



PHILADELPHIA
MAPPING PROJECT
GROUND CONTROL SURVEY REPORT
JOB NO. 65221207
DATE: APRIL 2022

Prepared by:



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**PHILADELPHIA
MAPPING PROJECT
GROUND CONTROL SURVEY REPORT**

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I. INTRODUCTION

This report summarizes the results of a ground control survey requested by Eagle View technologies. The survey was conducted in and around the city of Philadelphia, Pennsylvania. The purpose of the survey was to control LIDAR (Light Detection and Ranging) mapping. The ground control field observations were performed by Merrick & Company commencing on April 3, 2022, through the completion date of April 6, 2022. Merrick used Trimble RTX (A satellite-based service using worldwide continuously operating reference stations) verified with 8 NGS (National Geodetic Survey) ground stations to establish horizontal and vertical control constraints for the mapping acquisition. Merrick surveyed approximately 78 checkpoints to verify confidence levels of the LIDAR datasets.

HORIZONTAL AND VERTICAL CONTROL

The project coordinate system is Pennsylvania South Zone based on NAD-83, adjustment of 2011. The geodetic network was tied to CORS (Continuously Operating Reference Stations) via RTX and NGS ground stations. RTX coordinates are observed in International Terrestrial Reference Frame datum with the realization year of 2014 (ITRF (2014)). Coordinate values are converted into NAD83(2011) and NAVD88 values using the HTDP (Horizontal Time Dependent Positioning) program version 3.2.9 published by the National Geodetic Survey. The following existing NGS control points were used as horizontal checks to control this survey.

	NGS STATIONS CHECKED	
STATION NAME	PUBLISHED NAD83(2011) LATITUDE	PUBLISHED NAD83(2011) LONGITUDE
4 L 1	39°58'34.95611"N	75°01'54.74923"W
J 325	40°06'32.95227"N	75°20'02.79194"W
K 1	40°04'18.38193"N	75°18'28.44532"W
K 76	39°59'38.89816"N	75°01'57.99751"W
P 1	40°06'53.25274"N	75°22'41.31158"W
PRINTZ	39°47'45.21714"N	75°27'27.67300"W
Q 106	40°07'19.62194"N	75°13'02.24541"W
X 369	39°52'01.97961"N	75°18'01.58560"W

NGS Primary Control Horizontal NAD-83 (2011) Comparisons: Record Versus Measured		
NGS NAME	DIFFERENCE NORTHING (US FEET)	DIFFERENCE EASTING (US FEET)
4 L 1	+0.04	+0.01
J 325	+0.04	+0.05
K 1	+0.10	+0.05
K 76	-0.11	+0.01
P 1	-0.01	+0.05
PRINTZ	+0.08	+0.18
Q 106	+0.06	-0.07
X 369	0.02	-0.01

NGS Primary Vertical Control checks		
Comparisons: Record Versus Measured		
PT# (NGS NAME)	RECORD	MEASURED
	NAVD 88 elevation in US FEET	Difference in US FEET
4 L 1	57.55	+0.09
J 325	68.01	-0.25
K 1	57.17	+0.07
K 76	17.71	+0.11
P 1	77.46	+0.05
PRINTZ	17.46	-0.05
Q 106	185.64	-0.09
X 369	16.99	-0.02

II. JOB SUMMARY AND EQUIPMENT

The coordinate system is the Pennsylvania South Zone State Plane, and the units are in US feet. The projection parameters are as follows:

PROJECTION: LAMBERT CONIC TWO PARALLEL
 LATITUDE OF ORIGIN = N 39° 20'00.000000"
 LONGITUDE OF ORIGIN = W 77° 45'00.000000"
 FALSE NORTHING =0.000ft
 FALSE EASTING =1968500.000
 PARALLEL 1 = N 40° 58'00.000000"
 PARALLEL 2 = N 39° 56'00.000000"

The data collected was converted and checked with published ground station coordinates. The specifications for accuracy with RTX are 2 centimeters horizontally and 5 centimeters vertically. Close examination of residuals shows no distortions in orientation or scale.

Satellite data was collected using a Trimble R12i receiver. The coordinates were processed using Trimble Business Center (Version 5.60).

EAGLEVIEWPHILADELPPHIA MAPPING

65221207

PT#	NAD83(2011)		ELLIPSOID	PENNSYLVANIA SOUTH ZONE		NAVD 88	CODE	NOTE
	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION		
			US FT	NORTHING	EASTING	US FT		
				US FT	US FT			
101	39°53'06.65707"N	75°19'18.83375"W	-9.73	210398.54	2649821.81	98.48	LIPT	CAL
102	39°51'41.25561"N	75°18'09.49628"W	-95.47	201909.33	2655464.33	12.72	LIPT	CAL
103	39°49'30.67696"N	75°17'47.32790"W	-105.42	188749.21	2657559.42	2.81	LIPT	CAL
104	39°55'33.73936"N	75°15'04.25351"W	-27.30	225829.28	2669238.53	80.91	LIPT	CAL
105	39°55'30.85634"N	75°11'12.21366"W	-77.32	226055.71	2687317.11	30.76	LIPT	CAL
106	39°52'05.48058"N	75°07'53.77856"W	-91.75	205736.48	2703386.21	16.14	LIPT	CAL
107	40°00'18.50357"N	75°12'48.20513"W	132.39	254934.67	2679005.79	240.99	LIPT	CAL
108	39°58'59.68575"N	75°03'07.57011"W	-93.02	248301.73	2724412.49	14.91	LIPT	CAL
109	40°01'41.33003"N	75°05'55.44610"W	-2.31	264255.38	2710859.78	106.12	LIPT	CAL
110	40°05'14.63026"N	75°13'30.21409"W	20.74	284793.76	2674881.52	130.25	LIPT	CAL
111	40°04'49.38656"N	75°04'04.17994"W	46.11	283537.34	2718933.36	154.88	LIPT	CAL
112	40°06'58.06559"N	74°57'32.10478"W	5.34	297496.14	2748983.35	114.03	LIPT	CAL
113	40°08'27.99465"N	75°01'09.45891"W	157.87	306063.91	2731824.18	267.11	LIPT	CAL
114	40°03'40.35949"N	74°58'46.03517"W	-81.22	277319.26	2743870.13	27.01	LIPT	CAL
115	39°59'00.55238"N	75°08'07.10890"W	-72.31	247688.16	2701103.89	35.92	LIPT	CAL
116	40°02'07.32732"N	75°10'40.16308"W	137.23	266230.01	2688644.71	245.99	LIPT	CAL
117	40°03'36.11634"N	75°14'23.04324"W	296.14	274712.13	2671060.52	405.36	LIPT	CAL
118	39°57'57.60097"N	75°14'03.92849"W	4.92	240514.06	2673521.76	113.29	LIPT	CAL
119	39°57'19.74273"N	75°08'58.11050"W	-74.40	237374.49	2697435.94	33.70	LIPT	CAL
120	40°05'01.51613"N	75°01'28.11647"W	15.63	285135.50	2731020.65	124.26	LIPT	CAL
121	39°53'57.25661"N	75°14'55.54184"W	-104.16	216089.37	2670193.44	3.98	LIPT	CAL
122	39°51'59.58676"N	75°10'36.64389"W	-100.50	204767.12	2690709.92	7.47	LIPT	CAL
123	39°53'18.97779"N	75°14'47.85332"W	-97.61	212234.50	2670902.21	10.50	LIPT	CAL
124	40°02'46.20345"N	75°01'32.85146"W	-11.23	271438.38	2731075.10	97.06	LIPT	CAL
125	40°04'14.00993"N	75°10'28.59781"W	234.35	279069.76	2689170.11	343.44	LIPT	CAL
126	39°52'13.33243"N	75°16'14.90357"W	-100.88	205403.10	2664305.80	7.25	LIPT	CAL
201	39°53'05.94850"N	75°19'16.78350"W	-6.99	210331.27	2649983.54	101.22	LIPT	NVA

EAGLEVIEWPHILADELPPHIA MAPPING

65221207

PT#	NAD83(2011)		ELLIPSOID	PENNSYLVANIA SOUTH ZONE		NAVD 88	CODE	NOTE
	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION		
			US FT	NORTHING	EASTING	US FT		
				US FT	US FT			
202	39°51'38.24453"N	75°18'12.24925"W	-98.08	201598.80	2655258.17	10.11	LIPT	NVA
203	39°49'31.95869"N	75°17'46.56565"W	-106.38	188880.51	2657615.27	1.84	LIPT	NVA
204	39°55'33.04679"N	75°15'03.84789"W	-30.01	225760.12	2669272.10	78.20	LIPT	NVA
205	39°55'30.97022"N	75°11'12.99256"W	-75.96	226065.47	2687256.12	32.11	LIPT	NVA
206	39°52'04.48452"N	75°07'55.19366"W	-90.41	205632.46	2703278.91	17.48	LIPT	NVA
207	40°00'18.21430"N	75°12'46.98474"W	130.64	254908.14	2679101.56	239.24	LIPT	NVA
208	39°59'00.63033"N	75°03'07.74494"W	-91.58	248396.85	2724395.97	16.35	LIPT	NVA
209	40°01'40.95375"N	75°05'55.76539"W	-3.09	264216.57	2710836.09	105.34	LIPT	NVA
210	40°05'13.58202"N	75°13'30.11624"W	22.24	284687.95	2674892.16	131.75	LIPT	NVA
211	40°04'48.18986"N	75°04'04.86567"W	42.41	283414.68	2718883.76	151.18	LIPT	NVA
212	40°06'58.67889"N	74°57'32.53624"W	4.37	297557.11	2748947.88	113.07	LIPT	NVA
213	40°08'29.86895"N	75°01'10.50602"W	154.69	306250.97	2731737.04	263.93	LIPT	NVA
214	40°03'39.61974"N	74°58'44.60971"W	-80.47	277247.92	2743983.26	27.76	LIPT	NVA
215	39°58'57.73731"N	75°08'05.02888"W	-71.39	247408.22	2701274.17	36.83	LIPT	NVA
216	40°02'07.30192"N	75°10'39.05980"W	135.09	266229.93	2688730.56	243.85	LIPT	NVA
217	40°03'37.06121"N	75°14'24.06466"W	299.39	274805.45	2670978.41	408.62	LIPT	NVA
218	39°57'57.49803"N	75°14'03.04785"W	4.72	240505.60	2673590.60	113.09	LIPT	NVA
219	39°57'18.14487"N	75°08'58.47351"W	-74.86	237212.04	2697412.44	33.24	LIPT	NVA
220	40°05'02.37665"N	75°01'29.59839"W	14.85	285218.98	2730902.83	123.48	LIPT	NVA
221	39°53'58.25258"N	75°14'57.39348"W	-101.68	216186.03	2670046.33	6.46	LIPT	NVA
222	39°51'58.63148"N	75°10'35.77166"W	-100.53	204672.48	2690780.72	7.44	LIPT	NVA
223	39°53'18.91224"N	75°14'47.46374"W	-96.82	212228.73	2670932.75	11.29	LIPT	NVA
224	40°02'46.65707"N	75°01'31.59072"W	-12.25	271487.29	2731171.68	96.04	LIPT	NVA
225	40°04'14.69853"N	75°10'27.88693"W	236.22	279141.02	2689223.32	345.31	LIPT	NVA
226	39°52'15.95198"N	75°16'15.64514"W	-100.08	205666.45	2664240.56	8.06	LIPT	NVA
301	39°53'06.20074"N	75°19'17.29106"W	-7.65	210355.69	2649943.29	100.56	LIPT	VVA
302	39°51'38.77081"N	75°18'11.52952"W	-96.51	201653.59	2655312.80	11.68	LIPT	VVA

EAGLEVIEWPHILADELPHIA MAPPING

65221207

PT#	NAD83(2011)		ELLIPSOID	PENNSYLVANIA SOUTH ZONE		NAVD 88	CODE	NOTE
	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION		
			US FT	NORTHING	EASTING	US FT		
				US FT	US FT			
303	39°49'31.53555"N	75°17'46.16982"W	-105.58	188838.57	2657647.33	2.64	LIPT	VVA
304	39°55'33.34494"N	75°15'04.44457"W	-27.08	225788.96	2669224.78	81.13	LIPT	VVA
305	39°55'31.11659"N	75°11'12.69474"W	-75.04	226080.94	2687278.88	33.04	LIPT	VVA
306	39°52'06.68153"N	75°07'53.50679"W	-94.28	205858.58	2703403.79	13.61	LIPT	VVA
307	40°00'18.08521"N	75°12'48.44650"W	135.38	254891.82	2678988.23	243.98	LIPT	VVA
308	39°58'59.98081"N	75°03'06.51947"W	-91.68	248334.07	2724493.32	16.24	LIPT	VVA
309	40°01'40.79248"N	75°05'55.34861"W	-3.11	264201.23	2710868.99	105.32	LIPT	VVA
310	40°05'14.98971"N	75°13'30.88890"W	21.66	284828.62	2674828.06	131.17	LIPT	VVA
311	40°04'48.69124"N	75°04'04.49361"W	43.40	283466.27	2718911.13	152.17	LIPT	VVA
312	40°06'58.58486"N	74°57'32.15590"W	6.45	297548.53	2748977.72	115.15	LIPT	VVA
313	40°08'30.12677"N	75°01'10.00112"W	155.60	306278.26	2731775.42	264.84	LIPT	VVA
314	40°03'39.81520"N	74°58'44.19436"W	-79.49	277268.70	2744014.91	28.74	LIPT	VVA
315	39°58'58.47547"N	75°08'04.47935"W	-72.56	247484.15	2701314.71	35.66	LIPT	VVA
316	40°02'06.99753"N	75°10'38.99959"W	135.05	266199.28	2688736.14	243.81	LIPT	VVA
317	40°03'36.56810"N	75°14'23.76933"W	297.84	274756.22	2671002.78	407.06	LIPT	VVA
318	39°57'58.05483"N	75°14'03.62527"W	5.29	240560.64	2673544.06	113.66	LIPT	VVA
319	39°57'18.22944"N	75°08'58.69942"W	-73.69	237220.08	2697394.61	34.41	LIPT	VVA
320	40°05'02.68169"N	75°01'29.38271"W	15.71	285250.35	2730918.63	124.35	LIPT	VVA
321	39°53'58.03880"N	75°14'57.78491"W	-101.21	216163.54	2670016.45	6.93	LIPT	VVA
322	39°51'58.90834"N	75°10'35.67543"W	-100.22	204700.70	2690787.41	7.74	LIPT	VVA
323	39°53'19.27109"N	75°14'47.90600"W	-96.68	212264.05	2670897.26	11.43	LIPT	VVA
324	40°02'46.00761"N	75°01'31.71998"W	-11.33	271421.29	2731163.66	96.96	LIPT	VVA
325	40°04'15.21341"N	75°10'26.56240"W	235.21	279196.10	2689324.73	344.30	LIPT	VVA
326	39°52'17.26097"N	75°16'17.64241"W	-99.46	205794.48	2664081.18	8.68	LIPT	VVA
4 L 1	39°58'34.95633"N	75°01'54.74935"W	-50.17	245974.35	2730155.31	57.64	MFIR	
J 325	40°06'32.95271"N	75°20'02.79182"W	-42.54	291862.83	2644164.69	67.76	MFBC	
K 1	40°04'18.38235"N	75°18'28.44466"W	-52.41	278452.45	2651868.94	57.24	MFBC	

