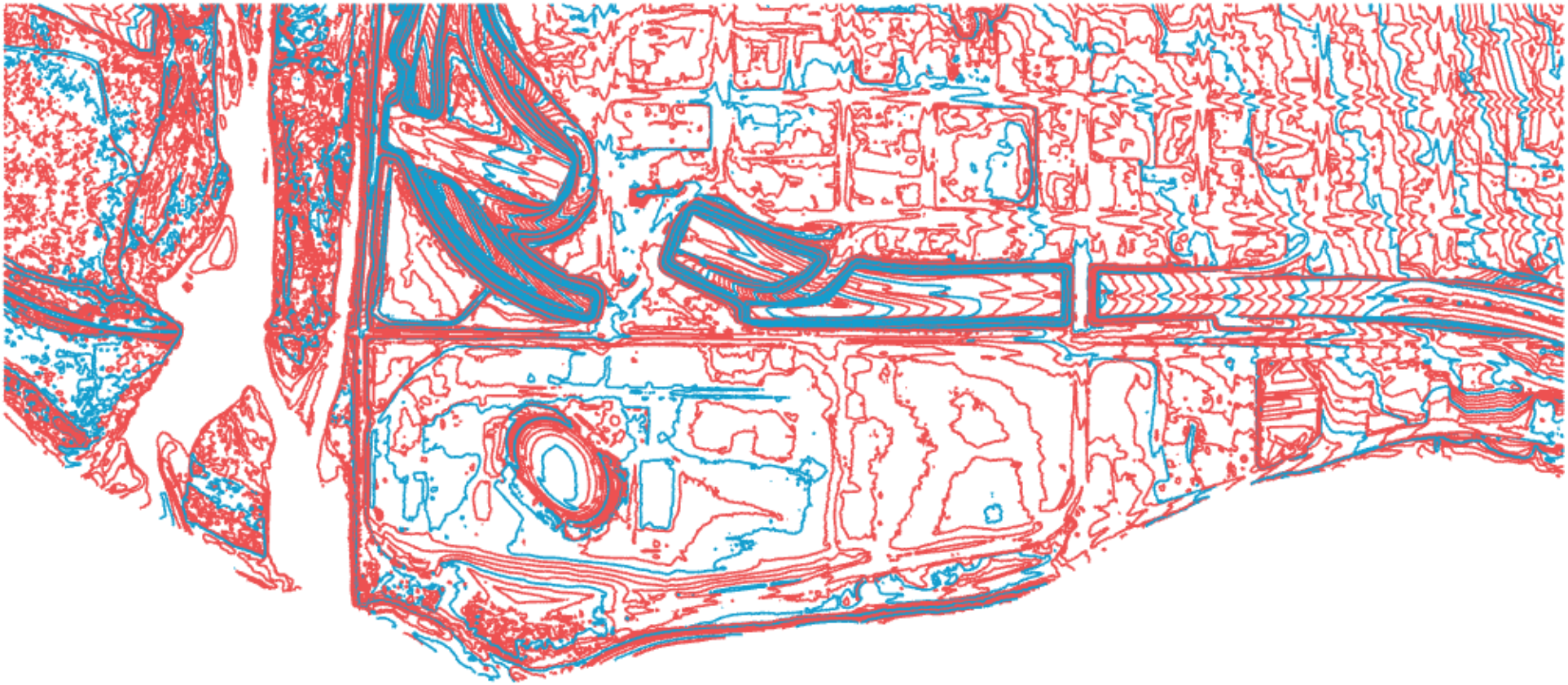
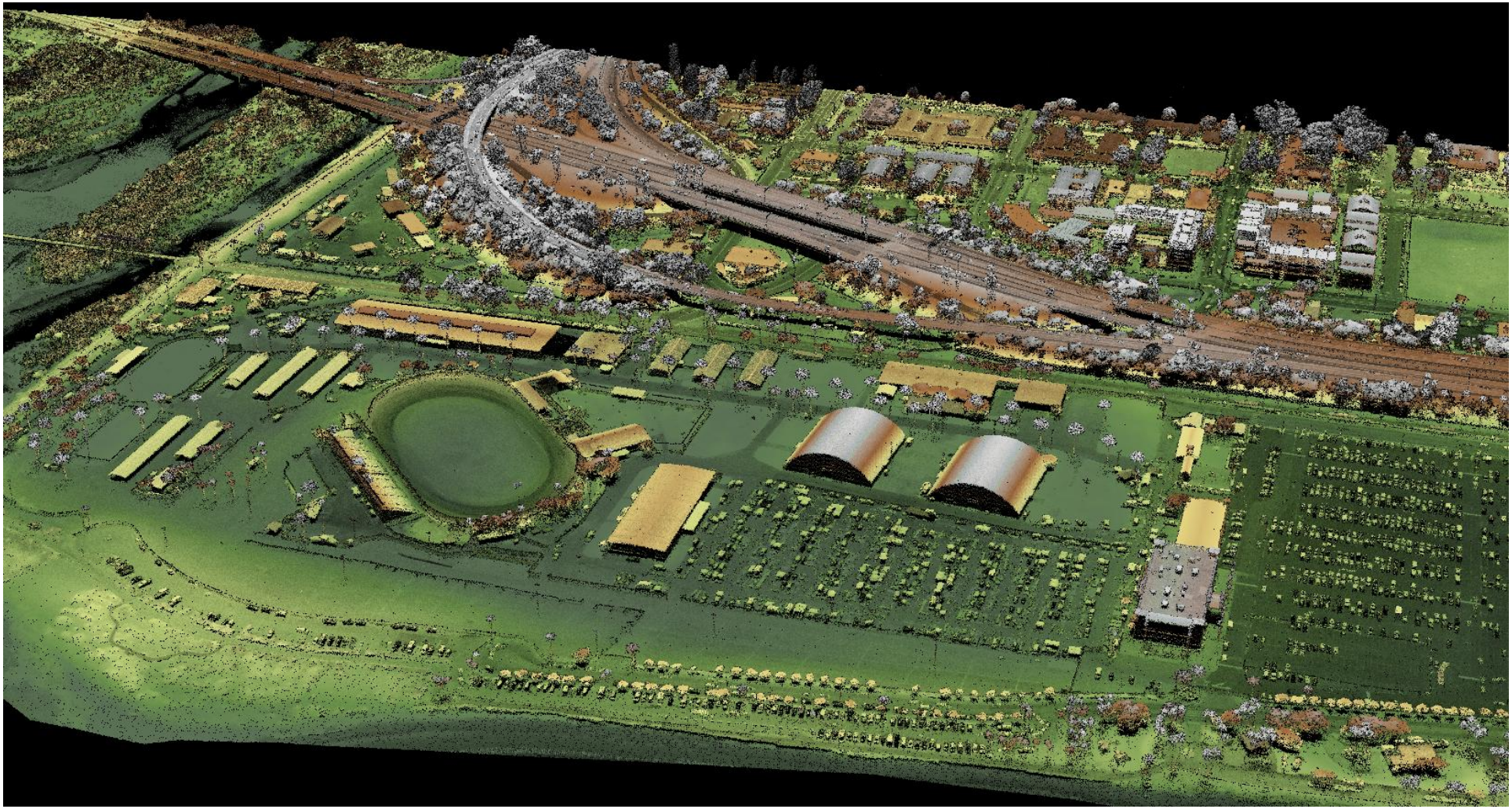
Orthoimagery is a georeferenced aerial or satellite image that has been geometrically corrected to remove distortions, resulting in a uniform scale that accurately represents the Earth's surface like a map. It combines the image-like detail of a photograph with the geometric accuracy of a map by correcting for issues like camera tilt, sensor geometry, and variations in terrain elevation. This process makes it possible to take accurate measurements and overlay orthoimagery with other Geographic Information System (GIS) data.

