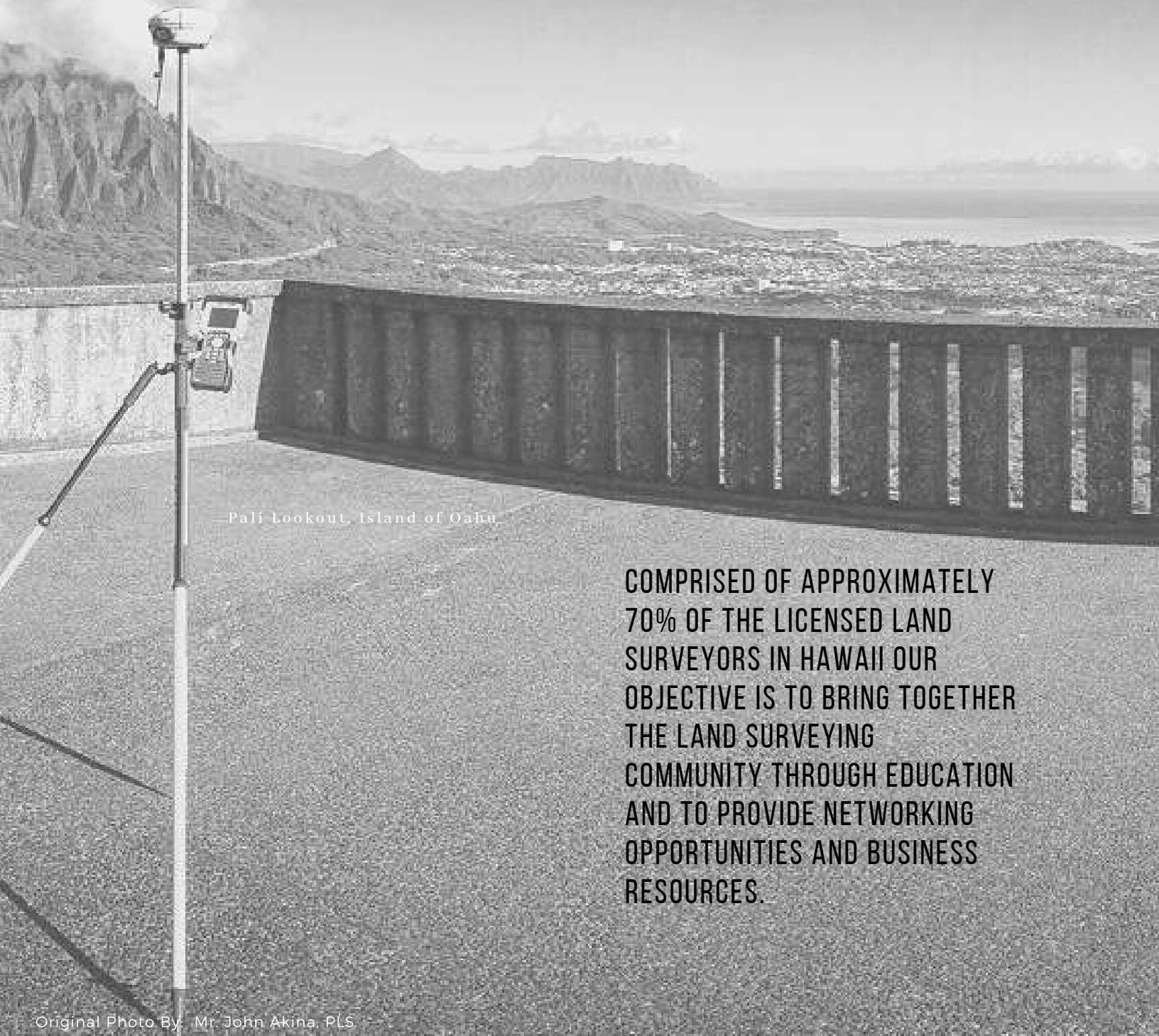
MAY - JUNE, VOLUME 34::ISSUE 3

LAE I LAE

POINT TO POINT

Lae I Lae, a newsletter from the **Hawaii Land Surveyors Association**, an affiliate and a member with the National Society of Professional Surveyors

EMAIL: hlsa-hawaii@outlook.com WEBSITE: www.hlsahawaii.org



Pali Lookout, Island of Oahu

COMPRISED OF APPROXIMATELY 70% OF THE LICENSED LAND SURVEYORS IN HAWAII OUR OBJECTIVE IS TO BRING TOGETHER THE LAND SURVEYING COMMUNITY THROUGH EDUCATION AND TO PROVIDE NETWORKING OPPORTUNITIES AND BUSINESS RESOURCES.

Original Photo By: Mr. John Akina, PLS

PRESIDENT'S MESSAGE

BY CHRISTINA VILLA

Aloha HLSA members!

