

Survey Request

Design Manual

Chapter 20

Project Automation

Originally Issued: 02-26-10

Revised: 08-09-18

A survey request is accomplished in two main steps:

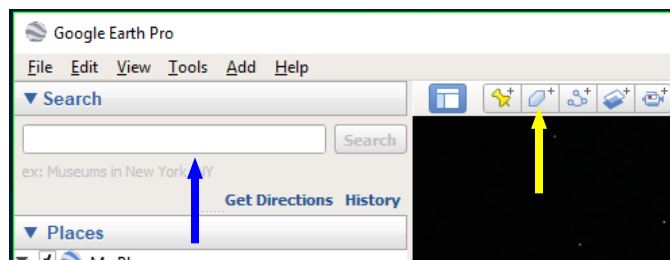
1. [Defining the imagery request area.](#)
2. [Lay Out the detailed survey request in MicroStation.](#)

Defining the Imagery Request Area

A request should be sent to the Photogrammetry Section for the imagery that covers the project area. Be sure to request a large enough area to adequately encompass any potential survey needs. The effort required to add additional images is the same as for the initial request.

Note: Prior to submitting a survey request, check with other offices to see if your request area is large enough to capture any additional survey needs they may be anticipating.

Start Google Earth Pro and enter the location of your project in the **Search** field (as located by the blue arrow, right). After the general area of interest is displayed on the screen, zoom in or out to make sure the specific area needed is displayed.

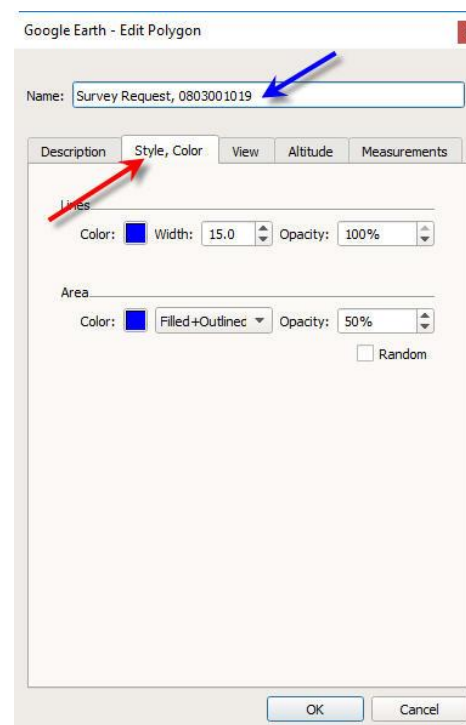


To show the outline of the specific area for the survey request, *click* the **Place Polygon** icon (as located by the yellow arrow, above) and the “Google Earth – New Polygon” dialog will display, as shown to the right.

Enter a “**Name**” for the polygon, “Survey Request, *Project PIN#*” (as located by the blue arrow)

Select the “**Style, Color**” tab, (as located by the red arrow), and change the settings to match those shown.

Do NOT click the **OK** button until after the shape has been placed.



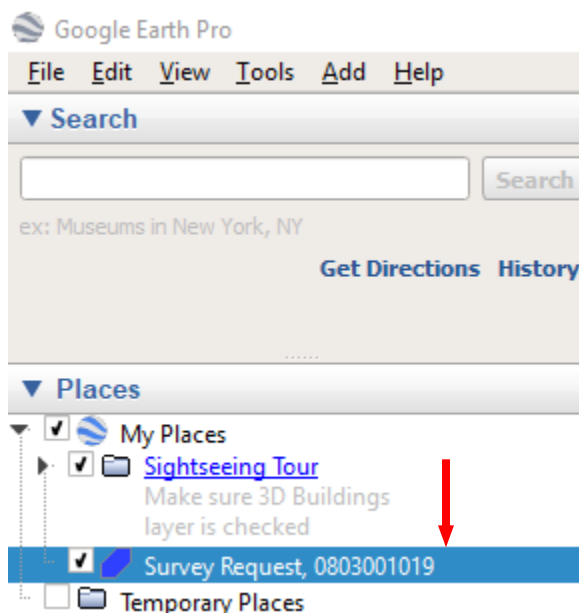
To place the polygon that will visually define the Survey Request Area, place points (left-click) to define the area, as shown to the right. The shape will not begin to display until at least three points have been placed, and will continue to change shape when additional points are placed. When the polygon shape placement is complete, click the **OK** button to accept the shape. The “**Google Earth - New Polygon**” dialog will disappear.



Note: This shape is defining only an approximate area of survey need. If there is any doubt on the size of the shape needed, make it larger. This shape will only be used to obtain the correct aerial imagery files that will be used to create the detailed survey request layout.

The **Name** of your newly defined polygon should now display in the list under the “**Google Earth > Places**” tab, as shown by the arrow to the right.

If a different shape is needed, highlight the name of the existing shape in the **Places** list and delete it using the keyboard delete key. Recreate a new shape as described above.



