GeoSync Z-Tools

USGS 123 Step Guide – DXF Contours (All States Except KY)

June 2020

Steps:

1. Project: Set up a new project (recommended for each new site)
2. Map: Find the site on the map and draw a boundary around it
3. CRS: Make sure your project CRS matches the USGS data tiles (this varies all over the country)
4. Find and Download: Use the LIDAR wizard to find the tiles and download them to your project
5. Select Downloaded Tiles: Select the downloaded data you want to use for contour creation
6. Set Contour Options and Run: Process the data
7. Finish and Open the Job Results

Step 1

Z-TOOLS PROJECT

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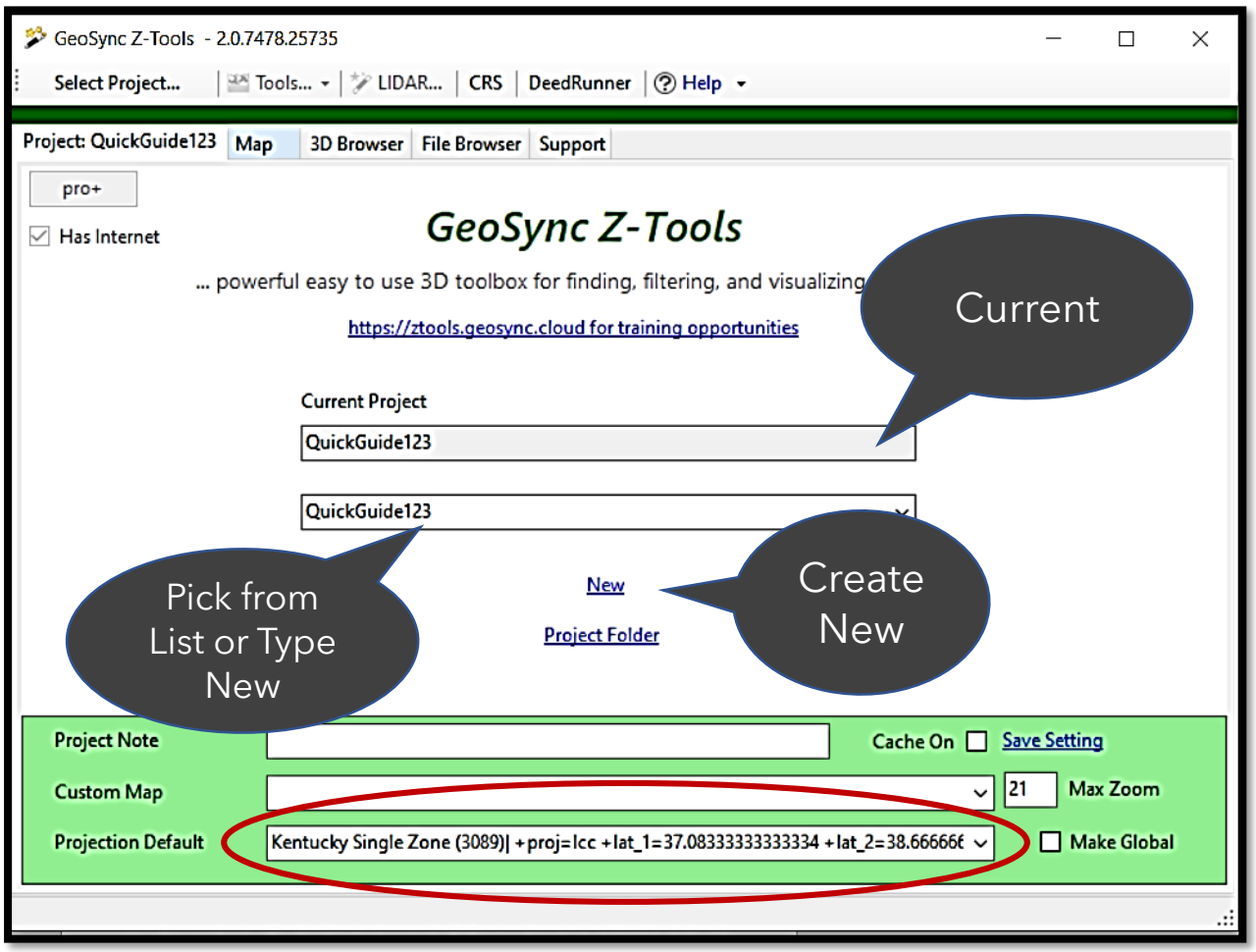

