The Orf467 National aTaxi Equal Area {0.5, 0.5} Pixel Grid

The *Orf467 National aTaxi Equal Area Pixel Grid* is a simple nethod by which to atomaticaly locate aTaxi Stands throught the nation and serve as a convnient pointer to tag, store and find (through sorting) all trip ends that are closest to, and thus would likely be served by the aTaxi Stand that is located at/near the center of the pixel. The size of these pixels, being 0.5 miles on a side implies that "all" trips ends are essentially within an "easy" walk (< ~ 5 minutes) of an aTaxi Stand.

The cented of the Orf46 7 National equal Area grid is at 37^0 N Latitude, -97.5^0 W Longitude. This places it near the geographic center of the continental US along the time meridian that is roughly the boundary between the Central and Mountain time Zones.

Along a Meridian, each degree of latitude traverses approximately 69.174 miles

Along a Parallel (at a Latitude) , each degree of longtude traverses approximately 69.174 * Cos (Latitude)

At the origin (and everywhere) the Y-height of a pixel is 0.00722814 degrees Latitude

At the origin (and all along the 37^0 N Latitude paralle) the X-width of a pixel is 0.00944344 degrees Latitude

The {i,j} pixel {xPixel, yPixel} includes all {Lon, Lat} points within

$$\{ -97.5 + 0.00722814*(i)/\cos(37 + j) \leq \text{Longitude} < \{ -97.5 + 0.00722814*(i + 1)/\cos(37 + j)\}$$
$$\{ 37.0 + 0.00722814*(j) \leq \text{Latitude} < \{ 37.0 + 0.00722814*(j + 1) \}$$

Pixelization of { Longitude, Latitude} -> {i,j} :

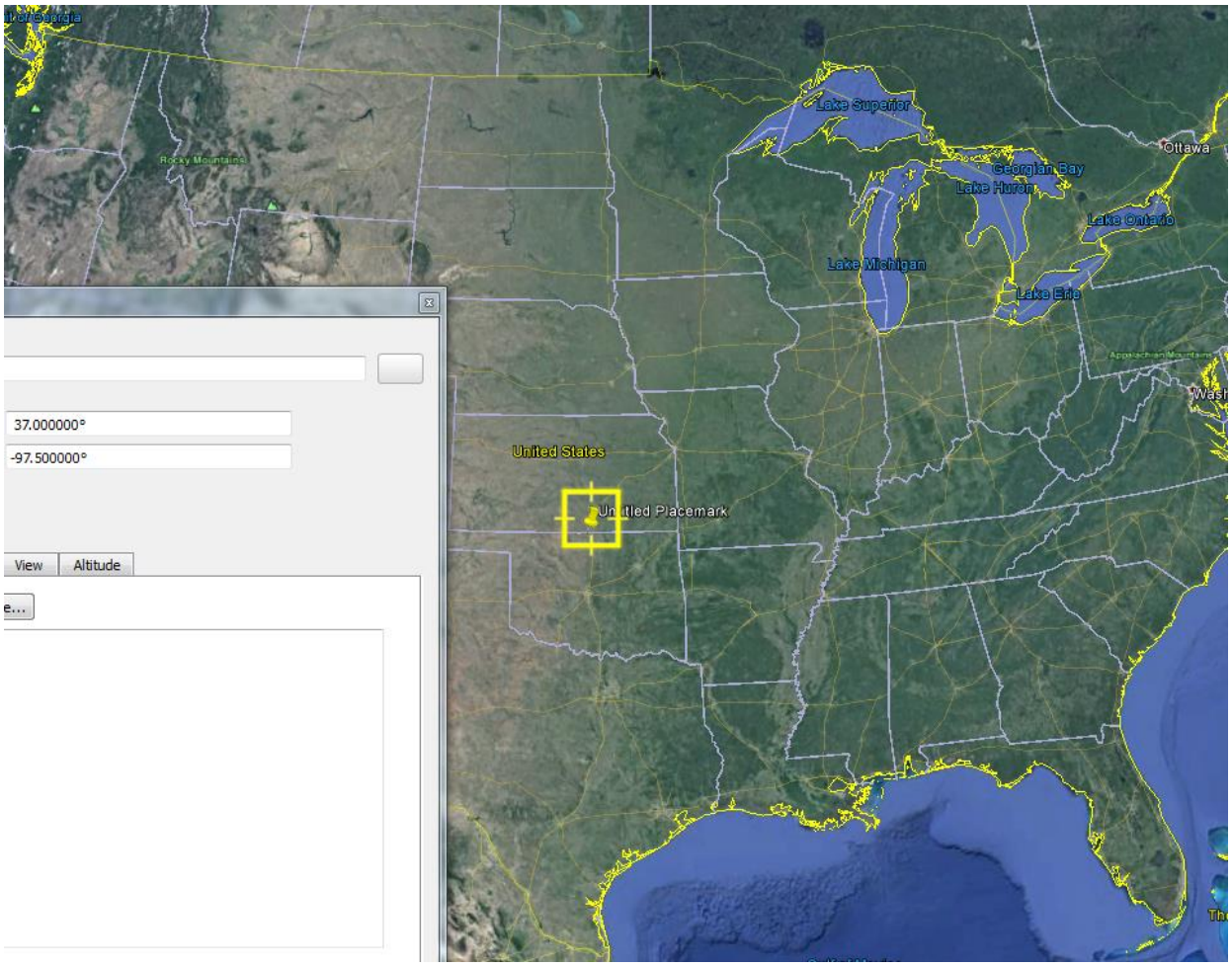
xPixel = i = floor {138.348 * (longitude + 97.5) * Cos(latitude)}

