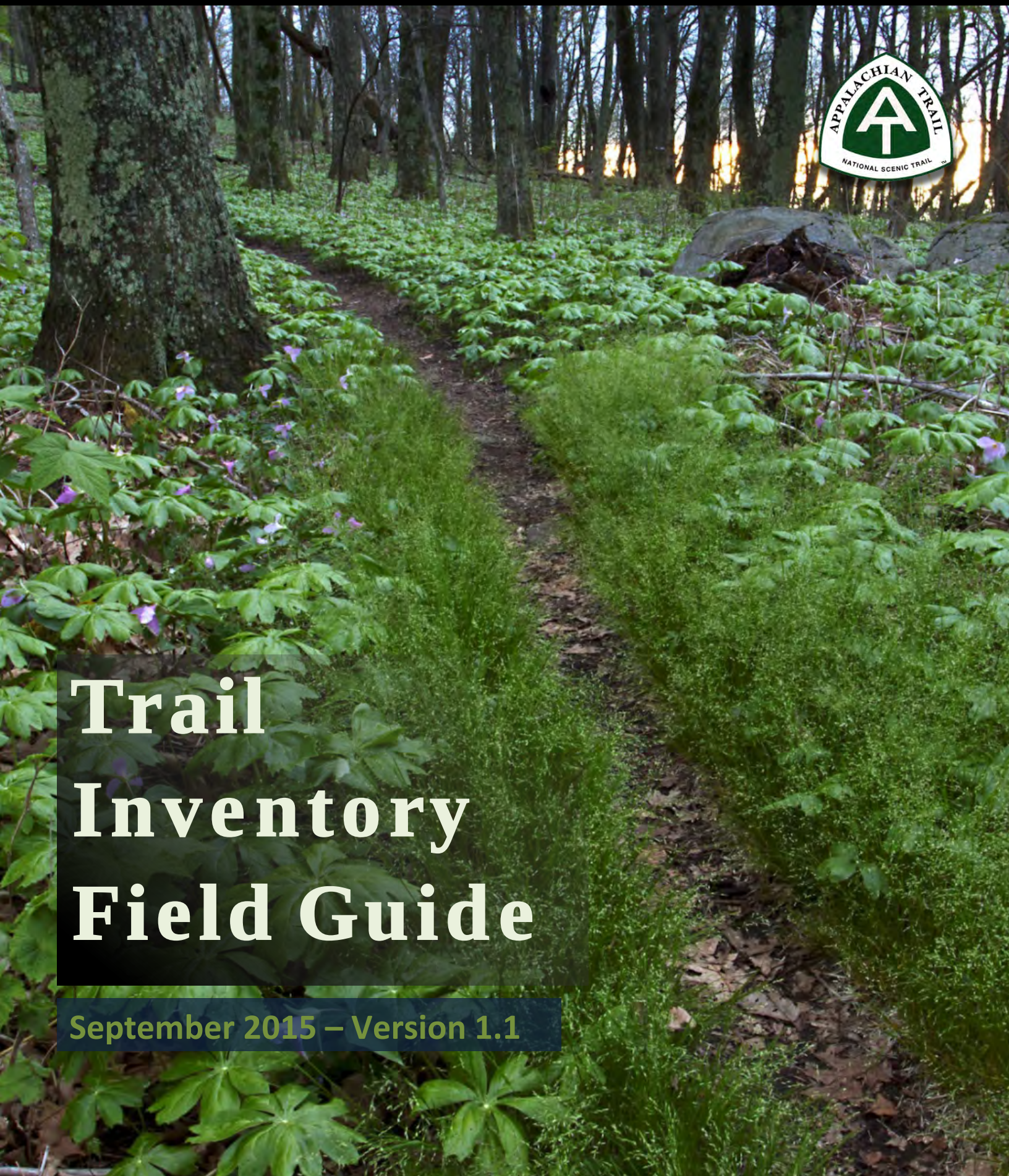
Appalachian National Scenic Trail

U.S. Department of the Interior
National Park Service



Trail Inventory Field Guide

September 2015 – Version 1.1

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Introduction

In 2014, APPA and ATC decided to take a year-long break from the routine 5-year Trail Assessment Cycle to evaluate two trail-wide assessment data sets (one from 2004-2008 and one from 2009-2014). During the development of APPA's business plan, the trail assessment data was reviewed and found to be missing critical information needed to create accurate CRVs (Current Replacement Values) and FMSS (Facility Management System Software) records. Essentially, CRVs are used by FMSS to capture the value of each NPS asset (shelters, privies, bridges, treadway segments, etc.) and estimate what it would cost to replace each asset "from scratch". Business plan analysis revealed that the overall current CRV for Appalachian Trail treadway is $7.31, which is approximately six times lower per linear foot than similar treadway at other National Parks (Great Smoky Mountains, Shenandoah, Delaware Water Gap). This means that most AT treadway repair/rehabilitation project costs are exponentially higher the treadway CRV. This information plays an important role in NPS project funding, as the Park Service must prioritize limited resources, typically funding projects that will show the highest return on investment. As a result, APPA's trail projects rank low against other NPS priority projects within PMIS (Project Management Information Software).

Example:

Park Unit	Project Cost for Repairing AT Treadway	Current Replacement Value (CRV) for AT Treadway	PMIS Priority Ranking	Project
Appalachian National Scenic Trail	**$26.68 per linear foot**	$7.31 per linear foot	LOW	Unfunded
Acadia National Park	**$26.68 per linear foot**	$43.17 per linear foot	HIGH	Funded

Even if the example project was funded, the actual costs of completing the work would easily surpass the project's budget because the CRV was too low.

If this current replacement values for APPA's assets are not accurately represented, project funding levels will decline and vital professional and youth trail crew projects may go unfunded. To ensure that all necessary work can be adequately funded, it is essential to maintain accurate CRV levels for all AT assets. It was concluded that in order to bring APPA's CRVs up to an appropriate level, all AT treadway features (small footbridges, waterbars, puncheon, etc.) will need to be inventoried and information missing from shelter, privy, bridge, and campsite records will need to be captured.

Trail Inventory Plan

In October 2014, APPA started development on a trail-wide inventory process to fill in the data gaps for FMSS and update asset CRVs. The NPS Northeast Regional Office agreed to provide the funding to support APPA's multi-year inventory effort to fulfill FMSS, CRV, and other data needs, and APPA and ATC agreed to collaboratively work together to develop appropriate instructions, recruit necessary assistance, process incoming data, and provide guidance for volunteers and seasonal staff.

As part of the trail inventory plan, seasonal field staff will be hired and dispersed to collect information, such as trail surface types and intersections along the main A.T. and contributing side trails. Seasonal staff will also take detailed measurements and pictures of trail facilities (bridges, campsites, shelters, privies, parking areas, etc.) and record facility locations with Trimble Global Positioning System (GPS) units and software. ATC and clubs will work together to count and collect non-GPS required trail feature information, such as waterbars, check-dams, puncheon, drainage dips, stairs, and ladders. NPS Staff will collect information on larger constructed AT facilities, such as engineered bridges, dams, water systems, buildings, and roads.

Field Preparation

Before you begin the trail inventory process, it is essential that you check-off the following list. Please ensure that you have the necessary equipment for each process; if not, please contact the appropriate staff to receive the required materials and equipment.

Required Materials:

- GPS Unit
- Digital Camera
- Extra Batteries (for both the GPS unit & digital camera)
- Pens/Pencils (consider bringing extra)
- Paper/Notebook
- Inventory Forms
- Reference Inventory Material (maps and list of existing data for the area you are visiting)
- Tape Measure (preferably 100-feet, but at least 25-feet)
- Compass
- Paper Map of the area you are visiting
- Usual hiking gear

Optional Gear:

- Measuring Wheel
- Rangefinder

Things to do before you go out in the field:

1. **Make sure your GPS unit is fully charged**.

   You will need to do this every day before you go in the field. Refer to the *Trimble GPS Setup, Configuration, and Data Collection Options* section of this manual for instructions.

2. **Make sure you have enough free memory on your GPS unit**.

   You shouldn't have to worry about this every day, but you will need to periodically check and clean the GPS memory. Refer to the *Trimble GPS Setup, Configuration, and Data Collection Options* section of this manual for instructions.

3. **Make sure your Digital Camera is fully charged or you have enough batteries for the day's work**. You will need to do this every day before you go in the field. You should also bring an extra set of batteries just in case.

4. **Make sure you have enough memory on the Digital Camera to take plenty of photos**. To check, look on the top of the camera at how many photos are left. If there is not enough free space, you will need to download and/or delete some photos from the camera.

5. **Make sure you have the Reference Inventory Material.** This includes the maintainer maps and list of features/assets (shelters, privies, etc.) and their existing FMSS Numbers for that section.

6. **Make sure you have a Tape Measure**. A 100-foot tape measure is recommended, particularly for measuring long features, such as parking areas or long sections of trail work. At a minimum, you must have at least a 25-foot tape measure.

7. **Make sure you have a compass.** You will need this to document the direction and extent of scenic vistas.

8. **Remember to take the usually hiking gear** (boots, raingear, water, food, light source, extra clothing, etc.).

Trimble GPS Setup, Configuration, and Data Collection Options

This chapter focuses on how to setup and configure a Trimble GPS unit and navigate the various options for collecting data. It includes the following subsections:

- Overview of Trimble GPS units
- Before going in the Field
- Configuring the GPS Unit
- Checking Settings in the Field
- Collecting Data
- Data Collection Tips
- Adding Points Manually
- Troubleshooting

Overview of Trimble GPS Units:

Trimble GPS

Trimble Navigation Inc. specializes in all-in-one mobile / GPS devices. That is, the GPS units contain the operating system, software, and necessary GPS components to collect data. This is different from earlier units where the antenna, receiver, and data logger were all separate and must be connected together. Nowadays, you may still use an external antenna if you wish (which does improves reception), but you do not need any external device to collect data – all you need is the GPS unit, appropriate software, and a data dictionary.

Recommended GPS Unit

The Trimble Geo7x is the current (as of 2015) device that we recommend for collecting inventory data. These units replaced the previous Geo6000 series and GeoXT/XH series units. Any of these units are suitable for data collection, but the Geo7x and Geo6000 units both have Trimble's "Floodlight" Technology, which greatly improves satellite reception and overall productivity.

Appropriate Software

The software that we are using (as of 2015) to collect inventory data is Trimble's TerraSync software. This has to be purchased separately from the GPS unit and manually installed on the device. If you are using one of the units provided to you, this should already be taken care of. If not, please let appropriate staff know.

Appropriate GPS Data Dictionary to use

The GPS Data Dictionary that we are using (as of 2015) is titled "AT 2015 Inventory". It will be followed by version number (e.g. v1.0, v1.1, etc). Please use the most current version. This file must be transferred to your GPS device manually using Trimble's Pathfinder Office software in order to work properly. If you need assistance, please let the appropriate staff know.

Charging Trimble GPS units

A completely drained Trimble GPS battery can take as much as 4-6 hours to fully charge, resulting in approximately 8-10 hours of run time.

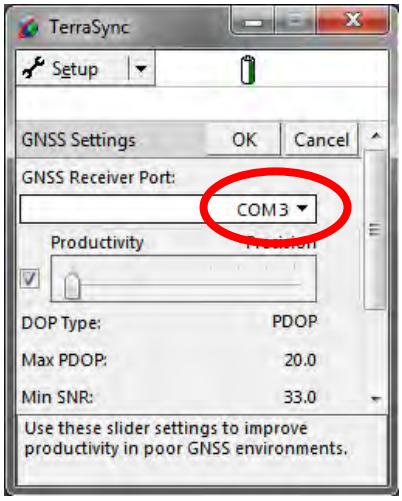
There are three ways to charge Trimble GPS units:

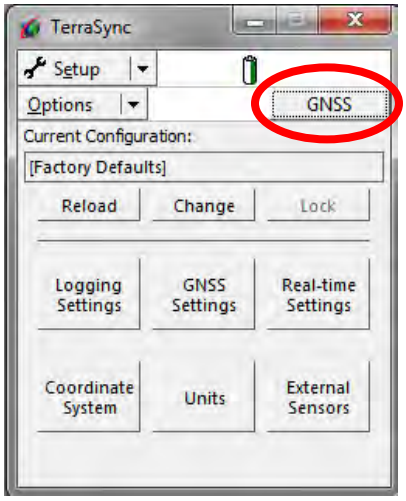
1) Use the power cord and/or cradle that came with the unit and simply plug it into an outlet – please see *Trimble's GPS Getting Started Guide* for additional information.
2) Attach it to the optional vehicle power cable, which plugs directly into a cigarette lighter – please see *Trimble's GPS Getting Started Guide* for additional information.
3) Attach the optional serial clip and plug it to an external camcorder battery.
   Note: this only applies to the older GeoXT/XH units.

Connecting to the GPS antenna

While the Trimble Geo7x, Geo6000 series, and GeoXT/XH units are all-in-one devices, they still utilize an internal COM port (short for communication port) to connect to the internal GPS receiver/antenna portion of the unit, so you will need to make sure that the software (in our case, TerraSync) is connected to the proper COM port and communicating with the internal GPS.

To check this feature, open up the TerraSync software on the GPS unit. Select "Setup" from the drop-down menu in the upper left hand corner, then select "GNSS Settings". Where it says "GNSS Receiver Port", make sure **COM3** is selected. Once that is done, select OK. Note: on older versions of TerraSync, it said "GPS Settings" and "GPS Receiver Port".





Before Going in the Field:

1. **Make sure your GPS unit is fully charged**.

   To charge your GPS unit, simply plug in with the provided cord or place in the associated 'cradle' and allow ample time to charge. A completely drained battery can take as much as 4-6 hours to fully charge, resulting in approximately 8-10 hours of run time.

   All extra or external batteries should also be fully charged and available in the event the GPS unit's main battery runs out before the end of the field day or if you expect to be out in the field for multiple days at a time. To charge any extra or external camcorder batteries, simply plug them in with the provided cord or place in the associated camcorder charger.

2. **Make sure you have enough free disk space on your GPS unit**.

   You will need to periodically check the disk space on the GPS unit and manage your space by deleting old files.

   To check the amount of free space, click on the Start Menu on the unit, select Settings > System > System Information > then tap through the choices (listed at the top on the Geo7x unit) until you get to "Storage". The amount of free space should be listed in MB.

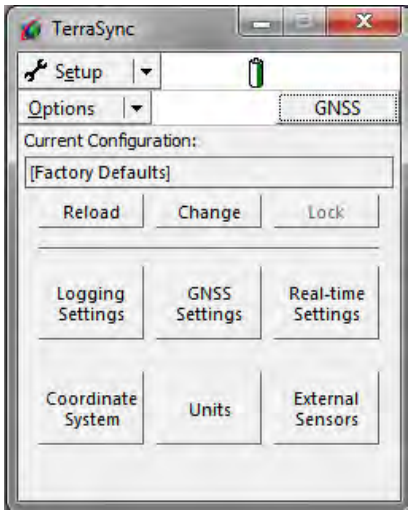
   To delete files off the unit, please reference to the *Technical Guide for Processing GPS Data & Digital Photos* for instructions.

   IMPORTANT NOTE: You should ***ONLY*** delete files that you have been transferred from the GPS unit to a computer and have been reviewed to make sure the transfer was successful. Please reference the *Technical Guide for Processing GPS Data & Digital Photos* for instructions on how to transfer files from the GPS unit to your computer.

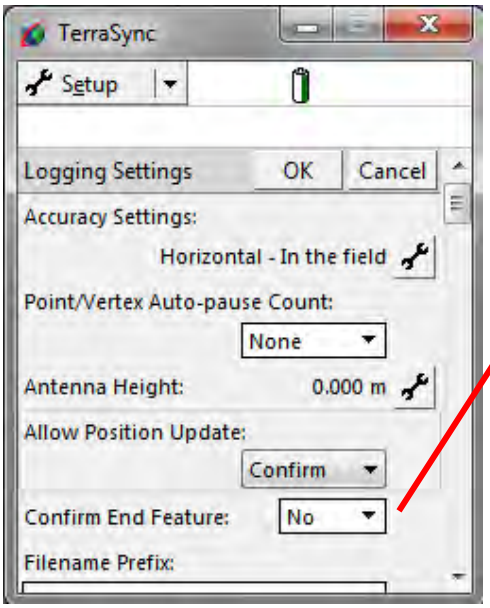
Configuring the GPS Unit:

Before you begin collecting data, you will need to check and configure some of the settings within TerraSync. The following screen images show the appropriate GPS settings.

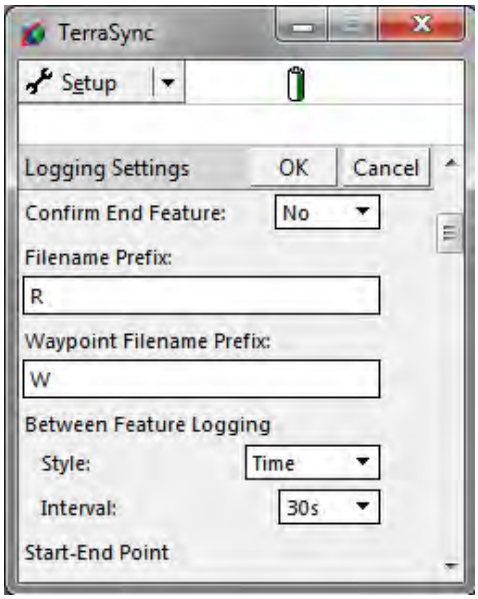
Setup Options



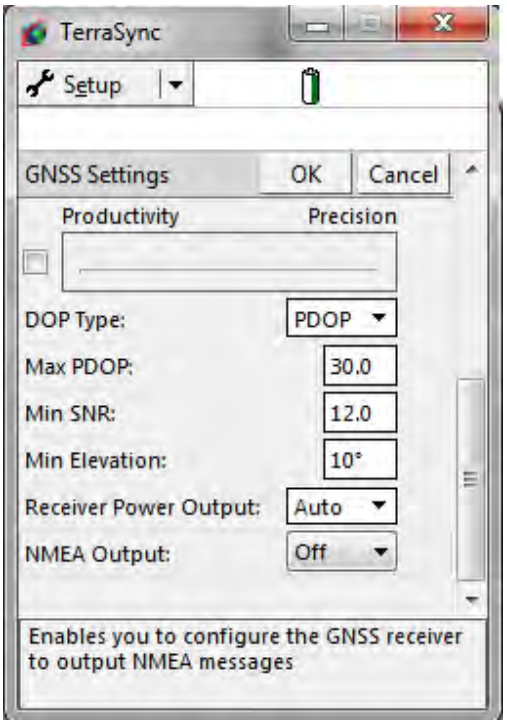
Logging Settings



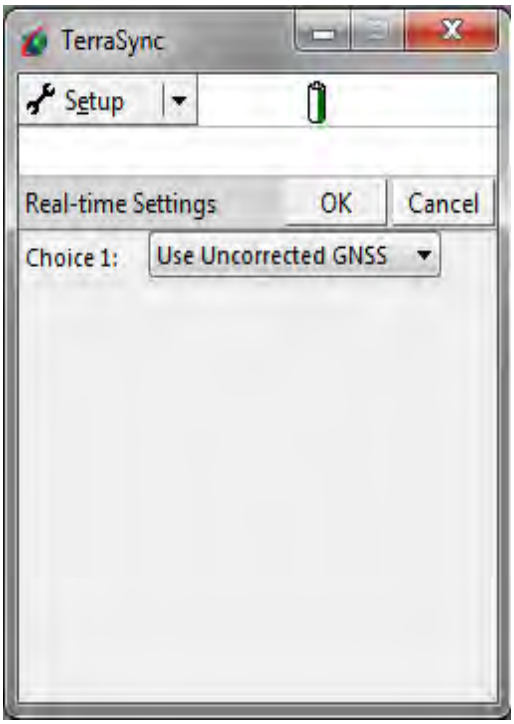
Logging Settings (continued)



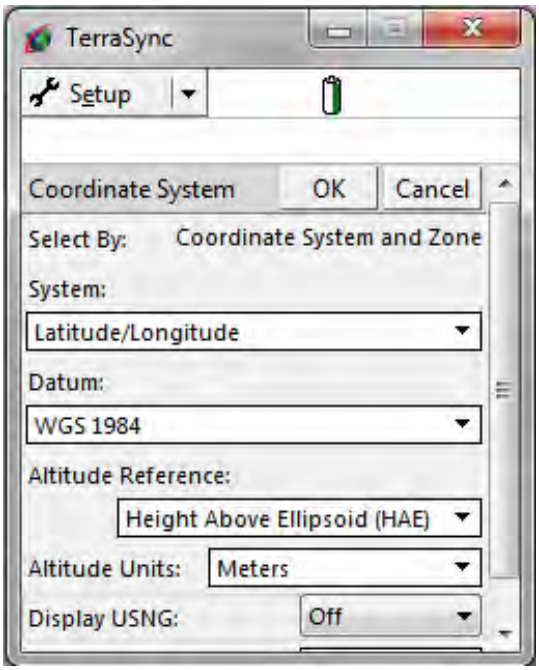
GNSS Settings



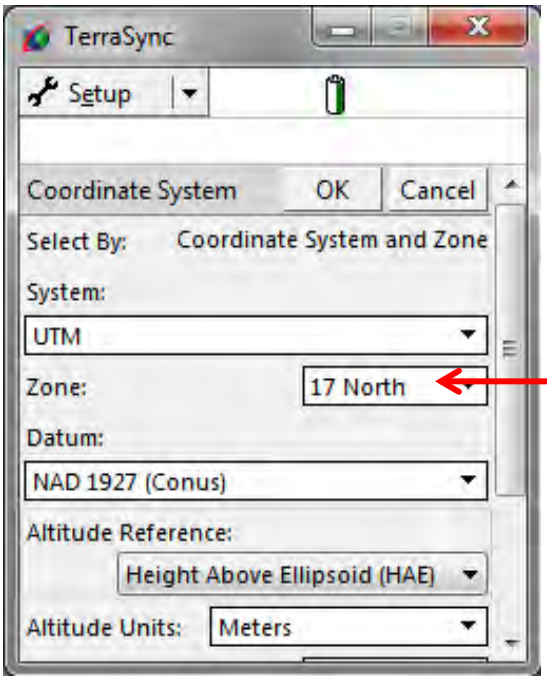
Real-time Settings



Coordinate System to use for general purposes or when comparing positions with other Lat./Long coordinates

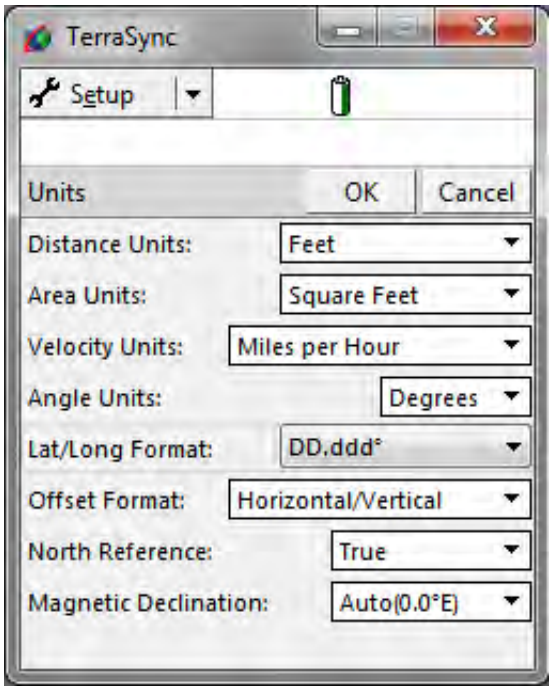


Coordinate System to use when loading the background maps and trying to view them in the Map section

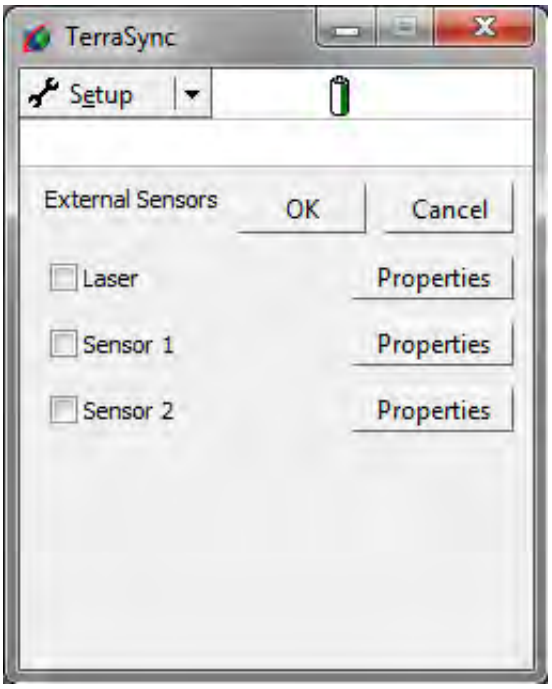


Note: the zone is different along the trail and needs to be changed depending where you are. See the "Adding Points Manually" section for more info.

Units



External Sensors

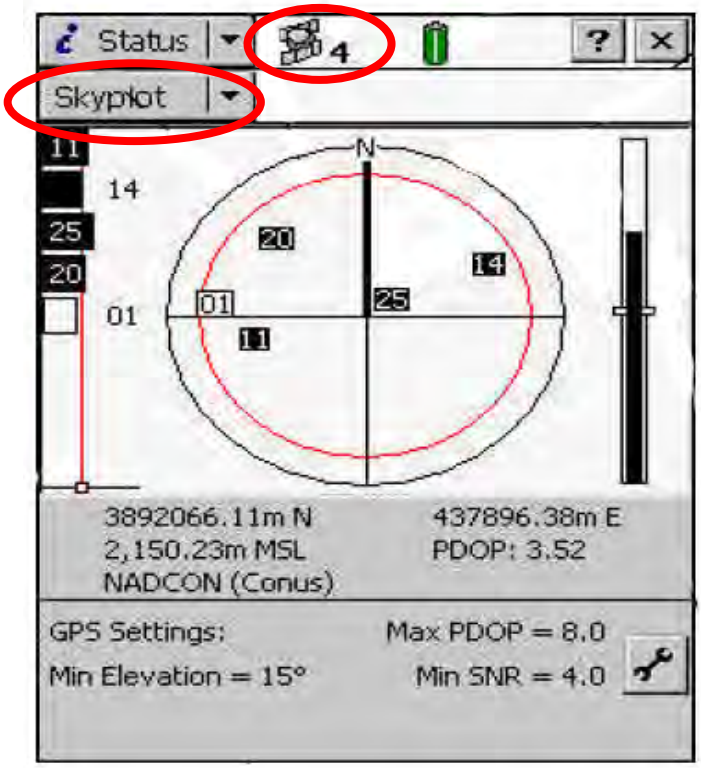


Checking Settings in the Field:

1. **As soon as you arrive in the field, turn on the GPS unit and allow a few minutes for it to 'lock on' to satellites. To do this, turn on the GPS unit, double-tap on TerraSync, then wait a few minutes for it to lock onto 4 or more satellites.**

   IMPORTANT NOTE: This is a good thing to do when you first arrive at the trailhead or at your drop-off/starting point (for example, while you are gathering all your gear for the day), as it may take several minutes to 'lock on' to the appropriate satellites. Once you have 4 or more satellites, you can begin collecting data with the GPS.

   To observe the status of the satellites, tap on the menu in the upper-left hand corner and select "Status". In the sub-menu below "Status", you have a number of options. Choose "Skyplot" to see a worm's eye view of the sky. The numbers are the different available satellites. The ones with black squares around them mean you are receiving good signals from those satellites; the numbers with white squares around them mean you are receiving signals from them, but they aren't strong enough to be used yet.

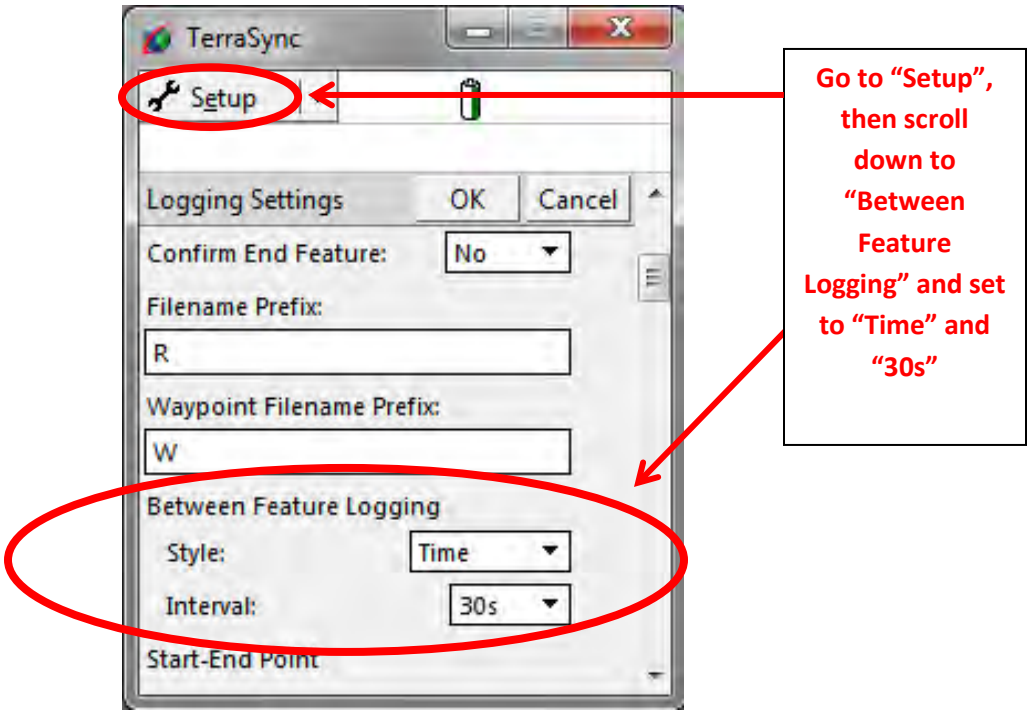


   IMPORTANT NOTE: You may need to 'connect' to the GPS unit before you can see or 'lock on' to any satellites, as sometimes these units don't always automatically connect. To do this, open TerraSync, go to "Setup", then hit the button on the top right that says "GNSS" (or "GPS" on the older versions of TerraSync).

2. **Check the following settings on the GPS:**

   a. **Check to see if "Log between Features" is turned on and the interval is set appropriately**

   In TerraSync, select "Setup" from the upper-left hand drop-down menu, then select "Logging Settings". In the "Logging Settings" section, scroll down to "Between Feature Logging". Make sure the "Style" is set to "Time" and the "Interval" is set to "30s". When you are finished, select "Ok" at the top of the screen. Note: you may have to manually type in 30s, as the dropdown choices are typically only set to 5s and 10s.



   b. **Check that the "Antenna Height" is correct**

   You should automatically be prompted to enter the antenna height whenever you open a new file, however it is still a good thing to check at the beginning of the day, in case you or someone else might have adjusted the height last time they used the unit.

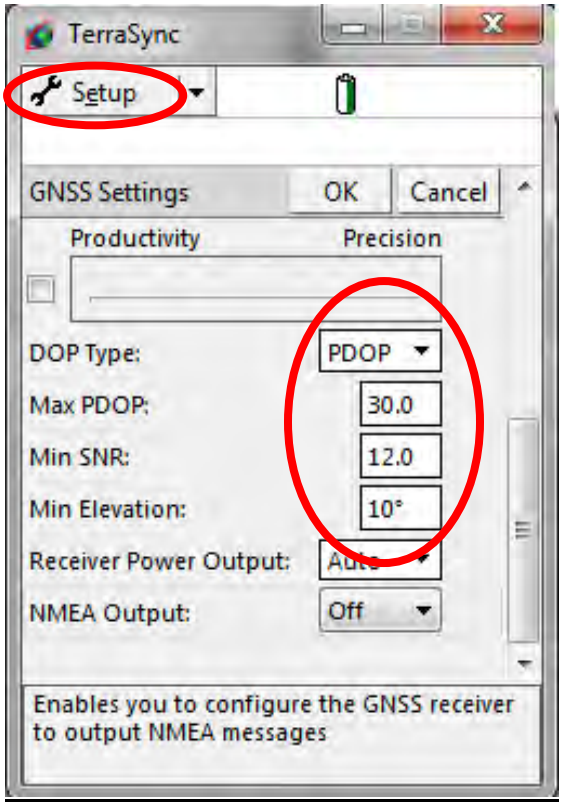
   You can check this setting by going to the "Setup" section and select "Logging Settings" (see part a. above for instructions on accessing this section). In the "Logging Settings" section, the fourth selection from the top is "Antenna Height". Make sure it is set appropriately (e.g. ~6 feet or 2 meters if using an external antenna or ~3.5 feet 1-1.25 meters if just holding the GPS unit in your hand with no external antenna attached). When you are finished, select "Ok" at the top of the screen.

c. Check the accuracy settings (PDOP, SNR, Elevation Mask, etc.)

In TerraSync, select “Setup” from the upper-left hand drop-down menu, then select “GNSS Settings” (on older versions of TerraSynce this simply read “GPS Settings”). In the “GNSS Settings” section, you can simply check the box that says “Use Smart Settings” or you can manually set the “Max PDOP”, “Min SNR”, and “Min Elevation”.

We recommend that you manually set these numbers and use the following settings “Max PDOP” = 30 or less, “Min SNR” = 12 or greater, and “Min Elevation” = 10º or higher.

When you are finished, select “Ok” at the top of the screen.



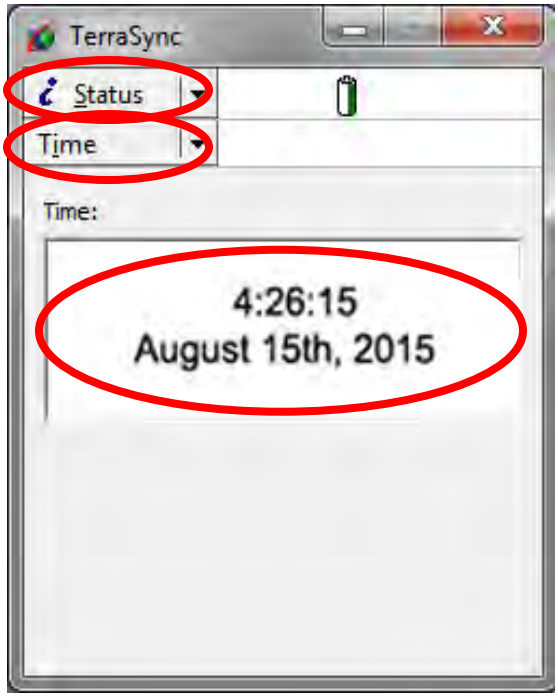
These are the recommended settings, though they can be adjusted OR overridden by checking the “Productivity” box and adjust the slider bar or checking “Use Smart Settings” in TerraSync 5.7

IMPORTANT NOTE: These should be the only settings that you will have to adjust in the field while taking data. If you will run into problems acquiring adequate satellites or the appropriate satellite signal strength in the field, even after waiting 5 to 10 minutes, then you may need to adjust these settings so you can acquire data and keep moving on with the day’s work. We suggest you lower the settings one at a time, and one number at a time, until you are able to acquire an adequate signal. ***If you have to adjust the PDOP greater than 30.0, the SNR less than 12, or the Elevation below 10º, then we recommend that you try and set these numbers back to the recommended levels as soon as you can.***

d. Check that the time is set correctly on the GPS

To view the time, select “Status”, then “Time” from the sub-menu. Check to make sure this is correct before beginning to collect any data.

For the GPS to work properly and avoid problems, the date and time needs to be set correctly. The time should automatically displayed be displayed as Local Time, though on older versions of TerraSync it may show up as UTC time. Conversion between daylight savings time is unnecessary, but the time should display correctly. If not, please see *Trimble’s GPS Getting Started Guide* for additional information.

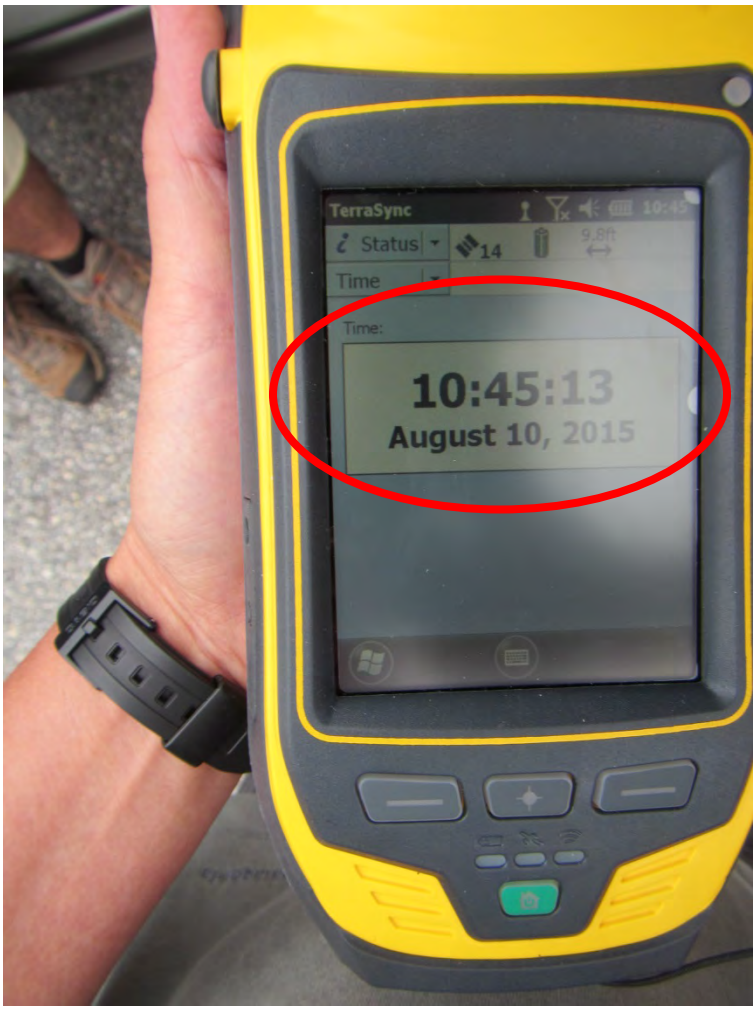


3. Check the date and time on your digital camera

The date and time on digital cameras is typically not very stable. The time tends to ‘drift’ with regular use and often gets reset when you change batteries. Therefore, you should check the date and time EVERY time before you start logging data.

4. Take a photo of the time shown on GPS so we can geo-locate your digital photos

Take a photo of the "Time" screen in TerraSync. DO NOT take a photo of the general Clock or Calendar that you see on the Windows Mobile screen (usually bottom right-hand or upper right-hand corner). **ONLY use the Time screen in TerraSync. It is located in the "Status" section of the program, under the secondary drop-down list, labeled "Time".**



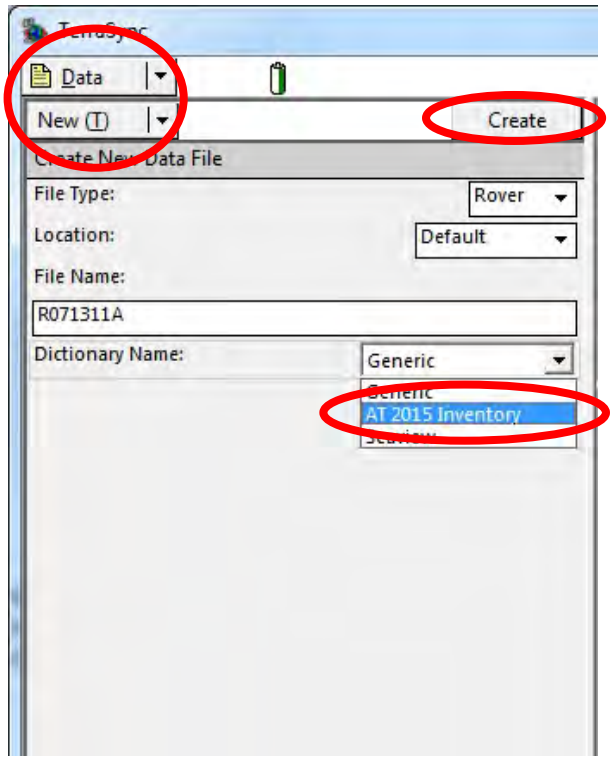
Check the photo on the camera to make sure you can read the time too. If not, please take another photo.

Collecting Data:

Once you have checked the configuration of the GPS (steps 1 and 2 above), checked your camera date and time (step 3 above), and taken a picture of the time on the GPS (step 4 above), you are ready to create a new file and start recording data with the GPS.

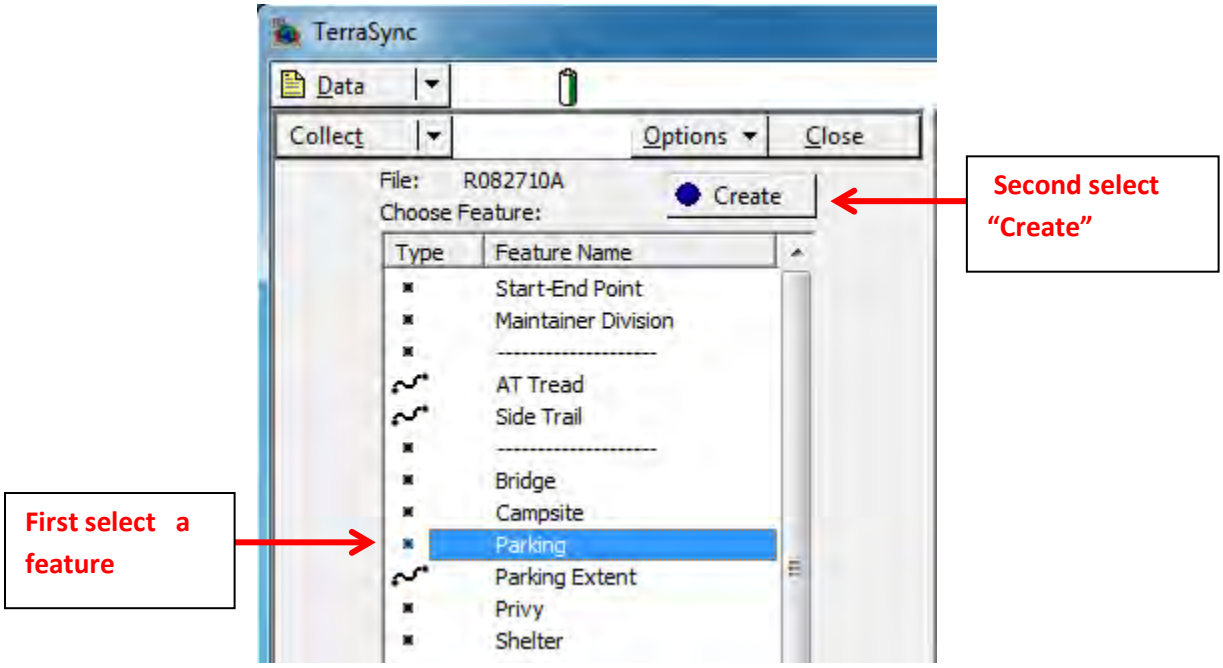
1. Create a New File and select the appropriate Data Dictionary

To create a new file, select "Data" from the upper-left hand drop-down menu within TerraSync. In the sub-menu directly below the "Data" menu, select "New". Where it reads "Dictionary Name", select the current version of the A.T. dictionary from the drop-down list. (It should say **AT 2015 Inventory** with some version number after it (e.g. v1.0, v1.1, etc). Please use the most current version. Now tap the "Create" button at the top of the application to create a new file.

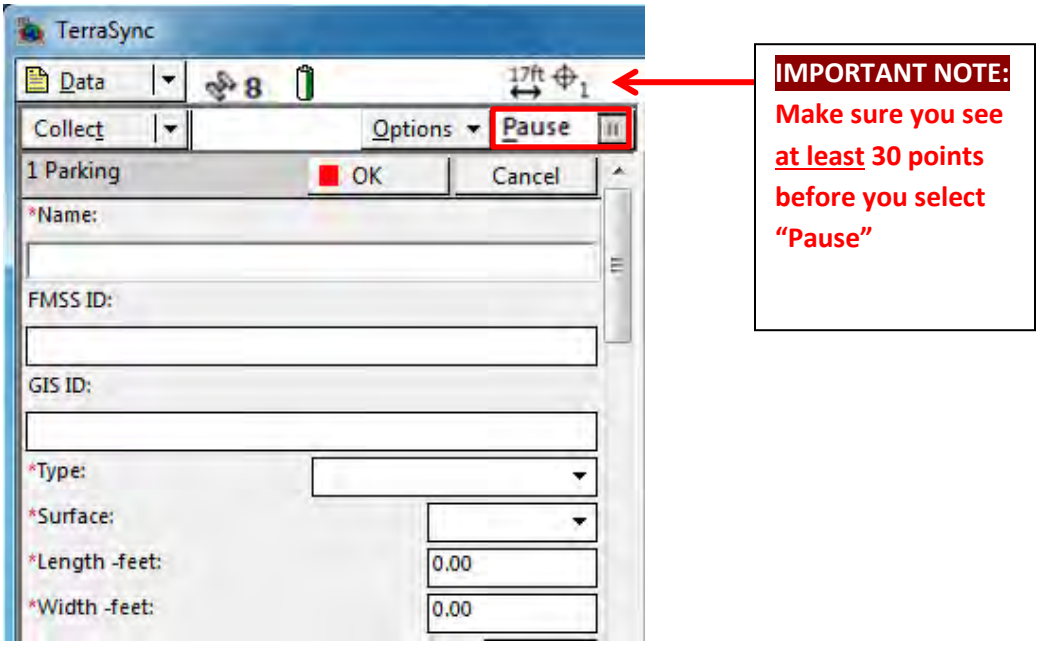


IMPORTANT NOTE: If you are going to be out in the field for more than 3 or 4 hours in the same day, you will want to save your file and create a new file at least halfway through the day. This is in case any unexpected problems occur that you won't lose all of your work that day. Follow the above steps to create a new file.

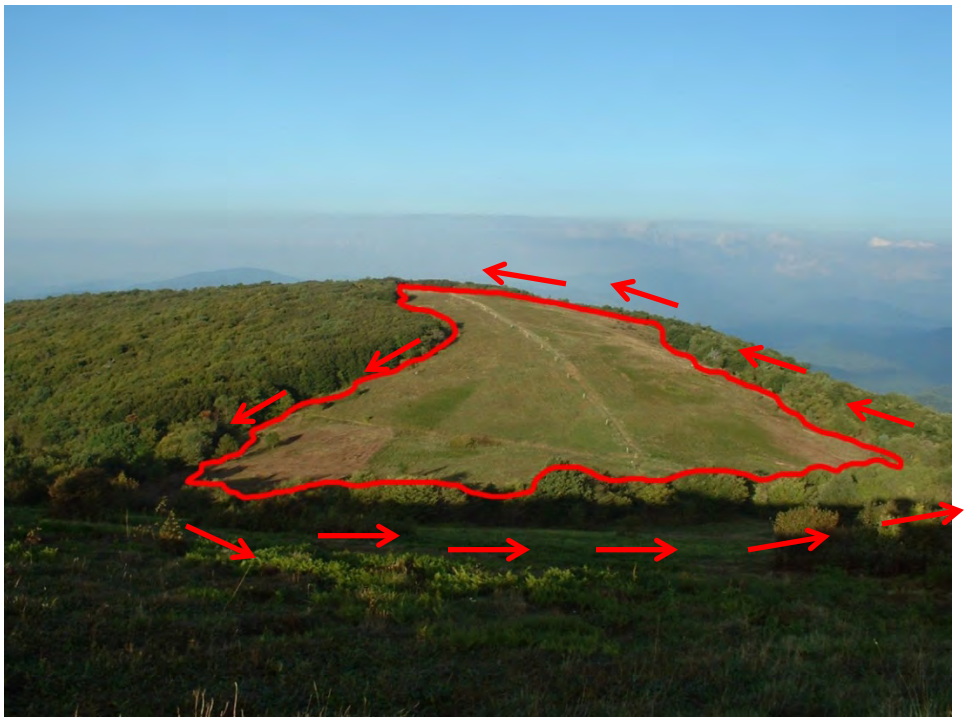
2. **Select a feature from the data dictionary (for example “Parking”) and tap “Create”.**



3. **If collecting a point feature, record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner. Then select “Pause”.**



If recording a linear feature, try to walk as close to the outside perimeter of the feature as possible (see image below for an example). Once you have returned to the location where you started, immediately select "Pause" in TerraSync.



Importance of "pausing" when collecting linear features

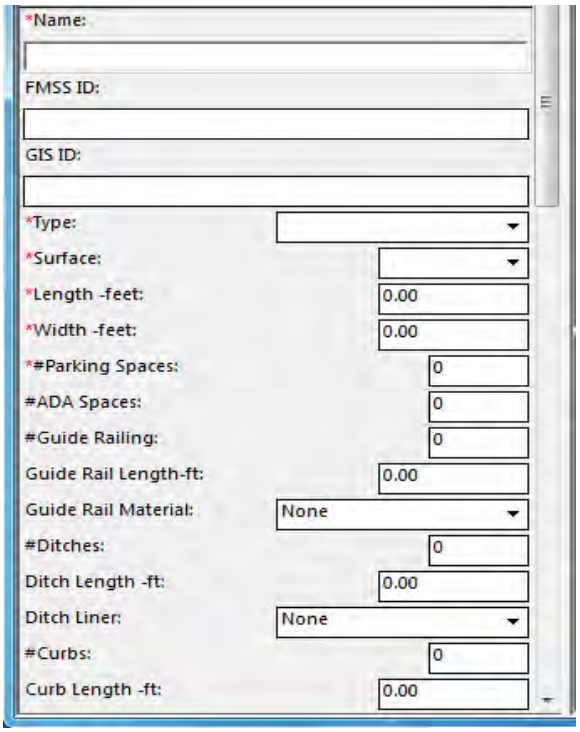
If you stop at **<u>any time</u>** while collecting linear features, make sure you immediately select "Pause" in TerraSync (as shown in step 3). This is important so that you don't accumulate any extra data. Once you are ready to start walking again, select "Log" in TerraSync and immediately begin walking again.