1. Select Project from drop down list or… type a name in the list box and click NEW to create project
2. Set the CRS (Projection Default) – (circled in red at the bottom of the form)
   a. If not in the list – use the CRS tool
   b. You may not know the projection – we can set it in step 3
   c. Should match the CRS of the downloaded tiles
3. Save the Project Default Settings – (blue text "Save Setting")
   a. Note: description
   b. Custom Map: background aerial you want to use

Step 2 MAP

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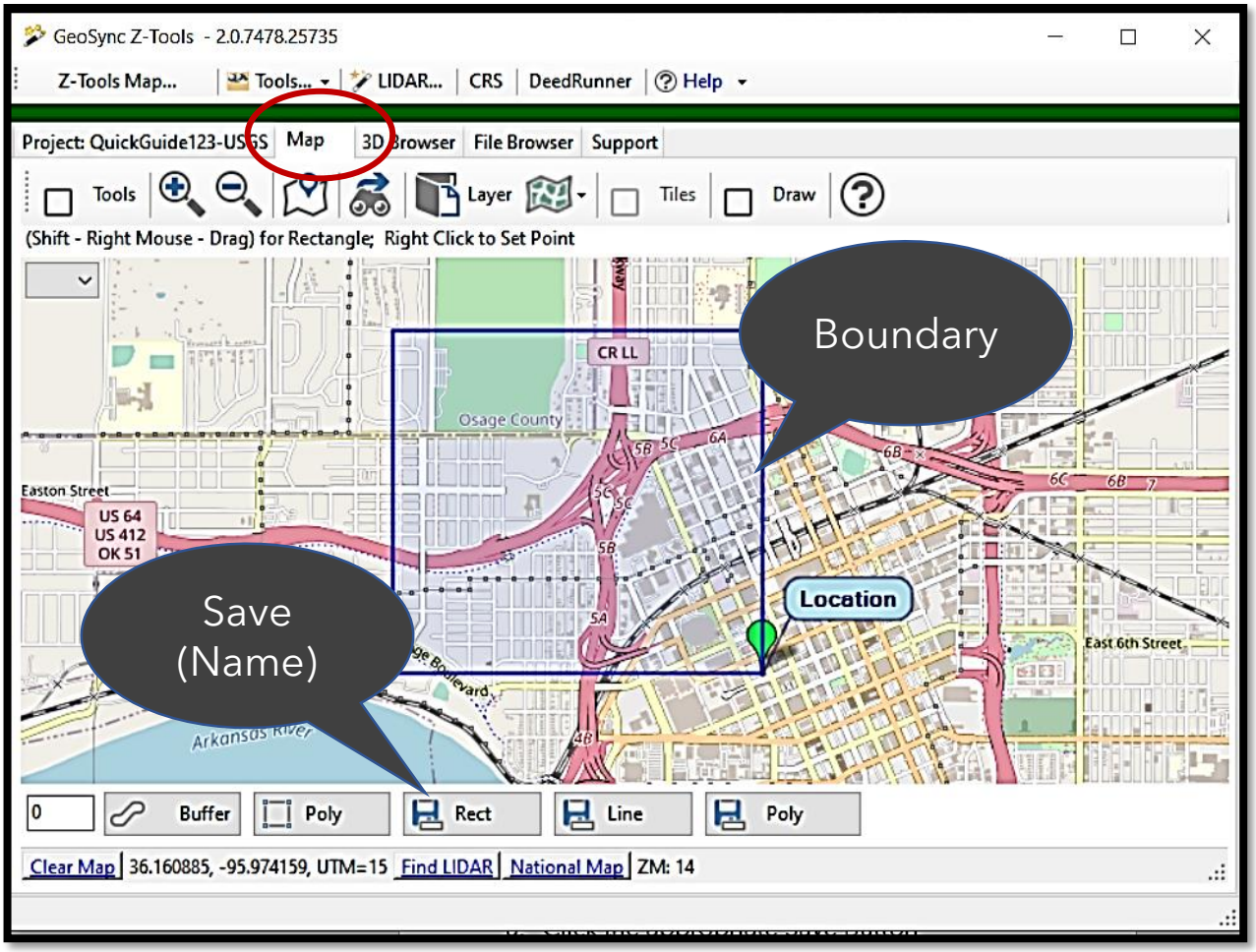

1. Find the site location on the street map

2. Draw a boundary (Rectangle is quickest)
   a. (Hold Down Shift – Right Mouse – Drag)

3. Save the boundary (Rectangle or Polygon or Buffer)
   a. Click the appropriate Save Button
   b. Give it a name (“intersection”)

