

[illegible]

URL: <https://macorsrtk.massdot.state.ma.us>

8/02/21 - Software update performed, and Network processing now includes the BeiDou constellation in the RTCM 3.2 MSM4 IMAX (GNSS) product.



	GNSS Post-Processing (RINEX) Services Free
	• RINEX Jobs Service - Allows customers to request and download GNSS

MaCORS Reference Station Information and Coordinates
NAD83 (2011) Epoch 2010.00 (MYCS2)

Site ID	Site Name	Ref. Station Number	Latitude	Longitude	Ellipsoid Height (m)	Antenna Type
MABN	Barnardston	21	42 40 11.99145 N	072 32 28.64398 W	94.904	LEIAR20 LEIM
MABT	Belchertown	22	42 16 56.08033 N	072 22 54.62449 W	120.854	LEIAR20 LEIM
MACM	Chatham	57	41 41 28.68832 N	069 58 01.53201 W	-12.964	LEIAR20 LEIM
MADA	Dartmouth	54	41 38 22.84851 N	071 01 41.39391 W	6.389	LEIAR20 LEIM
MAFA	Falmouth	55	41 37 11.07628 N	070 32 27.30466 W	-1.472	LEIAR20 LEIM
MAGS	Goshen	12	42 27 19.96865 N	072 49 56.37536 W	330.987	LEIAR20 LEIM
MAMA	Manchester	43	42 35 21.26104 N	070 47 14.35018 W	-6.307	LEIAR20 LEIM
MAMV	Milton	61	42 16 19.38629 N	071 02 55.25020 W	-17.485	LEIAR20 LEIM
MAMV	Martha's Vineyard	58	41 21 00.41432 N	070 45 49.65091 W	-19.885	LEIAR20 LEIM
MANB	Northborough	32	42 17 02.62246 N	071 39 40.52773 W	69.585	LEIAR20 LEIM
MANT	Nantucket	56	41 16 10.14720 N	070 05 00.87560 W	-15.545	LEIAR20 LEIM
MAPL	Plymouth	52	41 56 19.31507 N	070 39 18.24361 W	11.738	LEIAR20 LEIM
MASA	Salisbury	42	42 51 45.88649 N	070 53 34.94629 W	-10.292	LEIAR20 LEIM
MASB	Sturbridge	33	42 06 41.08155 N	072 05 13.98558 W	159.562	LEIAR20 LEIM
MASH	Sheffield	13	42 08 25.75422 N	073 21 51.06383 W	175.586	LEIAR20 LEIM
MATB	Tewksbury	41	42 37 48.00304 N	071 16 17.32201 W	13.166	LEIAR20 LEIM
MATU	Truro	53	41 58 51.70839 N	070 02 36.89157 W	13.332	LEIAR20 LEIM
MAWM	Westminster	31	42 33 40.62129 N	071 55 59.20800 W	317.177	LEIAR20 LEIM
MAWR	Wrentham	51	42 02 30.13387 N	071 18 15.03982 W	36.689	LEIAR20 LEIM
MAWS	West Springfield	23	42 08 14.41011 N	072 37 26.93710 W	-3.118	LEIAR20 LEIM
MAWT	Williamstown	11	42 38 21.24532 N	073 13 37.81419 W	271.512	LEIAR20 LEIM
URLL	Univ. of RI	01	41 29 20.15788 N	071 31 39.77809 W	45.644	TRM159800.00 SCIS

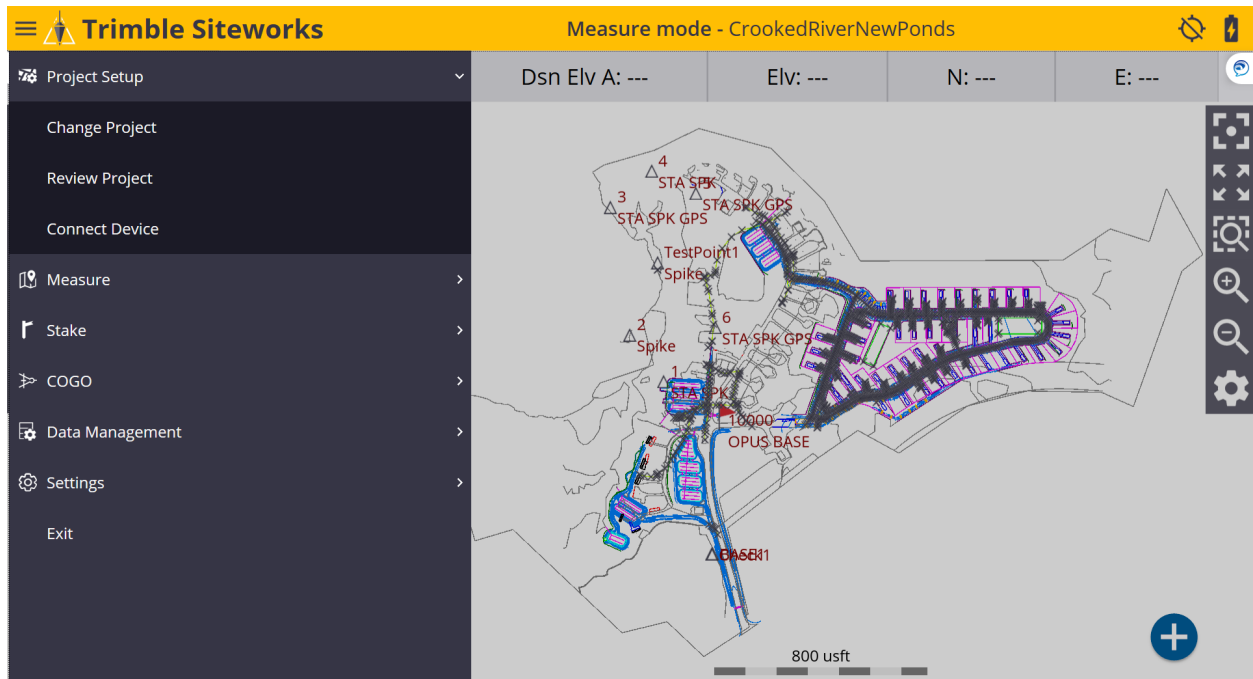
NOTES:

- All sites offer GNSS data
- Site IDs in **Green** are part of the NGS National CORS Network

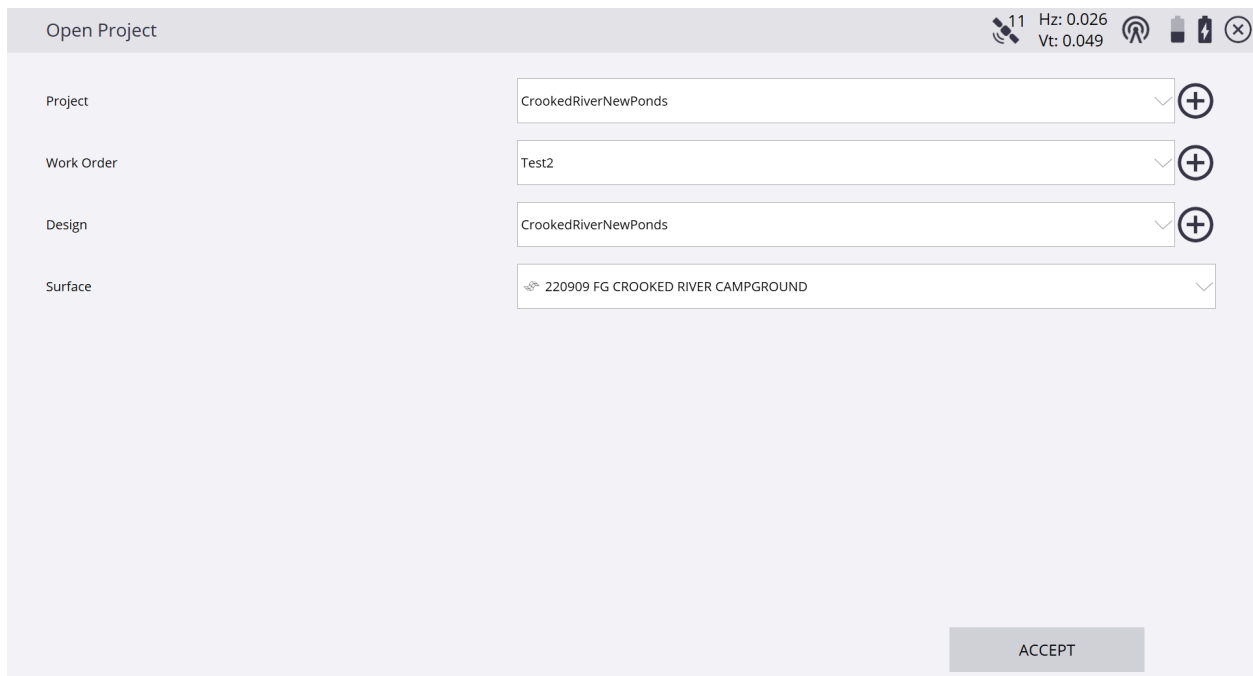
REVISIONS:

- 5/19/16 - Antenna Type for MATB changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 5/25/16 - Antenna Type for MAPL changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 5/26/16 - Antenna Type for MASA changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 3/06/18 - Site MANT added to the RTN
- 11/06/18 - Site MACH added to the RTN
- 2/08/19 - Chatham Site ID changed from MACH to MACM
- 3/14/19 - NGS accepts MACM into the National CORS Network. Site ID designation changed to reflect this
- 4/29/19 - Antenna Type for MAMA & MANB changed from [LEIAS10 NONE] to [LEIAR20 LEIM]
- 4/29/19 - Antenna Type for MAWR changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 4/30/19 - Antenna Type for MASH, MAWT, MAGS, & MABT changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 5/01/19 - Antenna Type for MASB, MAWS, MABN, & MAWM changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 5/02/19 - Antenna Type for MATU, MAFA, & MADA changed from [LEIAX1203+GNSS NONE] to [LEIAR20 LEIM]
- 9/14/19 - Adopted new NAD83(2011) Epoch 2010.00 reference station positions. The network was readjusted after replacing the old hardware
- 9/27/19 - NGS accepts MANT into the National CORS Network. Site ID designation changed to reflect this
- 4/24/20 - Adopted new NAD83(2011) Epoch 2010.00 coordinates (MYCS2 derived), due to a least-squares adjustment of the network
- 12/17/20 - NGS accepts MAWR into the National CORS Network. Site ID designation changed to reflect this
- 5/17/22 - Antenna mount adaptor for MATB changed and new coordinates computed and adopted as of 1:00 pm (EDT). The superseded values are: 42 37 48.00284 N, 071 16 17.32162 W, 13.188 (EL HGT)
- 6/14/22 - NGS accepts MATB into the National CORS Network. Site ID designation changed to reflect this
- 1/5/23 - Adopted new NAD83(2011) Epoch 2010.00 coordinates (MYCS2 derived), due to a least-squares adjustment of the network
- 1/17/23 - Site MAMV added to the RTN
- 2/27/23 - Site URLL added to the RTN

*On the Siteworks upper left main screen tap the **3-Bar Hamburger Icon** and select **Project Setup>Change Project.**



*Tap the + (*plus sign*) to the right of the **Project** window to create a new project.



*Name your new project in the **Project** window, select the preferred project unit settings from the drop-down lists in each window, tap **NEXT**.

New Project

Project: MassachusettsCORS

Distances: US Survey Feet

Angles: Degrees

Coordinate order: P, N, E, Z, D

Grid coordinate: North and East

Azimuth: North

Stationing: 0+00.000

NEXT

*On the **Project Creation Options** screen, check the box next to **Select coordinate system** to use a coordinate system, tap **COORDINATE SYSTEM**.

Project Creation Options

☐ Select control point file

Style guide: Siteworks Default

File name (.CSV): Tap to select file

☐ Select FXL file: Siteworks Default.fxl

☒ Select coordinate system

COORDINATE SYSTEM

Coordinate system: United States/NAD83

Zone: Massachusetts Mainland 2001

Geoid: GEOID18 (Conus)

FINISH

*On the **Select Coordinate System** screen, select the desired Coordinate System, Geoid and Zone, tap **ACCEPT**.

Select Coordinate System

Coordinate system United States/NAD83

Zone Massachusetts Mainland 2001

Geoid file GEOID18 (Conus) [g18us.ggf]

ACCEPT

*Once back to the **Project Creation Options** screen, tap **FINISH**.