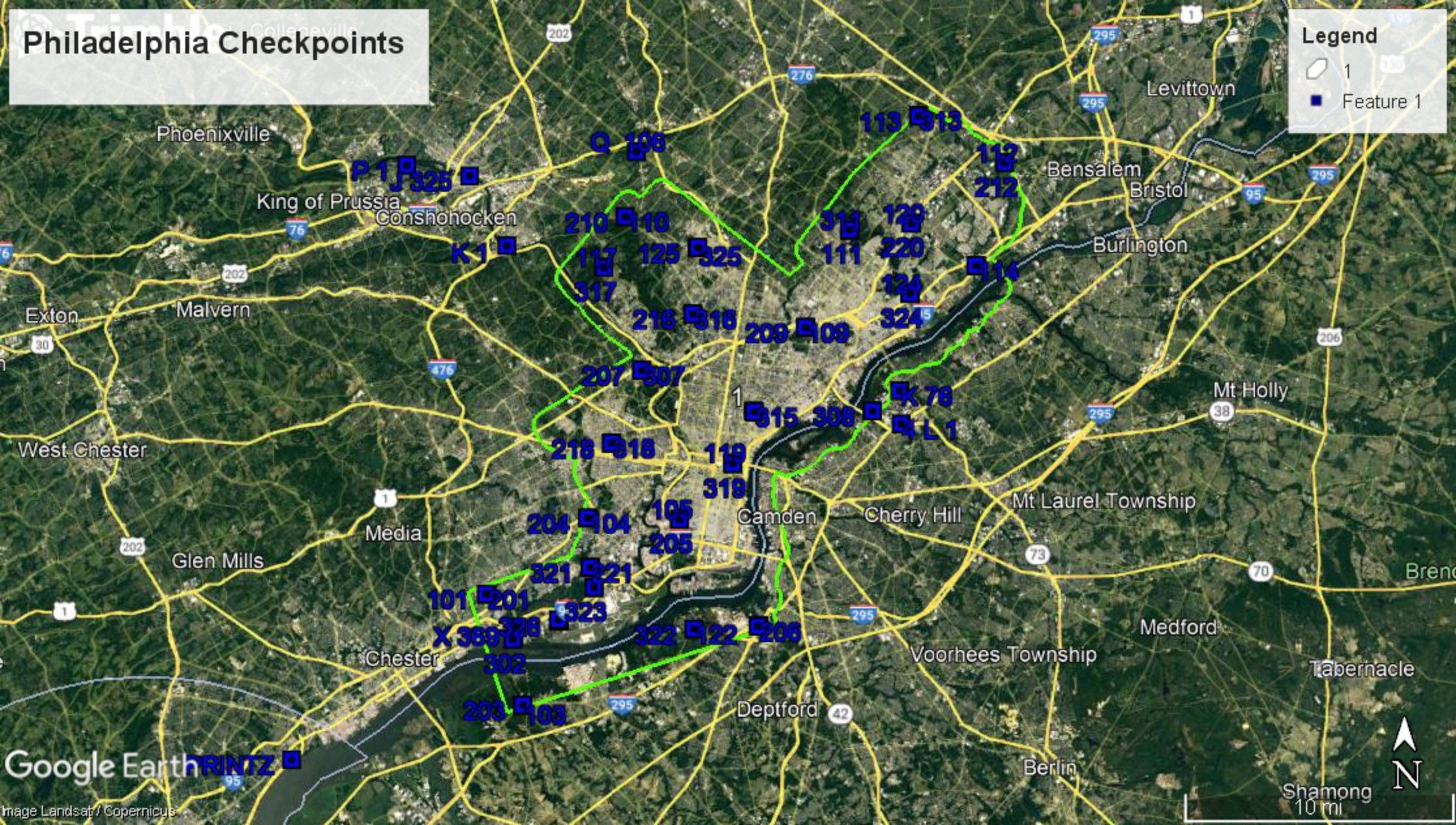
EAGLEVIEWPHILADELPHIA MAPPING
65221207

PT#	NAD83(2011)		ELLIPSOID	PENNSYLVANIA SOUTH ZONE		NAVD 88	CODE	NOTE
	LATITUDE	LONGITUDE	HEIGHT	STATE PLANE		ELEVATION		
			US FT	NORTHING	EASTING	US FT		
				US FT	US FT			
K 76	39°59'38.89912"N	75°01'57.99681"W	-90.10	252433.85	2729703.56	17.82	MFBC	
P 1	40°06'53.25165"N	75°22'41.31147"W	-33.06	293582.31	2631797.51	77.51	MFBC	
PRINTZ	39°47'45.21708"N	75°27'27.67242"W	-90.69	176864.86	2612572.75	17.41	MFBC	
Q 106	40°07'19.62266"N	75°13'02.24303"W	75.63	297498.81	2676691.91	185.55	MFBC	
X 369	39°52'01.98022"N	75°18'01.58643"W	-91.21	204022.73	2656022.75	16.97	MFBC	

Philadelphia Checkpoints

Legend

- 1
- Feature 1





DATASHEETS Data Sheet Retrieval
The NGS Data Sheet

See file dsdata.pdf for more information about the datasheet.

PROGRAM = datasheet95, VERSION = 8.12.5.14

Starting Datasheet Retrieval...

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

AJ5046 *****

AJ5046 FBN - This is a Federal Base Network Control Station.

AJ5046 DESIGNATION - 4 L 1

AJ5046 PID - AJ5046

AJ5046 STATE/COUNTY- NJ/CAMDEN

AJ5046 COUNTRY - US

AJ5046 USGS QUAD - CAMDEN (2019)

AJ5046

AJ5046 *CURRENT SURVEY CONTROL

AJ5046

AJ5046* NAD 83(2011) POSITION- 39 58 34.95611(N) 075 01 54.74923(W) ADJUSTED

AJ5046* NAD 83(2011) ELLIP HT- -15.328 (meters) (06/27/12) ADJUSTED

AJ5046* NAD 83(2011) EPOCH - 2010.00

AJ5046* NAVD 88 ORTHO HEIGHT - 17.541 (meters) 57.55 (feet) ADJUSTED

AJ5046

AJ5046 GEOID HEIGHT - -32.860 (meters) GEOID18

AJ5046 NAD 83(2011) X - 1,264,128.879 (meters) COMP

AJ5046 NAD 83(2011) Y - -4,728,313.459 (meters) COMP

AJ5046 NAD 83(2011) Z - 4,075,966.043 (meters) COMP

AJ5046 LAPLACE CORR - 2.20 (seconds) DEFLEC18

AJ5046 DYNAMIC HEIGHT - 17.533 (meters) 57.52 (feet) COMP

AJ5046 MODELED GRAVITY - 980,189.8 (mgal) NAVD 88

AJ5046

AJ5046 VERT ORDER - FIRST CLASS II

AJ5046

AJ5046 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

AJ5046 Standards:

AJ5046 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

AJ5046 Horiz Ellip SD_N SD_E SD_h (unitless)

AJ5046 -----

AJ5046 NETWORK 0.48 1.12 0.22 0.17 0.57 -0.04993871

AJ5046 -----

AJ5046 [Click here for local accuracies and other accuracy information.](#)

AJ5046

AJ5046

AJ5046.The horizontal coordinates were established by GPS observations

AJ5046.and adjusted by the National Geodetic Survey in June 2012.

AJ5046

AJ5046.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

AJ5046.been affixed to the stable North American tectonic plate. See

AJ5046.NA2011 for more information.

AJ5046

AJ5046.The horizontal coordinates are valid at the epoch date displayed above

AJ5046.which is a decimal equivalence of Year/Month/Day.

AJ5046

AJ5046.The orthometric height was determined by differential leveling and

AJ5046.adjusted by the NATIONAL GEODETIC SURVEY

AJ5046.in March 2005.

AJ5046

AJ5046.No vertical observational check was made to the station.

AJ5046

AJ5046.Significant digits in the geoid height do not necessarily reflect accuracy.

AJ5046.GEOID18 height accuracy estimate available here.

AJ5046

AJ5046.Click photographs - Photos may exist for this station.

AJ5046

AJ5046.The X, Y, and Z were computed from the position and the ellipsoidal ht.

AJ5046

AJ5046.The Laplace correction was computed from DEFLEC18 derived deflections.

AJ5046

AJ5046.The ellipsoidal height was determined by GPS observations

AJ5046.and is referenced to NAD 83.

AJ5046

AJ5046.The dynamic height is computed by dividing the NAVD 88

AJ5046.geopotential number by the normal gravity value computed on the

AJ5046.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45

AJ5046.degrees latitude ($g = 980.6199$ gals.).

AJ5046

AJ5046.The modeled gravity was interpolated from observed gravity values.

AJ5046

AJ5046. The following values were computed from the NAD 83(2011) position.

AJ5046

AJ5046; North East Units Scale Factor Converg.

AJ5046;SPC NJ - 127,027.147 104,569.941 MT 0.99992540 -0 20 30.2

AJ5046;SPC NJ - 416,754.90 343,076.55 sFT 0.99992540 -0 20 30.2

AJ5046;UTM 18 - 4,425,135.755 497,278.240 MT 0.99960009 -0 01 13.7

AJ5046

AJ5046! - Elev Factor x Scale Factor = Combined Factor

AJ5046!SPC NJ - 1.00000240 x 0.99992540 = 0.99992780

AJ5046!UTM 18 - 1.00000240 x 0.99960009 = 0.99960249

AJ5046

AJ5046 _U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVK9727825135(NAD 83)

AJ5046

AJ5046 SUPERSEDED SURVEY CONTROL

AJ5046

AJ5046 NAD 83(2007)- 39 58 34.95639(N) 075 01 54.74992(W) AD(2002.00) 0

AJ5046 ELLIP H (02/10/07) -15.317 (m) GP(2002.00)

AJ5046 NAD 83(1996)- 39 58 34.95649(N) 075 01 54.75006(W) AD() A

AJ5046 ELLIP H (09/24/01) -15.312 (m) GP() 4 1

AJ5046 NAVD 88 17.54 (m) 57.5 (f) LEVELING 3

AJ5046 NAVD 88 (09/24/01) 17.5 (m) GEOID99 model used GPS OBS

AJ5046

AJ5046.Superseded values are not recommended for survey control.

AJ5046

AJ5046.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

AJ5046.See file dsdata.pdf to determine how the superseded data were derived.

AJ5046

AJ5046 _MARKER: F = FLANGE-ENCASED ROD

AJ5046 _SETTING: 59 = STAINLESS STEEL ROD IN SLEEVE (10 FT.+)

AJ5046 _STAMPING: 4 L 1 2000

AJ5046_MARK LOGO: NGS
AJ5046_PROJECTION: RECESSED 5 CENTIMETERS
AJ5046_MAGNETIC: N = NO MAGNETIC MATERIAL
AJ5046_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
AJ5046_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
AJ5046+SATELLITE: SATELLITE OBSERVATIONS - June 25, 2007
AJ5046_ROD/PIPE-DEPTH: 7.32 meters
AJ5046_SLEEVE-DEPTH : 0.90 meters

AJ5046
AJ5046 HISTORY - Date Condition Report By
AJ5046 HISTORY - 2000 MONUMENTED NJGS
AJ5046 HISTORY - 20000606 GOOD NJGS
AJ5046 HISTORY - 20050411 GOOD NJGS
AJ5046 HISTORY - 20070625 GOOD NJDT

AJ5046
AJ5046 STATION DESCRIPTION

AJ5046
AJ5046'DESCRIBED BY NEW JERSEY GEODETIC SURVEY 2000 (RKJ)
AJ5046'THE STATION IS LOCATED IN PENNSAUKEN TOWNSHIP, IN THE CENTER OF
AJ5046'THE GRASSY MEDIAN OF US HIGHWAY 130. OWNERSHIP--NEW JERSEY
AJ5046'DEPARTMENT OF TRANSPORTATION. TO REACH THE STATION FROM THE
AJ5046'JUNCTION OF US HIGHWAY 130 AND STATE HIGHWAY 73, GO SOUTH ON
AJ5046'HIGHWAY 130 FOR 1.37 KM (0.85 MI) TO AN INTERSECTION. TURN LEFT,
AJ5046'SOUTHEAST ON JOHN TIPTON AVENUE FOR ABOUT 30.48 M (100.00 FT) TO
AJ5046'THE STATION ON THE RIGHT (THIS PART OF JOHN TIPTON AVENUE IS A
AJ5046'CONNECTOR ROAD FOR THE NORTHBOUND AND THE SOUTHBOUND LANES
AJ5046'OF HIGHWAY 130). THE STATION IS A PUNCH MARK ON THE TOP OF A
AJ5046'STAINLESS STEEL ROD IN A GREASE-FILLED SLEEVE, ENCASED IN A 13 CM
AJ5046'PVC PIPE WITH NGS LOGO CAP SURROUNDED BY CONCRETE RECESSED 5 CM
AJ5046'BELOW GROUND. LOCATED 30.48 M (100.00 FT) SOUTHEAST OF THE
AJ5046'SOUTHEAST CURB OF HIGHWAY 130, 24.6 M (80.7 FT) SOUTHEAST OF POWER
AJ5046'POLE NUMBER 65949, 5.6 M (18.4 FT) SOUTHWEST OF THE SOUTHWEST CURB
AJ5046'OF THE AVENUE CONNECTOR AND 0.65 M (2.13 FT) EAST OF AN NJGS METAL
AJ5046'WITNESS POST.