This is very important, because the GPS will continue to record data as long as you are in logging mode. This accumulates extra data, which not only throws the distance calculations off (adds extra length), but also requires additional clean-up back in the office, which is very time-consuming.

Example where the user did not "pause"

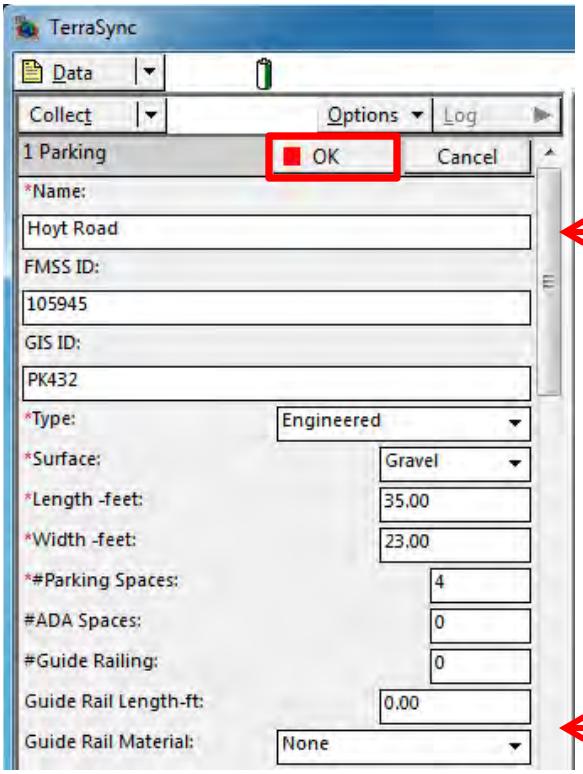
Example where user did "pause"

4. **Once you have recorded the feature's location and selected "Pause", then you can walk around and gather the necessary information and measurements.**



IMPORTANT NOTE:
Remember to select "Pause", before filling in the information. Then follow the procedures outlined in the methodology for collecting ALL information

5. **Once you have entered all the appropriate information, select "OK" to save your data.**



IMPORTANT NOTE:
Only select "OK" after ALL information has been filled in.

Data Collection Tips

- When recording a point feature with the GPS, remember to stand in one spot and don't move around. Take at least 30 point positions. You can then hit "Pause" as necessary to walk around and collect additional information, but try and take at least 30 point positions for each point feature.

- When recording a linear feature (trail, parking extent, etc.) with the GPS, remember to keep moving. If you stop walking, immediately press the "Pause" button, then "resume" once you start walking again. This will reduce the amount of editing and clean-up work needed back in the office.

- When not using an external antenna, remember to periodically hold the GPS unit with its internal antenna facing the sky. This helps so that you don't lose your 'lock' on the satellites, as well as allows a "breadcrumb" trail (log between features setting) to continue being collected. This is very helpful in the editing process and is necessary to link the digital photos to the GPS points.

- When you cannot get enough satellites in the field, you can manually assign a general location for a point. This is far better than skipping that feature or not collecting any location information at all. You can do this by "digitizing" a point on screen using the "Map" view in TerraSync. See following section of this chapter for more information on how to add points manually.

- If you don't know a piece of information, enter "unknown", "not sure", etc. Please do not guess or make up information. Also, please do not leave anything blank either. If you have nothing to enter for a certain category, enter "none", "NA", etc.

- The data dictionary is designed to capture most (90% or more) of the situations you will encounter, but you are bound to encounter something that is not listed in the data dictionary. If encounter something you want to record and there is not an appropriate choice in the data dictionary, select "other" and then explain why you chose other in the "notes" or "comment" field.

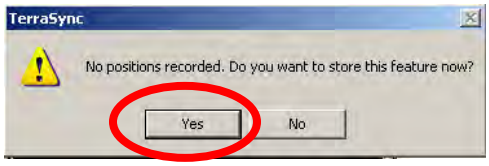
- Last, the information you gather is the most important part of this effort, so it is important that you fill out everything in the data dictionary – leave nothing blank if you can.

Adding Points Manually

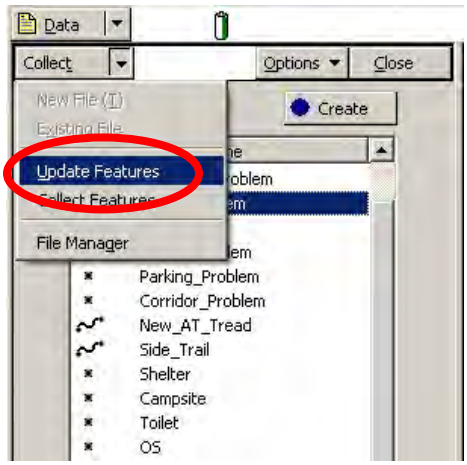
If you cannot get enough satellite signals for whatever reasons, even after waiting several minutes and adjusting the PDOP, then you can add a location manually using the following steps:

1. **Collect data as you normally would – select a feature from the data dictionary, then hit create and fill out as much information as possible.**

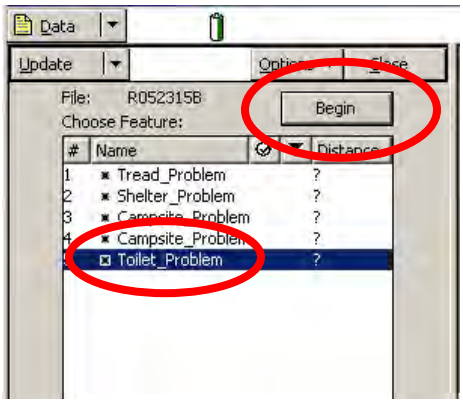
2. **When you close the feature and it says that 'No positions recorded. Do you want you store this feature now?' select 'Yes'**



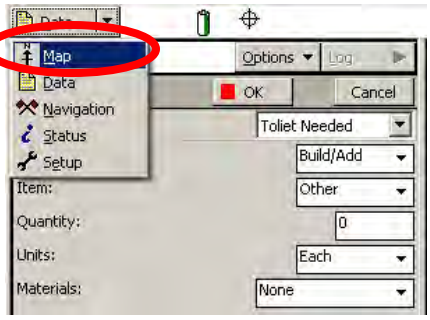
3. **Go to Data sub-menu and select "Update"**



4. **Select the feature that you need to add the coordinates to (it should be the one at the bottom of the list) and select "Begin"**



5. **Now, go the Map**

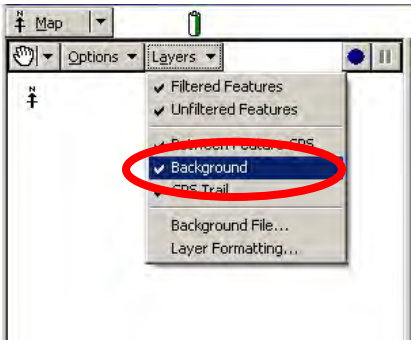


You should see the quad map, if loaded properly

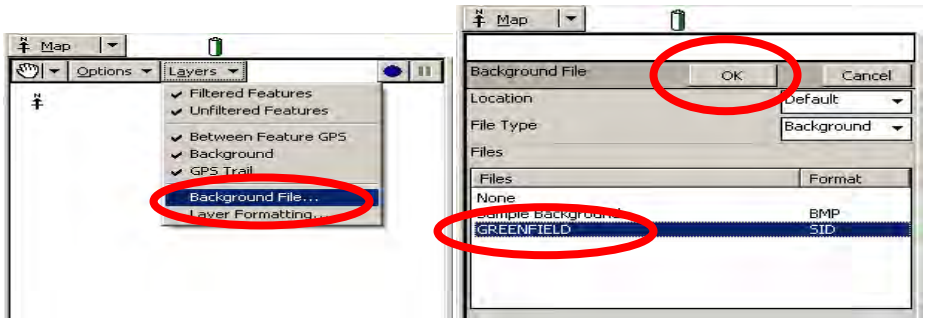
If you do not see the quad map then….

6. **You will need to make sure the background file is visible, the appropriate quadrangle is loaded, and the coordinate system and zone are set correctly.**

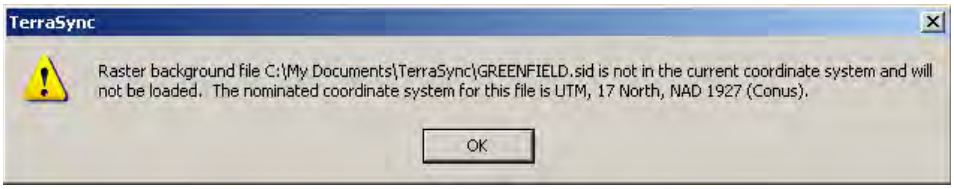
a) Go to the Layers menu and make sure that 'Background' is checked



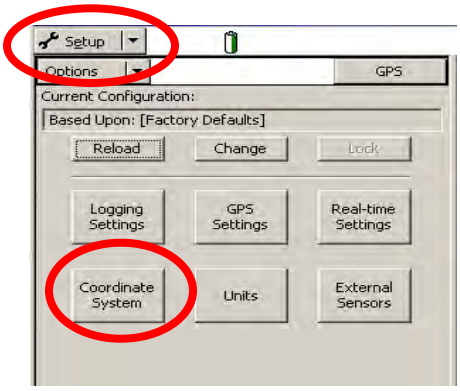
b) Go to the Layers menu, select 'Background File', and then add the appropriate quad.



7. If you receive an error message regarding incorrect coordinate system, you will need to make sure that TerraSync is set to the same coordinate system as the quad.

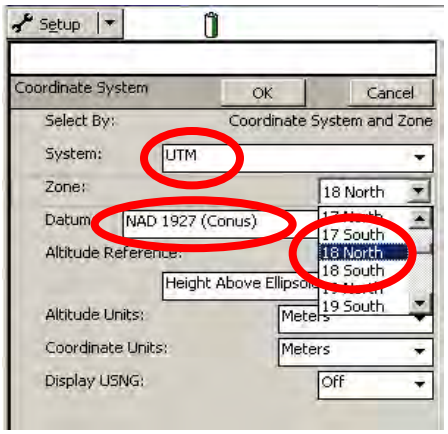


a) Go to the Setup menu, select Coordinate System:

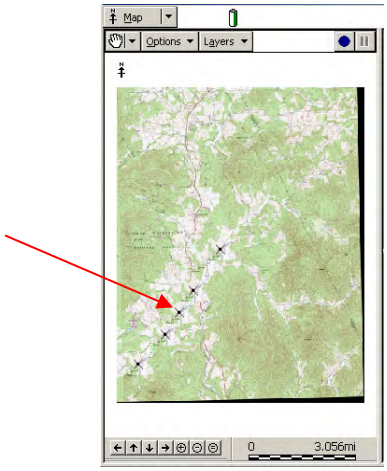


b) Set System to 'UTM', Datum to 'NAD 1927 (CONUS)', & Zone:

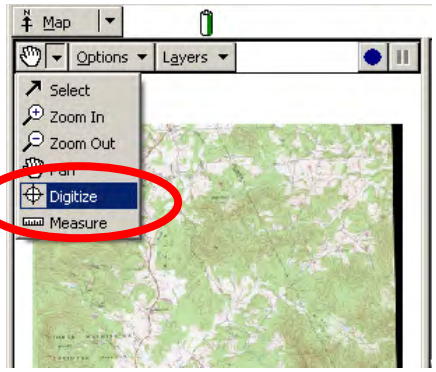
SORO *is zone 16 around Springer Mt, but everything else is 17 north;* ***VARO*** *is 17 north;* ***MARO*** *is 17 north to G. Richard Thompson WMA, then 18 north from there;* ***NERO*** *is 18 north to Smarts Mt., then 19 north from there to Katahdin.*



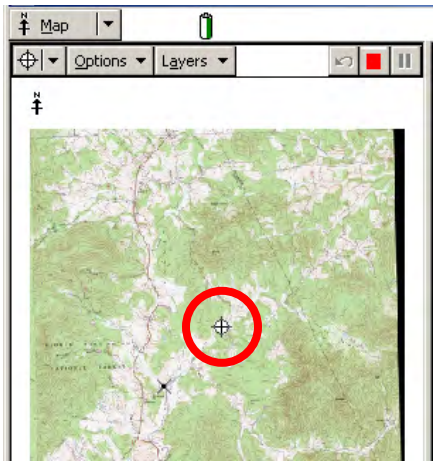
8. Once you are at the Map screen and have a quadrangle map loaded properly, you should see a quadrangle map and whatever features (represented with black X's) that you have collected in your current open file (note: if you are just beginning a file or haven't taken any features, you won't see any X's).



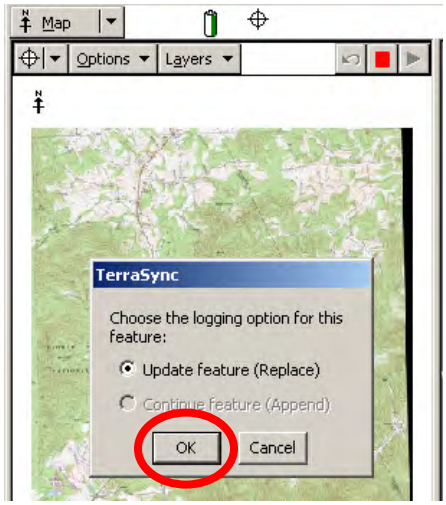
a) Select the "Digitize" tool (the circle with cross-hairs icon) from the Map sub-menu



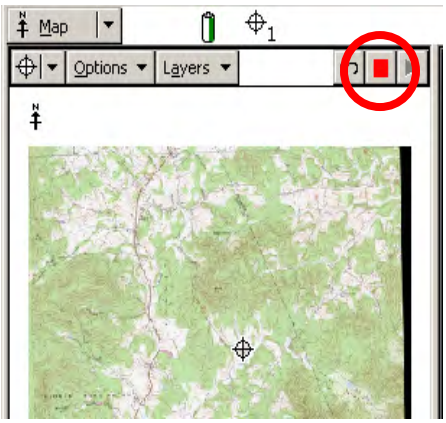
b) Using the “Digitize” tool, add a point to the map screen at the approximate location, using the quadrangle map to help you estimate where the feature is located.



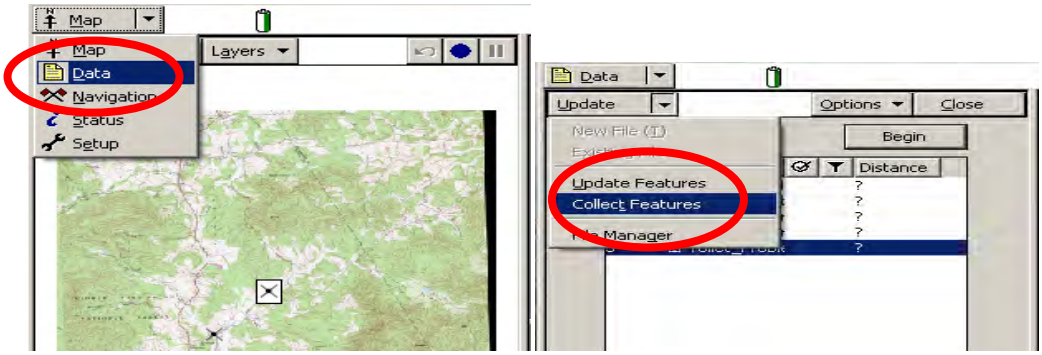
c) Hit OK when asked if you want to ‘Update feature (Replace)’.



9. Now hit the red box to store the point and associated the feature information you collected with it.



10. To return to collecting features, go to the 'Data' menu, and then select 'Collect Features' from the Data sub-menu.



This will take you back to the data dictionary listing, where you can continue collecting data.

Trouble Shooting

Below is a short list of common problems encountered and some suggestions on how to resolve them.

1. The GPS unit will not turn on

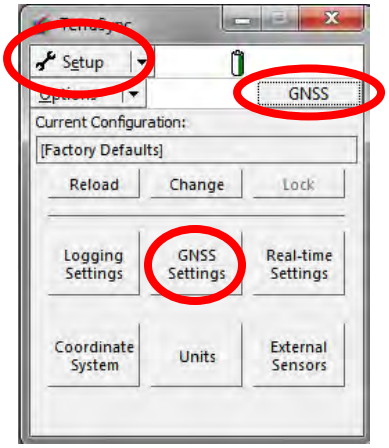
Likely Cause: *Batteries are dead.*

Recharge for 4-6 hours OR if using a GeoXT/XH series unit try attaching the optional serial clip or plug up the external camcorder battery (make sure it is charged).

2. GPS is disconnected

Likely Causes: *Software configuration is set incorrectly; Antenna or other cable is not plugged in properly; Antenna is defective.*

Open TerraSync and make sure the GPS Settings are correct and that you are connected using the appropriate 'receiver port'. It should typically be COM3. Then, go to the main setup menu and tap the GNSS button (note: this shows up as simply "GPS" in older versions of TerraSync).



3. Error message when trying to connect to GPS

Likely Cause: *The Windows date and time is incorrect*

a) Check and make sure the Date and time in Windows Mobile is correct. Go to:

START → Settings → System tab → Clock (or Clock & Alarms)

4. If the GPS shuts off automatically

Likely Cause: The Windows power setting is set to turn off automatically to save battery life.

b) Restart and check the Power Settings. Go to:

START → Settings → Power → Uncheck 'Turn off device if not used for'

5. Cannot lock on to enough satellites OR the PDOP too high

Likely Cause: The current satellite constellation isn't good at the moment and/or your receiver cannot 'see' enough satellites; the satellite signals you are receiving aren't very strong or are temporarily being affected by some interference.

a) Make sure the unit is pointing up and has a good view of the sky. Hold the unit up high if you have to and/or try moving around slightly (e.g. if you are standing next to an obstacle – tree, rock, shelter, etc. – take a step back).

b) Wait several minutes for the satellites to move and the constellation to improve. Often you will encounter "dead zones" throughout the day. The satellites are constantly in motion though, so frequently the issue can be resolved by simply waiting for the constellation to change.

c) Adjust the PDOP value in TerraSync to be 'more productive'. This will allow you to lock on to more satellites. However, this will substantially decrease your positional accuracy, so adjust the PDOP back to a normal level whenever possible.

d) After repeating the previous 3 steps at least twice, you can 'Add a point manually' if you have to and continue collecting data. See section above for more information on adding a point manually.

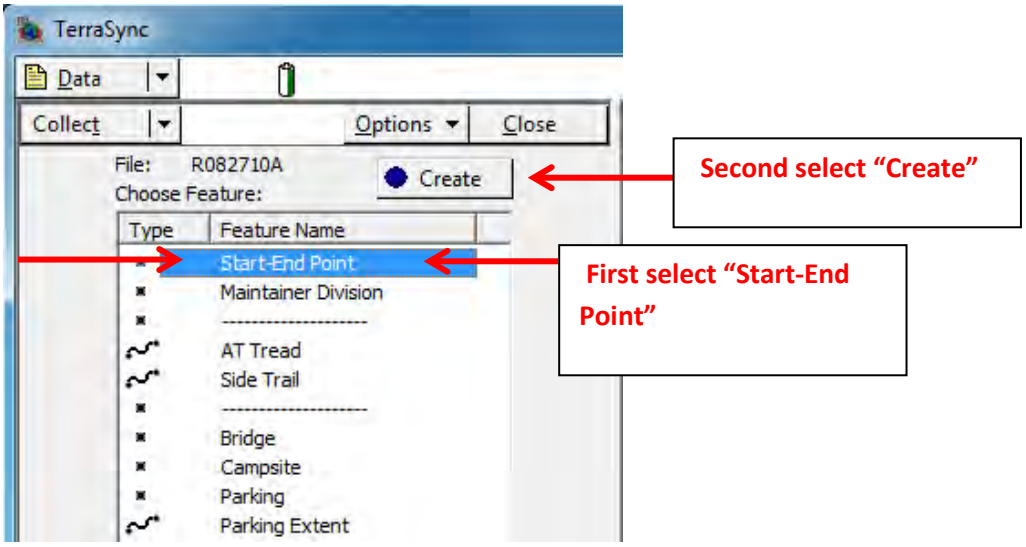
Start-End Point Inventory Process

Start and End points should be taken at the beginning and the end of each day. These should be taken exactly where you begin your inventory – whether that corresponds to a side trail, a parking area, or a road crossing.

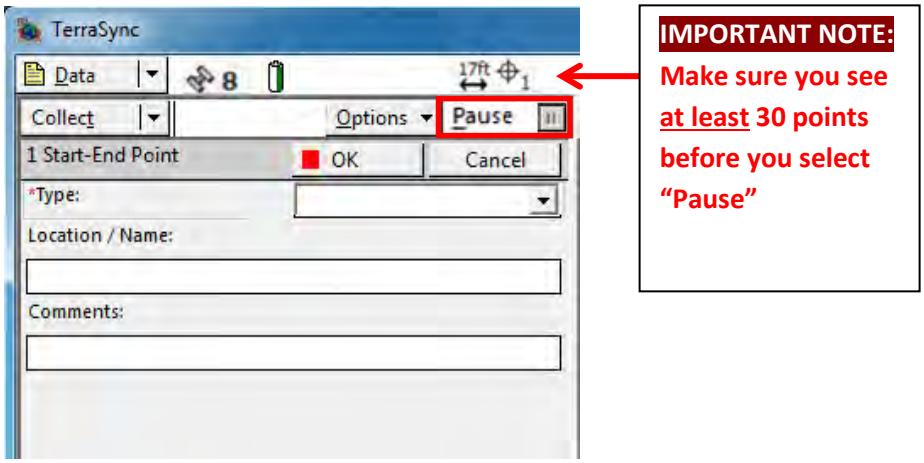
Start-End Point Inventory Process:

1. Record the location that you start inventorying and the location that you end inventorying each day.

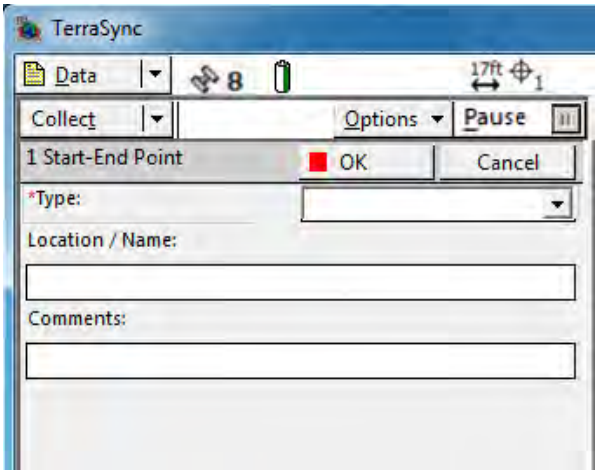
2. When you are ready to record a start-end point, select "Start-End Point" in the data dictionary and tap "Create".



3. Record at least 30 points for the location. The number of points will be displayed in the upper right-hand corner. Once you have collected 30 points, select "Pause".



4. Once you have selected “Pause”, fill out as much information in the data dictionary relating to the Start-End Point as possible.



IMPORTANT NOTE:
Remember to select “Pause”, before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information

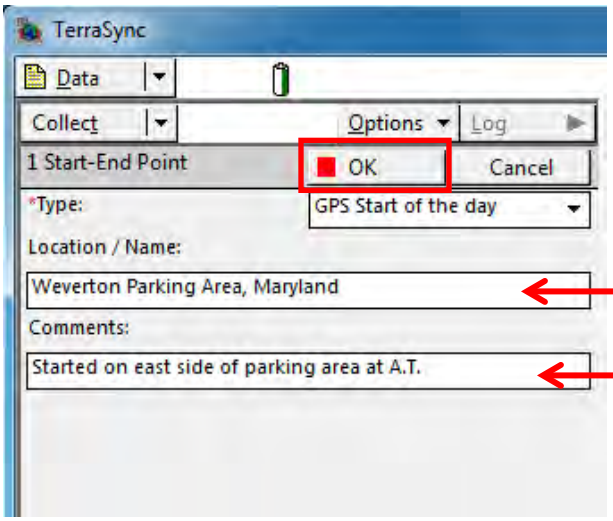
- Make sure to select the Type of Start-End Point:

  GPS Start of Day
  GPS End of Day
  Other

- Make sure to **enter a Location/Name for the Start-End Point**. This can be general, for example “South Mountain, Maryland”, but try and use some identifiable feature name if at all possible. You may use phrases such as “Close to …” or “Just north of …” if that helps to describe where it is located.

- Last, **enter any Comments** that are necessary or helpful to describe the start-end point you selected.

5. Once you have filled out as much information in the data dictionary as you can, select “OK” in the upper right-hand corner of TerraSync.



IMPORTANT NOTE:
Only select “OK” AFTER ALL information has been filled in.

Maintainer Division Inventory Process

As part of this inventory, we are attempting to map all trail maintainer sections along the A.T.

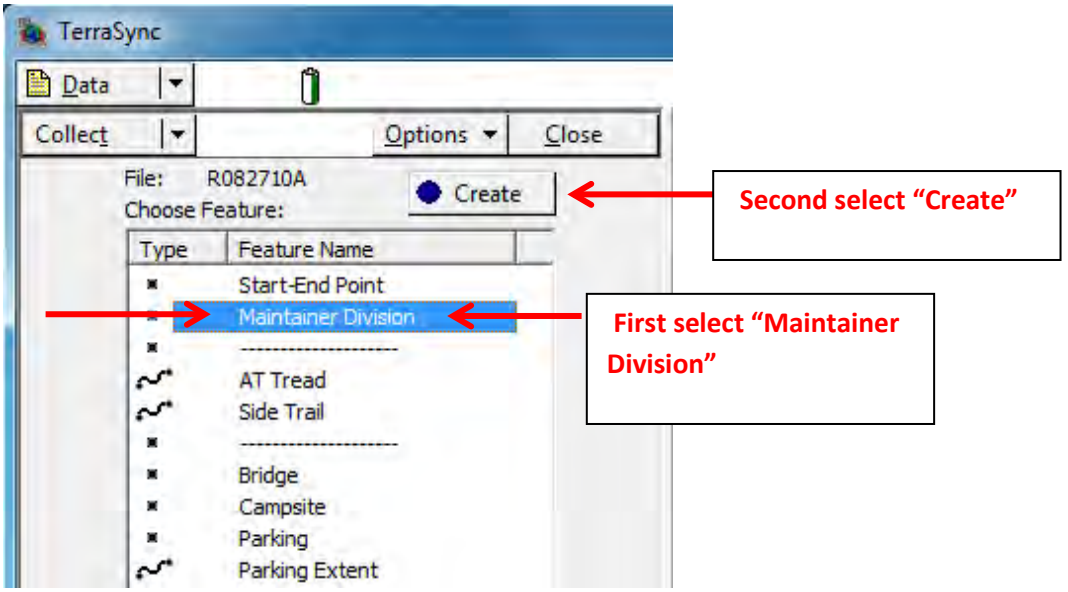
Trail maintainer sections are areas along the trail that have been assigned to different individuals to take care of, from a trail maintenance standpoint. Most of these are voluntary assignments and involve maintaining the A.T. treadway only – clearing vegetation and blowdowns, cleaning or installing trail features - water bars, checkdams, etc. Maintainer sections vary in length, but are typically somewhere between 1 to 5 miles long. For more information on maintainer sections, please refer to the Maintainer Maps provided as part of the Reference Materials for this project.

To capture Trail Maintainer sections, a point should be taken at each location where one maintainer section ends and another maintainer section begins - what we are calling a "Maintainer Division". These points should only be taken along the A.T. and only where the actual division occurs. If there is a separate maintainer for a side trail or other feature, you do not need to collect that - Maintainer Division points only need to be collected along the A.T.

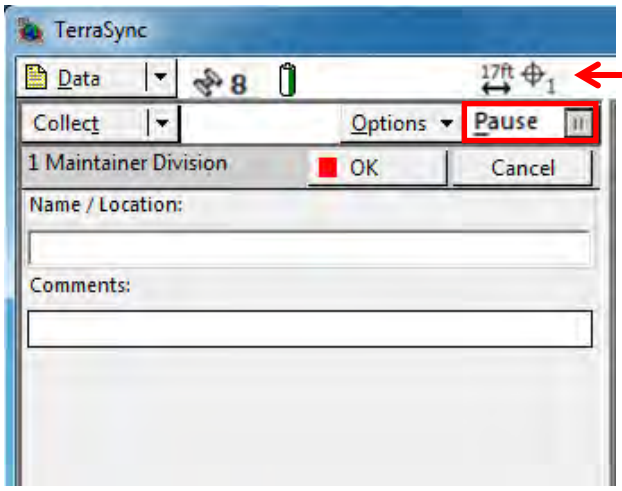
Maintainer Division Inventory Process:

1) When you locate a place along the A.T. where one maintainer section ends and another section begins, you will need to record that.

2) When you are ready to record, select "Maintainer Division" in the data dictionary and tap "Create".

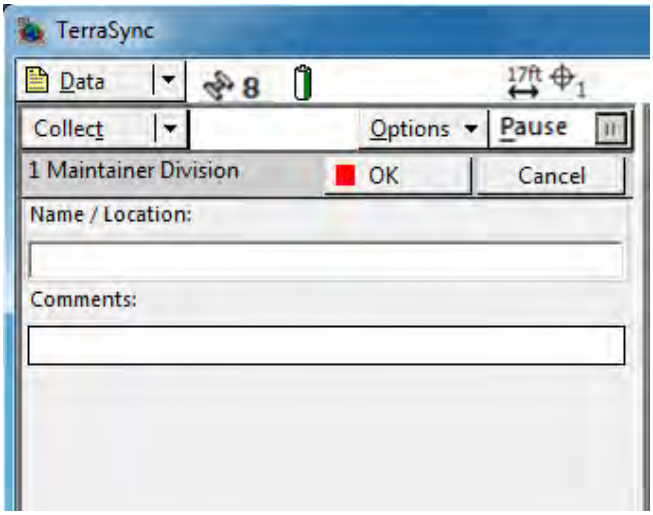


3) Record at least 30 points for the location. The number of points will be displayed in the upper right-hand corner. Once you have collected 30 points, select “Pause”.



IMPORTANT NOTE:
Make sure you see at least 30 points before you select “Pause”

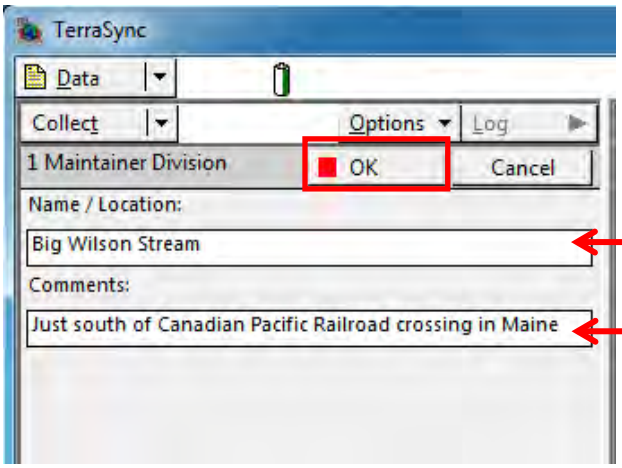
4) Once you have selected “Pause”, fill out as much information in the data dictionary relating to the Maintainer Division as possible. Please refer to the Maintainer Maps provided as part of the Reference Materials for this project for more information on filling out this data.



IMPORTANT NOTE:
Remember to select “Pause”, before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information

- Make sure you enter the **Name/Location of the Maintainer Division** and any comments that would help in locating or identifying this location. Please use the Name listed on the Maintainer Maps provided as part of the Reference Materials for this project.

5) Once you have filled out as much information in the data dictionary as you can, select “OK” in the upper right-hand corner of TerraSync.



IMPORTANT NOTE:
Only select “OK” to save the feature AFTER ALL information has been filled in.

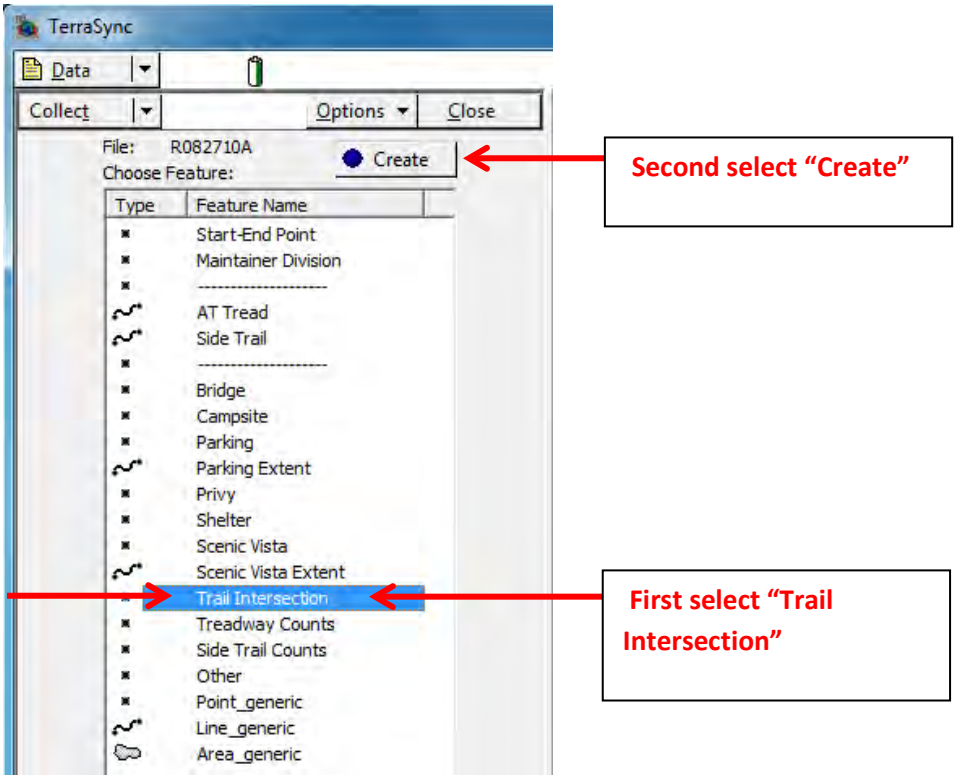
Trail Intersection Inventory Process

Trail Intersections include ANY trail that directly intersects the A.T. - whether official blazed or not. Deer or other animal trails do not count, neither do user-created social trails, unless they are substantial (well established) and serve a particularly useful purpose to the A.T. Trails that intersection other trails (e.g. a side trail to the A.T.) do not need to be recorded either – only trails that directly intersect the A.T.

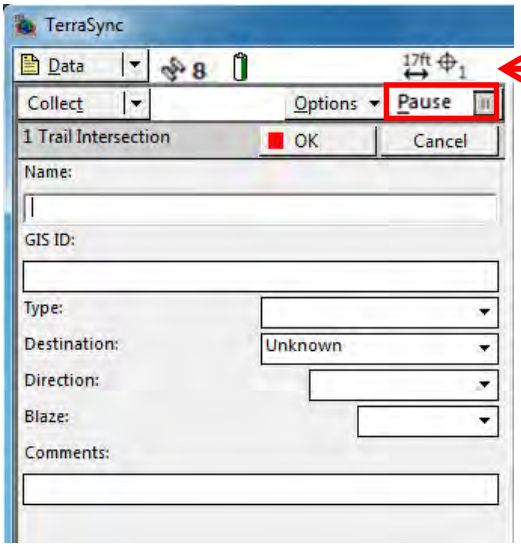
Trail Intersection Inventory Process:

1. When recording the GPS location of the Trail Intersection, try and stand in the approximate center of the A.T. and the adjoining trail to record the location.

2. When you are ready to record, select "Trail Intersection" in the data dictionary and tap "Create".

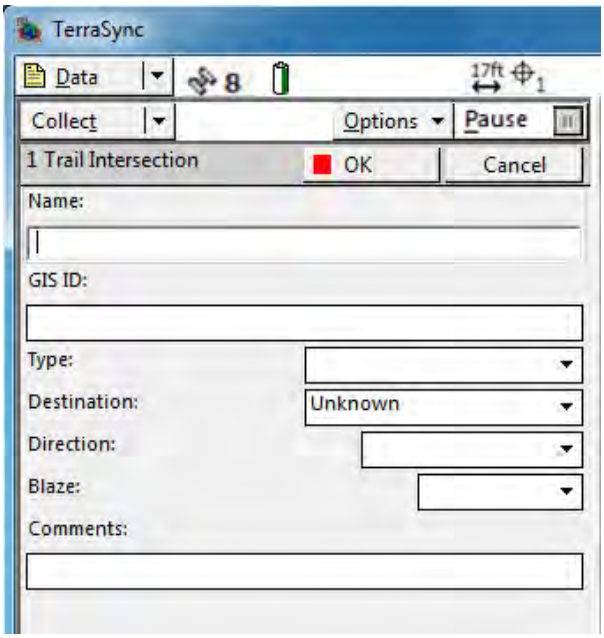


3. Record at least 30 points for the location. The number of points will be displayed in the upper right-hand corner. Once you have collected 30 points, select “Pause”.



IMPORTANT NOTE:
Make sure you see at least 30 points before you select “Pause”

4. Once you have selected “Pause”, fill out as much information in the data dictionary relating to the Trail Intersection as possible.



IMPORTANT NOTE:
Remember to select “Pause” before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information

See the information below for specific instructions on filling out trail intersection data.

5. Enter the **Name** of the trail that intersects the A.T. where it says "Name". If the trail does not have an official name, then please list the name based on the associated Maintainer Section name and the order that it is collected in.

   For Example: While collecting a trail intersection in the *Weverton* maintainer section, you come across a trail without a name. Then, if this was the first trail without a name in this section, you could list it as "*Weverton Trail Intersection 1*" within the GPS Data Dictionary.

6. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None". **IMPORTANT NOTE:** There are no FMSS IDs assigned to Trail Intersections yet, so you only have to enter the GIS ID.

7. Select the appropriate **Type** that will best describe the trail intersection you are inventorying within the GPS Data Dictionary. Refer to the trail types below:

   - **Access Trails**

     Trails are ones that lead directly to parking areas, road crossings, or other areas used to access the A.T.

   - **Alternative Route**

     Trails that offer alternatives to the official A.T. Route. These include bad weather routes (for example, those that avoid going directly over peaks or through wetlands that may be hazardous to traverse in bad weather) or simply alternative routes to the A.T. route itself.

   - **Significant Non-Blaze**

     Routes are any trail that contributes significantly to the A.T. experience (for example, leads to a primary vista, water source or other important feature) but is not blazed for one reason or another. Generally, most major trails will be blazed, but occasionally this is not the case. **IMPORTANT NOTE:** Please do not record every non-blazed trail. Use this option only for non-blazed trails that have some particular significance to the A.T.

   - **Spur**

     Trails are official side trails (meaning they are almost always blazed in some color) that lead directly from the A.T. to a significant feature, for example a primary vista, water source or other important feature. **IMPORTANT NOTE:** While technically a side trail that leads directly to a parking area would also be considered a spur, please record these separately as 'Access' trails. Also, several significant non-blaze trails could be considered a spur trail as well, but, if they aren't blazed, then please do not mark them as spur – use the 'significant non-blaze' category instead.

   - **Other**

     Trails are any other trail that offers some significance to the A.T. and worth recording, but does not fit in one of the above categories.

8. Select the primary **Destination** of the trail intersection you are inventorying within the GPS Data Dictionary. Refer to the Destinations below. If you unsure of the destination, please enter "Unknown".

Unknown	**Privy**	**Water Source**
Campsite	**Road**	**Other**
Geologic or Historic	**Shelter**	**Parking**
Vista / Summit		

9. Select the **Direction** of the trail intersection you are inventorying within the GPS Data Dictionary. Refer to the choices below:

Trail East	**Trail West**	**Both Directions**

IMPORTANT NOTE: Always enter the direction as though you are walking trail north, regardless of the direction you may actually be inventorying a section. For example: if you are walking trail north and encounter a trail to your right, that would "Trail East", left would be "Trail West".

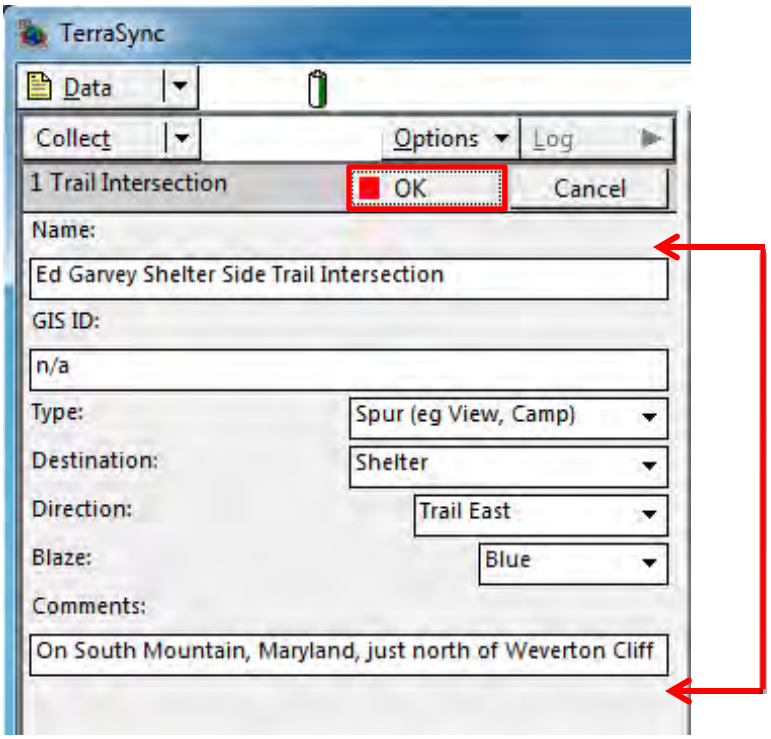
10. Select the color of the **Blaze** for the trail intersection you are inventorying within the GPS Data Dictionary. Refer to the choices below:

None	**Orange**	**Black**
Blue	**Yellow**	**Other**
White	**Green**	**Unknown**
Red	**Purple**	

IMPORTANT NOTE: If you do not know the color of the Blaze, please enter "Unknown". Also, only enter "None" if you are sure that there is no blaze color anywhere along the adjoining trail.

11. Enter any Comments that are necessary or helpful to describe the trail intersection or any of the entries you selected.

12. Once you have filled out as much information in the data dictionary as you can, select “OK” in the upper right-hand corner of TerraSync.



IMPORTANT NOTE:
Only select “OK” AFTER ALL information has been filled in.

A.T. Treadway and Side Trail Route Data

In addition to collecting information about features along the A.T. and on side trails, we are interested in collecting information about these routes themselves. This includes the centerline GPS location for both the A.T. treadway and associated side trails, along with information about the surface condition, shared use, type of trail, and more.

A.T. Treadway Route Data

The information that we want to collect for the A.T. Treadway, in addition to the GPS Location, include:

Status: Official A.T. Route, Alternative Route, or Other

Surface: Native Soil or Rock, Asphalt/Concrete, Gravel, Metal Surface, Native Pavers, Non-Native Pavers, Wood/Composite Decking, or Other

Shared Use: Single Trail Only, Shared w/Another Trail, Rail-grade/Towpath, Road/Sidewalk, Utility ROW, or Other

Comments: A general section intended for explanation or elaboration. For instance, if you choose "other" what does that mean?

Side Trail Route Data

The information that we want to collect for Side Trails, in addition to the GPS Location, include:

Name: The official name of the side trail (if applicable). If it does not have a formal name, then create a name based on the feature it leads to (e.g. Ed Garvey Privy Trail).

Type: Access, Alternative Route, Significant Non-Blaze, Spur, or Other

Surface: Native Soil or Rock, Asphalt/Concrete, Gravel, Metal Surface, Native Pavers, Non-Native Pavers, Wood/Composite Decking, or Other

Blaze: None, Blue, White, Red, Orange, Yellow, Green, Purple, Black, or Other

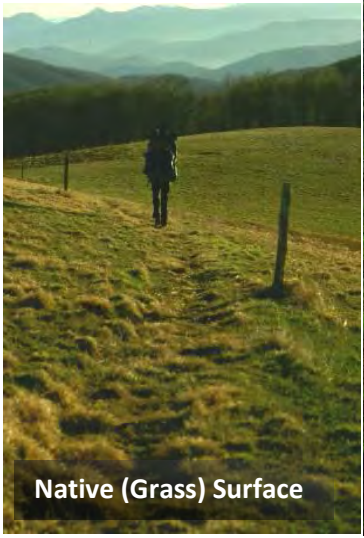
Comments: A general section intended for explanation or elaboration. For instance, if you choose "other" what does that mean?

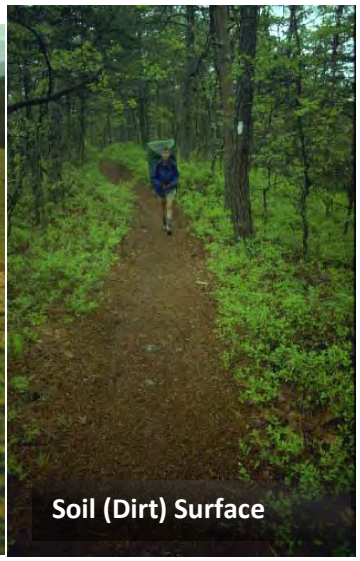
Treadway Definitions & Examples

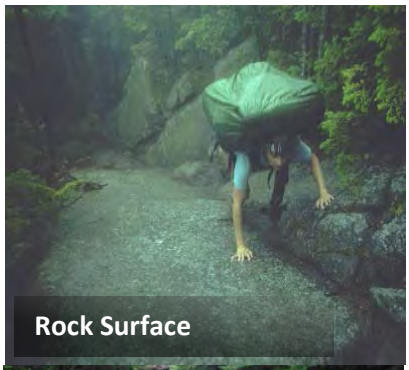
Surface

Native Soil or Rock:

Native Soil or Rock surfaces are naturally occurring surfaces where no major modifications have been made to the surface, other than perhaps some grading or side-hilling, and no imported materials (such as gravel) have been added.


Native (Grass) Surface


Soil (Dirt) Surface


Rock Surface

Asphalt/Concrete:

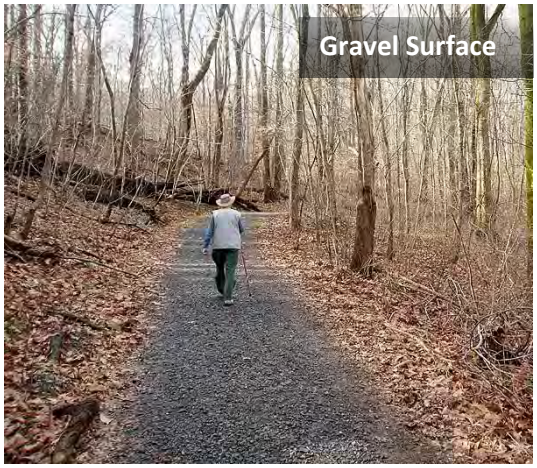
Asphalt/Concrete surfaces are improved, paved surfaces made of either asphalt or concrete.


Asphalt Surface


Concrete Surface

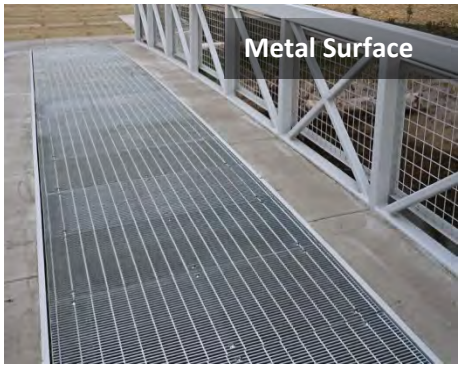
Gravel Surface:

Gravel surfaces are improved surfaces in which imported gravel has been distributed over the surface to harden or establish a pathway.



Metal Surface:

Metal surfaces are any surface where metal (aluminum, iron, steel or otherwise) has been used as the walkway or trail surface.



Native Paver Surface:

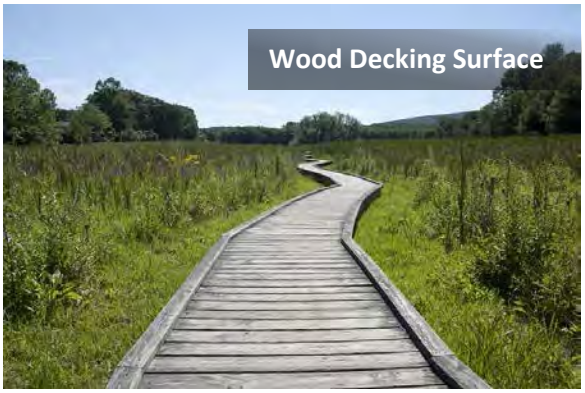
A native paver surface is group of relatively flat stones installed tightly together, often with small bits of crushed stone, stone or mortar between the gaps. Native stone pavers are used as treadway and other outdoor platform surfaces. Flagstone is included in this category.