We made it halfway through the year, are you feeling a bit of normalcy returning? Oahu has finally entered Tier 4 with fewer restrictions giving businesses more flexibility. I hope you are all safely taking advantage of some of the incentives that businesses are providing to get you out of the house! For the health of our community, it is nice to see Hawaii come together ahead of most of our country and cooperate in keeping our case counts and hospitalizations low. We are not in the clear, but we are moving forward. **https://www.oneoahu.org/reopening-strategy**

A huge **mahalo nui loa** to Luis Rojas from Carlson Software for a wonderful job educating our participants virtually, through three series of workshops on Carlson Software, this past May. We are very grateful for his time and for allowing us to offer it not only to our members, but anyone who was also interested, free of charge. Luis also provided a discount to any new purchasers of Carlson Software till the end of May. Another thank you goes out to Andrew Walther from BC Ministry of Transportation for hosting a "Survey Procedures in Civil 3D" virtual workshop in June. This session was very informative, so chockful of important tips that the hour went by quick! Thank you Luis and Andrew for dedicating your time, working with our different time zones to make these classes happen, and providing the opportunity to enrich our minds during this time.

If you missed out, we have ***more virtual workshops*** coming up just for you! The next workshop will be free of charge to HLSA members and $10 for non-members, held on **Thursday, July 22 from 3:30 to 4:30pm. Ed Carlson from NOAA's National Geodetic Survey will be hosting a virtual workshop on "Working the GPS Heights in Hawaii."** The workshop will discuss: 1. GPS project planning, 2. Using the GPS heights with new elevations from the new HIDOT leveling. I hope you all will be able to attend as Ed's classes are always educational and useful. If you have any questions this would be an opportune time to ask Ed. A link for registration will be on our website. **http://www.hlsahawaii.org/events/**

If you absolutely cannot make it in July, we are finalizing an August workshop to be hosted by Meyer Cummins. Meyer will discuss the "Basics of Research" at the State Survey Office and how to navigate through their online services. Meyer will enlighten you with the scoops for a more efficient approach to research. Providing resources are one of our main goals, let's keep the ball rolling on attendance and spreading the word.

PRESIDENT'S MESSAGE

BY CHRISTINA VILLA

The Board of Directors have been working on outreach education through our Public Relations Committee. Some of the big topics are Real Estate Outreach and “Pin Finders.” Since these topics can go hand in hand, it may be beneficial to spread your knowledge of what surveying is and what Licensed Professional Land Surveyors do. Let’s spread clarity, many surveying companies work with realtors or private owners. The more we can educate and build relationships with them, then there will be more incentive to contact individuals who perform proper land surveying work. It is always important to contact a professional land surveyor when you are buying or selling real estate, dividing any parcel of land and prior to building any permanent structure on your property. Obtaining a professionally performed survey may be the most important thing you do for your property or for your potential purchase. It allows you as the property owner, buyer, or seller to be informed about your investment. For any type of dispute found during your survey affecting the boundary that may need to be resolved legally in court, your professional surveyor is an expert witness and assumes full professional responsibility for the accuracy of the survey performed. Having boundaries surveyed or solving boundary issues requires a combination of technical expertise, judgement based on legal precedence and sufficient experience.

> ***H.R.S. 464 states: “Professional surveyor”, “professional land surveyor”, or “land surveyor” means a person who holds oneself out as able to practice, or who does practice, land surveying in this State.”***

We are very thankful to have H.B. 244 at Governor Ige’s attention. We are also hoping it will be signed into law. We know there will be some concerns from the public, even though we got this far with the bill. As surveyors, let’s familiarize ourselves with the bill, so if anyone has a question, we can answer rightfully. This bill is not only beneficial to surveyors, but more importantly the owner of the land. The new maps and descriptions will accurately reflect the lands being conveyed. Regular system mapping will ascribe the Hawaiian land titles and encumbrances that run with the land in perpetuity. When an owner purchases deregistered property it is in their best interest to know exactly what they are buying, and H.B. 244 will ensure that issues of title are apparent and intact. If you need a copy of the bill or more clarity please contact HLSA by email at hlsa-hawaii@outlook.com.

As always, if you have any recommendations on workshops or if you are interested in sharing your knowledge in surveying with the members, feel free to contact us.

Stay vigilant in your health and happiness

Sincerely,
Christina Villa
2021 HLSA President

Notes from NOAA, Pacific Region Geodetic Advisor

With my upcoming retirement, within the next 18months. I want talk about a couple of the items that have happen while during my time as NGS advisor to Hawaii and Pacific. First, it has been an honor work with HLSA and all surveyors in Hawaii in presenting workshops on different geodetic topics. Second, over the years working with Hawaii DOT on releveling project, under contract, for the islands of Kauai, Oahu, Maui, Molokai, Lanai and Hawaii for a total of about 1001.3 miles. This was a large effort on the part of Hawaii DOT for recon, mark setting, descriptions, leveling observations following FGCS Specifications and Procedures for Second Order Class I digital leveling, data processing following NGS Guidelines, and submitting data to NGS island by island. To date the islands of Oahu, Maui and Lanai are completed. Molokai and Kauai are in progress.

