DRONE U

Mapping Acquisition Plan

Client:
Sloan Baseball Club
2330 W. Rio Salado Parkway
Mesa, AZ 85201
33.4313°N 111.8816°W

Mission:
Using the Phantom 4 Pro, Collect aerial photos for aerial data acquisition (Macro Overview)
1. Nadir Crosshatch mission 70*
2. Exterior Orbits
3.

Dates:

Airspace: KPHX Bravo Shelf

Airspace Limitations: 150'

Goal:
The client is seeking a 3d Point Cloud model of the stadium in order to accurately measure the radar system.

Summary: Gentlemen,
Thank you for your assistance in collecting, interpreting and processing data in order to create a 3D Model of the Sloan Stadium. Our client is asking for a 3D point cloud model in order to measure distances from the radar guns, distances between the bases and distances between press boxes. Our goal is to gather aerial data, ground data, obliques and orbits in order to accurately map the stadium.

It is essential that we systematically approach this job. The following document will outline our systematic approach to data acquisition, data interpretation, re-acquisition and final processing.

DRONE U

Plan:

Doug and Paul will be main pilots with oversight from (authorization holder).

1. Ensure the stadium is clean, all necessary bases are cleaned and very visible.
2. Lay GCP's
3. Ensure there are multiple ways to get in and out of the stadium to maintain visual line of sight with the drone.
4. Begin first Flight plan
    a. Nadir Mission with cross hatch
    b. 75% overlay
    c. 70* camera angle
    d. White balance set
    e. Take off in a GPS rich environment
5. Begin second Flight plan
    a. Start Pix4d
    b. Ensure white balance
    c. Begin Mission
6. Begin third flight plan of outside Orbits
    a. When doing orbits
        i. Ensure there is no sky in the picture
        ii. Run multiple orbits
            1. Change elevation
            2. Change camera angle
            3. Ensure no sky in the images

Pilots (#):   **Approved Aircraft:** DJI Phantom 4

Pix4d Application Protocol for IOS:

1. Startup Drone
2. Open DJI Go just to get video transmission
3. Close DJI Go
4. Open Pix4d
5. Choose Drone and Camera Option (if first time using pix4d)
6. Choose Flight Path (Cross Hatch)
   a. Set area to map
   b. Set altitude to map
7. Click the Gear on the top right (This can also be done pre-flight to maximum flight time)
   a. Set angle of the camera
   b. Choose Front Overlap
   c. Choose Side Overlap
   d. Picture Trigger mode = Fast
   e. Drone Speed = Fast
   f. Choose White Balance (set either sunny or cloudy)
8. Click Start (DO NOT CLICK Video icon… as it will cause the phantom to have a pre-flight checklist error)
   a. Camera Error Protocol: try check list again
      i. Continue to have the error, turn drone off and back on.
      ii. Restart App
   b. Home Point error: not enough satellites, wait a longer period of time and restart pre-flight check list
9. Once in mission click video icon
   a. If you see a short lag and regain of VTX, it is taking images
   b. If you see a smooth VTX feed, it is not taking images. Land and restart the mission
10. Once mission ends, no need to download the images to your phone.
11. Backup images to computer ensure images have been taken.
12. Put new sd card and start a new process.