Non-Native Paver Surface:

A non-native paver surface is where paving-stone, -tile, -brick or brick-like pieces of concrete are used as treadway surface. This generally occurs in front country sections of the AT. Non-native pavers can also be used to make roadway, driveway, patio, walkway and other outdoor surfaces.

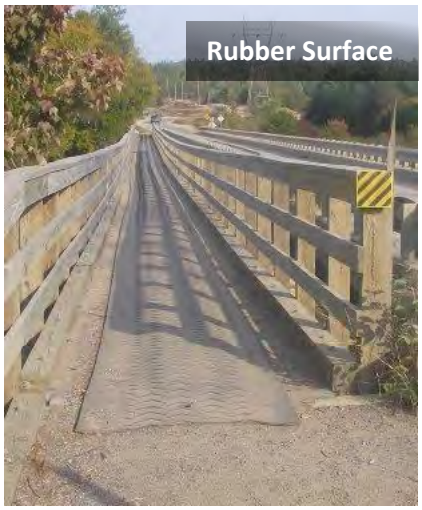
Wood/Composite Decking Surface:

A wood/composite decking surface is any surface where wood or composite lumber has been used as the walkway or trail surface. It includes boardwalks and bridges.



Other Surface:

Other surfaces include any surface that does not fit in one of the above categories. Examples include Rubber or Wood Chip. These should be rare on the A.T., but are out there.



Shared Use

Single Trail Only:

'Single trail only' means that there is only one trail present in this area. There is no other use occurring along this section, except travel along that individual trail.

Shared with Another Trail:

'Shared with another trail' means that the A.T. shares the same route with another trail for a particular section. Examples include the AT/LT (Appalachian Trail and Long Trail through central Vermont) or the AT and Benton MacKaye Trail.

IMPORTANT NOTE: Exceptions to this category include rail-to-trails and towpaths, such as the Virginia Creeper and C&O Canal. Since these trails are designed for a multiple uses, they fall into another category.

Rail-grade / Towpath:

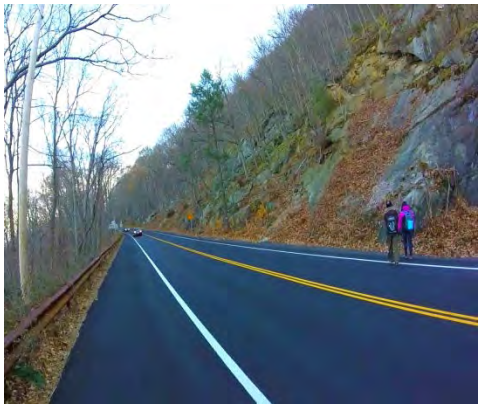
'Rail-grade / Towpath' are rail-to-trails (old railroad paths that have been converted to trails) and towpaths. These trails are generally flat, wide and designed for multi-use - pedestrian, bicycle and many times equestrian traffic. Examples along the A.T. include the Virginia Creeper and C&O Canal.


Virginia Creeper Trail


C&O Canal Trail

Road / Sidewalk:

'Road / Sidewalk' include any section of trail that is on (or follows) a road or sidewalk.



Utility ROW:

'Utility ROW' includes any sections of trail that traverse a Utility Right-of-Way (ROW) corridor. This includes power line and pipeline right-of-way corridors, but also telecommunication right-of-way corridors (e.g. telephone and fiber optic cable). These corridors can be anywhere from 20 or 30-feet to several hundred feet or more in width.

Other:

'Other' includes any section of trail that shares its use with some other significant element other than what's listed above.

Side Trail Type *(only applies to side trails)*

Access:

'Access' trails are ones that lead directly to parking areas, road crossings, or other areas used to access the A.T.

Alternative Route:

'Alternative Routes' are trails that offer alternatives to the official A.T. Route. These include bad weather routes (for example, those that avoid going directly over peaks or through wetlands that may be hazardous to traverse in bad weather) or simply alternative routes to the A.T. route itself.

Significant Non-Blaze:

'Significant Non-Blaze' routes are any trail that contributes significantly to the A.T. experience (for example, leads to a primary vista, water source or other important feature) but is not blazed for one reason or another. Generally, most major trails will be blazed, but occasionally this is not the case. **IMPORTANT NOTE:** ***Please do not record every non-blazed trail. Use this option only for non-blazed trails that have some particular significance to the A.T.***

Spur:

'Spur' trails are official side trails (meaning they are almost always blazed in some color) that lead directly from the A.T. to a significant feature, for example a primary vista, water source or other important feature. **IMPORTANT NOTE:** ***While technically a side trail that leads directly to a parking area would also be considered a spur, please record these separately as 'Access' trails. Also, several significant non-blaze trails could be considered a spur trail as well, but, if they aren't blazed, then please do not mark them as spur – use the 'significant non-blaze' category instead.***

Other:

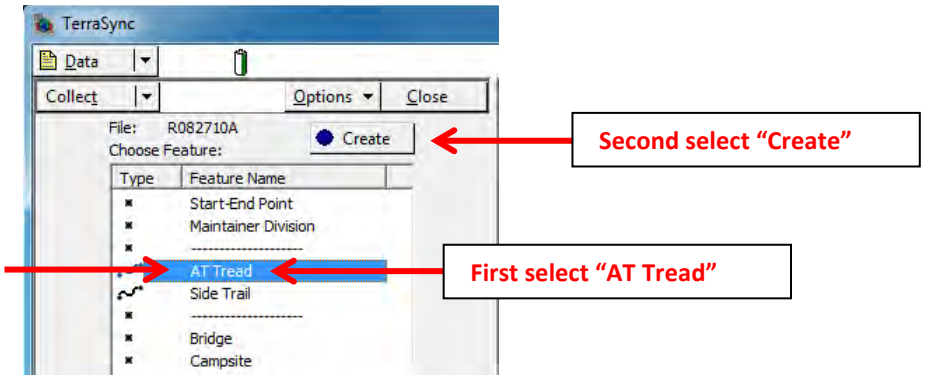
'Other' trails are any other trail that offers some significance to the A.T. and worth recording, but does not fit in one of the above categories.

A.T. and Side Trail Route Inventory Process

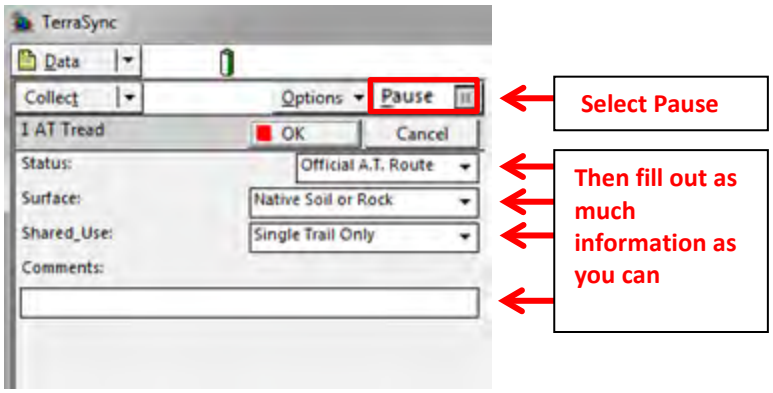
Recording the A.T. Route:

1) When recording the A.T. route, you do not want to begin logging any data until you are actually on the Appalachian Trail.

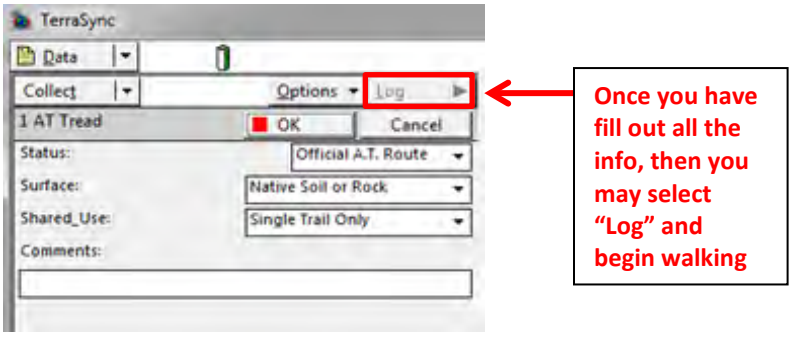
2) When you are ready to record the route of the A.T., select "AT Tread" in the data dictionary and tap "Create".



3) Immediately select "Pause" and fill out as much information as possible (Status, Surface, Shared Use, etc.), relating to this portion of the A.T. as seen from where you are standing.



4) Once you have filled out as much information in the data dictionary as you can, select "Log" and immediately begin walking.



Importance of "Pausing"

It is very important that you immediately select "Pause" in TerraSync **<u>any time</u>** that you stop while collecting line data. This is because the GPS will continue to record data as long as you are in logging mode. This accumulates extra data, which only throws the distance calculations off (adds extra length to it) and requires additional clean-up back in the office, which is very time-consuming.

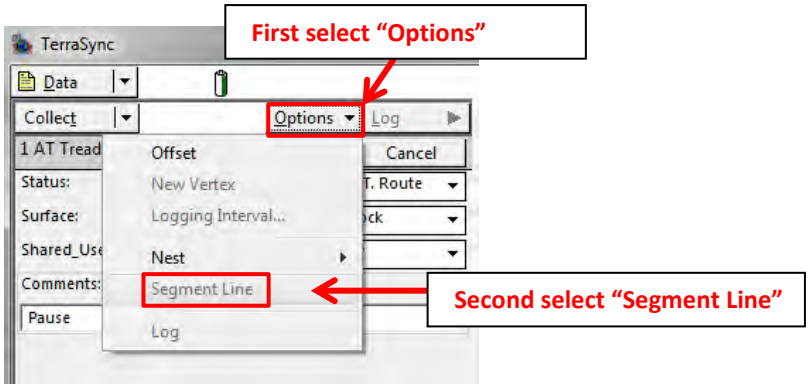
Example where the user did not "pause"

Example where user did "pause"

Once you are ready to start walking again, select "Log" in TerraSync and begin walking.

Documenting Transitions (Segmenting a Line)

Whenever you come to a change in the Status, Surface, or Shared Use, you will need to document that change. To do this with a line feature, you will want to tap on the "Options" menu and select "Segment Line".

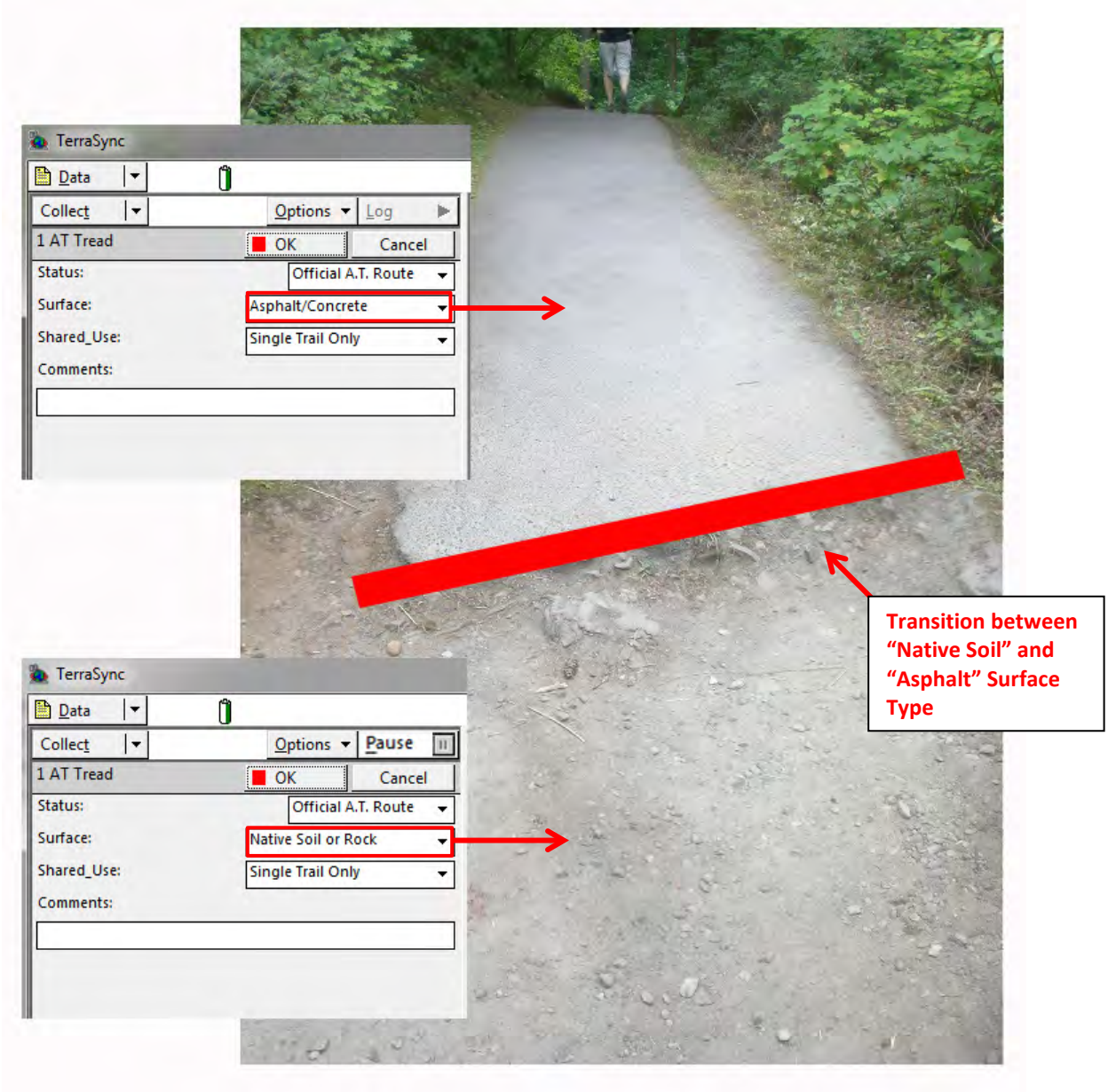


This creates a new segment within your existing line, containing different attributes then the section you just collected, but without having to start a complete new feature.

Next, simply change the information in the data dictionary to reflect the conditions of the A.T. in front of you - *for example if the trail surface in front of you is Asphalt/Concrete, select that* - then select "Log" and begin walking again.

EXAMPLE: Transition from “Native Soil or Rock” to “Asphalt/Concrete” surface.

If you come across the situation where the surface changes from “Native Soil or Rock” to “Asphalt/Concrete” (as pictured in the image below), you would want to stop exactly where the physical transition occurs (shown by the thick red line), go to the “Options” menu and select “Segment Line” (as shown in the instructions above), then tap “Pause”. You would then select “Surface”, change the value from “Native Soil or Rock” to “Asphalt/Concrete”, then select “Log” and begin walking again.



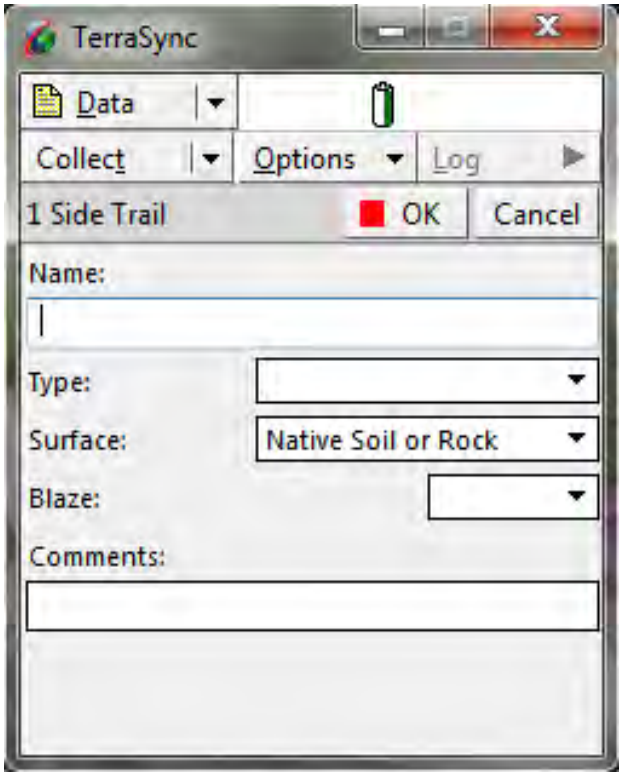
IMPORTANT NOTE: ***You will need to repeat this procedure each and every time you encounter a change in the Status, Surface, or Shared Use on the A.T.***

Recording a Side Trail Route:

When recording a side trail route, you will want to follow the same instructions (described above) for recording the A.T. Route. The only differences are that you will need to fill in slightly different information for side trails.

In addition to collecting "Surface" conditions, for Side Trails you will also need to collect the following:

1) The official "Name" of the side trail
2) The "Type" of side trail – choices include: Access, Alternative Route, Significant Non-Blaze, Spur, or Other (please see the Side Trail Type list above for more information on side trail choices)
3) The "Blaze" color used on the side trail – choices include: None, Blue, White, Red, Orange, Yellow, Green, Purple, Black, or Other



IMPORTANT NOTE: You will NOT be expected to record the "Shared Use" with Side Trails – that only applies to the A.T. Route.

A.T. Treadway & Side Trail Features Inventory Process

This chapter provides guidelines on how to collect information on trail features and structures along the A.T. and side trails. This will be collected slightly differently the other information in the Asset Inventory process. This information will primarily be recorded via a paper form and collected by trail volunteers. We are including it in this manual though, since it is part of the overall information needs for the A.T.

Required materials:

- **Printed Treadway form(s**) - one for each maintainer section you will be collecting data on (i.e. for two maintainer sections you will need two forms)
- **Printed Side Trail forms (s)** - one for each side trail you will be walking
- **Measuring device** - a tape measure that's at least 25 feet long. We recommend bringing both a 25-foot and 100-foot long tape measure.
- **Writing Device** - pen/pencil
- **Scrap paper/notebook** - to take field notes and perform calculations on features

Steps for filling out the paper forms:

1) Fill out the background information on top of each form.

   For the Treadway form, you will need to fill out the following:

   a) **Name:** Please enter both your *FIRST* and *LAST* name
   b) **Date:** Collection date
   c) **Email:** Email Address checked regularly (if available)
   d) **Phone:** A number that you can be reached at regularly
   e) **Club:** Trail Maintaining Club name that the maintainer section is located in
   f) **Maintainer Section:** Name for the club maintainer section
   g) **Northern Point:** Enter the northern point for data collection/maintainer section as shown on the Maintainer Reference Maps.
   (**IMPORTANT NOTE:** This is ***not*** the location where you started your hike).
   h) **Southern Point:** Enter the Southern point for data collection/maintainer section as shown on the Maintainer Reference Maps.
   IMPORTANT NOTE: If you cannot collect an entire maintainer section of information please provide the general location for where you stopped collecting data for the day. The

preferable location would be a trail intersection or another known location where yourself or another individual could start collecting data again.

For the Side Trail form, you will need to fill out the following:

a) **Name:** Please enter both your *FIRST* and *LAST* name

b) **Date:** Collection date

c) **Email:** Email Address checked regularly (if available)

d) **Phone:** A number that you can be reached at regularly

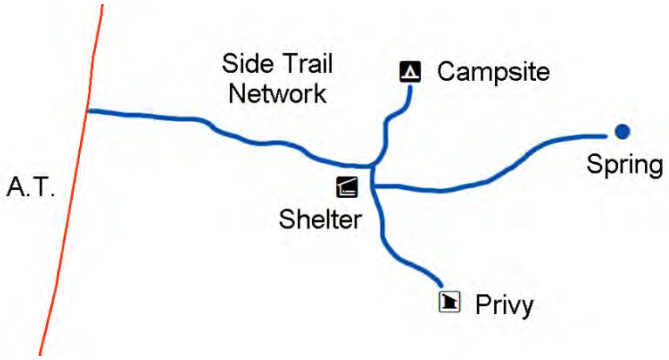
e) **Club:** Trail Maintaining Club name that the side trail is located in

f) **Side Trail Name:** Official name of the side trail

g) **Type of Side Trail:** Either "Individual Side Trail" or "Side Trail Network"

"Individual Side Trails" are single trails that lead from the A.T. to a specific feature (asset) that contributes to the AT. For example, a side trail that leads from the A.T. to an A.T. parking area.

"Side Trail Networks" are a series of related trails that typically branch off from a single side trail and are typically located within a relatively small area. Examples include trails you would find at an overnight site, where you typically have one side trail leading from the A.T. to a shelter, and then from there you have a separate trail leading to a campsite, to a privy, and to a spring. For side trail networks, you may fill out one form for all the trail features located along the network.



h) **Start Point:** Enter the start location of the side trail. Please be as descriptive as possible (e.g. US 76 at Dick's Creek Gap).

i) **End Point:** Enter the end location of the side trail. Please be as descriptive as possible (e.g. Race Brook Falls Trailhead at Connecticut Route 41).

IMPORTANT NOTE: Whichever point of the side trail (start or end) intersects the A.T., please enter "A.T." to signify that.

2) Filling out tally information for Treadway Structures (waterbars, check steps, etc.):

a) The methodology for these items is very simple. Hike down your section of trail, and when you come across a structure that meets the definition of one of the items in the list, place a tally for that structure in the "*Working Tally*" box. At the end your section, please total up all of the tallies for that particular item and write the number in the "*Total #*" column.

Appalachian Trail - Treadway Inventory Report – Version 1.1
(GPS Not Required)

Your Name: John Smith Date: 08/26/15
Email: john.smith@gmail.com Phone: 703-536-5684
Club: Potomac Appalachian Trail Club
Maintainer Section: Annapolis Rock Side Trail to US40
North Point: Annapolis Rock Side Trail South Point: US40

Item	Working Tally	Total #
Bollard		
Boulders		
Cattle Guard		
Checkdam – Rock	II	2
Checkdam – Wood	HH I	6
Checkdam – Concrete		
Culvert – Rock		
Culvert – Wood		
Culvert – Concrete		
Culvert – Metal		
Culvert – Plastic		
Drainage Dip / Swale	IIII	4
French Drain		

Example of completed tally count section

Enter your contact info and Maintainer Section info here. Refer to the Maintainer Reference Maps for appropriate names to use.

Total up your working tally counts when finished and enter the final numbers here

b) To fill out the tally information for features that require square or linear footage measurements please write the total square or linear feet for each feature in the working tally column. At the end of your data collection, total up the square or linear footage for **ALL** features in the "Total Sq. Ft." or "Total Linear Ft" column.

Item	Working Tally	Total Sq Feet
Boardwalk – Wood	26' x 3', 35' x 3'	183
Boardwalk – Composite		
Boardwalk – Metal (Grate)		
Corduroy – Wood		
Native Stone Pavers	10' x 2'	20
Non-Native Pavers		
Puncheon / Bog Bridge – Wood		
Retaining / Crib Wall – Rock	10' x 3', 21 x 2', 7' x 2' 5' x 5', 35' x 3'	216
Retaining / Crib Wall – Wood		

Example of completed Square Footage section

Total up your working tally counts when finished and enter the final numbers here

c) Please refer to the methodology table below on how to determine which treadway structure matches which structure definition.

Methodology Table: Definitions of Trail Structures (Total Number Only)

Name	Definition/Description	Picture
Bollard	A bollard is a short, vertical post used to divert traffic from an area or road. These structures are often concreted to the ground or held in by pins to make them removable. ***Count all material types for this structure***	
Boulders	A boulder is a large rock that is too large for a person to move unaided by machinery. While a boulder may be small enough to move or roll, others are extremely massive. **IMPORTANT NOTE:** Do not to count every boulder along the treadway. ***Please only record boulders that appear to have been intentionally placed and look to serve as a barrier to keep vehicles from using the trail.***	

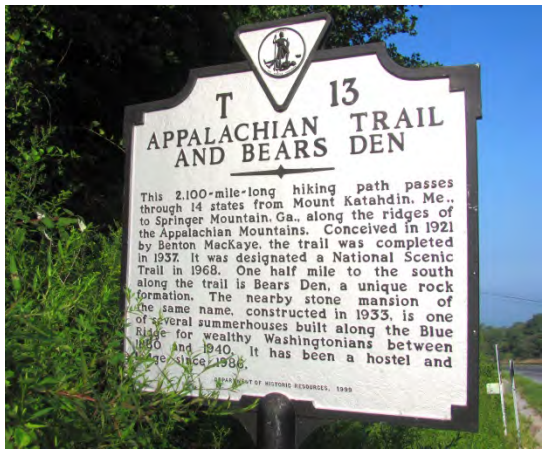
Cattle Guard	A cattle guard is a metal grid covering a ditch, allowing vehicles and pedestrians to pass over but not cattle and other animals. Usually associated with other fencing	
Check-dam – *Concrete, Rock, Wood*	A check dam or step is a log or row of rocks perpendicular (90 degrees) to a gullied fall line trail, embedded in both banks, to slow the rate of water erosion. They typically only hold materials in place at grade, never gaining elevation above existing grade. **IMPORTANT NOTE:** *The difference between this structure and a rock step is that* ***rock steps are in contact with one another while check dams are staggered to hold back tread material.*** *A rock step is a single step, where the top step is level with the tread once the step is set.* ***Keep in mind that a waterbar that has not been maintained may look like a check dam.*** *Observe the angle of the structure; if it's perpendicular to the trail count it as a check dam if it's not perpendicular to the trail count it as a waterbar.*	 

Culvert(s) – *Concrete, Metal , Plastic ,Rock, Wood,*	Culverts are typically hollow structures for draining water across a trail or a road. Natural culverts have been built using dimensional lumber or hollow logs and with rock, while industrial culverts are usually made with concrete, galvanized steel, aluminum, or plastic. **IMPORTANT NOTE:** ***Material determination should be made from the inner pipe material, not from associated structures (i.e. head walls)*** 	
Drainage Dip / Swale	A drainage dip is a broad, gradual excavated trail feature to shed water off the trail at regular intervals to prevent tread erosion by interrupting the normal grade of a section of trail. Soil excavated is mounded and compacted down the trail from the dip. Ideally, drainage dips are 15-30' long and 8-12" deep.	

French Drain	A French drain is an excavated cross drain that has been filled with rocks or gravel to the level of the trail tread, with enough open space among the rocks to redirect surface and ground water across the trail. When used to drain muddy areas, these drains may be wrapped in geotextile and/ or underlain with perforated drain pipe.	
Gate	A gate is usually a hinged barrier used to close an opening in a wall, fence, or hedge. Gates are typically swung, drawn, or lowered to block an entrance or a passageway. **IMPORTANT NOTE:** ***Specific guidance: if a gate has two swinging arms (gates), it counts as two gates.***	
Metal Rung	Metal rungs are typically placed on rock faces or ledges to provide ladder-like access in steep terrain	

Ladder	A ladder is a structure consisting of a series of bars or steps between two upright lengths of wood, metal, or rope, used for climbing up or down something. **IMPORTANT NOTE:** ***Record ALL MATERIAL TYPES for this feature. Remember, Railings will be recorded separately.***	
Sign: Blaze Post	Blaze posts are typically wooden posts (i.e. 4x4 posts) with a white or blue blaze painted on it. These posts vary in dimension and material, and the blaze may vary in color, depending on the associated trail.	  
Sign: Bulletin Board/Kiosk	Provide information (maps, Announcements, etc.) in public areas, such as trailheads, Bridges, And shelters.	  

Sign: Directional /Wayfinding	Directional signs inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail. These signs are generally posted at trailheads, intersections with side trails, or shelters/campsites.	 
Sign: Educational/ Interpretative	Interpretive signs or exhibits describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels that display interpretive information specific to the AT.	 

Sign: Identification /Entrance	Identification signs are typically short, basic labels or markers that identify the resource or place by name, and may list supplementary information like trail features. Typical signs include plant identification signs, international symbols, the AT diamond, and the AT elliptical triangle. This includes entrance signs, which alert visitors that they are entering the AT. Examples include river or road crossings, trailhead signs, campsites signs, and parking area signs.	 
Sign: Regulatory /Safety	Regulatory and safety signs alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance. This includes most signs that use the words that limit or prohibit certain things, such as campfires, horses, mountain bikes along the Trail.	  

Step(s) – *Concrete, Metal , Rock, Wood*	A step is a flat surface, especially one in a series, on which to place one's foot when moving from one level (elevation) to another. **IMPORTANT NOTE:** ***Only count the stair tread (stair steps) here, not associated features such as railing. Keep in mind that there might be other structures associated with the steps.*** 	
Step Stones	Step stones are typically flat, carefully selected and placed large stones that allow hikers to safely cross a stream or frequently wet area by stepping from one stable surface to the next. Step stones may be submerged under water at certain times of the year.	
Stile	A stile is an arrangement of steps or ladders that allows people, but not animals, to climb over or through a fence or wall. A pass-through stile provides an opening in the fence for people to walk through, but prevents livestock and vehicles from passing through.	

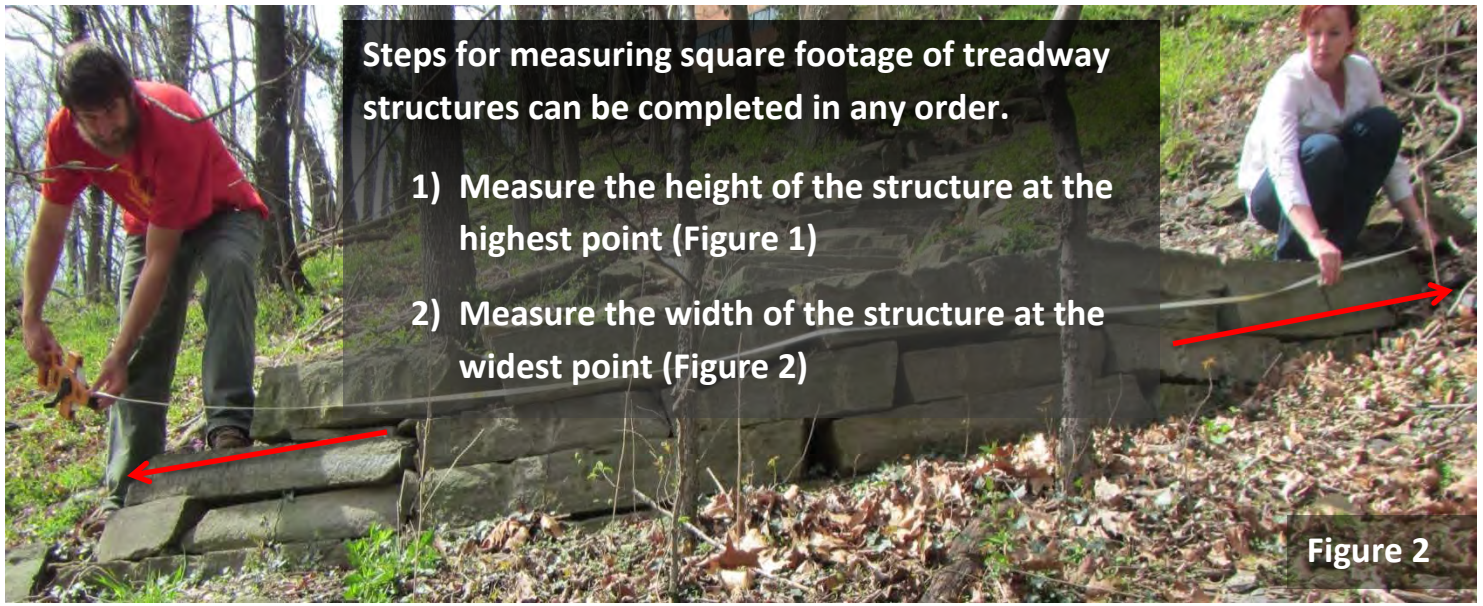
Waterbar – *Rock, Wood*	Waterbars are rock or log structures set diagonally (typically at a 45 degree or lesser angle) across the trail. The intended purpose of these structures is to divert water from, and mitigate erosion on the tread surface.  
Other:	In this section of the form record treadway features that do not fit in any category above but you feel they should be counted.

Methodology Table: Measurements in Square Feet

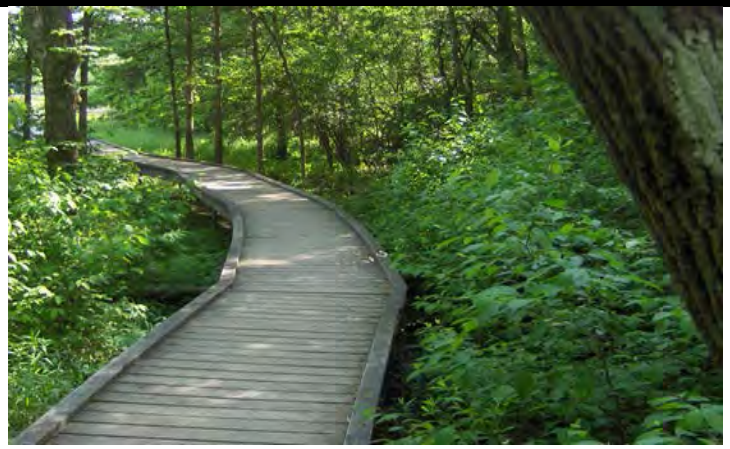
Features below will need to be measured in Square Feet: As you might know, most trail structures are not "square". Therefore, it is recommended that you follow the methodology below to take the necessary measurements for structures.

Measuring device: The device used to obtain the measures is solely up to the person performing the measurements. Suggested measuring devices include: measuring tape of various lengths (10 ft., 25 ft., 50 ft., etc.), survey wheel, survey tape, etc.

Square Feet Measuring Guidelines: To obtain the width measurement, please measure the **widest portion** of the structure. For the length of the structure, please use the **longest portion** of the structure. Write both measurements on a scrap piece of paper then multiply the measurements together and then enter that amount in the working tally portion of the form. **IMPORTANT NOTE:** ***Due to limited space, please do NOT perform the calculations directly on the form. Refer to the figures below for definitions and structures that need to be measured in square feet.***



Methodology Table: Definitions of Trail Structures Total Square Feet

Boardwalk – *Composite, Metal (Grate),Wood*	A boardwalk or boarded path is an elevated constructed pedestrian walkway, usually built with wood, to serve as treadway over bogs and wetlands and other fragile ecosystems. Piles (see *Bridge Substructure* section) can be used underneath the boardwalk to keep it from sinking in extremely wet or muddy areas.	
Corduroy – *Wood*	Corduroy is the technique, rarely used today, of building a boardwalk that lies on the ground to provide access through wetlands. Essentially, sill logs or beams are placed on the ground running perpendicular to the trail. Tread logs or half logs are then placed running parallel to the trail on the sill logs. Tread logs are installed of differing intervals mimicking a corduroy stitching pattern. The logs are spiked or pinned to the stringers, establishing an elevated tread surface.	

Native Stone Pavers	Native stone pavers are relatively flat stones installed tightly together, with small bits of crushed stone, stone or mortar between the gaps. Native stone pavers are used as treadway and other outdoor platform surfaces. Flagstone is included in this category.	
Non-Native Pavers	Non-native pavers are paving-stone, -tile, -brick or brick-like pieces of concrete used as treadway surface in front country sections of the AT. Non-native pavers can also be used to make roadway, driveway, patio, walkway and other outdoor surfaces.	

Puncheon /Bog Bridge – *Wood*	A puncheon or bog bridge is a wooden walkway or flattened logs that bridge muddy terrain. Typically, they consist of a series of short-span footbridges supported by a foundation of horizontal sleeper (sill) logs or timbers.	
Retaining / Crib Wall – *Metal, Rock, Wood*	Retaining/Cribwalls are structures that typically hold or retain materials behind them. Retaining walls are commonly made out of concrete blocks, poured concrete, brick, native logs or timber, dimensional lumber, rock or boulder, etc. Cribwalls are typically constructed from wood logs or rocks, and are backfilled with rocks and soil. **IMPORTANT NOTE*:*** ***Retaining and riprap walls can be found on either side of the treadway (toe and back slope). It is important to be constantly looking for these structures. The treadway that lies behind these walls is meant to be walked, unlike scree walls, which are not set in such a way that can be walked on.***   	

Turnpike /Causeway – *Rock, Wood*	Turnpikes are used to elevate the trail above wet ground. They typically have a single course of logs or rocks, placed parallel to the trail on either side of the trail tread, with fill materials placed in-between the logs to create an elevated treadway.	 
Riprap/Scree	A scree or junk wall consists of medium to large angular rocks (rip rap) loosely (or ideally carefully) placed/stacked on an unstable slope to slow erosion. In trail work, riprap may be placed adjacent to steps or check dams on the sides of gullied tread, or to stabilize tread back slope or downslope or to confine the impact of traffic.	 

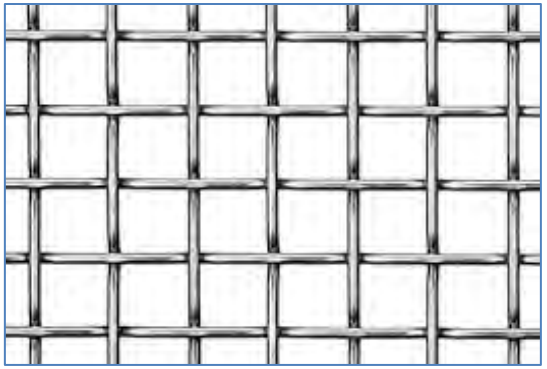
Methodology Table: Definitions of Trail Structures Total Linear Feet

Measuring device: The device used to obtain the measures is solely up to the person performing the measurements. Suggested measuring devices include: measuring tape of various lengths (10 ft., 25 ft., 50 ft., etc.), survey wheel, survey tape, etc. **IMPORTANT NOTE:** ***For this process, pacing is not an acceptable way to take a measurement.***

Linear Feet Measuring Guidelines: Start at the beginning of the feature, and move along the entire feature with your chosen measuring device. Once you have reached the end of the feature, record the length in the appropriate "Working Tally" box that pertains to that feature on the treadway form or within the GPS Data Dictionary.

Drainage Ditch	A trench or channel dug in the ground typically used to direct water flow to areas where runoff can be dispersed and filter back into the ground.	

Fence – *Barbwire, Slip Wire*	Wire is typically for fencing or gates, and is supported mainly by tension being stretched between posts for metal frames. Between these braced posts are additional smaller wooden or metal posts. Traditionally, wire fencing material is made of galvanized steel.	
Fence – *Chain Link*	A chain-link fence (also referred to as wire-mesh fence or chain-wire fence) is a type of woven fence usually made from galvanized or steel wire. The wires run vertically and are bent into a zig-zag pattern so that each "zig" hooks with the wire immediately on one side and each "zag" with the wire immediately on the other. This forms the characteristic diamond pattern seen in this type of fence.	
Fence – *Split Rail*	A split rail fence is usually constructed from logs, typically split lengthwise into rails and used in agriculture or as decoration.	

Fence – *Wire Mesh*	Wire mesh are connected strands of metal, fiber, or other materials that are typically woven, welded, or crimped together to create fence or barrier. There are various gauges of wire that can be used, and the opening spacing can vary depending on the type of wire mesh.	
Railing	Railings are typically structures designed to provide support, such as a handrail on a staircase or a bridge. Chains and cable railings are included in this category.	

Bridges and Associated Features

Bridge types along the AT range from simple, single unit foot bridges with native soil embankment abutments to complex engineered bridges with constructed abutments. Some bridges can be inspected by ATC staff or volunteers, while others require cyclic engineer led inspections. Puncheon, boardwalk, and other like trail structures not included in this category.

Arch

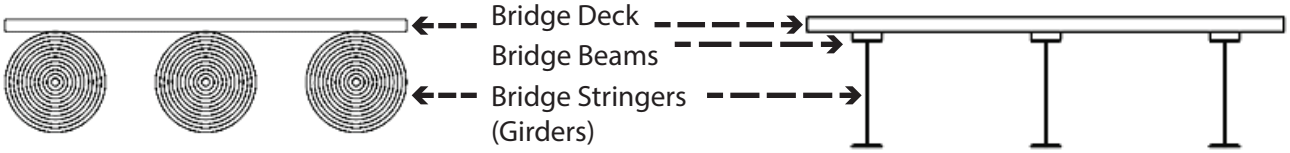
An arch bridge has abutments at each end shaped as a curved arch. Decks are supported by longitudinal beams or walls that are supported by one or more arches. Typical materials include brick, stone, and concrete.

Beam/Stringer (Deck Girder)

Wood/Log Simple Foot Bridge

This bridge is supported by two or more longitudinal stringers (girders), with wood or composite deck boards set across the top, perpendicular to the girders. Typical span is 10 to 40 feet.

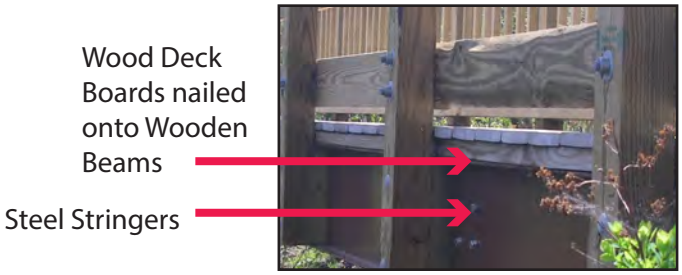
Wood/Log Simple Footbridge



Steel Stringer Trail Bridge

Steel Stringer Trail Bridge

Plank decks are usually nailed to timber nailers bolted to the top of the beams. Beams, typically log or steel (iron), are supported by an abutment or pier at each end. Typical span is 30 to 120 feet.

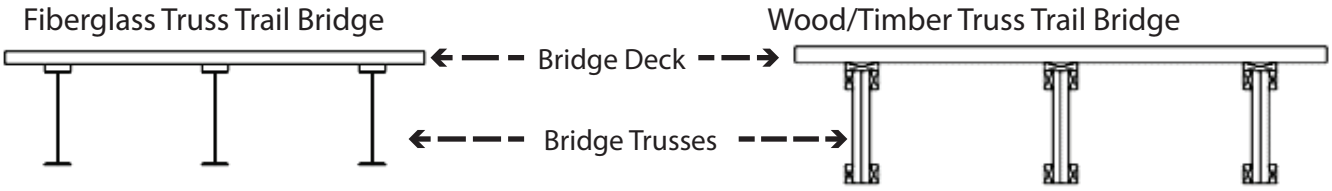


Culvert

Culvert bridges typically span short distances and run perpendicular to the trail. These bridges are often formed with dirt and rocks are compacted over the top of a culvert.

Deck Truss

This bridge is supported by two or more longitudinal trusses, with deck boards set across the top, perpendicular to the trusses. Typically the decks are made out of wood/timber, but they may be concrete steel, or fiberglass. Common truss materials include timber, steel, and fiberglass.



Prefabricated

Prefabricated bridge components or entire bridges are pre-engineered and built off site and transported to their final location. Steel is probably the most common type of prefabricated bridge; however, composite material has become popular for smaller pedestrian bridges. Only select this Bridge Type if you know or can determine that over 75 percent of the bridge was prefabricated.

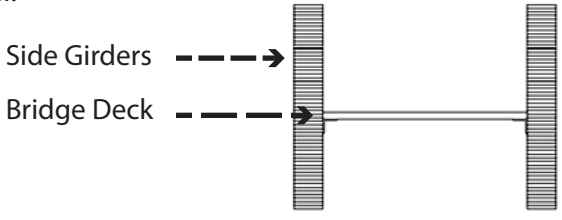
Rigid Frame

A Rigid-Frame Bridge is a bridge in which the superstructure and substructure are rigidly connected to act as a continuous unit. Typically, the structure is cast monolithically, making the structure continuous from deck to foundation.

Side Girder

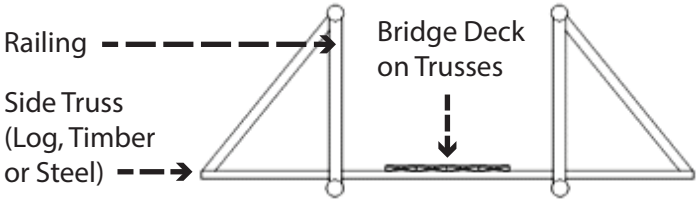
A side girder bridge is supported by two longitudinal girders (beams), one on each side. The deck, usually timber plank, is hung on the interior of the girders, either on floor beams or ledger beams attached to the main girders. Common girder materials include logs, timber, and steel.

The girders usually function as all, or part of the handrail system. Typical span 60 to 120 feet.



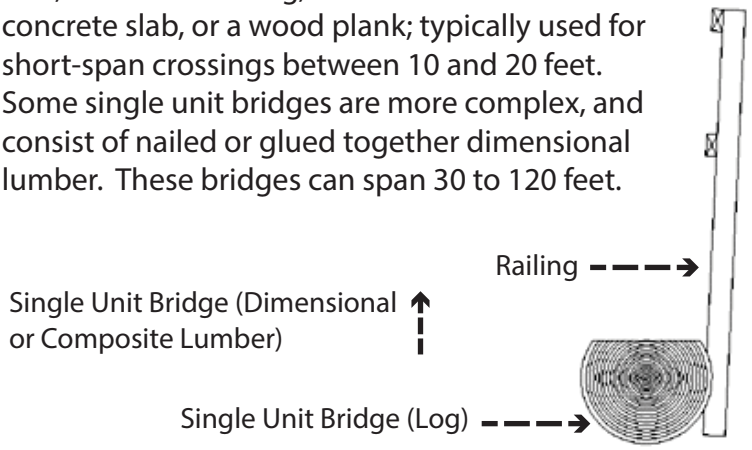
Side Truss

Side truss or pony truss bridges are supported by two longitudinal trusses, one on each side. The deck (usually timber plank, but may be concrete, steel, or fiberglass) is hung on the interior of the trusses. A-Frame bridges are also included in this category, but less common.



Single Unit

Typically, a single unit bridge is a self-supporting unit, such as a foot log, a stone or reinforced-concrete slab, or a wood plank; typically used for short-span crossings between 10 and 20 feet. Some single unit bridges are more complex, and consist of nailed or glued together dimensional lumber. These bridges can span 30 to 120 feet.



Suspension (Cable)

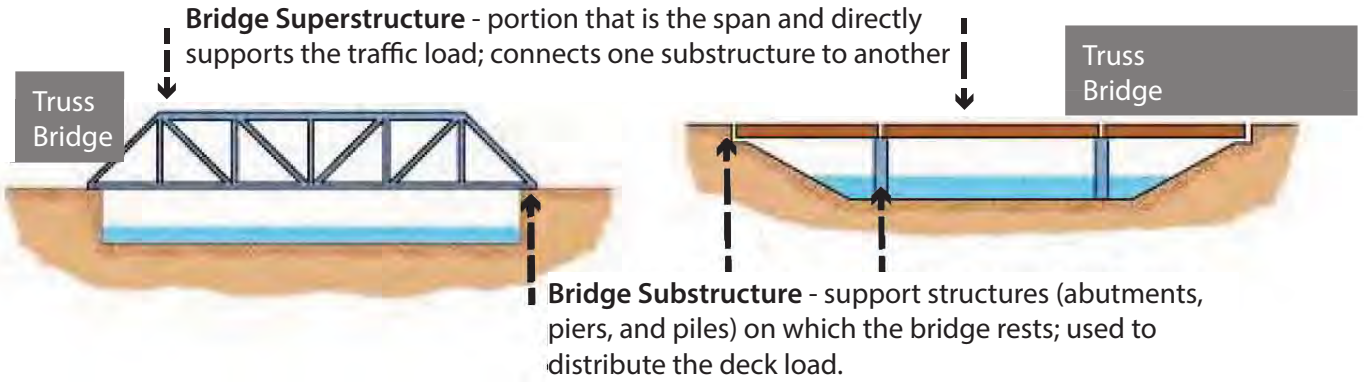
Suspension bridges decks are hung from suspender cables (suspension) or supported by two main cables (deck cables) anchored into the bank. Longer bridges can have intermediate towers or a stiffening truss; however typical trail bridges do not.

Cable suspension bridge without stiffening truss

Bridge Features

Bridges can be broken down into three general categories: Bridge Decking, Bridge Superstructure, and Bridge Substructure. Common decking materials include log, dimensional lumber, composite lumber, steel, and fiberglass. Common superstructure and substructure materials include log, dimensional lumber, steel, fiberglass, concrete, and rock.