Step 3 FIND CRS

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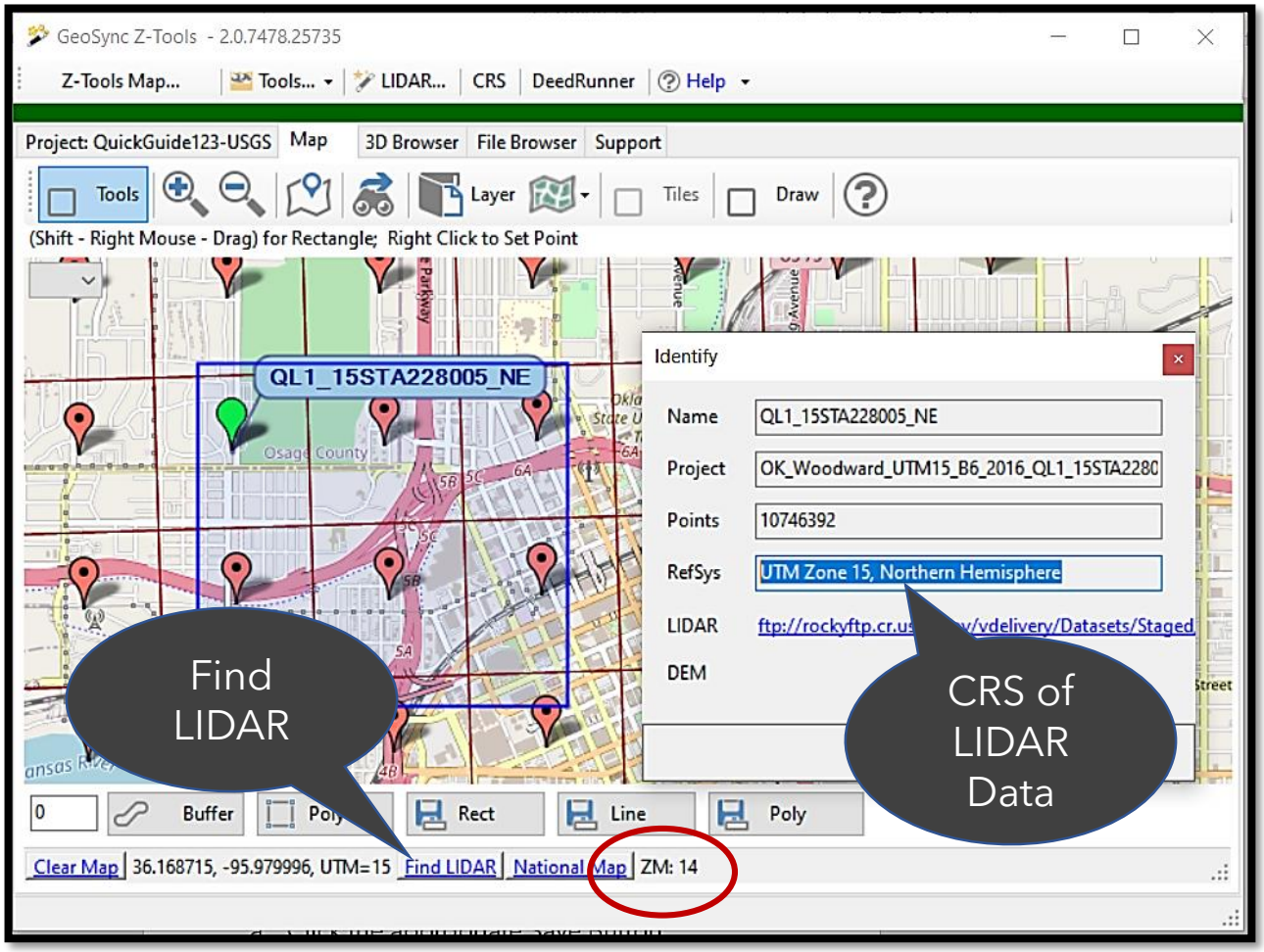

1. Use the FIND LIDAR tool to draw available tiles on the screen (bottom status bar)
   a. ZM – must be 14 or greater to see markers
   b. Select a marker (turns green) and opens Identify form
   c. Note the RefSys (CRS) shown – this will be the source projection of the available data
2. Return to Step 1 (Project Tab) and Set CRS
   a. Use the CRS Tool on the main toolbar if needed - Save the default project settings
3. Return to Step 2 (Map)
   a. Open a previous saved boundary (Layer Tool)

