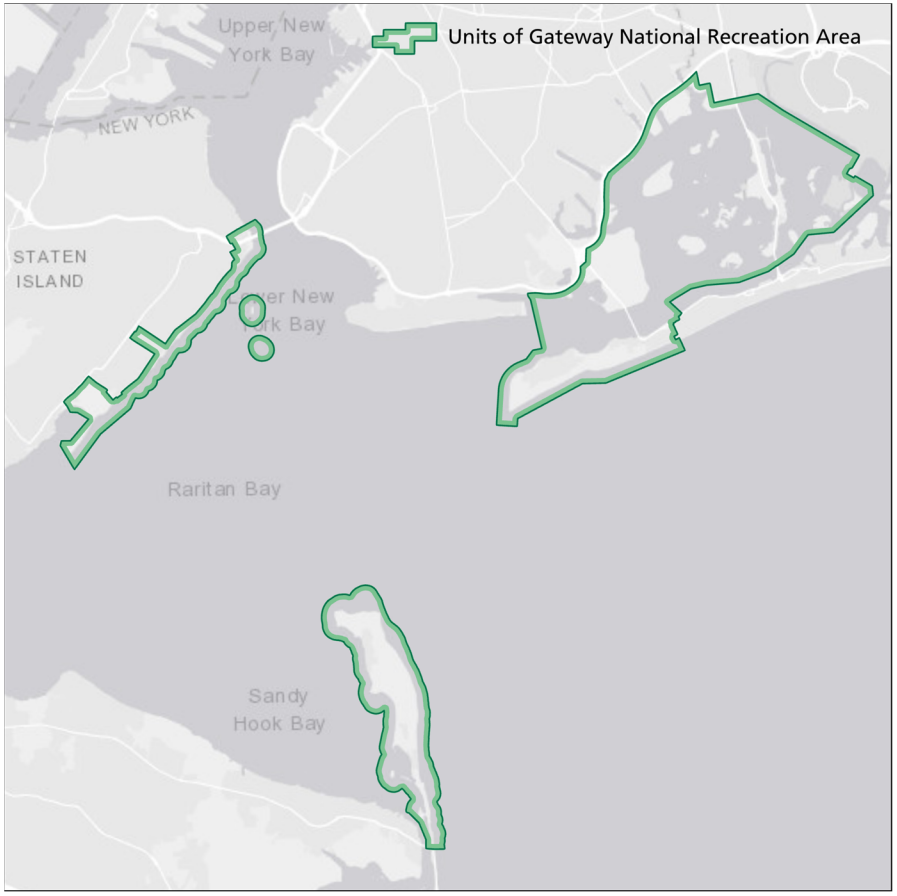
Field Booklet of Coastal Topography Spatial Monuments

Gateway National Recreation Area



V.2
July 2022

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Booklet Synopsis

This booklet includes site and descriptive information on the Spatial Network of Survey Control Monuments and Profile Lines at Miller Field and Fort Wadsworth, Staten Island Unit of Gateway National Recreation Area, NY. GIS files associated with this booklet are available from the GIS specialist of the Gateway National Recreation Area. This effort is part of the program associated with the development of a *Coastal Geomorphological Monitoring Protocol* for the NPS Northeast Coastal and Barrier Network I&M Program. The monuments are intended to be used as:

1) **Physical Transect Monuments** that occupy the location of the starting point of the transects surveyed in accordance with the Coastal Topography Protocol. These are highly accurate topographical points, established with a GPS/GNSS system that is the basis for standard surveying techniques.

2) **Virtual Transect Monuments** that are actually sets of coordinates for a point falling exactly on the transect generated in GIS and stored on the survey controller unit. Virtual monuments can be used to replace a lost transect monument and may be especially useful for transects where maintaining a physical monument is difficult or unfeasible.

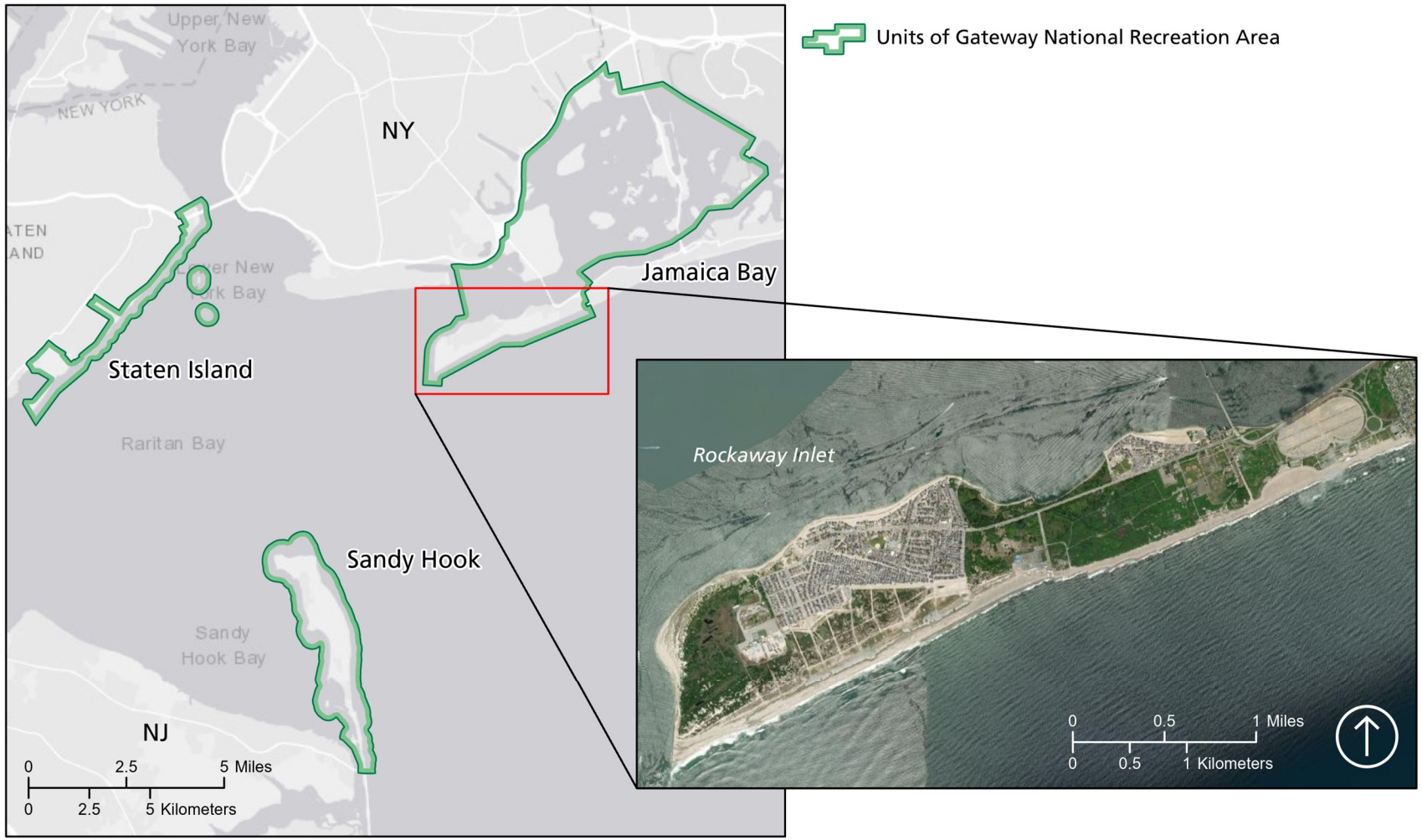
3) **Survey Control Monuments** used to set-up the GPS-RTK base receiver needed for Real-time Kinematic surveying or used as accuracy assessment points. They are control points within centimeter accuracy, computed through the Online Positioning User Service (OPUS).

The physical transect monuments are intended to be permanent structures taking a variety of forms, including 2” PVC pipe set into a concrete base, PK survey nails in concrete, and spray-paint marks. All the monuments are registered to the North American Datum of 1983 (NAD83), using the Universal Transverse Mercator (UTM) projection, and North American Vertical Datum of 1988 (NAVD88) vertical datum, in meters.

This booklet includes a brief description of each monument location, as well as two aerial photos of the site, two ground photos, and a table with the coordinates and elevation of each monument. One aerial photo is a smaller-scale locator map, whereas a second aerial photo is a larger-scale image of the monument site and, when applicable, incorporates the cross-shore profile direction and the corresponding azimuth in yellow. Generally, one of the ground photos is a close up of the monument and the other photo captures local landmarks that provide orientation relative to the site. Both photos incorporate either yellow arrows indicating the direction of the transect from the monument or light blue arrows indicating the monument location if it is used for survey control and not used for the transect surveys.

Original report prepared in July 2010 by:
Norbert P. Psuty, Andrea Spahn, Tanya M. Silveira, and Peter M. Dennehy
Sandy Hook Cooperative Research Programs, Institute of Marine and Coastal Sciences
Rutgers, The State University of New Jersey

Breezy Point and Riis Park – Jamaica Bay Unit



Monumentation Map



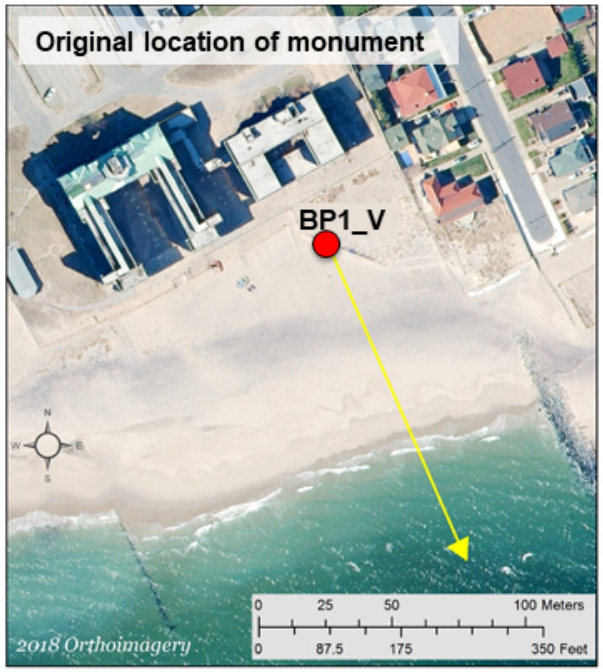
Monument Locations and Descriptions

BP1_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible – as of 2018 behind tall fencing. Now classified as a virtual monument.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (survey PK nail)
596158.118	**4491377.797**	**5.253**

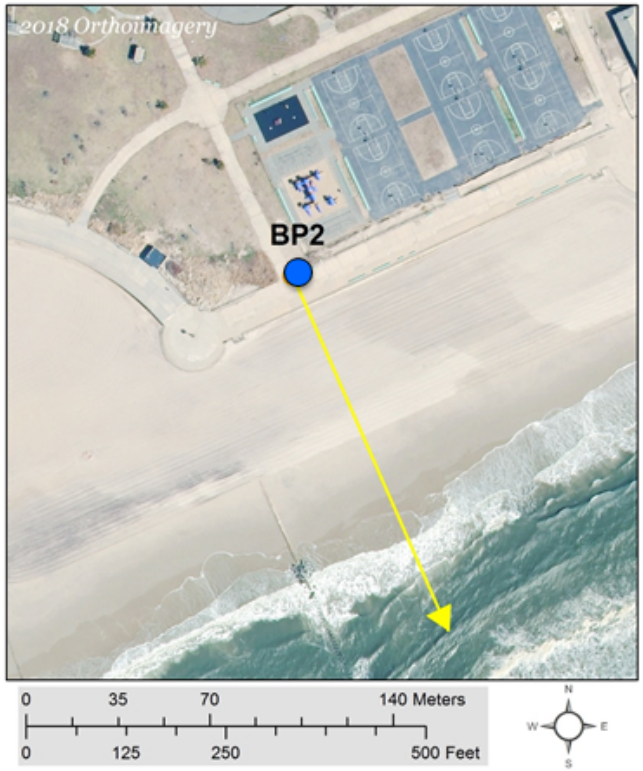
Virtual Transect Monument coordinates and elevation –

BP2

Purpose: Physical Transect Monument

Quality: RTK Measurement

A faded red spray-painted dot on the cement base of railing just east of an entrance road to the boardwalk. 45m east of the clock tower in Jacob Riis Park and 150m west of the western end of the Jacob Riis bath-house.





BP2





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (spray-painted dot)
595425.89	**4491096.53**	**5.283**

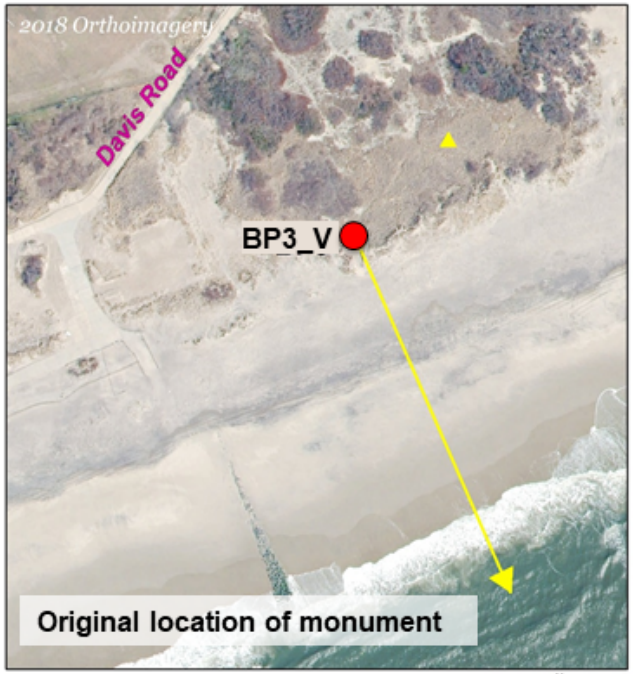
Physical Transect Monument coordinates and elevation – October 17, 2018

BP3_V

Purpose: Virtual Transect Monument

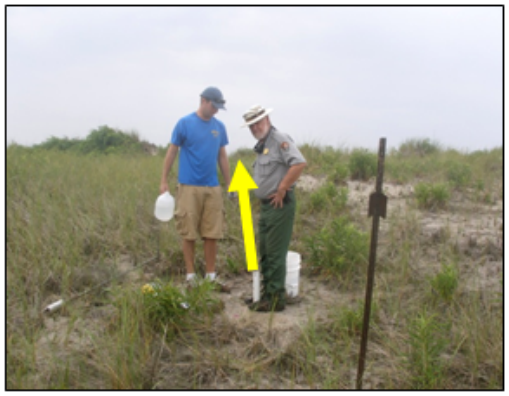
Quality: RTK Measurement

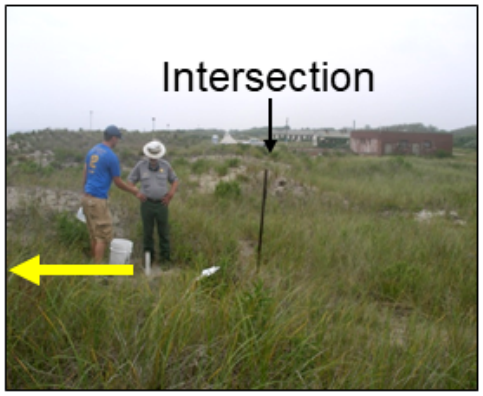
Monument missing/inaccessible – Plover fencing can make it difficult to access. Now classified as a virtual monument.





BP3_V





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
4490739.98	**59463.02**	

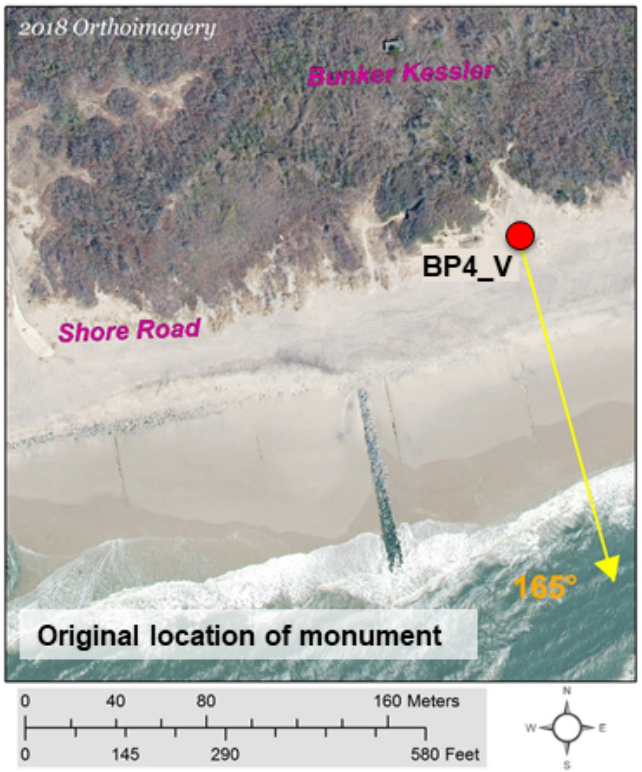
Virtual Transect Monument coordinates and elevation – October 2018

BP4_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing – no longer as vegetated – almost covered by dune.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC*)
4490277.71	**593429.92**	**3.062**

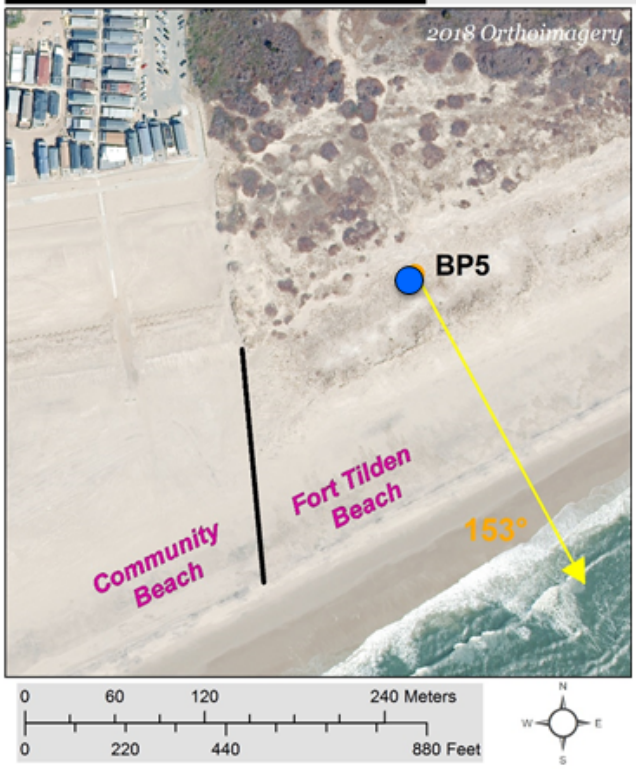
Virtual Transect Monument coordinates and elevation – October 2018, *if PVC is found.

BP5

Purpose: Physical Transect Monument

Quality: RTK Measurement

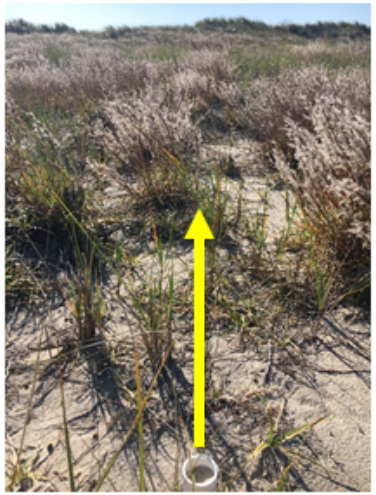
A PVC pipe located in first swale, 50m inland from the foredune crest, and 20m west of the Beach Road. Located on the western end of Fort Tilden, 130m east of the border of the Community beach.