Common Bridge Decking Material

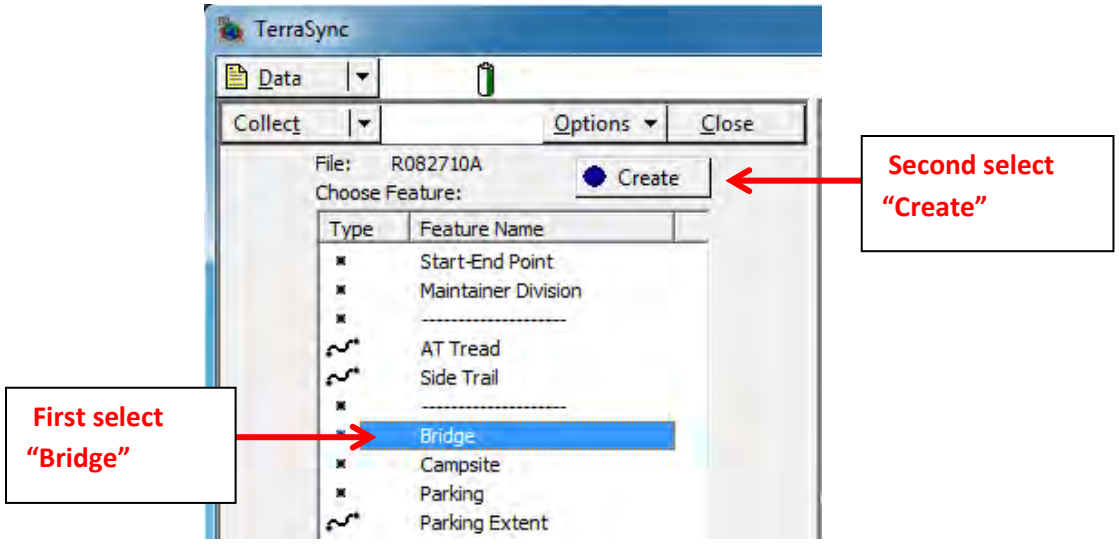


Bridge Inventory Process

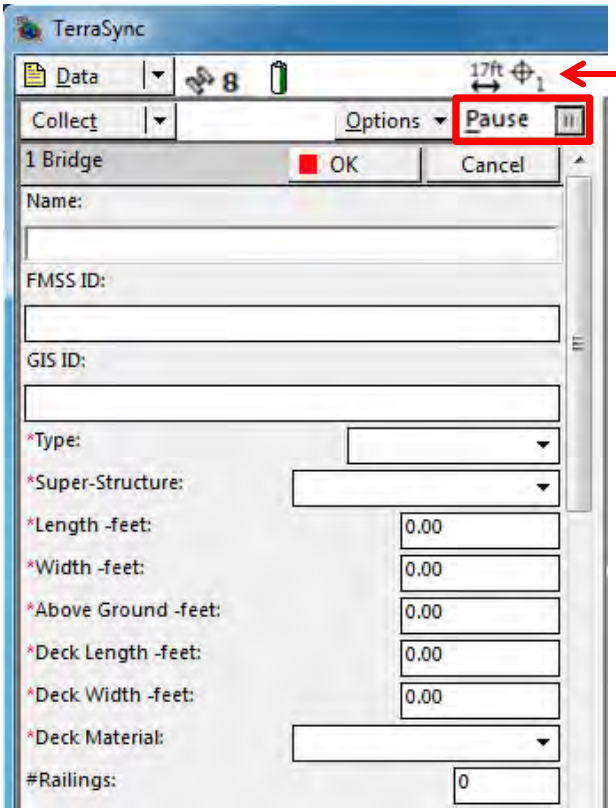
IMPORTANT NOTE: Boardwalk is not included as part of the Bridge Inventory. All Boardwalk structures should be included in the Treadway and Side Trail Features Inventory Process.

1. When recording the GPS location of a Bridge, try and stand in the center of the structure.

2. Select “Bridge” in the data dictionary and tap “Create”.

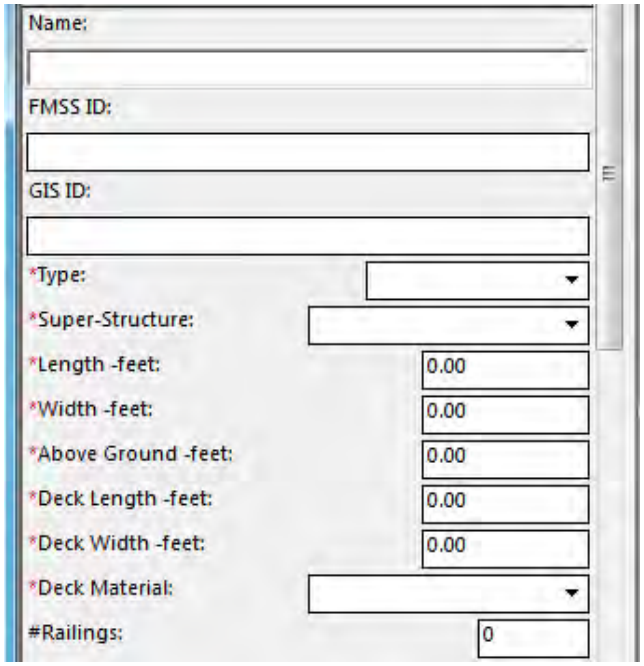


3. Record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner of TerraSync. Once you have collected 30 points, select “Pause”.

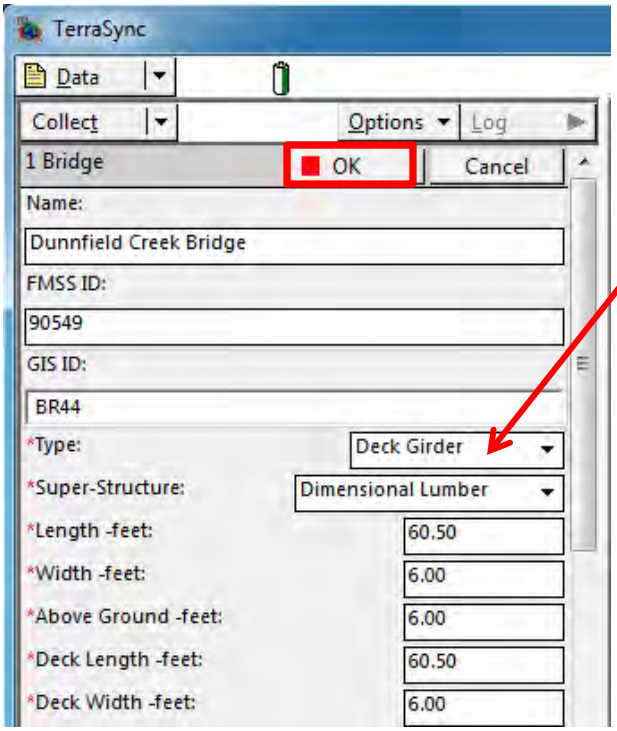


IMPORTANT NOTE:
Make sure you see at least 30 points before you select “Pause”

4. Once you have selected “Pause”, you can then walk around and gather the necessary information and measurements.



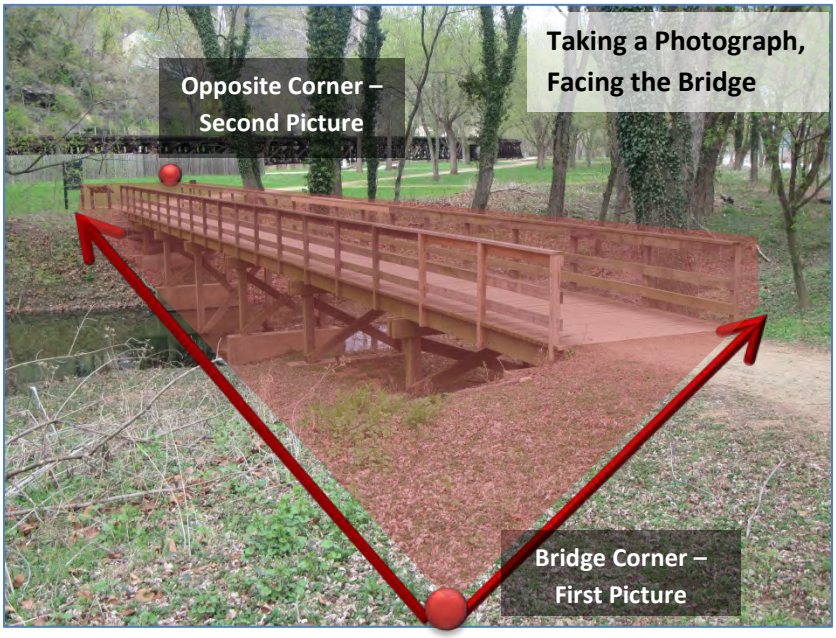
IMPORTANT NOTE:
Remember to select “Pause”, before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information



IMPORTANT NOTE:
Only select "OK" AFTER ALL information has been filled in.

5. Take at least two pictures of the Bridge you are inventorying – one from a corner of the bridge, and one from the opposite diagonal corner at the other end of the bridge. Please see the Technical Office Guide for information about naming photographs.

   - If you need to take more than two pictures, that's ok. Try and capture the associated features (signs, ramps, fence, etc.) in the picture if possible, but you do not have to take pictures of the associated features themselves. Stand far enough away to capture the whole bridge in the picture, **as long as it's safe**. Depending on the bridge surroundings, you may have to stand above, level, or below eye level of the bridge to take a good picture.



6. Enter the **Name** of the bridge within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials or the bridge does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting bridge information in the *Brink Road* maintainer section, you locate a small bridge without a name. If this was the first bridge without a name in this section, you could list it as "*Brink Road Bridge 1*" within the GPS Data Dictionary.

7. For the **FMSS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If there is no FMSS ID for the Bridge, then please enter "0". If you can't locate a corresponding ID, please enter "Not Found" or "None".

8. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

9. Select the predominant **Bridge Type** associated with the bridge you are inventorying within the GPS Data Dictionary. Refer to the bridge types below:

Arch	**Beam/Stringer**	**Culvert**	**Deck Truss**
Prefabricated	**Rigid Frame**	**Side Girder**	**Side Truss**
Single Unit	**Suspension (Cable)**	**Other**	

10. Select the primary **Bridge Superstructure Material** associated with the bridge you are inventorying within the GPS Data Dictionary. **IMPORTANT NOTE: The superstructure portion of the bridge that supports the deck and connects one substructure element (abutments and piers/piles) to another.** Refer to the superstructure types below:

Aluminum	**Block/Brick**	**Composite Lumber**
Dimensional Lumber	**Fiberglass**	**Log**
Steel	**Stone**	**Other**

11. Measure the **length and width of the Bridge** and record the measurement (in feet) within the GPS Data Dictionary. **IMPORTANT NOTE:** When recording measurements, remember to round to the nearest foot. (Example: *12 ft. 7 in. would be recorded as 13 ft.*)

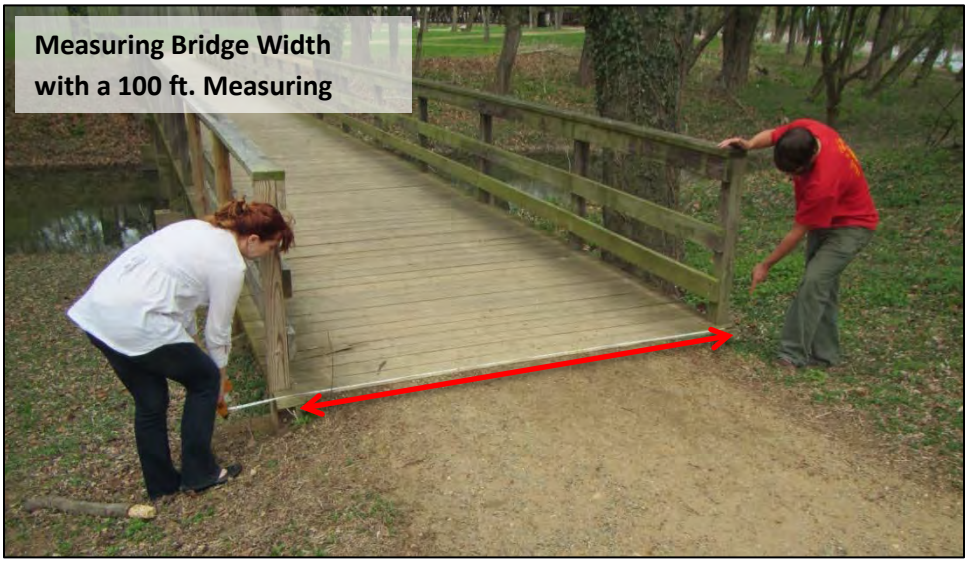
    To take the length measurement:

    - Stand on one side of the bridge and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length as you walk across the bridge. Try to take the measurement between the two points (from one side to the other) that will capture the greatest length.

    - Once you're at the other side, record the length measurement (in feet) within the GPS Data Dictionary.

    To take the width measurement:

    - Stand on one side of the bridge (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to take the measurement between the two points (from one side to the other) that will capture the widest part of the bridge.



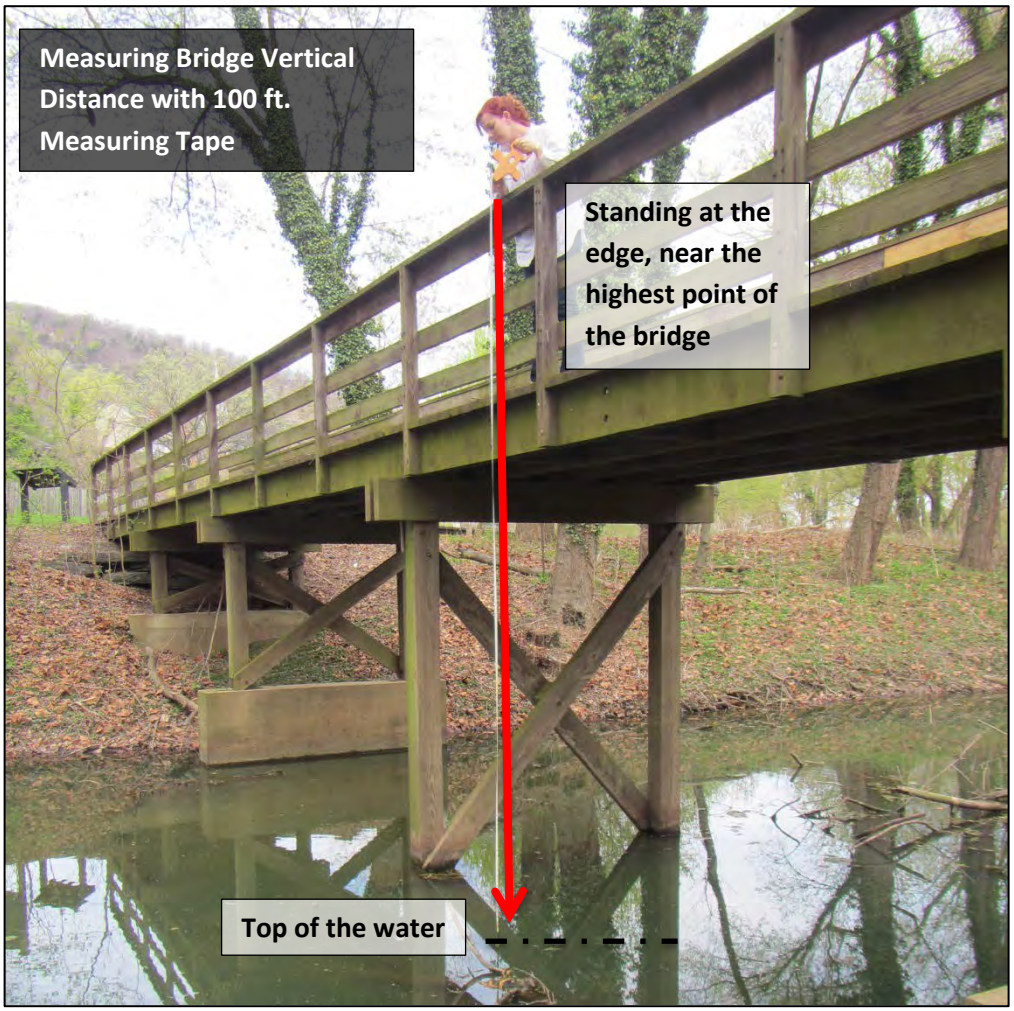
If the bridge width spans outside of the decking width, make sure to measure that section too. Add this length to the first width measurement to equal the total bridge width.

- Once have the total width measurement, record the width measurement (in feet) within the GPS Data Dictionary.

12. Measure the **vertical distance of the bridge** above ground/water and record the measurement (in feet) within the GPS Data Dictionary.

To take the vertical distance measurement:

- Stand at the approximate highest point of the bridge and, using your tape measure; safely obtain the distance from the water/ground surface to the top of the railing. **IMPORTANT NOTE:** Only take the measurement from the highest point if it is safe to do so. If it's not safe, take the measurement from the next highest point where it is safe.



- Once you think the end of the tape is near the ground or water, read the measurement at the top of the tape and record the necessary measurements within the GPS Data Dictionary. If your measuring tape (i.e. 100 ft.) cannot reach the ground or water from where you are standing on the bridge, make a "best guess" estimate of the height based on where the tape ends. This means that if your 100 ft. measuring tape ends half way between you and the ground/water, the height is roughly 200 ft.

13. Measure the **length and width of the Bridge Decking** and record the measurement (in feet) within the GPS Data Dictionary.

    To take the deck length measurement:

    - Stand on one side of the bridge and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length of the deck as you take the measurement across the bridge. Try to take the measurement between the two points (from one side to the other) that will capture the greatest length.

    - Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

    To take the deck width measurement:

    - Stand at one corner of the deck and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width (i.e. start at one corner of the decking and take the measurement perpendicular to the other corner of the decking on the same side).

    - Once you're at the other end, record the width measurement (in feet) within the GPS Data Dictionary.

14. Select the predominant **Bridge Decking Material** associated with the bridge you are inventorying. Refer to the decking materials below:

None	**Aluminum**	**Block/Brick**	**Composite Lumber**
Dimensional Lumber	**Fiberglass**	**Log**	**Steel**
Stone	**Other**		

15. Count and record the **number of Bridge Railings** that are associated with the bridge you are inventorying.

16. Measure the **length and height of the Bridge Railing** and record the measurement (in feet) within the GPS Data Dictionary.

To take the railing length measurement:

- Stand at one end of the railing and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to take the measurement between the two points (from one side to the other) that will capture the greatest length.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

To take the railing height measurement:

- Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the railing. Remember to try and capture the greatest height. Read the measurement at top of the tape and record the height within the GPS Data Dictionary.

17. Select the predominant **Bridge Railing Material** associated with the bridge you are inventorying. Refer to the railing materials below:

None	**Aluminum**	**Block/Brick**	**Composite Lumber**
Concrete	**Dimensional Lumber**	**Gabion Stone**	**Log**
Steel	**Stone**	**Other**	

18. Count and record the **number of Curb Barriers** (Toe Rails) that are associated with the bridge you are inventorying.

19. Measure the **length of the Curb Barriers** and record the measurement (in feet) within the GPS Data Dictionary.

    To take the curb barrier length measurement:

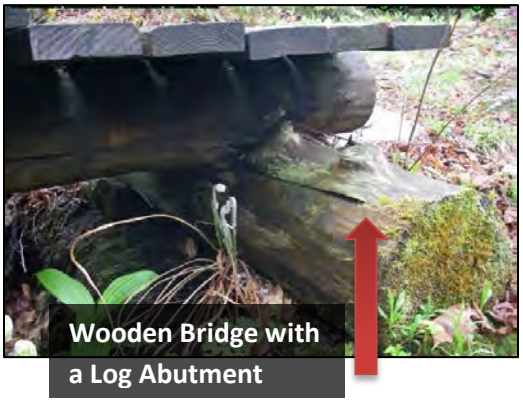
    - Take the necessary steps to capture the length, depending on what type of measuring device you are using (measuring tape or measuring wheel). Try to take the measurement between the two points (from one side to the other) that will capture the greatest length.

    - Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

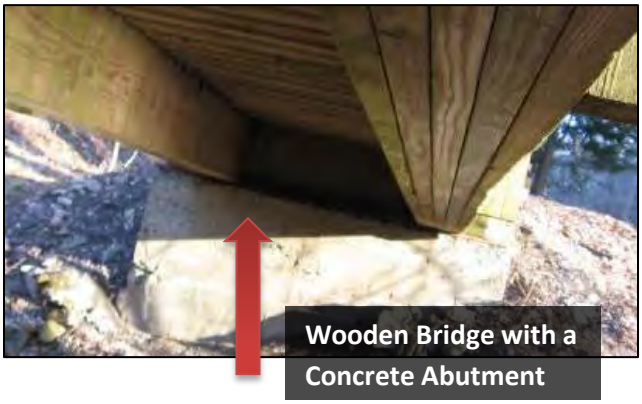
20. Select the predominant **Curb Barrier Material** associated with the bridge you are inventorying. Refer to the curb barrier materials below:

None	**Aluminum**	**Block/Brick**
Cable/Wire	**Composite Lumber**	**Dimensional Lumber**
Log	**Plastic**	**PVC**
Steel	**Stone**	**Other**

21. Count and record the **number of abutments** associated with the bridge you are inventorying. Typically, each bridge will have two abutments, but in cases where the bridge connects multiple land masses (i.e. from the starting embankment, over to a small island, then to the end embankment), there may be multiple abutments.



Wooden Bridge with a Log Abutment



Wooden Bridge with a Concrete Abutment

22. Select the predominant **Bridge Abutment Material** associated with the bridge you are inventorying. Refer to the abutment material below:

None	**Aluminum**	**Block/Brick**	**Composite Lumber**
Concrete	**Dimensional Lumber**	**Gabion**	**Log**
Rip Rap	**Steel**	**Stone**	**Other**

23. Count and record the **number of piers and/or piles** that are associated with the bridge you are inventorying. Typically, only more substantial trail bridges will have piers or piles, however, smaller footbridges that need additional support may need piers or piles as well.

Concrete Bridge with a Concrete Pier

Wooden Bridge with Wooden Piers

24. Select the predominant **Bridge Pier/Pile Material** associated with the bridge you are inventorying. Refer to the pier/pile materials below:

None	**Aluminum**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Gabion Stone	**Log**	**Steel**
Stone	**Other**	

25. Count and record the **number of Signs** that are associated with the Bridge you are inventorying within the GPS Data Dictionary. Signs should be attached or have a direct connection / contribution to the Bridge. Make sure to record the <u>total</u> number of signs by type, regardless of size, shape, and material type. Refer to the associated signage options below:

Kiosk (Bulletin Board)

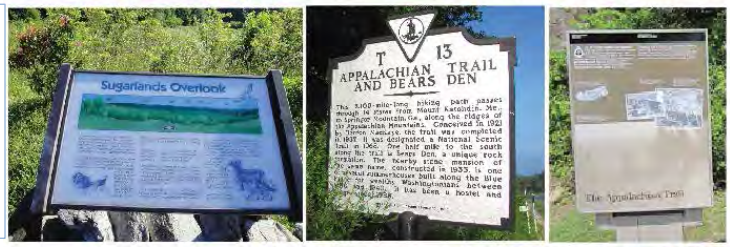
- Provide information (maps, announcements, etc.) in public areas, such as trailheads, shelters, and parking areas.

Directional/Wayfinding Signs

- Inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail.

Educational/Interpretive Signs

- Signs or exhibits that describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels.



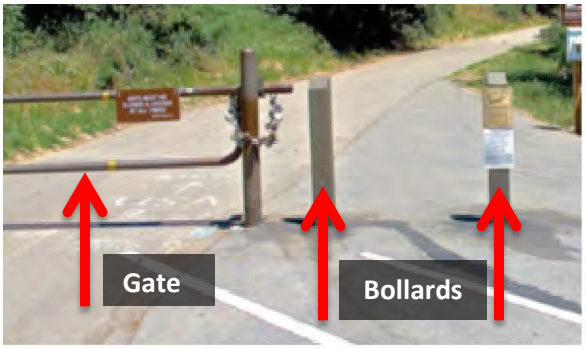
Identification/Entrance Signs

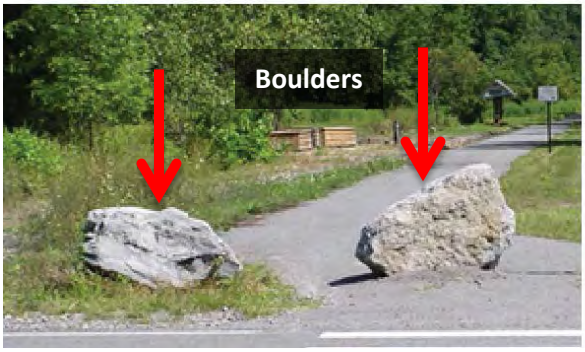
- Identification signs are typically short, basic labels or markers Typical signs include landmark signs, the AT diamond, and the AT elliptical triangle.

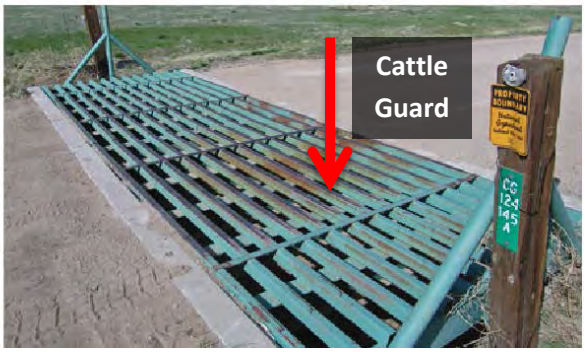
Regulatory/Safety Signs

- Signs that alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance.

26. Count and record the **number of Barriers** that are associated with the Bridge you are inventorying within the GPS Data Dictionary. Barriers should be attached or have a direct connection/contribution to the Bridge. Make sure to record the <u>total</u> number of barriers by type, regardless of size, shape, and material type. Refer to the associated barrier options below:







27. Count and record the **number of Fences** that are associated with the Bridge you are inventorying within the GPS Data Dictionary. Fences should be attached or have a direct connection/contribution to the Bridge.

28. Measure the **length of the Fence**, and record the measurement (in feet) within the GPS Data Dictionary.

To take the Fence length measurement:

- Stand at one end of the fence and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length, from one end to the other end. **IMPORTANT NOTE:** Remember to double the length measurement if there is an equal amount of fence on each side of the fence.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

29. Select the predominant **Fence Material** associated with the bridge you are inventorying. Refer to the fence materials below:

None	**Barbwire/Slip Wire**	**Chain Link**
Split Rail	**Wire Mesh**	**Other**

30. Select whether an **Inspection is Required** for the Bridge.

    To determine if the Bridge you are inventorying will need an engineer inspection, please refer to the following guidance:

    Examples of Engineered Bridges could include: bridges that are longer than 20 ft., bridges that are designed for vehicles, bridges with designed weight limits, bridges that require certified engineer inspections, complex bridge superstructure or substructure, etc.) If you are unsure, work with ATC staff to determine if the bridge is engineered not.

    If the bridge is considered an engineered bridge please select "Yes" within the GPS Data Dictionary so that an engineer inspection can be conducted.

    If the bridge can be inspected by without an Engineer, please select "No" within the GPS Data Dictionary.

31. If you know the **Design Load** or Load Restrictions associated with the bridge you are inventorying, please enter the amount (in pounds) within the GPS Data Dictionary. Often engineered bridges will have the design load/load restrictions posted adjacent to the bridge or on the bridge itself. If this information is not posted, work with ATC or designated volunteers to determine the design load/load restrictions for the bridge, if possible.

32. To determine if the bridge you are inventorying is a **multi-use bridge**, please refer to the following guidance:

    If this bridge is along a section of the AT where there is signage that designates it as being multi-use , along a formal, front country AT section (i.e. sidewalk, paved walkway, roadway), or within an area of the AT that is known to have multiple user groups (i.e. other NPS units, State Land, Forest Service Land), please select "Yes".

    If there's no signage or clear, visible/evidence (bicycles, horses, ATVs) of multiple user groups, then assume the bridge is "Pedestrian Use Only" and you should select "No".

33. Confirm that all of the **required photos have been taken** by checking "Yes". If you check "No", work with ATC to determine when the photos can be taken at a later date.

34. If you know the **Year Built** associated with the Bridge you are inventorying, please enter the year within the GPS Data Dictionary. Often engineered Bridges will have the year posted adjacent to the Bridge or on the Bridge itself. If this information is not posted, enter in "Unknown", and work with ATC or designated volunteers to determine the year built, if possible.

35. If you know the **Land Owner** (i.e. NPS, USFS, State, etc.) associated with the Bridge you are inventorying, please enter this information within the GPS Data Dictionary. (Please provide as much information as possible in regards to Agency, Bureau and Division - e.g. don't just say NPS or USFS, but NPS APPA, NPS Shenandoah, USFS George Washington-Jefferson NF New River District, Pennsylvania Game Commission State Game Land 217, Connecticut Department of Forestry Housatonic State Forest, etc.). If this information is not known, enter in "Unknown", and work with ATC or designated volunteers to determine the land owner, if possible.

Campsites and Associated Features

Designated campsites are one or more tent sites that contribute directly to the AT and may provide fire rings, earthen or constructed tent pads, food storage (i.e. animal resistant boxes, poles, etc.), privies, and non-potable water sources. Shelters are often found near campsites; however showers, electricity, and potable water sources are not typically provided.

For this inventory, collect campsites that are maintained by AT volunteers or staff, and funded by APPA for their construction and maintenance activities, regardless of land ownership. Do not collect user created or undesignated campsites or tent sites. Work with the appropriate ATC staff and volunteers to determine which campsites and tent sites are designated.

Tent Site
A tent site is a relatively flat, level dirt or grass area, typically free of roots and rocks, for visitors to pitch tents. They are unimproved other than clearing the area of rocks and sticks.

Tent Pad
A tent pad is a structure used to place a tent on, typically constructed as a frame and then filled in-between the walls with sand, soil, gravel, etc. However, some tent pads are just a hardened earthen pad without framing.

Campsites and Associated Features

Tent Platform
A tent platform is an elevated wooden decked platform surface for visitors to pitch a tent or tents.

Group Campsite
A group campsite is a designated site that can accommodate multiple tent sites, tent pads, and/or tent platforms. These sites have been evaluated to show that they accommodate a designated group size without damaging the resource.

Other Materials Associated with Tent Sites, Tent Pads, and Tent Platforms:

Composite Lumber

Gravel

Log

Stone

Campsites and Associated Features

Food Storage (Bear Boxes, Bear Cables, and Bear Poles)
Bear-resistant food storage containers are usually hard-sided containers used by backpackers to protect their food from theft by bears, especially in areas where bears have become habituated to human presence. Bear cables are wire cable systems that run horizontally between two trees with half-dozen wire loops that run from this cable to the ground. Bear poles are vertical metal poles set in the ground with hooks welded to the top on which to hang food bags.

Metal Food (Bear) Box

Food (Bear) Cables

Food (Bear) Pole

Fire Rings
A fire ring is a construction or device used to contain campfires and prevent them from spreading and turning into wildfires. A fire ring is designed to contain a fire that is built directly upon the ground, such as a campfire. **IMPORTANT NOTE:** ***For this inventory, only count the fire rings made of metal and mortared stone or block/brick.***

Metal Fire Ring

Mortared Stone Fire Ring

Loose Rock Fire Ring -
Do Not Inventory

Campsites and Associated Features

Storage Boxes (Tools, Maintainer Supplies, etc.)
Storage boxes can be found at shelters and privies, as well as along the Trail. These boxes typically hold trail maintenance equipment (i.e. tools, hard hats, safety glasses, etc.) or mulch/leaf debris/duff to be used at the privies

Metal Storage Box

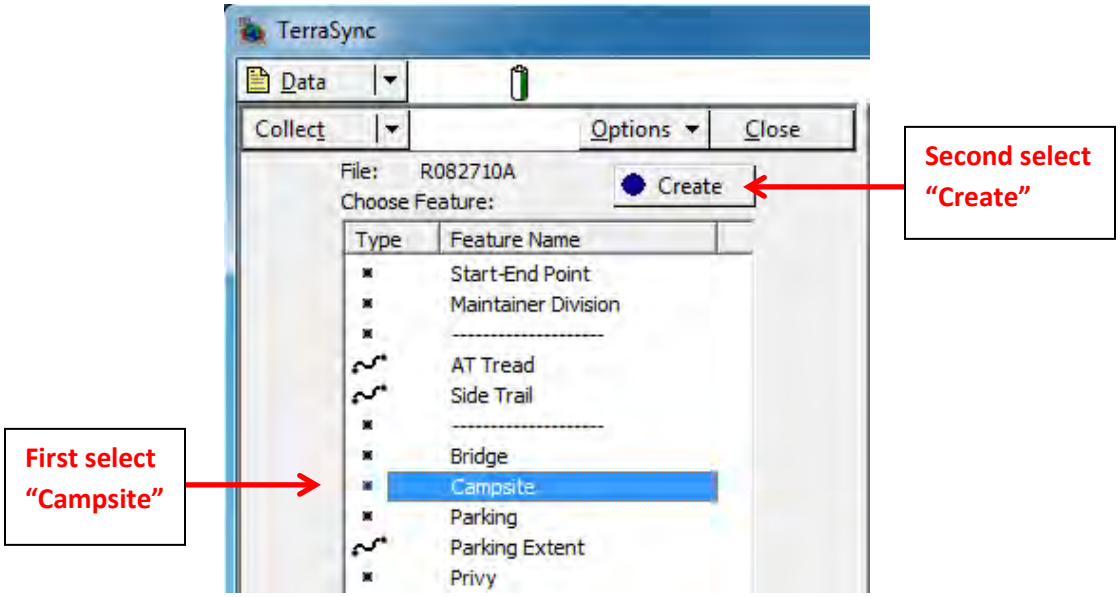
Designated Campsite Inventory Process

IMPORTANT NOTE: You do not have to inventory every campsite along the A.T. For purposes of this inventory, we are only interested in "designated" campsites. Please refer to the above information and/or your regional ATC field staff to determine what constitutes a designated site.

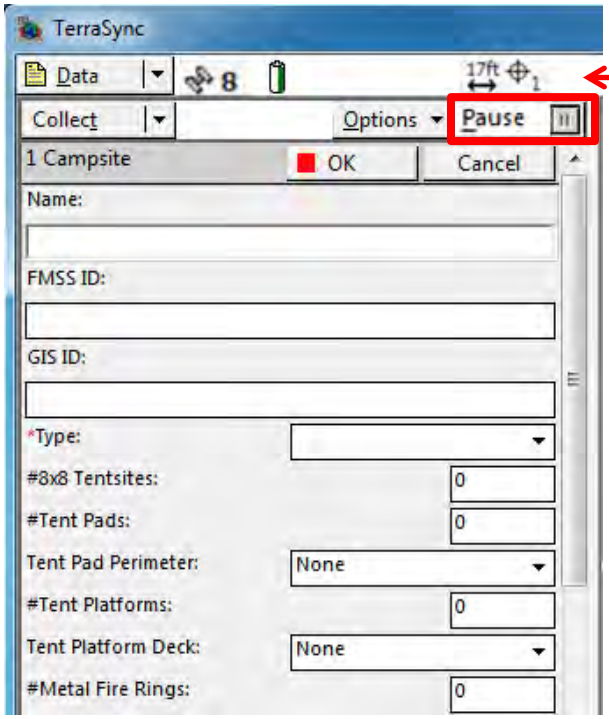
1. When recording the GPS location of the Designated Campsite, try and stand in the center of campsite. If the center is not clear, then stand near the main fire ring of the site.

Taking a Campsite Location with the Trimble GPS Unit

2. Select "Campsite" in the data dictionary and tap "Create".

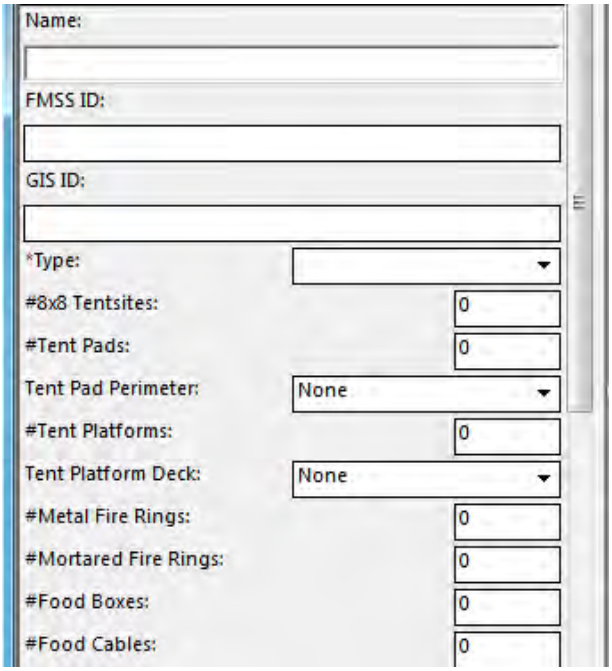


3. Record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner of TerraSync. Once you have collected 30 points, select "Pause".

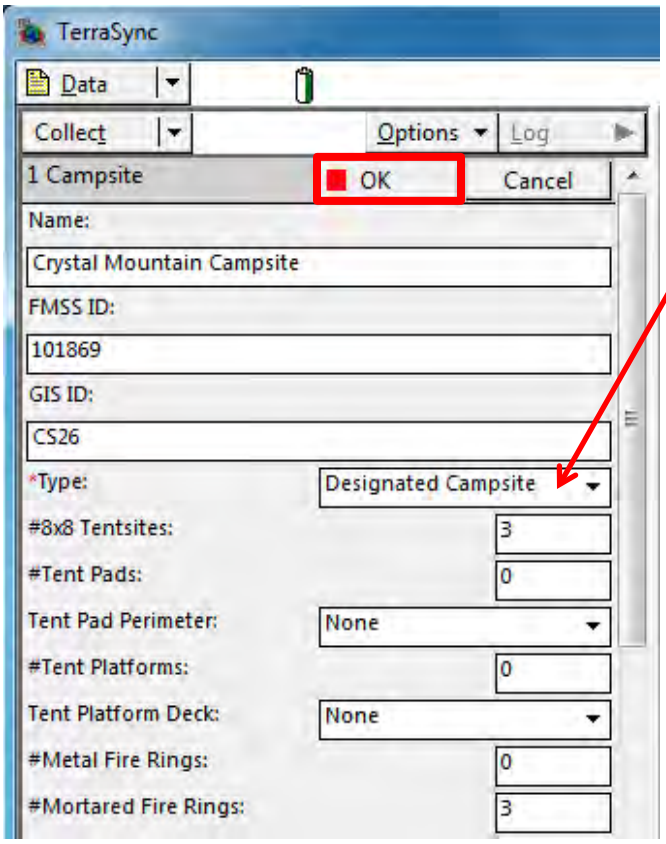


IMPORTANT NOTE:
Make sure you see at least 30 points before you select "Pause"

4. Once you have selected "Pause", you can then walk around and gather the necessary information and measurements.



IMPORTANT NOTE:
Remember to select "Pause", before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information



IMPORTANT NOTE:
Only select "OK" AFTER ALL information has been filled in.

5. Take at least two pictures of the Campsite you are inventorying – one from corner and one from the opposite end, diagonal from the original corner. Please see the Technical Office Guide for information about naming photographs.

If you need to take more than two pictures, that's ok. Try and capture the associated features (signs, fire rings, fence, etc.) in the picture if possible, but you do not have to take pictures of the associated features themselves. As you can see in the example below, stand far enough away from the Campsite to capture the whole Campsite in the picture, **as long as it's safe**. Depending on the Campsite surroundings, you may have to stand above, level, or below eye level of the Campsite to take a good picture.

6. Enter the **Name** of the campsite within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials or the campsite does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting campsite information in the *Brink Road* maintainer section, you locate a designated campsite without a name. If this was the first campsite without a name in this section, you could list it as "*Brink Road Campsite 1*" within the GPS Data Dictionary.

7. For the **FMSS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If there is no FMSS ID for the Campsite, then please enter "0". If you can't locate a corresponding ID, please enter "Not Found" or "None".

8. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

9. Select either **"Designated Campsite" or "Designated Group Site"** within the GPS Data Dictionary for the Campsite you are inventorying. If you do not know, work with designated ATC staff or trail club volunteers to determine the appropriate selection.

10. Count the **number of Tent Sites** (8 x 8 ft. size or larger) and record the number in the Data Dictionary. If there are no formal tent site markers, count how many 8 x 8 spaces where people could set up tents. Look for areas where people have previously camped (bare spaces, areas free of sticks and/or rocks, flat areas, etc.) The 8 x 8 spaces do not have to be side by side, as seen in the picture below.

11. Count the **number of Constructed Tent Pads** and record the number within the GPS Data Dictionary.

12. Select the predominant **Constructed Tent Pad Perimeter Material** associated with the Campsite you are inventorying. Refer to the materials below:

None	**Composite Lumber**	**Concrete**
Dimensional Lumber	**Log**	**Side hill/Benching**
Stone	**Other**	

13. Count the **number of Constructed Tent Platforms** and record the number within the GPS Data Dictionary.

14. Select the predominant **Constructed Tent Platform material** associated with the Campsite you are inventorying. Refer to the materials below:

None	**Composite Lumber**	**Concrete**
Dimensional Lumber	**Log**	**Stone**
Other		

15. Count and record the **number of Metal Fire Rings** that are associated with the Campsite you are inventorying.

16. Count and record the **number of Mortared (Brick or Stone) Fire Rings** that are associated with the Campsite you are inventorying.

17. Count and record the **number of Food Storage Systems** (Food Boxes, Food Cables, and Food Poles) that are associated with the Campsite you are inventorying.

18. Count and record the **number of Storage Boxes** (Tools, Maintainer Supplies, etc.) that are associated with the Campsite you are inventorying.

19. Count and record the **number of Signs** that are associated with the Campsite you are inventorying. Signs should have a direct connection / contribution to the Campsite. Make sure to record the <u>total</u> number of signs by type, regardless of size, shape, and material type. Refer to the associated signage options below:

Kiosk (Bulletin Board)

- Provide information (maps, announcements, etc.) in public areas, such as trailheads, shelters, and parking areas.

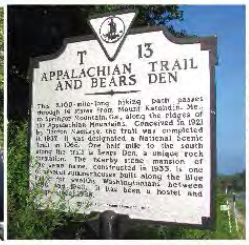


Directional/Wayfinding Signs

- Inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail.

Educational/Interpretive Signs

- Signs or exhibits that describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels.



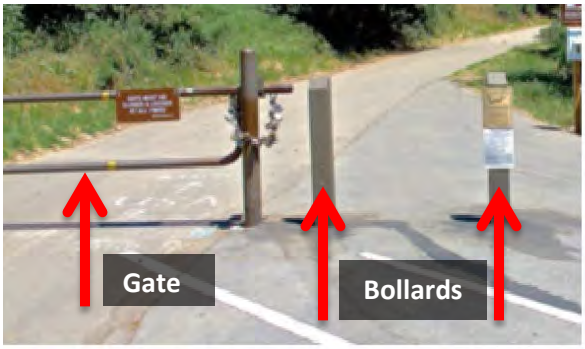
Identification/Entrance Signs

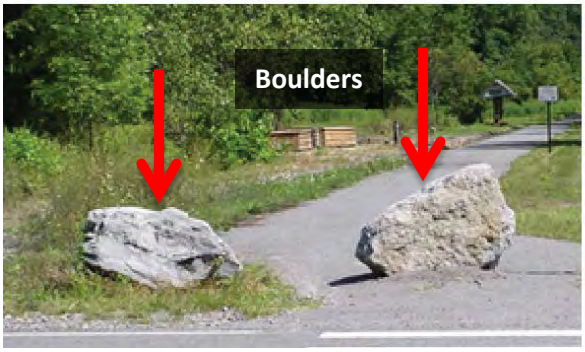
- Identification signs are typically short, basic labels or markers Typical signs include landmark signs, the AT diamond, and the AT elliptical triangle.

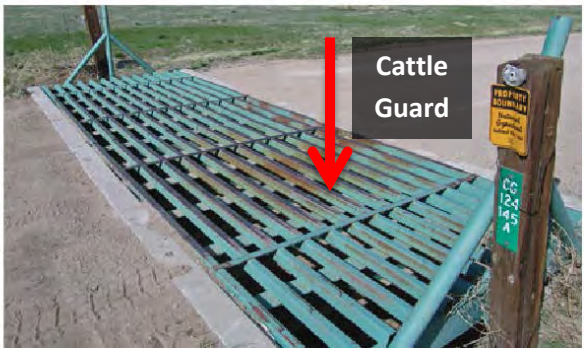
Regulatory/Safety Signs

- Signs that alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance.

20. Count and record the **number of Barriers** that are associated with the Campsite you are inventorying. Barriers should be attached or have a direct connection / contribution to the Campsite. **IMPORTANT NOTE:** Make sure to record the total number of barriers by type, regardless of size, shape, and material type. Refer to the associated barrier options below:







21. Count and record the **number of Fences** that are associated with the Campsite you are inventorying. Fences should be attached or have a direct connection / contribution to the Campsite.

22. Measure the **length of the Fences** and record the measurement (in feet) within the GPS Data Dictionary.

    To take the Fence length measurement:

    - Stand at one end of the fence and, depending on what type of measuring device you are using (Measuring tape or measuring wheel), take the necessary steps to capture the length, from one end to the other end. **IMPORTANT NOTE:** Remember to double the length measurement if there is an equal amount of fence on each side of the fence. When recording measurements, always round to the nearest foot. (Example: *12 ft. 7 in. would be recorded as 13 ft.*)

    - Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

23. Select the appropriate **Fence Material** that will best describe the Campsite you are inventorying. Refer to the fence materials below:

None	**Barbwire/Slip Wire**	**Chain Link**
Split Rail	**Wire Mesh**	**Other**

24. Confirm that all of the **required photos have been taken** by checking "Yes". If you check "No", work with ATC to determine when the photos can be taken at a later date.

25. If you know the **Year Built** associated with the Campsite you are inventorying, please enter the year within the GPS Data Dictionary. If this information is not posted, enter in "Unknown", and work with ATC or designated volunteers to determine the year built, if possible.

26. If you know the **Land Owner** (i.e. NPS, USFS, State, etc.) associated with the Campsite you are inventorying, please enter this information within the GPS Data Dictionary. (Please provide as much information as possible in regards to Agency, Bureau and Division - e.g. don't just say NPS or USFS, but NPS APPA, NPS Shenandoah, USFS George Washington-Jefferson NF New River District, Pennsylvania Game Commission State Game Land 217, Connecticut Department of Forestry Housatonic State Forest, etc.). If this information is not known, enter in "Unknown", and work with ATC or designated volunteers to determine the land owner, if possible.

Parking Areas and Associated Features

Designated Parking Area and Pull-offs

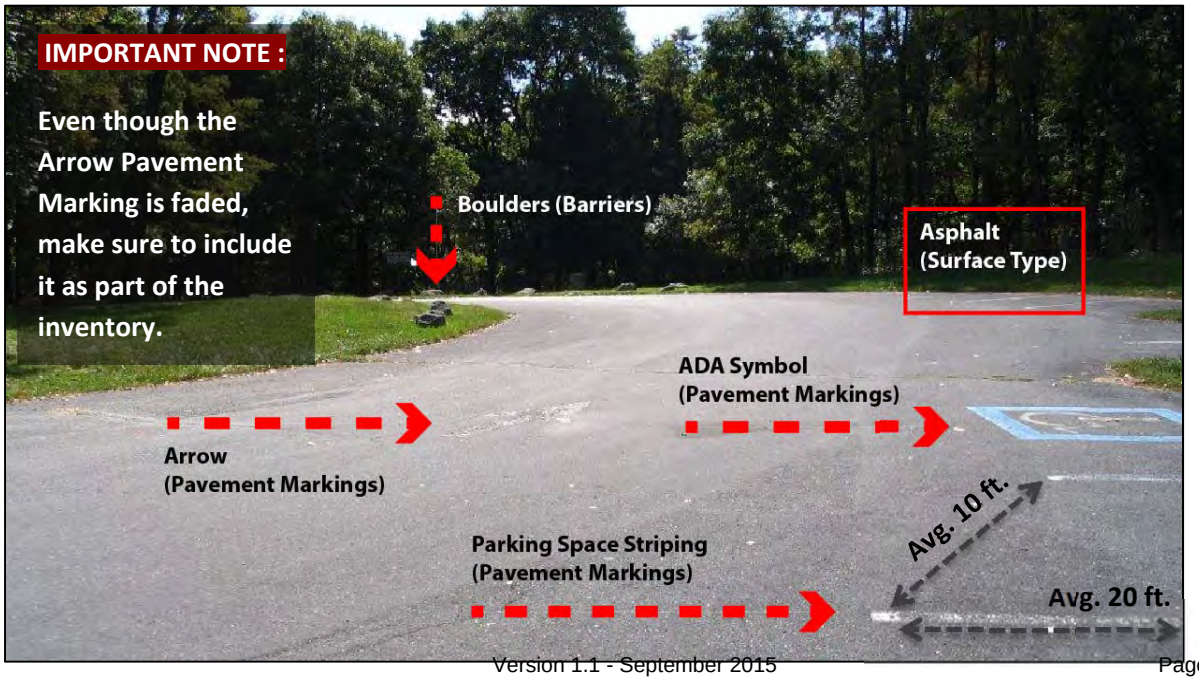
Designated parking areas include trailhead parking, scenic pull-offs and overlooks, and ATC headquarters, regional offices, and other official locations (e.g. Kellogg Center) that contribute directly to the AT. For this inventory, document parking areas that are maintained by AT volunteers or staff, and have maintenance activities that are at least partially funded by APPA, regardless of land ownership. For this inventory, designated parking areas and pull-offs:

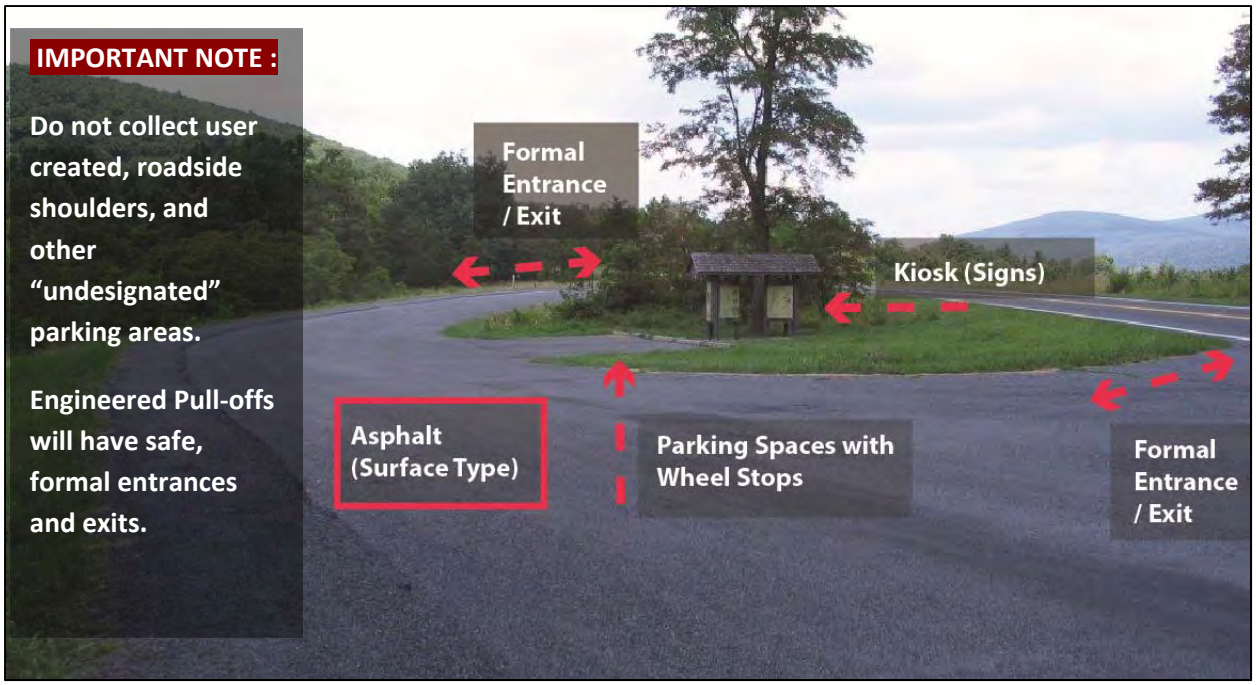
- **Are currently being maintained by AT volunteers**
- **Provide safe, accessible parking for one or more vehicles (i.e. visitors must be able to open and close doors without being in the travel lane/roadway)**
- **Planned to be improved/formalized within the next 2-5 years**

IMPORTANT NOTE : ***Do not collect user created, roadside shoulders, and other "undesignated" parking areas. Work with the appropriate ATC staff and volunteers to determine which parking areas and pull-offs are designated.***

Engineered

Engineered parking areas and pull-offs that typically accommodate more than one vehicle. These developed/planned parking locations may have ADA parking spaces, signage, bulletin boards/kiosks, bike racks, drainage grates, parking space striping, wheel stops, guiderail, and other features. Although not all parking spaces are formally marked, it is important to capture all marked and unmarked parking spaces. These unmarked parking spaces are defined as a "space" or area that can be occupied by one vehicle, (on average 20 ft. long and 10 ft. wide). In the example below, you will notice some of the associated features such as parking area boulders and pavement markings. It is important to capture all pavement markings, regardless of how faded they are. Once the inventory is complete, work can be scheduled to repaint or replace these markings.