If no tiles watch this video

Step 4 FIND & DOWNLOAD

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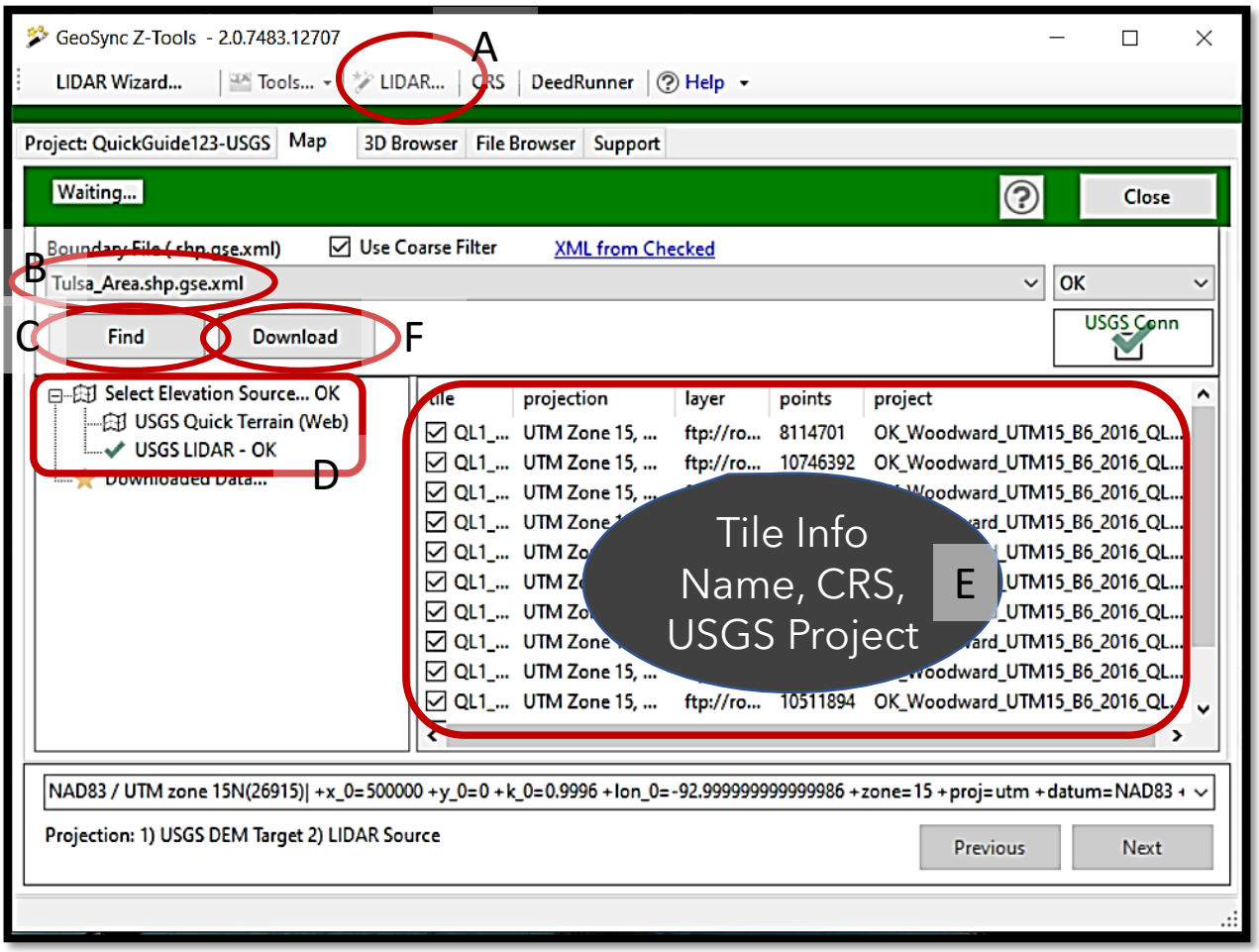

A. Open LIDAR Wizard
B. Select target boundary from list
C. Click the Find button to search for data
D. Select from list of found data – USGS LIDAR
    i. the results will be displayed to the right
E. Check the tiles you want to download
    i. Could be overlapping datasets (year)
    ii. Note the coordinate system (you will need this)
F. Click the download button
    i. Tiles will be downloaded to project folder
    ii. Notice the “Running” label to see it is working
    iii. Could take a while to download