BP5





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
592435.821	**4490070.426**	**2.304**

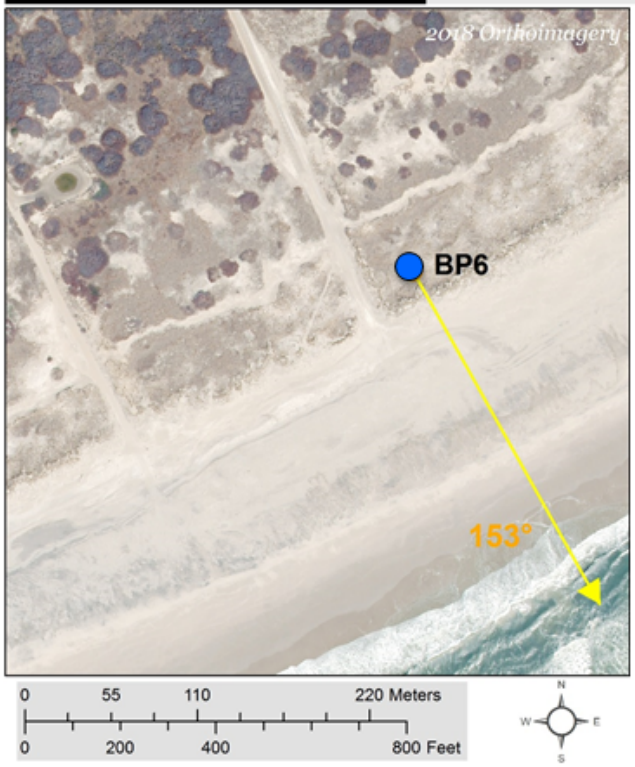
Physical Transect Monument coordinates and elevation – October 2018

BP6

Purpose: Physical Transect Monument

Quality: RTK Measurement

A PVC pipe located in the first swale, 30m inland of the foredune crest, and 25m east of Surf Club Path. Path is easternmost of the two National Park Service paths and is 175m west of the border of the NPS beach and community housing beach.





BP6





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
590740.26	**4489066.34**	**Unknown if PVC is still there**

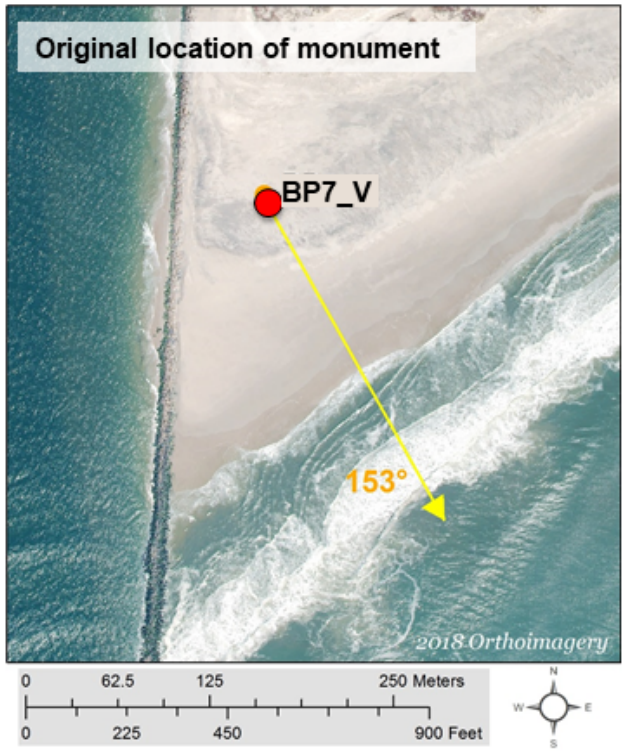
Physical Transect Monument coordinates and elevation – April 11, 2018

BP7_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible – Buried or washed away. Now classified as virtual.





BP7_V

NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
589778.99	**4488644.71**	

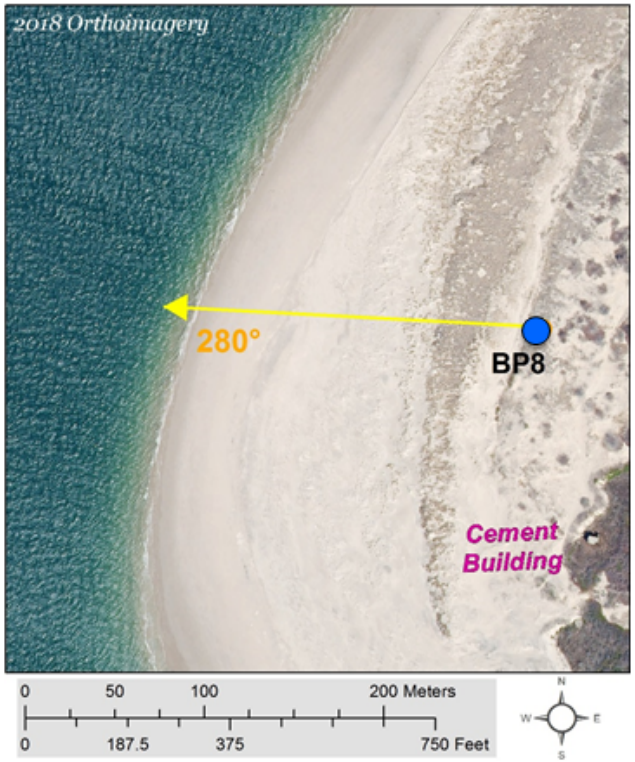
Virtual Transect Monument coordinates and elevation – April 11, 2018

BP8

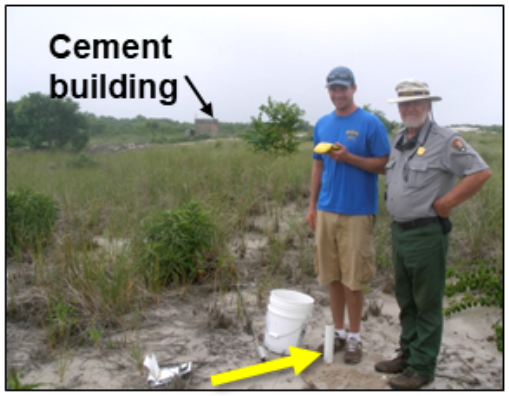
Purpose: Physical Transect Monument

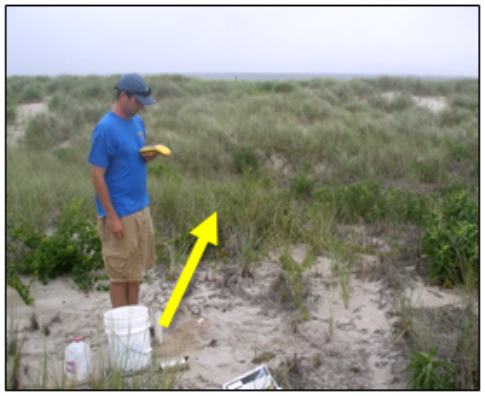
Quality: RTK Measurement

A PVC pipe located in the first swale 30m inland from the foredune crest and 120m north northwest of small cement building in the dunes.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
589800.035	**4489681.382**	**4.55**

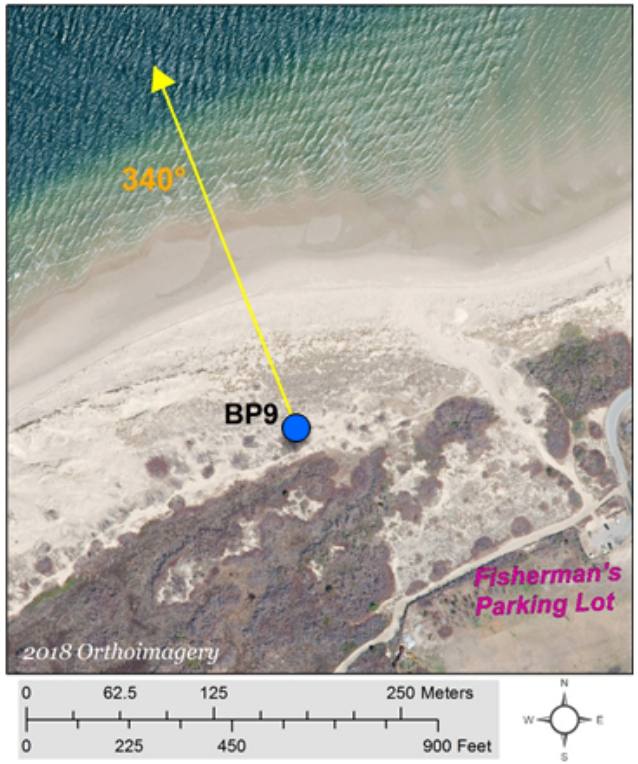
Physical Transect Monument coordinates and elevation – May 24, 2019

BP9

Purpose: Physical Transect Monument

Quality: RTK Measurement

Monument is located around 130m west of the beach access road and is in good condition. Behind hedge row now.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
590240.70	**4490102.94**	**3.626**

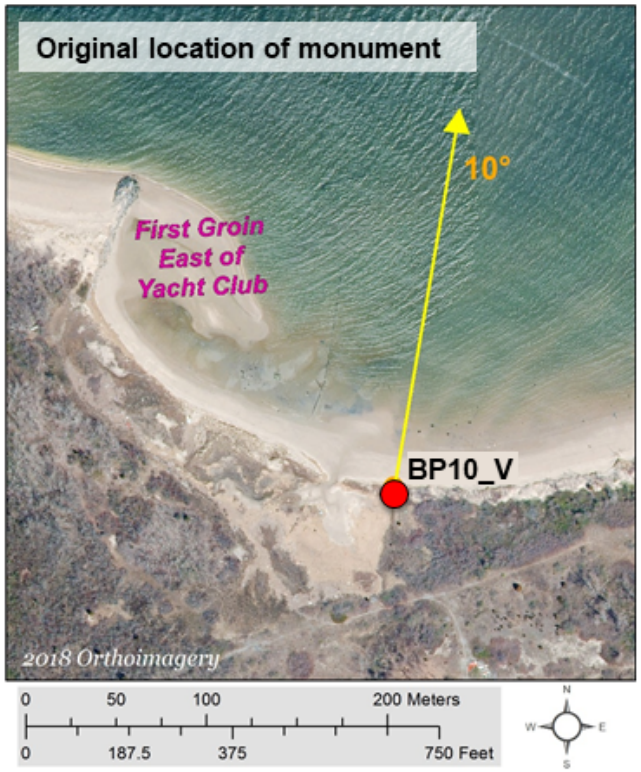
Physical Transect Monument coordinates and elevation – March 27, 2019

BP10_V

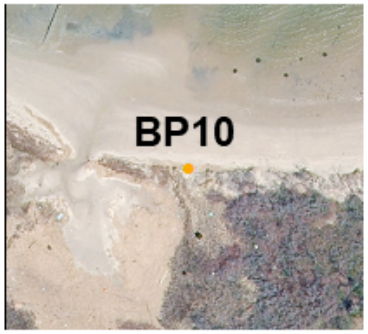
Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible – now classified as virtual.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
592591.93	**4490778.58**	

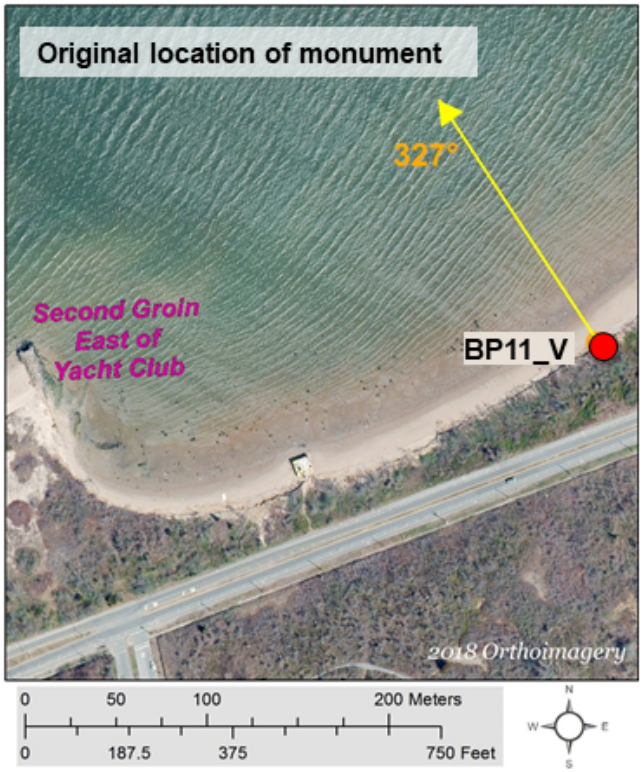
Virtual Transect Monument coordinates and elevation – March 24, 2019

BP11_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible, now classified as virtual.





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
593187.193	**4490884.461**	

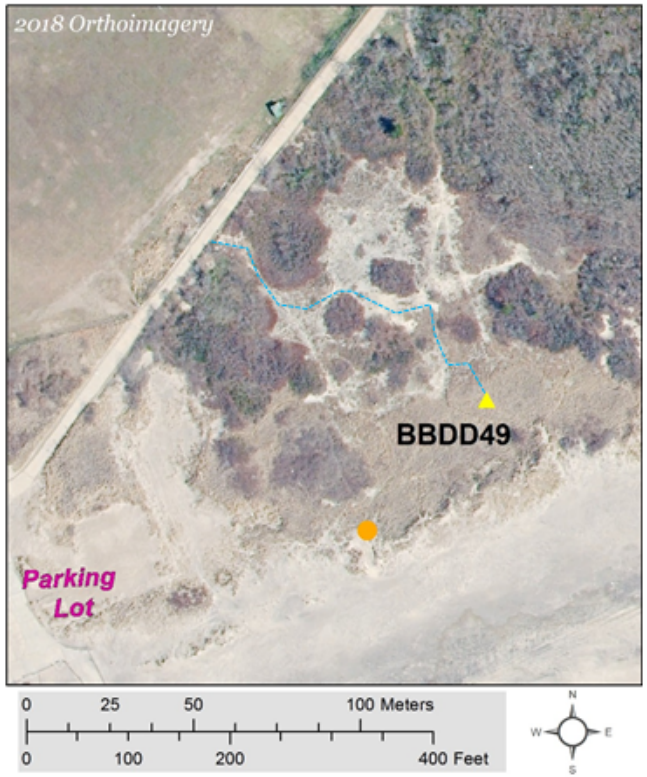
Virtual Transect Monument coordinates and elevation – March 24, 2019

PID: BBDD49

Purpose: Survey Control Monument

Quality: OPUS Solution

Monument is a U.S. Coast and Geodetic Survey disk, installed in 1940, and set in a concrete cylinder in the back dune approximately 40 to 50m landward from toe of foredune.





BBDD49







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of disk on cylinder)
594678.710	**4490778.967**	**4.762**

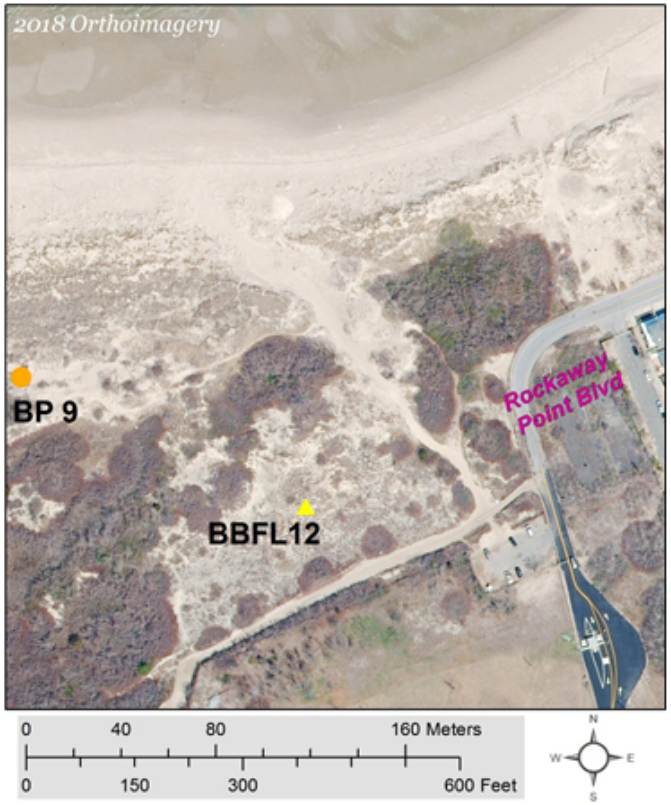
Survey Control Monument coordinates and elevation – observed 2012-07-25 OPUS Solution

PID: BBFL12

Purpose: Survey Control Monument

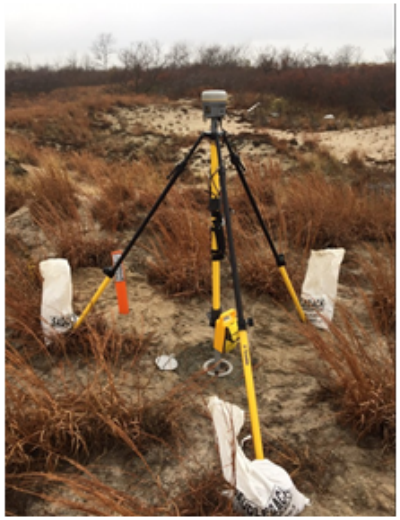
Quality: OPUS Solution

Monument is a steel road encased in a sleeve. Take Rockaway Pt Blvd until road takes a sharp turn, go past beach access road to NPS lot. Mark is in a sandy dune 310ft NW from the NW corner of the lot.