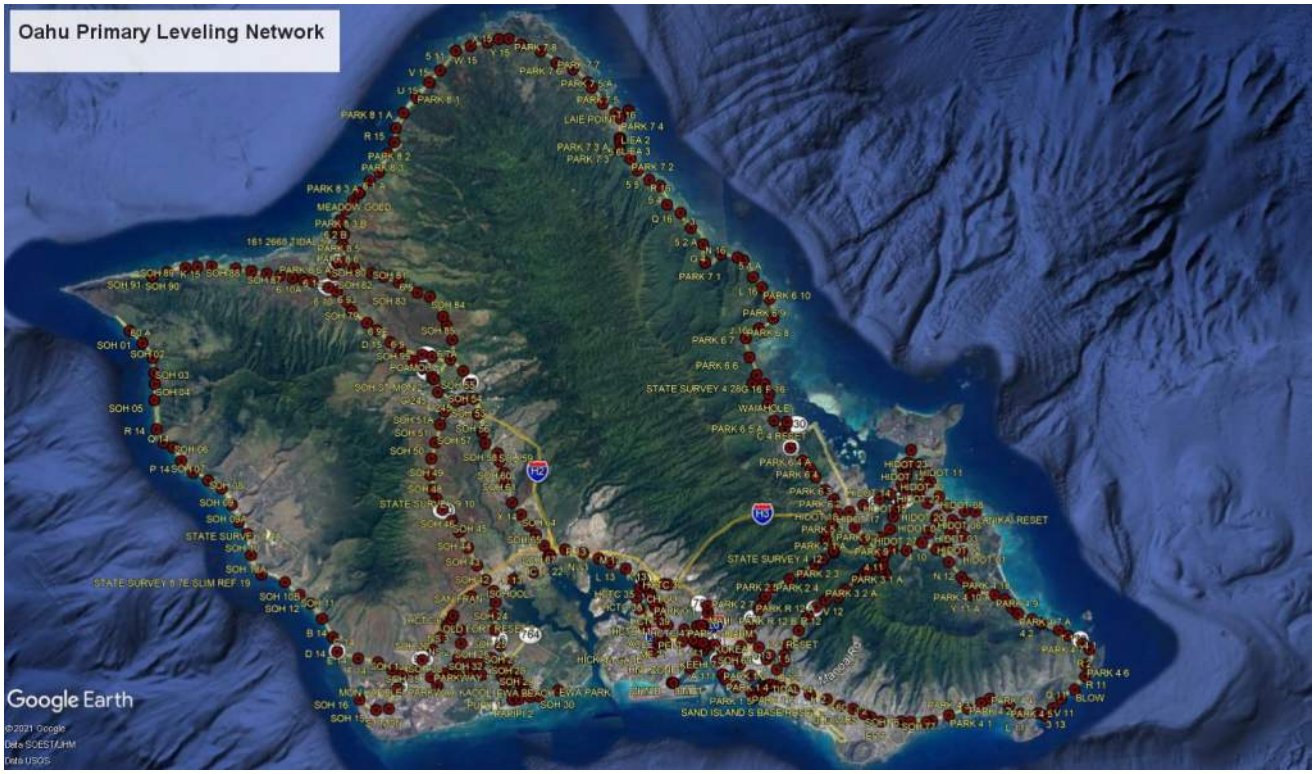
The following is the method used adjust leveling on each island:
First, a tidal benchmark was determined by the Hawaii DOT and National Geodetic Survey (NGS) to serve as the datum origin point for the island. The height of this point was to be exactly identical to the LMSL height of this bench mark for the National Tidal Datum 1983-2001 as determined by the Center for Operational Oceanographics Products and Services (Co-OPS).
Second, a primary adjustment was done using the latest contracted leveling data holding the datum point elevation fixed.
Third, using the data from all the previous surveys which were already loaded into the NGS database. They had a different datum and different epoch date. The secondary adjustment was performed holding all published heights from the primary adjustment. This adjustment would produce elevations which were on the same datum and epoch date.