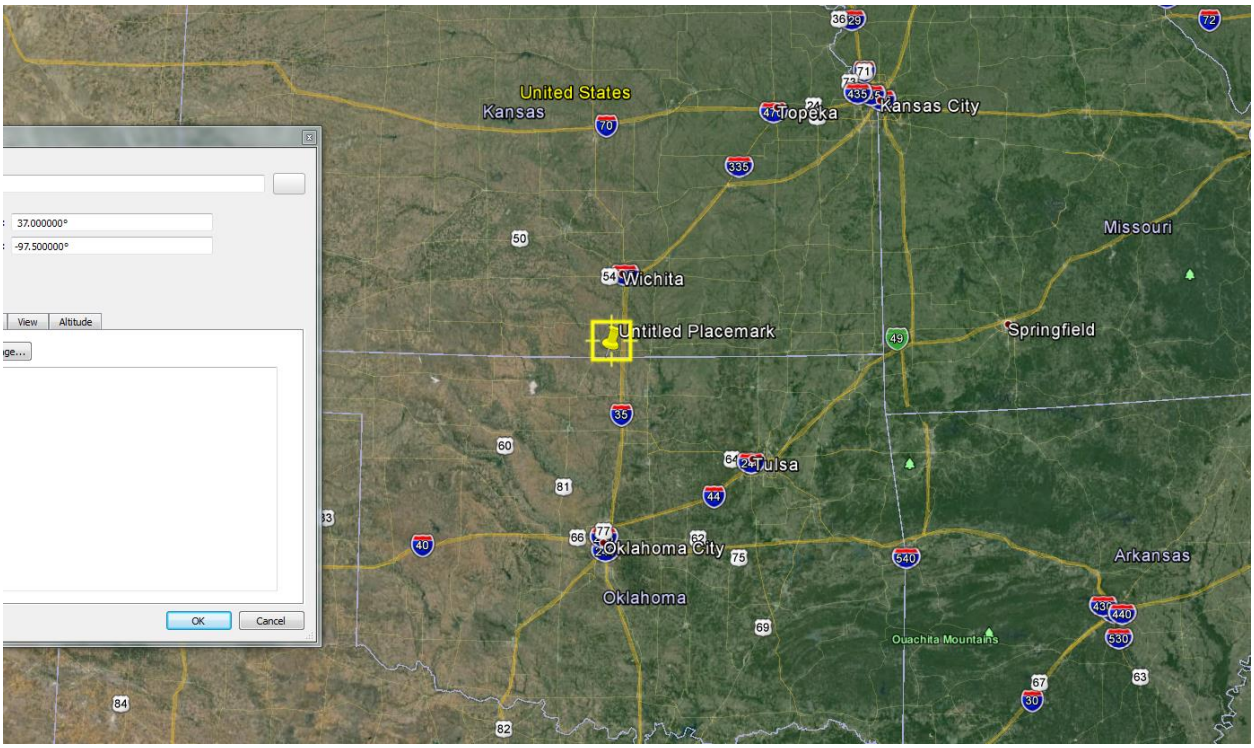
yPixel = j = floor { 138.348 * (latitude – 37.0)}