AJ5046'
AJ5046
AJ5046 STATION RECOVERY (2000)

AJ5046
AJ5046'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 2000 (RJK)
AJ5046'THE STATION WAS RECOVERED AS DESCRIBED.

AJ5046
AJ5046 STATION RECOVERY (2005)

AJ5046
AJ5046'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 2005 (RJK)
AJ5046'RECOVERED AS DESCRIBED.

AJ5046
AJ5046 STATION RECOVERY (2007)

AJ5046
AJ5046'RECOVERY NOTE BY NJ DEPT OF TRANSP 2007 (JFL)
AJ5046'RECOVERED AS DESCRIBED

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

KV1846 *****

KV1846 DESIGNATION - J 325

KV1846 PID - KV1846

KV1846 STATE/COUNTY- PA/MONTGOMERY

KV1846 COUNTRY - US

KV1846 USGS QUAD - NORRISTOWN (2019)

KV1846

KV1846 *CURRENT SURVEY CONTROL

KV1846

KV1846* NAD 83(2011) POSITION- 40 06 32.95227(N) 075 20 02.79194(W) ADJUSTED

KV1846* NAD 83(2011) ELLIP HT- -12.902 (meters) (10/31/17) ADJUSTED

KV1846* NAD 83(2011) EPOCH - 2010.00

KV1846* NAVD 88 ORTHO HEIGHT - 20.728 (meters) 68.01 (feet) ADJUSTED

KV1846

KV1846 GEOID HEIGHT - -33.620 (meters) GEOID18

KV1846 NAD 83(2011) X - 1,236,768.695 (meters) COMP

KV1846 NAD 83(2011) Y - -4,725,741.757 (meters) COMP

KV1846 NAD 83(2011) Z - 4,087,254.233 (meters) COMP

KV1846 LAPLACE CORR - 2.89 (seconds) DEFLEC18

KV1846 DYNAMIC HEIGHT - 20.718 (meters) 67.97 (feet) COMP

KV1846 MODELED GRAVITY - 980,155.8 (mgal) NAVD 88

KV1846

KV1846 VERT ORDER - FIRST CLASS I

KV1846

KV1846 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

KV1846 Standards:

KV1846 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

KV1846 Horiz Ellip SD_N SD_E SD_h (unitless)

KV1846 -----

KV1846 NETWORK 0.76 1.61 0.34 0.28 0.82 0.03126612

KV1846 -----

KV1846 [Click here for local accuracies and other accuracy information.](#)

KV1846

KV1846

KV1846.The horizontal coordinates were established by GPS observations

KV1846.and adjusted by the TERRA SURV in October 2017.

KV1846

KV1846.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

KV1846.been affixed to the stable North American tectonic plate. See

KV1846.NA2011 for more information.

KV1846

KV1846.The horizontal coordinates are valid at the epoch date displayed above

KV1846.which is a decimal equivalence of Year/Month/Day.

KV1846

KV1846.The orthometric height was determined by differential leveling and

KV1846.adjusted by the NATIONAL GEODETIC SURVEY

KV1846.in June 1991.

KV1846

KV1846.Significant digits in the geoid height do not necessarily reflect accuracy.

KV1846.GEOID18 height accuracy estimate available here.

KV1846

KV1846.[Click photographs](#) - Photos may exist for this station.

KV1846

KV1846.The X, Y, and Z were computed from the position and the ellipsoidal ht.

KV1846

KV1846.The Laplace correction was computed from DEFLEC18 derived deflections.

KV1846

KV1846.The ellipsoidal height was determined by GPS observations
KV1846.and is referenced to NAD 83.

KV1846

KV1846.The dynamic height is computed by dividing the NAVD 88
KV1846.geopotential number by the normal gravity value computed on the
KV1846.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KV1846.degrees latitude ($g = 980.6199$ gals.).

KV1846

KV1846.The modeled gravity was interpolated from observed gravity values.

KV1846

KV1846. The following values were computed from the NAD 83(2011) position.

KV1846

KV1846;	North	East	Units	Scale	Factor	Converg.
KV1846;SPC PA S	- 88,959.954	805,943.006	MT	0.99997716	+1 34 02.7	
KV1846;SPC PA S	- 291,862.78	2,644,164.68	sFT	0.99997716	+1 34 02.7	
KV1846;UTM 18	- 4,439,925.780	471,526.002	MT	0.99960998	-0 12 54.9	

KV1846

KV1846! - Elev Factor x Scale Factor = Combined Factor

KV1846!SPC PA S - 1.00000202 x 0.99997716 = 0.99997918

KV1846!UTM 18 - 1.00000202 x 0.99960998 = 0.99961200

KV1846

KV1846_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TVK7152639925(NAD 83)

KV1846

KV1846 SUPERSEDED SURVEY CONTROL

KV1846

KV1846 NGVD 29 (11/26/84) 21.038 (m) 69.02 (f) ADJUSTED 1 1

KV1846

KV1846.Superseded values are not recommended for survey control.

KV1846

KV1846.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

KV1846.See file dsdata.pdf to determine how the superseded data were derived.

KV1846

KV1846_MARKER: DB = BENCH MARK DISK

KV1846_SETTING: 32 = SET IN A RETAINING WALL OR CONCRETE LEDGE

KV1846_SP_SET: SERVICE BOX

KV1846_STAMPING: J 325 1966

KV1846_MARK LOGO: CGS

KV1846_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

KV1846+STABILITY: SURFACE MOTION

KV1846_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

KV1846+SATELLITE: SATELLITE OBSERVATIONS - April 01, 2017

KV1846

KV1846 HISTORY	- Date	Condition	Report By
KV1846 HISTORY	- 1966	MONUMENTED	CGS
KV1846 HISTORY	- 1988	GOOD	USPSQD
KV1846 HISTORY	- 20050531	GOOD	USPSQD
KV1846 HISTORY	- 20060809	GOOD	PADT
KV1846 HISTORY	- 20070311	GOOD	GEOCAC
KV1846 HISTORY	- 20080513	GOOD	INDIV
KV1846 HISTORY	- 20160516	GOOD	PADT
KV1846 HISTORY	- 20170401	GOOD	TERRSV

KV1846

KV1846 STATION DESCRIPTION

KV1846

KV1846'DESCRIBED BY COAST AND GEODETIC SURVEY 1966
KV1846'0.6 MI SE FROM NORRISTOWN.
KV1846'0.6 MILE SOUTHEAST ALONG THE READING COMPANY RAILROAD FROM THE
KV1846'STATION AT NORRISTOWN, AT THE CROSSING OF THE RAILROAD AND
KV1846'FORD STREET, 22 FEET NORTHEAST OF THE NORTHEAST RAIL OF THE
KV1846'NORTHEAST SET OF MAIN LINE TRACKS, SET IN THE TOP OF THE WEST
KV1846'CORNER OF A CONCRETE ELECTRICAL SERVICE BOX, 9 FEET NORTHEAST
KV1846'OF THE NORTHEAST RAIL OF SIDETRACK, 54 FEET NORTHWEST OF
KV1846'THE CENTER LINE OF FORD STREET, 9.5 FEET SOUTHEAST OF CATENARY
KV1846'POLE NUMBER 16/17 WHICH BEARS SIGNAL LIGHT NUMBER 229, ABOUT
KV1846'LEVEL WITH THE TRACK.

KV1846
KV1846 STATION RECOVERY (1988)
KV1846
KV1846'RECOVERY NOTE BY US POWER SQUADRON 1988 (JDC)
KV1846'RECOVERED IN GOOD CONDITION.

KV1846
KV1846 STATION RECOVERY (2005)
KV1846
KV1846'RECOVERY NOTE BY US POWER SQUADRON 2005 (WEA)
KV1846'RECOVERED IN GOOD CONDITION.

KV1846
KV1846 STATION RECOVERY (2006)
KV1846
KV1846'RECOVERY NOTE BY PA DEPT OF TRANSP 2006 (LJM)
KV1846'RECOVERED IN GOOD CONDITION.

KV1846
KV1846 STATION RECOVERY (2007)
KV1846
KV1846'RECOVERY NOTE BY GEOCACHING 2007 (MFL)
KV1846'RAILROAD IS CURRENTLY SEPTA.

KV1846
KV1846 STATION RECOVERY (2008)
KV1846
KV1846'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2008 (BRG)
KV1846'RECOVERED AS DESCRIBED, GOOD CONDITION, ERB CONTRACTORS, INC.

KV1846
KV1846 STATION RECOVERY (2016)
KV1846
KV1846'RECOVERY NOTE BY PA DEPT OF TRANSP 2016 (WK)
KV1846'RECOVERED IN GOOD CONDITION.

KV1846
KV1846 STATION RECOVERY (2017)
KV1846
KV1846'RECOVERY NOTE BY TERRA SURV 2017 (JVH)
KV1846'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022
KV1840 *****
KV1840 DESIGNATION - K 1
KV1840 PID - KV1840
KV1840 STATE/COUNTY- PA/MONTGOMERY
KV1840 COUNTRY - US
KV1840 USGS QUAD - NORRISTOWN (2019)
KV1840

*CURRENT SURVEY CONTROL

KV1840

KV1840

KV1840* NAD 83(2011) POSITION- 40 04 18.38193(N) 075 18 28.44532(W) ADJUSTED

KV1840* NAD 83(2011) ELLIP HT- -15.991 (meters) (10/31/17) ADJUSTED

KV1840* NAD 83(2011) EPOCH - 2010.00

KV1840* NAVD 88 ORTHO HEIGHT - 17.424 (meters) 57.17 (feet) ADJUSTED

KV1840

KV1840 GEOID HEIGHT - -33.422 (meters) GEOID18

KV1840 NAD 83(2011) X - 1,239,607.477 (meters) COMP

KV1840 NAD 83(2011) Y - -4,727,758.846 (meters) COMP

KV1840 NAD 83(2011) Z - 4,084,076.915 (meters) COMP

KV1840 LAPLACE CORR - 2.50 (seconds) DEFLEC18

KV1840 DYNAMIC HEIGHT - 17.416 (meters) 57.14 (feet) COMP

KV1840 MODELED GRAVITY - 980,157.8 (mgal) NAVD 88

KV1840

KV1840 VERT ORDER - FIRST CLASS I

KV1840

KV1840 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

KV1840 Standards:

KV1840 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

KV1840 Horiz Ellip SD_N SD_E SD_h (unitless)

KV1840 -----

KV1840 NETWORK 1.50 6.08 0.69 0.49 3.10 -0.27704112

KV1840 -----

KV1840 [Click here for local accuracies and other accuracy information.](#)

KV1840

KV1840

KV1840.The horizontal coordinates were established by GPS observations

KV1840.and adjusted by the TERRA SURV in October 2017.

KV1840

KV1840.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

KV1840.been affixed to the stable North American tectonic plate. See

KV1840.NA2011 for more information.

KV1840

KV1840.The horizontal coordinates are valid at the epoch date displayed above

KV1840.which is a decimal equivalence of Year/Month/Day.

KV1840

KV1840.The orthometric height was determined by differential leveling and

KV1840.adjusted by the NATIONAL GEODETIC SURVEY

KV1840.in June 1991.

KV1840

KV1840.Significant digits in the geoid height do not necessarily reflect accuracy.

KV1840.GEOID18 height accuracy estimate available here.

KV1840

KV1840.[Click photographs](#) - Photos may exist for this station.

KV1840

KV1840.The X, Y, and Z were computed from the position and the ellipsoidal ht.

KV1840

KV1840.The Laplace correction was computed from DEFLEC18 derived deflections.

KV1840

KV1840.The ellipsoidal height was determined by GPS observations

KV1840.and is referenced to NAD 83.

KV1840

KV1840.The dynamic height is computed by dividing the NAVD 88

KV1840.geopotential number by the normal gravity value computed on the
KV1840.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KV1840.degrees latitude (g = 980.6199 gals.).

KV1840

KV1840.The modeled gravity was interpolated from observed gravity values.

KV1840

KV1840. The following values were computed from the NAD 83(2011) position.

KV1840

KV1840; North East Units Scale Factor Converg.

KV1840;SPC PA S - 84,872.463 808,291.254 MT 0.99998124 +1 35 03.9

KV1840;SPC PA S - 278,452.41 2,651,868.89 sFT 0.99998124 +1 35 03.9

KV1840;UTM 18 - 4,435,768.756 473,745.138 MT 0.99960849 -0 11 53.6

KV1840

KV1840! - Elev Factor x Scale Factor = Combined Factor

KV1840!SPC PA S - 1.00000251 x 0.99998124 = 0.99998375

KV1840!UTM 18 - 1.00000251 x 0.99960849 = 0.99961100

KV1840

KV1840_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TVK7374535768(NAD 83)

KV1840

KV1840 SUPERSEDED SURVEY CONTROL

KV1840

KV1840 NGVD 29 (11/26/84) 17.739 (m) 58.20 (f) ADJUSTED 1 1

KV1840

KV1840.Superseded values are not recommended for survey control.