Surface Types and Features

Asphalt and gravel are common surfaces found at engineered parking areas and pull-offs; however, concrete and pavers (both brick and non-native stone) surface types can be found.

Many of the parking areas along the Appalachian Trail are different, and the range of features and amenities found at each will vary. Several parking area features are included on your parking area inventory form; however, there are some features and amenities that you may find that will not be captured.

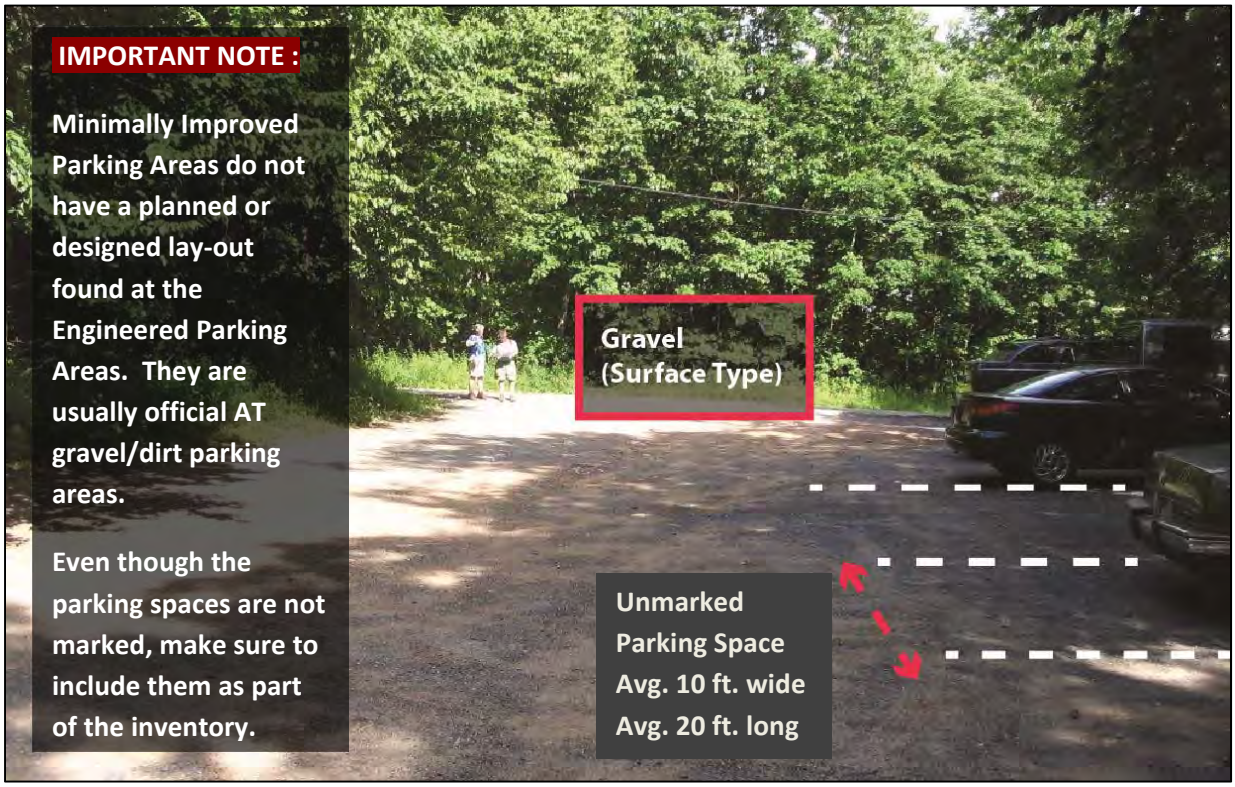
Engineered Parking Area and Pull-off Feature Types:				
Bike Rack	Bollards	Boulders	Cattle Guards	Culverts
Curb Barriers	Drainage Ditching	Fence	Gates	Guiderail
Grate	Pavement Markings	Railings	Retaining Wall	Signs
Wheel Stops				

For this Inventory, Do Not Collect Information for:				
Covered Picnic Area	Grills	Trash/Recycling Bins	Benches	Playground Equipment

Since these features are not on the inventory form or in the trail inventory glossary, please do not collect the information as an "other" feature type. Picnic areas and benches may be counted at a later date, as part of different inventory initiative.

Minimally Improved

Minimally improved parking areas and pull-offs exhibit basic or minor improvements, and do not have the same level of developed and planned features that are present at engineer parking areas. Many of the AT parking areas are either minimally improved or unimproved. In the example below, you will notice that the parking area does not have pavement markings, boulders, or wheel stops.



Surface Types and Features

Gravel and dirt are common surfaces found at minimally improved parking areas and pull-offs. Features found at minimally improved parking areas may include signage, such as the AT/trail head name, or fencing to keep vehicles from parking past the delineated gravel or dirt area. For this inventory, minimally improved parking areas and pull-offs only have one or two features. If there are more than two, include the parking area or pull-off in the engineered parking area/pull-off category.

Minimally Improved Parking Area and Pull-off Feature Types:				
Bollards	Boulders	Cattle Guards	Drainage Ditching	Fence
Gates	Signs			

Unimproved

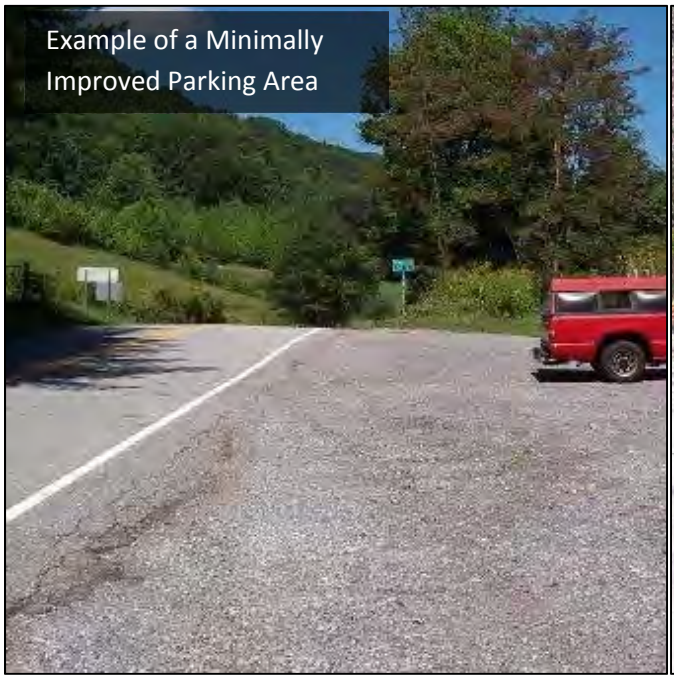
Unimproved improved parking areas exhibit no site improvements and no features have been established. An example would be a dirt or grass parking area without a fence or AT signage.

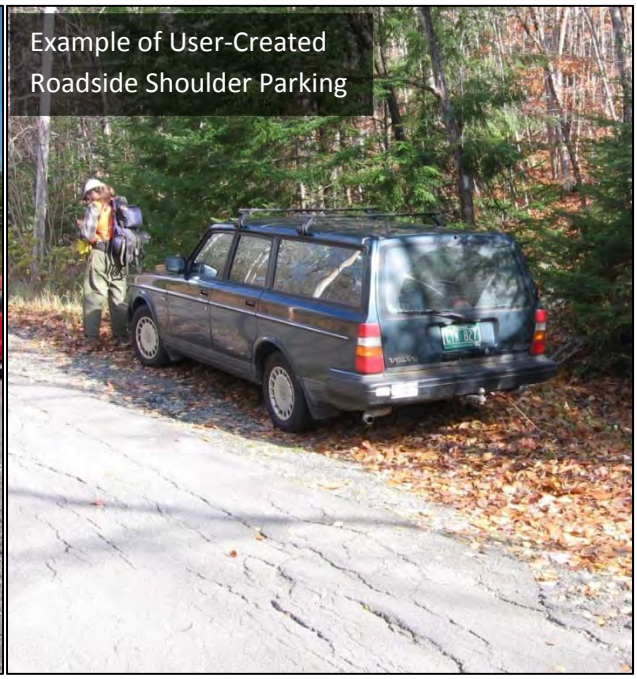
Example of an Unimproved Parking Area – Dirt

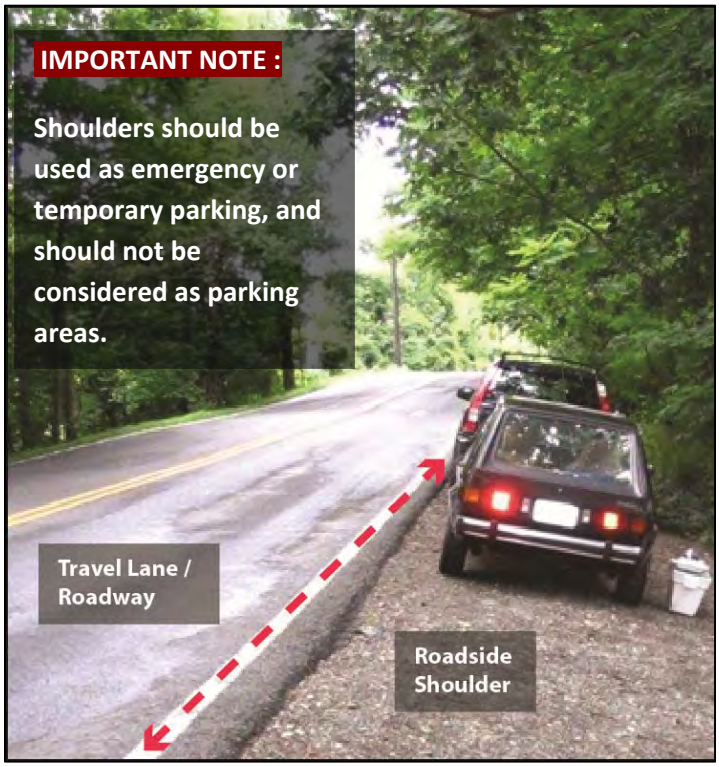
Example of an Unimproved Parking Area – Grass

Roadside Shoulder

A road shoulder is usually narrower than a full traffic lane and should be used as emergency or temporary parking. For this inventory, do not include user-created roadside shoulder parking areas. **However, if there is a roadside shoulder that the club is currently maintaining and/or would like to have it formalized to create improved parking within the next ten years**; make sure to record the location so that it can be designated as a "planned parking area".







Why aren't we inventorying roadside shoulders as parking?

We have a good inventory of where roadside shoulder locations are in GIS.

For this inventory, we want to focus our efforts on designated parking areas and pull-offs that:

- Are currently being maintained by AT volunteers
- Provide safe parking accessibility for one or more vehicles (must be able to open and close doors without being in the travel lane/roadway)
- Planned to be improved/formalized within the next 2-5 years

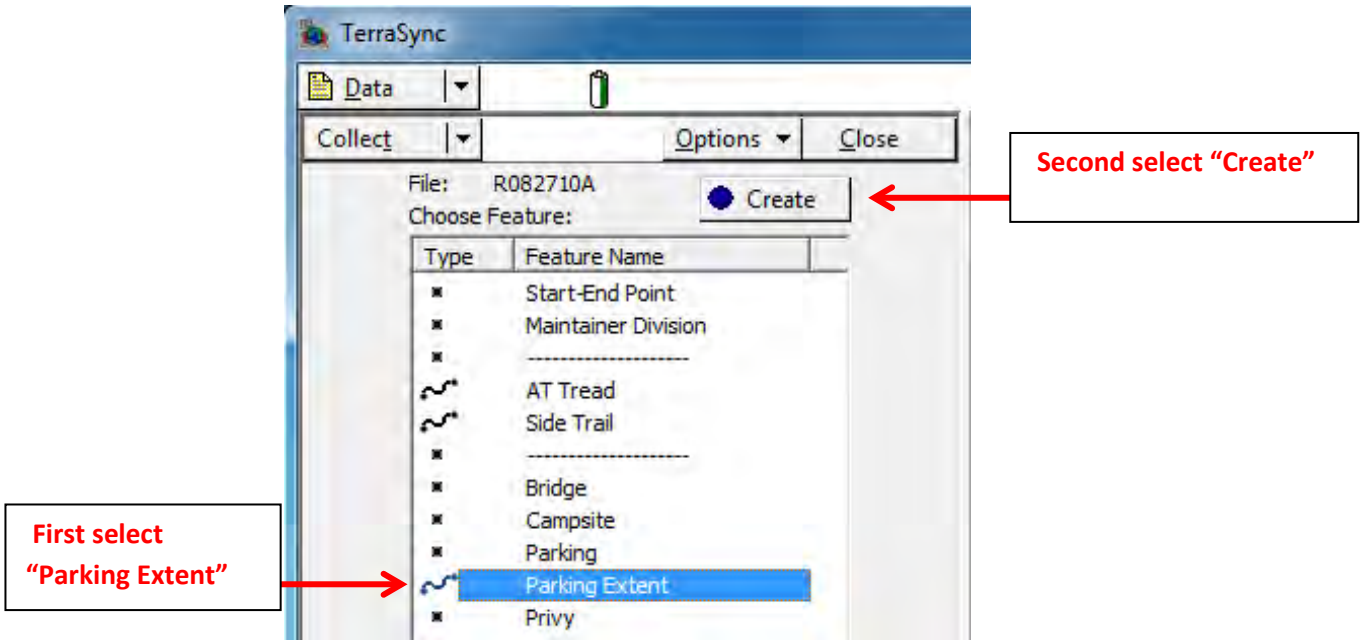
Parking Areas Inventory Process

There are two parts to each Parking Area Inventory – capturing the Parking Area Extent (as a line feature) and recording Parking Area information and measurements (as a point feature).

Collecting the Parking Area Extent:

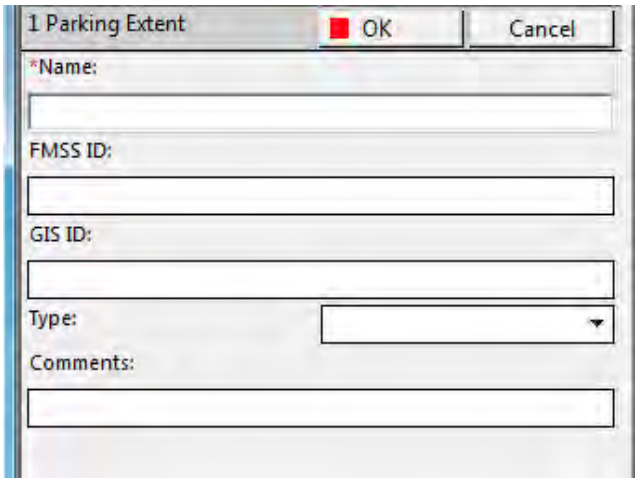
1. When you are ready to record a parking area extent, you will need to walk to one edge of the parking area before you begin.

2. Select “Parking Extent” in the data dictionary, and then select “Create”.



3. After you select “Create”, **immediately** begin walking. Try to walk as close to the outside perimeter of the parking area as you can. Once you have return to the location where you started, **immediately** select “Pause” in TerraSync.

4. Fill in the necessary information in the data dictionary for this feature.



IMPORTANT NOTE:
Fill in ALL information using the following guidelines.

5. Enter the **Name** of the parking area within the GPS Data Dictionary where is says “Name”. Please refer to the Reference Materials provided as part of for this project to determine the name. If a name is not listed on the Reference Materials or the parking area does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting data in the *Brink Road* maintainer section, you locate a parking area without a name. If this was the first parking area without a name in this section, you could list it as “*Brink Road Parking Area 1*” within the GPS Data Dictionary.

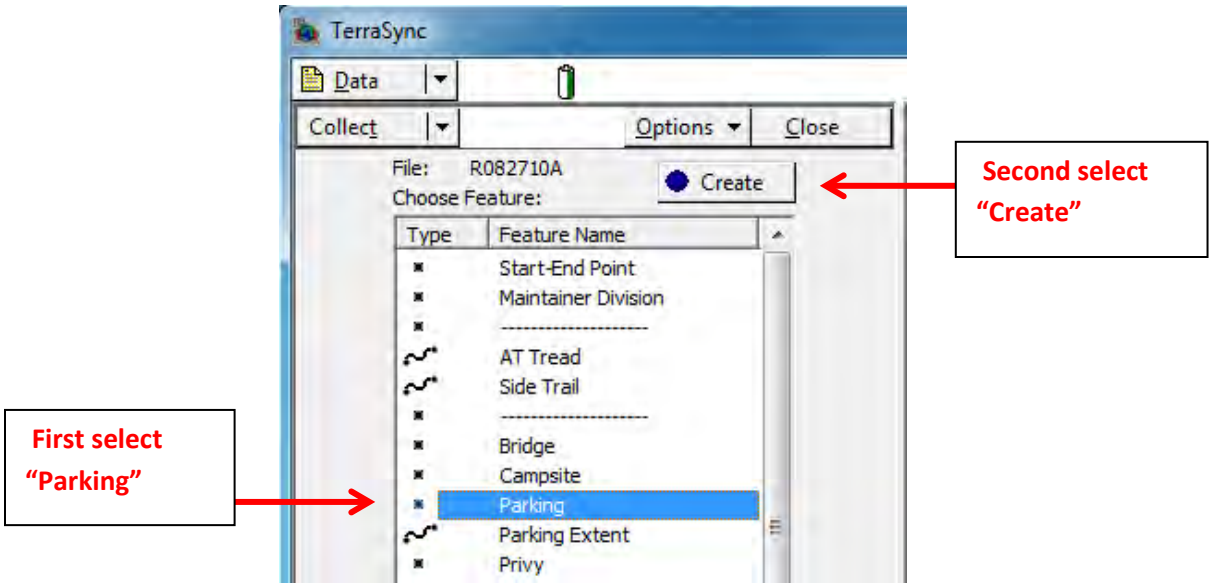
6. For the **FMSS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If there is no FMSS ID for the Bridge, then please enter “0”. If you can’t locate a corresponding ID, please enter “Not Found” or “None”.

7. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can’t locate a corresponding ID, please enter “Not Found” or “None”.

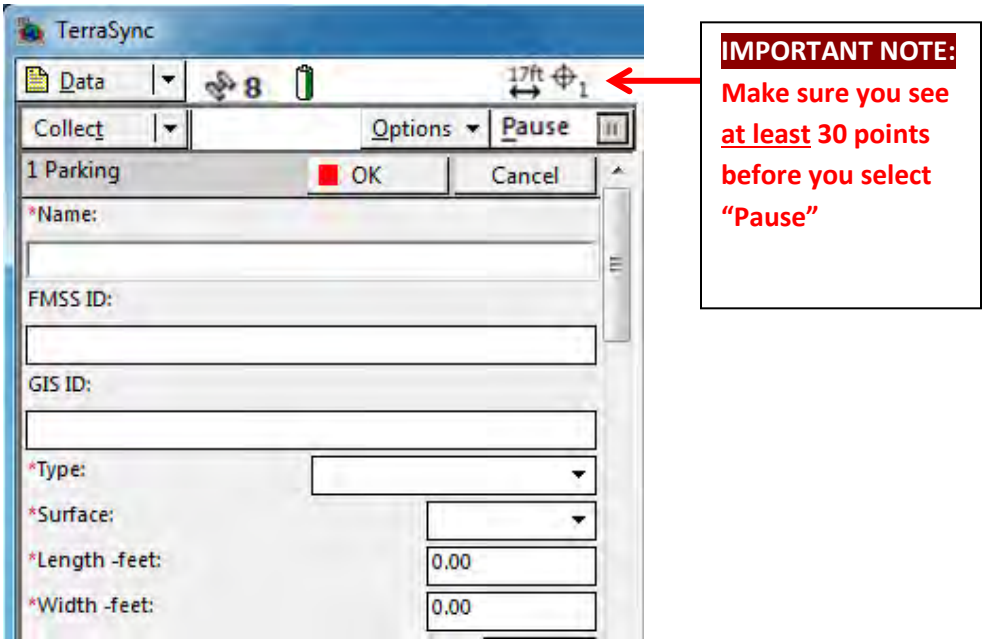
Collecting the Parking Area Point Location:

1. When recording the GPS point location of a Parking Area, try and stand in the center of the parking area.

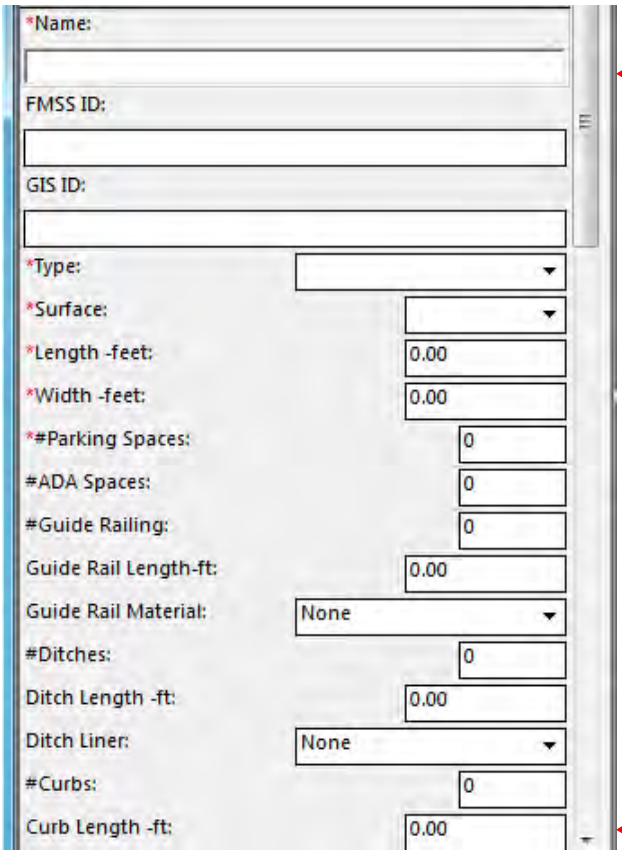
2. Select “Parking” in the data dictionary and tap “Create”.



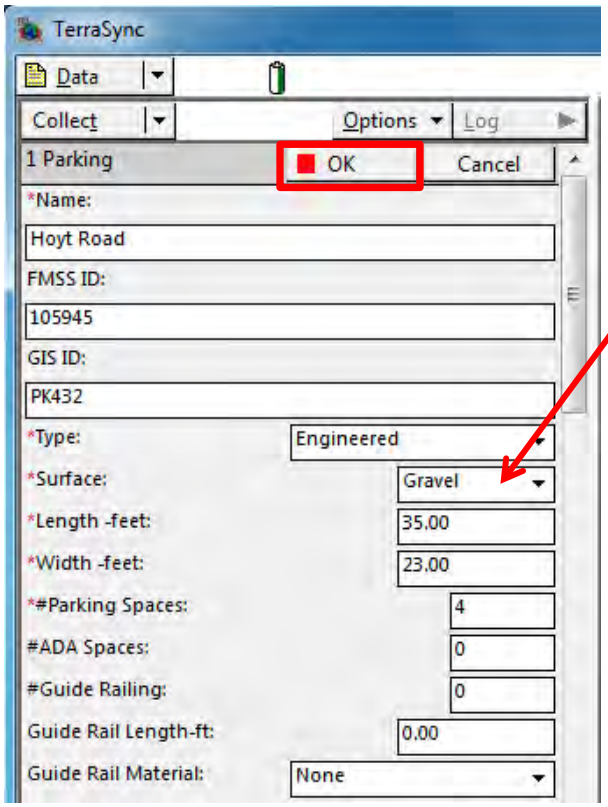
3. Record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner of TerraSync. Once you have collected 30 points, select “Pause”.



4. Once you have selected “Pause”, you can then walk around and gather the necessary information and measurements.

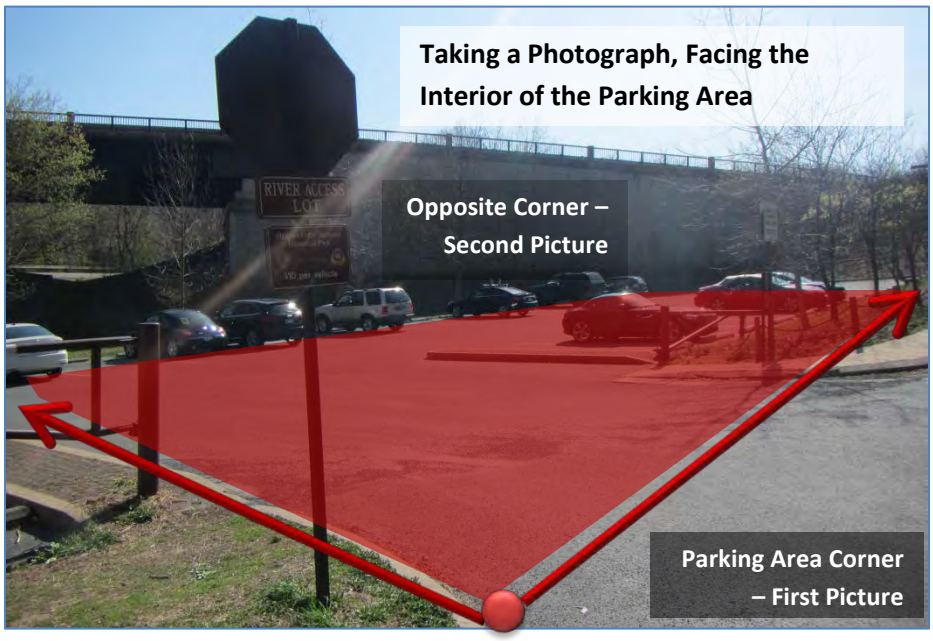


IMPORTANT NOTE:
Remember to select “Pause”, before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information



IMPORTANT NOTE:
Only select “OK” AFTER ALL information has been filled in.

5. Take at least two pictures of the Parking Area you are inventorying – one from corner and one from the opposite end, diagonal from the original corner. Please see the Technical Office Guide for information about naming photographs.



   - If you need to take more than two pictures, that's ok. Try and capture the associated features (signs, fire rings, fence, etc.) in the picture if possible, but you do not have to take pictures of the associated features themselves. As you can see in the example below, stand far enough away from the Parking Area to capture the whole Parking Area in the picture, **as long as it's safe**. Depending on the Parking Area surroundings, you may have to stand above, level, or below eye level of the Parking Area to take a good picture.

6. Enter the **Name** of the parking area within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials or the parking area does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting data in the *Brink Road* maintainer section, you locate a parking area without a name. If this was the first parking area without a name in this section, you could list it as "*Brink Road Parking Area 1*" within the GPS Data Dictionary.

7. For the **FMSS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If there is no FMSS ID for the Bridge, then please enter "0". If you can't locate a corresponding ID, please enter "Not Found" or "None".

8. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

9. Select the appropriate **Parking Area Type** that will best describe the parking area you are inventorying. Refer to the parking area types below:
   Engineered **Minimally Improved** **Unimproved** **Other**

10. Select the predominant **Parking Area Material** associated with the parking area you are inventorying. Refer to the surface material types below:
    Asphalt **Concrete** **Pavers** **Gravel**
    Dirt **Grass** **Other**

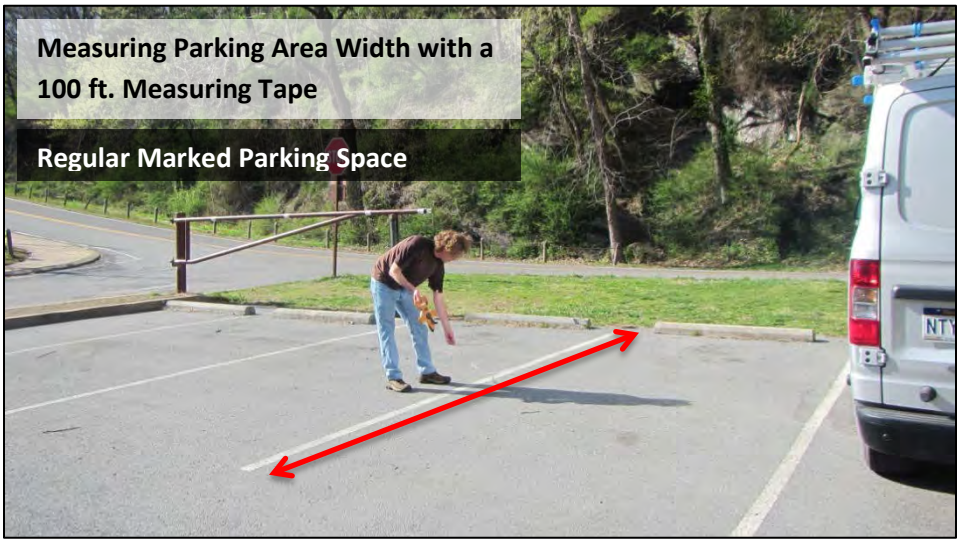
11. Measure the **length and width of the Parking Area** and record the measurement (in feet) in the GPS Data Dictionary. **IMPORTANT NOTE:** When recording measurements, remember to round to the nearest foot. (Example: *12 ft. 7 in. would be recorded as 13 ft.*)

    To take the length measurement:
    - Depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length of the parking area. Try to walk between the two points (from one side to the other) that will capture the greatest distance and longest length.

- Once you're at the other side, record the length measurement (in feet) within the GPS Data Dictionary.

To take the width measurement:

- Stand on one of the sides of parking area (perpendicular to the sides you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to walk between the two points (from one side to the other) that will capture the widest part of the parking area.



- Once you're at the other side, record the length measurement (in feet) within the GPS Data Dictionary.

12. Count the **number of Parking Spaces**, both regular spaces and ADA (Americans with Disabilities Act) parking spaces. If there is no parking space striping in the parking area, please count the number of "unmarked" spaces (i.e. a "space" that could be occupied by one vehicle) available.

13. Count and record the **number of Guide Rails** associated with the parking area you are inventorying. Make sure to record the <u>total</u> number of guide rails, regardless of size, shape, and material type.

14. Measure the **length of the Guide Railing** and record the measurement (in feet) within the GPS Data Dictionary.

    To take the guide railing length measurement:

    - Stand at one end of the railing and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to walk between the two points (from one side to the other) that will capture the greatest length.

Measuring Guide Rail Length

    - Once you're at the other end, record the length measurement (in feet) in the GPS Data Dictionary.

15. Select the predominant **Guide Railing Material** associated with the parking area you are inventorying. Refer to the guide railing materials below:

None	**Aluminum**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Gabion	**Log**	**Steel**
Stone	**Other**	

16. Count and record the **number of Ditches** associated with the parking area you are inventorying. Make sure to record the <u>total</u> number of ditches, regardless of size, shape, and material type.

17. Measure the **length of Ditching** and record the measurement (in feet) within the GPS Data Dictionary.

    To take the ditch length measurement:

    - Stand at one end of the ditch and take the necessary steps to capture the length, depending on what type of measuring device you are using (measuring tape or measuring wheel). Try to walk between the two points (from one side to the other) that will capture the greatest length.

    - Once you're at the other end, record the length measurement (in feet) in the GPS Data Dictionary.

18. Select the predominant **Ditch Material** associated with the parking area you are inventorying. Refer to the ditch materials below:

None	**Aluminum**	**Asphalt**
Block/Brick	**Composite Lumber**	**Concrete**
Dimensional Lumber	**Dirt/Soil**	**Gabion Stone**
Gravel	**Steel**	**Stone**
Other		

19. Count and record the **number of Curbs** that are associated with the parking area you are inventorying.

20. Measure the **length of the Curbs** and record the measurement (in feet) within the GPS Data Dictionary.

    To take the curb length measurement:

    - Stand at one end of the curb and take the necessary steps to capture the length, depending on what type of measuring device you are using (measuring tape or measuring wheel).

Measuring Curbing Length with a 100 ft. Measuring Tape

    - Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

21. Select the predominant **Curb Material** associated with the parking area you are inventorying. Refer to the curb barrier materials below:

None	**Asphalt**	**Block/Brick**
Concrete	**Dimensional Lumber**	**Log**
Steel	**Stone**	**Other**

22. Count and record the **number of Railings** that are associated with the parking area you are inventorying.

23. Measure the **length and height of Railing** and record the measurement (in feet) within the GPS Data Dictionary.

To take the railing length measurement:

- Stand at one end of the railing and take the necessary steps to capture the length, depending on what type of measuring device you are using (measuring tape or measuring wheel). Try to measure between the two points (from one side to the other) that will capture the greatest length.

Measuring Railing Length

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

To take the railing height measurement:

- Stand at the highest/tallest point of the railing. Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the railing. Read the measurement at top of the tape and record the height within the GPS Data Dictionary.

Measuring Railing Height with a Measuring Tape

24. Select the predominant **Railing Material** associated with the parking area you are inventorying. Refer to the railing materials below:

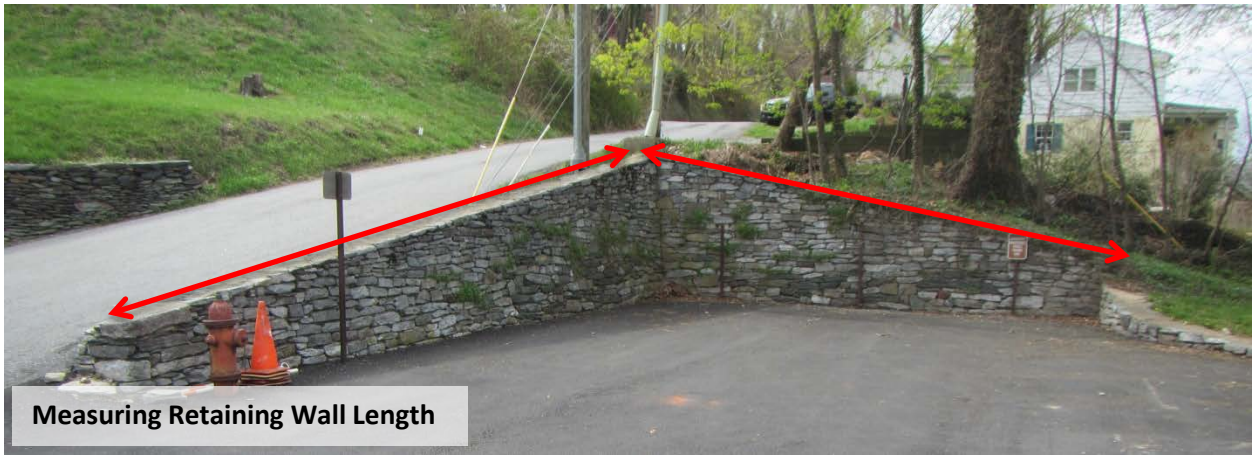
None	**Aluminum**	**Block/Brick**
Cable/Wire	**Composite Lumber**	**Concrete**
Dimensional Lumber	**Log**	**Plastic**
PVC	**Steel**	**Stone**
Other		

25. Count and record the **number of Retaining Walls** associated with the parking area you are inventorying. Make sure to record the total number of retaining walls, regardless of size, shape, and material type.

26. Measure the **length and height of the Retaining Walls** and record the square footage measurement (in feet) within the GPS Data Dictionary.

    To take the retaining wall length measurement:

    - Stand at one end of the retaining wall and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Read the measurement and record the length (you can use scrap paper for this, later you will multiply this measurement with the height).



Measuring Retaining Wall Length

    To take the retaining wall height measurement:

    - In the safest way possible, stand at the highest/tallest point of the wall. Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the wall. Read the measurement at top of the tape and record the height (you will need this measurement to multiply with the length). Not all retaining walls are square, so it is important to try and capture the height from the highest point to make sure you are not

underestimating the square footage of the wall. However, remember it is more important that you take this measurement from a safe location, even if it is not the highest point.

Measuring Retaining Wall Height

Once you have the measurements for both the retaining wall's length and height, multiply the two measurements together to determine the square footage of the wall. Record the square footage measurement (in feet) within the GPS Data Dictionary.

27. Select the predominant **Retaining Wall Material** associated with the parking area you are inventorying. Refer to the retaining wall materials below: (Pictures/descriptions to be included in the final)

None	**Aluminum**	**Asphalt**
Block/Brick	**Composite Lumber**	**Concrete**
Dimensional Lumber	**Gabion**	**Log**
Plastic	**Steel**	**Stone**
Other		

28. Count and record the **number of Culverts** associated with the parking area you are inventorying. Make sure to record the total number of culverts, regardless of size, shape, and material type.

29. Select the predominant **Culvert Material** associated with the parking area you are inventorying. Refer to the culvert materials below:

None	**Aluminum**	**Concrete**
Dimensional Lumber	**Iron**	**Plastic**
Steel	**Stone**	**Other**

30. Count and record the **number of Grates** associated with the parking area you are inventorying. Make sure to record the total number of grates, regardless of size, shape, and material type.

31. Select the appropriate **Grate Material** that will best describe the parking area you are inventorying. Refer to the grate materials below:

None	**Aluminum**	**Concrete**
Iron	**Plastic**	**Steel**
Other		

32. Count and record the **number of Bike Racks** associated with the parking area you are inventorying. Make sure to record the <u>total</u> number of bike racks, regardless of size, shape, and material type.

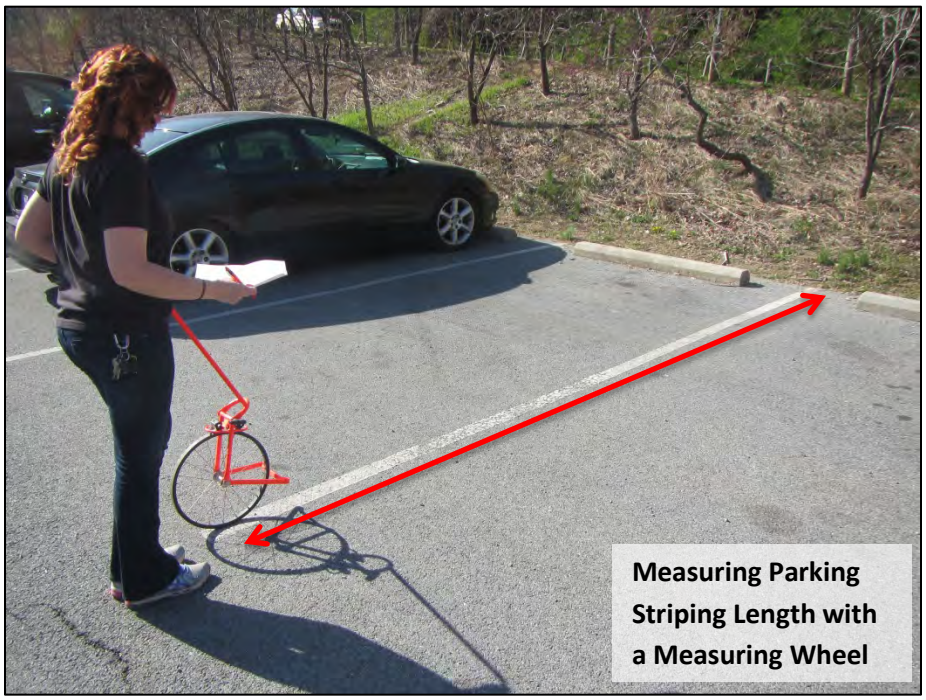
33. Select the predominant **Bike Rack Material** associated with the parking area you are inventorying. Refer to the bike rack materials below:

None	**Aluminum**	**Cable/Wire**
Plastic	**Steel**	**Other**

34. Measure the **length of the Parking Area Striping** and record the measurement (in feet) in the GPS Data Dictionary.

    To take the striping length measurement:

    - Stand at one corner of the stripe and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. If there are multiple stripes, measure each stripe individually, add all of the striping length together, and then record the total length measurement (in feet) within the GPS Data Dictionary.



Measuring Parking Striping Length with a Measuring Wheel

35. Count and record the **number of Wheel Stops** associated with the parking area you are inventorying, by type. Typically, parking areas will only have one type of wheel stop, but that is not always the case.

36. Count and record the **number of Pavement Markings** associated with the parking area you are inventorying, by type. Most gravel parking areas do not have associated paving markings.

37. Count and record the **number of Signs** that are associated with the parking area you are inventorying. Signs should be attached or have a direct connection / contribution to the parking area. Make sure to record the <u>total</u> number of signs by type, regardless of size, shape, and material type. Refer to the associated signage options below:

Kiosk (Bulletin Board)

- Provide information (maps, announcements, etc.) in public areas, such as trailheads, shelters, and parking areas.

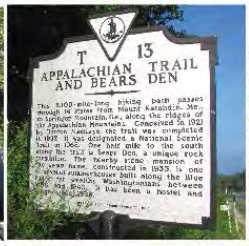


Directional/Wayfinding Signs

- Inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail.

Educational/Interpretive Signs

- Signs or exhibits that describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels.



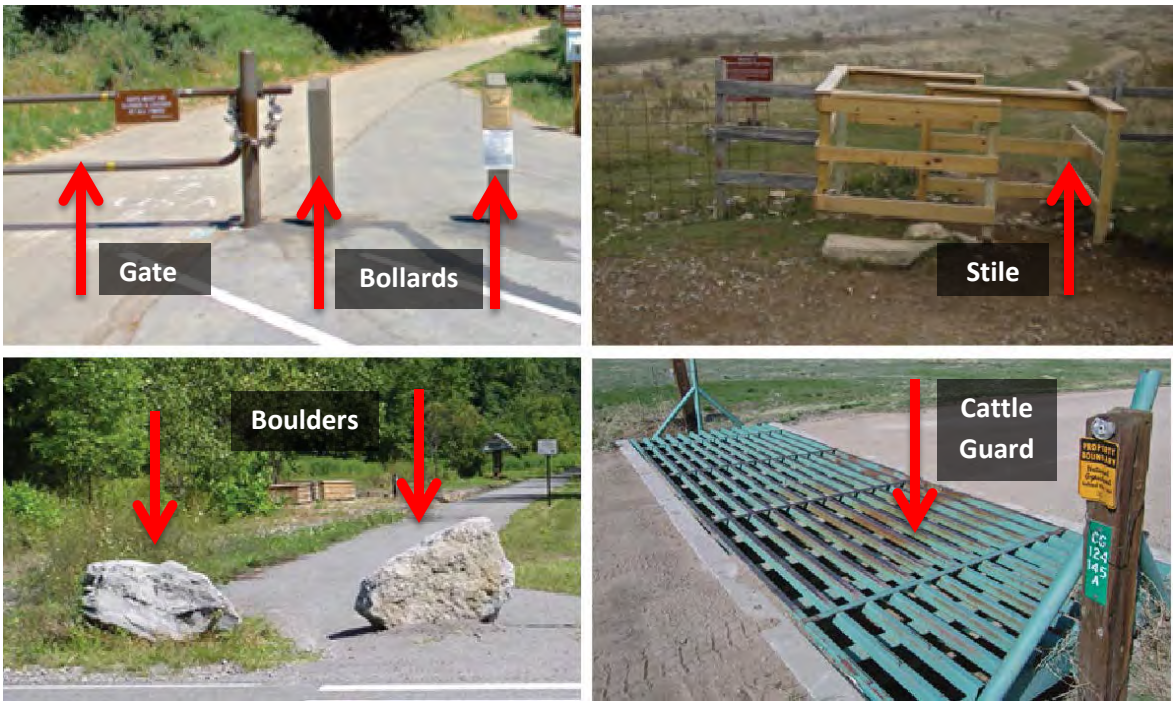
Identification/Entrance Signs

- Identification signs are typically short, basic labels or markers Typical signs include landmark signs, the AT diamond, and the AT elliptical triangle.

Regulatory/Safety Signs

- Signs that alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance.

38. Count and record the **number of Barriers** that are associated with the parking area you are inventorying. Barriers should be attached or have a direct connection / contribution to the parking area. Make sure to record the <u>total</u> number of barriers by type, regardless of size, shape, and material type. Refer to the associated barrier options below:



39. Count and record the **number of Fences** that are associated with the parking area you are inventorying. Fences should be attached or have a direct connection/contribution to the parking area.

40. Measure the **length of the Fences** and record the measurement (in feet) within the GPS Data Dictionary.

To take the fence length measurement:

- Stand at one end of the fence and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length, from one end to the other end.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

41. Select the predominant **Fence Material** associated with the parking area you are inventorying. Refer to the fence materials below:

None	**Barbwire/Slip Wire**	**Chain Link**
Split Rail	**Wire Mesh**	**Other**

42. Confirm that all of the **required photos have been taken** by checking "Yes". If you check "No", work with ATC to determine when the photos can be taken at a later date.

43. If you know the **Year Built** associated with the Parking Area you are inventorying, please enter the year within the GPS Data Dictionary. If this information is not posted, enter in "Unknown", and work with ATC or designated volunteers to determine the year built, if possible.

44. If you know the **Land Owner** (i.e. NPS, USFS, State, etc.) associated with the Parking Area you are inventorying, please enter this information within the GPS Data Dictionary. (Please provide as much information as possible in regards to Agency, Bureau and Division - e.g. don't just say NPS or USFS, but NPS APPA, NPS Shenandoah, USFS George Washington-Jefferson NF New River District, Pennsylvania Game Commission State Game Land 217, Connecticut Department of Forestry Housatonic State Forest, etc.). If this information is not known, enter in "Unknown", and work with ATC or designated volunteers to determine the land owner, if possible.

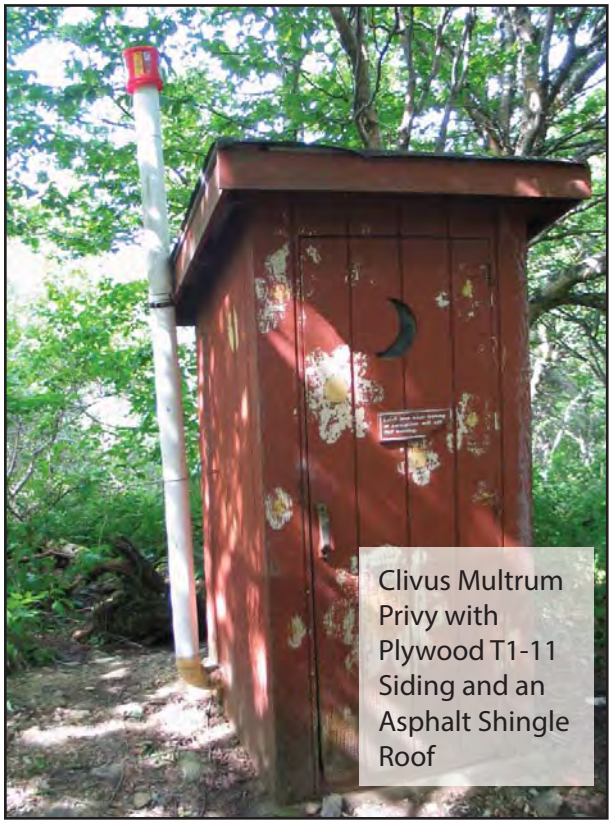
Privies and Associated Features

A single privy is a toilet located in a small shed outside a house or other building. A double or multi-seat privy is a single privy with more than one seat. A chum privy is typically a hole dug in the ground to contain waste, with a seat on a riser or small platform, without an associated enclosed structure. These privies are typically made out of logs, plywood, or dimensional lumber, but they can also be prefabricated.