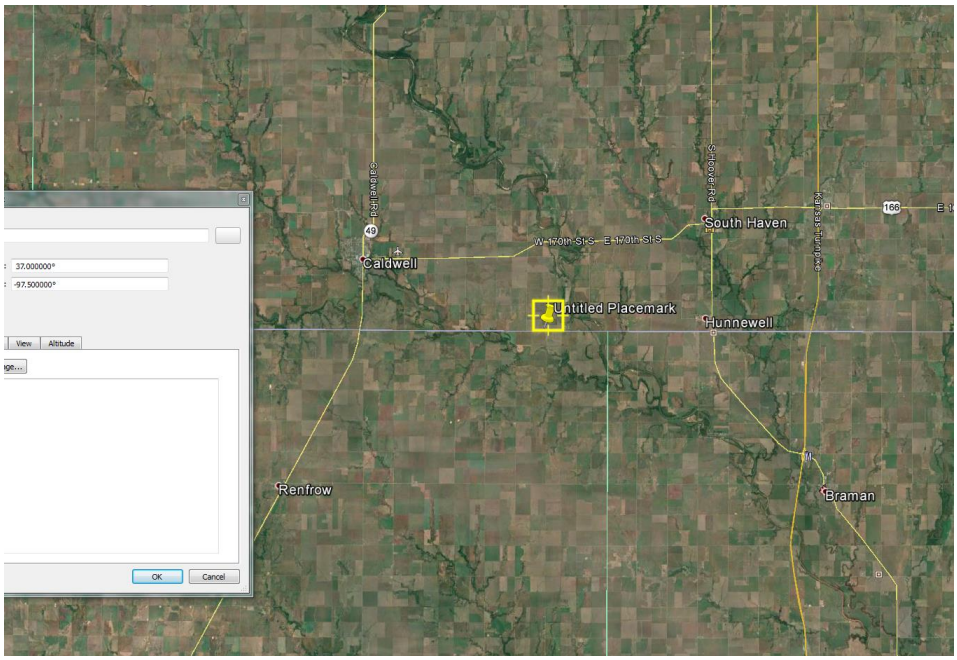
Pixel {I,j} is centered @: Latitude = 37.0 + 0.00722814*(j + .5)