Step 5

SELECT DOWNLOADED TILES

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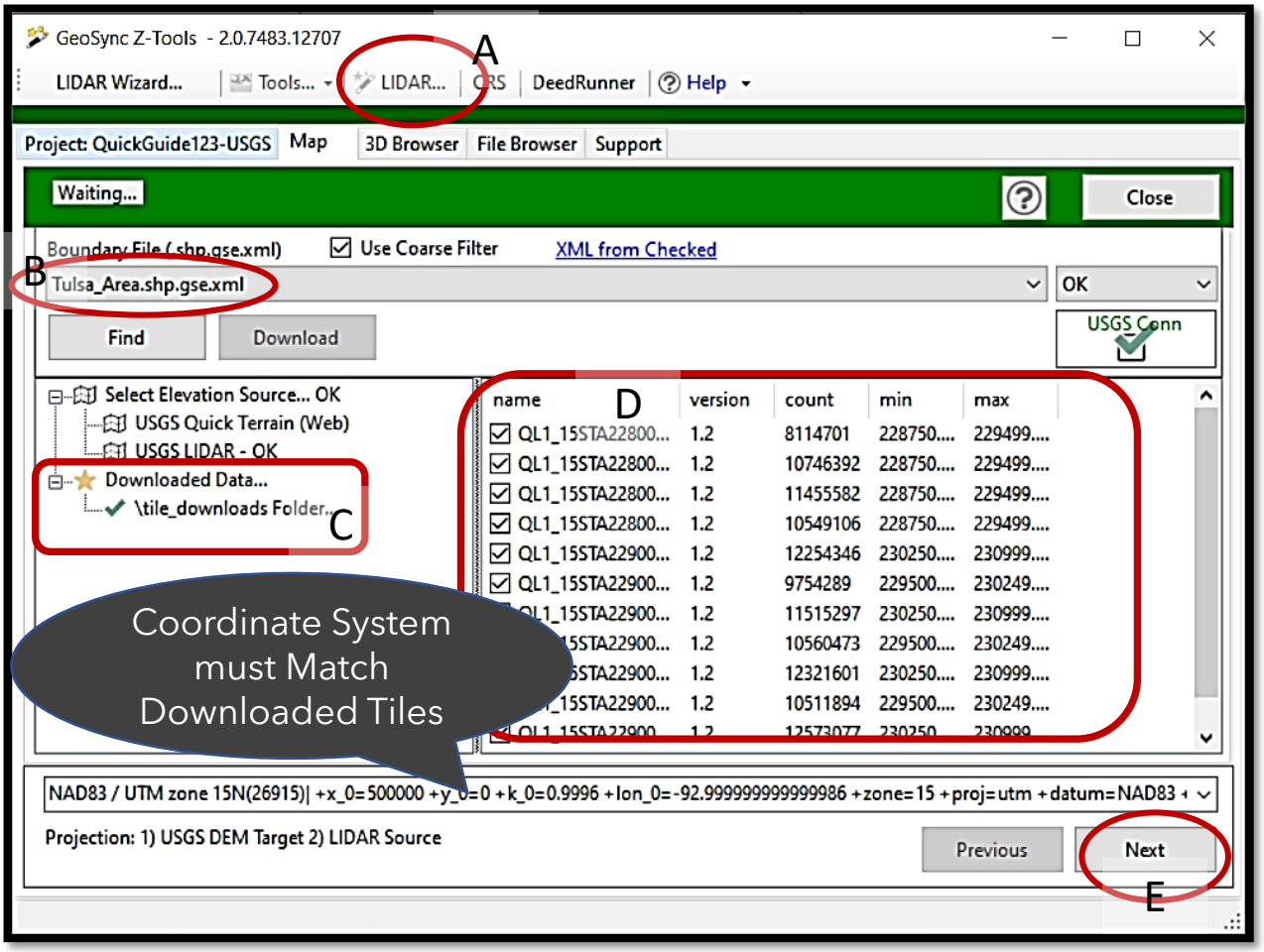

A. Open LIDAR Wizard if not already open
B. Select target boundary from list
C. Open Downloaded Data Node
    i. Select download folder
    ii. Downloaded tiles will be listed to the right
D. Check the tiles you want to work with
    i. NOTE: Coordinate system (Projection) must match the coordinate system of the downloaded data tiles. The defaulted text will match the value set in step 1 but can be changed.
E. Click the Next button to move to processing