BBFL14



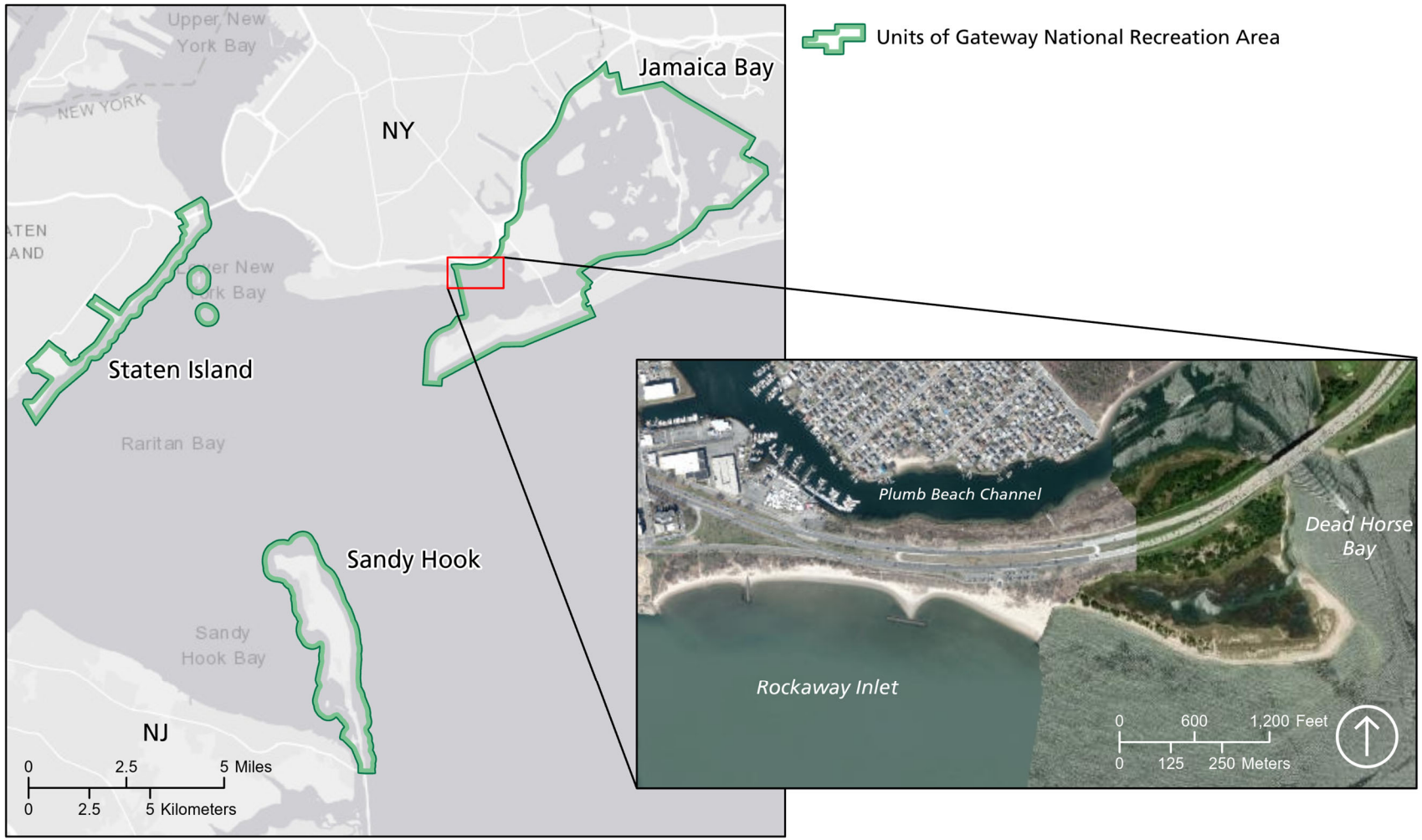




NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
590360.773	**4490048.273**	**3.759**

Survey Control Monument coordinates and elevation – observed 2016-12-07 OPUS Solution

Plum Beach – Jamaica Bay Unit



Monumentation Map



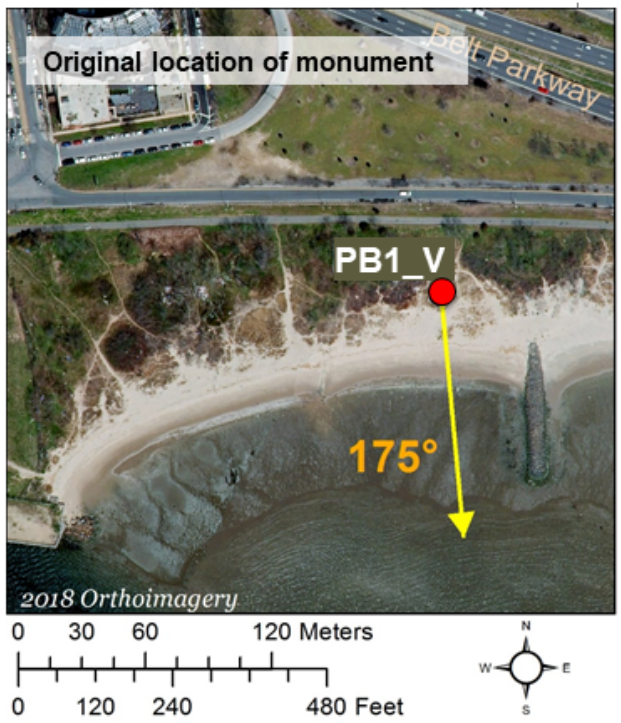
Monument Locations and Descriptions

PB1_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Now classified as virtual.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
590656.094	**4493107.422**	

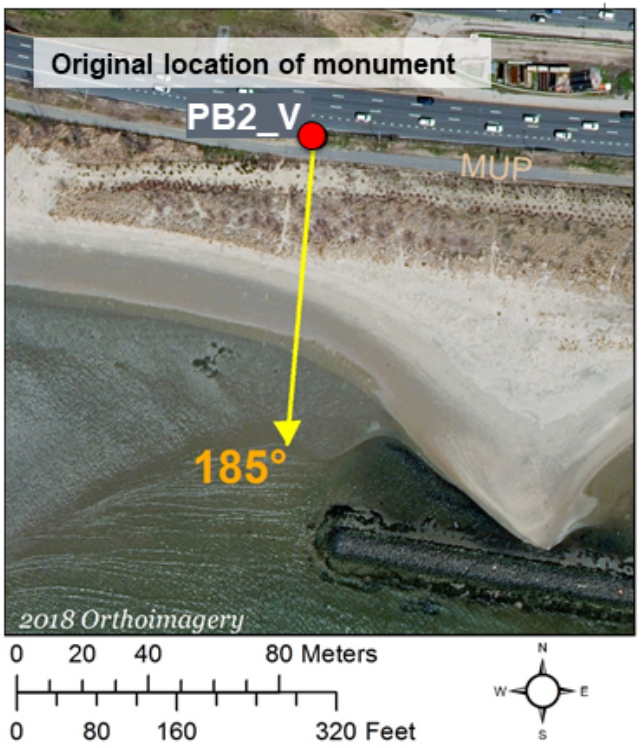
Virtual Transect Monument coordinates and elevation –

PB2_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument (fire hydrant) missing, virtual monument still accessible through sand fences.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
591035.466	**4493105.33**	

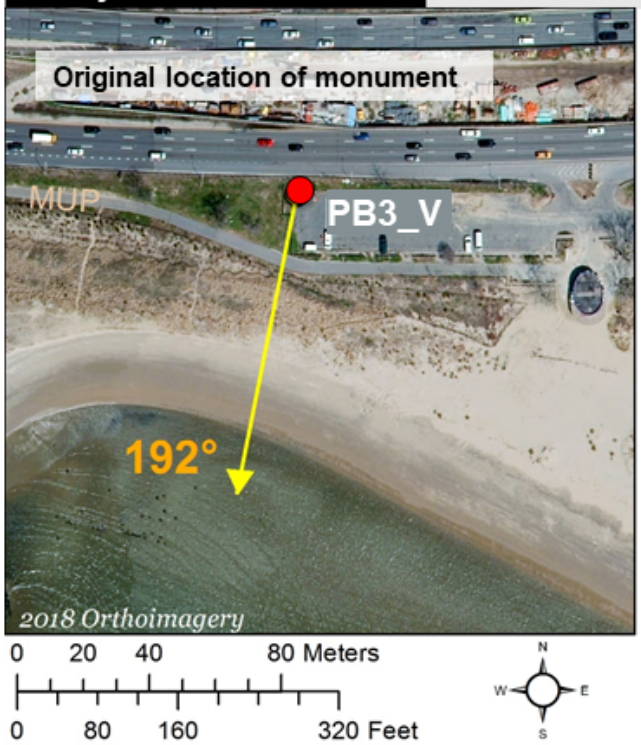
Virtual Transect Monument coordinates and elevation – January 19, 2016

PB3_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Benchmark missing/inaccessible. Now classified as virtual.





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (PK nail)
591225.747	**4493089.833**	

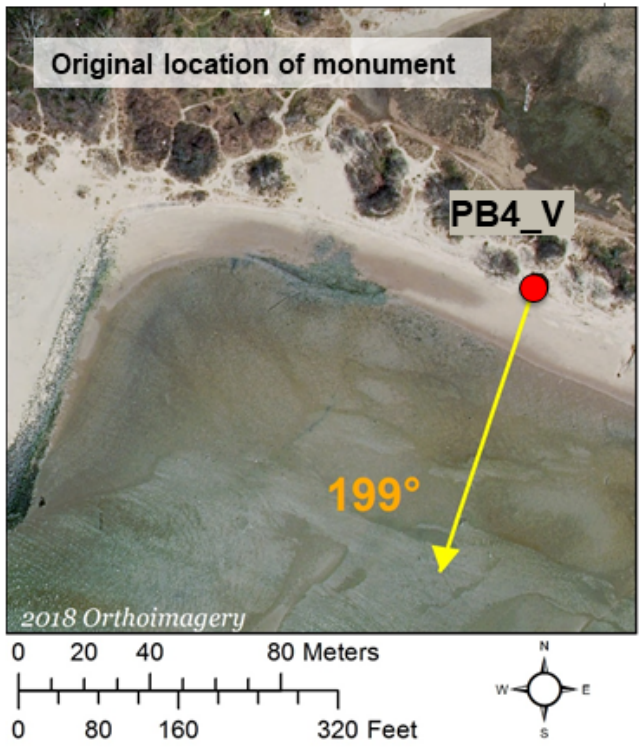
Virtual Transect Monument coordinates and elevation –

PB4_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Benchmark missing/inaccessible. Now classified as virtual.





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
591576.53	**4492984.104**	

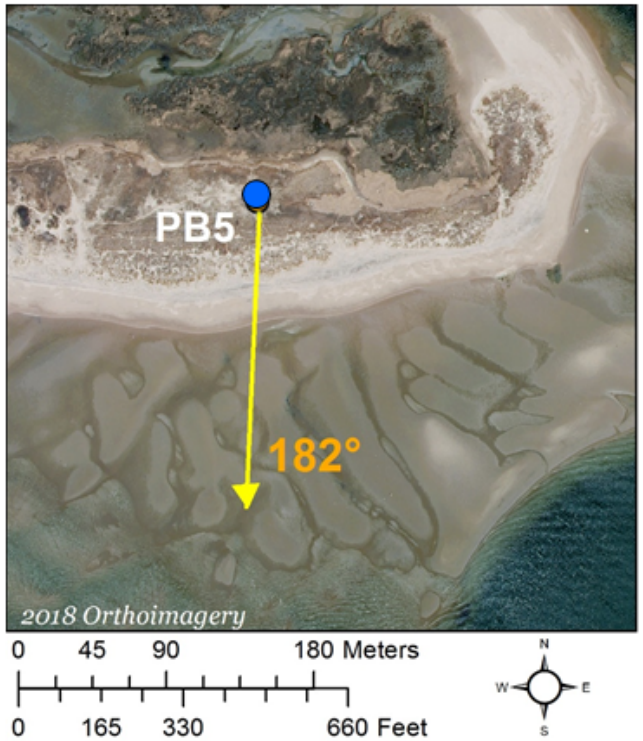
Virtual Transect Monument coordinates and elevation –

PB5

Purpose: Physical Transect Monument

Quality: RTK Measurement

PVC pipe on the eastern end of Plumb Beach, 25m landward of foredune crest. Marine Parkway Bridge is visible to the northeast across the salt marsh. Hut is no longer there.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
591951.024	**4492927.344**	**1.704**

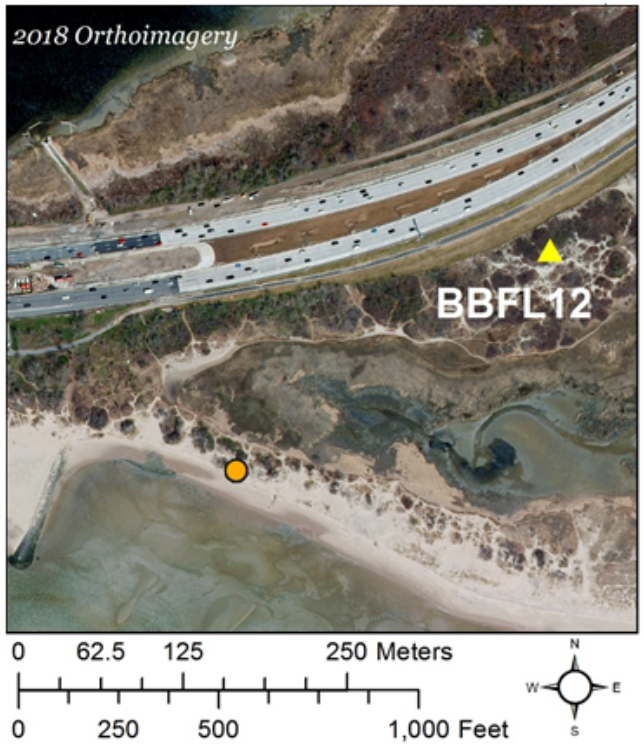
Physical Transect Monument coordinates and elevation – January 19 , 2016

PID: BBFL12

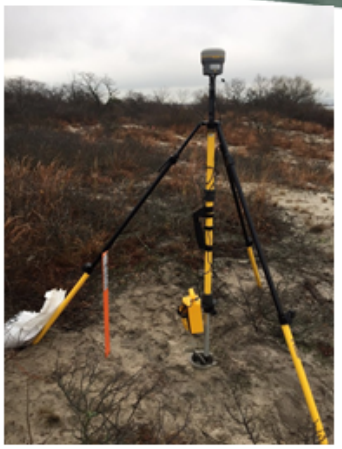
Purpose: Survey Control Monument

Quality: RTK Measurement

Mark is a steel rod encased in security sleeve. Go approximately 1810ft along MUP, then go 220ft south into the marsh. Park is 2.5ft south of witness post.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
591815.672	**4493152.454**	**3.735**

Survey Control Monument coordinates and elevation – observed 2016-12-07 OPUS Solution

Fort Wadsworth – Staten Island Unit



Monumentation Map



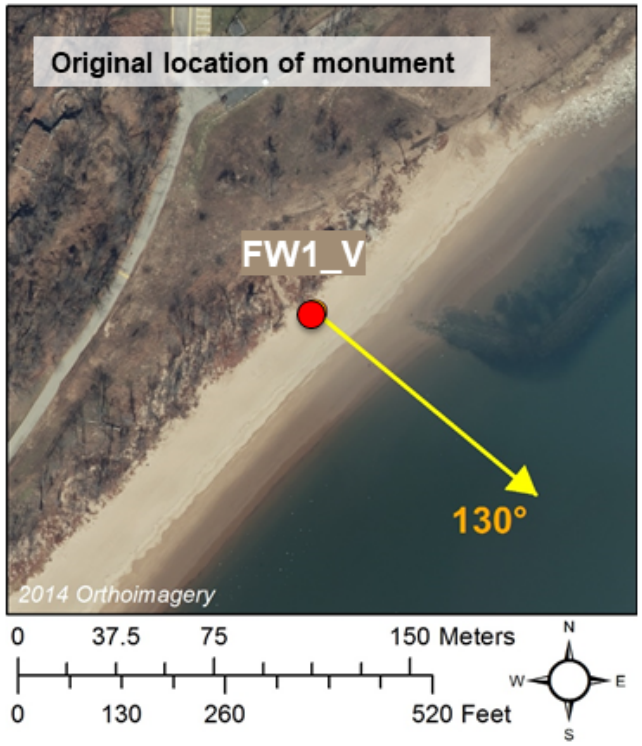
Monument Locations and Descriptions

FW1_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
579968.298	**4494654.085**	

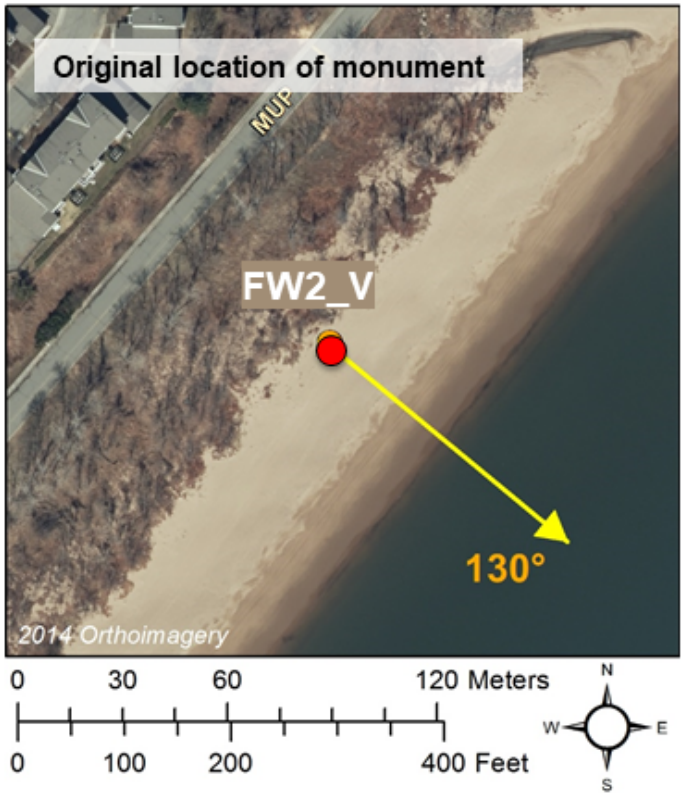
Virtual Transect Monument coordinates and elevation –

FW2_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
579710.402	**4494361.453**	

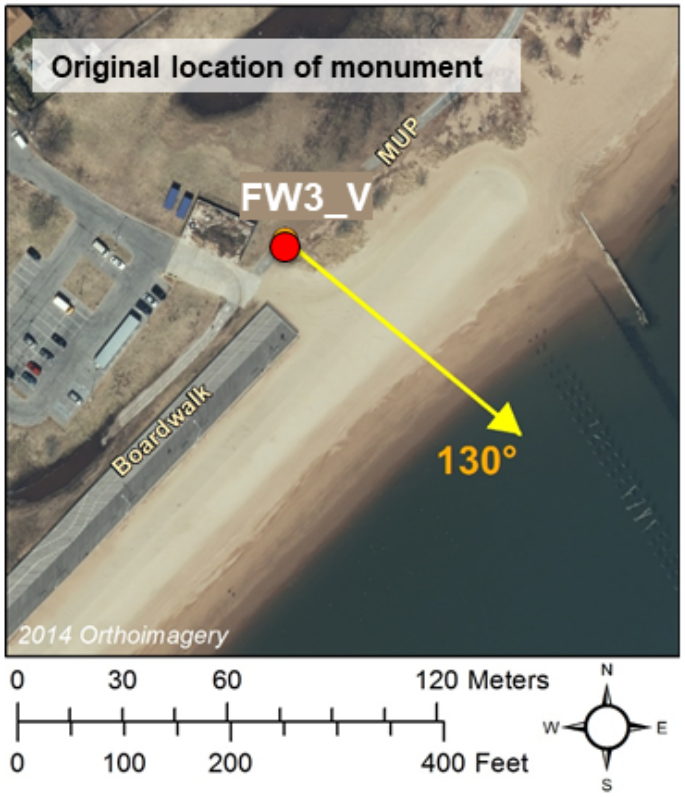
Virtual Transect Monument coordinates and elevation –

FW3_V

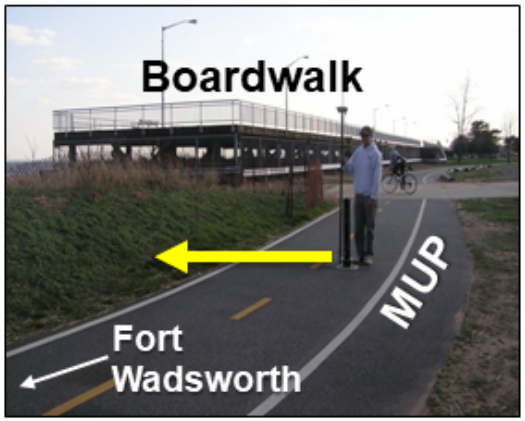
Purpose: Virtual Transect Monument

Quality: RTK Measurement

Red spray-painted dot on the southern corner of a cement slab in the center of the MUP, 100m west of Fort Wadsworth boundary. 25m northeast of the boardwalk. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (spray-painted dot)
579464.679	**4494104.956**	**2.056**

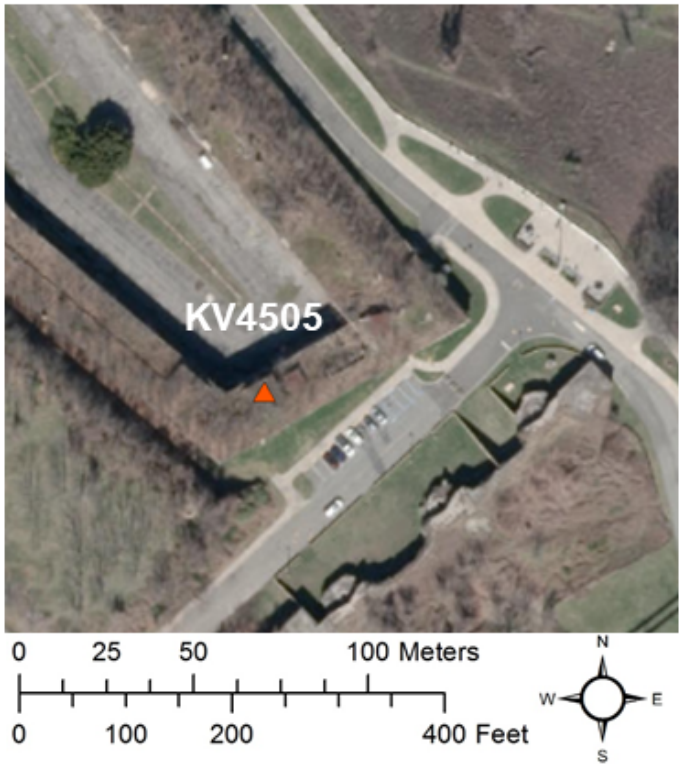
Virtual Transect Monument coordinates and elevation – January 19, 2016

PID: KV4505

Purpose: Survey Control Monument

Quality: OPUS Solution

Monument is a disk stamped Fort Tompkins 2 No 1 1903 1932 and is cemented in a drilled hole in a stone wall.