KV1840

KV1840.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

KV1840.See file dsdata.pdf to determine how the superseded data were derived.

KV1840

KV1840_MARKER: DB = BENCH MARK DISK

KV1840_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

KV1840_STAMPING: K 1 1929 58.241

KV1840_MARK LOGO: CGS

KV1840_PROJECTION: FLUSH

KV1840_MAGNETIC: N = NO MAGNETIC MATERIAL

KV1840_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

KV1840+STABILITY: SURFACE MOTION

KV1840_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

KV1840+SATELLITE: SATELLITE OBSERVATIONS - April 19, 2021

KV1840

KV1840 HISTORY - Date Condition Report By

KV1840 HISTORY - 1929 MONUMENTED CGS

KV1840 HISTORY - 1966 GOOD CGS

KV1840 HISTORY - 1977 GOOD LOCENG

KV1840 HISTORY - 20010123 GOOD PADT

KV1840 HISTORY - 20030723 GOOD STEWRT

KV1840 HISTORY - 20070311 GOOD GEOCAC

KV1840 HISTORY - 20111024 GOOD PADT

KV1840 HISTORY - 20170401 GOOD TERRSV

KV1840 HISTORY - 20210419 GOOD PADT

KV1840

KV1840 STATION DESCRIPTION

KV1840

KV1840'DESCRIBED BY COAST AND GEODETIC SURVEY 1966

KV1840'AT CONSHOHOCKEN.

KV1840'AT CONSHOHOCKEN, ON THE READING COMPANY RAILROAD, 142 FEET EAST
KV1840'OF THE EAST FACE OF THE RAILROAD STATION, OR ABOUT 1.2 MILES
KV1840'WEST ALONG THE READING COMPANY RAILROAD FROM THE STATION AT SPRING
KV1840'MILL, 70 FEET EAST OF THE EAST SIDE OF THE FAYETT STREET OVERPASS
KV1840'WHICH IS NUMBERED 13/48, 24 FEET SOUTH OF THE SOUTH RAIL OF THE
KV1840'SOUTH SET OF TRACKS, 33 FEET WEST OF CATENARY POLE NUMBER 13/11,
KV1840'5 FEET NORTHWEST OF THE FIRST POWER POLE EAST OF THE OVERPASS
KV1840'WHICH BEARS A TRANSFORMER, ABOUT 3 FEET ABOVE THE LEVEL OF THE
KV1840'TRACK, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 1 INCH.

KV1840

STATION RECOVERY (1977)

KV1840

KV1840'RECOVERY NOTE BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1977

KV1840'23.8 FT. SOUTH OF THE SOUTH RAIL OF SOUTH TRACK READING CO. RAILROAD

KV1840'STATION, 98 FT. EAST OF BRIDGE LEADING FROM CONSHOHOCKEN TO WEST

KV1840'CONSHOHOCKEN.

KV1840

KV1840

STATION RECOVERY (2001)

KV1840

KV1840'RECOVERY NOTE BY PA DEPT OF TRANSP 2001

KV1840'RECOVERED IN GOOD CONDITION.

KV1840

KV1840

STATION RECOVERY (2003)

KV1840

KV1840'RECOVERY NOTE BY JAMES STEWART INCORPORATED 2003 (DEN)

KV1840'RECOVERED IN GOOD CONDITION.

KV1840

KV1840

STATION RECOVERY (2007)

KV1840

KV1840'RECOVERY NOTE BY GEOCACHING 2007 (MFL)

KV1840'RAILROAD IS CURRENTLY SEPTA.

KV1840'

KV1840'HH2 N 40 04 18.5 W 075 17 28.7

KV1840

KV1840

STATION RECOVERY (2011)

KV1840

KV1840'RECOVERY NOTE BY PA DEPT OF TRANSP 2011 (LGB)

KV1840'RECOVERED IN GOOD CONDITION.

KV1840

KV1840

STATION RECOVERY (2017)

KV1840

KV1840'RECOVERY NOTE BY TERRA SURV 2017 (JVH)

KV1840'RECOVERED AS DESCRIBED.

KV1840

KV1840

STATION RECOVERY (2021)

KV1840

KV1840'RECOVERY NOTE BY PA DEPT OF TRANSP 2021 (WK)

KV1840'RECOVERED IN GOOD CONDITION.

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

JU0686 *****

JU0686 DESIGNATION - K 76

JU0686 PID - JU0686

JU0686 STATE/COUNTY- NJ/CAMDEN

JU0686 COUNTRY - US

JU0686 USGS QUAD - CAMDEN (2019)

JU0686

JU0686 *CURRENT SURVEY CONTROL

JU0686

JU0686* NAD 83(2011) POSITION- 39 59 38.89816(N) 075 01 57.99751(W) ADJUSTED

JU0686* NAD 83(2011) ELLIP HT- -27.499 (meters) (06/27/12) ADJUSTED

JU0686* NAD 83(2011) EPOCH - 2010.00

JU0686* NAVD 88 ORTHO HEIGHT - 5.399 (meters) 17.71 (feet) ADJUSTED

JU0686

JU0686 GEOID HEIGHT - -32.894 (meters) GEOID18

JU0686 NAD 83(2011) X - 1,263,724.712 (meters) COMP

JU0686 NAD 83(2011) Y - -4,727,100.066 (meters) COMP

JU0686 NAD 83(2011) Z - 4,077,469.302 (meters) COMP

JU0686 LAPLACE CORR - 2.52 (seconds) DEFLEC18

JU0686 DYNAMIC HEIGHT - 5.397 (meters) 17.71 (feet) COMP

JU0686 MODELED GRAVITY - 980,187.8 (mgal) NAVD 88

JU0686

JU0686 VERT ORDER - FIRST CLASS II

JU0686

JU0686 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

JU0686 Standards:

FGDC (95% conf, cm)	Standard deviation (cm)			CorrNE
Horiz Ellip	SD_N	SD_E	SD_h	(unitless)

NETWORK	0.31	0.59	0.14	0.11	0.30	-0.01435397
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JU0686 [Click here for local accuracies and other accuracy information.](#)

JU0686

JU0686

JU0686.The horizontal coordinates were established by GPS observations

JU0686.and adjusted by the National Geodetic Survey in June 2012.

JU0686

JU0686.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

JU0686.been affixed to the stable North American tectonic plate. See

JU0686.NA2011 for more information.

JU0686

JU0686.The horizontal coordinates are valid at the epoch date displayed above

JU0686.which is a decimal equivalence of Year/Month/Day.

JU0686

JU0686.The orthometric height was determined by differential leveling and

JU0686.adjusted by the NATIONAL GEODETIC SURVEY

JU0686.in June 1991.

JU0686

JU0686.Significant digits in the geoid height do not necessarily reflect accuracy.

JU0686.GEOID18 height accuracy estimate available here.

JU0686

JU0686.Click photographs - Photos may exist for this station.

JU0686

JU0686.The X, Y, and Z were computed from the position and the ellipsoidal ht.

JU0686

JU0686.The Laplace correction was computed from DEFLEC18 derived deflections.

JU0686

JU0686.The ellipsoidal height was determined by GPS observations

JU0686.and is referenced to NAD 83.

JU0686

JU0686.The dynamic height is computed by dividing the NAVD 88
JU0686.geopotential number by the normal gravity value computed on the
JU0686.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
JU0686.degrees latitude (g = 980.6199 gals.).

JU0686

JU0686.The modeled gravity was interpolated from observed gravity values.

JU0686

JU0686. The following values were computed from the NAD 83(2011) position.

JU0686

JU0686;	North	East	Units	Scale Factor	Converg.
JU0686;SPC NJ	- 128,999.581	104,504.654	MT	0.99992547	-0 20 32.7
JU0686;SPC NJ	- 423,226.13	342,862.35	sFT	0.99992547	-0 20 32.7
JU0686;UTM 18	- 4,427,107.151	497,201.919	MT	0.99960010	-0 01 15.8

JU0686

JU0686! - Elev Factor x Scale Factor = Combined Factor

JU0686!SPC NJ - 1.00000431 x 0.99992547 = 0.99992978

JU0686!UTM 18 - 1.00000431 x 0.99960010 = 0.99960441

JU0686

JU0686_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVK9720127107(NAD 83)

JU0686

SUPERSEDED SURVEY CONTROL

JU0686

JU0686 NAD 83(2007)- 39 59 38.89857(N) 075 01 57.99818(W) AD(2002.00) 0

JU0686 ELLIP H (02/10/07) -27.493 (m) GP(2002.00)

JU0686 ELLIP H (09/23/02) -27.424 (m) GP() 4 1

JU0686 NAD 83(1996)- 39 59 38.89877(N) 075 01 57.99790(W) AD() A

JU0686 ELLIP H (07/24/97) -27.436 (m) GP() 2 1

JU0686 NAD 83(1992)- 39 59 38.89809(N) 075 01 57.99835(W) AD(1996.00) A

JU0686 ELLIP H (06/07/96) -27.439 (m) GP(1996.00) 1 1

JU0686 NAVD 88 5.40 (m) 17.7 (f) LEVELING 3

JU0686 NGVD 29 (01/10/92) 5.720 (m) 18.77 (f) ADJUSTED 1 2

JU0686

JU0686.Superseded values are not recommended for survey control.

JU0686

JU0686.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

JU0686.See file dsdata.pdf to determine how the superseded data were derived.

JU0686

JU0686_MARKER: DV = VERTICAL CONTROL DISK

JU0686_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE

JU0686_SP_SET: BRIDGE ABUTMENT

JU0686_STAMPING: K 76 1974

JU0686_MARK LOGO: NGS

JU0686_MAGNETIC: N = NO MAGNETIC MATERIAL

JU0686_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

JU0686_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

JU0686+SATELLITE: SATELLITE OBSERVATIONS - June 21, 2010

JU0686

JU0686 HISTORY	- Date	Condition	Report By
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JU0686 HISTORY	- 1974	MONUMENTED	NGS
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JU0686 HISTORY	- 19940608	GOOD	NJGS
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JU0686 HISTORY	- 19950824	GOOD	NJGS
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JU0686 HISTORY	- 19951129	GOOD	TWT
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JU0686 HISTORY	- 19961211	GOOD	NJGS
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JU0686 HISTORY - 19990614 GOOD NJGS
JU0686 HISTORY - 20000706 GOOD NJGS
JU0686 HISTORY - 20000830 GOOD TWT
JU0686 HISTORY - 20041108 GOOD INDIV
JU0686 HISTORY - 20070220 GOOD T3GLOB
JU0686 HISTORY - 20070225 GOOD UE
JU0686 HISTORY - 20100621 GOOD GEOCAC

JU0686

JU0686 STATION DESCRIPTION

JU0686

JU0686'DESCRIBED BY NATIONAL GEODETIC SURVEY 1974

JU0686'0.4 MI SW FROM PALMYRA.

JU0686'0.2 MILE SOUTHEAST ALONG PULIC STREET FROM THE JUNCTION OF NORTH
JU0686'BROAD STREET AT PALMYRA, THENCE 0.25 MILE SOUTHWEST ALONG RIVER
JU0686'ROAD, ON TOP OF THE SOUTHEAST END OF THE SOUTHWEST ABUTMENT OF
JU0686'BRIDGE OVER PENNSAUKEN CREEK AT THE BURLINGTON AND CAMDEN COUNTY
JU0686'LINE, 7 FEET SOUTHEAST OF THE SOUTHEAST CURB OF RIVER ROAD, 1.7
JU0686'FEET EAST OF THE SOUTHEAST CORNER OF THE BRIDGE AND ABOUT 2 FEET
JU0686'ABOVE THE LEVEL OF THE ROAD.

JU0686

JU0686 STATION RECOVERY (1994)

JU0686

JU0686'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1994 (FAC)

JU0686'THE STATION IS LOCATED IN PENNSAUKEN TOWNSHIP ON TOP OF THE SOUTHEAST
JU0686'END OF THE SOUTHWEST ABUTMENT OF THE BRIDGE CARRYING RIVER ROAD,
JU0686'COUNTY ROAD 543, OVER THE PENNSAUKEN CREEK. TO REACH THE STATION FROM
JU0686'THE INTERSECTION OF PUBLIC STREET AND NORTH RIVER ROAD IN PALMYRA IN
JU0686'BURLINGTON COUNTY, GO 0.45 MI (0.72 KM) SOUTHEAST THEN SOUTHWEST ON
JU0686'RIVER ROAD TO THE BRIDGE OVER THE PENNSAUKEN CREEK AND THE STATION ON
JU0686'THE RIGHT. THE STATION IS 7.0 FT (2.1 M) SOUTHEAST FROM THE
JU0686'SOUTHEAST CURB OF RIVER ROAD, 1.7 FT (0.5 M) EAST FROM THE SOUTHEAST
JU0686'CORNER OF THE SOUTHWEST ABUTMENT AND ABOUT 2.0 FT (0.6 M) ABOVE THE
JU0686'LEVEL OF THE ROAD.

JU0686

JU0686 STATION RECOVERY (1995)

JU0686

JU0686'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1995 (FAC)

JU0686'RECOVERED AS DESCRIBED.

JU0686

JU0686 STATION RECOVERY (1995)

JU0686

JU0686'RECOVERY NOTE BY TWT CONS ENG 1995 (WPD)

JU0686'RECOVERED AS DESCRIBED.

JU0686

JU0686 STATION RECOVERY (1996)

JU0686

JU0686'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1996 (FAC)

JU0686'RECOVERED AS DESCRIBED.

JU0686

JU0686 STATION RECOVERY (1999)

JU0686

JU0686'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1999 (FAC)

JU0686'RECOVERED AS DESCRIBED.