Moldering Privy with Plywood Siding and a Metal Roof

Cool Composting (Moldering)
Moldering or cool composting is commonly an above ground crib system allowing the material to decompose in a cool environment, over a long period of time.

Unlike hot composting privies, cool composting privies do not typically have a vent type connected to the bin. Instead, air is allowed to flow through sides of the ground crib



Clivus Multrum Privy with Plywood T1-11 Siding and an Asphalt Shingle Roof

Cool Composting (Clivus Multrum)
The Clivus Multrum is a self-contained, waterless and odorless toilet treatment system. It uses no chemicals, heat or water and has no polluting discharge. "Clivus" is Latin for incline or slope; "multrum" is a Swedish composite word meaning "compost room," thus a "Clivus Multrum" is an inclining compost room.

Privies and Associated Features

Hot Composting
Hot composting or thermophilic bin systems use high temperatures to break down waste in a short time frame. These systems typically use sawdust or leaves to increase microbiological activity.

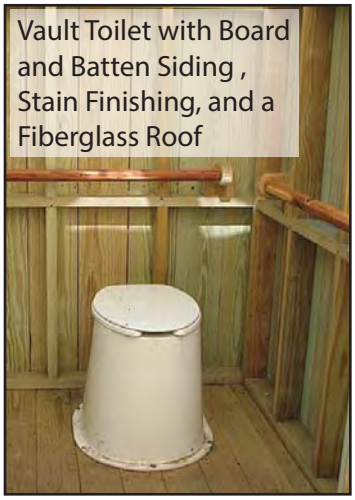
Unlike cool composting privies, hot composting does not allow for air to pass through the bin . Air typically passes through a vent pipe.

Pit Privy (Complete Enclosure)

Chum Pit Privy (No Enclosure)

Pit
A pit is typically a hole dug in the ground to contain waste, with a seat on a riser or small platform or a complete enclosure.

It may be difficult to determine what is or is not a pit privy since you cannot see the bin underneath. If you are not sure, please ask the ATC staff or volunteer you are working with.



Vault Toilet with Board and Batten Siding , Stain Finishing, and a Fiberglass Roof

Vault
Vault toilets are common backcountry solutions for sites with drivable road access. Waste materials are stored in a contained/sealed underground vault that must be emptied periodically with a pump truck.

It may be difficult to determine what is or is not a vault privy since you cannot see the bin underneath. If you are not sure, please ask the ATC staff or volunteer you are working with.

Privies and Associated Features

Other Exterior Materials and Construction:

Dimensional Lumber

Post and Beam

Metal Siding

Log Siding

Typical Roof Materials:

Asphalt Shingle

Metal

Fiberglass

Wood Shingle

Storage Boxes (Tools, Maintainer Supplies, etc.)

Storage boxes can be found at shelters and privies, as well as along the Trail. These boxes typically hold trail maintenance equipment (i.e. tools, hard hats, safety glasses, etc.) or mulch/leaf debris/duff to be used at the privies

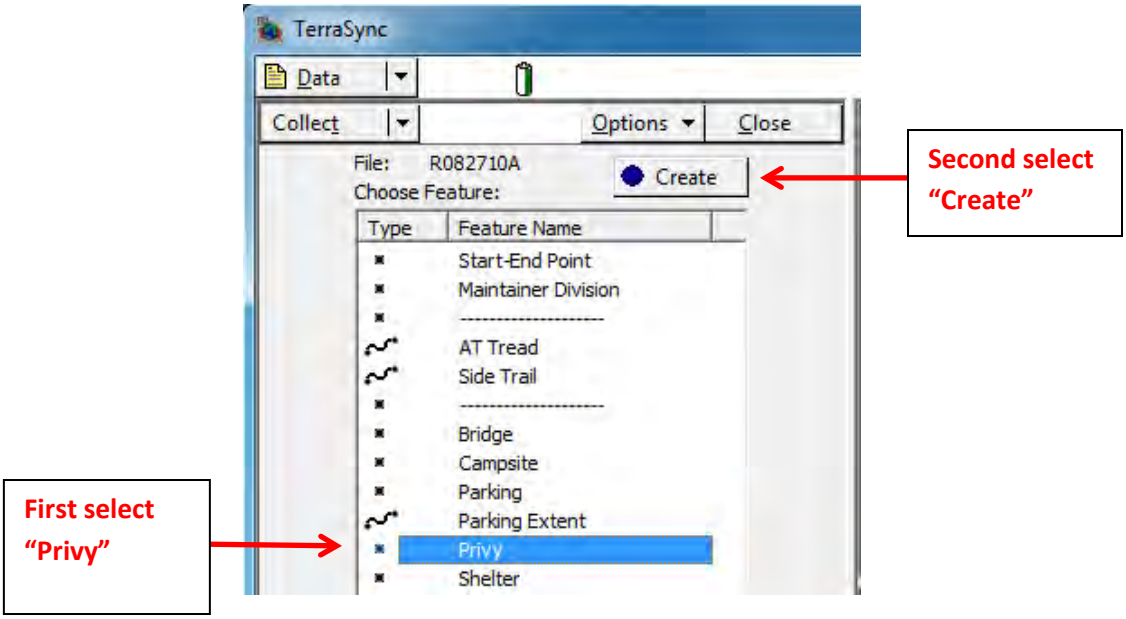
Metal Storage Box

Privy Inventory Process

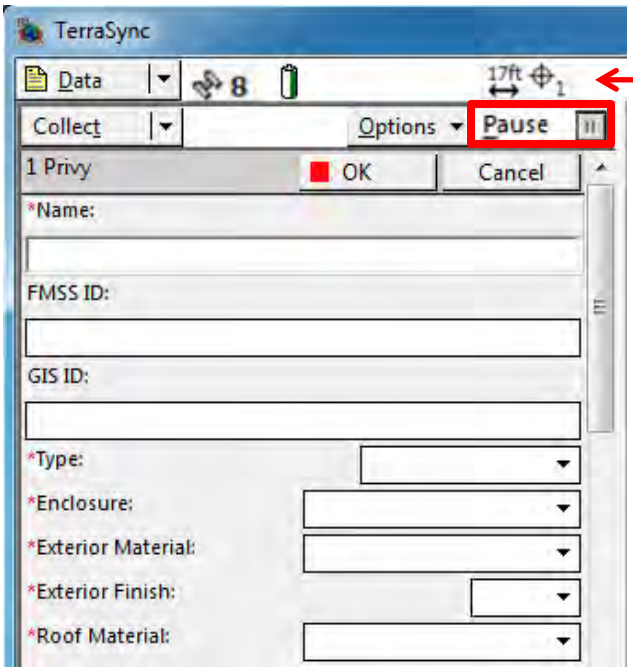
1. When recording the GPS location of a Privy, try and stand in front of the structure near the center.

IMPORTANT NOTE: The closer you are to the structure, the more accurate the location, however the higher potential for interference with the GPS. So, if you are having trouble recording the location, try stepping back to get better reception. If you have to step back further than 10-feet or so, please note that in the "comment" section.

2. Select "Privy" in the data dictionary and tap "Create".

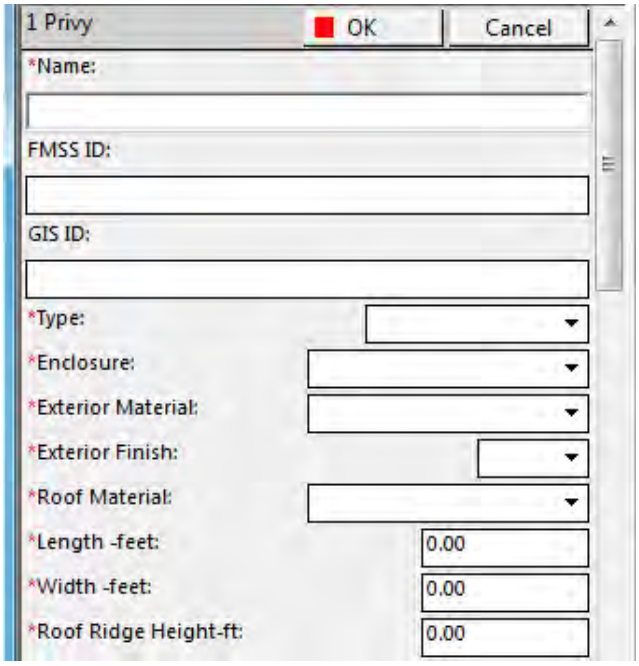


3. Record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner of TerraSync. Once you have collected 30 points, select "Pause".

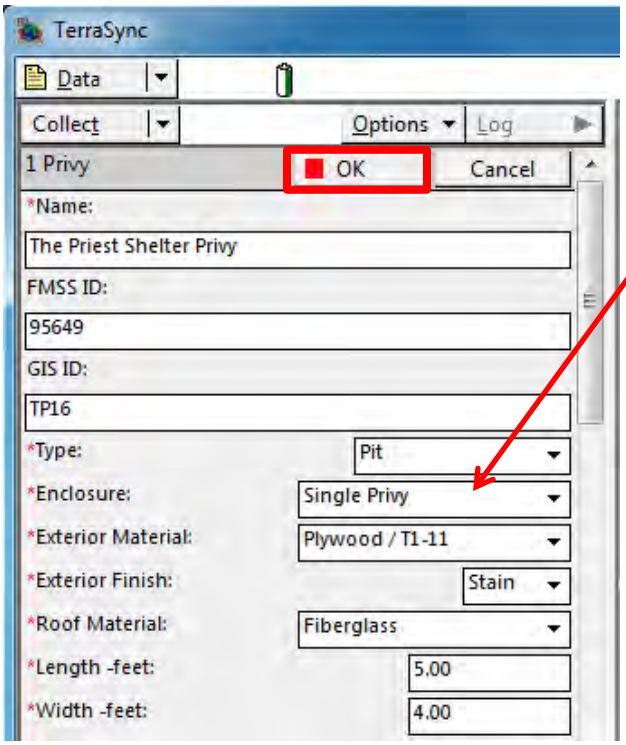


IMPORTANT NOTE:
Make sure you see at least 30 points before you select "Pause"

4. Once you have selected "Pause", you can walk around and gather the necessary information and measurements.



IMPORTANT NOTE:
Remember to select "Pause", before filling in the information. Follow the procedures outlined in the methodology below for collecting ALL information



IMPORTANT NOTE:
Only select "OK" AFTER ALL information has been filled in.

5. Take at least two pictures of the Privy you are inventorying – one from corner and one from the opposite end, diagonal from the original corner. Please see the Technical Office Guide for information about naming photographs.

First Corner – First Picture

Taking Each Photograph, Facing the Privy

Opposite Corner – Second Picture

- If you need to take more than two pictures, that's ok. Try and capture the associated features (signs, ramps, fence, etc.) in the picture if possible, but you do not have to take pictures of the associated features themselves. As you can see in the example below, stand far enough away from the Privy to capture the whole Privy in the picture, **as long as it's safe**. Depending on the Privy surroundings, you may have to stand above, level, or below eye level of the Privy to take a good picture.

6. Enter the **Name** of the privy within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials or the privy does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting bridge information in the *Brink Road* maintainer section, you locate a privy without a name. If this was the first privy without a name in this section, you could list it as "*Brink Road Privy 1*" within the GPS Data Dictionary.

7. For the **FMSS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If there is no FMSS ID for the Privy, then please enter "0". If you can't locate a corresponding ID, please enter "Not Found" or "None".

8. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

9. Select the **Type** of Privy you are inventorying. Refer to the privy types below:

Hot Composting	**Moldering**	**Clivus Multrum**
Pit	**Vault**	**Other**

10. Select the type of **Privy Enclosure** you are inventorying. Refer to the enclosure types below:

Chum (No Enclosure)	**Single Privy**	**Multi-Seat Privy**
Other		

11. Select the predominant **Exterior Material** associated with the Privy you are inventorying. Refer to the materials below:

Block/Brick	**Board & Batten**	**Clapboard**
Corrugated Metal	**Dimensional Lumber**	**Log**
Log & Stone	**Plywood/T1-11 Siding**	**Post & Beam**
Siding – Aluminum	**Siding – Shingle**	**Steel**
Stone	**Other**	

12. Select the predominant **Exterior Finish** associated with the Privy you are inventorying. Refer to the finish types below:

    None **Paint** **Stain** **Other**

13. Select the predominant **Roof Material** associated with the Privy you are inventorying. Refer to the materials below:

    Asphalt Shingle **Asphalt Roll Roofing** **Fiberglass**
    Metal **Slate** **Wood Shingle**
    Other

14. Measure the **length and width of the Privy** and record the measurement (in feet) within the GPS data dictionary. **IMPORTANT NOTE:** Always remember to round up for all measurements to the nearest foot (Example: *12 ft. 7 in. rounds up to 13 ft*.)

To take the exterior length measurement:

- Stand on one exterior wall corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length. **IMPORTANT NOTE:** For this inventory, include roof overhangs, decks, privy bins and landings in the total length of the privy.

- Once you're at the other corner of the exterior wall, record the length measurement (in feet) within the GPS data dictionary.

To take the exterior width measurement:

- Stand on one of the exterior wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to walk between the two points (corner to corner, along the wall) that will capture the widest part of the Privy. **IMPORTANT NOTE:** For this inventory, include roof overhangs, decks, bins and landings in the total width of the privy.

- Once have the total width measurement, record the width measurement (in feet) within the GPS data dictionary.

15. Measure the **Roof Ridge height** and record the measurement (in feet) within the GPS data dictionary.

16. Measure the **Roof area** and record the measurement (in square feet) within the GPS Data Dictionary. **IMPORTANT NOTE:** ***Remember to capture all roofing (i.e. roof overhang) in the roofing measurement.***

    Use the following steps to determine the ridge height and roof area:

    - Stand below the roof overhang and, using either a range finder or a measuring tape, capture the distance between ground and the top of the ridge.

    - **IMPORTANT NOTE:** The highest point may be at the not be in the center of the structure. At no point should you climb on to the roof to take this measurement.

17. Measure the interior **ceiling height** of the Privy and record the measurement (in feet) within the GPS data dictionary.

    - To take the interior ceiling height measurement:
      Stand inside the Privy and use your tape measure from the bottom of the floor to the highest ceiling.

    - Once you think the end of the tape is near the ceiling, read the measurement on the tape and record the necessary measurements within the GPS data dictionary.

18. Measure the interior **floor space** and record the measurement (in square feet) within the GPS data dictionary.

    To take the interior length measurement:

    - Stand on one of the interior wall corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length.

To take the interior width measurement:

- Stand on one of the interior wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the wall) that will capture the widest part.

- Once you have both measurements, multiply the interior floor length by the width, and record the measurement (in square feet) within the GPS data dictionary.

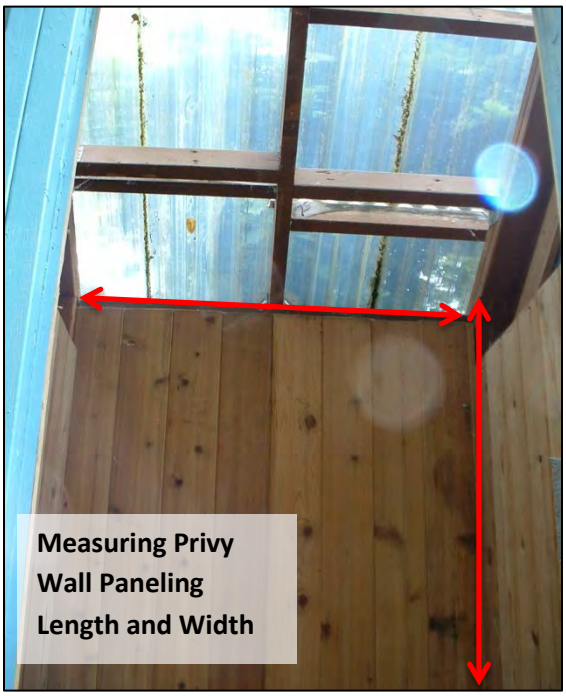
19. Select the predominant interior **Flooring Material** associated with the Privy you are inventorying. Refer to the materials below:

None	**Dimensional Lumber**	**Dirt/Soil**
Concrete	**Gravel**	**Log**
Plywood	**Steel**	**Stone**
Other		

20. Measure the interior **Wall Paneling** (or Wall Covering) and record the measurement (in square feet) within the GPS data dictionary.

To take the length measurement:

- Stand on one of the wall corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length.



Measuring Privy Wall Paneling Length and Width

To take the width measurement:

- Stand on one of the interior wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the wall) that will capture the widest part.

Get the total square feet:

- Multiply the interior wall length by the width. For example, if the length is 20 ft. and the width is 20 ft., so the total square feet would be 400.

21. Select the predominant interior **Wall Paneling Material** associated with the Privy you are inventorying. Refer to the materials below:

None	**Dimensional Lumber**	**Log**
Plywood	**Metal**	**Other**

22. Count and record the **number of Doors** that are associated with the Privy you are inventorying.

23. Select the predominant **Door Material** for the Privy you are inventorying. Refer to the materials below:

None	**Aluminum**	**Chain Link**
Dimensional Lumber	**Log**	**Plywood**
Steel	**Wire Mesh**	**Other**

24. Count and record the number of Windows that are associated with the Privy you are inventorying.

25. Select the predominant **Window Material** for the Privy you are inventorying. Refer to the materials below:

None	**Glass**	**Lexan (Polycarbonate)**
Plexiglass	**Other**	

26. Count and record the **number of Skylights** that are associated with the Privy you are inventorying. **IMPORTANT NOTE:** ***Count as one Skylight unless there is a divider; regardless of the size of the Skylight.***

27. Select the predominant **Skylight Material** for the Privy you are inventorying. Refer to the materials below:

None	**Glass**	**Lexan (Polycarbonate)**
Plexiglass	**Other**	

28. Count and record the **number of Steps** that are associated with the Privy you are inventorying.

29. Select the predominant **Step Material** for the Privy you are inventorying. Refer to the materials below:

None	**Aluminum**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Log	**Steel**	**Stone**
Other		

30. Count and record the **number of Railings** that are associated with the Privy you are inventorying.

31. Measure the **length and height of the Railing** and record the measurement (in feet) within the GPS data dictionary.

    To take the railing length measurement:

    - Stand at one end of the railing and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (from one side to the other) that will capture the greatest length. Remember, if there are two rails, measure each.

    - Once you're at the other end, record the length measurement (in feet) within the GPS data dictionary.

To take the railing height measurement:

- Stand at one corner of the railing. Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the railing. Read the measurement at top of the tape and record the height within the GPS data dictionary.

- Once you're at the other end, record the length measurement (in feet) within the GPS data dictionary.

32. Select the appropriate **Railing Material** that will best describe the Privy you are inventorying. Refer to the railing materials below:

None	**Aluminum**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Log	**Plastic**	**PVC**
Steel	**Stone**	**Other**

33. Count and record the **number of Ramps** that are associated with the Privy you are inventorying.

34. Measure the **Ramp Area** and record the measurement (in square feet) within the GPS Data Dictionary.

To take the length measurement:

- Stand on one of the corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the ramp) that will capture the greatest length.

To take the width measurement:

- Stand on one of the ramp corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the ramp) that will capture the widest part.

Get the total square feet:

- Multiply the ramp length by the width. For example, if the length is 20 ft. and the width is 20 ft., so the total square feet would be 400.

35. Select the appropriate **Ramp Material** that will best describe the Privy you are inventorying. Refer to the railing materials below:

None	**Block/Brick**	**Composite Lumber**
Concrete	**Dimensional Lumber**	**Dirt/Soil (Berm)**
Log	**Metal**	**Stone**
Other		

36. Count and record the **number of Vents** that are associated with the Privy you are inventorying.

37. Select the predominant **Vent Material** associated with the Privy you are inventorying. Refer to the materials below:

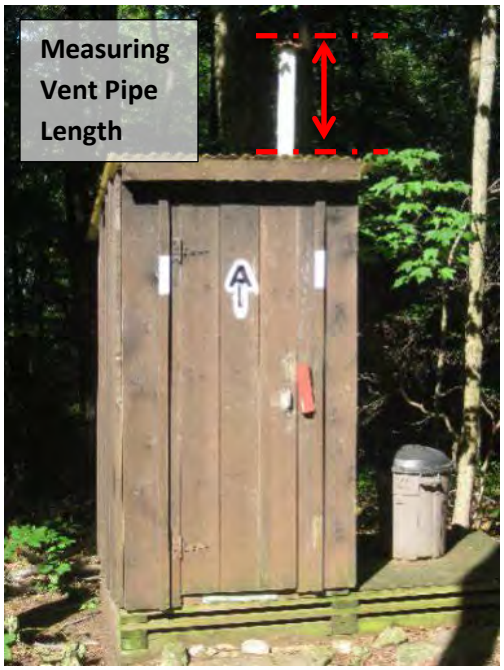
None	**Aluminum**	**Plastic**
Screen	**Steel**	**Other**

38. Count and record the **number of Vent Pipes** that are associated with the Privy you are inventorying.

39. Measure the **length of the Vent Pipes** and record the measurement (in feet) within the GPS data dictionary.

To take the Vent Pipe length measurement:

- Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the bottom of the vent pipe and extend the unconnected, loose end toward the top of the pipe. Read the measurement on the measuring tape and record the length within the GPS data dictionary.



- Once you're at the other end, record the length measurement (in feet) within the GPS data dictionary.

40. Select the predominant **Vent Pipe Material** associated with the Privy you are inventorying. Refer to the materials below:

None	**Aluminum**	**Concrete**
Plastic	**PVC**	**Steel**
Other		

41. Count and record the **number of Gutters** that are associated with the Privy you are inventorying.

42. Measure the **length of the Gutter** and record the measurement (in feet) within the GPS Data Dictionary.

To take the Gutter length measurement:

- Stand at one end of the gutter and, depending on what type of measuring device you are using, take the necessary steps to capture the length. Try to measure between the two points (from one side to the other) that will capture the greatest length.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

43. Select the predominant **Gutter Material** associated with the Privy you are inventorying. Refer to the materials below:

None	**Dimensional Lumber**	**Log**
Metal	**Vinyl**	**Other**

44. Count and record the **number of Retaining Walls** that are associated with the Privy you are inventorying.

45. Measure the **height and length of all Retaining Walls** associated with the Privy you are inventorying and record the measurement (in square feet) within the GPS Data Dictionary. (See Shelter Inventory Chapter for additional information and photograph).

46. Count and record the **number of Storage Systems** (Tools, Maintainer Supplies, etc.) that are associated with the Privy you are inventorying.

47. Count and record the **number of Signs** that are associated with the Privy you are inventorying. Signs should be attached or have a direct connection / contribution to the Privy. Make sure to record the <u>total</u> number of signs by type, regardless of size, shape, and material type. Refer to the associated signage options below:

Kiosk (Bulletin Board)

- Provide information (maps, announcements, etc.) in public areas, such as trailheads, shelters, and parking areas.

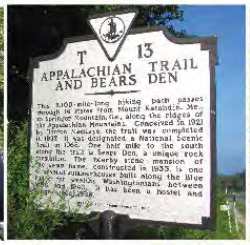


Directional/Wayfinding Signs

- Inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail.

Educational/Interpretive Signs

- Signs or exhibits that describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels.



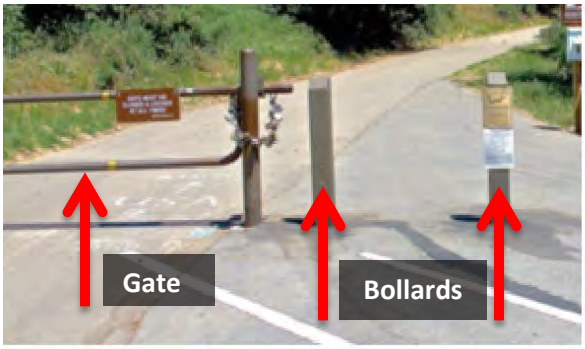
Identification/Entrance Signs

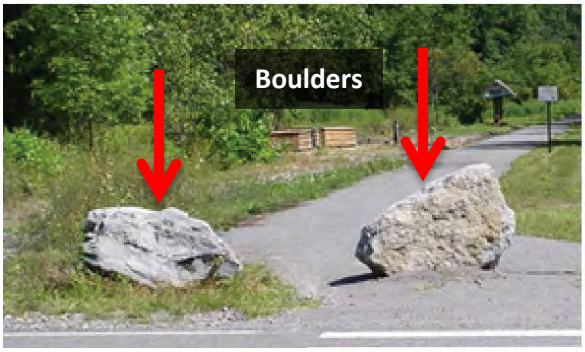
- Identification signs are typically short, basic labels or markers Typical signs include landmark signs, the AT diamond, and the AT elliptical triangle.

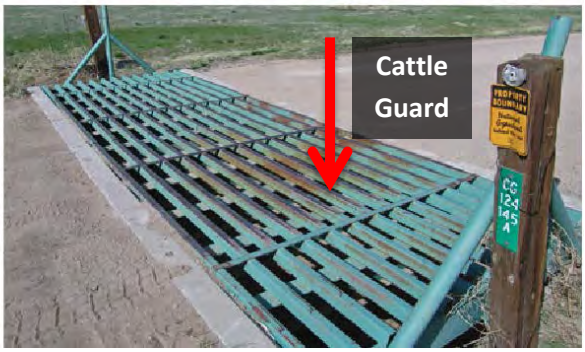
Regulatory/Safety Signs

- Signs that alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance.

48. Count and record the number of Barriers that are associated with the Privy you are inventorying. Barriers should be attached or have a direct connection / contribution to the Privy. **IMPORTANT NOTE:** Make sure to record the total number of barriers by type, regardless of size, shape, and material type. Refer to the associated barrier options below:





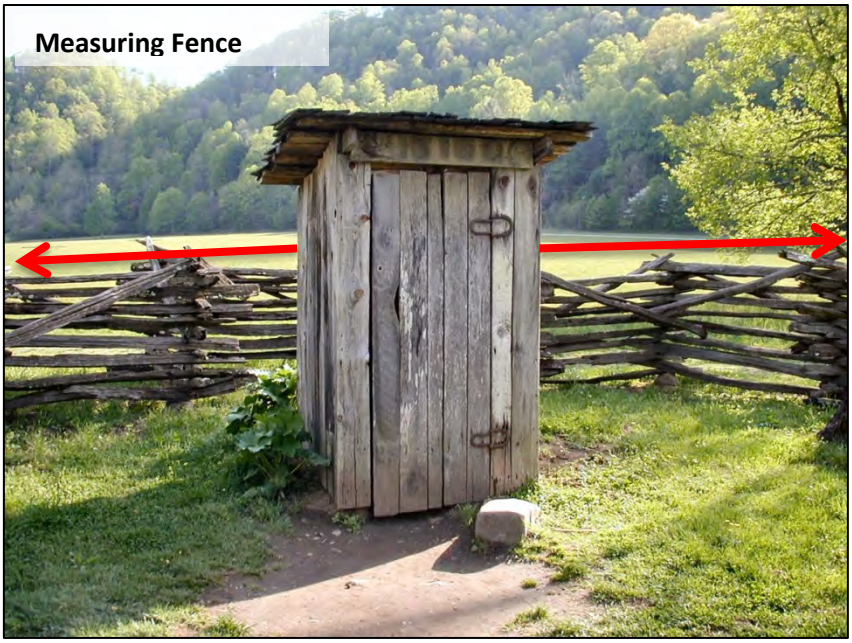


49. Count and record the **number of Fences** that are associated with the Privy you are inventorying. Fences should be attached or have a direct connection / contribution to the Privy.

50. Measure the **length of the Fences** and record the measurement (in feet) within the GPS data dictionary.

To take the Fence length measurement:

- Stand at one end of the fence and, depending on what type of measuring device you are using (Measuring tape or measuring wheel), take the necessary steps to capture the length, from one end to the other end. **IMPORTANT NOTE:** Remember to double the length measurement if there is an equal amount of fence on each side of the fence.



- Once you're at the other end, record the length measurement (in feet) within the GPS data dictionary.

51. Select the appropriate **Fence Material** that will best describe the Privy you are inventorying. Refer to the fence materials below:

None	**Barbwire/Slip Wire**	**Chain Link**
Split Rail	**Wire Mesh**	**Other**

52. Confirm that all of the **required photos have been taken** by checking "Yes". If you check "No", work with ATC to determine when the photos can be taken at a later date.

53. If you know the **Year Built** associated with the Privy you are inventorying, please enter the year within the GPS data dictionary. If this information is not posted, enter in "Unknown", and work with ATC or designated volunteers to determine the year built, if possible.

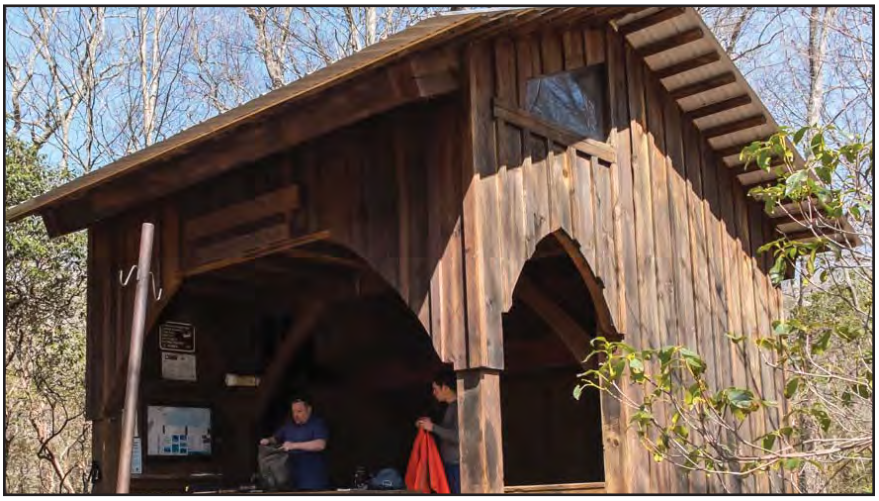
54. If you know the **Land Owner** (i.e. NPS, USFS, State, etc.) associated with the Privy you are inventorying, please enter this information within the GPS Data Dictionary. (Please provide as much information as possible in regards to Agency, Bureau and Division - e.g. don't just say NPS or USFS, but NPS APPA, NPS Shenandoah, USFS George Washington-Jefferson NF New River District, Pennsylvania Game Commission State Game Land 217, Connecticut Department of Forestry Housatonic State Forest, etc.). If this information is not known, enter in "Unknown", and work with ATC or designated volunteers to determine the land owner, if possible.

Shelters and Associated Features

A typical shelter, sometimes called a "lean-to," has an overhanging roof, a wooden floor and three or four walls. Four-sided shelters can have doors and windows, but are not typically as formal as cabins. Three-sided structures are open to the elements on one side but will usually keep you dry.

Block/Brick Shelters

The most common blocks are cinder concrete (cinder blocks), ordinary concrete (concrete blocks), or hollow tile are generically known as Concrete Masonry Units (CMUs).



Board & Batten

Board and batten siding consists of wide boards laid vertically with narrower strips of wood, called battens, covering the gaps. The wide boards can vary, but they are often around eight inches in width.

Clapboard Siding

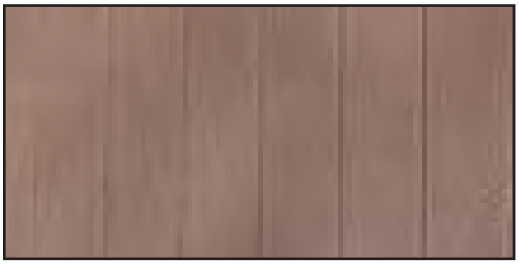
Clapboard, also known as bevel siding, lap siding or weatherboard, is typically made from wooden wedge-shaped boards which are designed to overlap with each other.

Shelters and Associated Features

Log Shelter
Logs are typically found nearby or onsite. These structures are typically built from logs laid horizontally and interlocked on the ends with notches. Logs may be square.

Log and Stone Shelter
These shelters are similar to regular log shelters; however, there is typically a stone and mortar wall or foundation incorporated into the design. The amount of stone can vary, and stones are usually collected nearby or onsite.

Plywood/T1-11 Siding
Plywood is a type of strong thin wooden board consisting of two or more layers glued and pressed together. T1-11 plywood is a common siding choice for shelters and privies, and may come with a solid or grooved surface.



Shelters and Associated Features

Post and Beam Shelter
Timber framing and "post-and-beam" construction are methods of building with heavy timbers, squared-off and carefully fitted and joined timbers with joints, instead of dimensional lumber .

Other Typical Exterior Materials and Finishes:

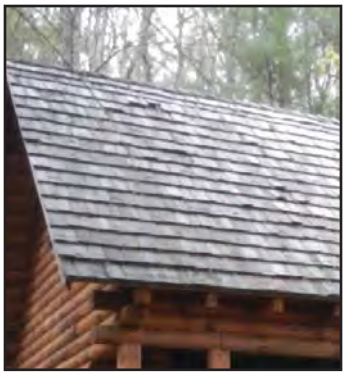
Painted Finish

Stained Finish

Shingle Siding

Stone

Typical Roof Materials:



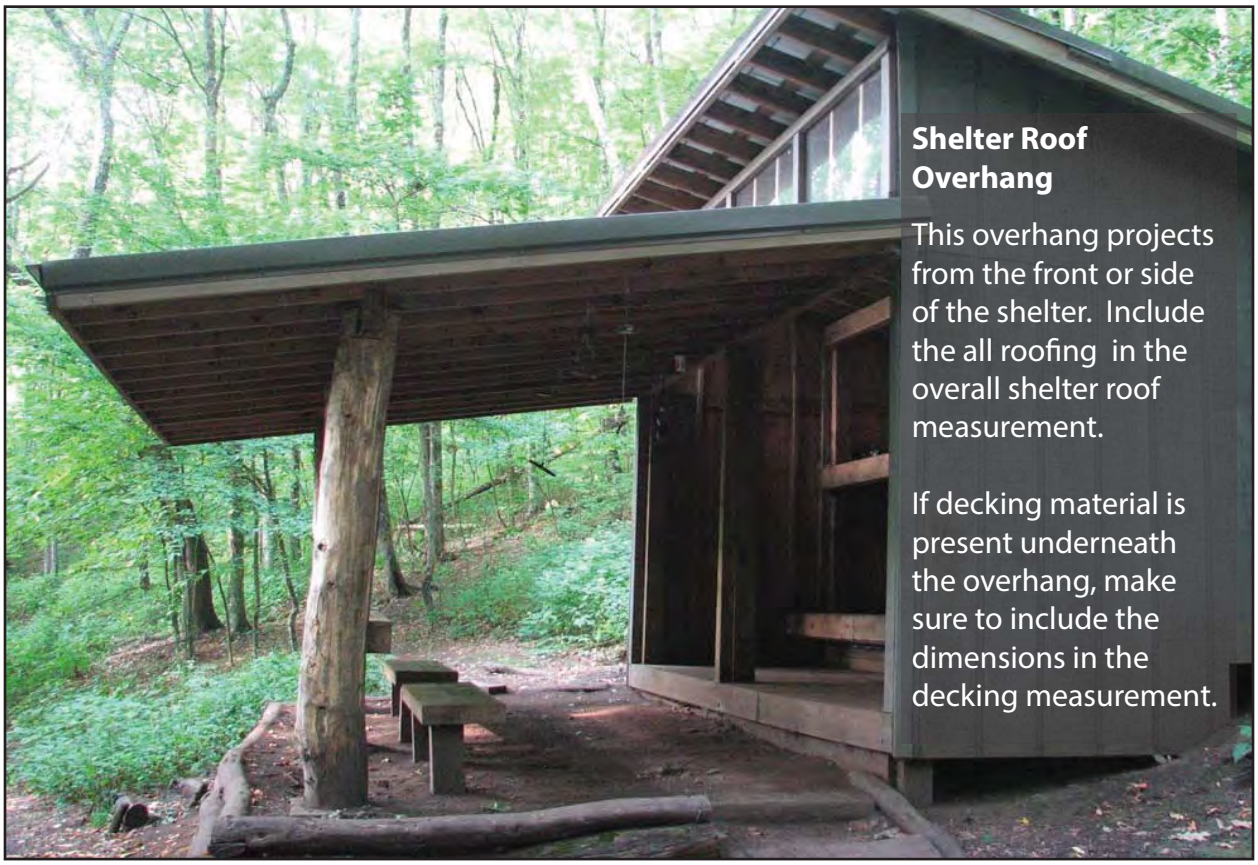
Wood Shingle

Metal

Fiberglass

Asphalt Shingle

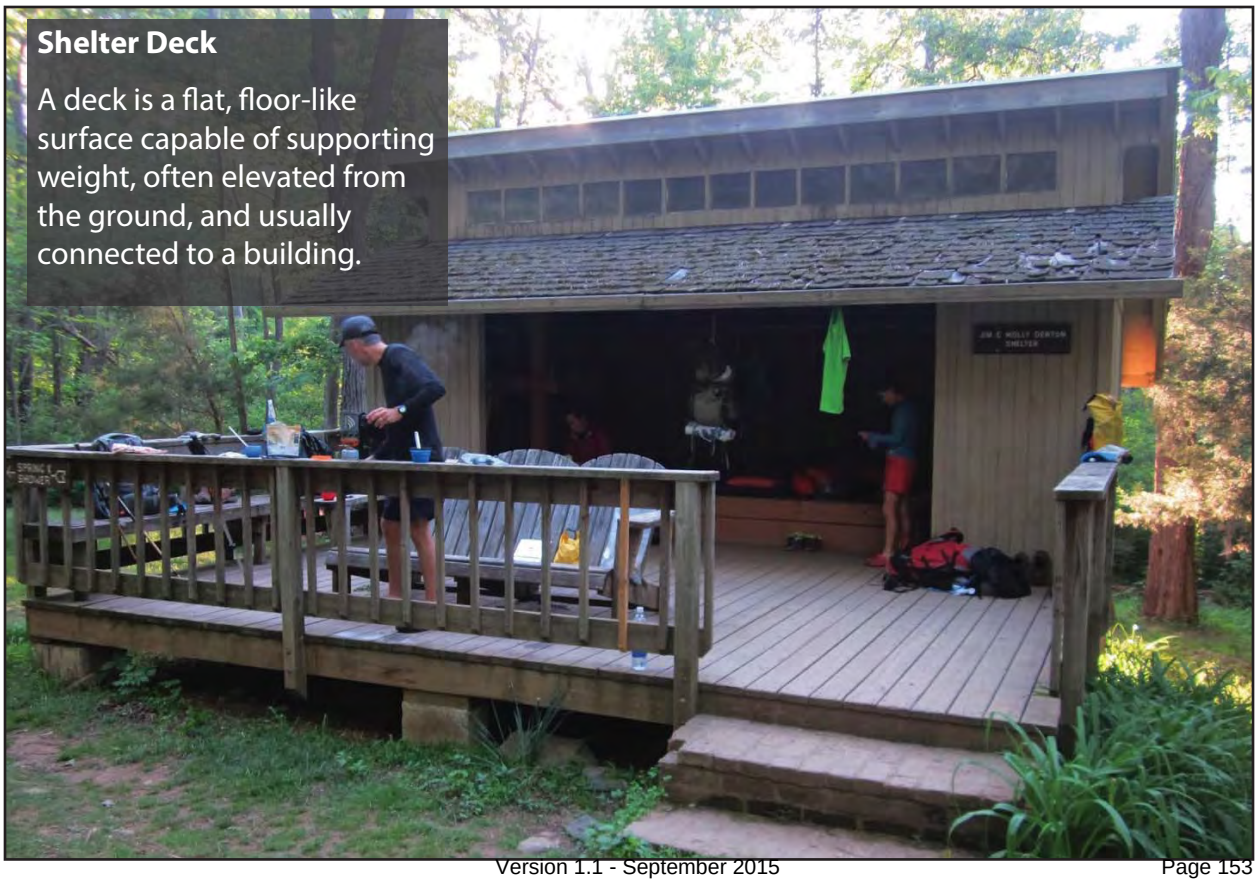
Shelters and Associated Features



Shelter Roof Overhang

This overhang projects from the front or side of the shelter. Include the all roofing in the overall shelter roof measurement.

If decking material is present underneath the overhang, make sure to include the dimensions in the decking measurement.



Shelter Deck

A deck is a flat, floor-like surface capable of supporting weight, often elevated from the ground, and usually connected to a building.

Shelters and Associated Features

Food Storage (Bear Boxes, Bear Cables, and Bear Poles)
Bear-resistant food storage containers are usually hard-sided containers used by backpackers to protect their food from theft by bears, especially in areas where bears have become habituated to human presence. Bear cables are wire cable systems that run horizontally between two trees with half-dozen wire loops that run from this cable to the ground. Bear poles are vertical metal poles set in the ground with hooks welded to the top on which to hang food bags.

Metal Food (Bear) Box

Food (Bear) Cables

Food (Bear) Pole

Fire Rings
A fire ring is a construction or device used to contain campfires and prevent them from spreading and turning into wildfires. A fire ring is designed to contain a fire that is built directly upon the ground, such as a campfire. **IMPORTANT NOTE:** ***For this inventory, only count the fire rings made of metal and mortared stone or block/brick.***

Metal Fire Ring

Mortared Stone Fire Ring

Loose Rock Fire Ring -
Do Not Inventory

Shelters and Associated Features

Storage Boxes (Tools, Maintainer Supplies, etc.)
Storage boxes can be found at shelters and privies, as well as along the Trail. These boxes typically hold trail maintenance equipment (i.e. tools, hard hats, safety glasses, etc.) or mulch/leaf debris/duff to be used at the privies

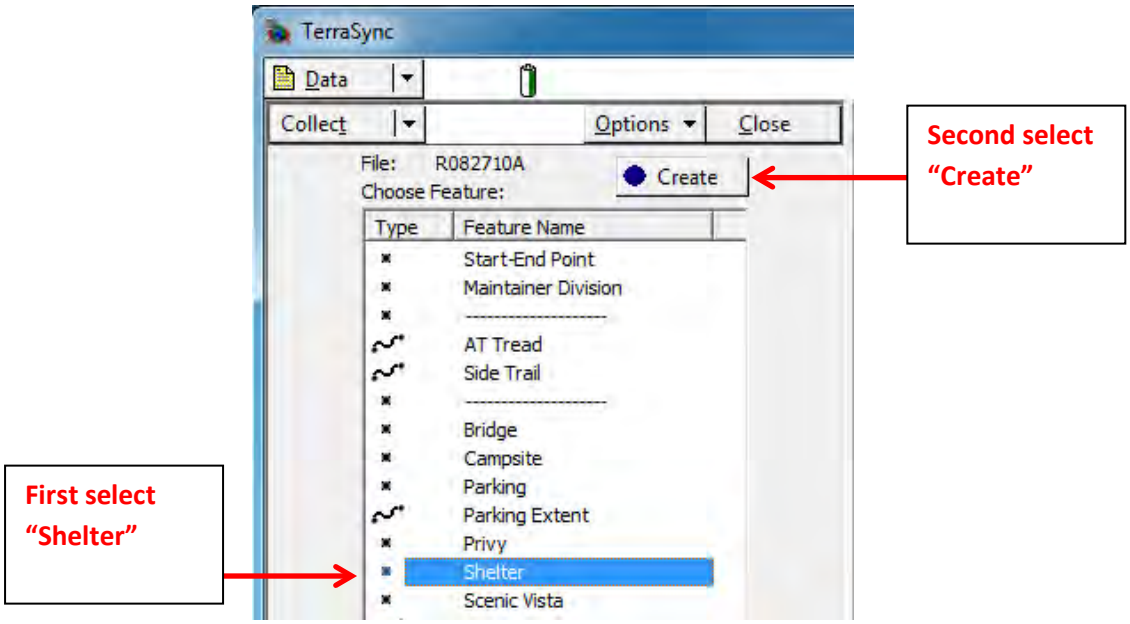
Metal Storage Box

Shelter Inventory Process

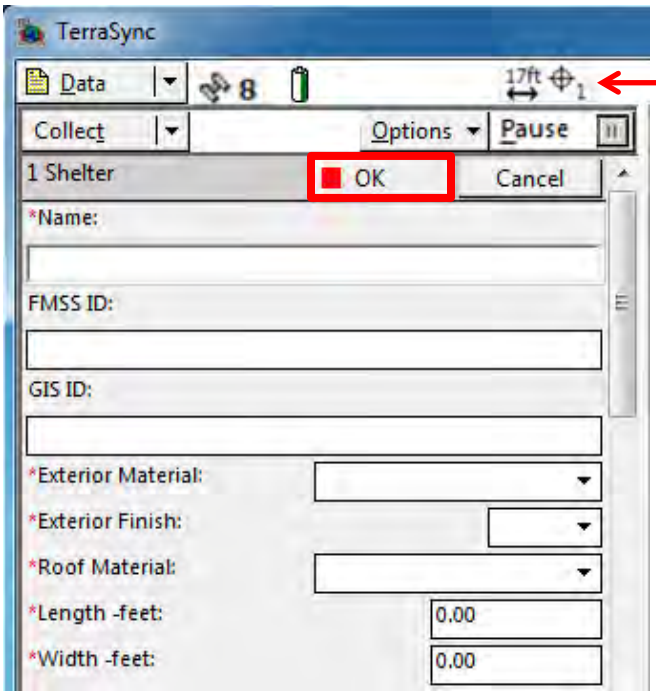
1. When recording the GPS location of a Shelter, try and stand in front of the structure, near the center.

IMPORTANT NOTE: The closer you are to the structure, the more accurate the location, however the higher potential for interference with the GPS. So, if you are having trouble recording the location, try stepping back to get better reception. However, if you have to step back further than 10-feet or so, please note that in the "comment" section.

2. Select "Shelter" in the data dictionary and tap "Create".

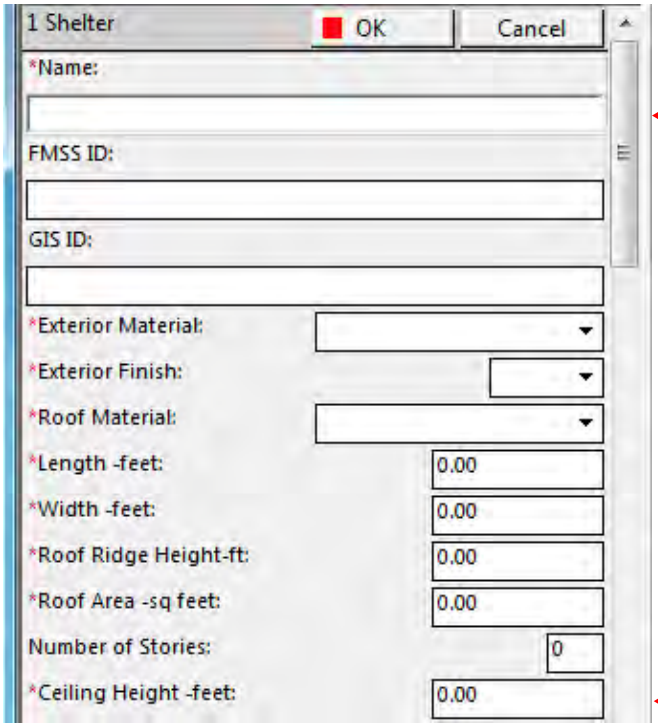


3. Record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner of TerraSync. Once you have collected 30 points, select “Pause”.

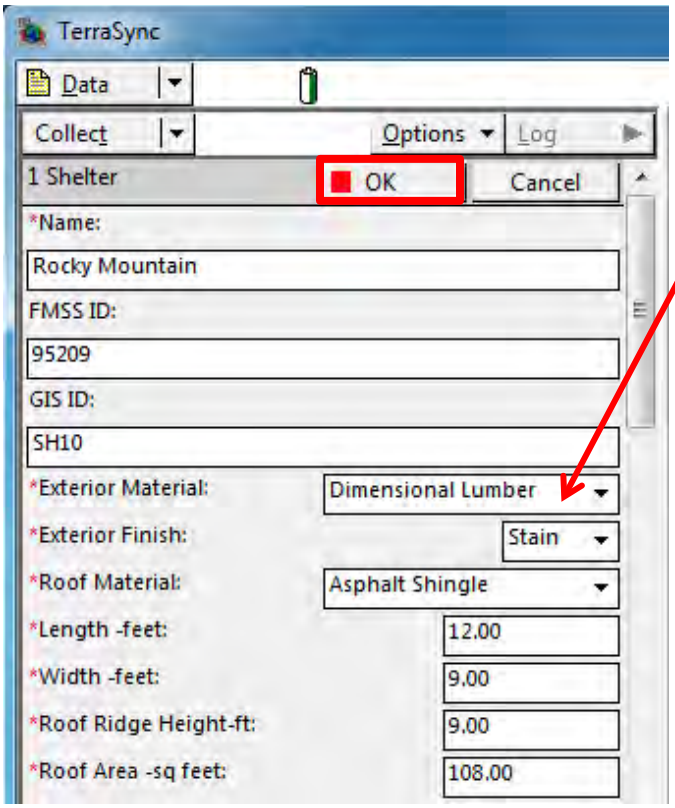


IMPORTANT NOTE:
Make sure you see at least 30 points before you select “Pause”

4. Once you have selected “Pause”, you can walk around and gather the necessary information and measurements.



IMPORTANT NOTE:
Remember to select “Pause”, before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information



IMPORTANT NOTE:
Only select "OK" to save the feature AFTER ALL information has been filled in.