The **Roads Layer** must be toggled ON (☒ as shown to the right) so the Street and Highway names will be displayed when printing the Imagery Request.



Before printing, correct any rotation manipulation of the Google Earth image so that North is at the top. To do this, *left-click* on the small “N” located in the direction indicator (shown by the yellow arrow at the right). This will cause the image orientation to be corrected and rotated automatically so that North will be at the top.

Next you will need to correct any view tilt. Hold the shift key and mouse scroll towards yourself until the image looks like a flat map.

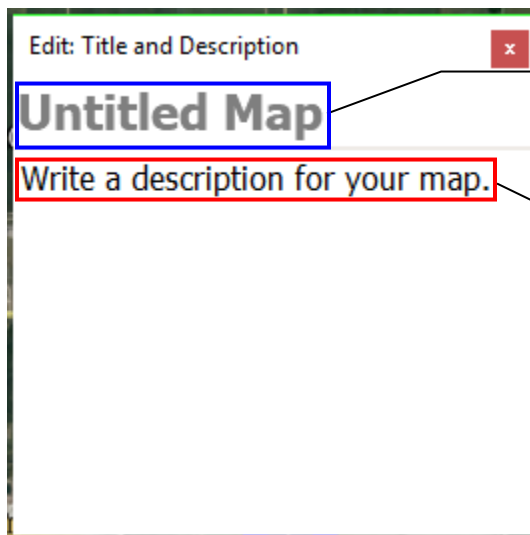
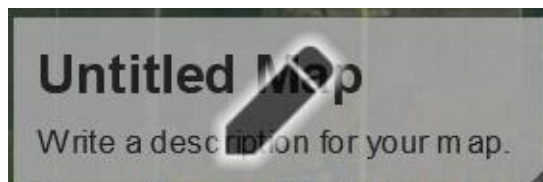
NOTE: The “Rotate, Move, Zoom in and Zoom Out” tools, (shown at the right), are located at the upper right corner of the image. If they are not visible, move the cursor to that area of the screen and they should appear, similar to as shown.



Using either *File -> Print* or the **Print Button** as shown below starts the Map and Legend creator.



First Edit the Map Title by clicking on the map title box pictured to the right (your legend will be populated with any features in the field of view being printed) and edit the text in the pop up word editor window shown below. Close the editor window when done to save the changes. You can then resize the Title Box to properly fit the text.



Change to:

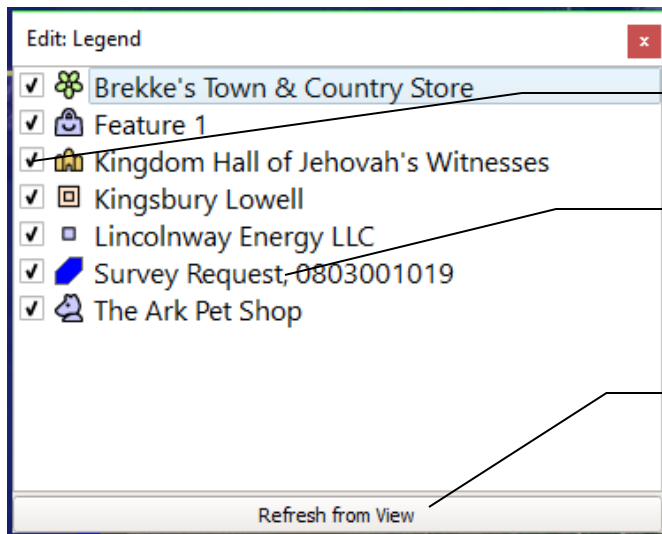
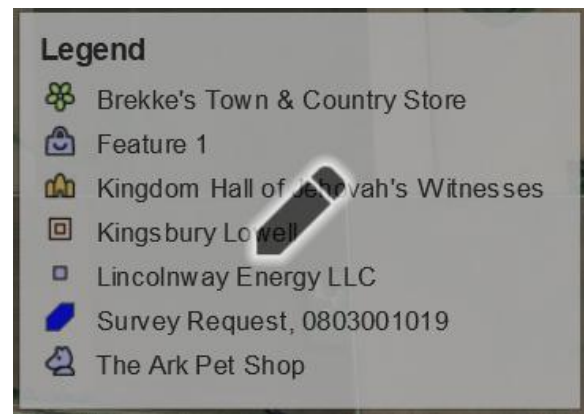
Survey Request for Project PIN#

Delete this.



Click and drag here to resize the title box.

Next edit the Legend by clicking on the legend box pictured to the right and edit legend entries in the legend wizard window as shown below. Close the legend wizard window when done to save the changes.