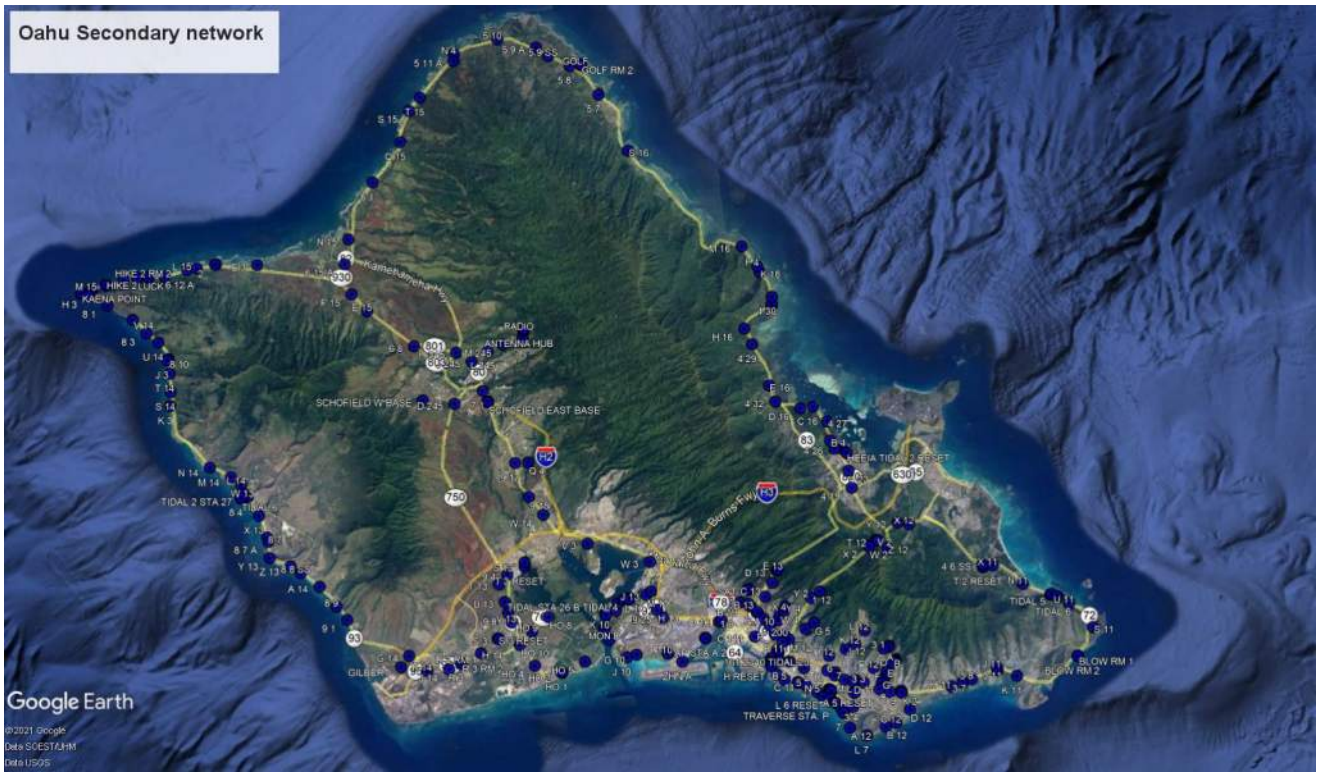
Island of Oahu

Datum Point:
161 2340 TIDAL 21 (TU0291) with elevation 2.042m on the National Tidal Datum Epoch (NTDE) 1983–2001.
Primary Adjustment:
The adjustment was done using the 2017 data done by Sam O. Hirota, INC., ParEn, Inc. dba Park Engineering, and Hawaii Department of Transportation- Highways Division – Cadastral Engineering Section. The main length of the project was 182 km with 218 km of spur line length. A total of 414 benchmarks were observed and their elevations published.
Secondary Adjustment:
There were 19 previous projects loaded into the NGS Integrated Database (IDB). The descriptions and observations were loaded but never adjusted. The secondary adjustment was performed holding all 414 published heights from the primary adjustment of the latest project. Because the latest 2017 project was a Second order class I (2/1) project, all these heights had to be published as 2/1, but the observations will remain as First Oder Class II (1/2).

The appropriate text below was added to the datasheets for the Permanent Identifiers (PIDs) in these adjustments and should have the following:
Primary: “The orthometric height was determined by differential leveling and adjusted by the National Geodetic Survey in June 2019 holding the tidal station 161 2340 TIDAL 21 to the 1983/2001 tidal epoch value 2.042 meters.”

Secondary: “The orthometric height was determined by differential leveling and adjusted by the National Geodetic Survey in September 2019 holding the tidal station 161 2340 TIDAL 21 to the 1983/2001 tidal epoch value 2.042 meters.”
NOTE, NOTE !!!!: If description does NOT have one of the above statements in the text.
User BEWARE!!! We know the benchmark has was determined by leveling but who knows which tidal datum it reference too.