5. Take at least two pictures of the Shelter you are inventorying – one from corner and one from the opposite end, diagonal from the original corner. Please see the Technical Office Guide for information about naming photographs.

- If you need to take more than two pictures, that's ok. Try and capture the associated features (signs, ramps, fence, etc.) in the picture if possible, but you do not have to take pictures of the associated features themselves. As you can see in the example below, stand far enough away from the Shelter to capture the whole Shelter in the picture, **as long as it's safe**. Depending on the Shelter surroundings, you may have to stand above, level, or below eye level of the Shelter to take a good picture.

6. Enter the **Name** of the shelter within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials, then please enter an appropriate name.

7. For the **FMSS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If there is no FMSS ID for the shelter, then please enter "0". If you can't locate a corresponding ID, please enter "Not Found" or "None".

8. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

9. Select the predominant **Exterior Material** associated with the Shelter you are inventorying. Refer to the materials below:

Block/Brick	**Board & Batten**	**Clapboard**
Corrugated Metal	**Dimensional Lumber**	**Log**
Log & Stone	**Plywood/T1-11 Siding**	**Post & Beam**
Siding – Aluminum	**Siding – Shingle**	**Steel**
Stone	**Other**	

10. Select the predominant **Exterior Finish** associated with the Shelter you are inventorying. Refer to the finish types below:

None	**Paint**	**Stain**	**Other**

11. Select the predominant **Roof Material** associated with the Shelter you are inventorying. Refer to the materials below:

Asphalt Shingle	**Asphalt Roll Roofing**	**Fiberglass**
Metal	**Slate**	**Wood Shingle**
Other		

12. Measure the exterior **length and width of the Shelter** and record the measurement (in feet) within the GPS Data Dictionary. **IMPORTANT NOTE:** Always remember to round up for all measurements to the nearest foot (Example: *12 ft. 7 in. rounds up to 13 ft*.)

To take the exterior length measurement:

- Stand on one exterior wall corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length. **IMPORTANT NOTE:** Remember to include the shelter overhang in the measurement as part of the shelter.

Measuring Shelter Length with a 100 ft. Measuring Tape

Once you're at the other corner of the exterior wall, record the length measurement (in feet) within the GPS Data Dictionary.

To take the exterior width measurement:

- Stand on one of the exterior wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the wall) that will capture the widest part of the Shelter.

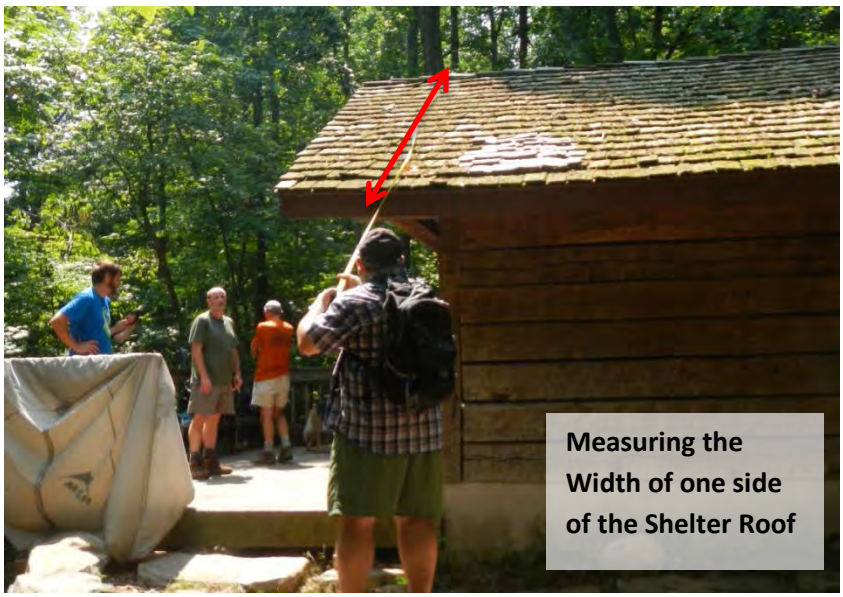
- Once have the total exterior width measurement, record the width measurement (in feet) within the GPS Data Dictionary.

13. Measure the **ridge height** of the Shelter and record the measurement (in feet) within the GPS Data Dictionary. Use the following steps to determine the ridge height, if not known:

- Stand below the roof overhang and, using either a range finder or a measuring tape, capture the distance between ground and the top of the ridge.

- **IMPORTANT NOTE:** The highest point may be at the not be in the center of the structure. At no point should you climb on to the roof to take this measurement.

14. Measure the **Roof Area** of the Shelter and record the measurement (in square feet) within the GPS Data Dictionary. **IMPORTANT NOTE:** ***Remember to capture all roofing (i.e. porch, roof overhang, etc.) in the roofing measurement.***



Measuring the Width of one side of the Shelter Roof

15. Count and record the **number of stories** that are associated with the Shelter you are inventorying. A two-storied shelter should have a bottom floor that connects at least three walls, with an opening for steps or a ladder. This opening or doorway can be on the inside or the outside. **IMPORTANT NOTE:** Remember that sleeping lofts do not count as stories.

16. Measure the interior **ceiling height** of the Shelter and record the measurement (in feet) within the GPS Data Dictionary.

    To take the interior ceiling height measurement:

    - Stand inside the Shelter and use your tape measure from the bottom of the floor to the highest ceiling. **IMPORTANT NOTE:** The highest ceiling may be at the second story, or past a loft. If there's a loft, make sure to stand at a location to the side that allows you to reach the ceiling. If the there is a second story, take the measurement from the second story level (**not** the first story) to the ceiling.

      If your measuring tape (i.e. 25 ft. or 30 ft.) cannot reach the top of the ceiling from where you are standing, make a "best guess" estimate of the height based on where the tape ends. This means that if your 25 ft. measuring tape ends half way between you and the ceiling, the height is roughly 50 ft.

- Once you think the end of the tape is near the ceiling, read the measurement on the tape and record the necessary measurements within the GPS Data Dictionary. **IMPORTANT NOTE:** Make sure to round up for all measurements to the nearest foot (Example: *12 ft. 7 in. rounds up to 13 ft*.)

17. Measure the Interior **Floor Space** of the Shelter and record the measurement (in square feet) within the GPS Data Dictionary.

    To take the interior length measurement:

    - Stand on one of the interior wall corners and, depending on what type of measuring device you are using, take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length.

To take the interior width measurement:

- Stand on one of the interior wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using; take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest width.

- Once you have both the length measurement and the width measurement.

18. Select the predominant **Floor Material** associated with the Shelter you are inventorying. Refer to the materials below:

Dimensional Lumber	**Dirt/Soil**	**Concrete**
Gravel	**Log**	**Plywood**
Steel	**Stone**	**Other**

19. Measure the **length and width of Wall Paneling** (or Wall Covering) and record the measurement (in square feet) within the GPS Data Dictionary.

To take the length measurement:

- Stand on one of the interior wall corners and, depending on what type of measuring device you are using, take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length.

To take the width measurement:

- Stand on one of the interior wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using, take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the wall) that will capture the widest part.

Get the total square feet:

- Multiply the interior wall length by the width. For example, if the length is 20 ft. and the width is 20 ft., so the total square feet would be 400.

20. Select the predominant interior **Wall Paneling Material** associated with the Shelter you are inventorying. Refer to the materials below:

None	**Dimensional Lumber**	**Log**
Plywood	**Metal**	**Other**

21. Measure the **length and width of the Deck/Patio** associated with the Shelter that you are inventorying and record the measurement (in feet) within the GPS Data Dictionary.

To take the deck/patio length measurement:

- Stand on one side of the deck and, depending on what type of measuring device you are using (Measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (from one corner to the other) that will capture the greatest length.

Measuring Deck Length with a 100 ft. Tape Measure

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

To take the deck/patio width measurement:

- Stand at one corner of the deck/patio (on the side perpendicular to the "length" side) and, depending on what type of measuring device you are using (measuring tape, or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (from one corner to the other) that will capture the greatest width.

Measuring Deck Width with a 100 ft. Tape Measure

- Once you're at the other end, record the width measurement (in feet) within the GPS Data Dictionary.

22. Select the appropriate **Decking/Patio Material** that will best describe the Shelter you are inventorying. Refer to the decking/patio materials below:

None	**Block/Brick**	**Composite Lumber**
Concrete	**Dimensional Lumber**	**Log**
Stone	**Other**	

23. Count and record the **number of Doors** that are associated with the Shelter you are inventorying.

24. Select the predominant **Door Material** for the Shelter you are inventorying. Refer to the materials below:

None	**Aluminum**	**Chain Link**
Dimensional Lumber	**Log**	**Plywood**
Steel	**Wire Mesh**	**Other**

25. Count and record the **number of Windows** that are associated with the Shelter you are inventorying.

26. Select the predominant **Window Material** for the Shelter you are inventorying. Refer to the materials below:

None	**Glass**	**Lexan (Polycarbonate)**
Plexiglass	**Other**	

27. Count and record the **number of Skylights** that are associated with the Shelter you are inventorying.

28. Select the predominant **Skylight Material** for the Shelter you are inventorying. Refer to the materials below:

None	**Glass**	**Lexan (Polycarbonate)**
Plexiglass	**Other**	

29. Count and record the **number of Steps** that are associated with the Shelter you are inventorying.

30. Select the predominant **Step Material** for the Shelter you are inventorying. Refer to the materials below:

None	**Aluminum**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Log	**Steel**	**Stone**
Other		

31. Count and record the **number of Railings** that are associated with the Shelter you are inventorying.

32. Measure the **length and height of Railing** and record the measurement (in feet) within the GPS Data Dictionary.

To take the railing length measurement:

- Stand at one end of the railing and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (from one side to the other) that will capture the greatest length.
- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

To take the railing height measurement:

- Stand at one corner of the railing. Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the railing. Read the measurement at top of the tape and record the height within the GPS Data Dictionary.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

33. Select the appropriate **Railing Material** that will best describe the Shelter you are inventorying. Refer to the railing materials below:

None	**Aluminum**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Log	**Plastic**	**PVC**
Steel	**Stone**	**Other**

34. Count and record the **number of Ramps** that are associated with the Shelter you are inventorying.

35. Measure the **Ramp Area** and record the measurement (in square feet) within the GPS Data Dictionary.

To take the length measurement:

- Stand on one of the corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the ramp) that will capture the greatest length.

To take the width measurement:

- Stand on one of the ramp corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the ramp) that will capture the widest part.

Get the total square feet:

- Multiply the ramp length by the width. For example, if the length is 20 ft. and the width is 20 ft., so the total square feet would be 400.

36. Select the appropriate **Ramp Material** that will best describe the Shelter you are inventorying. Refer to the railing materials below:

None	**Block/Brick**	**Composite Lumber**
Concrete	**Dimensional Lumber**	**Dirt/Soil (Berm)**
Log	**Metal**	**Stone**
Other		

37. Count and record the **number of Vents** that are associated with the Shelter you are inventorying.

38. Select the predominant **Vent Material** associated with the Shelter you are inventorying. Refer to the materials below:

None	**Aluminum**	**Plastic**
Screen	**Steel**	**Other**

39. Count and record the number of **Vent Pipes** that are associated with the Shelter you are inventorying.

40. Measure the **length of the Vent Pipes** and record the measurement (in feet) within the GPS Data Dictionary.

To take the Vent Pipe length measurement:

- Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the bottom of the vent pipe and extend the unconnected, loose end toward the top of the pipe. Read the measurement on the measuring tape and record the length within the GPS Data Dictionary.

- If you cannot reach the vent pipe to take the measurement, repeat the steps for determining the Shelter's ridge height. First, use the measuring device (stick, tape measure, trekking pole, PVC pipe, etc. the same length as your arm) to establish base of the vent pipe and then mark your location. Second, walk backwards until you can see the top of the vent pipe and mark the location. Measure the distance between the first location and the second location backwards to determine the length of the vent pipe.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

41. Select the predominant **Vent Pipe Material** associated with the Shelter you are inventorying. Refer to the materials below:

None	**Aluminum**	**Concrete**
Plastic	**PVC**	**Steel**
Other		

42. Count and record the **number of Chimneys** that are associated with the Shelter you are inventorying.

43. Select the predominant **Chimney Material** associated with the Shelter you are inventorying. Refer to the materials below:

None	**Block/Brick**	**Concrete**
Metal	**Stone**	**Other**

44. Count and record the **number of Gutters** that are associated with the Shelter you are inventorying.

45. Measure the **length of the Gutter** and record the measurement (in feet) within the GPS Data Dictionary.

To take the Gutter length measurement:

- Stand at one end of the gutter and, depending on what type of measuring device you are using, take the necessary steps to capture the length. Try to measure between the two points (from one side to the other) that will capture the greatest length.

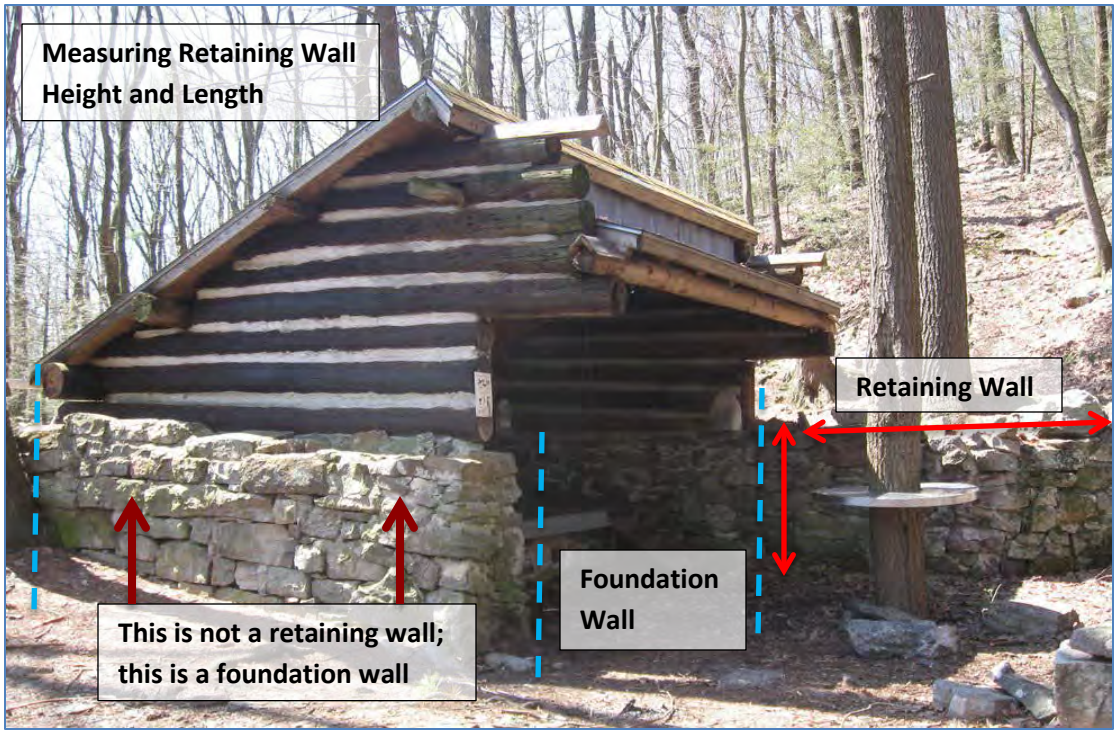
- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

46. Select the predominant **Gutter Material** associated with the Shelter you are inventorying. Refer to the materials below:

None	**Dimensional Lumber**	**Log**
Metal	**Vinyl**	**Other**

47. Count and record the **number of Retaining Walls** that are associated with the Shelter you are inventorying.

48. Measure the **height and length of all Retaining Walls** associated with the Shelter you are inventorying and record the measurement (in square feet) within the GPS Data Dictionary.



To take the length measurement:

- Stand on one of the corners and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to measure between the two points (corner to corner, along the wall) that will capture the greatest length.

To take the width measurement:

- Stand on one of the wall corners (perpendicular to the side you used to measure the length) and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the width. Try to measure between the two points (corner to corner, along the ramp) that will capture the widest part.

Get the total square feet:

- Multiply the wall length by the width. For example, if the length is 20 ft. and the width is 20 ft., so the total square feet would be 400.

49. Count and record the **number of Metal Fire Rings** that are associated with the Shelter you are inventorying.

50. Count and record the **number of Mortared (Brick or Stone) Fire Rings** that are associated with the Shelter you are inventorying.

51. Count and record the **number of Food Storage Systems** (Food Boxes, Food Cables, and Food Poles) that are associated with the Shelter you are inventorying.

52. Count and record the **number of Storage Systems** (Tools, Maintainer Supplies, etc.) that are associated with the Shelter you are inventorying.

53. Count and record the **number of Signs** that are associated with the Shelter you are inventorying. Signs should be attached or have a direct connection / contribution to the Shelter. Make sure to record the <u>total</u> number of signs by type, regardless of size, shape, and material type. Refer to the associated signage options below:

Kiosk (Bulletin Board)

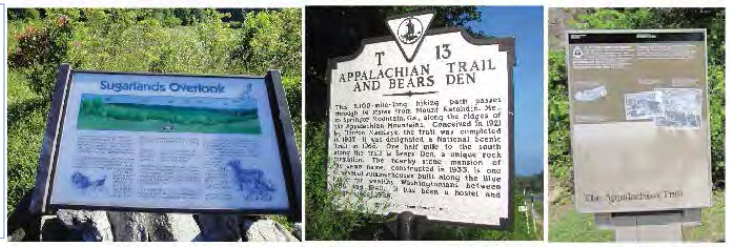
- Provide information (maps, announcements, etc.) in public areas, such as trailheads, shelters, and parking areas.

Directional/Wayfinding Signs

- Inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail.

Educational/Interpretive Signs

- Signs or exhibits that describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels.



Identification/Entrance Signs

- Identification signs are typically short, basic labels or markers Typical signs include landmark signs, the AT diamond, and the AT elliptical triangle.

Regulatory/Safety Signs

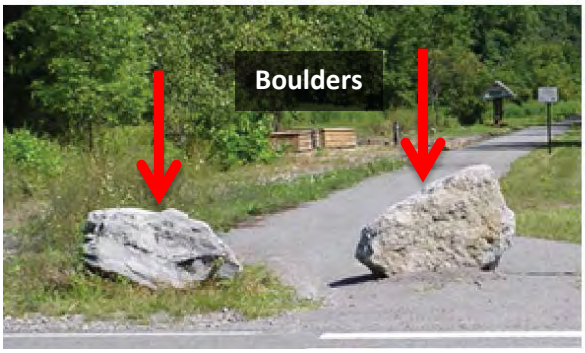
- Signs that alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance.

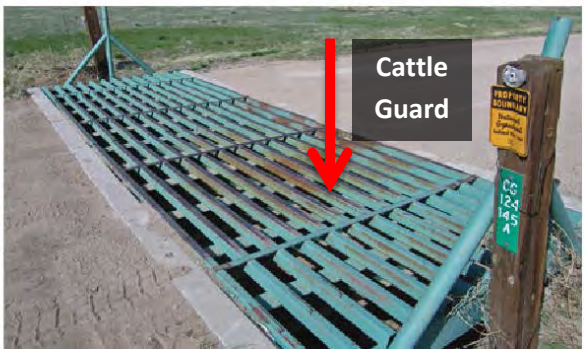
Signs at Shelters

There are many different signs on, in, and around shelters. Count each bulletin board and kiosk as one sign.

IMPORTANT NOTE: ***Do not count the signs individually in each bulletin board or kiosk.***

54. Count and record the **number of Barriers** that are associated with the Shelter you are inventorying. Barriers should be attached or have a direct connection / contribution to the Shelter. **IMPORTANT NOTE:** Make sure to record the <u>total</u> number of barriers by type, regardless of size, shape, and material type. Refer to the associated barrier options below:



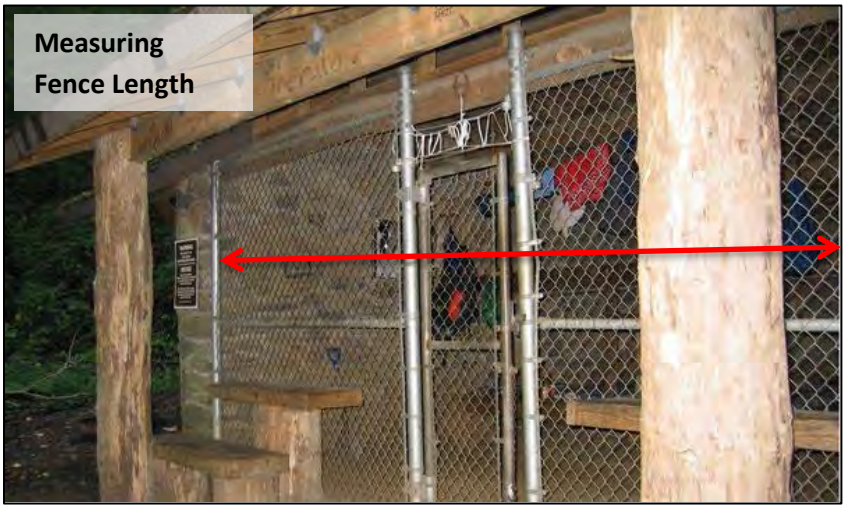


55. Count and record the **number of Fences** that are associated with the Shelter you are inventorying. Fences should be attached or have a direct connection / contribution to the Shelter.

56. Measure the **length of the Fences** and record the measurement (in feet) within the GPS Data Dictionary.

To take the fence length measurement:

- Stand at one end of the fence and, depending on what type of measuring device you are using (Measuring tape or measuring wheel), take the necessary steps to capture the length, from one end to the other. **IMPORTANT NOTE:** Remember to double the length measurement if there is an equal amount of fence on each side of the fence



- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

57. Select the appropriate **Fence Material** that will best describe the Shelter you are inventorying. Refer to the fence materials below:

None	**Barbwire/Slip Wire**	**Chain Link**
Split Rail	**Wire Mesh**	**Other**

58. Confirm that all of the **required photos have been taken** by checking "Yes". If you check "No", work with ATC to determine when the photos can be taken at a later date.

59. If you know the **Year Built** associated with the Shelter you are inventorying, please enter the year within the GPS Data Dictionary. If this information is not posted, enter in "Unknown", and work with ATC or designated volunteers to determine the year built, if possible.

60. If you know the **Land Owner** (i.e. NPS, USFS, State, etc.) associated with the Shelter you are inventorying, please enter this information within the GPS Data Dictionary. (Please provide as much information as possible - e.g. don't just say NPS or USFS. Enter in NPS APPA, USFS George Washington-Jefferson NF New River District, Pennsylvania Game Commission State Game Land 217, etc.). If this information is not known, enter in "Unknown", and work with ATC or designated volunteers to determine the land owner, if possible.

Scenic Vistas and Associated Features

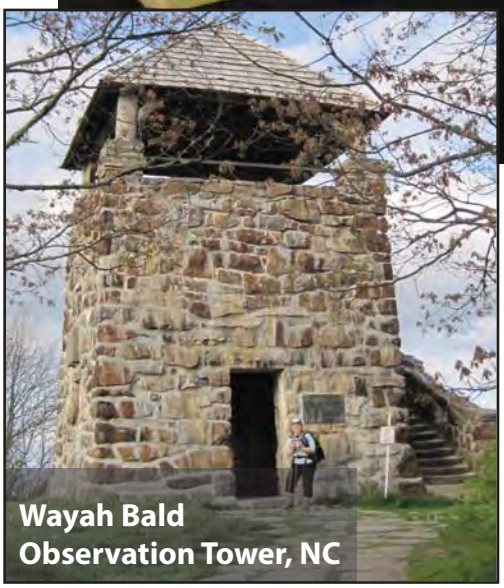
Scenic Vista

A vista is a location with a view or panoramic scene. It's what you stop to see when you climb to the top of a mountain, or pull off the road at a "scenic view" overlook. These views include, but are not limited to, parklands, prime farmlands, wetlands, wild and scenic rivers, woodlands, and other landscapes and viewpoints. Common scenic vistas along the trail include unimproved viewpoints, improved overlooks, and maintained open areas.

Unimproved Viewpoint

An unimproved viewpoint exhibits no site improvements and requires no routine maintenance. Examples include naturally open areas with low or little vegetation.

Scenic Vistas and Associated Features



Improved Viewpoint
Improved viewpoints often have site features such as a viewing platform or observation tower, guard wall, or railing. Formal scenic viewpoints with railing, pull-offs/parking areas, and vegetation clearing should be included in this vista type. These viewpoints are also called "Improved Overlooks" in some areas. These "Improved Overlooks" offer a view ***outside*** or ***around*** a specific viewpoint location or observation point.

Other Improved Overlook Surface Types:

Scenic Vistas and Associated Features

Maintained Open Area

Maintained open areas exhibit a scenic quality that directly contributes to the AT. These landscapes are typically mown periodically and offer scenic views near or within the AT corridor. Examples include Max Patch in North Carolina and Bartlett Field in Vermont.


Max Patch, NC

Unlike most unimproved and improved viewpoints, which look outward, maintained open areas offer ***internal views***, typically of naturally or culturally important pastorial landscapes.

Like other improved viewpoints, maintained landscapes often require cyclic mowing or brush removal.

Other Examples Include:

*** Roan Highlands, NC/TN**

*** Ovoka, VA**

*** Tyringham Cobble, MA**

*** Beagle Gap, VA**

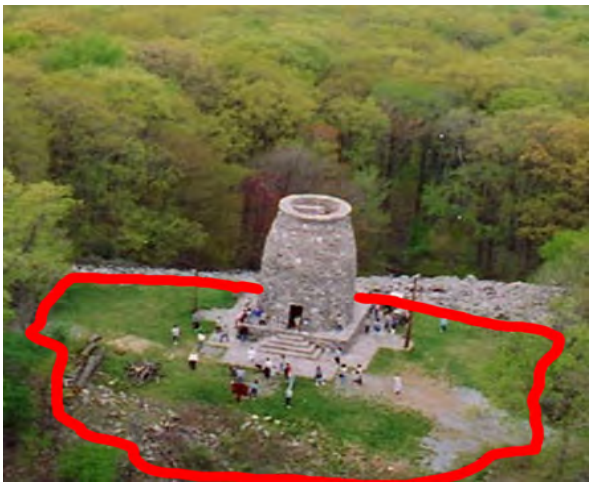

Spence Field, NC

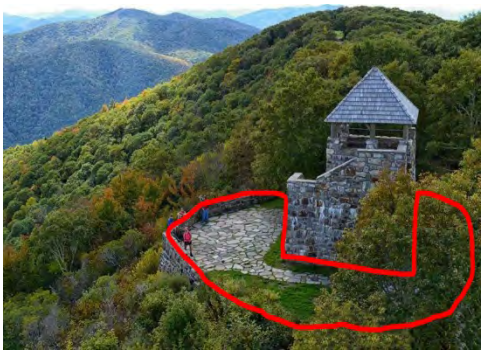
Scenic Vista Inventory Process

There are two parts to each Scenic Vista Inventory – capturing the Scenic Vista Extent (as a line feature) and recording the Scenic Vista information and measurements (as a point feature).

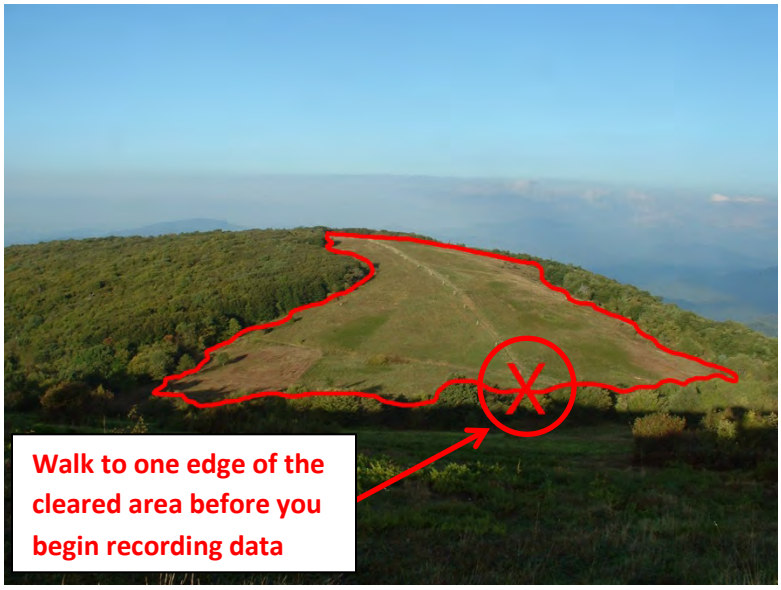
Collecting the Scenic Vista Extent:

Scenic Vista Extents do not need to be collected for every vista, particularly single, isolated viewpoints that do not have much cleared area around them or unimproved areas that are naturally clear, such as a vista from a rock outcrop. Specifically, what we are interested in a scenic vista extent if it is actively being "maintained" to keep it open - for instance, an open area or an improved viewpoint where vegetation is actively cleared. Here are some examples:

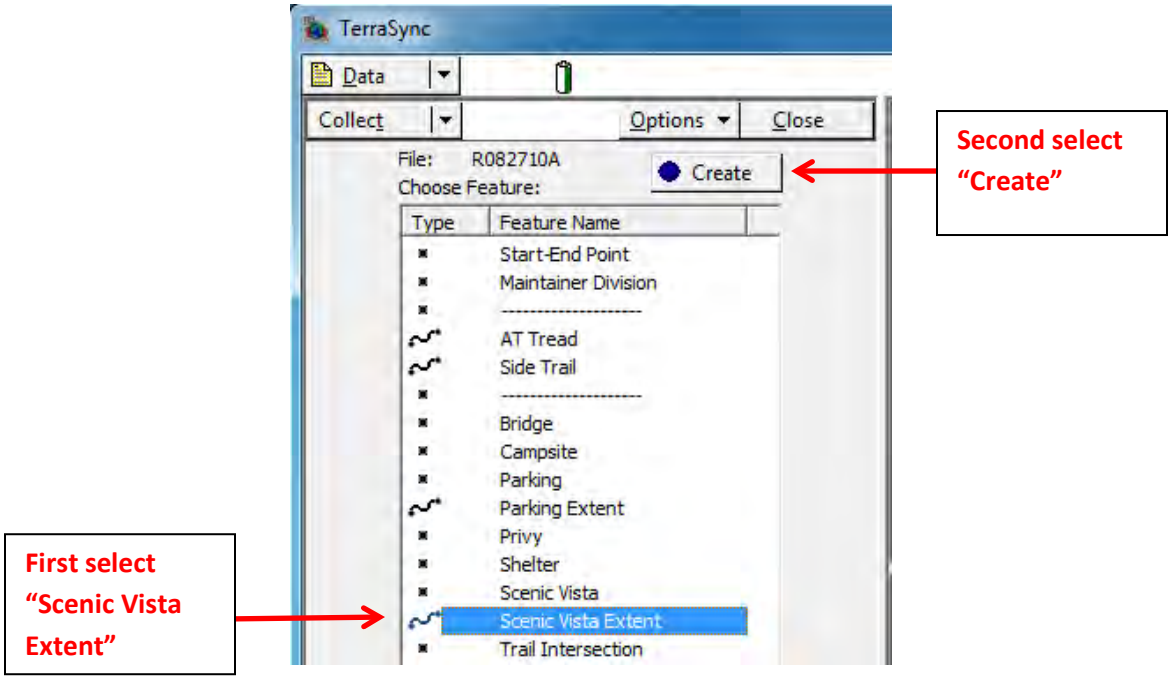




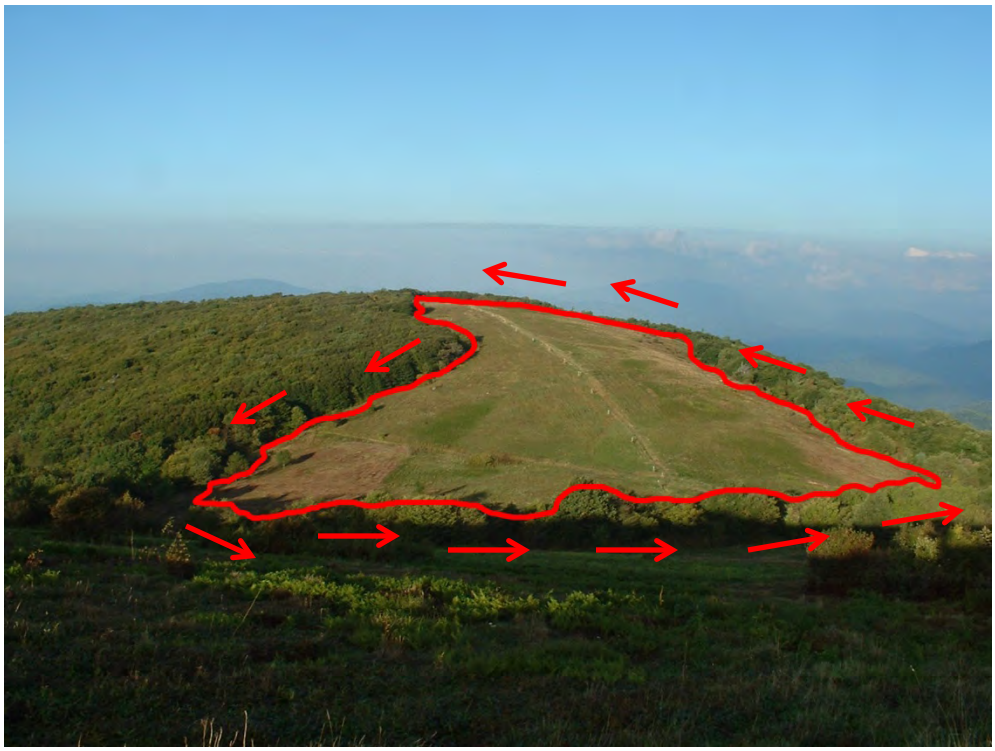
1. When you are ready to record a scenic vista extent, you will need to walk to one edge of cleared area before you begin recording data.



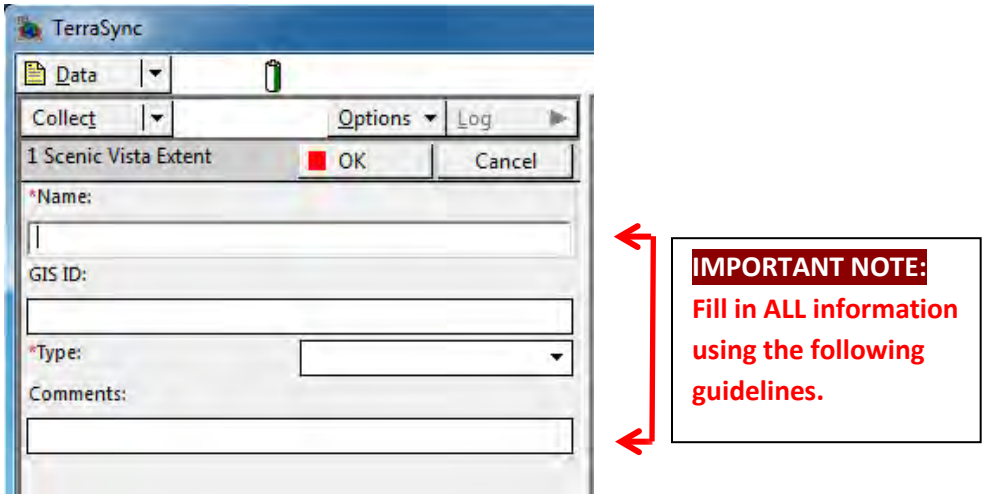
2. Select “Scenic Vista Extent” in the data dictionary, and then select “Create”.

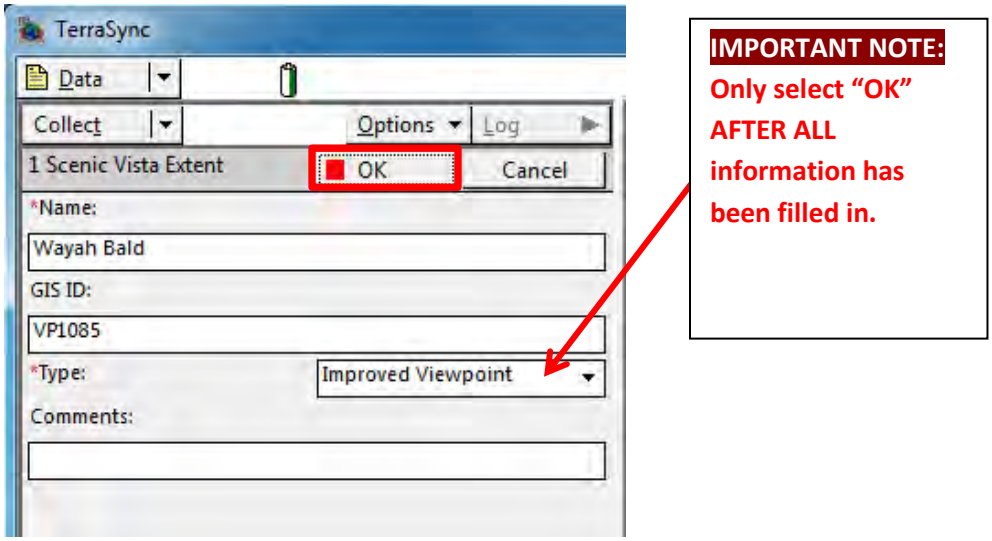


3. After you select “Create”, **immediately** begin walking. Try to walk as close to the outside perimeter of the scenic vista clearing as you can. Once you have return to the location where you started, **immediately** select “Pause” in TerraSync.



4. Now fill in the necessary information in the data dictionary for this feature.





5. Enter the **Name** of the scenic vista within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials or the scenic vista does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting data in the *Brink Road* maintainer section, you locate a scenic vista without a name. If this was the first scenic vista without a name in this section, you could list it as "*Brink Road Scenic Vista 1*" within the GPS Data Dictionary.

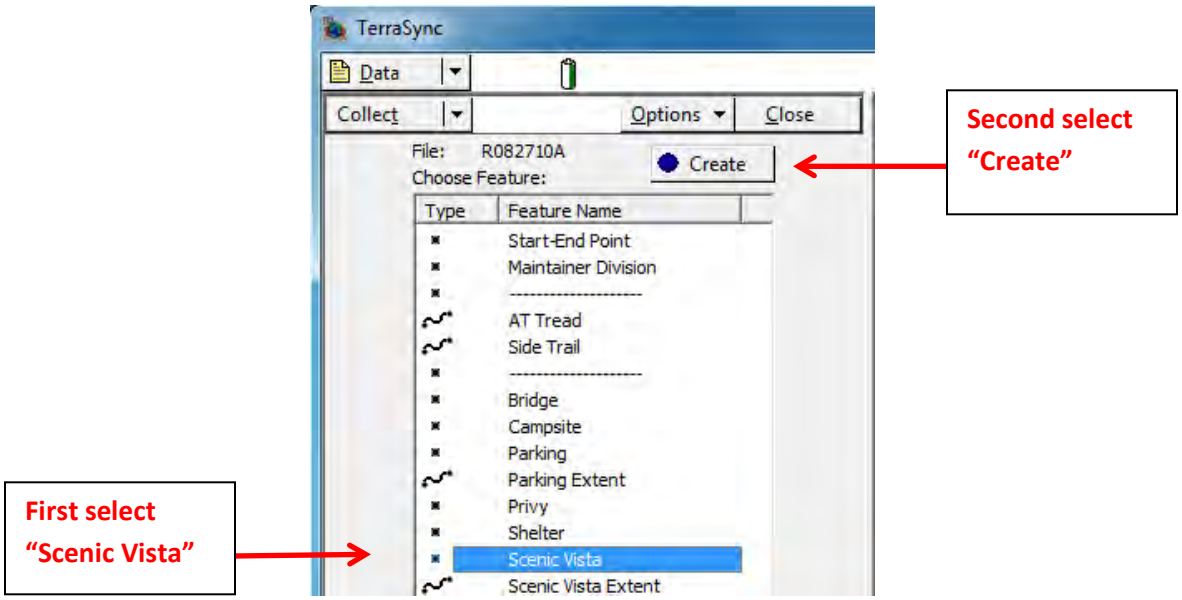
6. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

   IMPORTANT NOTE: There are no FMSS IDs assigned to Scenic Vistas yet, so you only have to enter the GIS ID.

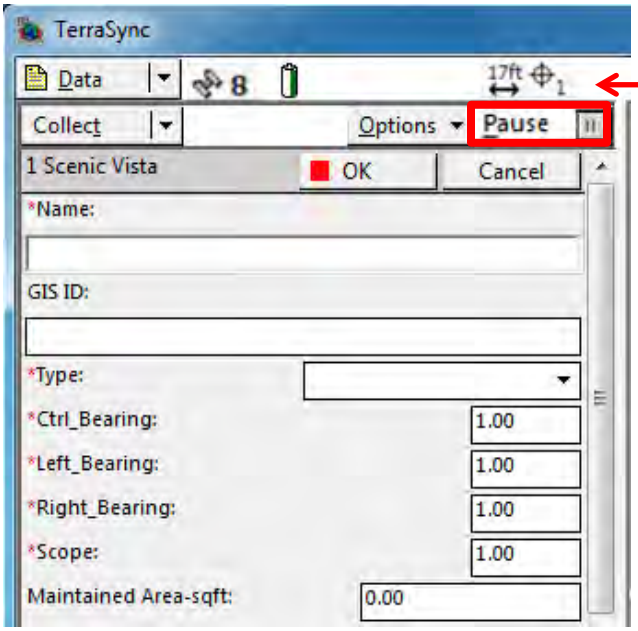
Collecting the Scenic Vista Point Location:

1. When recording the GPS point location of a Scenic Vista, try and stand in center of view, but back far enough from the edge to be safe.

2. Select "Scenic Vista" in the data dictionary and tap "Create".

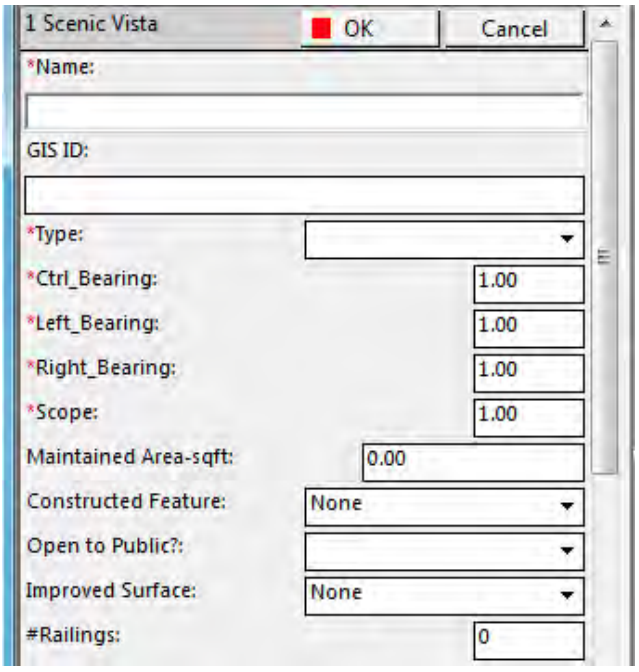


3. Record at least 30 points for the location. The number of points collected will be displayed in the upper right-hand corner of TerraSync. Once you have collected 30 points, select “Pause”.

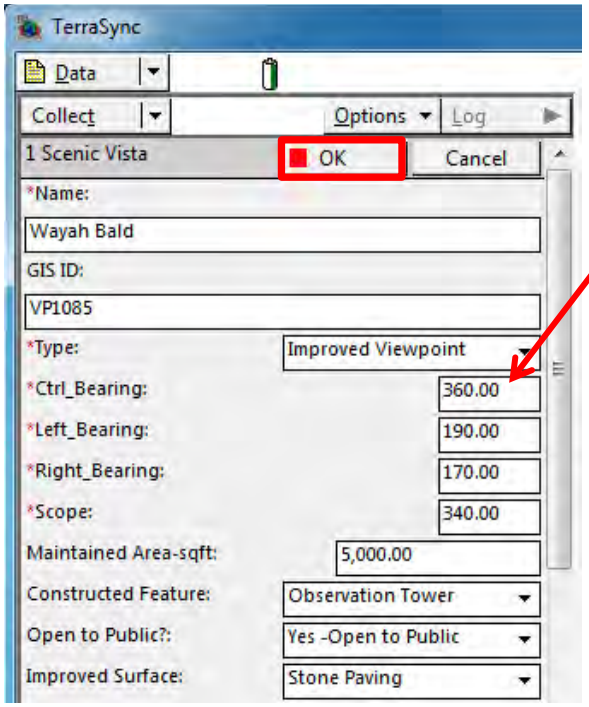


IMPORTANT NOTE:
Make sure you see at least 30 points before you select “Pause”

4. Once you have selected “Pause”, you can walk around and gather the necessary information and measurements.



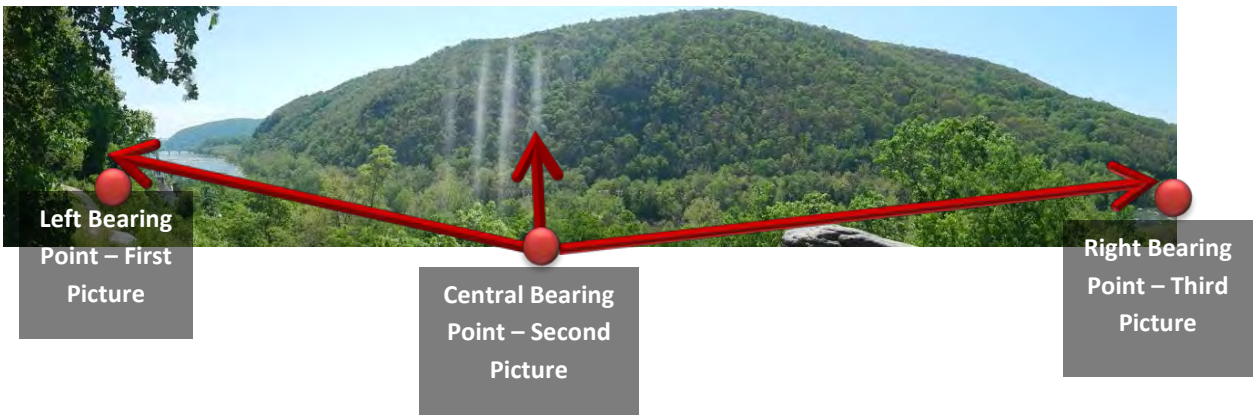
IMPORTANT NOTE:
Only select “OK” AFTER ALL information has been filled in.



IMPORTANT NOTE:
Remember to select "Pause", before filling in the information. Then, follow the procedures outlined in the methodology below for collecting ALL information

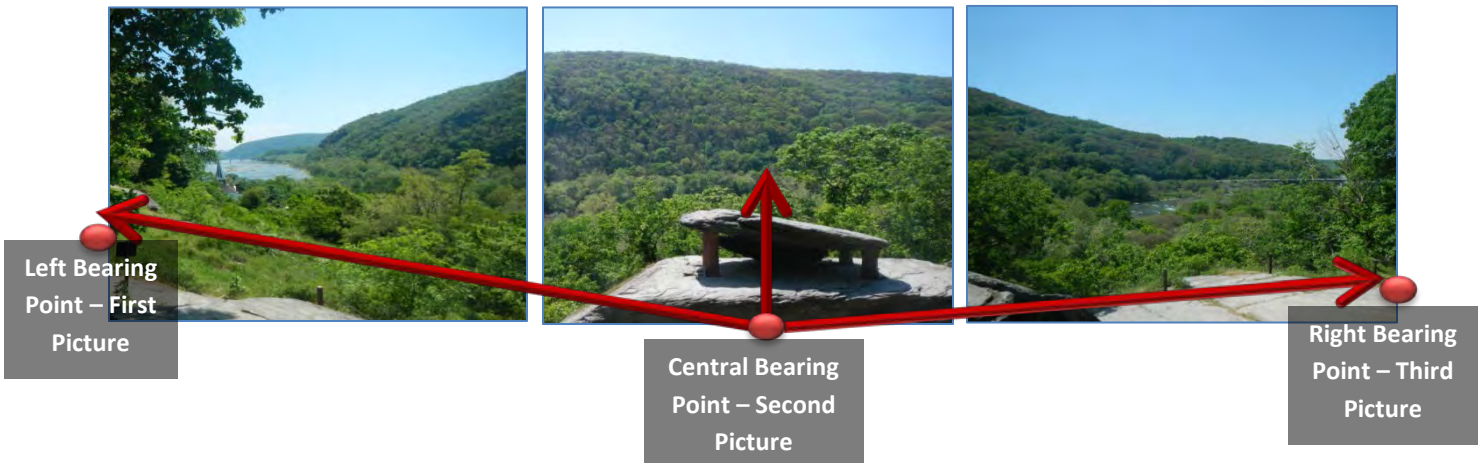
Taking pictures at scenic vistas, you have two options:

- **Option 1:** Take a panoramic picture of the Scenic Vista you are inventorying, using either the panoramic feature on a camera or a smart phone. Make sure you are standing at the Central Bearing point when you are taking the panoramic picture. Pan from the left side of the vista to the right side.



