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Localization to deed plot and old surveys with JAVAD

A) I like to work in State Plane but this process is useful as well and I've had questions about it. The current manual for the Triumph LS covers this in some depth (pages 112-120) but leaves a few things sketchy. So, hopefully this will clarify the process some, while at the same time abbreviating it (impossible I know).

B) Process in a nutshell:

1) Set base on autonomous, or use RTN to collect some state plane positions on found monuments, nails, etc. on a page set up for state plane coordinates. If you used autonomous, DPOS the results. **These will be your surveyed points prior to localization.**

2) Import your coordinates from a previous job that was based on N 5000, E 5000 or whatever, or from a deed plot you did in CAD from some other surveyor's previous survey. **These will be your design points, and you will add surveyed points to the page you create in this step, after the localization.**

a) Files – data exchange – import

b) Select the file and hit next

c) Where it shows which **Page** the import will go to, click that and pick an unused page number. Then click on the **page coordinate system**, then on the icon that looks like a **house** to add a local coordinate system to use with that page number. Rename to **client name local**, or something like that.

d) In the **underlying coordinate system field**, click and pick your state plane system that you used or will be using in step 1 above. (note: step one and two can be done two and then one).

e) Highlight the newly created local system and press **select**. You should now be back to the import screen. It will show the **page** you selected for the **import**. Click the **import button** and the coordinates are imported onto the page with the local coordinate system as you set it up.

3) At this point you should have a **page with design points in a local coordinate system**, and a **different page with surveyed points in a state plane system**. You will now perform the actual localization.

a) Get back to the home screen and press Localize.

- b) On the left side pick your **design coordinate system** *client name local*, which you created to import.
- c) On the right side pick the **surveyed coordinate system**, *same state plane system you used to collect points on the survey page*.
- d) Click the plus button on either side to pick surveyed points on the right side and their corresponding design points on the left.
- e) Click a point on the right and a point on the left so that arrows are next to them. **You can only do one pair of points at a time.** The localization will change as you add more pairs.
- f) When you have arrows next to two corresponding points, click the **link button** at the bottom of screen. Pick **NE Horizontal** (because you don't know elevations of the design points, generally, for this example).
- g) Repeat steps (e) and (f) above until you have **linked** all pairs you have. **Do not click save yet.**
- 4) Click the **customize** button on bottom left of screen. Then click the **scale** button on the right in order to **check mark it on**. Then click the **icon next to it on the right**. You **must do this when you don't know elevations of the old survey and are using NE Horizontal linking in step (f) above.** You will see the scale value change. In my area from around 8000 to -70. For more explanation, see the manual. Click the **OK** button.
- You will now look at the **residuals** for each linked pair in N and E columns. If any are greatly above the others then you want to click on that pair to get the arrows, hit the link button at bottom of screen, and **change them to check** instead of NE Horizontal. This **will remove them from the localization**.
- When you are happy with the residuals, click **save** at bottom right.
- 5) On home screen click points. Look at surveyed points to make sure they did in fact change from state plane to the local system.
- 6) On home screen click collect, then **change from survey page to local coordinate page**.
- 7) Restart base on one of the points and pick the point from list instead of autonomous. Make sure it's a local coordinate. (don't change any other base parameters like reference frame).
- 8) Stakeout to another point used in the localization as a check.
- 9) If it checks well, continue. You are now on the local coordinate system.