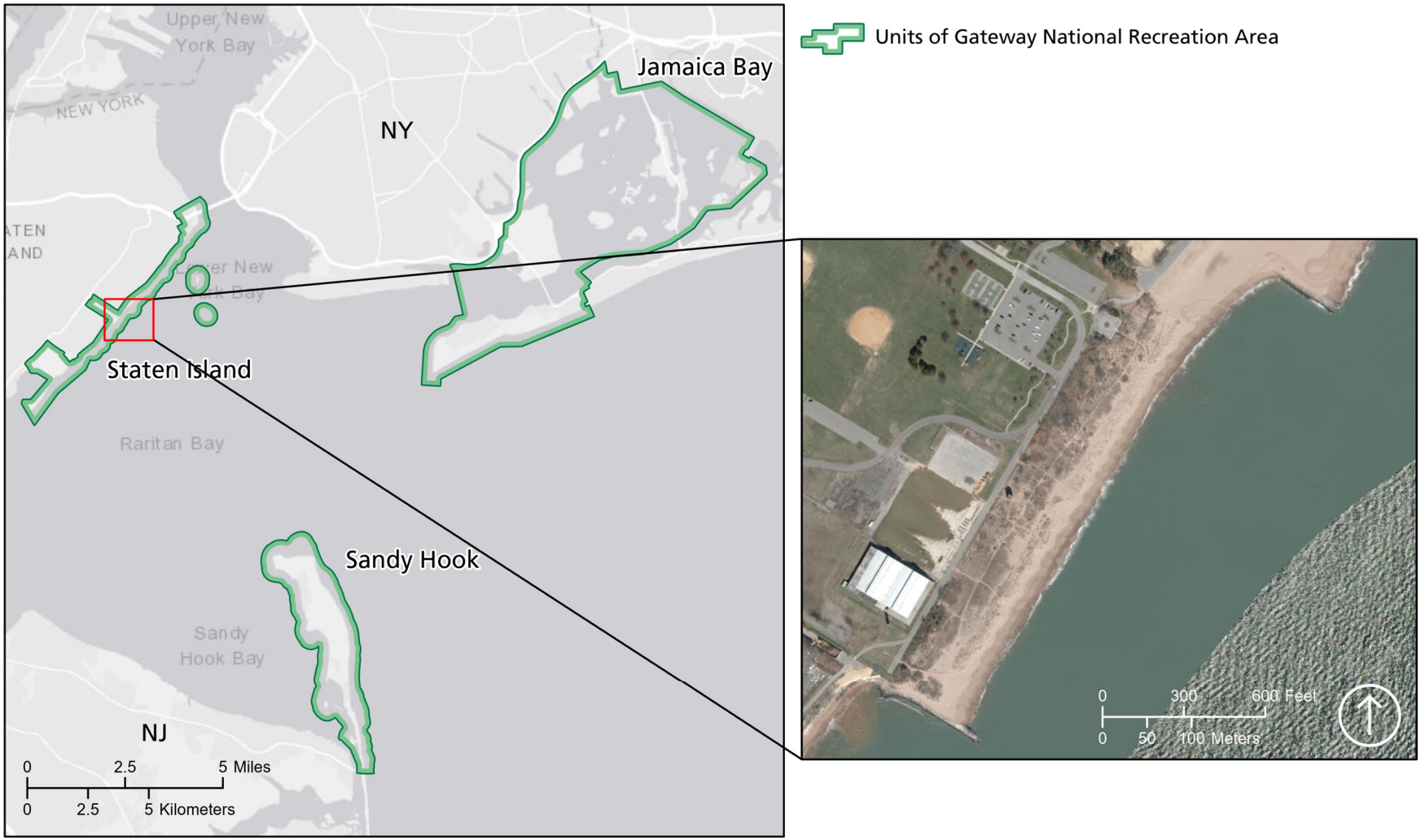




NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
579854.511	**4495272.296**	**49.513**

Survey Control Monument coordinates and elevation – observed 2012-07-24 OPUS Solution

Miller Field – Staten Island Unit



Monumentation Map



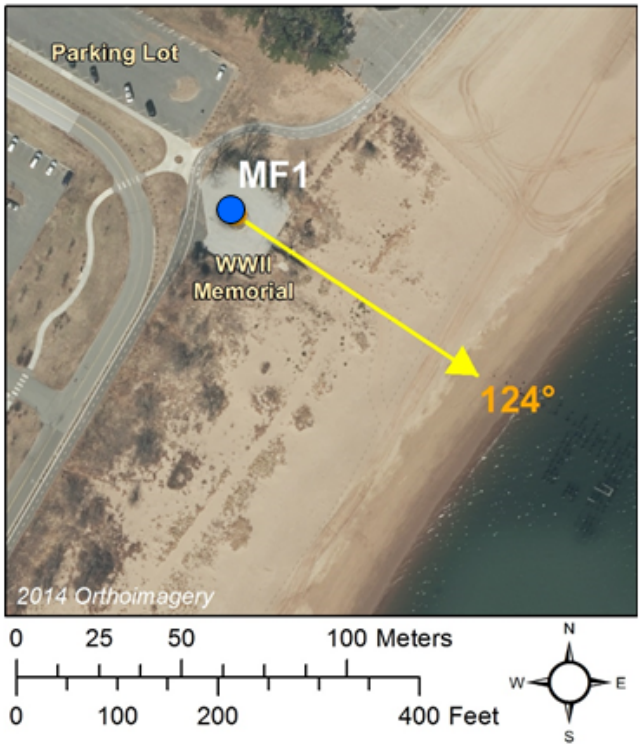
Monument Locations and Descriptions

MF1

Purpose: Physical Transect Monument

Quality: RTK Measurement

Middle of the survey square etched into the steps on the western side of the World War II Memorial in Miller Field.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
576839.9	**4491082.806**	**2.447**

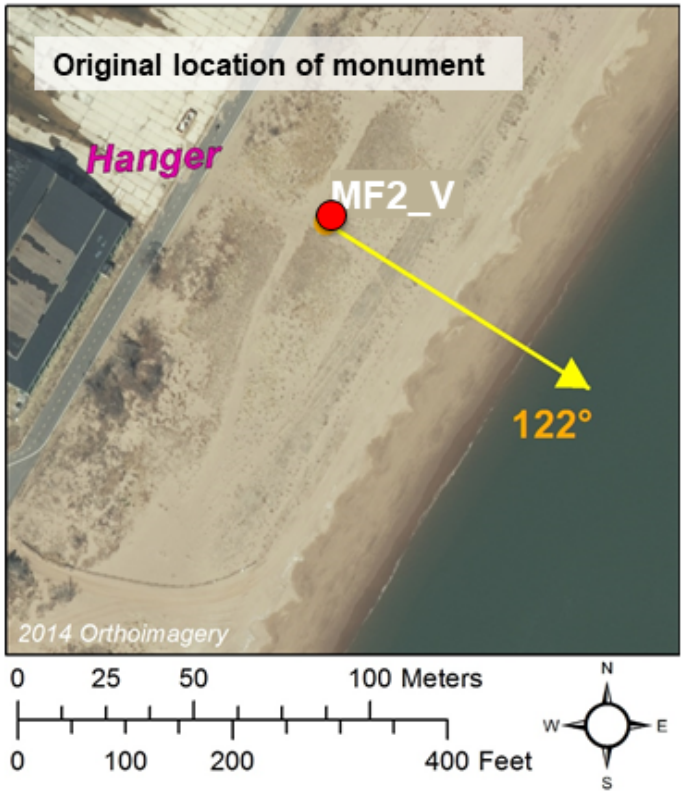
Physical Transect Monument coordinates and elevation – January 19, 2016

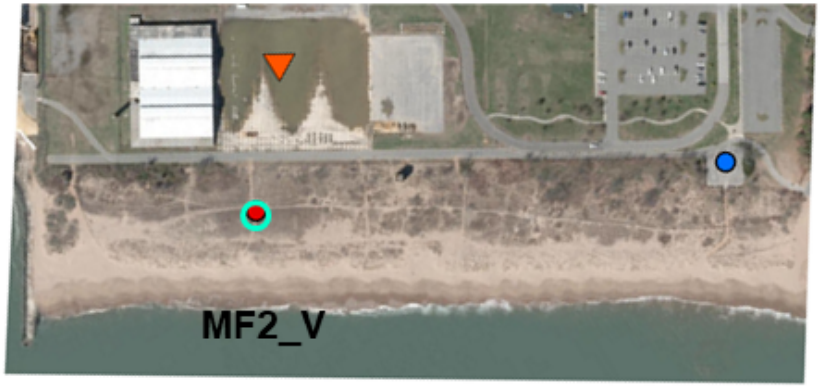
MF2_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Virtual monument is next to beach path in grass after broken sand fence.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
576702.066	**4490792.404**	

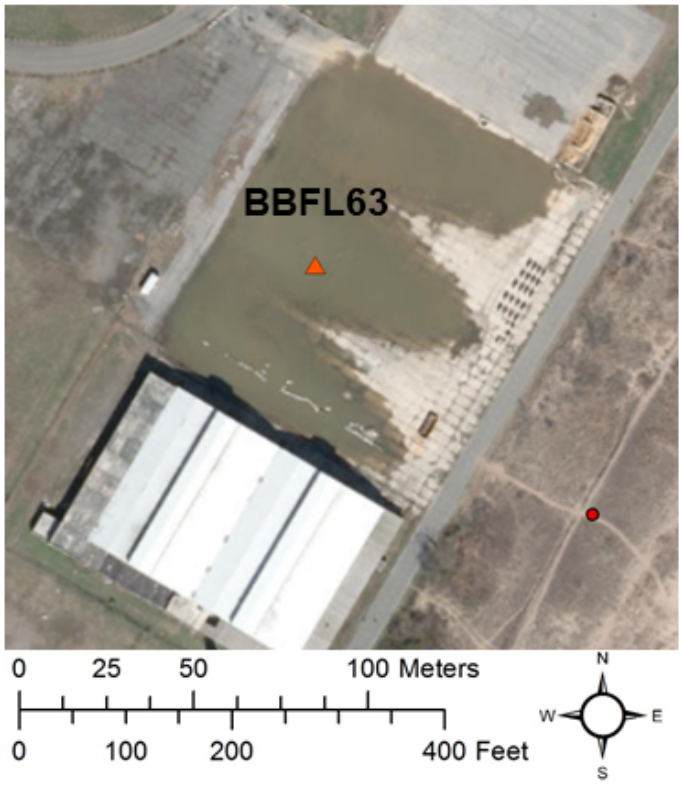
Table: Virtual Transect Monument coordinates and elevation –

PID: BBFL63

Purpose: Survey Control Monument

Quality: OPUS Solution

Monument is a National Park Service disk in the middle of the parking lot at Miller Field on Staten Island, NY. Disk is labelled "MILLER" and was installed in 2011. Cannot access when covered in water and goose poop (which is all the time).





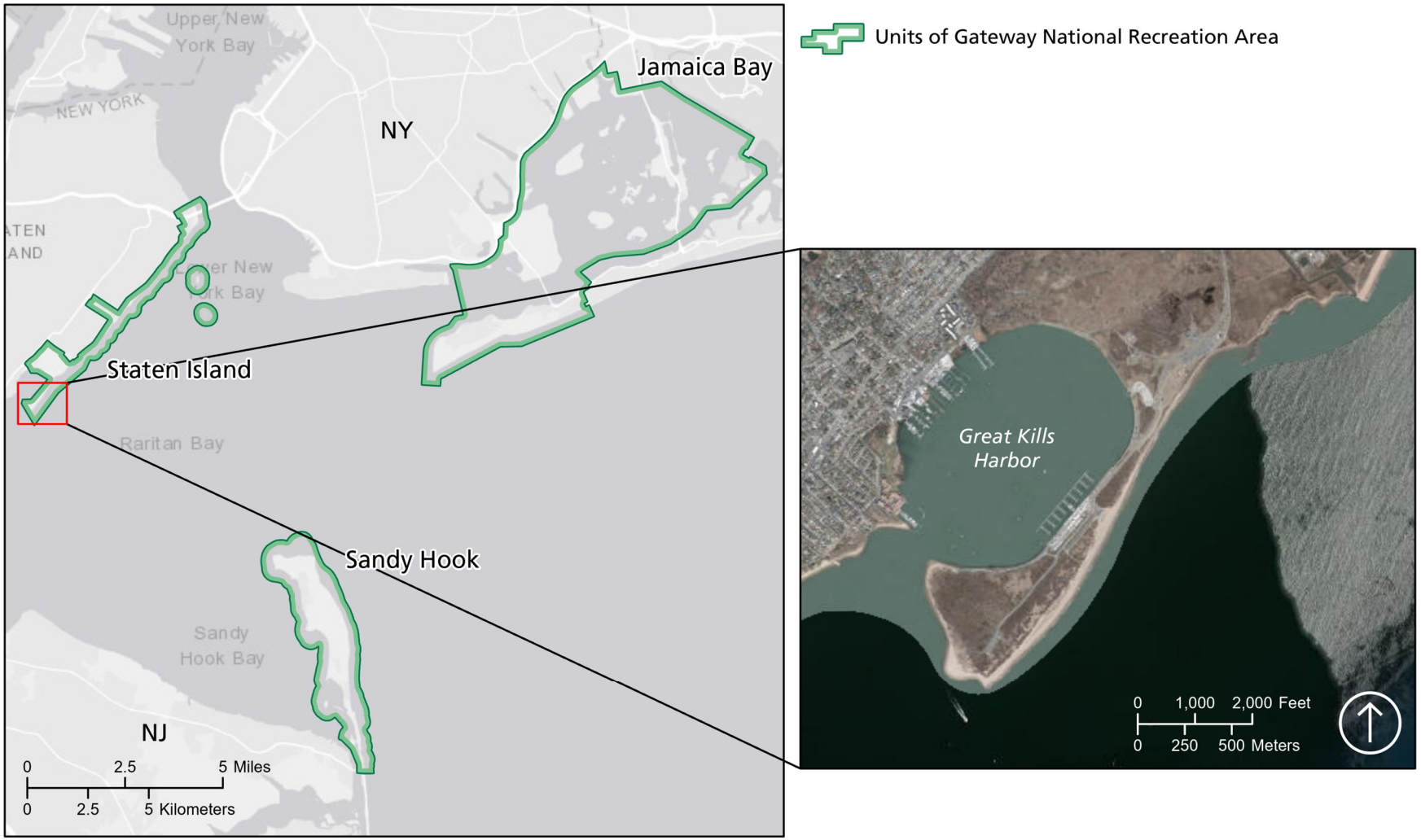




NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
576622.203	**4490862.781**	**1.659**

Survey Control Monument coordinates and elevation – observed 2016-03-07 OPUS Solution

Great Kills – Staten Island Unit



Monumentation Map



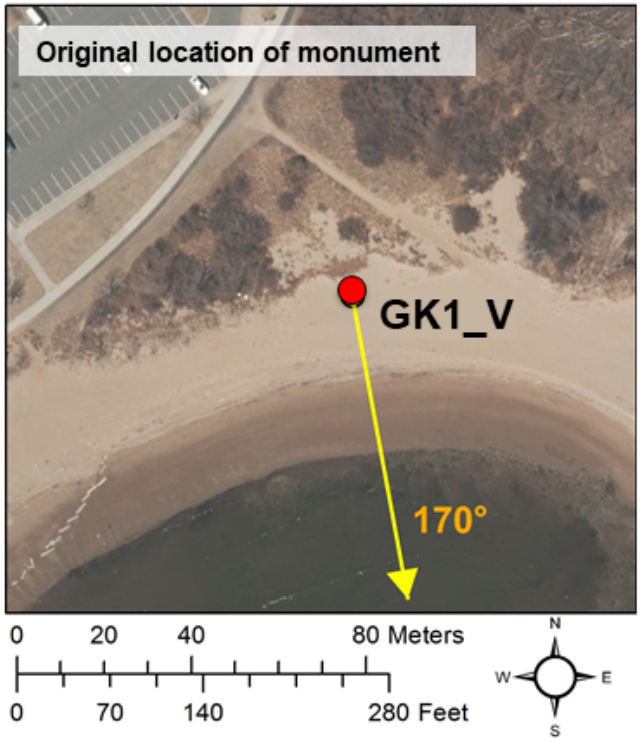
Monument Locations and Descriptions

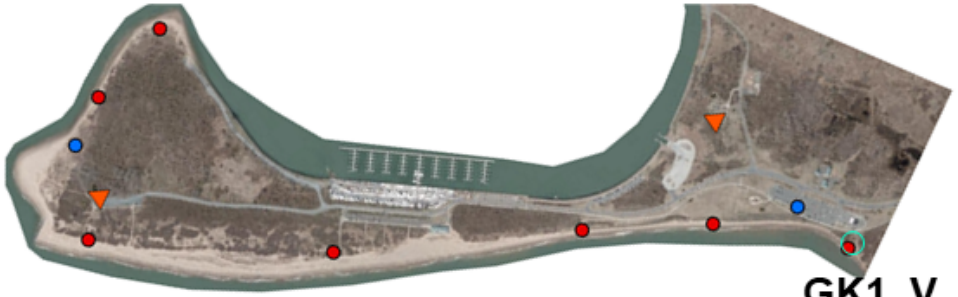
GK1_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Missing post-Sandy. Now classified as virtual.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
574398.503	**4488697.037**	

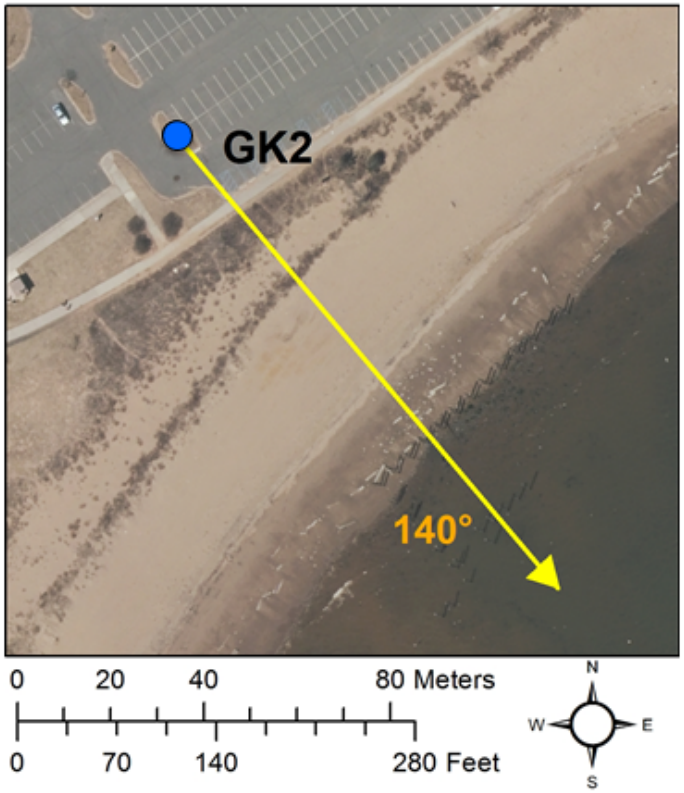
Virtual Transect Monument coordinates – March 13, 2018