- **Option 2:** Take three pictures of the Scenic Vista you are inventorying – one from Central Bearing point, one from the Left Bearing point, and one from the Right Bearing point.

- Make sure you are standing in a safe location, far away from potentially hazardous areas, when you are taking pictures.



If you need to take more pictures, that's ok. Try and capture the associated features (signs, viewing platforms, fence, etc.) in the picture if possible, but you do not have to take pictures of the associated features themselves. Please see the Technical Office Guide for information about naming photographs. Stand far enough away from the Scenic Vista to capture the whole Scenic Vista in the picture, **as long as it's safe**. Depending on the Scenic Vista surroundings, you may have to stand above, level, or below eye level of the Scenic Vista to take a good picture.

5. Enter the **Name** of the scenic vista within the GPS Data Dictionary where is says "Name". Please refer to the Reference Materials provided as part of this project to determine the name. If a name is not listed on the Reference Materials or the scenic vista does not have a name, then please list the name based on the associated Maintainer Section name and the order that it is collected.

   Example: While collecting data in the *Brink Road* maintainer section, you locate a scenic vista without a name. If this was the first scenic vista without a name in this section, you could list it as "*Brink Road Scenic Vista 1*" within the GPS Data Dictionary.

6. For the **GIS ID**, please refer to the Reference Materials provided as part of this project and enter the corresponding ID number. If you can't locate a corresponding ID, please enter "Not Found" or "None".

   IMPORTANT NOTE: There are no FMSS IDs assigned to Scenic Vistas yet, so you only have to enter the GIS ID.

7. Select the appropriate **Scenic Vista Type** based on the view. Refer to the vista types below:

   Unimproved Viewpoint
   Improved Viewpoint
   Maintained Open Area
   Other

8. Record the **Central Bearing** (Ctrl_Bearing), **Left Bearing** and **Right Bearing** in the GPS Data Dictionary. Please record units in degrees (1 to 360). Please avoid using 0, as that leaves to confusion. If the bearing is pointing north, please enter 360 to indicate that.

9. The **Scope** or Field of View is the difference between the Left Bearing and Right Bearing represents. Please record that in the GPS Data Dictionary under "Scope".

10. Enter the estimated **total maintained area** in the "Maintained Area – sq. ft." entry in the GPS Data Dictionary.

11. Select the **Constructed Observation Feature** in the GPS Data Dictionary for the Scenic Vista you are inventorying within the GPS Data Dictionary. If you do not know, work with designated ATC staff or trail club volunteers to determine the appropriate selection. Refer to the observation features below:

    None **Observation Tower** **Fire Tower**
    Viewing Platform

    - Remember to check "Yes" or "No" to whether or not the observation structure is **open to the public**. If you do not know, work with designated ATC staff or trail club volunteers to determine the appropriate selection.

12. Select the predominant **Improved Overlook Surface** material associated with the Scenic Vista you are inventorying. Refer to the materials below:

None	**Asphalt**	**Concrete**
Decking (Wood/Composite)	**Gravel**	**Pavers (Non-Native)**
Stone Paving	**Other**	

13. Count and record the **number of Railings** that are associated with the Scenic Vista you are inventorying within the GPS Data Dictionary.

14. Measure the **length and height of the Railing** and record the measurement (in feet) within the GPS Data Dictionary. **IMPORTANT NOTE:** When recording measurements, remember to round to the nearest foot. (Example: *12 ft. 7 in. would be recorded as 13 ft.*)

To take the railing length measurement:

- Stand at one end of the railing and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length. Try to take the measurement between the two points (from one side to the other) that will capture the greatest length.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

To take the railing height measurement:

- Stand at the highest/tallest point of the railing. Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the railing. Read the measurement at top of the tape and record the height within the GPS Data Dictionary.

15. Select the predominant **Railing material** associated with the Scenic Vista you are inventorying. Refer to the railing materials below:

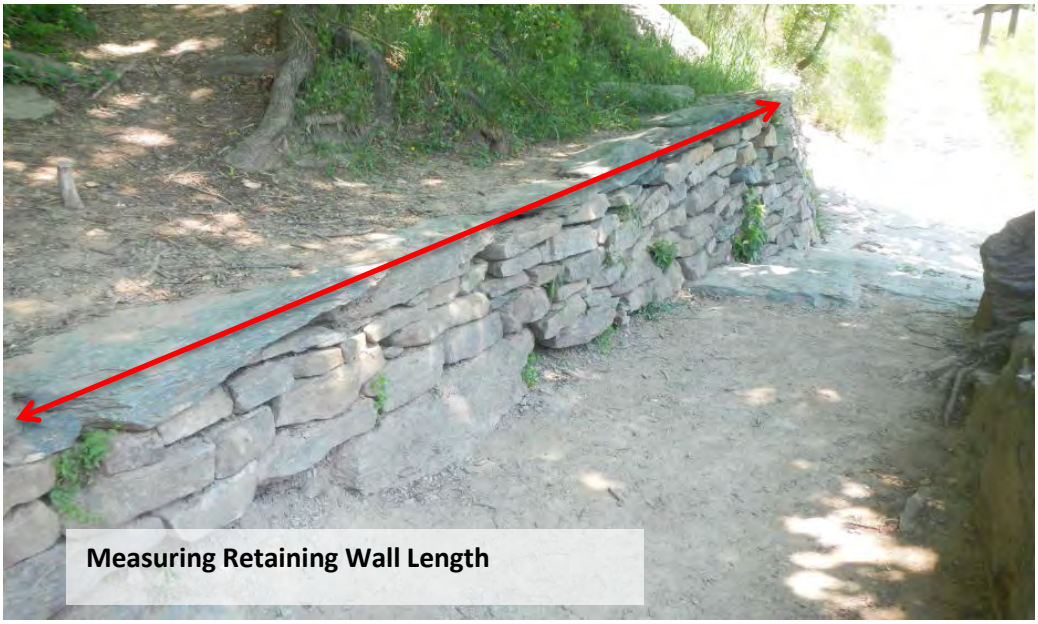
None	**Aluminum**	**Block/Brick**
Cable/Wire	**Composite Lumber**	**Concrete**
Dimensional Lumber	**Log**	**Plastic**
PVC	**Steel**	**Stone**
Other		

16. Count and record the **number of Retaining Walls** associated with the scenic vista you are inventorying within the GPS Data Dictionary. Make sure to record the total number of retaining walls, regardless of size, shape, and material type.

17. Measure the **length and height of the Retaining Walls** and record the square footage measurement (in feet) within the GPS Data Dictionary.

    To take the retaining wall length measurement:

    - Stand at one end of the retaining wall and, depending on what type of measuring device you are using (measuring tape, or measuring wheel), take the necessary steps to capture the length. Read the measurement and record the length (you can use scrap paper for this, later you will multiply with this measurement with the height).



Measuring Retaining Wall Length

To take the retaining wall height measurement:

- ***In the safest way possible***, stand at the highest/tallest point of the wall. Using a measuring tape (or comparable measuring device), hold one end of the measuring tape at the top of the railing and lower the unconnected, loose end to the bottom of the wall. Read the measurement at top of the tape and record the height (you will need this measurement to multiply with the length). Not all retaining walls are square, so it is important to try and capture the height from the highest point to make sure you are not underestimating the square footage of the wall. ***However, remember it is more important that you take this measurement from a safe location, even if it is not the highest point.***

Measuring Retaining Wall Height

- Once you have the measurements for both the retaining wall's length and height, multiply the two measurements together to determine the square footage of the wall. Record the square footage measurement (in feet) within the GPS Data Dictionary.

18. Select the appropriate **Retaining Wall Material** that will best describe the parking area you are inventorying. Refer to the retaining wall materials below: (Pictures/descriptions to be included in the final)

Aluminum	**Asphalt**	**Block/Brick**
Composite Lumber	**Concrete**	**Dimensional Lumber**
Gabion	**Log**	**Plastic**
Steel	**Stone**	**Other**

19. Count and record the **number of Signs** that are associated with the Scenic Vista you are inventorying within the GPS Data Dictionary. Signs should have a direct connection / contribution to the Scenic Vista. Make sure to record the <u>total</u> number of signs by type, regardless of size, shape, and material type. Refer to the associated signage options below:

Kiosk (Bulletin Board)

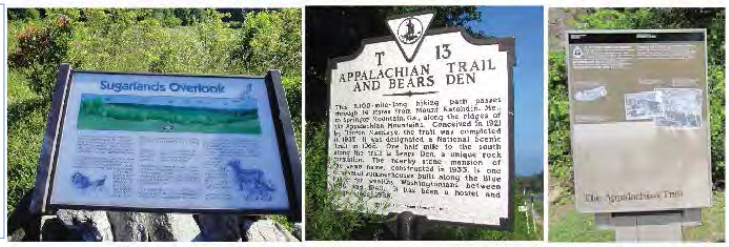
- Provide information (maps, announcements, etc.) in public areas, such as trailheads, shelters, and parking areas.

Directional/Wayfinding Signs

- Inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail.

Educational/Interpretive Signs

- Signs or exhibits that describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels.



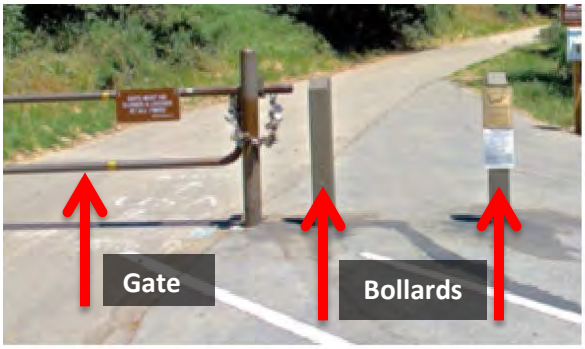
Identification/Entrance Signs

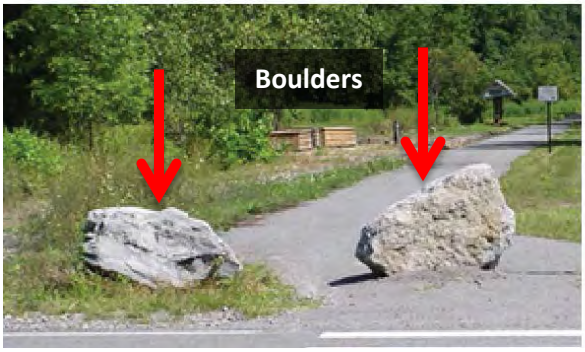
- Identification signs are typically short, basic labels or markers Typical signs include landmark signs, the AT diamond, and the AT elliptical triangle.

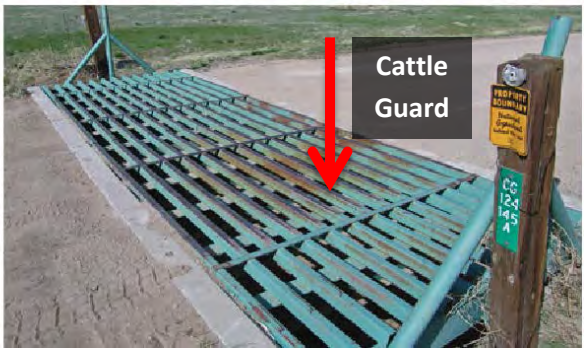
Regulatory/Safety Signs

- Signs that alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance.

20. Count and record the **number of Barriers** that are associated with the Scenic Vista you are inventorying. Barriers should be attached or have a direct connection / contribution to the Scenic Vista. **IMPORTANT NOTE:** Make sure to record the total number of barriers by type, regardless of size, shape, and material type. Refer to the associated barrier options below:







21. Count and record the **number of Fences** that are associated with the Scenic Vista you are inventorying. Fences should be attached or have a direct connection /contribution to the Scenic Vista.

22. Measure the **length of the Fences** and record the measurement (in feet) within the GPS Data Dictionary.

To take the fence length measurement:

- Stand at one end of the fence and, depending on what type of measuring device you are using (measuring tape or measuring wheel), take the necessary steps to capture the length, from one end to the other end. **IMPORTANT NOTE:** Remember to double the length measurement if there is an equal amount of fence on each side of the fence.

- Once you're at the other end, record the length measurement (in feet) within the GPS Data Dictionary.

23. Select the appropriate **Fence Material** that will best describe the Scenic Vista you are inventorying. Refer to the fence materials below:

None	**Barbwire/Slip Wire**	**Chain Link**
Split Rail	**Wire Mesh**	**Other**

24. Confirm that all of the **required photos have been taken** by checking "Yes". If you check "No", work with ATC to determine when the photos can be taken at a later date.

25. If you know the **Year Built** associated with the Scenic Vista you are inventorying, please enter the year within the GPS Data Dictionary. Often engineered Scenic Vistas will have the year posted adjacent to the Scenic Vista or on the Scenic Vista itself. If this information is not posted, enter in "Unknown", and work with ATC or designated volunteers to determine the year built, if possible.

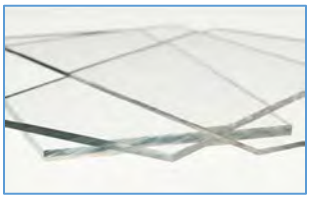
26. If you know the **Land Owner** (i.e. NPS, USFS, State, etc.) associated with the Bridge you are inventorying, please enter this information within the GPS Data Dictionary. (Please provide as much information as possible in regards to Agency, Bureau and Division - e.g. don't just say NPS or USFS, but NPS APPA, NPS Shenandoah, USFS George Washington-Jefferson NF New River District, Pennsylvania Game Commission State Game Land 217, Connecticut Department of Forestry Housatonic State Forest, etc.). If this information is not known, enter in "Unknown", and work with ATC or designated volunteers to determine the land owner, if possible.

“Do Not Inventory” List:

For this inventory, please do not collect features that are in the list below.

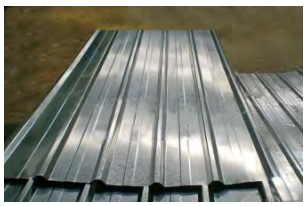
- Sleeping Platforms
- Bunks
- Carpet
- Shelter or Privy Foundations
- Basements
- Picnic Tables
- Benches
- Pavilions
- Swings
- Clothes Poles
- Lights – including solar ones
- Solar Panels
- Plaques/Monuments
- Bird Houses / Chicken Coups
- Weather/Monitoring Stations
- Side Hill
- Paper Signs or Unofficial signs
- Potted or Hanging Plants
- Showers (regular showers – don’t think there are any – or solar showers)
- Washing Machines or other appliances
- Plastic Fencing (also called drift, safety or snow fencing)
- Register Boxes
- Map/Brochure Boxes
- Trail Logs / Libraries
- Trail Counters
- Playground Equipment
- Dumpsters and Trash Cans/Bins
- Recycle Bins
- **Sidewalks (though surface is captured in line features)**

Trail Inventory Materials List:



***Acrylic**

Acrylic is a kind of plastic, fabric, fiber, or paint that's made from acrylic acid. Acrylic sheets are usually transparent plastic that resemble glass.



Aluminum

Aluminum is a relatively soft, durable, lightweight, ductile and malleable metal with appearance ranging from silvery to dull gray, depending on the surface roughness. It is nonmagnetic, making it ideal for windows, doors, siding, building wire, roofing, flashing, gutters, downspouts, wall panels, etc.

Asphalt

Asphalt is a mixture of dark bituminous pitch with sand or gravel, used for surfacing roads, flooring, roofing, etc.

Board and Batten

Board and batten siding consists of wide boards laid vertically with narrower strips of wood, called battens, covering the gaps. The wide boards can vary, but they are often around eight inches in width.

Block

Blocks come in many sizes and are typically placed in rows called courses. The most common blocks are cinder concrete (cinder blocks), ordinary concrete (concrete blocks), or hollow tile are generically known as Concrete Masonry Units (CMUs).

Brick

A brick is a block or a single unit of a kneaded clay-bearing soil, sand and lime, or concrete material, fire hardened or air dried, used in masonry construction. Typically, rows of bricks — called courses — are laid on top of one another to build up a structure such as a brick wall.

Chain-link Fence

A chain-link fence (wire-mesh fence or chain-wire fence) is a type of woven fence usually made from galvanized or steel wire. The wires run vertically and are bent into a zig-zag pattern.

Clapboard Siding

Clapboard, also known as bevel siding, lap siding or weatherboard, is typically made from wooden wedge-shaped boards which are designed to overlap with each other.

***Clay**

Clay is a stiff, sticky fine-grained earth, typically yellow, red, or bluish-gray in color and often dried and baked to make bricks, pottery, and ceramics. Clay can be occasionally used to make roofing tiles.

Composite (Recycled) Lumber

"Lumber" planks and rails made from recycled plastics or plastic-wood composites are carefully engineered to same dimensions so warping and knots are virtually eliminated.

Concrete

Concrete is a heavy, rough building material made from a mixture of broken stone or gravel, sand, cement, and water, that can be spread or poured into molds and that forms a stone-like mass on hardening.

Corrugated Metal

Corrugated metal is typically a structural sheet, usually galvanized, shaped in parallel furrows and ridges for rigidity (looking similar to rippled potato chips). Corrugated metal siding and roofing is commonly made from aluminum or steel.

Dimensional Lumber

Dimensional lumber is lumber that is cut to standardized width and depth specified in inches. This type of lumber is sawn, planed, and prefabricated for building applications (i.e., 2"x4"'s, 4"x4"'s, etc.).

Dirt (Native Soils)

Dirt is loose soil or earth, also known as the ground typically found on site. It can be compacted to create treadway, roads, floor, walls, dams, and berms.

Fencing - Wire (Barbwire/Slip Wire)

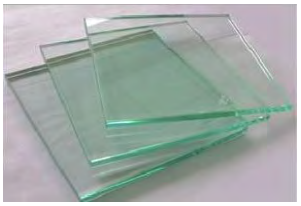
Wire is typically for fencing or gates, and is supported mainly by tension being stretched between posts for metal frames. Between these braced posts are additional smaller wooden or metal posts. Traditionally, wire fencing material is made of galvanized steel.

Fiberglass

Fiberglass is a reinforced plastic material composed of glass fibers embedded in a resin matrix. Applications of fiberglass include bath tubs and enclosures, septic tanks, water tanks, insulation, roofing panels, pipes, and wall paneling.

Gabion Stone

Gabion stone is typically between 3 inches to 5 inches in diameter; commonly used in gabion baskets to make walls and along ditches to prevent erosion.



Glass

The main use of glass in buildings are facades and windows, however some materials that look like glass might actually be plastic (polycarbonate) or acrylic “Plexiglas”. Glass is also used in light fixtures and other ornamental features.

Grass

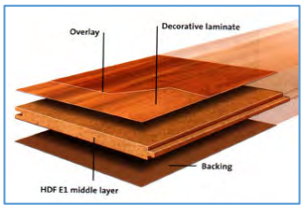
An area dominated by native or cultivated grass and other herbaceous plants, including wild flowers, rushes, and sedges. Grassy areas should be generally free of woody species.

Gravel (Base Rock/Fill, Aggregate)

Gravel is coarse granular aggregate, larger than sand; formed either naturally or by crushing rock. Loose aggregation consists of small water-worn or pounded stones, often between ¼ inch and 1 inch.

Iron (Cast Iron)

The most commonly recognized color of iron is a black to silvery gray color. Wrought iron can be used for seating, railings, fences, gates, and other decorative purposes, while cast iron can be used in door knobs, plumbing fixtures, pipes, and other smaller features.



***Laminate**

A laminated structure or material is made of layers fixed together to form a hard, flat, or flexible material. Common laminated materials include tile flooring, countertops, and cabinets.

Lexan (Polycarbonate or PC)

Lexan is a transparent plastic (polycarbonate) of high impact strength and has excellent UV resistance. Commonly used in windows, this polycarbonate has better light transmission than many kinds of glass.

*** Mulch**

Organic mulch is a material (such as decaying leaves, bark, or compost) spread around to enrich or insulate the soil. Mulch can be used to reduce weeds and erosions in high use areas.

Native Stone Pavers

Native stone pavers are relatively flat stones installed tightly together, with small bits of crushed stone, stone or mortar between the gaps. Native stone pavers are used as treadway and other outdoor platform surfaces. Flagstone is included in this category.

Native Wood/Timber

Native Wood/Timber refers to untreated hardwood and softwood material that has been collected and fabricated onsite and used to build several types of rustic structure; reflects typical tree species found locally.

Non-native Pavers

Non-native pavers are paving-stone, -tile, -brick or brick-like pieces of concrete used as treadway surface in front country sections of the AT. Non-native pavers can also be used to make roadway, driveway, patio, walkway and other outdoor surfaces.

Paint

Paint is used to decorate, protect and prolong the life of natural and synthetic materials, and acts as a barrier against environmental conditions. (See *Shelter Inventory Summary* and *Privy Inventory Summary* sections for more images.)

Parking Area Striping - Traffic Paint

Traffic paint is a thin layer of blended material, generally used to mark travel lanes and parking spaces. Colors for these applications are typically white and yellow.

Parking Area Striping - Thermoplastic Marking Paint

Thermoplastic marking paint is typically thicker than normal traffic paint, and has a higher number of reflective glass beads than normal traffic paint. This paint is typically white or yellow.

***Plaster**

Plaster is a soft mixture of lime with sand or cement and water for spreading on walls, ceilings, statues, or other structures to form a smooth hard surface when dried.

Plywood (T1-11 Siding)

Plywood is a type of strong, thin wooden board, consisting of two or more layers glued and pressed together with the direction of the grain alternating, and usually sold in sheets of four by eight feet. T1-11 plywood is a common siding choice for shelters and privies. The 4-by-8-foot, 5/8-inch plywood or OSB siding sheets come with a solid or grooved surface, and has a textured surface that allows it to blend unpretentiously with rustic surroundings.

PVC

Polyvinyl chloride (PVC) comes in two basic forms: rigid (sometimes abbreviated as RPVC) and flexible. The rigid form of PVC is used in construction for pipe, doors, and windows. The flexible PVC is used in plumbing, electrical cable insulation, signage, and many applications where it replaces rubber.

Rip Rap

Rip rap (also known shot rock, rock armor, or rubble) consists of medium to large angular rocks, typically between 7 inches and 20 inches in diameter. Rip Rap is commonly used in scree erosion and traffic control and junk walls along the side of the trail.

Screen

A screen is a barrier made of connected strands of metal, fiber, or other flexible/ductile materials. It is similar to a web or a net in that it has many attached or woven strands, and commonly used on doors, gates, or windows at shelters and/or privies.

***Slate**

Slate is a fine-grained gray, green, or bluish metamorphic rock easily split into smooth, flat pieces. These pieces are commonly made into roofing slates.

Stain

A stain will color a material or object, such as wood, by applying a penetrative dye or chemical. Stain can also act as a barrier against environmental conditions. (See *Shelter Inventory Summary* and *Privy Inventory Summary* sections for more images.)

Steel

Steel is a hard, strong, gray or bluish-gray alloy of iron with carbon and usually other elements, used extensively as a structural and fabricating material. Steel is also used on roofs and as cladding for exterior walls.

Stone

Stone is the hard, solid, nonmetallic mineral matter of which rock is made, especially as a building material. Stone has numerous structural and decorative uses, such as seating, columns, piers, walls, walkways, drainage structures, monuments/memorials, and statues.

***Stucco**

Stucco or render is a material made of an aggregate, a binder, and water. It is used as decorative coating for walls and ceilings, covering less visually appealing construction materials such as metal, concrete, cinder block, or clay brick and adobe.

Tile

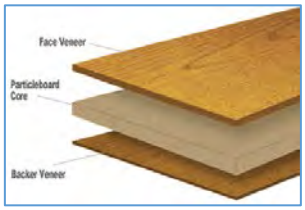
A tile is a manufactured piece of hard-wearing material such as ceramic, clay, stone, metal, or even glass, generally used for covering roofs, floors, walls, or other objects.

***Tin**

The uses of tin fall into two categories: the alloying of tin with other metals such as copper to form bronze, and the coating of tin on harder metals, such as tinplated iron or steel. Today, tinplate (also known as "tin roof") is still used for roofing and flashing and ornamental features.

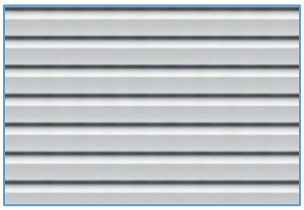
Vegetation

Vegetation is defined as the assemblages of plant species and the ground cover they provide; generally low growing. These plants can be found in drainage channels, along trail edges, and/or used to absorb storm water run-off from adjacent parking areas and roadways.



***Veneer**

A veneer wall consists of masonry units (usually bricks) or decorative wood installed on one or both sides of a structurally independent, load bearing wall usually constructed of wood or masonry. Veneer walls are primarily used for their appearance.

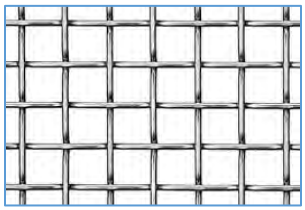


Vinyl

Vinyl is primarily used as wall and floor coverings, gutters, downspouts, single-ply roofing, and window frames.

Wall Paneling

Paneling is typically wood or plastic panels collectively, when used to decorate a wall. Paneling is typically found in more formal structures.



Wire Mesh

Wire mesh are connected strands of metal, fiber, or other materials that are typically woven, welded, or crimped together to create fence or barrier. There are various gauges of wire that can be used, and the opening spacing can vary depending on the type of wire mesh.

Trail and Structure Features List:

For pictures or examples of each trail and/or structure feature, please refer to the corresponding section of the Field Manual (i.e. Pictures of shelters can be found in the Shelter Inventory section)

Barrier
Structural barriers are man-made devices to define boundaries, delay or prevent access, restrict movement to a particular area, or obscure visual observation into or from an area.

Bike Rack
Bicycle stand – a stationary fixture to which a bicycle can be securely attached (typically using a bicycle lock) to prevent theft.

Boardwalk
A boardwalk or boarded path is an elevated constructed pedestrian walkway along, usually built with wood, to serve as treadway over bogs and wetlands and other fragile ecosystems. Piles (see *Bridge Substructure*) can be used underneath the boardwalk to keep it from sinking in extremely wet or muddy areas.

Bollard
A bollard is a short, vertical post used to divert traffic from an area or road. These structures are often concreted to the ground or held in by pins to make them removable.

Boulder
In common usage, a boulder is too large for a person to move unaided by machinery. While a boulder may be small enough to move or roll, others are extremely massive.

Bridge
A bridge is a structure spanning, and providing passage over a river, ravine, road, railroad, or other obstacle. Bridge types along the AT range from simple, single unit foot bridges with native soil embankment abutments to complex engineered bridges with constructed abutments. Some bridges can be inspected by ATC staff or volunteers, while others require cyclic engineer led inspections. Puncheon, boardwalk, and other like trail structures not included in this category.

Bridge Abutments
Abutments are used at the ends of bridges to retain the embankment and carry the vertical and horizontal forces from the superstructure. They could be designed as retaining walls (single span bridges) or piers (multi-span bridges).

Bridge - Arch
An arch bridge has abutments at each end shaped as a curved arch. Decks are supported by longitudinal beams or walls that are supported by one or more arches. Typical materials include brick, stone, and concrete.

Bridge - Culvert
Culvert bridges typically span short distances and run perpendicular to the trail. These bridges are often formed with dirt and rocks are compacted over the top of a culvert.

Bridge Decking
A bridge deck is the roadway or the pedestrian walkway surface of a bridge; typically pavement, steel grate, wood, or composite lumber. The concrete deck may be supported with I-beams or steel girders (floor beams).

Bridge - Deck Girder (**Simple Beam/Stringer)**
This bridge is supported by two or more longitudinal girders (beams), with wood or composite deck boards set across the top, perpendicular to the girders. Beams, typically log or steel (iron), are supported by an abutment or pier at each end. Typical span is 10 to 40 feet.

Bridge - Deck Truss
This bridge is supported by two or more longitudinal trusses, with deck boards set across the top, perpendicular to the trusses. Common truss materials include timber, steel, and fiberglass.

Bridge - Prefabricated
Prefabricated bridge components or entire bridges are pre-engineered and built off site and transported to their final location. Steel is probably the most common type of prefabricated bridge used throughout the United States; however, composite material has become popular for smaller pedestrian bridges.

Bridge - Rigid Frame
A Rigid-Frame Bridge is a bridge in which the superstructure and substructure are rigidly connected to act as a continuous unit. Typically, the structure is cast monolithically, making the structure continuous from deck to foundation.

Bridge - Side Truss
Side truss or pony truss bridges are supported by two longitudinal trusses, one on each side. The deck (usually timber plank, but may be concrete, steel, or fiberglass) is hung on the interior of the trusses. A-Frame bridges are also included in this category, but less common.

Bridge - Side Girder
A side girder bridge is supported by two longitudinal girders (beams), one on each side. The deck, usually timber plank, is hung on the interior of the girders. Common girder materials include logs, timber, and steel.

Bridge - Single Unit
A single unit bridge is a single, self-supporting unit, such as a foot log, a stone slab, a reinforced-concrete slab, or a wood plank across a stream; typically used for short-span crossings between 10 and 20 feet.

Bridge Substructure (Piles/Piers)
A bridge pile is a structure which is hammered or screwed into the soft soils beneath the bridge until the end of the pile reaches a hard layer of compacted soil or rock that will support the load of the bridge deck. Piles or piers may be timber or log cribbing or piles, helical piles, stone masonry, or concrete.

Bridge Superstructure
The superstructure of a bridge is made up of the portion of the bridge built on top of the substructure and supports the bridge deck. Superstructure items include beams, girders, deck surfaces, the bridge barriers, median slabs, sidewalks, etc. In contrast, the abutment, piers, and other support structures are called the substructure.

Bridge - Suspension (Cable)
Suspension bridges decks are hung from suspender cables (suspension) or supported by two main cables (deck cables) anchored into the bank. Longer bridges can have intermediate towers or a stiffening truss; however typical trail bridges do not.

Campsites and Tent Sites (Designated)
Designated campsites are one or more tent sites that contribute directly to the AT and may provide fire rings, earthen or constructed tent pads, food storage (i.e. animal resistant boxes, poles, etc.), privies, and non-potable water sources. Shelters are often found near campsites; however showers, electricity, and potable water sources are not typically provided. For this inventory, collect campsites that are maintained by AT volunteers or staff, and funded by APPA for their construction and maintenance activities, regardless of land ownership. Do not collect user created or undesignated campsites or tent sites. Work with the appropriate ATC staff and volunteers to determine which campsites and tent sites are designated.

Campsite /Tent Site – Single or Double
A tent site is a relatively flat, level dirt or grass area, typically free of roots and rocks, for visitors to pitch tents. They are unimproved other than clearing the area of rocks and sticks.

Campsite / Tent Site - Group
A group campsite is designated site that accommodates multiple tent sites, tent pads, and/or tent platforms. These sites have been evaluated to show that they accommodate a designated group size without damaging the resource.

Campsite / Tent Pad
A tent pad is a structure used to place a tent on, typically constructed as a frame and then filled in-between the walls with sand, soil, gravel, etc. However, some tent pads are just a hardened earthen pad without framing.

Campsite /Tent Platform
A tent platform is an elevated wooden decked platform surface for visitors to pitch a tent or tents.

Cattle Guard
A cattle guard is a metal grid covering a ditch, allowing vehicles and pedestrians to pass over but not cattle and other animals.

Check Dam/Step
A check dam or step is a log or row of rocks perpendicular to a gullied fall line trail, embedded in both banks, to slow the rate of water erosion. They typically only hold materials in place at grade, never gaining elevation above existing grade.

Chimney
A chimney is a vertical channel or pipe, typically stone or metal, that conducts smoke and combustion gases up from a fire, typically through the roof or along the side of a building.

Corduroy
Corduroy is the technique, rarely used today, of building a boardwalk that lies on the ground to provide access through wetlands. Essentially, sill logs or beams are placed on the ground running perpendicular to the trail. Tread logs or half logs are then placed running parallel to the trail on the sill logs. Tread logs are installed of differing intervals mimicking a corduroy stitching pattern. The logs are spiked or pinned to the stringers, establishing an elevated tread surface.

Culvert
Culverts are typically hollow structures for draining water across a trail or a road. Natural culverts have been built using dimensional lumber or hollow logs and with rock, while industrial culverts are usually made with concrete, galvanized steel, aluminum, or plastic.

- **Arch Culvert**
- **Box Culvert**
- **Oval Culvert**
- **Round Culvert**
- **Timber Culvert**
- **Open Culvert**

Curb Barrier (Toe Rails)

Roadway curbing is typically a concrete border or row of joined stones forming part of a gutter along the edge of a street. Bridge curbing or toe rails are typically low wood rails, approximately 3 to 6 inches above the top of the bridge deck, that run parallel on each side of the bridge.

Door

A door is a moving structure used to block off, and allow access to, an entrance to or within an enclosed space, such as a shelter or a privy.

Drainage Dip (Swale)

A drainage dip is a broad, gradual excavated trail feature to shed water off the trail at regular intervals to prevent tread erosion by interrupting the normal grade of a section of trail. Soil excavated is mounded and compacted down the trail from the dip. Ideally, drainage dips are 15-30' long and 8-12" deep.

Drainage Ditching/Channeling

A long narrow trench or channel dug in the ground typically used directed water flow to areas where runoff can be dispersed and filter back into the ground.

Fence

A fence is typically a barrier of wood or wire, enclosing an area of ground to mark a boundary or control access.

Fire Rings

A fire ring is a construction or device used to contain campfires and prevent them from spreading and turning into wildfires. A fire ring is designed to contain a fire that is built directly upon the ground, such as a campfire. For this inventory, only count the fire rings made of metal and mortared stone or block/brick.

Food Storage (Bear Boxes, Bear Cables, and Bear Poles)

Bear-resistant food storage containers are usually hard-sided containers used by backpackers to protect their food from theft by bears, especially in areas where bears have become habituated to human presence. Bear cables are wire cable systems that run horizontally between two trees with half-dozen wire loops that run from this cable to the ground. Bear poles are vertical metal poles set in the ground with hooks welded to the top on which to hang food bags.

Flooring

Flooring is a term to generically describe any finish material applied over a floor structure to provide a walking surface.

French Drain (Underdrain, Cross Drain)
A French drain is an excavated cross drain that has been filled with rocks or gravel to the level of the trail tread, with enough open space among the rocks to redirect surface and ground water across the trail. When used to drain muddy areas, these drains may be wrapped in geotextile and/ or underlain with perforated drain pipe.

Gabion
Gabions are rectangular wire baskets, usually of zinc-protected steel (galvanized steel) that are filled with fractured stone of medium size. These will act as a single unit and are stacked with setbacks to form a revetment or retaining wall.

Gate
A gate is usually a hinged barrier used to close an opening in a wall, fence, or hedge. Gates are typically swung, drawn, or lowered to block an entrance or a passageway.

Grate
Grates are structures at the drainage inlets, designed to block large debris while still allowing water to pass through. Typically they are round, square, or rectangular.

Guardrail
Guardrail, sometimes referred to as guide rail or railing, is a system designed to keep people or vehicles from straying into dangerous or off-limits areas. Guardrails are generally required by code where there is a drop of 30" or more.

Gutter
A gutter is a shallow trough, typically made out of wood (logs or dimensional lumber), vinyl, or metal, fixed beneath the edge of a roof for carrying off rainwater. Gutters can be found at shelters and privies. Gutters are shallow troughs fixed beneath the edge of a roof to carrying off rainwater.

Ladder
A ladder is a structure consisting of a series of bars or steps between two upright lengths of wood, metal, or rope, used for climbing up or down something.

Metal Rung
Metal rungs are typically placed on rock faces or ledges to provide ladder-like access in steep terrain.

***Parapet (Knee Wall)**
Parapets or knee walls are low structures typically used to prevent people from falling off where there is a drop. Examples of parapets are low concrete walls or steel rails along bridges, a low wall of stone or wood on a bridge, or an elevated earthen wall on the outer edge of a trench.

Parking Area and Pull-off (Designated)
Designated parking areas contribute directly to the AT. Examples include trailhead parking, scenic pull-offs and overlooks, and ATC headquarters, regional offices, and other official locations (e.g. Kellogg Center). For this inventory, collect parking areas that are maintained by AT volunteers or staff, and at least partially funded by APPA for their construction and maintenance activities, regardless of land ownership. Do not collect user created, roadside shoulders, and other "undesignated" parking areas. Work with the appropriate ATC staff and volunteers to determine which parking areas are designated.

Parking Area / Pull-off - Engineered
Engineered parking areas and pull-offs typically have a paved or gravel surface, and may have ADA parking spaces, signage, kiosks, bike rack, drainage grates, parking space striping, wheel stops, and other features found in developed/planned parking locations.

Parking Area / Pull-off - Minimally Improved
Minimally improved parking areas and pull-offs exhibit basic or minor improvements such as gravel, fencing or barriers, and/or signage. These parking areas do not have the same level of improvement or developed and planned features that are present at engineer parking areas.

Parking Area / Pull-off - Unimproved
Unimproved improved parking areas exhibit no site improvements and no features have been established. An example would be a dirt or grass parking area without a fence or AT signage.

Parking Area / Pull-off - Roadside Shoulder
A road shoulder is usually slightly narrower than a full traffic lane and typically not used by moving traffic. Shoulders should be used as emergency or temporary parking, and should not be considered as parking areas. Do not include user-created roadside shoulder parking areas as part of this inventory.

Pavement Marking
Pavement markings are lines, symbols, or words painted on a paved surface to help guide, warn, or regulate drivers. Typical pavement markings include arrows, crosswalks, stop bars, lettering, parking space striping, and ADA parking symbols.

Privy
A single privy is a toilet located in a small shed outside a house or other building. A double or multi-seat privy is composed of two or more adjacent or connected single privies. A chum privy is typically a hole dug in the ground to contain waste, with a seat on a riser or small platform, without an associated enclosed structure. These privies are typically made out of logs, plywood, or dimensional lumber, but they can also be prefabricated.

Privy - Vault Toilet
Vault toilets are common backcountry solutions for sites with drivable road access. Waste materials are stored in a contained/sealed underground vault that must be emptied periodically with a pump truck.

Privy - Clivus Multrum (Cool Composting)
The Clivus Multrum is a self-contained, waterless and odorless toilet treatment system. It uses no chemicals, heat or water and has no polluting discharge. "Clivus" is Latin for incline or slope; "multrum" is a Swedish composite word meaning "compost room," thus a "Clivus Multrum" is an inclining compost room.

Privy - Pit
A pit is typically a hole dug in the ground to contain waste, with a seat on a riser or small platform or a complete enclosure.

Privy – Moldering (Cool Composting)
Moldering or cool composting is commonly an above ground crib system allowing the material to decompose in a cool environment, over a long period of time.

Privy - Hot Composting
Hot composting or thermophilic bin systems use high temperatures to break down waste in a short time frame. These systems typically use sawdust or leaves to increase microbiological activity.

Puncheon / Bog Bridge
A puncheon or bog bridge is a wooden walkway or flattened logs that bridge muddy terrain. Typically, they consist of a series of short-span footbridges supported by a foundation of horizontal sleeper (sill) logs or timbers.

Ramp
A ramp is a slope or inclined plane for joining two different levels, as at the entrance or between floors of a building (i.e. shelter or privy). Ramps are commonly made out of wood (logs, dimensional lumber, and composite lumber), metal, and dirt/soil.

Railing
Railings are typically structures designed to provide support, such as a handrail on a staircase or a bridge. Chains and cable railings are included in this category.

Retaining Wall/Cribwall
Retaining/Cribwalls are structures that typically hold or retain materials behind them. Retaining walls are commonly made out of concrete blocks, poured concrete, brick, native logs or timber, dimensional lumber, rock or boulder, etc. Cribwalls are typically constructed from wood logs or rocks, and are backfilled with free draining material, like rocks and soil.

Scenic Vista
A vista is a location with a view or panoramic scene. It's what you stop to see when you climb to the top of a mountain, or pull off the road at a "scenic view" overlook. These views include, but are not limited to, parklands, prime farmlands, wetlands, wild and scenic rivers, woodlands, and other landscapes and viewpoints. Common scenic vistas along the trail include unimproved viewpoints, improved overlooks, and maintained open areas.

Scenic Vista - Unimproved Viewpoint
An unimproved viewpoint exhibits no site improvements and requires no routine maintenance. Examples include naturally open areas with low or little vegetation.

Scenic Vista - Improved/Maintained Viewpoint
Improved viewpoints often have site features such as a viewing platform or observation tower, guard wall, or railing. Formal scenic viewpoints with railing, pull-offs, and parking areas are should be included in this vista type. These viewpoints are also called “Improved Overlooks” in some areas.

Scenic Vista - Maintained Open Area
Maintained open areas exhibit a scenic quality that directly contributes to the AT. These landscapes are typically mown periodically and offer scenic views near or within the AT corridor. Examples include Max Patch in North Carolina and Bartlett Field in Vermont.

Scree
A scree or junk wall consists of medium to large angular rocks (rip rap) loosely (or ideally carefully) placed/stacked on an unstable slope to slow erosion. In trail work, riprap may be placed adjacent to steps or check dams on the sides of gullied tread, or to stabilize tread back slope or downslope or to confine the impact of traffic.

Shelter
A typical shelter, sometimes called a “lean-to,” has an overhanging roof, a wooden floor and three or four walls. Four-sided structures can have doors and windows, but are not typically as formal as cabins. Three sided structures are open to the elements on one side but will usually keep you dry.

Sign – Blaze Post
Blaze posts are typically wooden posts (i.e. 4x4 posts) with a white or blue blaze painted on it. These posts vary in dimension and material, and the blaze may vary in color, depending on the associated trail.

Sign - Directional/Wayfinding
Directional signs inform visitors about the route ahead of them, by listing the direction, destinations and distances along the trail. These signs are generally posted at trailheads, intersections with side trails, or shelters/campsites.

Sign - Identification/Entrance
Identification signs are typically short, basic labels or markers that identify the resource or place by name, and may list supplementary information like trail features. Typical signs include plant identification signs, international symbols, the AT diamond, and the AT elliptical triangle. This includes entrance signs, which alert visitors that they are entering the AT corridor and describe prohibited activities based on land managers guidance. Examples include river or road crossings, trailhead signs, campsites signs, and parking area signs.

Sign - Interpretive/Education
Interpretive signs or exhibits describe interesting natural/cultural features, historic events, or environmental concerns. This includes wayside signs or panels that display interpretive information specific to the AT.

Sign - Kiosk (Bulletin Boards)
Kiosks are typically structures in public areas used for providing information. These structures can be found at trailheads, parking areas, and shelters and are commonly made of metal (vandal resistant), logs, or dimensional lumber. Kiosks may also have map boxes. For this inventory, bulletin boards are included in the Kiosk category.

Sign - Regulatory/Safety
Regulatory signs carry the weight of the law behind them in areas where camping, vehicular traffic, and other activities are prohibited or restricted. Most regulation signs are standardized and need little or no tailoring for the location. Safety signs include, but are not limited to, emergency assistance information, leave no trace, water treatment advisories, and safety precautions.

Skylight
A skylight is a roof structure, with a perimeter frame supporting the light-transmitting portion, typically made primarily of fiberglass or plexiglass; a space for daylighting purposes.

Step (Single)
A step is a flat surface, especially one in a series, on which to place one's foot when moving from one level to another.

Steps [Multiple (Stairs / Stairways)]
Stairways or staircases are a collection of multiple running steps that lead from one level to another gaining elevation, and can include landings, posts, and railings. They are typically constructed with rocks or logs, dimensional lumber, composite lumber, concrete, etc.

Step Stone
Step stones are typically flat, carefully selected and placed large stones that allow hikers to safely cross a stream or frequently wet area by stepping from one stable surface to the next. Step stones may be submerged under water at certain times of the year.

Stile
A stile is an arrangement of steps or ladders that allows people, but not livestock, to climb over a fence or wall. Pass-through stiles are an opening in a fence that allows people, but not livestock or vehicles, to pass.

Storage Box
Storage boxes can be found at shelters and privies, as well as along the Trail. These boxes typically hold trail maintenance equipment (i.e. tools, hard hats, safety glasses, etc.) or mulch/leaf debris/duff to be used at the privies.

Structural Ruins and Remnants
Structural ruins along the Trail include remnant foundations, walls, chimneys, or other built features. Typically made of brick or stone, these structural vestiges may no longer have a practical purpose, but could still be considered important for their architectural, historical, or cultural significance. Currently, we are not collecting these structures as part of the trail inventory process.

Trail - AT Main Treadway
The main AT treadway runs along a well-established white blazed route, from Georgia to Maine. The 2 x 6 inch white blazes typically appear on trees but can appear on telephone poles, rocks, fence posts, and guardrails. All supporting trail features will be collected as part of this inventory, including steps, waterbars, and retaining wall.

Trail - AT Side and Connecting Trails
All side trails that are designated spur trails and connecting (access/alternative route) trails: have well-established blaze markings; have typical trail supporting features such as steps, waterbars, and retaining walls; are routinely maintained by AT volunteers or ATC staff; receive any sort of funding from APPA. Side and connecting trails provide significant access to the AT or between the AT and significant AT resources and facilities, and may be included regardless of land ownership.

Non-AT Trails
Trails that may intersect the AT, but do not contribute to AT facilities or infrastructure. They may or may not be blazed, and do not receive maintenance funding from APPA. All other non-AT and social trails will not be included as part of this inventory.

Social Trails

Social Trails are undesirable, user created trails that result from visitors who detour to avoid muddy and/or difficult sections of trail, or shortcut to get to an attraction such as a view point. All other non-AT and social trails will not be included as part of this inventory.

Access/Connecting Trails

Access Trails connect the main trail with other Appalachian Trail contributing roads, parking areas, communities, and/or adjoining trail systems.

Alternate Routes

Alternative Routes typically parallel the main trail. They provide access to iconic viewpoints or features off the main trail, or provide an opportunity for circuit hikes, or help relive the main trail of the full load of traffic along high use sections.

Significant Non-Blazed Trail

It is a trail that is leads from one feature to another (i.e. from a shelter to a privy) or connect the AT to an AT related feature that is not blazed and may not be signed. These side trails must directly contribute to the AT experience in a significant way, and/or have substantial features that we maintain on them, like a bridge or staircase, if they are to be part of our formal inventory.

Spur Trails

Spur Trails are dead-end side trails leading to points of interests not far from the main trail. They may provide access to privies, water sources, camp sites, shelters, vistas, etc. that contribute directly to the AT corridor.

Turnpike/Causeway

Turnpikes are used to elevate the trail above wet ground. They typically have one log or large rock, single course, placed parallel to the trail on either side of the trail with fill materials (crushed rocks & tread materials) placed in-between the logs to create an elevated treadway.

Vent and Vent Pipe

A vent is an opening that allows air, gas, or liquid to pass out of or into a confined space. Vents and vent pipes are made with a variety of materials such as aluminum and PVC, and can be found both indoors and outdoors.

Wall Paneling (Covering)

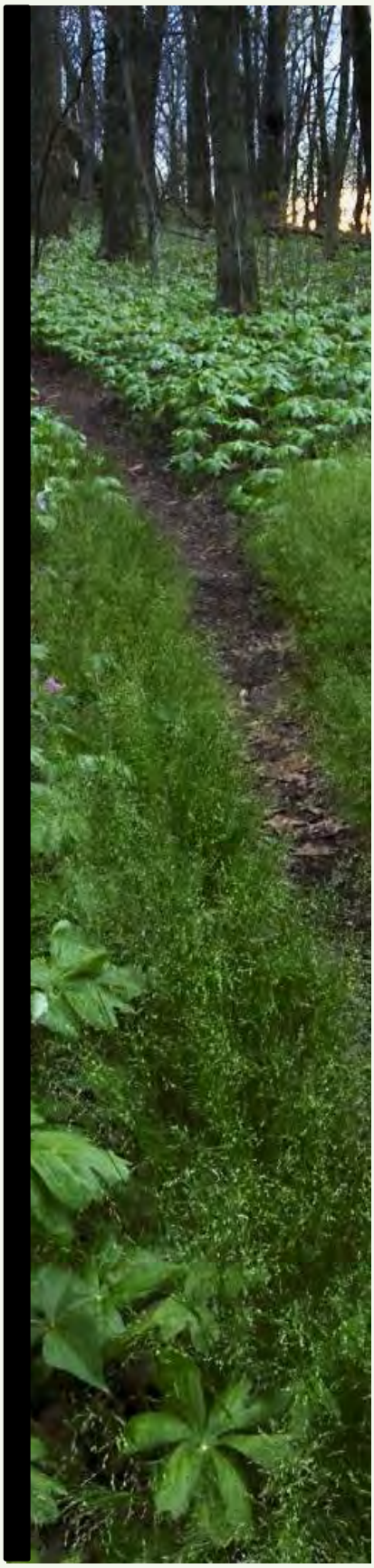
A wall panel is single piece of material, usually flat and cut into a rectangular shape, that serves as the exposed covering for a wall.

Waterbar
Waterbars are rock or log structures set diagonally (typically at a 45% angle) across the trail to divert water and mitigate erosion.

Wheel Stop
Wheel stops are typically concrete, log, dimensional lumber, or stone structures that indicate parking spaces and deter parking outside of designated areas.

Window
A window is an opening in the wall or roof of a building that is fitted with glass or other transparent material in a frame to admit light or air and allow people to see out.

***Wood Burning Stove and Stove Pipe**
A wood burning stove is an enclosed space in which fuel is burned to provide heating, either to heat the space in which the stove is situated, or to heat the stove itself and items placed on it.



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