Project Creation Options

☐ Select control point file

Style guide Siteworks Default

File name (.CSV) Tap to select file

☐ Select FXL file Siteworks Default.fxl

☒ Select coordinate system

COORDINATE SYSTEM

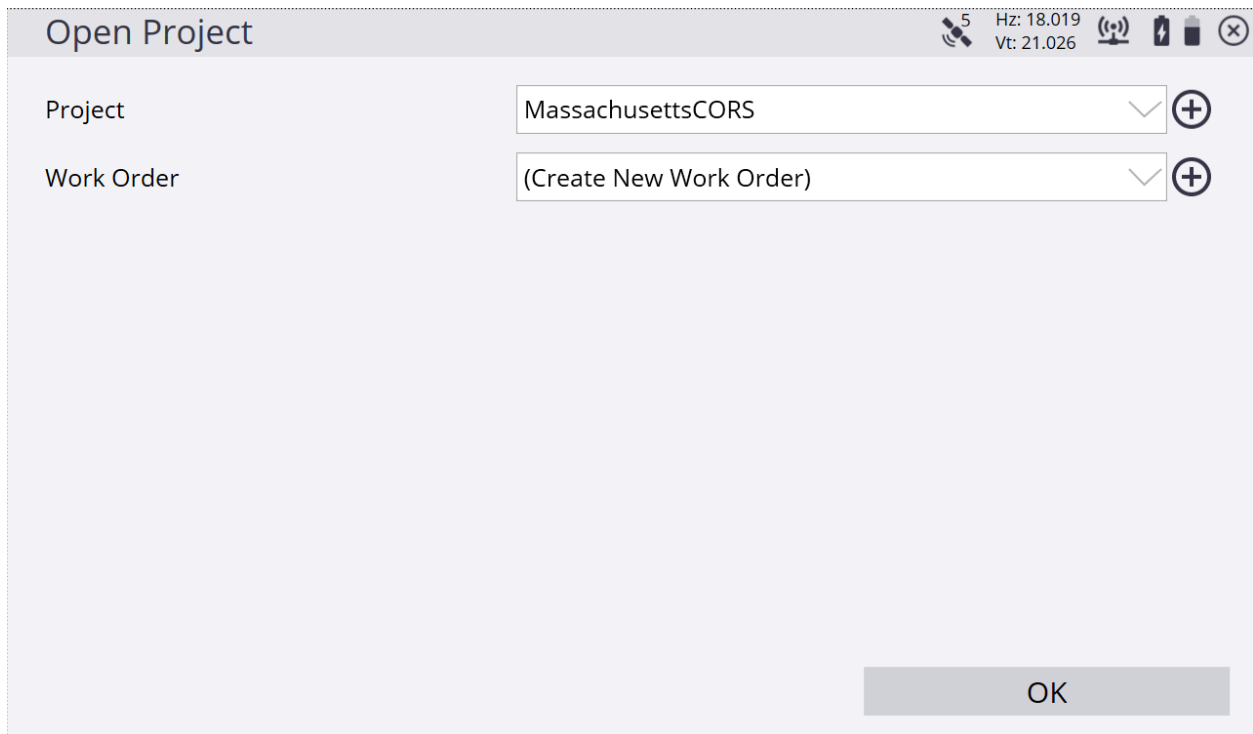
Coordinate system United States/NAD83

Zone Massachusetts Mainland 2001

Geoid GEOID18 (Conus)

FINISH

*Once back to the **Open Project** screen, tap the + (*plus sign*) and create a new **Work Order**.



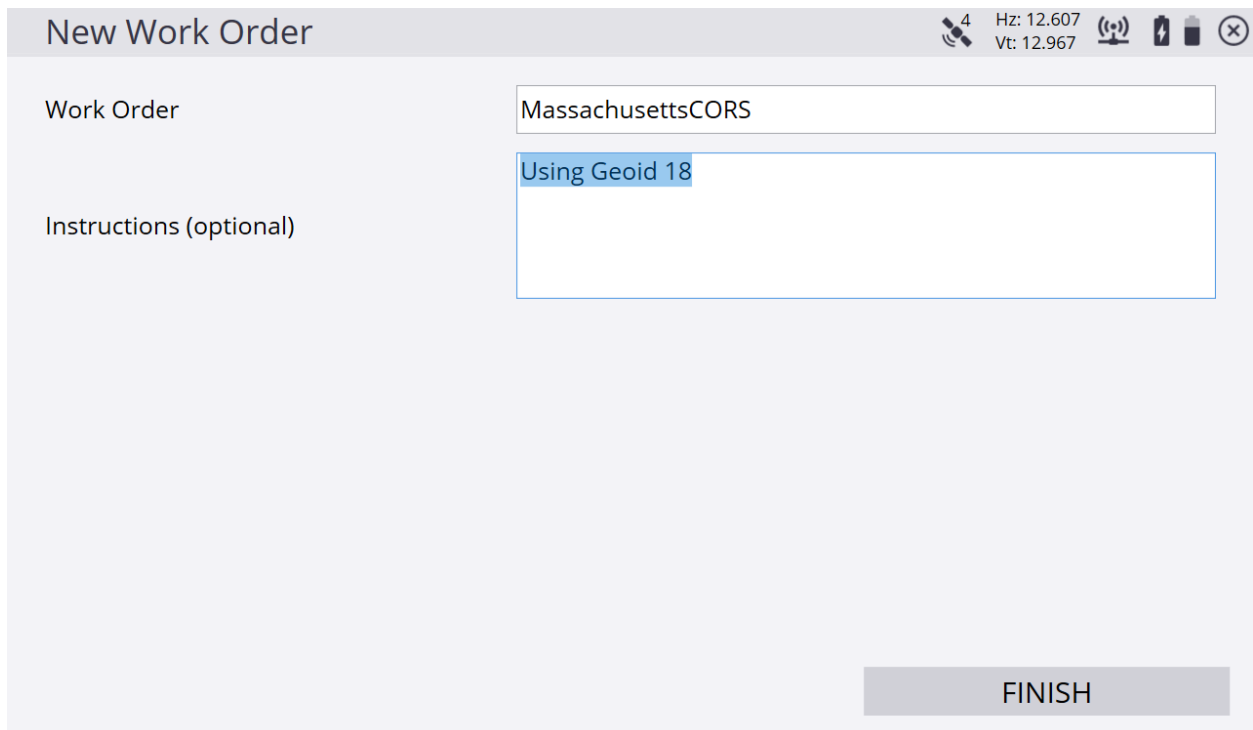
Open Project

Project MassachusettsCORS

Work Order (Create New Work Order)

OK

*After naming the **Work Order**, create **Instructions** in the **Instructions (optional)** window to reference the work order, tap **FINISH**.