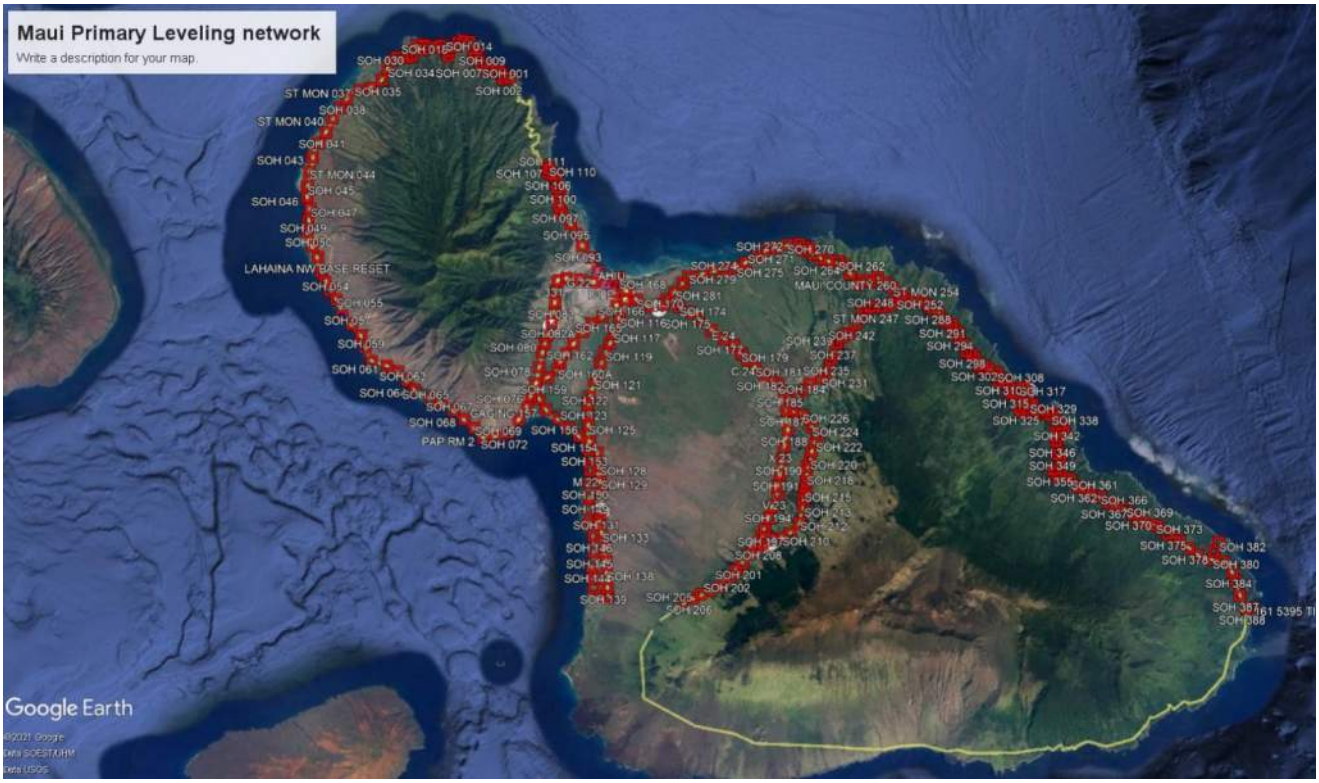


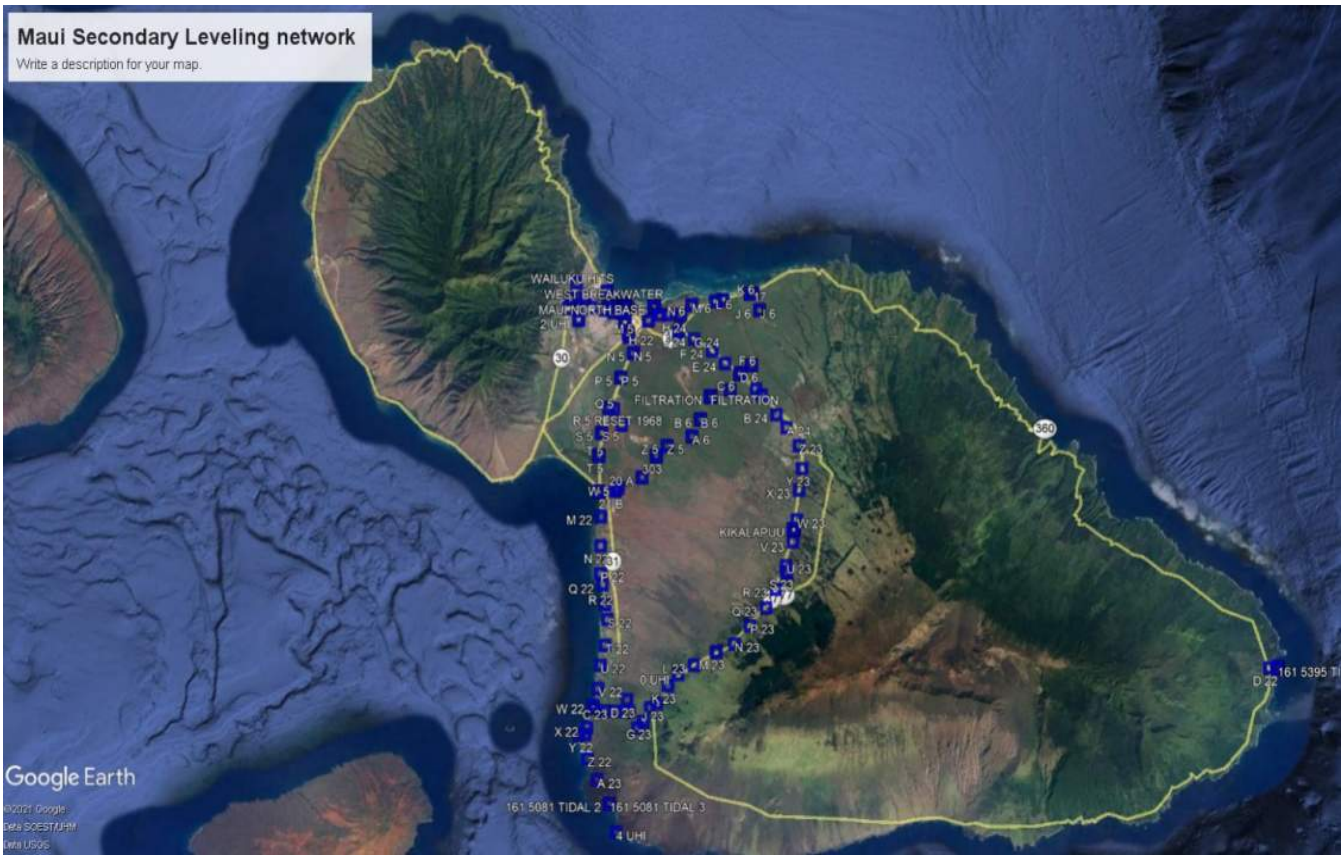


Island of Maui

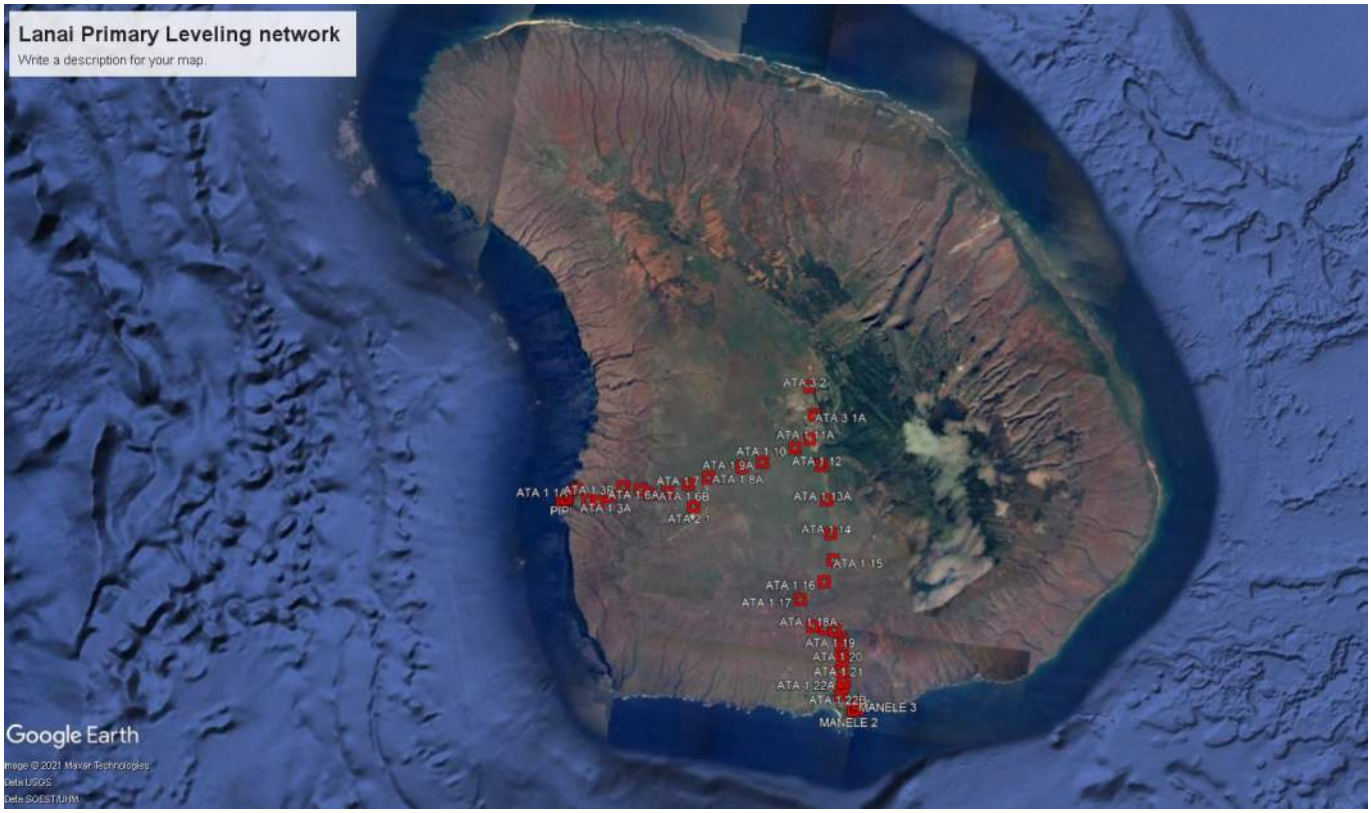
Datum Point:
161 5680 C TIDAL (DK3427) on the National Tidal Datum Epoch 1983-2001, with an elevation 1.461 m.
Primary Adjustment:
The adjustment was done using the 2019 data done by Sam O. Hirota, INC. The main line length of this project is 85 km with 199 km of spur line length. A total of 386 benchmarks were observed, and their elevations were published.
Secondary Adjustment:
There were 4 previous projects loaded into the NGS Integrated Database (IDB). The descriptions and observations were loaded but never adjusted. The secondary adjustment was performed holding all 386 published heights from the primary adjustment of the latest project. Because the latest 2019 project was a Second order class I (2/1) project, all these heights had to be published as 2/1, but the observations will remain as First Oder Class II (1/2).

The appropriate text below was added to the datasheets for the Permanent Identifiers (PIDs) in these adjustments and should have the following:
Primary: "The orthometric height was determined by differential leveling and adjusted by the National Geodetic Survey in June 2020 holding the tidal station 161 5680 C TIDAL to the 1983/2001 tidal epoch value 1.461 meters".
Secondary:
"The orthometric height was determined by differential leveling and adjusted by the National Geodetic Survey in July 2020 holding the tidal station 161 5680 C TIDAL to the 1983/2001 tidal epoch value 1.461 meters".
NOTE, NOTE !!!!: If description does NOT have one of the above statements in the text.
User BEWARE!!! We know the benchmark has was determined by leveling but who knows which tidal datum it reference too.





Island of Lanai



Datum Point:
161 4465 TIDAL 2 (DL6323) on the National Tidal Datum Epoch 1983-2001, with an elevation 3.478 m.
Primary Adjustment:
The adjustment was done using the 2017 data done by Austin, Tsutsumi & Associates Inc. The main line length of this project is 23 km with 3 km of spur line length. A total of 42 benchmarks were observed, and their elevations were published. Because the latest 2017 project was a Second order class I (2/1) project, all these heights had to be published as 2/1.

