GTMR
Geographic Time Management Resources

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Control Report

Salton Sea (2) / Niland / Calipatria, CA.

Ground Control Point (GCP) Project

(+ UAS Imagery / Lidar Project)

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TABLE OF CONTENTS

I. Project Overview

- GTMR (Geographic Time Management Resources Company) has provided a geospatial service/product to Empower UAV for this Imperial Valley Project.
- Established a Geometric Control Network within the Properties. Data collection by GTMR for checking / redundancy purposes. The Control Network provided coordinates for Ground Control Points (GCPs) for UAS (imagery) and LIDAR data collection processes.
- Selected locations around the property (in a strategic geometric method) are several Ground Control Points (GCPs): each 4' x 4': white / black contrast background.
- The GCP's provided the control for the photogrammetry (Structure from Motion) product and the LIDAR mapping product.
- Each of these Ground Control Points now have a coordinate value (X, Y, Z) attached to them. The following sections listed in the Table of Contents provide information relative to this project.

II. Project Datums and Reference System

The selection of the Project Datum for this project is based upon a couple of criteria. The first is to make a connection to the National Spatial Reference System (NSRS). The second is to provide quality Ground Control Point (GCP) data that can be relied upon and used by other entities to provide follow on services such as UAS, Landscape, and GIS services. The datum also serves as a common language for the entities that may provide the follow on services. These GCPs include both Horizontal and Vertical values, namely Coordinates and Elevations.

The third important aspect of this control is Policy/Law and Best Practices. The GCP control network established for this Project meets and/or exceeds the criteria for which this product is intended: Sub-Decimeter Control @ ≤10cm (Landscape, GIS and UAS); Reference is also made to the GIS/LIS addendum to the Report of the Task Force on the NCEES Model Law for Surveying. (See section VII ~ Accuracy; Local and Network)

The Coordinate information provided is associated with the North American Datum of 1983; (NAD83)2011, Epoch2010. In addition, coordinate information (Latitude and Longitude) have been provided. The National Spatial Reference System (NSRS) is a **consistent coordinate system** that defines latitude, longitude, height, scale, gravity, and orientation throughout the United States. The National Spatial Reference System is maintained by the National Geodetic Survey (NGS). (Please see section IV for the description of the NSRS network). The Orthometric Elevations associated with this system are computed based upon Ellipsoid Heights (Geoid 12B) which are associated with the North American Vertical Datum of 1988 (NAVD88). The Ground Control Points (GCPs) in this Control Network are tied into the National Spatial Reference System (NSRS).