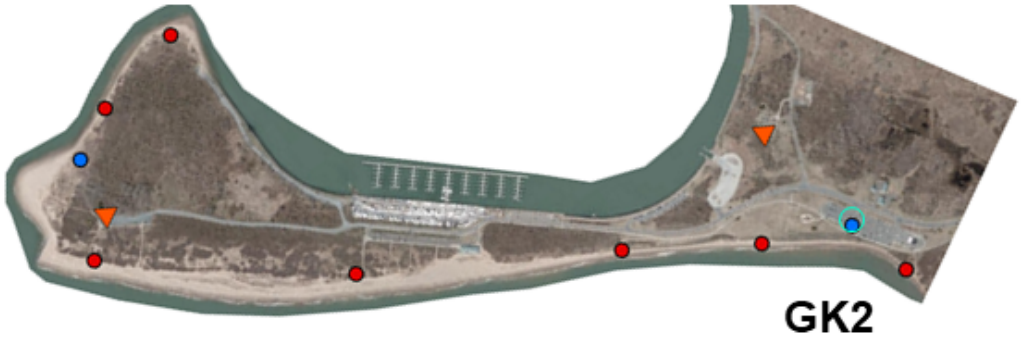
GK2

Purpose: Physical Transect Monument

Quality: RTK Measurement

Red dot on the curb of the traffic island closest to the beach, 85m south of the maintenance facility that is north of the main parking lot. Grass is encroaching on dot – might need to wash dirt off.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (spray-painted dot)
574225.567	**4488647.97**	**4.766**

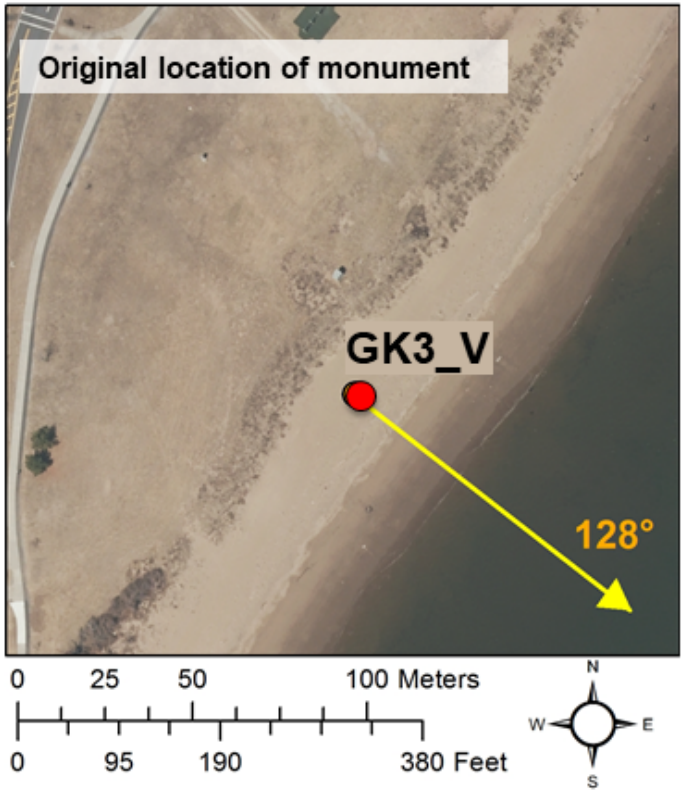
Physical Transect Monument coordinates and elevation – January 19, 2016

GK3_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument lost post-Sandy. Now classified as virtual.





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
574130.73	**4488429.59**	

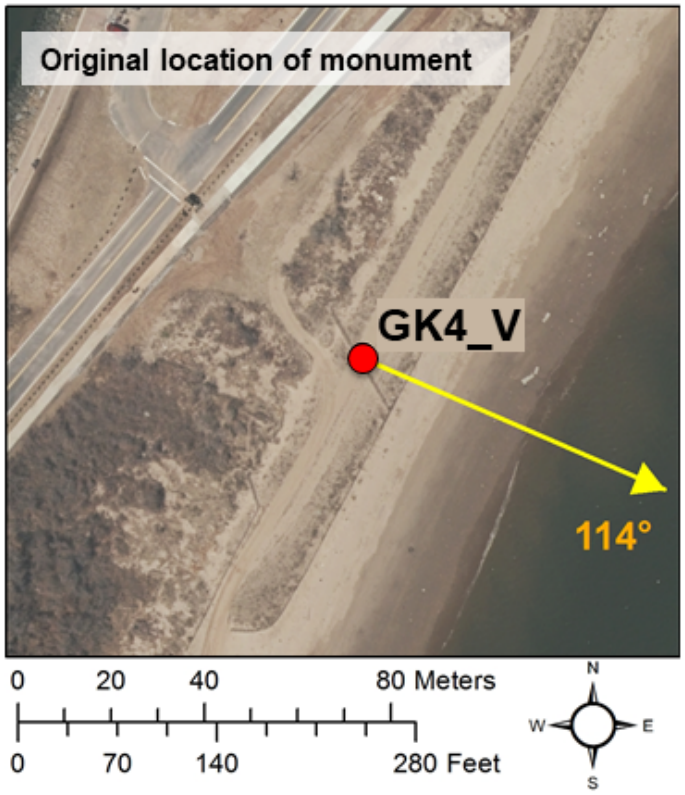
Virtual Transect Monument coordinates – March 2018

GK4_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Now classified as virtual.





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
573938.419	**4488125.488**	

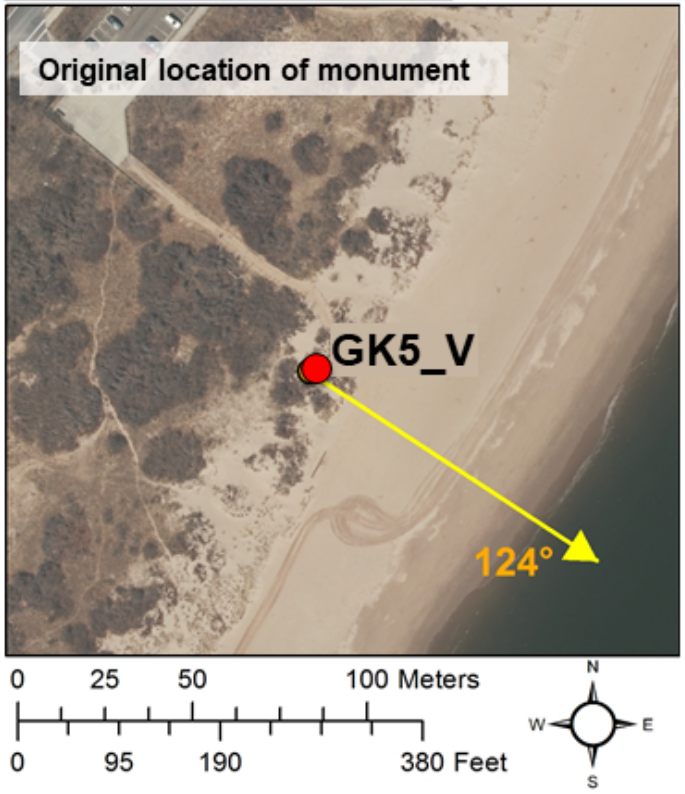
Virtual Transect Monument coordinates – March 2018

GK5_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. As of 2019 it is inaccessible as a Virtual monument due to dense vegetation.





GK5_V





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
573594.783	**4487529.401**	

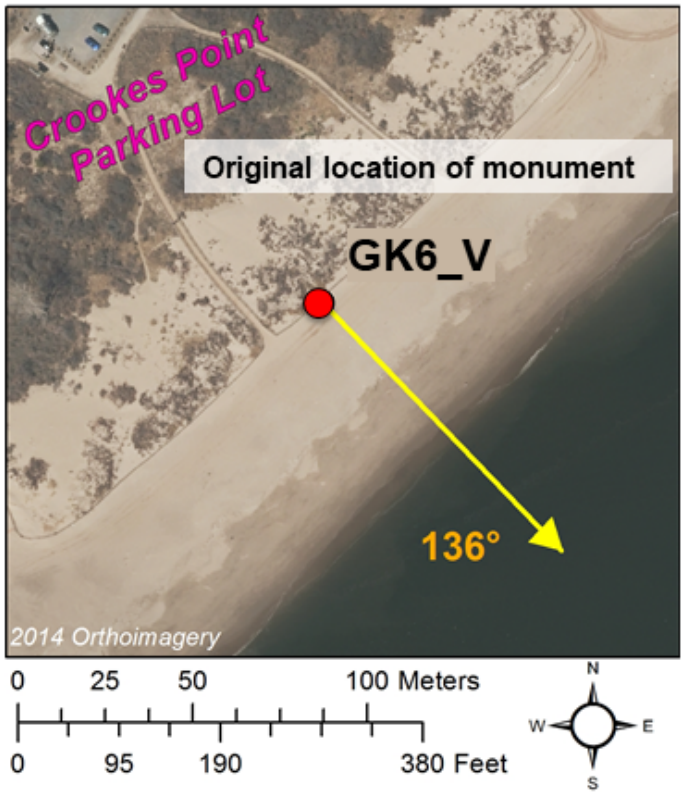
Virtual Transect Monument coordinates

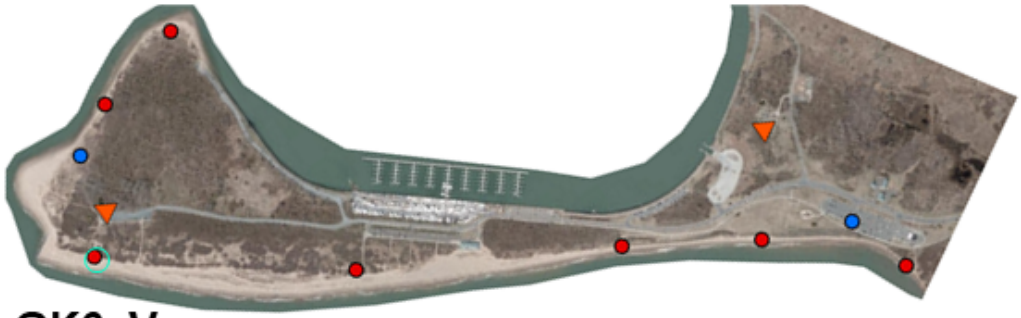
GK6_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Virtual monument is located right before fencing. Sand path/road must be crossed to get to beach.





GK6_V



NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
573180.505	**4486997.045**	

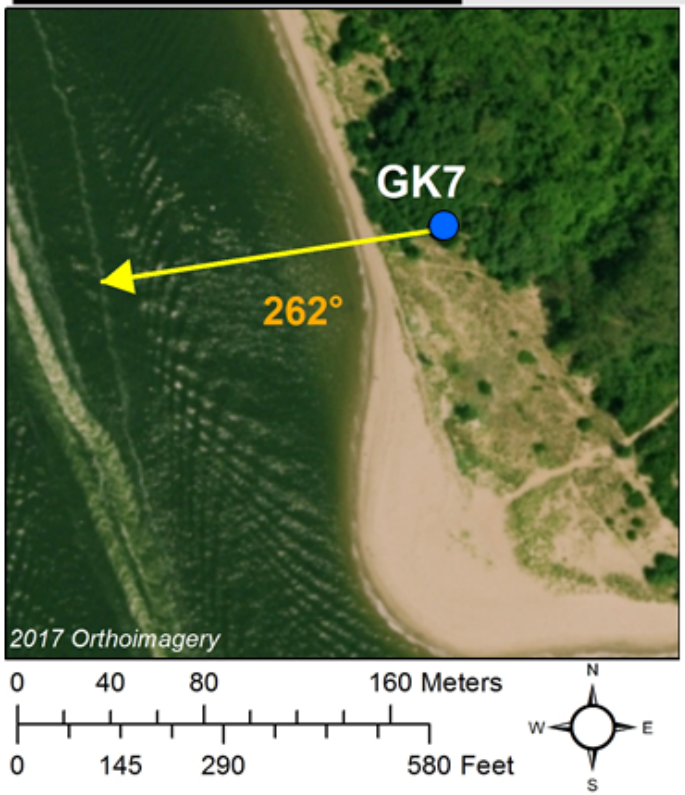
Virtual Transect Monument coordinates

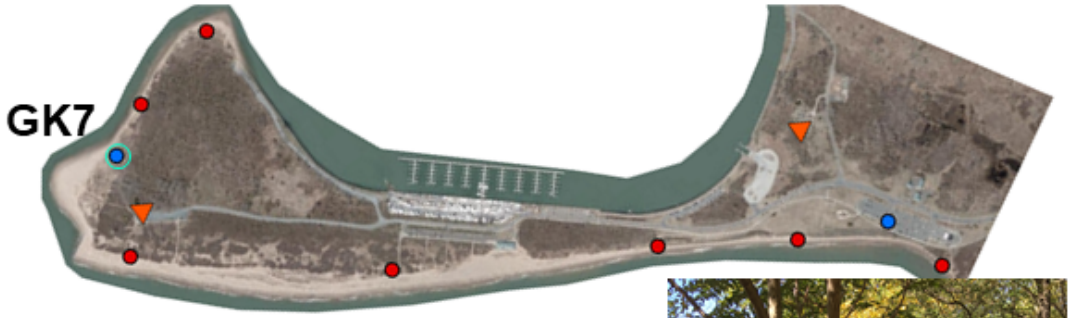
GK7

Purpose: Physical Transect Monument

Quality: RTK Measurement

PVC pipe located in the forest 15m north of the path leading northwest from the parking lot at Crookes Point.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
572948.06	**4487115.741**	**3.257**

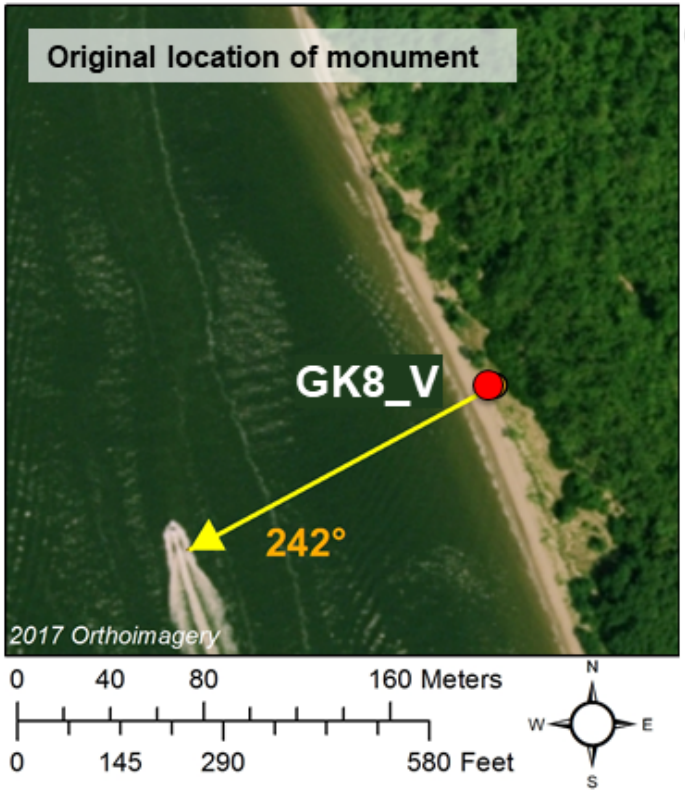
Physical Transect Monument coordinates and elevation – January 19, 2016

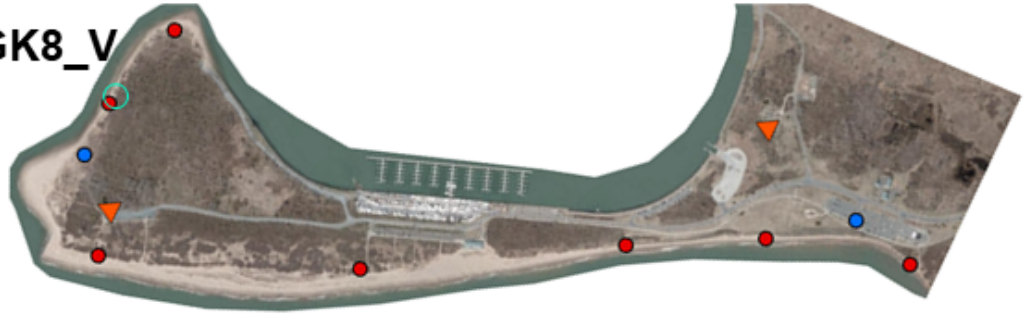
GK8_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Virtual monument is 1-2m behind dune/bluff in the grass right before dense vegetation.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
572875.587	**4487243.827**	

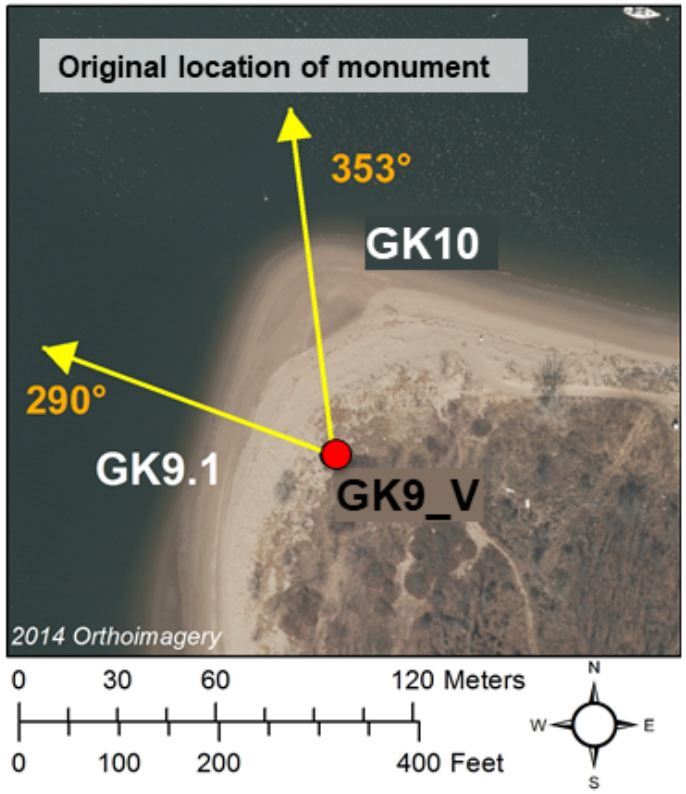
Virtual Transect Monument coordinates

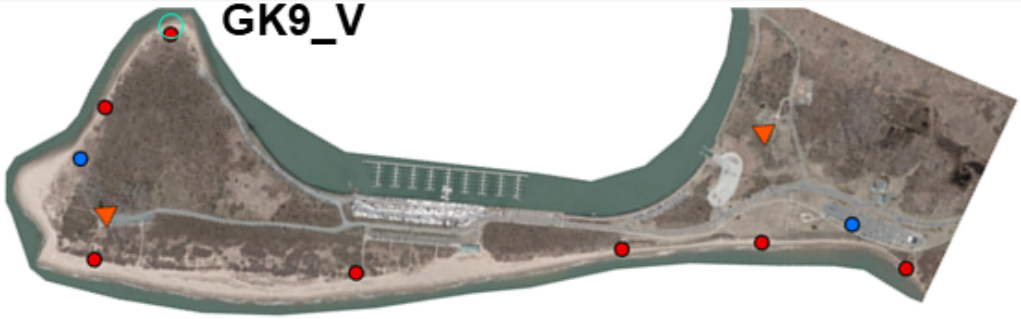
GK9_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Virtual monument is up behind dune on forest edge.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
572818.078	**4487490.247**	