Step 6 SET CONTOUR OPTIONS & RUN

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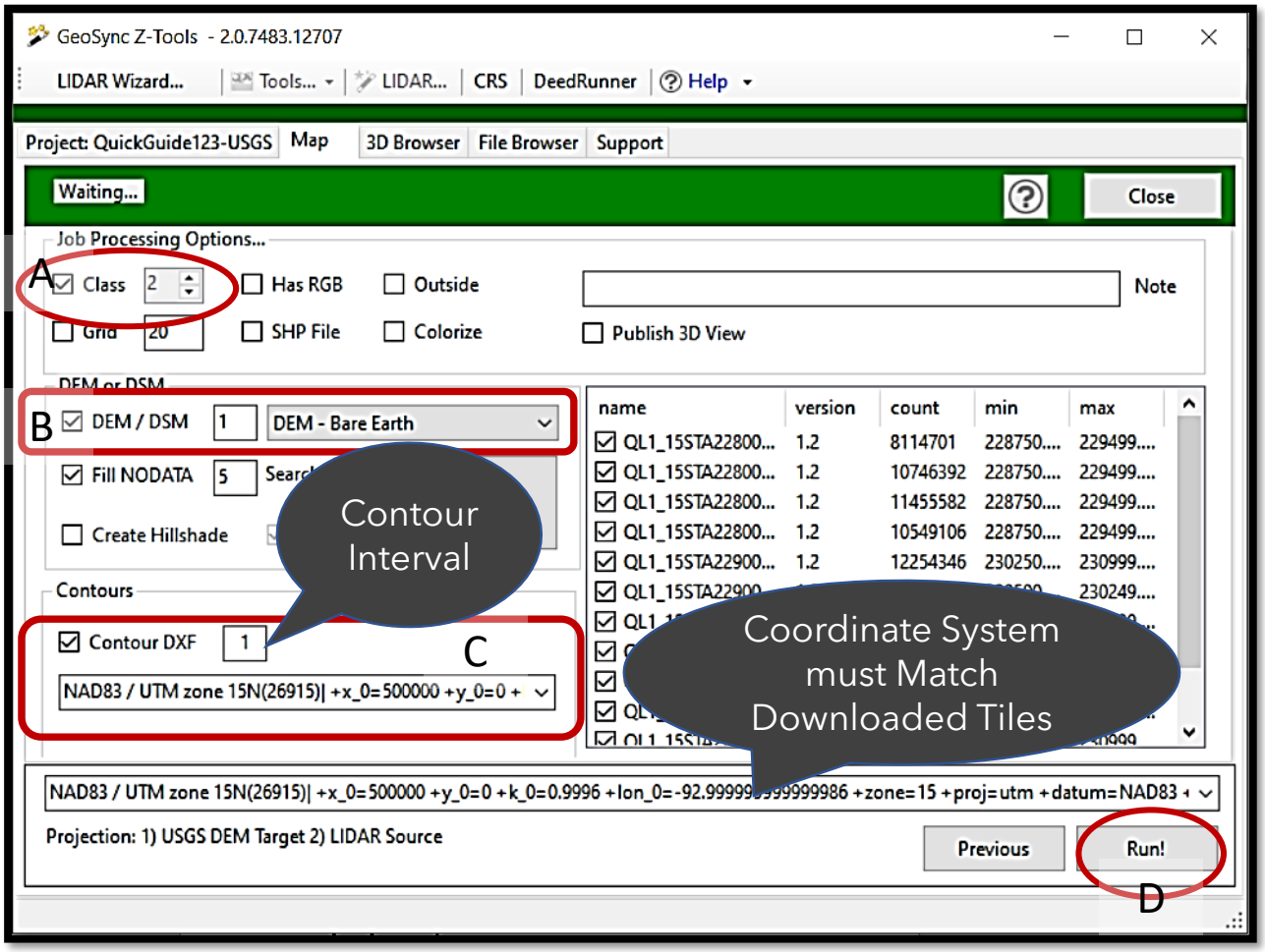

Generate Ground DXF Contours from LIDAR

A. Class Filter (2) Should be Checked
   i. We want only ground points
B. Check DEM/DSM Option
   i. 5 foot grid is usually good – if in meters change to 1
   ii. Use DEM-Bare Earth Option
C. Check Contour DXF Option
   A. Set contour interval (vertical units)
   B. Set the DXF output coordinate system (projection)
D. Click the Run! button to process