JU0686

JU0686 STATION RECOVERY (2000)
 JU0686
 JU0686'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 2000 (FAC)
 JU0686'RECOVERED AS DESCRIBED.
 JU0686
 JU0686 STATION RECOVERY (2000)
 JU0686
 JU0686'RECOVERY NOTE BY TWT CONS ENG 2000 (BSJ)
 JU0686'RECOVERED IN GOOD CONDITION.
 JU0686
 JU0686 STATION RECOVERY (2004)
 JU0686
 JU0686'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2004 (RG)
 JU0686'RECOVERED IN GOOD CONDITION.
 JU0686
 JU0686 STATION RECOVERY (2007)
 JU0686
 JU0686'RECOVERY NOTE BY T3 GLOBAL STRATEGIES 2007 (BAW)
 JU0686'RECOVERED AS DESCRIBED.
 JU0686
 JU0686 STATION RECOVERY (2007)
 JU0686
 JU0686'RECOVERY NOTE BY URBAN ENGINEERS INC 2007 (WBF)
 JU0686'RECOVERED IN GOOD CONDITION.
 JU0686
 JU0686 STATION RECOVERY (2010)
 JU0686
 JU0686'RECOVERY NOTE BY GEOCACHING 2010 (GAH)
 JU0686'MARK AND SETTING IN REASONABLY FAIR CONDITION.
 JU0686'SATELLITE VIEWS SHOULD BE REASONABLY GOOD IF YOU USE A TRIPOD TO GET
 JU0686'ANTENNA ABOVE ADJACENT BRIDGE COMPONENT.
 JU0686'

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

KV1851 *****

KV1851 DESIGNATION - P 1

KV1851 PID - KV1851

KV1851 STATE/COUNTY- PA/MONTGOMERY

KV1851 COUNTRY - US

KV1851 USGS QUAD - VALLEY FORGE (2019)

KV1851

KV1851 *CURRENT SURVEY CONTROL

KV1851

KV1851* NAD 83(2011) POSITION- 40 06 53.25274(N) 075 22 41.31158(W) ADJUSTED

KV1851* NAD 83(2011) ELLIP HT- -10.010 (meters) (02/06/18) ADJUSTED

KV1851* NAD 83(2011) EPOCH - 2010.00

KV1851* NAVD 88 ORTHO HEIGHT - 23.611 (meters) 77.46 (feet) ADJUSTED

KV1851

KV1851 GEOID HEIGHT - -33.703 (meters) GEOID18

KV1851 NAD 83(2011) X - 1,233,035.202 (meters) COMP

KV1851 NAD 83(2011) Y - -4,726,302.644 (meters) COMP

KV1851 NAD 83(2011) Z - 4,087,734.958 (meters) COMP

KV1851 LAPLACE CORR - 2.74 (seconds) DEFLEC18

KV1851 DYNAMIC HEIGHT - 23.600 (meters) 77.43 (feet) COMP

KV1851 MODELED GRAVITY - 980,148.6 (mgal) NAVD 88

KV1851
KV1851 VERT ORDER - FIRST CLASS I
KV1851
KV1851 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
KV1851 Standards:
KV1851 FGDC (95% conf, cm) Standard deviation (cm) CorrNE
KV1851 Horiz Ellip SD_N SD_E SD_h (unitless)
KV1851 -----
KV1851 NETWORK 1.66 2.12 0.79 0.49 1.08 -0.02248653
KV1851 -----
KV1851 [Click here for local accuracies and other accuracy information.](#)
KV1851
KV1851
KV1851.The horizontal coordinates were established by GPS observations
KV1851.and adjusted by the National Geodetic Survey in June 2012.
KV1851
KV1851.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
KV1851.been affixed to the stable North American tectonic plate. See
KV1851.NA2011 for more information.
KV1851
KV1851.The horizontal coordinates are valid at the epoch date displayed above
KV1851.which is a decimal equivalence of Year/Month/Day.
KV1851
KV1851.The orthometric height was determined by differential leveling and
KV1851.adjusted by the NATIONAL GEODETIC SURVEY
KV1851.in June 1991.
KV1851
KV1851.Significant digits in the geoid height do not necessarily reflect accuracy.
KV1851.GEOID18 height accuracy estimate available [here](#).
KV1851
KV1851.[Click photographs - Photos may exist for this station.](#)
KV1851
KV1851.The X, Y, and Z were computed from the position and the ellipsoidal ht.
KV1851
KV1851.The Laplace correction was computed from DEFLEC18 derived deflections.
KV1851
KV1851.The ellipsoidal height was determined by GPS observations
KV1851.and is referenced to NAD 83.
KV1851
KV1851.The dynamic height is computed by dividing the NAVD 88
KV1851.geopotential number by the normal gravity value computed on the
KV1851.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KV1851.degrees latitude (g = 980.6199 gals.).
KV1851
KV1851.The modeled gravity was interpolated from observed gravity values.
KV1851
KV1851. The following values were computed from the NAD 83(2011) position.
KV1851
KV1851;
KV1851;SPC PA S - 89,484.102 802,173.483 MT 0.99997659 +1 32 19.8
KV1851;SPC PA S - 293,582.42 2,631,797.50 sFT 0.99997659 +1 32 19.8
KV1851;UTM 18 - 4,440,566.697 467,775.979 MT 0.99961278 -0 14 37.1
KV1851
KV1851!
- Elev Factor x Scale Factor = Combined Factor

KV1851!SPC PA S - 1.00000157 x 0.99997659 = 0.99997816

KV1851!UTM 18 - 1.00000157 x 0.99961278 = 0.99961435

KV1851

KV1851_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TVK6777540566(NAD 83)

KV1851

KV1851 SUPERSEDED SURVEY CONTROL

KV1851

KV1851 ELLIP H (06/27/12) -9.436 (m) GP(2010.00)

KV1851 NAD 83(2007)- 40 06 53.25297(N) 075 22 41.31196(W) AD(2002.00) 0

KV1851 ELLIP H (02/10/07) -9.516 (m) GP(2002.00)

KV1851 ELLIP H (08/10/01) -9.518 (m) GP() 4 2

KV1851 NAD 83(1996)- 40 06 53.25128(N) 075 22 41.31162(W) AD() 1

KV1851 ELLIP H (05/11/01) -9.537 (m) GP() 4 2

KV1851 NAD 83(1996)- 40 06 53.25131(N) 075 22 41.31165(W) AD() 1

KV1851 ELLIP H (10/27/00) -9.578 (m) GP() 4 2

KV1851 NAVD 88 (02/06/18) 23.7 (m) GEOID12 model used GPS OBS

KV1851 NAVD 88 (05/11/01) 24.2 (m) UNKNOWN model used GPS OBS

KV1851 NAVD 88 23.61 (m) 77.5 (f) LEVELING 3

KV1851 NGVD 29 (11/26/84) 23.917 (m) 78.47 (f) ADJUSTED 1 1

KV1851

KV1851.Superseded values are not recommended for survey control.

KV1851

KV1851.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

KV1851.See file dsdata.pdf to determine how the superseded data were derived.

KV1851

KV1851_MARKER: DB = BENCH MARK DISK

KV1851_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT

KV1851_STAMPING: P 1 1929 78.510

KV1851_MARK LOGO: CGS

KV1851_PROJECTION: FLUSH

KV1851_MAGNETIC: N = NO MAGNETIC MATERIAL

KV1851_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

KV1851+STABILITY: SURFACE MOTION

KV1851_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

KV1851+SATELLITE: SATELLITE OBSERVATIONS - February 09, 2015

KV1851

KV1851 HISTORY - Date Condition Report By

KV1851 HISTORY - 1929 MONUMENTED CGS

KV1851 HISTORY - 1966 GOOD CGS

KV1851 HISTORY - 19980608 GOOD GPSSER

KV1851 HISTORY - 20010618 GOOD AASCO

KV1851 HISTORY - 20050211 GOOD ECOAST

KV1851 HISTORY - 20060522 GOOD PADT

KV1851 HISTORY - 20090330 GOOD NAVNEW

KV1851 HISTORY - 20150209 GOOD CDICOR

KV1851

KV1851 STATION DESCRIPTION

KV1851

KV1851'DESCRIBED BY COAST AND GEODETIC SURVEY 1966

KV1851'AT ABRAMS.

KV1851'AT ABRAMS, ON THE READING COMPANY RAILROAD, ON THE NORTH SIDE OF

KV1851'THE YARD OFFICE BUILDING, 5 POLES EAST OF FRACTIONAL MILEPOST

KV1851'19/10, 21 FEET SOUTH OF THE SOUTH RAIL OF THE SOUTH SET OF MAIN

KV1851'LINE TRACKS, 144 FEET EAST OF THE MORE EASTERLY OF THE TWO SOUTH

KV1851'STEEL LEGS OF A SIGNAL GANTRY, 51 FEET EAST OF THE WEST END AND
KV1851'10 FEET NORTH OF THE NORTH FACE OF THE YARD OFFICE BUILDING, 0.6
KV1851'FOOT NORTH OF A METAL WITNESS POST, ABOUT LEVEL WITH THE TRACK,
KV1851'AND SET IN THE TOP OF A CONCRETE POST ABOUT LEVEL WITH THE GROUND.

KV1851

KV1851 STATION RECOVERY (1998)

KV1851

KV1851'RECOVERY NOTE BY GPS SERVICES INCORPORATED 1998 (DD)

KV1851'RECOVERED AS DESCRIBED.

KV1851

KV1851 STATION RECOVERY (2001)

KV1851

KV1851'RECOVERY NOTE BY ATLANTIS AERIAL SURVEY COMPANY 2001 (CAS)

KV1851'RECOVERED IN GOOD CONDITION.

KV1851

KV1851 STATION RECOVERY (2005)

KV1851

KV1851'RECOVERY NOTE BY EAST COAST ENGINEERING 2005 (JFP)

KV1851'PICTURES AVAILABLE JFP2-AT-ECEINC.NET

KV1851

KV1851 STATION RECOVERY (2006)

KV1851

KV1851'RECOVERY NOTE BY PA DEPT OF TRANSP 2006 (REF)

KV1851'RECOVERED IN GOOD CONDITION.

KV1851

KV1851 STATION RECOVERY (2009)

KV1851

KV1851'RECOVERY NOTE BY NAVE NEWELL INCORPORATED 2009 (DFJ)

KV1851'RECOVERED IN GOOD CONDITION.

KV1851

KV1851 STATION RECOVERY (2015)

KV1851

KV1851'RECOVERY NOTE BY CDI CORPORATION 2015 (SL)

KV1851'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

JU0786 *****

JU0786 DESIGNATION - PRINTZ

JU0786 PID - JU0786

JU0786 STATE/COUNTY- DE/NEW CASTLE

JU0786 COUNTRY - US

JU0786 USGS QUAD - MARCUS HOOK (2019)

JU0786

JU0786 *CURRENT SURVEY CONTROL

JU0786

JU0786* NAD 83(2011) POSITION- 39 47 45.21714(N) 075 27 27.67300(W) ADJUSTED

JU0786* NAD 83(2011) ELLIP HT- -27.644 (meters) (06/27/12) ADJUSTED

JU0786* NAD 83(2011) EPOCH - 2010.00

JU0786* NAVD 88 ORTHO HEIGHT - 5.321 (meters) 17.46 (feet) ADJUSTED

JU0786

JU0786 GEOID HEIGHT - -32.948 (meters) GEOID18

JU0786 NAD 83(2011) X - 1,232,178.632 (meters) COMP

JU0786 NAD 83(2011) Y - -4,750,007.276 (meters) COMP

JU0786 NAD 83(2011) Z - 4,060,581.507 (meters) COMP

JU0786 LAPLACE CORR - -2.73 (seconds) DEFLEC18

JU0786 DYNAMIC HEIGHT - 5.319 (meters) 17.45 (feet) COMP
JU0786 MODELED GRAVITY - 980,180.1 (mgal) NAVD 88

JU0786
JU0786 VERT ORDER - FIRST CLASS II

JU0786 Network accuracy estimates per FGDC Geospatial Positioning Accuracy
JU0786 Standards:

FGDC (95% conf, cm)	Standard deviation (cm)			CorrNE
Horiz Ellip	SD_N	SD_E	SD_h	(unitless)

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NETWORK	0.46	0.86	0.21 0.16 0.44	-0.02929032
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JU0786 Click here for local accuracies and other accuracy information.

JU0786
JU0786
JU0786.The horizontal coordinates were established by GPS observations
JU0786.and adjusted by the National Geodetic Survey in June 2012.

JU0786
JU0786.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
JU0786.been affixed to the stable North American tectonic plate. See
JU0786.NA2011 for more information.

JU0786
JU0786.The horizontal coordinates are valid at the epoch date displayed above
JU0786.which is a decimal equivalence of Year/Month/Day.

JU0786
JU0786.The orthometric height was determined by differential leveling and
JU0786.adjusted by the NATIONAL GEODETIC SURVEY
JU0786.in June 1991.

JU0786
JU0786.Significant digits in the geoid height do not necessarily reflect accuracy.
JU0786.GEOID18 height accuracy estimate available here.

JU0786
JU0786.Click photographs - Photos may exist for this station.

JU0786
JU0786.The X, Y, and Z were computed from the position and the ellipsoidal ht.

JU0786
JU0786.The Laplace correction was computed from DEFLEC18 derived deflections.

JU0786
JU0786.The ellipsoidal height was determined by GPS observations
JU0786.and is referenced to NAD 83.

JU0786
JU0786.The dynamic height is computed by dividing the NAVD 88
JU0786.geopotential number by the normal gravity value computed on the
JU0786.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
JU0786.degrees latitude (g = 980.6199 gals.).

JU0786
JU0786.The modeled gravity was interpolated from observed gravity values.

JU0786
JU0786. The following values were computed from the NAD 83(2011) position.