The appropriate text below was added to the datasheets for the Permanent Identifiers (PIDs) in these adjustments and should have the following:
Primary:
"The orthometric height was determined by differential leveling and adjusted by the National Geodetic Survey in August 2020 holding the tidal station 161 4465 TIDAL 2 (DL6323) to the 1983/2001 tidal station epoch value 3.478 meters".

NOTE, NOTE!!!: Since Lanai did not have any previous leveling only a primary adjustment was done.

Upon the completion of the island leveling I have been asked "What is the change in elevation for the existing/old benchmarks". I developed a tables for of the changes in the elevation for each island. Also, I have "kml" files of the benchmarks for each island. You can email me (ed.carlson@noaa.gov) or Chris Guerin (Christopher.Guerin@hawaii.gov) and request the "kml" file or tables.

Finally, the new leveling network was a huge effort on part of HIDOT over the years. PLEASE, if you are involved in a project that a you know that a benchmark might be destroyed or relocated please contact myself or Chris Guerin.

Edward Carlson
NOAA, Pacific Region Geodetic Advisor

EMPLOYMENT OPPORTUNITIES

Hawaiian Electric

Lead Land Surveyors: Oahu and Hawaii Island

Seeking experienced licensed land surveyors (State of Hawaii) to perform, direct and manage survey projects. Candidates should have experience with Land Court maps and Land Court certificate preferred. Must have a thorough knowledge of the principles of surveying and proficiency in mapping, writing land descriptions and title searching. Must be familiar with operating a variety of survey equipment. Requires a thorough knowledge of federal, state and county rules and regulations related to survey. Must be able to prioritize safety in all work.

Responsibilities include performing and directing survey work to locate land boundaries, create easements and layout facilities for construction projects. Conducts studies, performs calculations and prepares documents to determine land titles, ownership and descriptions of land in connection with capital construction projects, general operations and facilities. The lead surveyor also serves as a resource for land surveying matters for Hawaiian Electric, Maui Electric and Hawaii Electric Light.

The lead land survey positions must have the demonstrated ability to be a team player and remain flexible in a demanding work environment and adapt to rapidly changing priorities, such as, cost containment, change of Company's goals and project focus. The candidate must also have demonstrated interpersonal skills to handle confrontational, difficult and/or sensitive issues. Ability to handle such issues with professionalism while using tact, courtesy, and discretion.

For a full list of qualifications, skills, knowledge and experience required, and to apply for this job or to explore other employment opportunities, please visit us at: **hawaiianelectric.com/careers**.

Req # 5289 (Oahu):
https://career4.successfactors.com/sfcareer/jobreqcareer?jobId=5289&company=hawaiianel
Req # 5302 (Hawaii Island):
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PODCAST

Mentoring MONDAYS

Please check out Mentoring Mondays for informational presentations to help build our knowledge in this profession.
WWW.MENTORINGMONDAYS.XYZ

Members have spoken and we are listening! To fill the void left by the ending this past July of the NSPS Radio Hour, the weekly radio show hosted by Executive Director Curt Sumner, we are proud to announce our new podcast, "SURVEYOR SAYS!" featuring all things surveying.

https://surveyorsays.podbean.com/

Surveyors Supply Company, Inc.

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- Accuracy: < 3 cm
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- Point density @100 m: 50 - 100 points/m²

Trinity F90+ UAS with Qube 240 LiDAR

- Max. Take-off weight: 5.4 kg (11.9 lbs)
- Max. Flight time: 60 min
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- Maximum flight altitude: 3500 m MSL
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- Cruise speed: 18 m/s (35 kn)
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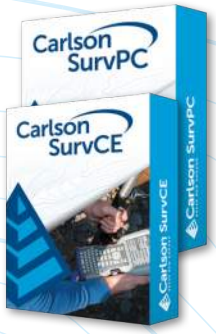
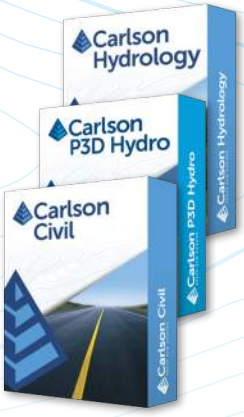