Step 7

FINISH & OPEN RESULTS

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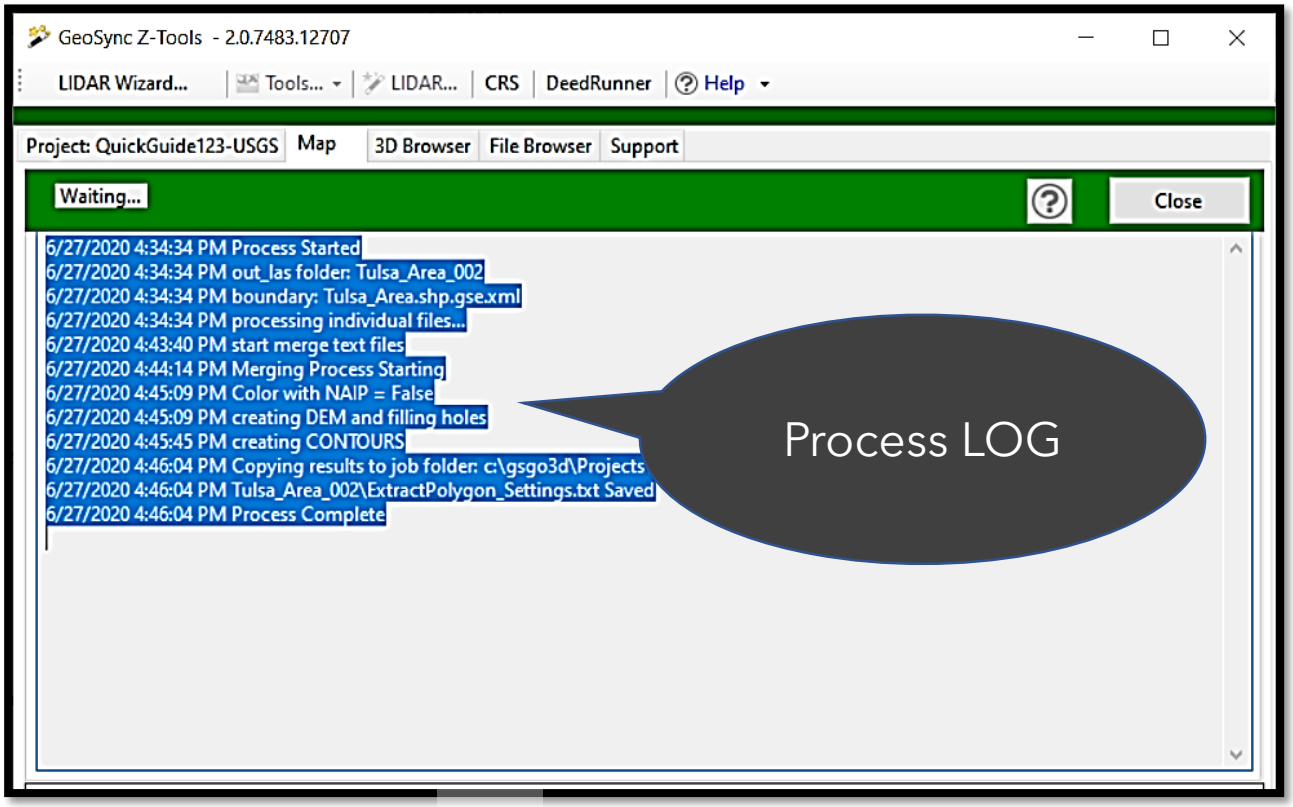

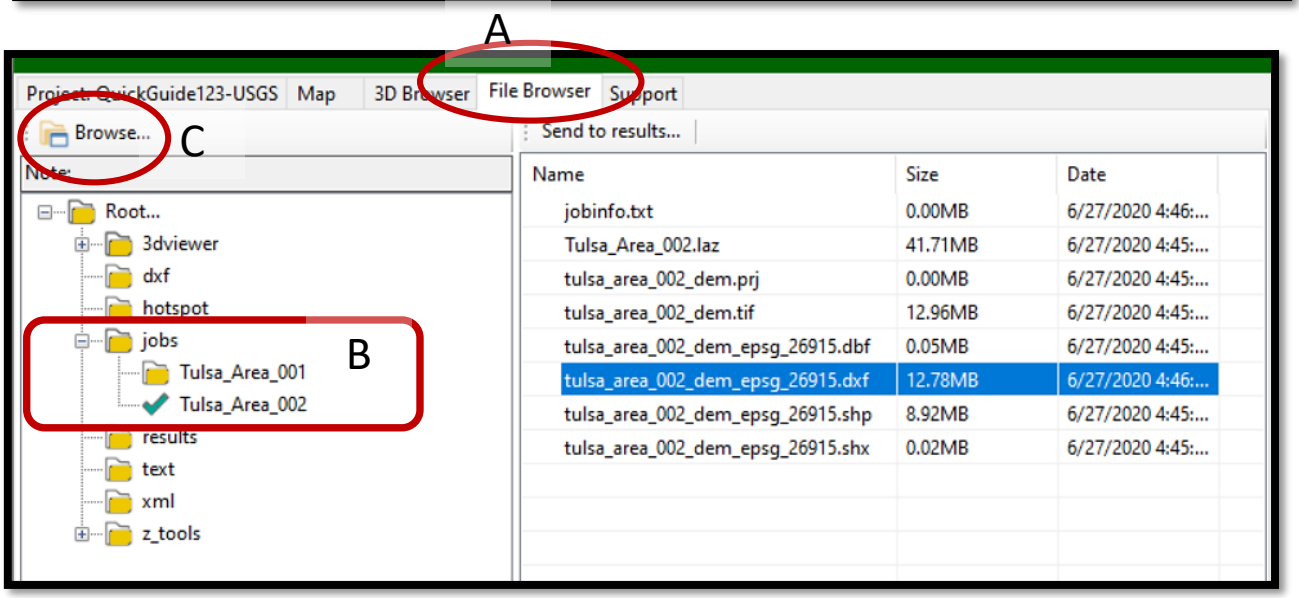

A. Open File Browser to View Job Results
B. Find JOB and Select – Files are displayed on right
C. Click Browse to Open Windows Explorer to Folder
    i. Copy DXF / Add to CAD