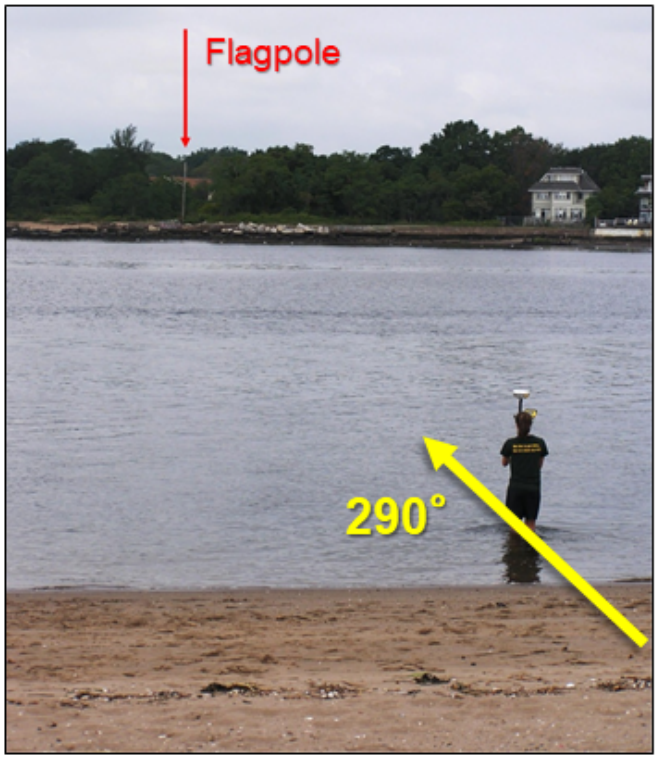
Virtual Transect Monument coordinates

GK9_V Transects

This monument is the starting point for two beach transect lines with different cross-shore orientations – GK9.1 and GK10

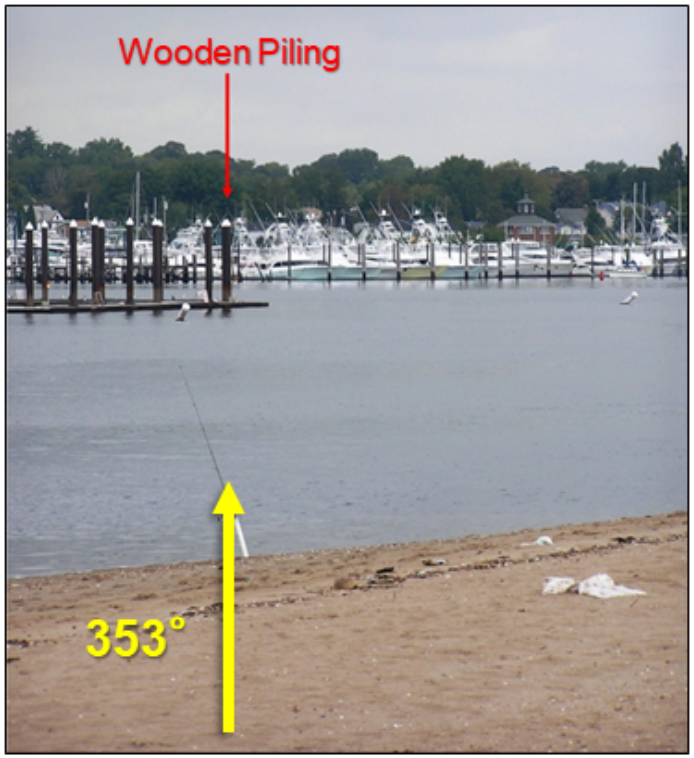
Profile GK9.1

Oriented 290° from the virtual transect monument, GK-9_V, northwest towards the white flagpole on the opposite shore of Great Kills Harbor



Profile GK10

Oriented 353° from the virtual transect monument, GK-9_V, northeast towards the easternmost wooden piling on the closest dock in Great Kills Harbor

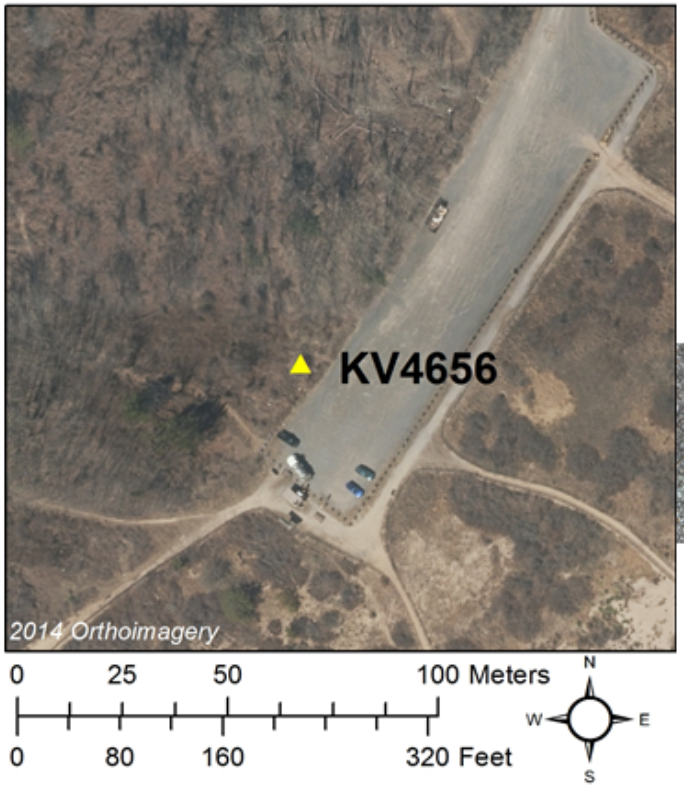


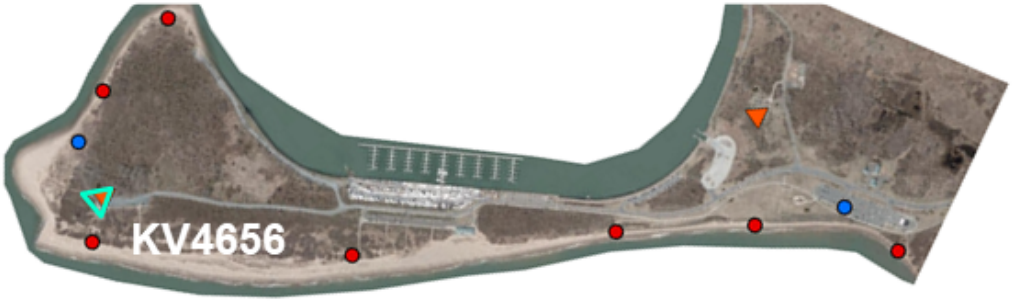
PID: KV4656

Purpose: Survey Control Monument

Quality: NGS adjustment

It is about 300 yards northeast of the southwest end of Crooks point, 5 feet west of a witness post and 35 feet northwest of the centerline of a graveled road. The monument project 5 inches and the disk is stamped "Crookes 1962". Recovered in 2013 and found in 2019 – in the woods in the only cleared space with lots of trash and marked with orange flags.











NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
573102.025	**4487101.956**	**4.3**

Survey Control Monument coordinates and elevation – adjusted 2013-05-30 NGS Data Sheet

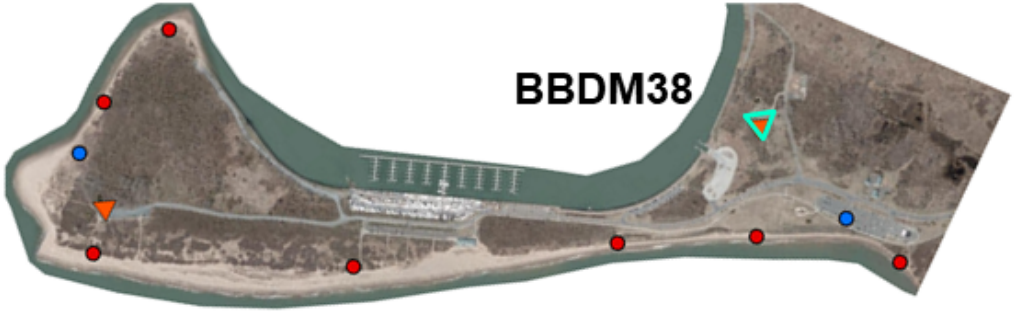
PID: BBDM38

Purpose: Survey Control Monument

Quality: OPUS Solution

It is in grass east of the Education Field Station. It is a stainless-steel rod in a sleeve. Uncertain accessibility via main road or gravel road.





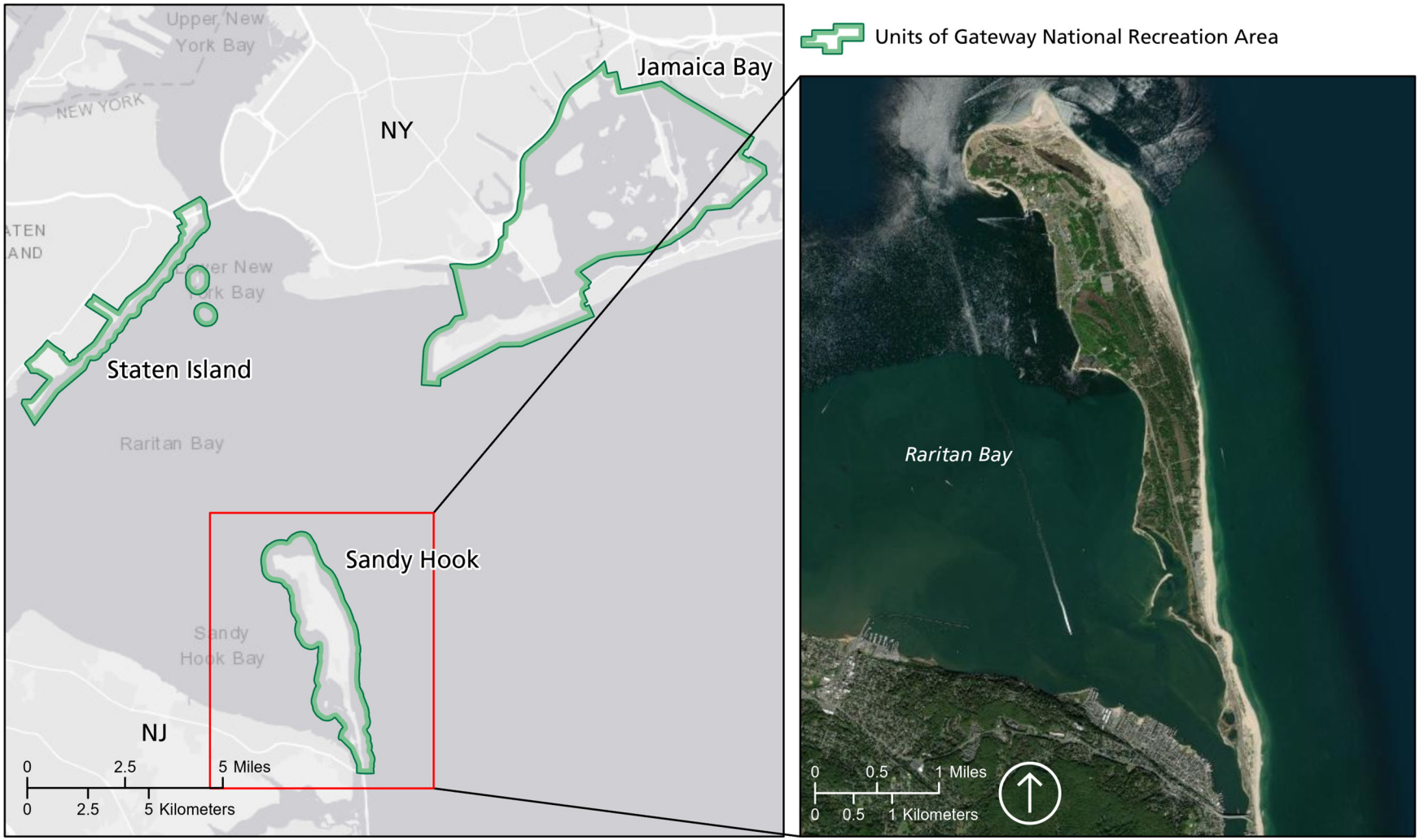




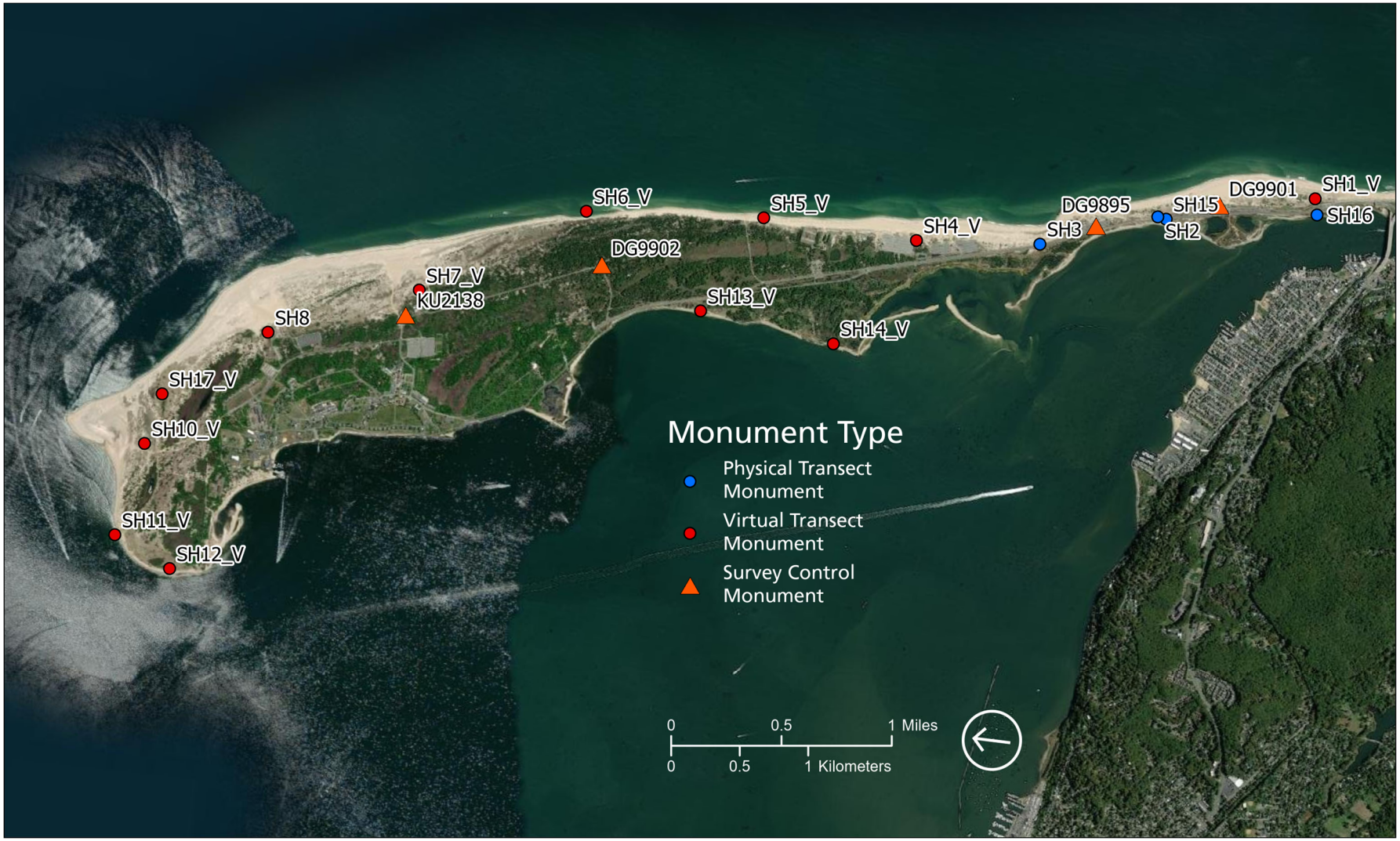
NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
573901.096	**4488610.414**	**5.615**

Survey Control Monument coordinates and elevation – observed 2014-04-18 OPUS Solution

Sandy Hook Unit



Monumentation Map



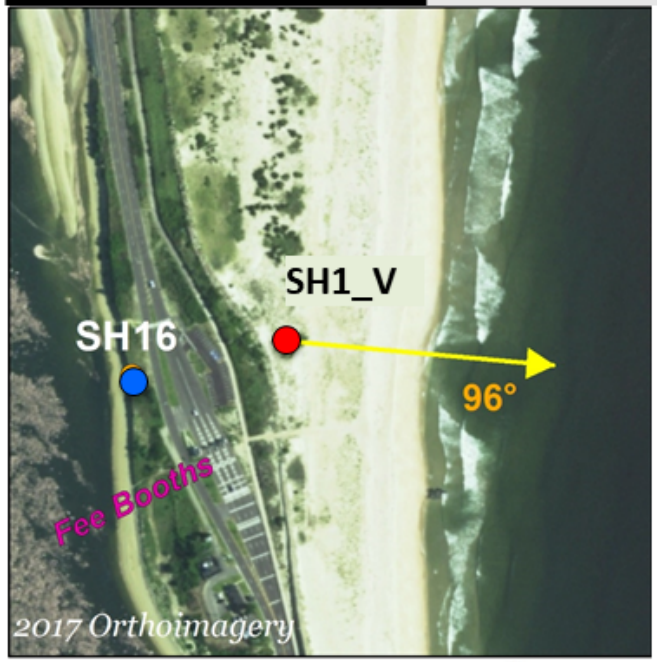
Monument Locations and Descriptions

SH1_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

A PVC pipe located 12m due east of a red spray-painted cross on the seawall. 70m northeast of access road to the beach and 75m northeast of the fee booths. Buried under sand as of September 2019. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
586850.589	4472808.787	(*Top of PVC 3.063)

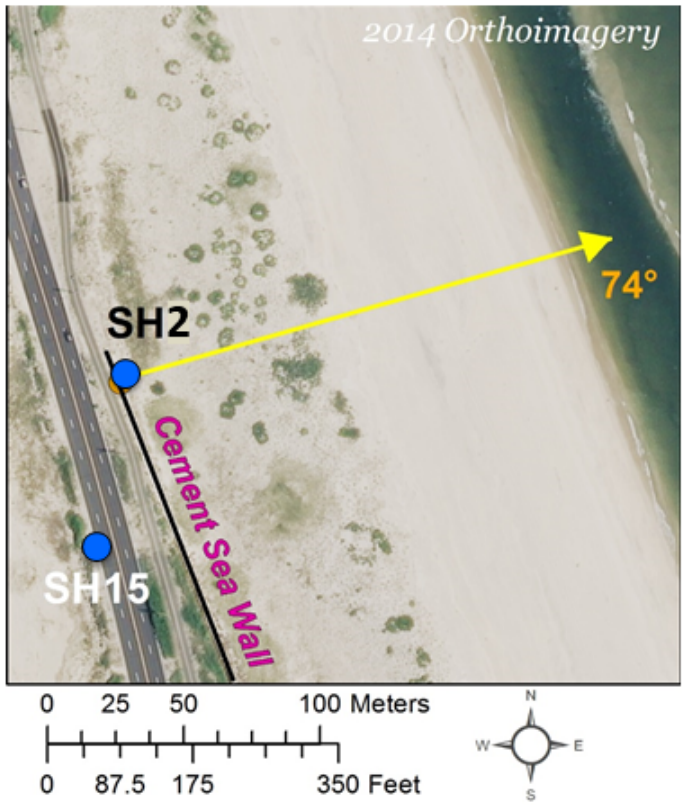
Virtual Transect Monument coordinates and elevation – January 19, 2016, if uncovered use *elevation

SH2

Purpose: Physical Transect Monument

Quality: RTK Measurement

A metal NGS disc on the cement seawall 240m north of parking lot B. Access either by jumping fence or beach B entrance and walking along sea wall.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (metal disc)
586579.451	4473931.67	4.717