New Work Order

Work Order MassachusettsCORS

Instructions (optional) Using Geoid 18

FINISH

*Tap + (*plus sign*) to create a new **Design** or use (No design needed). For this demonstration we are not using a design, tap **ACCEPT**.

Open Project

Project: MassachusettsCORS (+)

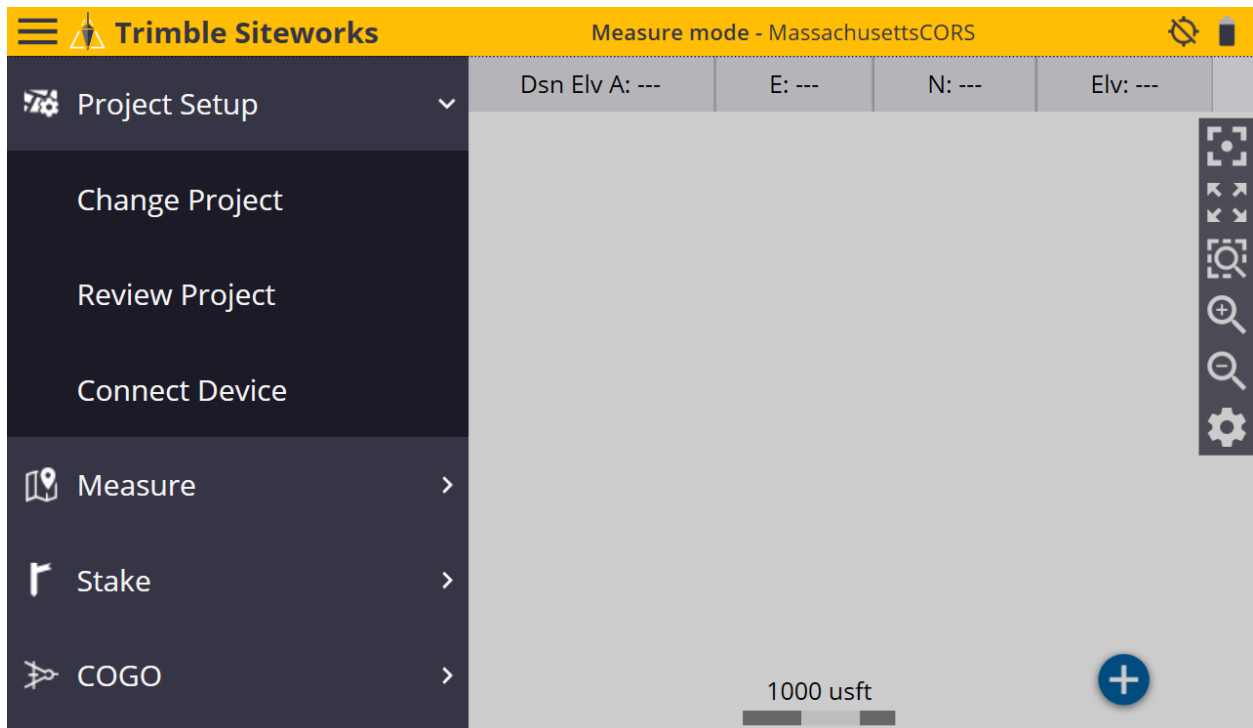
Work Order: MassachusettsCORS (+)