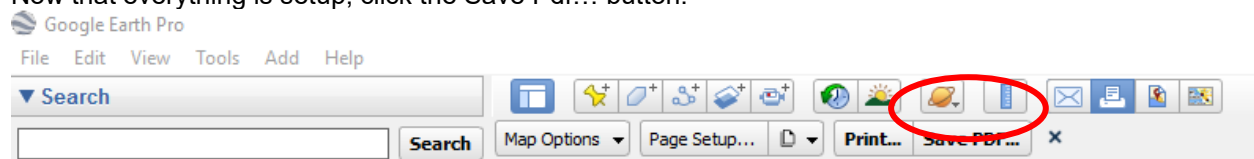
Uncheck all features except for your Survey Request shape that was made.

Double click on the text and delete the ", Project PIN#"

This button will update the list of entries from the current view.

Note: The Scale, North Arrow, and the Google Earth Watermark can all be moved.

Now that everything is setup, click the Save Pdf... button.



Follow the windows save file prompt to create the "Imagery Request PDF file".

After the "Imagery Request PDF file" has been created, the Imagery Request can be submitted to Photogrammetry by email, with a link to the PDF file.

[Example Imagery Request](#)

Lay Out the Detailed Survey Request in MicroStation

After receiving notification from Photogrammetry that the imagery is available, the file should be located in the project Photo folder, with a ".ras" (raster) file extension.

A new 2D file should be created using the 2D seed file in the Copy Seed program. For details on the Copy Seed program, see section [21C-54](#).

In the new 2D file, attach the ".ras" imagery file as a reference file.

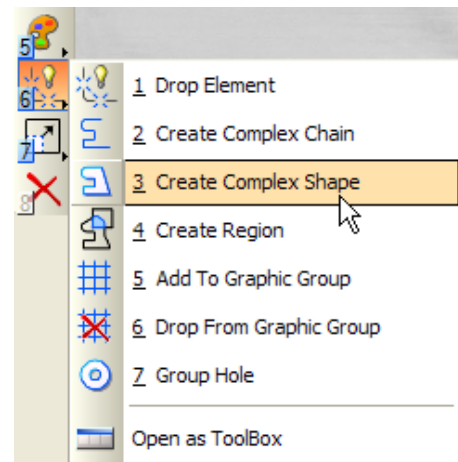
It is important that the survey request shape(s) placed in this file include all necessary areas, but none that are not needed. The survey process is very time consuming and expensive. It can easily take from six months to one year to get additional survey completed. It is necessary to make effective use of the surveyor's time. The "ground survey" process typically picks up the items in the table below.

The intervals are adjusted at the Surveyor's discretion	
Feature	Approximate interval for shots
Centerline	50 feet
Edge of Pavement	50 feet
Edge Returns	2 to 20 feet, depending on grade changes
Draws and other Breaklines	As needed by topography
Culverts or other drainage structure	Any that fall within the limits of the request
Side Roads	Only the amount included in the request

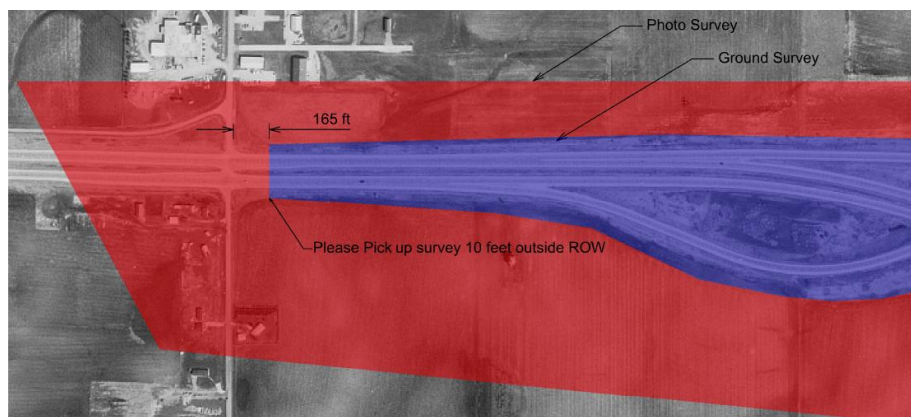
If other key items are needed, this should be addressed in the survey request.

Two shapes should be placed in the file: one that defines the limits of the field survey (blue, at 50% transparency), and one that defines the limits of the Photogrammetric survey (red, at 50% transparency).

The shape(s) placed should be complex MicroStation shape(s). If individual lines were used to define the boundary, the “Create Complex Shape” tool (as shown at the right) should be used to convert the individual lines into a single complex shape.



The field survey request should be dimensioned, as much as possible, to make it easier for the field personal to determine where to start and stop the survey. After the shape(s) are complete, an e-mail should be sent to the Photogrammetry section and Preliminary Survey section with a link to the file containing the defined survey limits. The model from this file will be copied into either the appropriate Photo or Preliminary Survey file(s). The date of the Survey Request will be saved within the model name. As additional survey requests are made, additional dated models will be added.



Chronology of Changes to Design Manual Section:

020A-002 Survey Request

8/9/2018	Revised Updated Step 1 to match the new workflow of Google Earth Pro. Reorganized this step to better walk through in order.
7/18/2013	Revised Minor technical edit in table on page 4.
2/26/2010	NEW