6” ORTHO IMAGERY



LIDAR contour lines are lines on a map that show points of equal elevation, generated from high-accuracy elevation data collected by LIDAR technology. LIDAR uses lasers to measure distances and create a detailed 3D point cloud of the ground, which is then used to generate these contour lines. The density of the lines indicates the steepness of the terrain: closely spaced lines show a steep slope, while widely spaced lines indicate a gentler slope.

TOPOGRAPHIC CONTOURS (DWG/SHP)



A LiDAR point cloud is a collection of 3D data points that represent an environment, created by a LiDAR sensor emitting laser pulses and measuring the time it takes for the light to reflect back. These points are used to build a detailed 3D model, and each point contains information such as its X, Y, and Z coordinates, as well as other attributes like intensity, color, and classification.

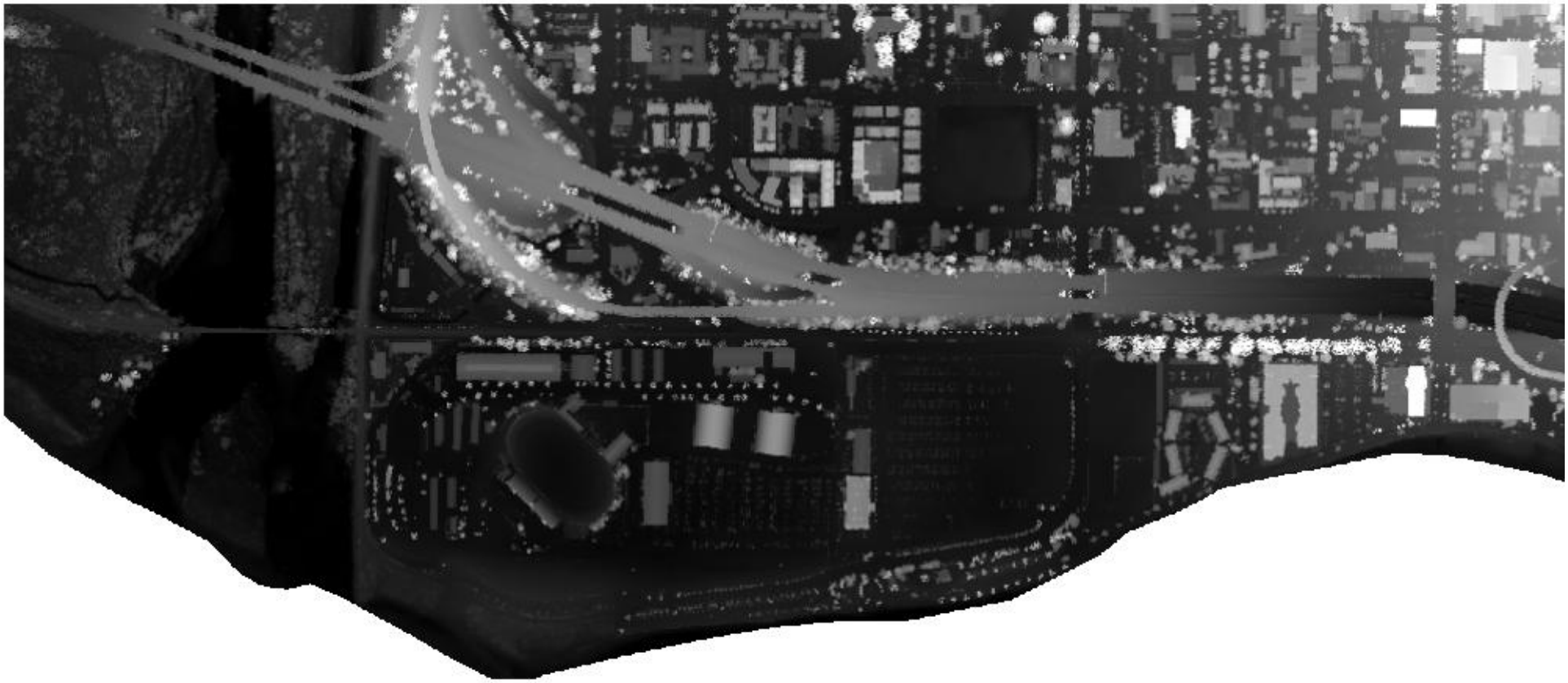
LIDAR POINT CLOUD (LAS/LAZ)

A LiDAR bare earth DEM is a high-resolution map of the Earth's surface created using LiDAR technology to show the ground elevation without any trees, buildings, or other structures. It is created by filtering out the "first returns" from laser pulses, which hit the top of objects, and instead using the last returns that reflect off the ground. This provides a true representation of the terrain itself.

BARE EARTH DIGITAL ELEVATION MODEL (DEM)

A LiDAR intensity image is a black-and-white image created from LiDAR data that represents the return strength of the laser pulse, similar to a grayscale photograph. It shows how much energy was reflected back to the sensor by each surface, with brighter areas indicating higher reflectivity and darker areas showing lower reflectivity. These images are useful for identifying features like roads, buildings, and vegetation, aiding in object classification and mapping.

INTENSITY IMAGERY



A LiDAR Digital Surface Model (DSM) is a 3D representation of the Earth's surface that includes the height of all objects on it, such as buildings, trees, and other man-made or natural features. LiDAR is a remote sensing method that uses laser pulses to measure distances, which are then used to create the DSM by capturing the elevation of the topmost surface, including all obstructions.

DIGITAL SURFACE MODEL (DSM)