Instructions: Using Geoid 18

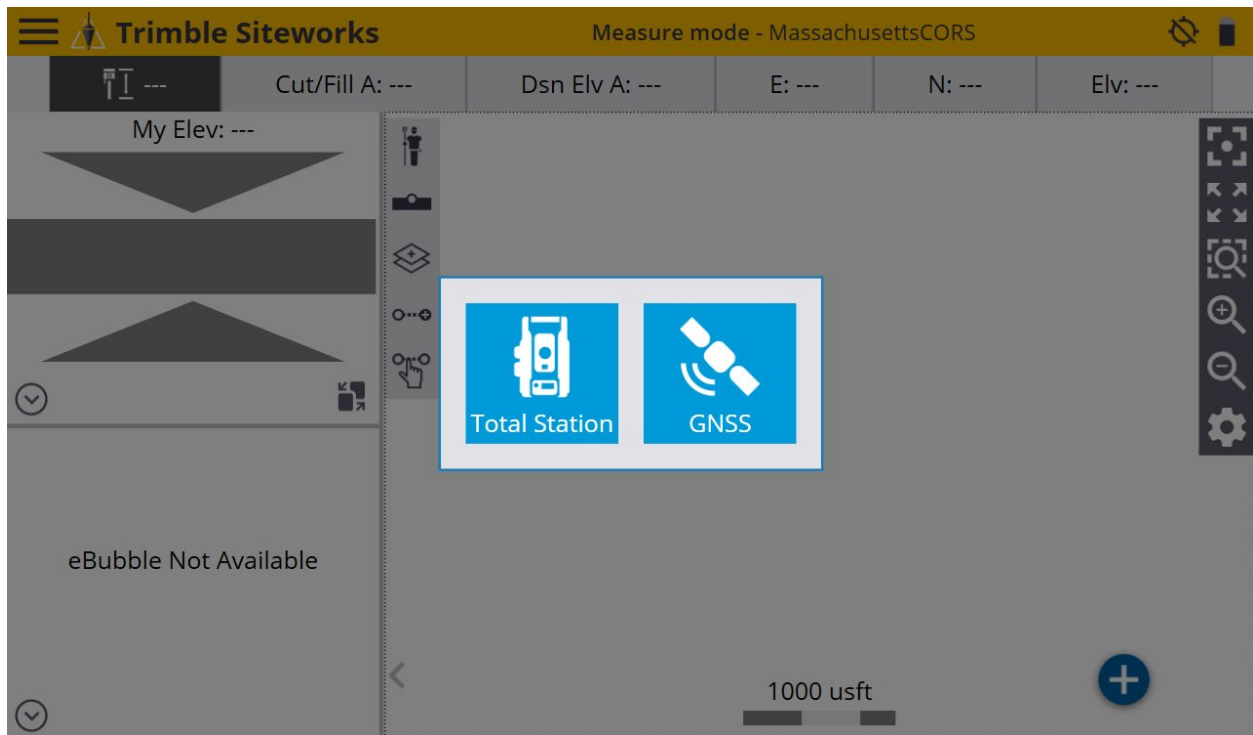
Design: (No design needed) (+)

ACCEPT

*From the Siteworks upper left main screen tap the **3-Bar Hamburger Icon** and select **Connect Device**.



*In **Connect Device** tap on the blue **GNSS Icon** to enter **Receiver Setup** screen.



*Next, select **Rover** from the drop-down list in the **Mode** window, then select **Bluetooth** from the drop-down list in the **Connection type** window.

The image shows the 'Receiver Setup' screen in the Trimble Siteworks application. It features two drop-down menus. The first menu, labeled 'Mode', has 'Rover' selected. The second menu, labeled 'Connection type', has 'Bluetooth' selected. At the bottom right, there is a 'SELECT' button. The screen also has a close button (X) in the top right corner.

*Next, select the Rover from the drop-down list in the **Bluetooth device** window.

Receiver Setup

Mode

Rover

Connection type

Bluetooth

Bluetooth device

R780 6229F00329 Trimble

Correction method

Internet

SELECT

*Next, select **Internet** from the drop-down list in the **Correction method** window and tap **VRS connection settings** in the **VRS connection settings** window.

Receiver Setup

Mode

Rover

Connection type

Bluetooth

Bluetooth device

R780 6229F00329 Trimble

Correction method

Internet

VRS connection settings

VRS connection settings

OK

*On the **Receiver Setup Server** screen, input the **IP Server address**, **Port number**, **User name** and **Server password** into their corresponding windows.

Receiver Setup

10 Hz: 23.376 Vt: 24.958

Server address

66.128.64.251

Port number

10000

User name

J_Goosetrey

Server password

ACCEPT

*On the **Receiver Setup** screen select the desired **Data stream** for the VRS connection from the drop-down list in the **Data stream** window, tap **ACCEPT**.