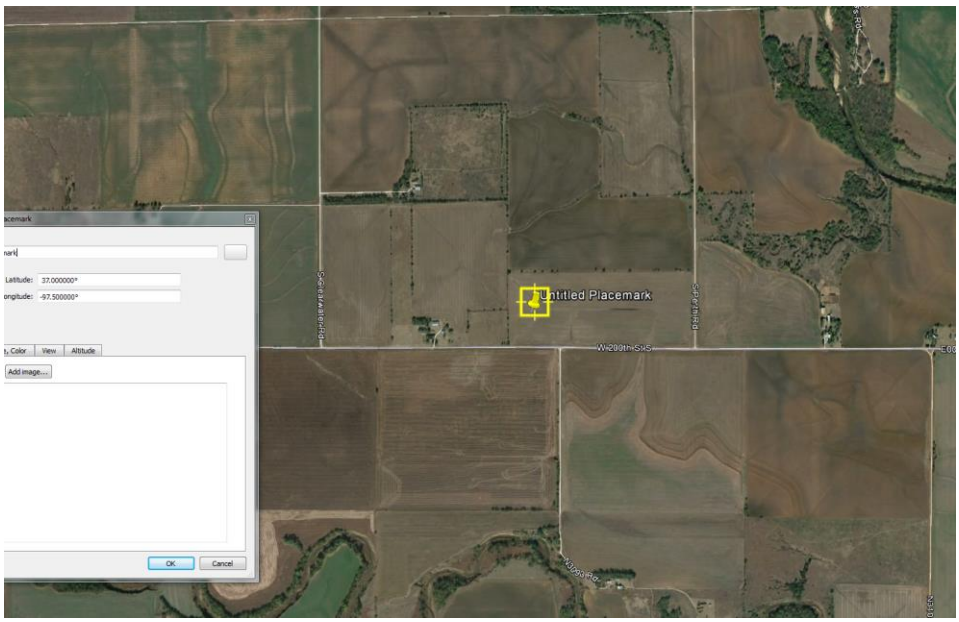
Longitude = -97.5 + 0.00722814*(i + .5)/cos(Latitude)

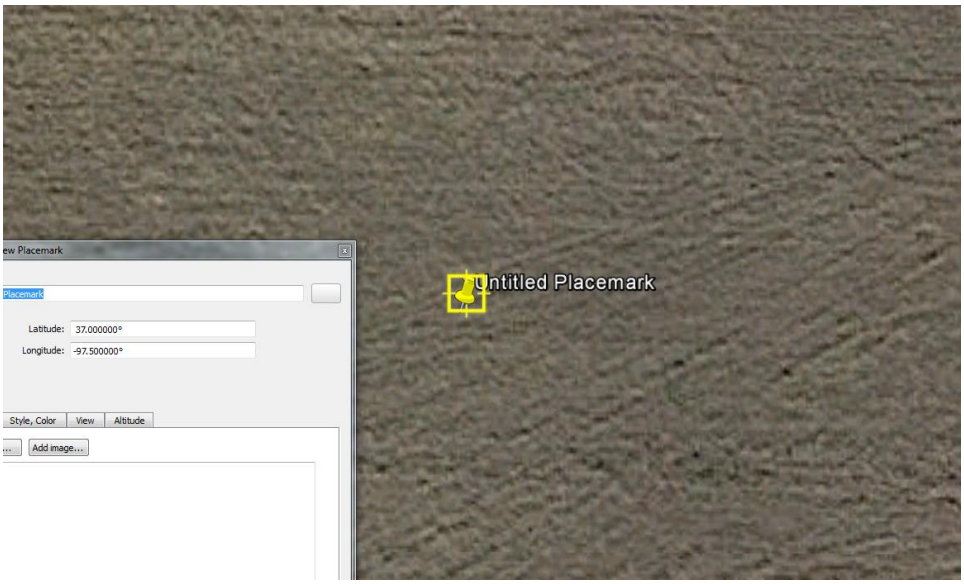
See: EqualArea{0.5,0.5} Pixel LonLat Conversion&Distances.xlsx


Lake Superior
Ottawa
Georgian Bay
Lake Huron
Lake Ontario
Lake Michigan
Lake Erie
Rocky Mountains
37.000000°
-97.500000°
View
Altitude
United States
Untitled Placemark


37.000000°
-97.500000°
View
Altitude
OK
Cancel
United States
Kansas
Topeka
Kansas City
Missouri
Wichita
Untitled Placemark
Springfield
Tulsa
Oklahoma City
Oklahoma
Arkansas
Ouachita Mountains


Caldwell
South Haven
Untitled Placemark
Hunnewell
Renfrow
Braman
168
W 170th St S
E 170th St S
37.000000°
-97.500000°
View
Altitude
OK
Cancel


Untitled Placemark
W 230th St S
Latitude: 37.000000°
Add image...
OK
Cancel


Untitled Placemark
Latitude: 37.000000°
Longitude: -97.500000°
Style, Color
View
Altitude
Add image...