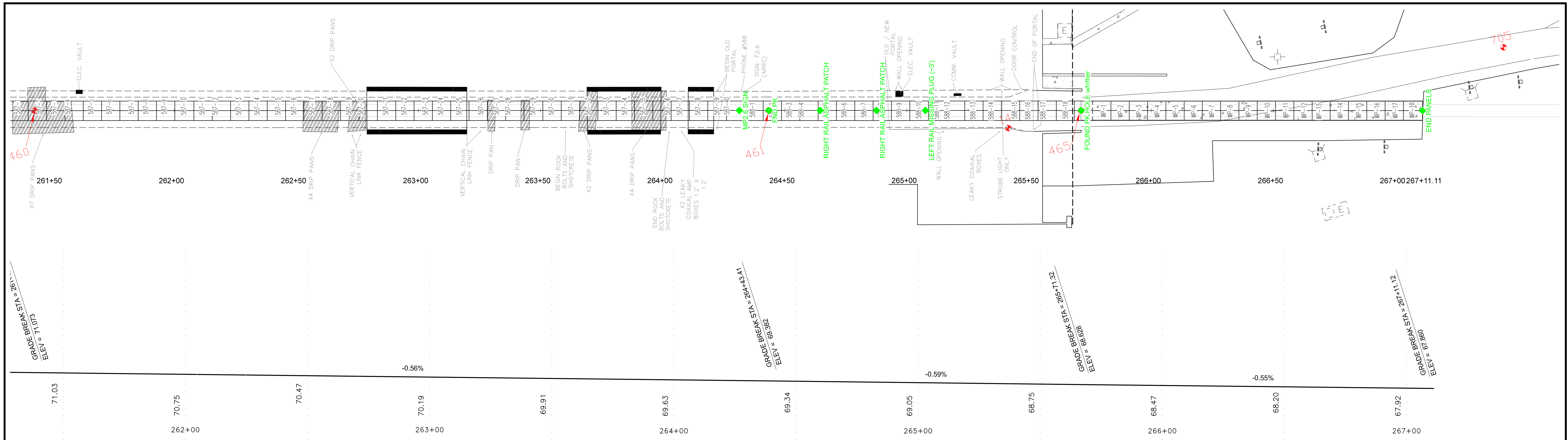


SYM.	REVISIONS	DATE	BY



CLIENT **ALASKA RAILROAD CORPORATION** JOB NUMBER **20-80**
 PROJECT **ARRC WHITTIER TUNNEL**
 SHEET TITLE **GEOMETRY DATA AND DEFLECTION OVERLAY**

SCALE
1" : 20 FEET
 DATE **12/22/2020**
 SHEET NO
24 OF 25



GROUND PENETRATING RADAR LEGEND

- Left Rail
- Right Rail
- < 1 in
- 1 - 2 in
- ≥ 2 in

NOTE: GPR STATIONING IS ARBITRARY AND DISTANCES ARE IN METERS

TRAIN GEOMETRY LEGEND

- TRACK DIP DATA, SEE NOTE 3
- TRACK TWIST DATA, SEE NOTE 3



SCALE: 1" = 20 FEET

SYM.	REVISIONS	DATE	BY



CLIENT	ALASKA RAILROAD CORPORATION	JOB NUMBER	20-80
PROJECT	ARRC WHITTIER TUNNEL		
SHEET TITLE	GEOMETRY DATA AND DEFLECTION OVERLAY		

SCALE	1" : 20 FEET
DATE	12/22/2020
SHEET NO	25 OF 25