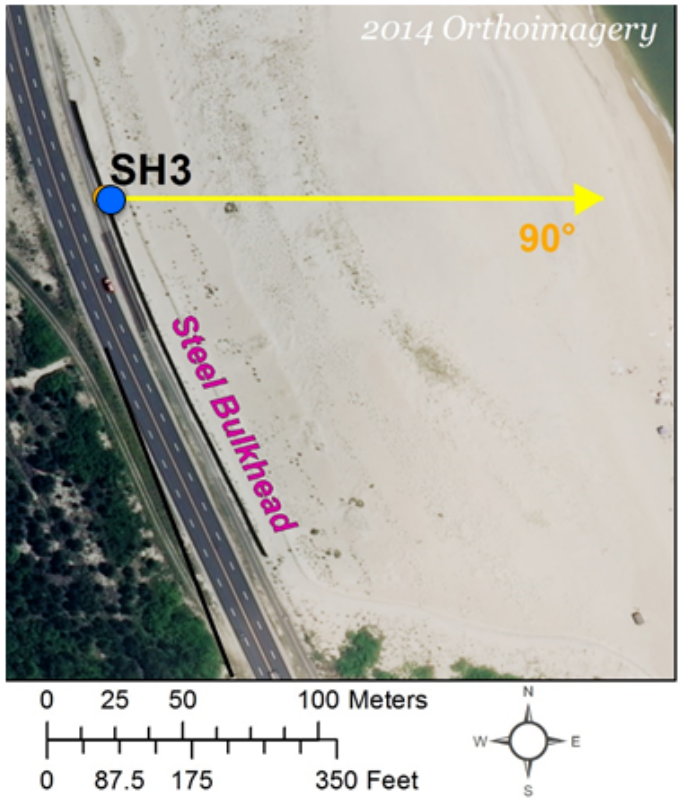
Physical Transect Monument coordinates and elevation – January 19, 2016

SH3

Purpose: Physical Transect Monument

Quality: RTK Measurement

Metal survey disc located 35m from the northern end of the bulkhead. It is approximately one meter south of orange spray painted arrow (not shown) on west side of bulkhead. Profile is mostly poison ivy free.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (metal disc)
586276.445	4474762.613	3.986

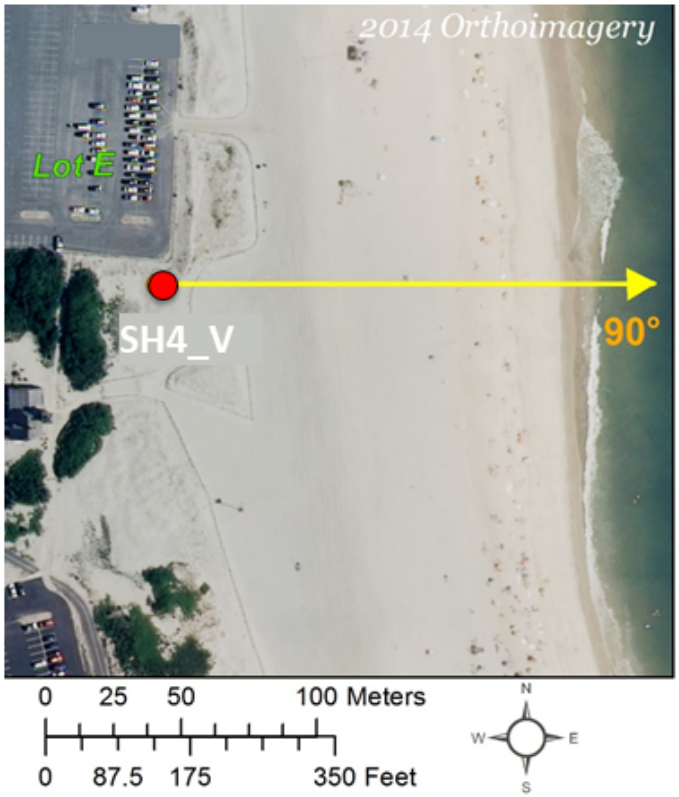
Physical Transect Monument coordinates and elevation – January 19, 2016

SH4_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Benchmark missing/inaccessible. Hop fence and climb dune feature, almost parallel to the end of the parking lot.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
586209.276	4475659.75	

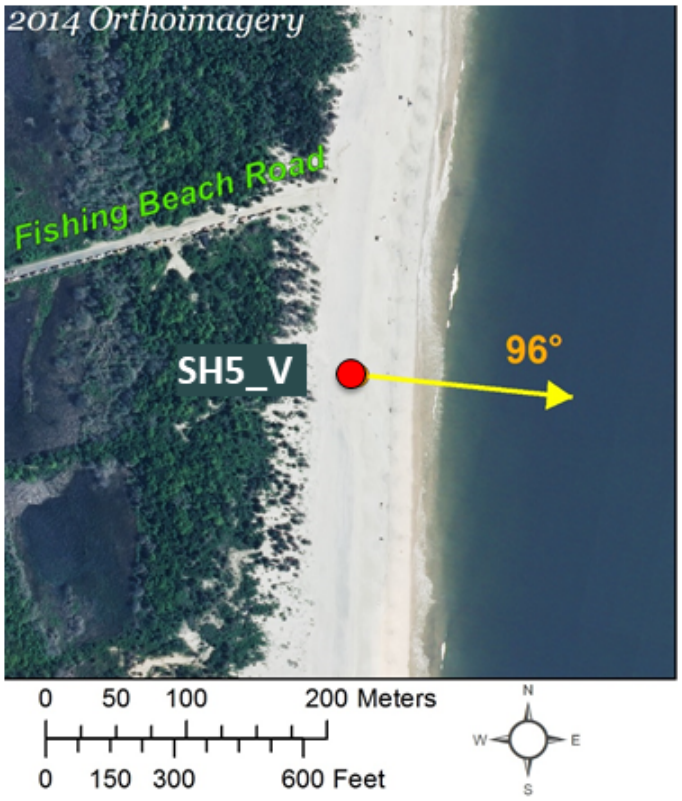
Virtual Transect Monument coordinates

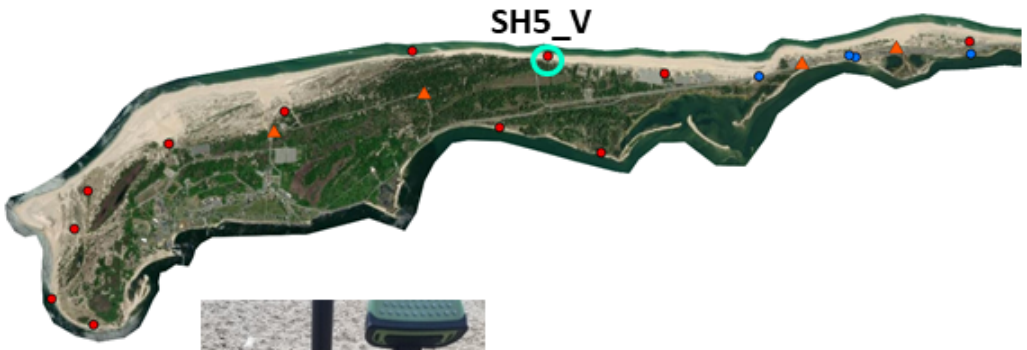
SH5_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Benchmark missing, virtual monument is on the beach berm.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
586217.078	4476784.952	

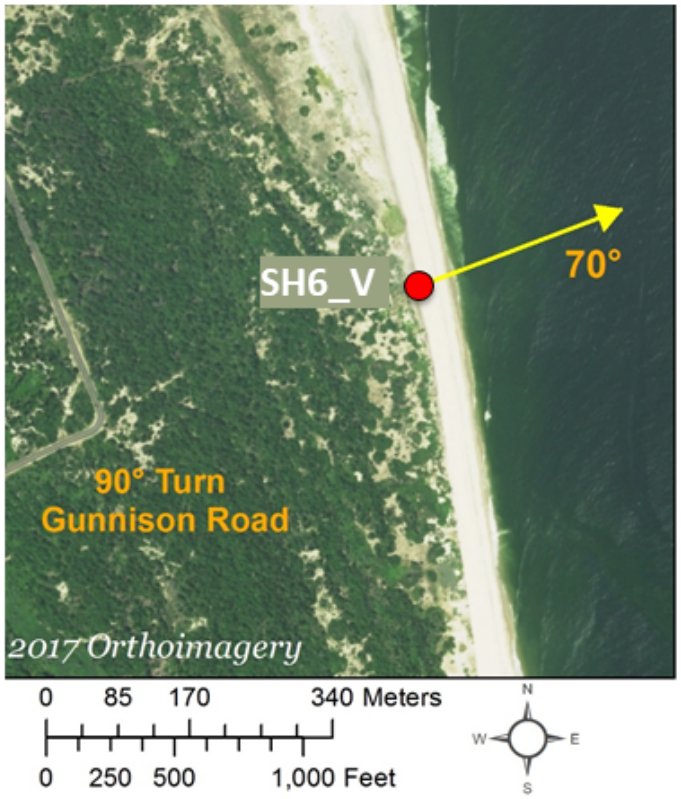
Virtual Transect Monument coordinates

SH6_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Benchmark missing/inaccessible. Virtual monument may be underwater depending on tide.







NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
586108.793	4478075.332	

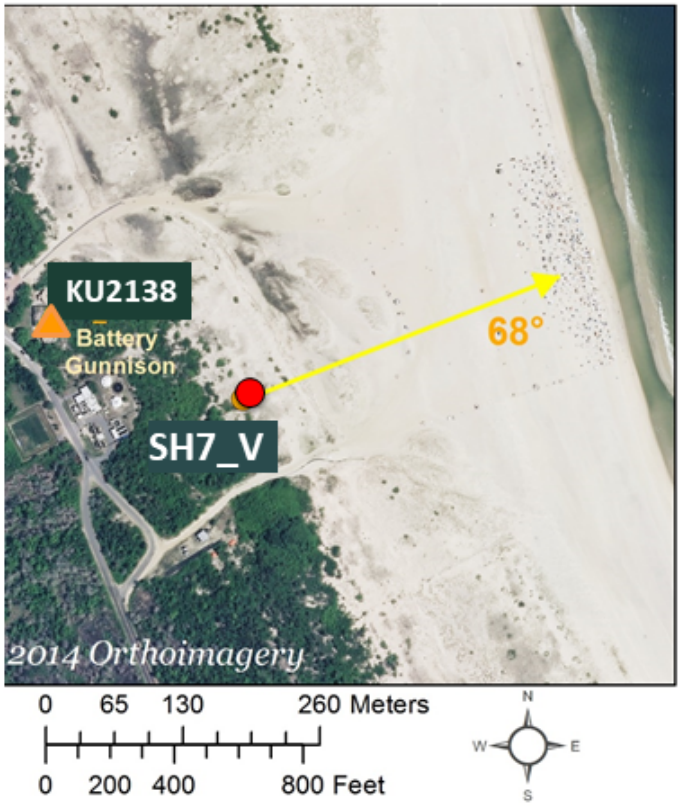
Virtual Transect Monument coordinates

SH7_V

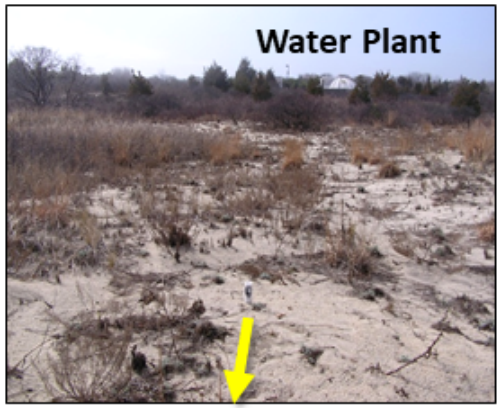
Purpose: Virtual Transect Monument

Quality: RTK Measurement

Originally a PVC pipe located on the crest of the dune 120m south of the prominent white-roofed water plant building. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
585388.979	4479216.438	

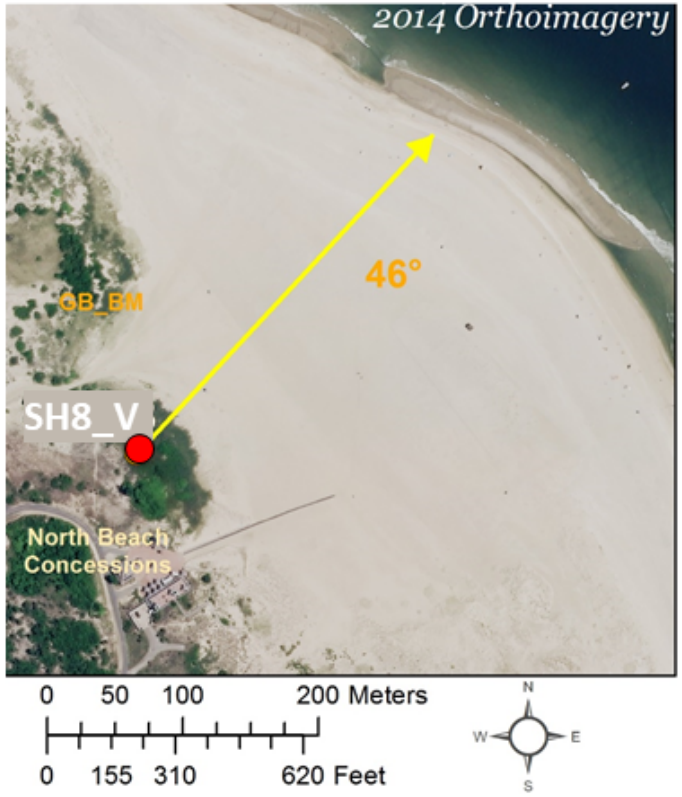
Virtual Transect Monument coordinates

SH8_V

Purpose: Virtual Transect Monument

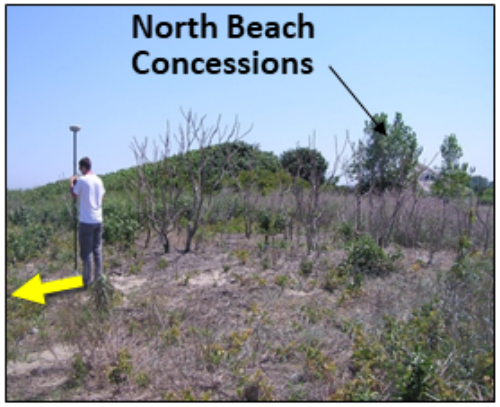
Quality: RTK Measurement

Originally a PVC pipe located 5m north of stand of dead trees. 125m northeast of Proving Ground structures, 60 m southeast of entrance road to North Beach, and 70m north of the North Beach Concessions. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
584950.331	4480275.071	

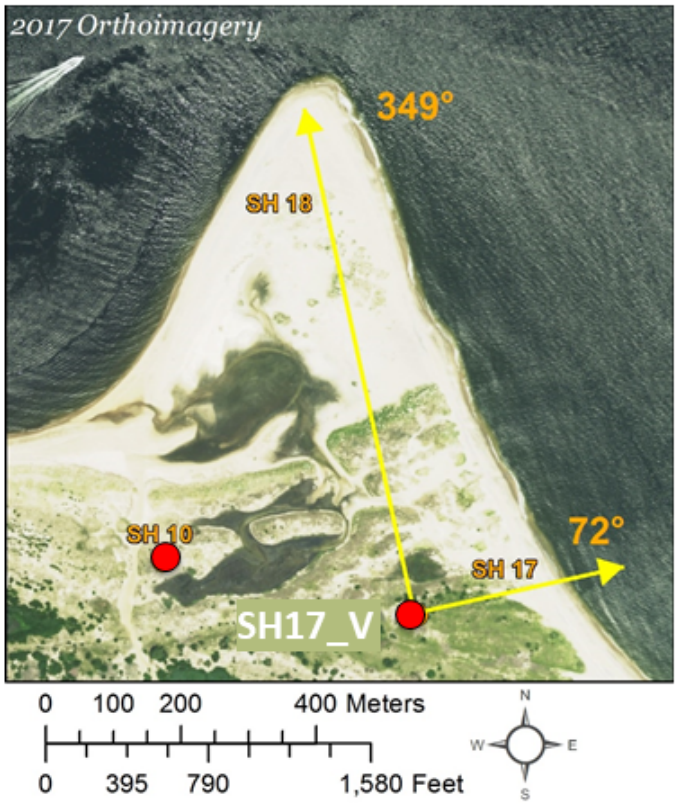
Virtual Transect Monument coordinates

SH17_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Virtual monument inland from the old SH9. SH17_V replaced SH9 as of September 2019, SH17_V is the starting point for transects SH17 and SH18.





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
584409.00	4480987.41	

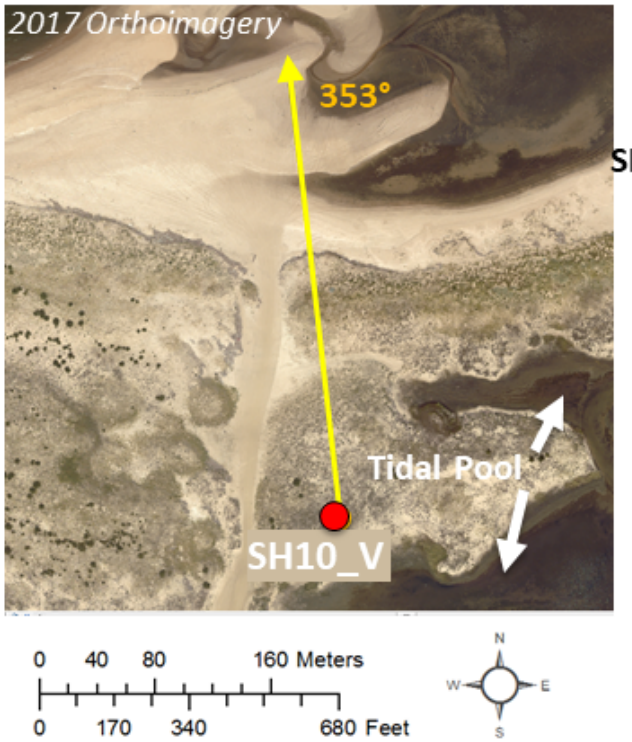
Virtual Transect Monument coordinates

SH10_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Originally a PVC pipe located 100m northeast of the entrance road to the North Fishing Beach. Approximately 50m northwest of tidal pool behind the foredune. Now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
584033.976	4481068.255	

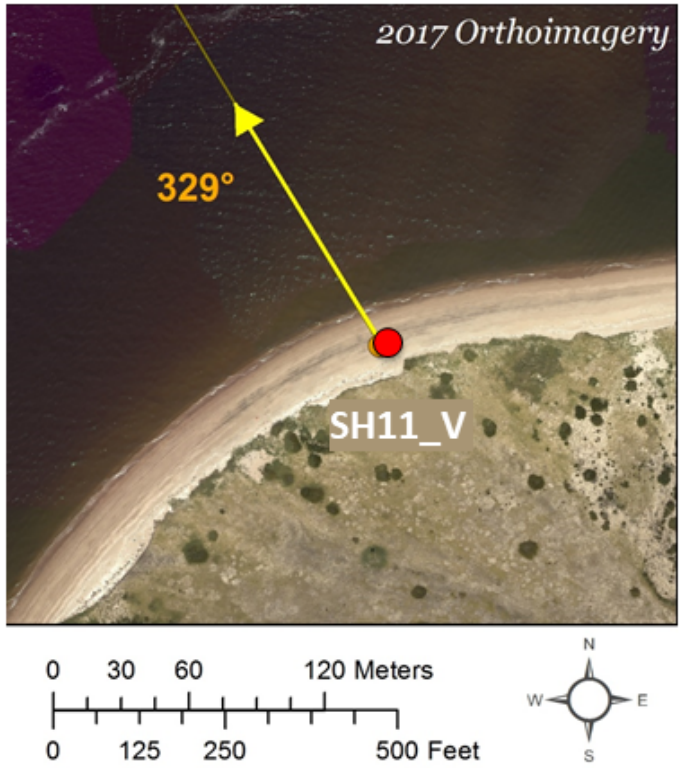
Virtual Transect Monument coordinates

SH11_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument gone – virtual monument is under water at low tide





NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
583343.876	4481203.195	

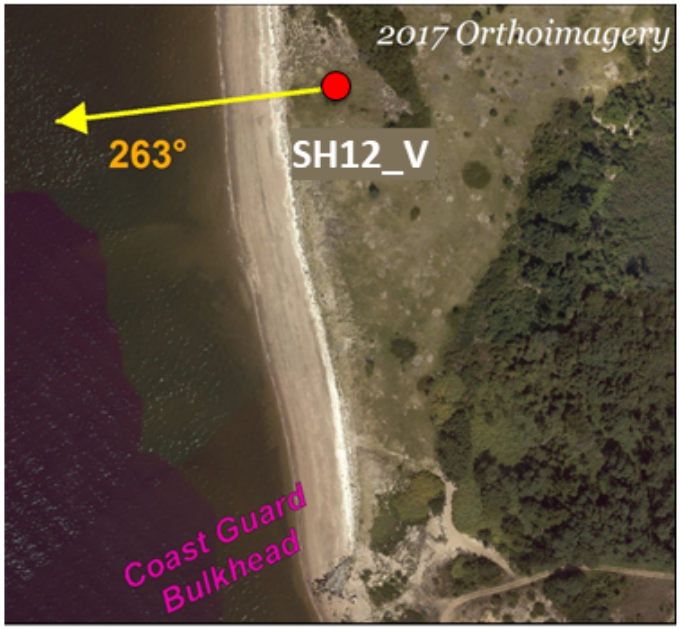
Virtual Transect Monument coordinates

SH12_V

Purpose: Virtual Transect Monument

Quality: RTK Measurement

PVC missing/buried, virtual monument ~50m behind foredune









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (*top of PVC)
583147.669	4480777.834	*1.221

Virtual Transect Monument coordinates and *elevation – January 19, 2016

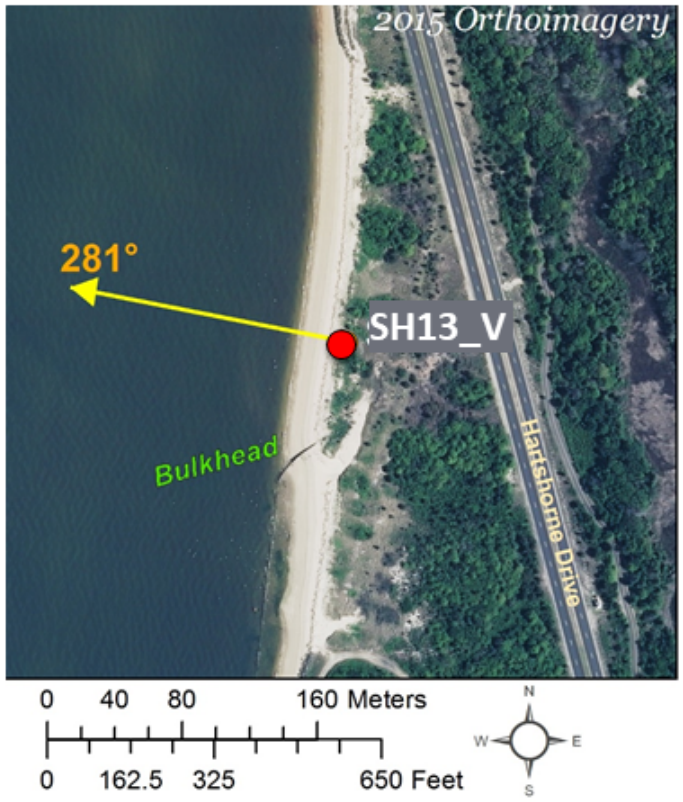
*If not buried

SH13_V

Purpose: Virtual Transect Monument

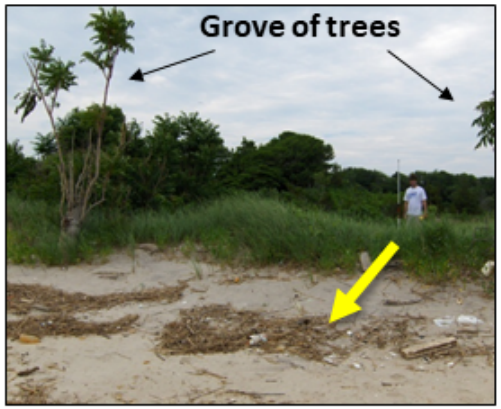
Quality: RTK Measurement

Original monument missing/inaccessible. Lots of poison ivy, now classified as virtual.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
585488.135	4477161.404	

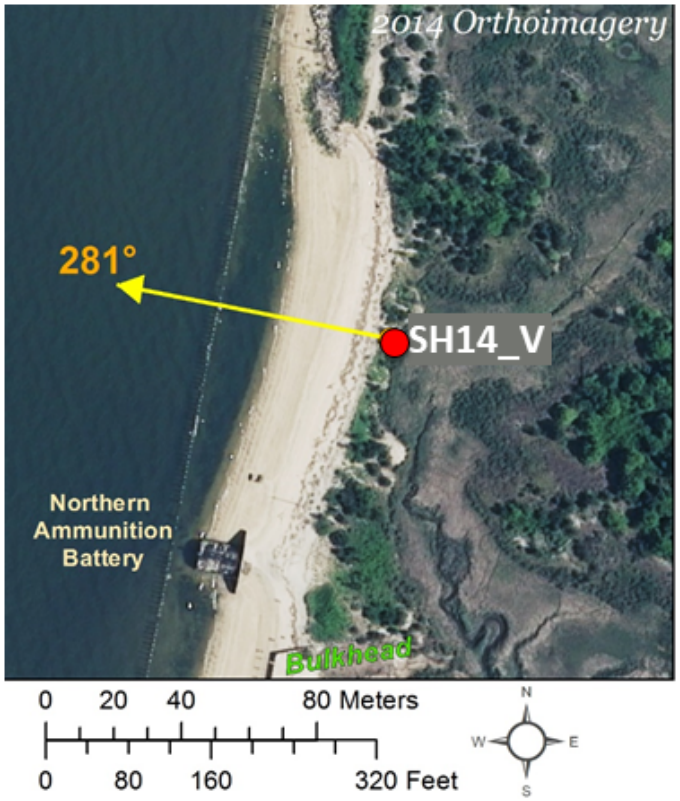
Virtual Transect Monument coordinates

SH14_V

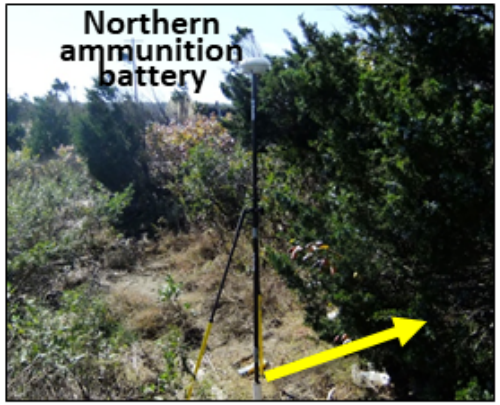
Purpose: Virtual Transect Monument

Quality: RTK Measurement

Monument missing/inaccessible. Virtual monument is inland behind berm – lots of poison ivy.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
585374.598	4476166.179	

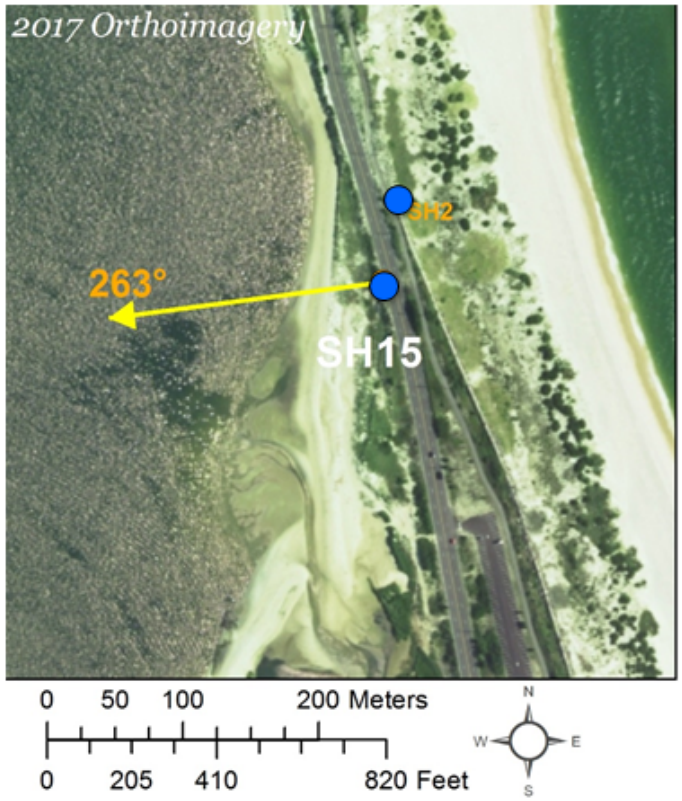
Virtual Transect Monument coordinates

SH15

Purpose: Physical Transect Monument

Quality: RTK Measurement

A USACE metal disc on the western curb of Hartshorne Drive 175m north of parking lot B. Disc is built into the concrete curb/bulkhead.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (metal disc)
586569.741	4473871.067	3.396

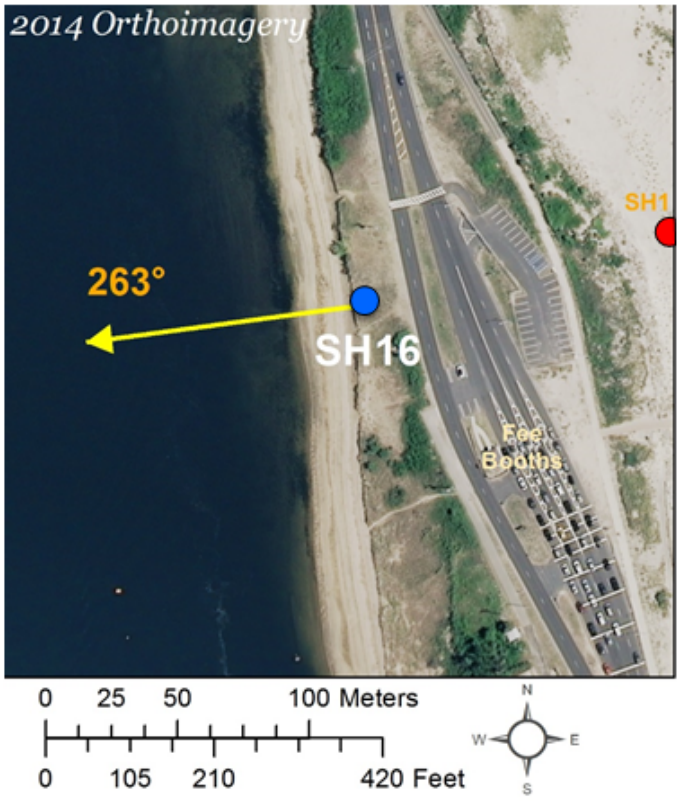
Physical Transect Monument coordinates and elevation – January 19, 2016

SH16

Purpose: Physical Transect Monument

Quality: RTK Measurement

A PVC pipe located 15m west of Hartshorne Drive and 60m northwest of fee booths. Behind the prominent scarp.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (top of PVC)
586732.842	4472780.551	3.821

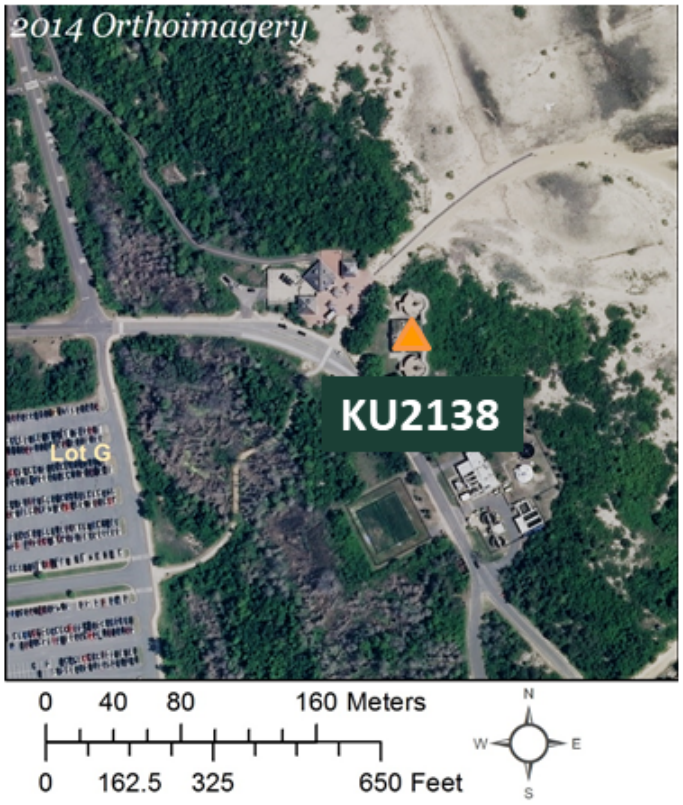
Physical Transect Monument coordinates and elevation – January 19, 2016

PID: KU2138

Purpose: Survey Control Monument

Quality: RTK Measurement

NGS metal disc set into a metal pipe in the grassy area between the two guns on top of Battery Gunnison.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (center of disc)
585204.368	4479293.575	8.018

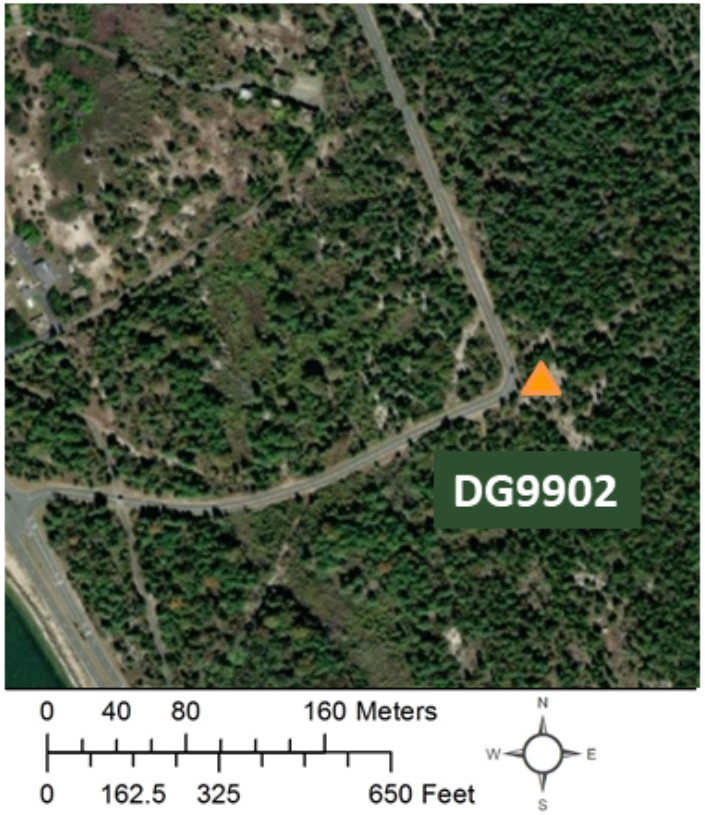
Survey Control Monument coordinates and elevation – observed 2016-04-06 OPUS Solution

PID: DG9902

Purpose: Survey Control Monument

Quality: RTK Measurement

Metal disc set into a concrete footing.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z (center of disc)
585730.901	4477926.590	5.321

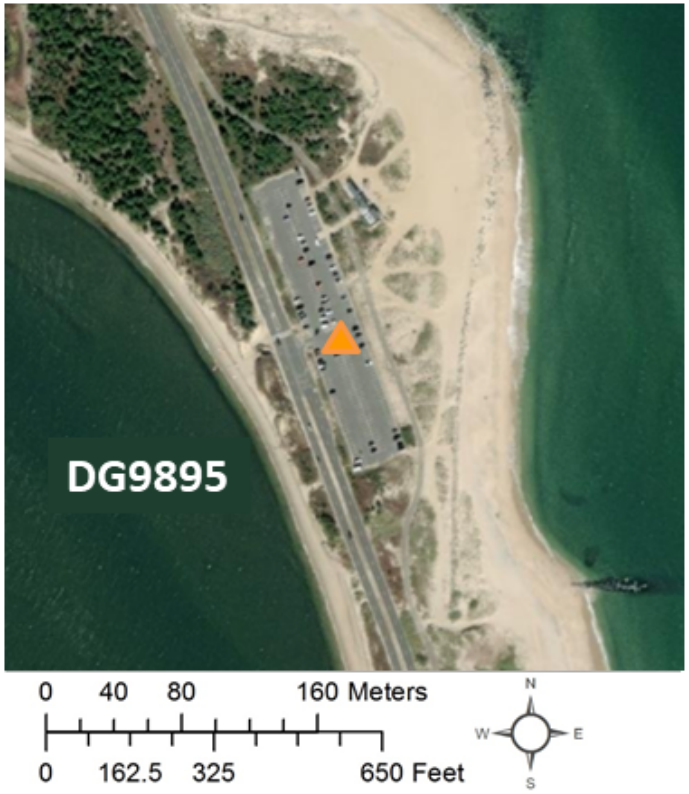
Survey Control Monument coordinates and elevation – observed 2021-12-20 OPUS Solution

PID: DG9895

Purpose: Survey Control Monument

Quality: RTK Measurement

Stainless steel rod in a greased sleave located in the median of Beach Area C.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
586464.564	4474373.338	2.530

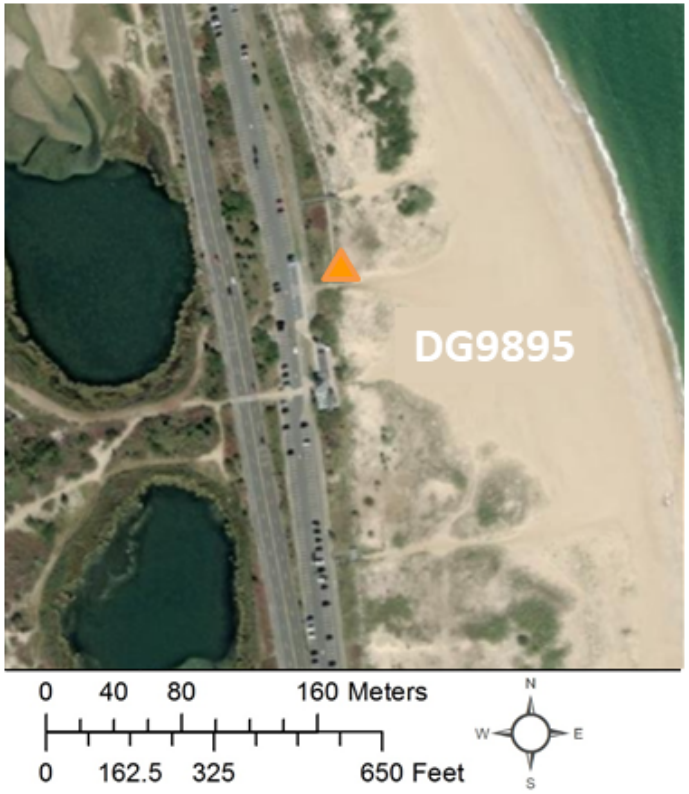
Survey Control Monument coordinates and elevation – observed 2012-07-26 OPUS Solution

PID: DG9901

Purpose: Survey Control Monument

Quality: RTK Measurement

Metal disk set in a sea wall boulder near Beach Area B.









NAD 83 UTM (m)		NAVD 88 (m)
X (Easting)	Y (Northing)	Z
586722.657	4473497.657	4.781

Survey Control Monument coordinates and elevation – adjusted 2017-11-22 NGS Data Sheet