JU0786;	North	East	Units	Scale	Factor	Converg.
JU0786;SPC DE	- 199,368.346	196,486.731	MT	0.99999515	-0 01	34.5
JU0786;SPC DE	- 654,094.32	644,640.22	sFT	0.99999515	-0 01	34.5
JU0786;SPC NJ	- 107,292.943	67,983.952	MT	0.99998279	-0 36	46.8

JU0786;SPC NJ - 352,010.26 223,044.02 sFT 0.99998279 -0 36 46.8
 JU0786;SPC PA S - 53,908.517 796,313.754 MT 1.00002433 +1 29 14.1
 JU0786;SPC PA S - 176,864.86 2,612,572.71 sFT 1.00002433 +1 29 14.1
 JU0786;UTM 18 - 4,405,203.983 460,815.833 MT 0.99961890 -0 17 34.6

JU0786
 JU0786! - Elev Factor x Scale Factor = Combined Factor
 JU0786!SPC DE - 1.00000434 x 0.99999515 = 0.99999949
 JU0786!SPC NJ - 1.00000434 x 0.99998279 = 0.99998713
 JU0786!SPC PA S - 1.00000434 x 1.00002433 = 1.00002867
 JU0786!UTM 18 - 1.00000434 x 0.99961890 = 0.99962324

JU0786
 JU0786: Primary Azimuth Mark Grid Az
 JU0786:SPC DE - WILMINGTON BROOK VIEW WATER TK 350 34 51.6
 JU0786:SPC NJ - WILMINGTON BROOK VIEW WATER TK 351 10 03.9
 JU0786:SPC PA S - WILMINGTON BROOK VIEW WATER TK 349 04 03.0
 JU0786:UTM 18 - WILMINGTON BROOK VIEW WATER TK 350 50 51.7

JU0786
 JU0786_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVK6081505203(NAD 83)

JU0786

JU0786	PID	Reference Object	Distance	Geod. Az
JU0786			dddmss.s	
JU0786	JU0787	PRINTZ RM 1	9.922 METERS	12602
JU0786	JU0788	PRINTZ RM 2	10.256 METERS	23039
JU0786	JU3642	WILMINGTON VILLA MONTARAY TANK	APPROX. 4.6 KM	2363934.6
JU0786	JU3313	WILMINGTON HOLLY OAK TANK	APPROX. 1.3 KM	2562614.4
JU0786	JU3314	WILMINGTON ASHBOURNE HILLS TK	APPROX. 2.2 KM	3325707.8
JU0786	JU3338	WILMINGTON BROOK VIEW WATER TK	APPROX. 0.8 KM	3503317.1

JU0786
 JU0786 SUPERSEDED SURVEY CONTROL
 JU0786

JU0786 NAD 83(2007)- 39 47 45.21746(N) 075 27 27.67381(W) AD(2002.00) 0
 JU0786 ELLIP H (02/10/07) -27.628 (m) GP(2002.00)
 JU0786 ELLIP H (09/25/02) -27.600 (m) GP() 4 1
 JU0786 NAD 83(1991)- 39 47 45.21737(N) 075 27 27.67413(W) AD() 1
 JU0786 ELLIP H (03/31/00) -27.603 (m) GP() 3 1
 JU0786 NAD 83(1991)- 39 47 45.21011(N) 075 27 27.67626(W) AD() 2
 JU0786 NAD 83(1986)- 39 47 45.20949(N) 075 27 27.67890(W) AD() 2
 JU0786 NAD 27 - 39 47 44.80080(N) 075 27 28.97560(W) AD() 2
 JU0786 NAVD 88 5.32 (m) 17.5 (f) LEVELING 3
 JU0786 NGVD 29 (01/10/92) 5.591 (m) 18.34 (f) ADJUSTED 1 2
 JU0786 NGVD 29 (??/??/87) 5.596 (m) 18.36 (f) SUPERSEDED 1 2
 JU0786 NGVD 29 5.66 (m) 18.6 (f) LEVELING 3

JU0786
 JU0786.Superseded values are not recommended for survey control.
 JU0786
 JU0786.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
 JU0786.See file dsdata.pdf to determine how the superseded data were derived.

JU0786
 JU0786_MARKER: DS = TRIANGULATION STATION DISK
 JU0786_SETTING: 7 = SET IN TOP OF CONCRETE MONUMENT
 JU0786_STAMPING: PRINTZ 1959
 JU0786_MARK LOGO: CGS

JU0786_PROJECTION: FLUSH

JU0786_MAGNETIC: N = NO MAGNETIC MATERIAL

JU0786_STABILITY: C = MAY HOLD, BUT OF TYPE COMMONLY SUBJECT TO

JU0786+STABILITY: SURFACE MOTION

JU0786_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

JU0786+SATELLITE: SATELLITE OBSERVATIONS - February 09, 2015

JU0786

JU0786 HISTORY	- Date	Condition	Report By
JU0786 HISTORY	- 1959	MONUMENTED	CGS
JU0786 HISTORY	- 1965	GOOD	CGS
JU0786 HISTORY	- 1965	GOOD	CGS
JU0786 HISTORY	- 1979	GOOD	NGS
JU0786 HISTORY	- 1979	GOOD	UDE
JU0786 HISTORY	- 1980	GOOD	LOCENG
JU0786 HISTORY	- 19910417	GOOD	USPSQD
JU0786 HISTORY	- 19990301	GOOD	PADT
JU0786 HISTORY	- 19990621	GOOD	NJGS
JU0786 HISTORY	- 20020429	GOOD	JCLS
JU0786 HISTORY	- 20030303	GOOD	NGS
JU0786 HISTORY	- 20060305	GOOD	USPSQD
JU0786 HISTORY	- 20070522	GOOD	PADT
JU0786 HISTORY	- 20090205	GOOD	INDIV
JU0786 HISTORY	- 20091112	GOOD	JCLS
JU0786 HISTORY	- 20100901	GOOD	JCLS
JU0786 HISTORY	- 20120306	GOOD	JMTMD
JU0786 HISTORY	- 20130711	GOOD	DELCOS
JU0786 HISTORY	- 20140618	GOOD	JCLS
JU0786 HISTORY	- 20150209	GOOD	CDICOR

JU0786

JU0786 STATION DESCRIPTION

JU0786

JU0786'DESCRIBED BY COAST AND GEODETIC SURVEY 1959 (HRL)

JU0786'STATION IS LOCATED ABOUT 6 MILES NORTHEAST OF THE WILMINGTON

JU0786'POST OFFICE, AND ABOUT 0.1 MILE NORTHWEST OF THE DELAWARE

JU0786'RIVER AND 50 YARDS SOUTH-SOUTHWEST OF A ESSO SERVICE

JU0786'STATION. IT IS 29-1/2 FEET NORTH OF A MANHOLE, 25 FEET

JU0786'SOUTH-SOUTHWEST OF A TELEPHONE SIGN, 48 FEET EAST OF THE

JU0786'CENTERLINE OF U.S. HIGHWAY NO. 13 ALTERNATE AND 53 FEET

JU0786'NORTH-NORTHWEST OF A NARROW STREET. THE MARK IS A

JU0786'STANDARD TRIANGULATION DISK, SET IN A 10 BY 10 INCH CONCRETE

JU0786'MONUMENT FLUSH WITH THE GROUND, THE DISK IS STAMPED PRINTZ

JU0786'1959.

JU0786'

JU0786'TO REACH FROM THE JUNCTION OF U.S. HIGHWAY NO. 13 AND

JU0786'U.S. HIGHWAY NO. 13 ALTERNATE, NORTHEAST OF WILMINGTON, GO

JU0786'SOUTHERLY ON U.S. HIGHWAY 13 ALTERNATE FOR 0.35 MILE, STATION

JU0786'IS ON EAST (LEFT) SIDE OF HIGHWAY AS DESCRIBED.

JU0786'

JU0786'REFERENCE MARK NO. 1 IS A STANDARD REFERENCE MARK DISK SET

JU0786'IN A 10 BY 10 INCH CONCRETE MONUMENT FLUSH WITH THE GROUND, THE

JU0786'DISK IS STAMPED PRINTZ NO 1 1959. IT IS 22 FEET

JU0786'NORTH-NORTHWEST OF CENTERLINE OF A NARROW STREET, 9 FEET

JU0786'SOUTH-SOUTHEAST OF CENTER OF A SMALL DITCH, 29 FEET

JU0786'EAST-SOUTHEAST OF MANHOLE AND 45-1/2 FEET SOUTH OF TELEPHONE

JU0786'SIGN.

JU0786'

JU0786'REFERENCE MARK NO. 2 IS A STANDARD REFERENCE MARK DISK SET
JU0786'IN A 10 BY 10 INCH CONCRETE MONUMENT FLUSH WITH THE GROUND,
JU0786'THE DISK IS STAMPED PRINTZ NO 2 1959. IT IS 28 FEET
JU0786'EAST-SOUTHEAST OF CENTERLINE OF U.S. HIGHWAY NO. 13 ALTERNATE, 24
JU0786'FEET NORTHWEST OF MANHOLE AND 53 FEET NORTH-NORTHWEST
JU0786'OF CENTER OF A NARROW STREET.

JU0786'

JU0786'HEIGHT OF LIGHT ABOVE STATION MARK 27 METERS.

JU0786

JU0786 STATION RECOVERY (1965)

JU0786

JU0786'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1965 (JCB)
JU0786'THE STATION AND REFERENCE MARKS 1 AND 2 WERE RECOVERED AND
JU0786'FOUND IN GOOD CONDITION.

JU0786'

JU0786'THE ORIGINAL DESCRIPTION IS RATHER VAGUE AND NOT TOO
JU0786'ACCURATE. A COMPLETE NEW DESCRIPTION IS GIVEN BELOW.

JU0786'

JU0786'THE STATION IS LOCATED ABOUT 6 MILES NORTHEAST OF THE
JU0786'WILMINGTON POST OFFICE, 0.1 MILE NORTHWEST OF THE DELAWARE
JU0786'RIVER, 50 YARDS SOUTH-SOUTHWEST OF AN ESSO SERVICE STATION
JU0786'AND WHERE U.S. HIGHWAY 13 A MAKES A RELATIVELY SHARP CURVE
JU0786'TO THE LEFT, IN A NORTHERLY DIRECTION. IT IS 47 FEET
JU0786'NORTHWEST OF THE APPROXIMATE CENTERLINE OF A MACADAM STREET, 46
JU0786'FEET SOUTH-SOUTHWEST OF AN ESSO SIGN POST, 29 FEET
JU0786'NORTH-NORTHEAST OF A GRATED STORM DRAIN COVER, 32 FEET
JU0786'SOUTH-SOUTHEAST OF A MANHOLE COVER AND 48 FEET EAST OF THE
JU0786'CENTERLINE OF THE NORTHEAST BOUND TRAFFIC LANE. THE
JU0786'MONUMENT IS FLUSH WITH THE GROUND AND THE DISK IS STAMPED
JU0786'PRINTZ 1959.

JU0786'

JU0786'REFERENCE MARK 1 IS 32.55 FEET SOUTHEAST OF THE STATION,
JU0786'28 FEET EAST-NORTHEAST OF A GRATED STORM COVER, 15-1/2 FEET
JU0786'NORTH-NORTHWEST OF THE APPROXIMATE CENTERLINE OF A MACADAM
JU0786'STREET, 28 FEET EAST-NORTHEAST OF THE GRATED STORM DRAIN COVER
JU0786'AND 10 FEET SOUTH-SOUTHEAST OF A DRAINAGE DITCH. THE MONUMENT
JU0786'IS FLUSH AND THE DISK IS STAMPED PRINTZ NO 1 1959.

JU0786'

JU0786'REFERENCE MARK NO. 2 IS 33.65 FEET SOUTHWEST OF THE STATION, 48
JU0786'FEET SOUTH-SOUTHWEST OF A ROUND MANHOLE COVER, 27 FEET
JU0786'EAST-SOUTHEAST OF THE CENTERLINE OF THE NORTHEAST BOUND LANE OF
JU0786'U.S. HIGHWAY 13 A AND 24 FEET WEST-NORTHWEST OF THE GRATED STORM
JU0786'DRAIN COVER. THE MONUMENT IS FLUSH WITH THE GROUND AND THE DISK
JU0786'IS STAMPED PRINTZ NO 2 1959.

JU0786'

JU0786'TO REACH THE STATION FROM THE JUNCTION OF U.S. HIGHWAYS 13 AND 13
JU0786'ALTERNATE, NORTHEAST OF WILMINGTON (THE SOUTHWEST ONE OF TWO SUCH
JU0786'JUNCTIONS), GO SOUTH ON HIGHWAY 13 ALTERNATE FOR 0.35 MILE TO A
JU0786'ESSO SERVICE STATION ON THE LEFT AND THE STATION ON THE LEFT
JU0786'AS DESCRIBED.

JU0786

JU0786 STATION RECOVERY (1965)

JU0786

JU0786'RECOVERY NOTE BY COAST AND GEODETIC SURVEY 1965

JU0786'4.1 MI NE FROM WILMINGTON.

JU0786'4.1 MILES NORTHEAST ALONG GOVERNOR PRINTZ BLVD. (U.S. HIGHWAY 13 A)

JU0786'FROM OVERPASS OF EDMOOR ROAD OVER HIGHWAY, ABOUT 0.35 MILE

JU0786'SOUTH ALONG U.S. HIGHWAY 13 A FROM THE JUNCTION OF U.S. HIGHWAY

JU0786'13 (PHILADELPHIA PIKE), AT THE OUTSIDE OF A CURVE IN HIGHWAY

JU0786'13 A, 45 FEET EAST-SOUTHEAST OF CENTERLINE OF NORTH BOUND LANE

JU0786'OF HIGHWAY, IN A GRASSY TRIANGLE BETWEEN HIGHWAY 13 A, A

JU0786'BLACK TOP ROAD LEADING EAST-NORTHEAST AND A DRIVE TO ESSO

JU0786'SERVICE CENTER, 52 1/2 FEET NORTH-NORTHWEST OF CENTERLINE OF

JU0786'BLACK TOP ROAD, 27 1/2 FEET NORTH OF NORTH CORNER OF A 1 1/2

JU0786'BY 3-FOOT IRON GRILL COVERED MANHOLE, 143 1/2 FEET SOUTH-SOUTHWEST

JU0786'OF WEST CORNER OF ESSO STATION, 33.6 FEET NORTHEAST OF RM NO. 2,

JU0786'32.5 FEET NORTHWEST OF RM NO. 1, ABOUT LEVEL WITH ROADS AND SET

JU0786'IN THE TOP OF A CONCRETE POST PROJECTING 1 INCH.