Receiver Setup

9 Hz: 61.123 Vt: 74.088

Data stream

RTCM3MSM_IMAX

Details

VRS

Yes

Fee

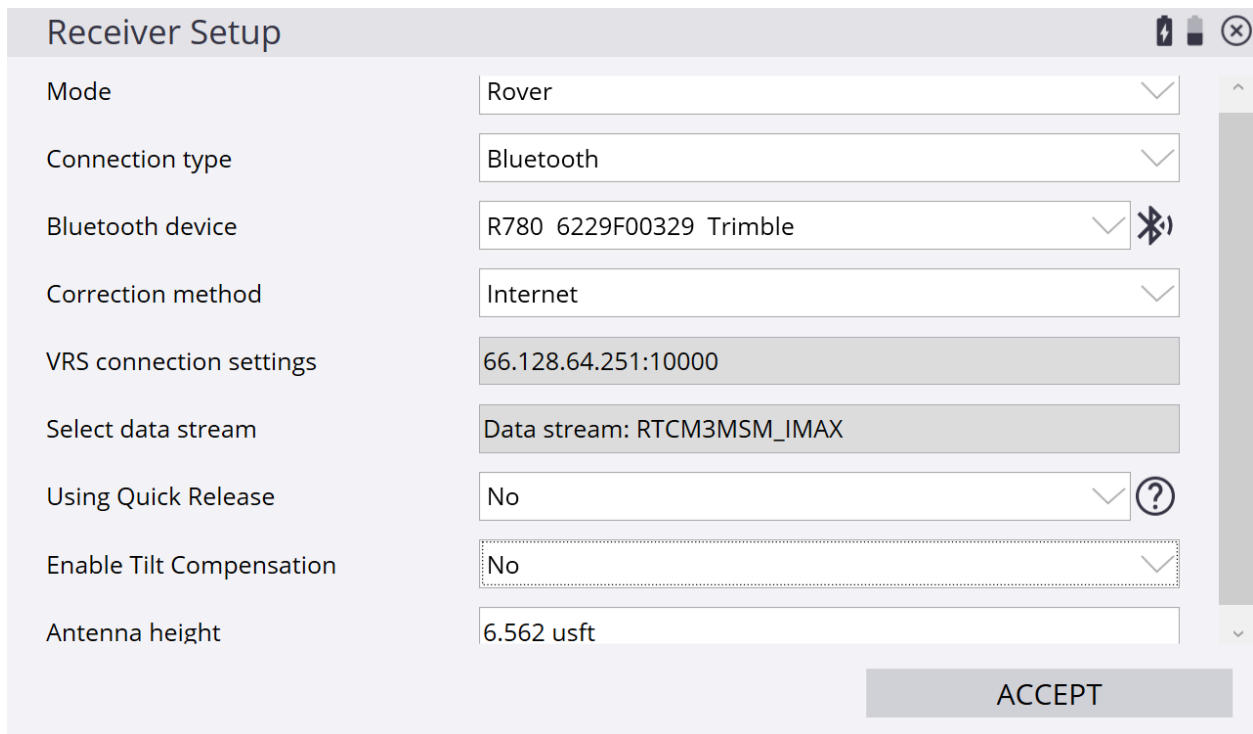
Yes

Description

RTCM3MSM_IMAX

ACCEPT

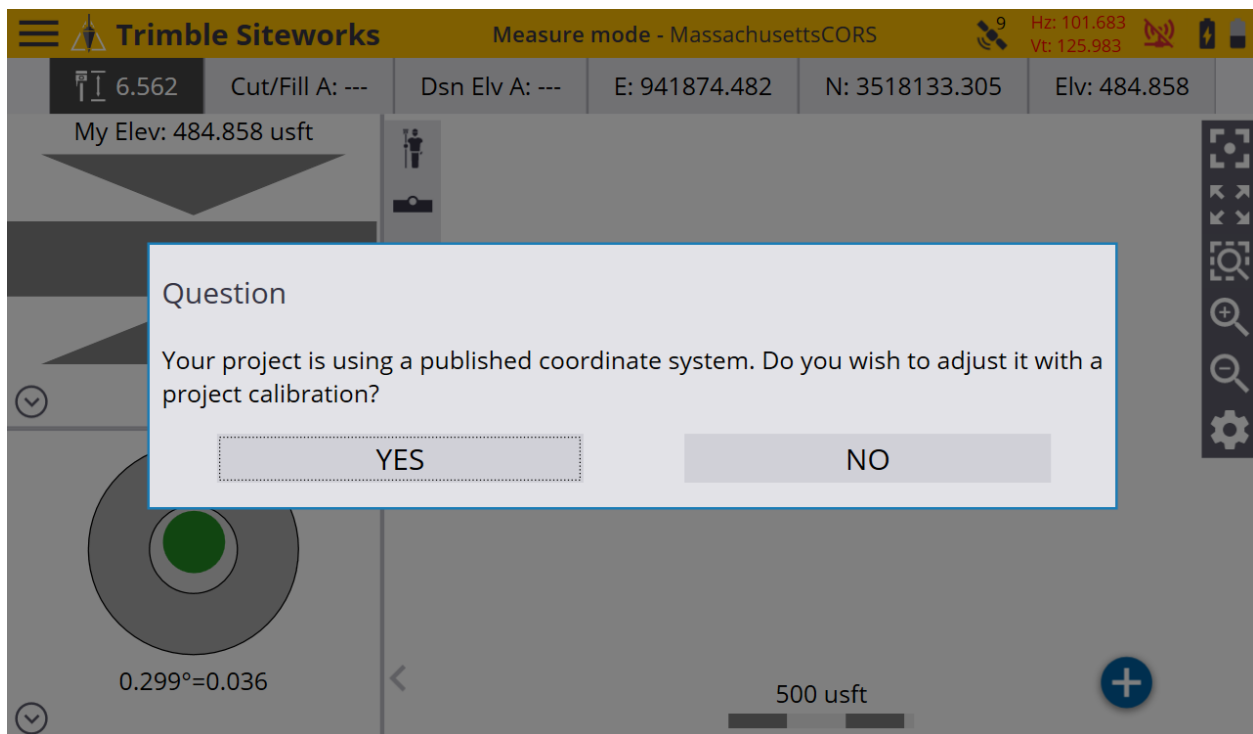
*On the **Receiver Setup** screen select the additional settings for the VRS connection from the drop-down lists in their windows, tap **ACCEPT**.