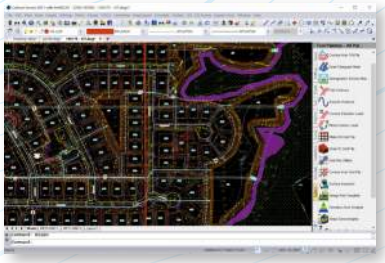
From the Field

To the Office

To Completion

Carlson PhotoCapture





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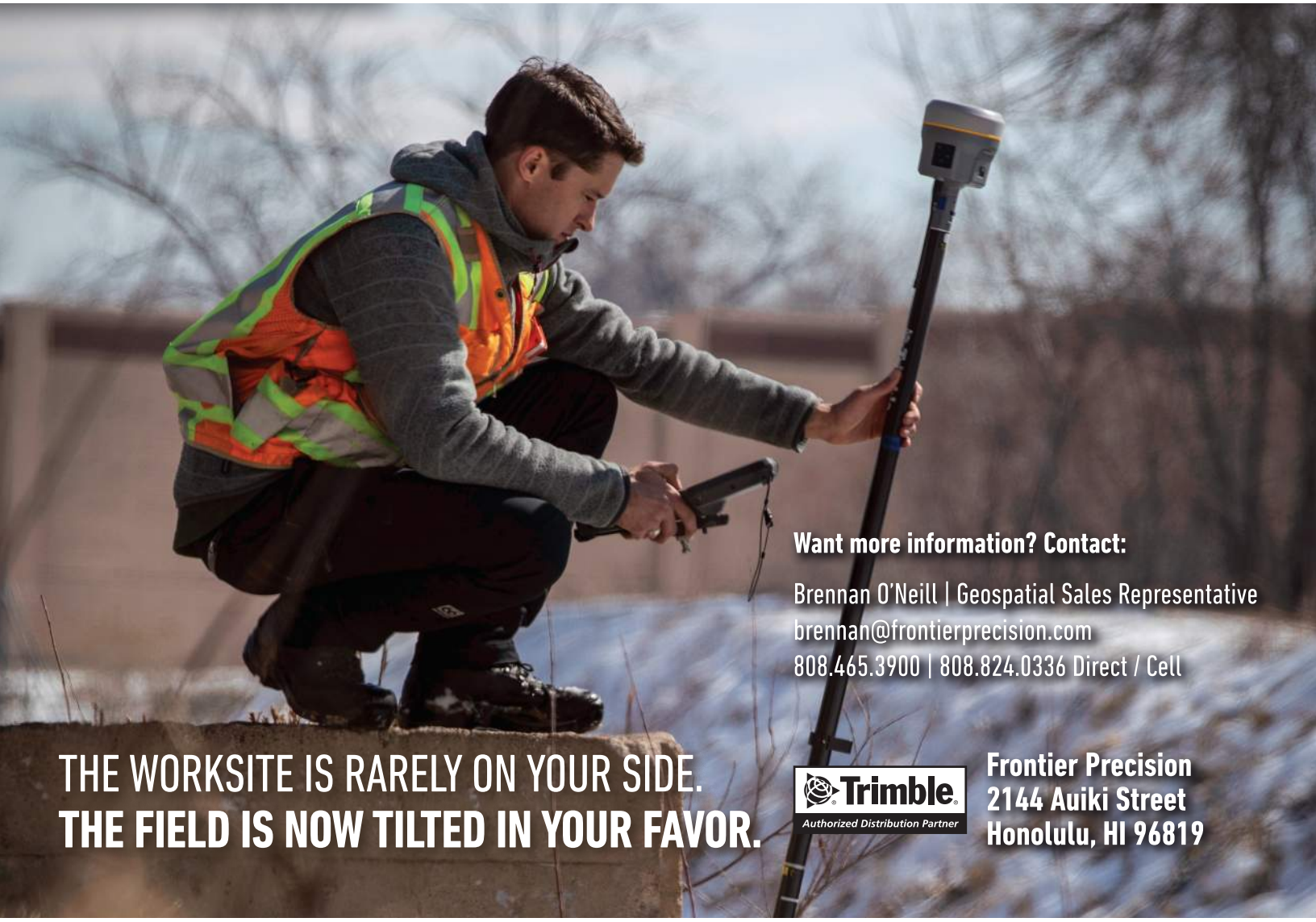

Want more information? Contact:

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Utilizing specialized software, we process the 3DLS data and create deliverables that are compatible with a variety of design and analysis programs. Our modeling teams have developed workflow systems to provide a practical interface solution—merging 3DLS point cloud data into industry standard drafting, modeling, and Building Information Modeling (BIM) programs.

Benefits

3DLS offers many benefits, including accurately gathering more data in less time than traditional surveying techniques, added safety, and reduced facility downtime.

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- **Flexibility.** Systems can be mounted to vehicles to cover vast landscapes, roads, or rail systems quickly.
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- **Site Sensitive.** Drone mounted 3D scanning supports access to historic sites, preserves history, and supports national defense.
- **Reduced Time.** Just in time data eliminates the need to schedule crews weeks in advance and saves data calibration and consolidate time.
- **Accuracy.** As-built data is readily available for future modifcations and improvements.

Applications

Clients are moving to BIM modeling for accuracy

We employ 3DLS on projects that require high definition and precision using rapid data collection techniques. Examples include as-builts, roadways, bridges, airports, historical buildings, forensics, power generation, environmental, industrial inventories, and more.

Technology

What is it?
Highly accurate method of capturing intimate details of existing buildings, construction sites, or water ways.

How does it work?
Uses laser light and advanced scanners to create 3D points.

What can it do?
It can document dimensions and measurements of large and small scale projects with accuracy of 2-4mm.

Want to learn more?
Scan the QR code below for 4 reasons why 3D modeling and BIM are the future of infrastructure design.

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The Stantec community unites approximately 22,000 employees working in more than 350 locations across six continents. Our work—from initial project concept and planning through design, construction, and commissioning—begins at the intersection of community, creativity, and client relationships. With long-term commitment to the people and places we serve, Stantec has the unique ability to connect to projects on a personal level and advance the quality of life in communities across the globe.

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