RESULTS

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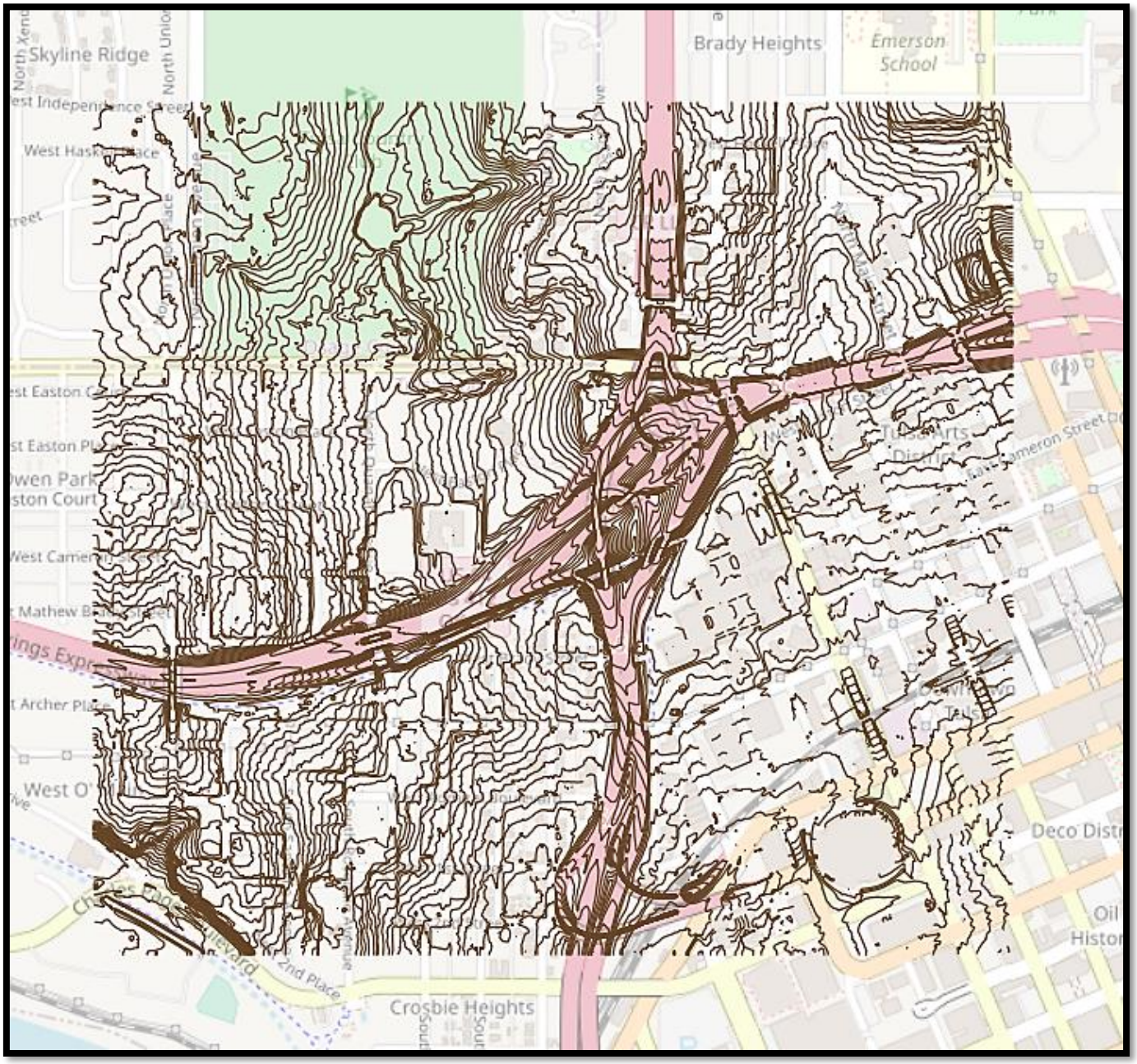

A. DXF 3D Contours – 1 meter interval
    i. Change the contour CRS in Step 6 to output in State Plane US FT
B. Displayed in QGIS – CAD Ready