The image shows the 'Receiver Setup' screen of a mobile application. It features a list of settings on the left and their corresponding values in dropdown menus on the right. The settings include Mode (Rover), Connection type (Bluetooth), Bluetooth device (R780 6229F00329 Trimble), Correction method (Internet), VRS connection settings (66.128.64.251:10000), Select data stream (Data stream: RTCM3MSM_IMAX), Using Quick Release (No), Enable Tilt Compensation (No), and Antenna height (6.562 usft). At the bottom right, there is a large 'ACCEPT' button.

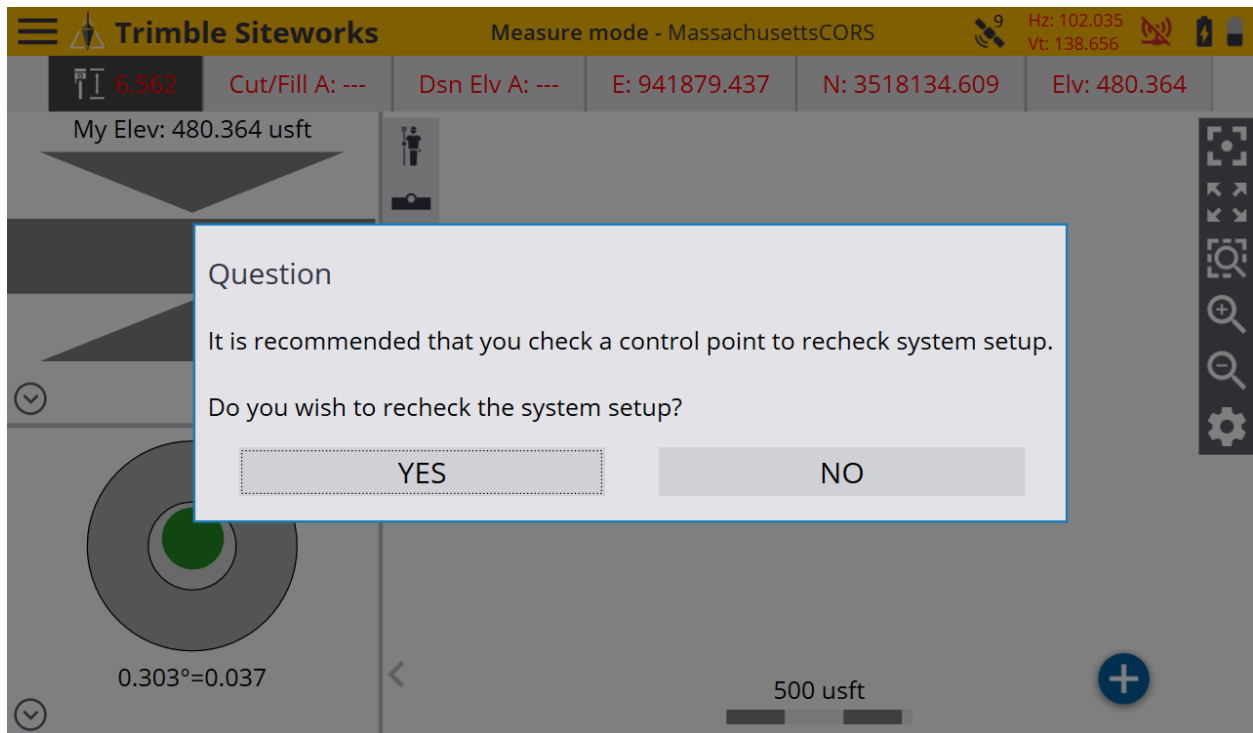
Setting	Value
Mode	Rover
Connection type	Bluetooth
Bluetooth device	R780 6229F00329 Trimble
Correction method	Internet
VRS connection settings	66.128.64.251:10000
Select data stream	Data stream: RTCM3MSM_IMAX
Using Quick Release	No
Enable Tilt Compensation	No
Antenna height	6.562 usft

ACCEPT

*Siteworks asks if you want to adjust your project with a calibration, tap **NO**.

The image shows the Trimble Siteworks application interface. At the top, there's a header with the app name and 'Measure mode - MassachusettsCORS'. Below this is a status bar with various data points: '6.562', 'Cut/Fill A: ---', 'Dsn Elev A: ---', 'E: 941874.482', 'N: 3518133.305', and 'Elev: 484.858'. A central area displays 'My Elev: 484.858 usft'. A modal dialog box is overlaid on the screen, asking 'Question: Your project is using a published coordinate system. Do you wish to adjust it with a project calibration?'. The dialog has two buttons: 'YES' and 'NO'. The background shows a map with a green circle and a scale bar indicating '500 usft'.

*Siteworks asks if you want to recheck the system setup, tap **NO**.



*Once back to the main Siteworks screen you may start working.