JU0786

JU0786 STATION RECOVERY (1979)

JU0786

JU0786'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 1979

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786 STATION RECOVERY (1979)

JU0786

JU0786'RECOVERY NOTE BY UNIVERSITY OF DELAWARE 1979

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786 STATION RECOVERY (1980)

JU0786

JU0786'RECOVERY NOTE BY LOCAL ENGINEER (INDIVIDUAL OR FIRM) 1980 (WW)

JU0786'RECOVERED BY VANDEMARK LYNCH INC.

JU0786'

JU0786'PRINTZ-1959 GOOD

JU0786'

JU0786'PRINTZ-NO. 1-1959 GOOD

JU0786'

JU0786'PRINTZ-NO. 2-1959 GOOD

JU0786'

JU0786'STATION AND REFERENCE MARKS ADEQUATLY DESCRIBED.

JU0786

JU0786 STATION RECOVERY (1991)

JU0786

JU0786'RECOVERY NOTE BY US POWER SQUADRON 1991 (WHG)

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786 STATION RECOVERY (1999)

JU0786

JU0786'RECOVERY NOTE BY PA DEPT OF TRANSP 1999

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786 STATION RECOVERY (1999)

JU0786

JU0786'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1999 (JVS)

JU0786'RECOVERED AS DESCRIBED WITH A NEW DESCRIPTION TO FOLLOW. THE STATION

JU0786'IS LOCATED IN CLAYMONT ABOUT 6 MI (9.7 KM) NORTHEAST FROM THE CITY OF
JU0786'WILMINGTON. TO REACH THE STATION FROM THE INTERSECTION OF INTERSTATE
JU0786'HIGHWAY 95 AND U.S. HIGHWAY 13, THE PHILADELPHIA PIKE, GO SOUTHWEST
JU0786'ON U.S. HIGHWAY 13 FOR 0.5 MI (0.8 KM) TO THE INTERSECTION WITH U.S.
JU0786'HIGHWAY 13 ALTERNATE ON THE LEFT. TURN LEFT AND GO SOUTHEAST ON U.S.
JU0786'HIGHWAY 13 ALTERNATE FOR 0.35 MI (0.56 KM) TO THE STATION ON THE LEFT,
JU0786'ON THE OUTSIDE OF A SHARP CURVE BEARING TO THE RIGHT AND SET FLUSH IN
JU0786'THE LAWN AT THE INTERSECTION OF GOVERNOR PRINTZ BOULEVARD AND GOVERNOR
JU0786'PRINTZ ENTENSION. THE STATION IS 9.7 M (31.8 FT) SOUTH SOUTHEAST FROM
JU0786'A SANITARY SEWER MANHOLE, 15.6 M (51.2 FT) NORTH NORTHEAST FROM THE
JU0786'END POST OF A GUIDE RAIL AT THE SOUTHWEST NOSE OF THE LAWN, 18.7 M
JU0786'(61.4 FT) NORTH NORTHEAST FROM A STOP SIGN AT THE JUNCTION OF GOVERNOR
JU0786'PRINTZ BOULEVARD AND GOVERNOR PRINTZ EXTENSION, 21.0 M (68.9 FT)
JU0786'NORTHEAST FROM THE NOSE OF THE GUIDERAIL, 7.0 M (23.0 FT) SOUTHEAST
JU0786'FROM THE SOUTHEAST FACE OF THE GUIDERAIL, 16.0 M (52.5 FT) SOUTH FROM
JU0786'THE MOST NORTHERN POST OF THE GUIDERAIL AND 15.5 M (50.9 FT) NORTHWEST
JU0786'FROM THE CENTERLINE OF GOVERNOR PRINTZ EXTENSION.

JU0786

STATION RECOVERY (2002)

JU0786

JU0786

JU0786'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2002 (MRY)

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786

STATION RECOVERY (2003)

JU0786

JU0786'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2003 (VCP)

JU0786'RECOVERED AS DESCRIBED.

JU0786'

JU0786

JU0786

STATION RECOVERY (2006)

JU0786

JU0786'RECOVERY NOTE BY US POWER SQUADRON 2006 (SAL)

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786

STATION RECOVERY (2007)

JU0786

JU0786'RECOVERY NOTE BY PA DEPT OF TRANSP 2007 (MBJ)

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786

STATION RECOVERY (2009)

JU0786

JU0786'RECOVERY NOTE BY INDIVIDUAL CONTRIBUTORS 2009 (JFS)

JU0786'DESCRIPTION IS ADEQUATE

JU0786

JU0786

STATION RECOVERY (2009)

JU0786

JU0786'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2009

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786

STATION RECOVERY (2010)

JU0786

JU0786'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2010

JU0786'RECOVERED IN GOOD CONDITION.

JU0786

JU0786 STATION RECOVERY (2012)
 JU0786
 JU0786'RECOVERY NOTE BY JMT ENGINEERING 2012 (CJH)
 JU0786'RECOVERED IN GOOD CONDITION.
 JU0786
 JU0786 STATION RECOVERY (2013)
 JU0786
 JU0786'RECOVERY NOTE BY DELAWARE COASTAL PROGRAM 2013
 JU0786'RECOVERED IN GOOD CONDITION.
 JU0786
 JU0786 STATION RECOVERY (2014)
 JU0786
 JU0786'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2014 (MRY)
 JU0786'RECOVERED IN GOOD CONDITION.
 JU0786
 JU0786 STATION RECOVERY (2015)
 JU0786
 JU0786'RECOVERY NOTE BY CDI CORPORATION 2015 (SL)
 JU0786'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

KV1876 *****

KV1876 DESIGNATION - Q 106

KV1876 PID - KV1876

KV1876 STATE/COUNTY- PA/MONTGOMERY

KV1876 COUNTRY - US

KV1876 USGS QUAD - GERMANTOWN (2019)

KV1876

KV1876 *CURRENT SURVEY CONTROL

KV1876

KV1876* NAD 83(2011) POSITION- 40 07 19.62194(N) 075 13 02.24541(W) ADJUSTED

KV1876* NAD 83(2011) ELLIP HT- 23.073 (meters) (06/27/12) ADJUSTED

KV1876* NAD 83(2011) EPOCH - 2010.00

KV1876* NAVD 88 ORTHO HEIGHT - 56.583 (meters) 185.64 (feet) ADJUSTED

KV1876

KV1876 GEOID HEIGHT - -33.504 (meters) GEOID18

KV1876 NAD 83(2011) X - 1,246,171.643 (meters) COMP

KV1876 NAD 83(2011) Y - -4,722,340.139 (meters) COMP

KV1876 NAD 83(2011) Z - 4,088,378.234 (meters) COMP

KV1876 LAPLACE CORR - 2.73 (seconds) DEFLEC18

KV1876 DYNAMIC HEIGHT - 56.557 (meters) 185.55 (feet) COMP

KV1876 MODELED GRAVITY - 980,157.4 (mgal) NAVD 88

KV1876

KV1876 VERT ORDER - SECOND CLASS 0

KV1876

KV1876 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

KV1876 Standards:

KV1876 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

KV1876 Horiz Ellip SD_N SD_E SD_h (unitless)

KV1876 -----

KV1876 NETWORK 0.52 0.86 0.23 0.19 0.44 -0.04969506

KV1876 -----

KV1876 Click here for local accuracies and other accuracy information.

KV1876

KV1876

KV1876.The horizontal coordinates were established by GPS observations
KV1876.and adjusted by the National Geodetic Survey in June 2012.
KV1876
KV1876.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has
KV1876.been affixed to the stable North American tectonic plate. See
KV1876.NA2011 for more information.
KV1876
KV1876.The horizontal coordinates are valid at the epoch date displayed above
KV1876.which is a decimal equivalence of Year/Month/Day.
KV1876
KV1876.The orthometric height was determined by differential leveling and
KV1876.adjusted by the NATIONAL GEODETIC SURVEY
KV1876.in June 1991.
KV1876
KV1876.Significant digits in the geoid height do not necessarily reflect accuracy.
KV1876.GEOID18 height accuracy estimate available here.
KV1876
KV1876.Click photographs - Photos may exist for this station.
KV1876
KV1876.The X, Y, and Z were computed from the position and the ellipsoidal ht.
KV1876
KV1876.The Laplace correction was computed from DEFLEC18 derived deflections.
KV1876
KV1876.The ellipsoidal height was determined by GPS observations
KV1876.and is referenced to NAD 83.
KV1876
KV1876.The dynamic height is computed by dividing the NAVD 88
KV1876.geopotential number by the normal gravity value computed on the
KV1876.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
KV1876.degrees latitude ($g = 980.6199$ gals.).
KV1876
KV1876.The modeled gravity was interpolated from observed gravity values.
KV1876
KV1876. The following values were computed from the NAD 83(2011) position.
KV1876
KV1876; North East Units Scale Factor Converg.
KV1876;SPC PA S - 90,677.794 815,857.271 MT 0.99997585 +1 38 35.5
KV1876;SPC PA S - 297,498.73 2,676,691.73 sFT 0.99997585 +1 38 35.5
KV1876;UTM 18 - 4,441,333.802 481,485.233 MT 0.99960422 -0 08 24.1
KV1876
KV1876! - Elev Factor x Scale Factor = Combined Factor
KV1876!SPC PA S - 0.99999638 x 0.99997585 = 0.99997223
KV1876!UTM 18 - 0.99999638 x 0.99960422 = 0.99960060
KV1876
KV1876_U.S. NATIONAL GRID SPATIAL ADDRESS: 18TVK8148541333(NAD 83)
KV1876
KV1876 SUPERSEDED SURVEY CONTROL
KV1876
KV1876 NAD 83(2007)- 40 07 19.62224(N) 075 13 02.24616(W) AD(2002.00) 0
KV1876 ELLIP H (02/10/07) 23.086 (m) GP(2002.00)
KV1876 ELLIP H (08/10/01) 23.117 (m) GP() 4 2
KV1876 NAD 83(1996)- 40 07 19.62171(N) 075 13 02.24592(W) AD() 1
KV1876 NAD 83(1992)- 40 07 19.62143(N) 075 13 02.24589(W) AD() 1
KV1876 ELLIP H (06/28/94) 23.064 (m) GP() 4 1

KV1876 NAVD 88 (06/28/94) 56.6 (m) GEOID93 model used GPS OBS
KV1876 NGVD 29 (11/26/84) 56.877 (m) 186.60 (f) ADJUSTED 2 0

KV1876

KV1876.Superseded values are not recommended for survey control.

KV1876

KV1876.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.

KV1876.See file dsdata.pdf to determine how the superseded data were derived.

KV1876

KV1876_MARKER: DB = BENCH MARK DISK

KV1876_SETTING: 38 = SET IN THE ABUTMENT OR PIER OF A LARGE BRIDGE

KV1876_SP_SET: TOP OF CONCRETE HEADWALL

KV1876_STAMPING: Q 106 1935

KV1876_MARK LOGO: CGS

KV1876_MAGNETIC: N = NO MAGNETIC MATERIAL

KV1876_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL

KV1876_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR

KV1876+SATELLITE: SATELLITE OBSERVATIONS - May 07, 2019

KV1876

KV1876 HISTORY	- Date	Condition	Report By
KV1876 HISTORY	- 1935	MONUMENTED	CGS
KV1876 HISTORY	- 1936	GOOD	CGS
KV1876 HISTORY	- 1974	GOOD	PADH
KV1876 HISTORY	- 19930601	GOOD	ADRGs
KV1876 HISTORY	- 19980608	GOOD	CZOP
KV1876 HISTORY	- 20000501	GOOD	PADT
KV1876 HISTORY	- 20060301	GOOD	USPSQD
KV1876 HISTORY	- 20090913	GOOD	PROFLN
KV1876 HISTORY	- 20120414	GOOD	WOOLPT
KV1876 HISTORY	- 20170401	GOOD	TERRSV
KV1876 HISTORY	- 20190507	GOOD	TERRSV

KV1876

KV1876 STATION DESCRIPTION

KV1876

KV1876'DESCRIBED BY COAST AND GEODETIC SURVEY 1936

KV1876'5.8 MI E FROM NORRISTOWN.

KV1876'5.8 MILES EAST ALONG THE PENNSYLVANIA RAILROAD FREIGHT LINE FROM

KV1876'THE CROSSING OF AN ELECTRIC RAILROAD AT NORRISTOWN, MONTGOMERY

KV1876'COUNTY, AT AN UNDERPASS FOR U.S. HIGHWAY 309, AT BRIDGE 20.87

KV1876'ON THE FREIGHT LINE, AT THE SOUTH SIDE AND WEST END OF BRIDGE

KV1876'20.93, IN THE TOP OF A CONCRETE HEADWALL, AND 3 FEET SOUTH OF THE

KV1876'SOUTH RAIL. A STANDARD DISK, STAMPED Q 106 1935.

KV1876

KV1876 STATION RECOVERY (1974)

KV1876

KV1876'RECOVERY NOTE BY PA DEPT OF HIGHWAYS 1974

KV1876'RECOVERED IN GOOD CONDITION.

KV1876

KV1876 STATION RECOVERY (1993)

KV1876

KV1876'RECOVERY NOTE BY ADR GEODETIC SERVICES 1993

KV1876'RECOVERED IN GOOD CONDITION.

KV1876

KV1876 STATION RECOVERY (1998)

KV1876

KV1876'RECOVERY NOTE BY CZOP/SPECTER INC. 1998 (DD)

KV1876'RECOVERED AS DESCRIBED.

KV1876

KV1876 STATION RECOVERY (2000)

KV1876

KV1876'RECOVERY NOTE BY PA DEPT OF TRANSP 2000

KV1876'RECOVERED IN GOOD CONDITION.

KV1876

KV1876 STATION RECOVERY (2006)

KV1876

KV1876'RECOVERY NOTE BY US POWER SQUADRON 2006 (WA)

KV1876'RECOVERED AS DESCRIBED IN GOOD CONDITION

KV1876

KV1876 STATION RECOVERY (2009)

KV1876

KV1876'RECOVERY NOTE BY PROFESSIONAL LAND SURVEYOR 2009 (DSL)

KV1876'RECOVERED IN FAIR CONDITION. THE ELEVATION SEEMS STABLE BUT THE

KV1876'MATERIAL IN WHICH THE DISC IS EMBEDDED IS DETERIORATING. THE

KV1876'DESCRIPTION FOR THIS MONUMENT IS WRONG. PLEASE USE THE FOLLOWING

KV1876'DESCRIPTION TO LOCATE THIS MONUMENT MORE ACCURATELY. DESCRIBED BY

KV1876'DAVID LANDRECHT OF DAVELAND 3D SERVICES, LLC. 5.8 MI E FROM

KV1876'NORRISTOWN. 5.8 MILES EAST ALONG THE PENNSYLVANIA RAILROAD FREIGHT

KV1876'LINE FROM THE CROSSING OF AN ELECTRIC RAILROAD AT NORRISTOWN,

KV1876'MONTGOMERY COUNTY, AT A RAILWAY UNDERPASS FOR U.S. HIGHWAY 73

KV1876'(SKIPPACK PIKE), WITH THE INTERSECTION OF BETHLEHEM PIKE, AND CAMPHILL

KV1876'

KV1876'ROAD, ON THE RAILWAY FREIGHT LINE, SEVERAL FEET ABOVE THE ROAD WAY IN

KV1876'

KV1876'THE TOP OF THE SOUTHWEST CONCRETE HEADWALL OF A RAILWAY BRIDGE, AND 3

KV1876'

KV1876'FEET SOUTH OF THE SOUTH RAIL. A STANDARD DISK, STAMPED Q 106 1935.

KV1876

KV1876 STATION RECOVERY (2012)

KV1876

KV1876'RECOVERY NOTE BY WOOLPERT CONSULTANTS 2012 (BEM)

KV1876'RECOVERED AS DESCRIBED IN 2009.

KV1876

KV1876 STATION RECOVERY (2017)

KV1876

KV1876'RECOVERY NOTE BY TERRA SURV 2017 (JVH)

KV1876'RECOVERED AS DESCRIBED.

KV1876

KV1876 STATION RECOVERY (2019)

KV1876

KV1876'RECOVERY NOTE BY TERRA SURV 2019 (JVH)

KV1876'RECOVERED AS DESCRIBED.

1 National Geodetic Survey, Retrieval Date = APRIL 21, 2022

JU2216 *****

JU2216 DESIGNATION - X 369

JU2216 PID - JU2216

JU2216 STATE/COUNTY- PA/DELAWARE

JU2216 COUNTRY - US

JU2216 USGS QUAD - BRIDGEPORT (2019)

JU2216

*CURRENT SURVEY CONTROL

JU2216

JU2216

JU2216* NAD 83(2011) POSITION- 39 52 01.97961(N) 075 18 01.58560(W) ADJUSTED

JU2216* NAD 83(2011) ELLIP HT- -27.778 (meters) (06/27/12) ADJUSTED

JU2216* NAD 83(2011) EPOCH - 2010.00

JU2216* NAVD 88 ORTHO HEIGHT - 5.178 (meters) 16.99 (feet) ADJUSTED

JU2216

JU2216 GEOID HEIGHT - -32.974 (meters) GEOID18

JU2216 NAD 83(2011) X - 1,243,923.071 (meters) COMP

JU2216 NAD 83(2011) Y - -4,741,701.228 (meters) COMP

JU2216 NAD 83(2011) Z - 4,066,662.702 (meters) COMP

JU2216 LAPLACE CORR - 0.93 (seconds) DEFLEC18

JU2216 DYNAMIC HEIGHT - 5.175 (meters) 16.98 (feet) COMP

JU2216 MODELED GRAVITY - 980,175.5 (mgal) NAVD 88

JU2216

JU2216 VERT ORDER - FIRST CLASS II

JU2216

JU2216 Network accuracy estimates per FGDC Geospatial Positioning Accuracy

JU2216 Standards:

JU2216 FGDC (95% conf, cm) Standard deviation (cm) CorrNE

JU2216 Horiz Ellip SD_N SD_E SD_h (unitless)

JU2216 -----

JU2216 NETWORK 0.55 1.10 0.25 0.19 0.56 0.00159312

JU2216 -----

JU2216 [Click here for local accuracies and other accuracy information.](#)

JU2216

JU2216

JU2216.The horizontal coordinates were established by GPS observations

JU2216.and adjusted by the National Geodetic Survey in June 2012.

JU2216

JU2216.NAD 83(2011) refers to NAD 83 coordinates where the reference frame has

JU2216.been affixed to the stable North American tectonic plate. See

JU2216.NA2011 for more information.

JU2216

JU2216.The horizontal coordinates are valid at the epoch date displayed above

JU2216.which is a decimal equivalence of Year/Month/Day.

JU2216

JU2216.The orthometric height was determined by differential leveling and

JU2216.adjusted by the NATIONAL GEODETIC SURVEY

JU2216.in June 1991.

JU2216

JU2216.Significant digits in the geoid height do not necessarily reflect accuracy.

JU2216.GEOID18 height accuracy estimate available here.

JU2216

JU2216.[Click photographs](#) - Photos may exist for this station.

JU2216

JU2216.The X, Y, and Z were computed from the position and the ellipsoidal ht.

JU2216

JU2216.The Laplace correction was computed from DEFLEC18 derived deflections.

JU2216

JU2216.The ellipsoidal height was determined by GPS observations

JU2216.and is referenced to NAD 83.

JU2216

JU2216.The dynamic height is computed by dividing the NAVD 88

JU2216.geopotential number by the normal gravity value computed on the
JU2216.Geodetic Reference System of 1980 (GRS 80) ellipsoid at 45
JU2216.degrees latitude (g = 980.6199 gals.).

JU2216
JU2216.The modeled gravity was interpolated from observed gravity values.

JU2216
JU2216. The following values were computed from the NAD 83(2011) position.

JU2216
JU2216;
JU2216;SPC PA S - 62,186.234 809,557.373 MT 1.00001100 +1 35 21.3
JU2216;SPC PA S - 204,022.67 2,656,022.81 sFT 1.00001100 +1 35 21.3
JU2216;UTM 18 - 4,413,062.909 474,304.868 MT 0.99960813 -0 11 33.3

JU2216
JU2216! - Elev Factor x Scale Factor = Combined Factor
JU2216!SPC PA S - 1.00000436 x 1.00001100 = 1.00001536
JU2216!UTM 18 - 1.00000436 x 0.99960813 = 0.99961249

JU2216
JU2216_U.S. NATIONAL GRID SPATIAL ADDRESS: 18SVK7430413062(NAD 83)

JU2216
JU2216 SUPERSEDED SURVEY CONTROL

JU2216
JU2216 NAD 83(2007)- 39 52 01.97996(N) 075 18 01.58639(W) AD(2002.00) 0
JU2216 ELLIP H (02/10/07) -27.764 (m) GP(2002.00)
JU2216 ELLIP H (09/25/02) -27.762 (m) GP() 4 1
JU2216 NAD 83(1996)- 39 52 01.97978(N) 075 18 01.58626(W) AD() 1
JU2216 ELLIP H (03/31/00) -27.742 (m) GP() 3 1
JU2216 NAVD 88 (02/06/18) 5.3 (m) GEOID12 model used GPS OBS
JU2216 NAVD 88 5.18 (m) 17.0 (f) LEVELING 3
JU2216 NGVD 29 (01/10/92) 5.473 (m) 17.96 (f) ADJUSTED 1 2

JU2216
JU2216.Superseded values are not recommended for survey control.

JU2216
JU2216.NGS no longer adjusts projects to the NAD 27 or NGVD 29 datums.
JU2216.See file dsdata.pdf to determine how the superseded data were derived.

JU2216
JU2216_MARKER: DV = VERTICAL CONTROL DISK
JU2216_SETTING: 49 = STAINLESS STEEL ROD W/O SLEEVE (10 FT.+)
JU2216_STAMPING: X 369 1979
JU2216_MARK LOGO: NGS
JU2216_PROJECTION: FLUSH
JU2216_MAGNETIC: N = NO MAGNETIC MATERIAL
JU2216_STABILITY: B = PROBABLY HOLD POSITION/ELEVATION WELL
JU2216_SATELLITE: THE SITE LOCATION WAS REPORTED AS SUITABLE FOR
JU2216+SATELLITE: SATELLITE OBSERVATIONS - September 22, 2016
JU2216_ROD/PIPE-DEPTH: 6.1 meters

JU2216
JU2216 HISTORY - Date Condition Report By
JU2216 HISTORY - 1979 MONUMENTED NGS
JU2216 HISTORY - 1981 GOOD USGS
JU2216 HISTORY - 19980313 GOOD USPSQD
JU2216 HISTORY - 19990615 GOOD NJGS
JU2216 HISTORY - 20030303 GOOD NGS
JU2216 HISTORY - 20060203 GOOD JCLS
JU2216 HISTORY - 20070226 GOOD USPSQD

JU2216 HISTORY - 20090707 GOOD GEOCAC
JU2216 HISTORY - 20100820 GOOD PADT
JU2216 HISTORY - 20110806 GOOD PADT
JU2216 HISTORY - 20120109 GOOD PADT
JU2216 HISTORY - 20120806 GOOD PADT
JU2216 HISTORY - 20140618 GOOD JCLS
JU2216 HISTORY - 20160922 GOOD CDICOR

JU2216

JU2216 STATION DESCRIPTION

JU2216

JU2216'DESCRIBED BY NATIONAL GEODETIC SURVEY 1979

JU2216'IN ESSINGTON.

JU2216'IN ESSINGTON, ALSO 4.45 MILES SOUTHWEST ALONG STATE HIGHWAY 291 FROM
JU2216'THE SOUTHWEST END OF THE BRIDGE OVER THE SCHUYLKILL RIVER, AT THE
JU2216'INTERSECTION OF STATE HIGHWAY 420, WANAMAKER AVENUE, EAST AND ACROSS
JU2216'WANAMAKER AVENUE FROM THE SOUTHERN MOST PARTITION OF THE SAINT
JU2216'MARGARET MARY,S SCHOOL, 185 FEET NORTH OF THE NORTH EDGE OF THE MEDIAN
JU2216'OF STATE HIGHWAY 291, 44 FEET EAST OF THE MEDIAN FOR STATE HIGHWAY 420
JU2216'11 FEET SOUTH SOUTHEAST OF A POLE SUPPORTING FLASHING YELLOW LIGHTS
JU2216'INDICATING A SCHOOL ZONE, AND 2 FEET NORTHWEST OF THE SOUTH END OF A
JU2216'5 FOOT HIGH CHAIN LINK FENCE.

JU2216'THE MARK IS 0.5 FT ABOVE HIGHWAY 420.

JU2216

JU2216 STATION RECOVERY (1981)

JU2216

JU2216'RECOVERY NOTE BY US GEOLOGICAL SURVEY 1981

JU2216'RECOVERED IN GOOD CONDITION.

JU2216

JU2216 STATION RECOVERY (1998)

JU2216

JU2216'RECOVERY NOTE BY US POWER SQUADRON 1998

JU2216'RECOVERED IN GOOD CONDITION.

JU2216

JU2216 STATION RECOVERY (1999)

JU2216

JU2216'RECOVERY NOTE BY NEW JERSEY GEODETIC SURVEY 1999 (ECB)

JU2216'RECOVERED AS DESCRIBED.

JU2216

JU2216 STATION RECOVERY (2003)

JU2216

JU2216'RECOVERY NOTE BY NATIONAL GEODETIC SURVEY 2003 (VCP)

JU2216'RECOVERED AS DESCRIBED.

JU2216'

JU2216

JU2216 STATION RECOVERY (2006)

JU2216

JU2216'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2006 (MRY)

JU2216'RECOVERED IN GOOD CONDITION.

JU2216

JU2216 STATION RECOVERY (2007)

JU2216

JU2216'RECOVERY NOTE BY US POWER SQUADRON 2007

JU2216'RECOVERED IN GOOD CONDITION.

JU2216

JU2216 STATION RECOVERY (2009)
JU2216
JU2216'RECOVERY NOTE BY GEOCACHING 2009 (MFL)
JU2216'RECOVERED IN GOOD CONDITION.
JU2216
JU2216 STATION RECOVERY (2010)
JU2216
JU2216'RECOVERY NOTE BY PA DEPT OF TRANSP 2010 (PL)
JU2216'RECOVERED IN GOOD CONDITION.
JU2216
JU2216 STATION RECOVERY (2011)
JU2216
JU2216'RECOVERY NOTE BY PA DEPT OF TRANSP 2011 (PAL)
JU2216'RECOVERED IN GOOD CONDITION.
JU2216
JU2216 STATION RECOVERY (2012)
JU2216
JU2216'RECOVERY NOTE BY PA DEPT OF TRANSP 2012 (LJM)
JU2216'RECOVERED IN GOOD CONDITION.
JU2216
JU2216 STATION RECOVERY (2012)
JU2216
JU2216'RECOVERY NOTE BY PA DEPT OF TRANSP 2012 (LGB)
JU2216'RECOVERED IN GOOD CONDITION.
JU2216
JU2216 STATION RECOVERY (2014)
JU2216
JU2216'RECOVERY NOTE BY JOHN CHANCE LAND SURVEYS INC 2014 (MRY)
JU2216'RECOVERED IN GOOD CONDITION.
JU2216
JU2216 STATION RECOVERY (2016)
JU2216
JU2216'RECOVERY NOTE BY CDI CORPORATION 2016 (SL)
JU2216'RECOVERED AS DESCRIBED.

*** retrieval complete.

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