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UTILITY PATENT APPLICATION TRANSMITTAL <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>		Attorney Docket No. 6338.497	
		First Named Inventor Dale R. Thornberry	
		Title SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY	
		Priority Mail Express® Label No. Electronically Filed	

APPLICATION ELEMENTS <i>See MPEP chapter 600 concerning utility patent application contents.</i>	ADDRESS TO: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450
1. ☐ Fee Transmittal Form (PTO/SB/17 or equivalent) 2. ☐ Applicant asserts small entity status. See 37 CFR 1.27 3. ☐ Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent. 4. ☒ Specification [Total Pages <u>38</u>] Both the claims and abstract must start on a new page. (See MPEP § 608.01(a) for information on the preferred arrangement) 5. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets <u>21</u>] 6. Inventor's Oath or Declaration [Total Pages _____] (including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e)) a. ☐ Newly executed (original or copy) b. ☐ A copy from a prior application (37 CFR 1.63(d)) 7. ☒ Application Data Sheet * See note below. See 37 CFR 1.76 (PTO/AIA/14 or equivalent) 8. ☐ CD-ROM or CD-R in duplicate, large table, or Computer Program (Appendix) ☐ Landscape Table on CD 9. Nucleotide and/or Amino Acid Sequence Submission (if applicable, items a. - c. are required) a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on: i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies	ACCOMPANYING APPLICATION PAPERS 10. ☒ Assignment Papers (cover sheet & document(s)) Name of Assignee _____ 11. ☒ 37 CFR 3.73(c) Statement (when there is an assignee) ☒ Power of Attorney 12. ☐ English Translation Document (if applicable) 13. ☒ Information Disclosure Statement (PTO/SB/08 or PTO-1449) ☐ Copies of citations attached 14. ☐ Preliminary Amendment 15. ☐ Return Receipt Postcard (MPEP § 503) (Should be specifically itemized) 16. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 17. ☐ Nonpublication Request Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent. 18. ☐ Other: _____ _____ _____ _____

*Note: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 must be included in an Application Data Sheet (ADS).
 (2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

19. CORRESPONDENCE ADDRESS					
☒ The address associated with Customer Number: <u>30589</u> OR ☐ Correspondence address below					
Name	Dunlap Coddling, P.C.				
Address	P.O. Box 16370				
City	Oklahoma City	State	OK	Zip Code	73113
Country	US	Telephone	405-607-8600	Email	mbrockhaus@dunlapcoddling.com
Signature	<i>Marc Brockhaus</i>			Date	02/01/2019
Name (Print/Type)	Marc A. Brockhaus			Registration No. (Attorney/Agent)	40,923

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6338.497
		Application Number	
Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Dale	R.	Thornberry		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Carmel	State/Province	IN	Country of Residence	US
Mailing Address of Inventor:					
Address 1		13890 Wildcat Dr.			
Address 2					
City	Carmel	State/Province	IN		
Postal Code	46033	Country	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Chris	T.	Thornberry		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Indianapolis	State/Province	IN	Country of Residence	US
Mailing Address of Inventor:					
Address 1		10825 Cyrus Dr.			
Address 2					
City	Indianapolis	State/Province	IN		
Postal Code	46231	Country	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Mark	F.	Garringer		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number		6338.497	
		Application Number			
Title of Invention		SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY			
City	Eaton	State/Province	IN	Country of Residence	US
Mailing Address of Inventor:					
Address 1		516 E. South			
Address 2					
City	Eaton	State/Province	IN		
Postal Code	47338	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence Information of this application.			
Customer Number	30589		
Email Address	mbrockhaus@dunlapcoddington.com	Add Email	Remove Email

Application Information:

Title of the Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY		
Attorney Docket Number	6338.497	Small Entity Status Claimed ☐	
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	21	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6338.497
	Application Number	
Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY	

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	30589		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
	Continuation of	15/943337	2018-04-02		
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15/943337	Continuation of	15/005977	2016-01-25	9933254	2018-04-03
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15/005977	Continuation of	14/018943	2013-09-05	9244589	2016-01-26
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
14/018943	Continuation of	13/774478	2013-02-22	8542880	2013-09-24
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
13/774478	Continuation of	12/470984	2009-05-22	8401222	2013-03-19

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6338.497
		Application Number	
Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6338.497
	Application Number	
Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	6338.497
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Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

- ☒ Assignee
 ☐ Legal Representative under 35 U.S.C. 117
 ☐ Joint Inventor
- ☐ Person to whom the inventor is obligated to assign.
 ☐ Person who shows sufficient proprietary interest

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name Pictometry International Corp.

Mailing Address Information For Applicant:

Address 1	25 Methodist Hill Drive		
Address 2			
City	Rochester	State/Province	NY
Country	US	Postal Code	14623
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button.

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6338.497
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Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY		

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		State/Province	
Country ¹		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application **and** either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic** entity (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	<i>Marc Brockhaus</i>		Date (YYYY-MM-DD)	2019-02-01	
First Name	Marc A.	Last Name	Brockhaus	Registration Number	40,923

Additional Signature may be generated within this form by selecting the Add button.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6338.497
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Filed Electronically on February 1, 2019

SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

INCORPORATION BY REFERENCE

[001] The present patent application claims priority to and is a continuation of the patent application identified by U.S. Serial No. 15/943,337, filed April 2, 2018, which is a continuation of U.S. Serial No. 15/005,977, filed January 25, 2016, which is a continuation of U.S. Serial No. 14/018,943, filed September 5, 2013, which is a continuation of the patent application identified by U.S. Serial No. 13/774,478, filed February 22, 2013, which is a continuation of the patent application identified by U.S. Serial No. 12/470,984, filed May 22, 2009, all of which the entire contents of which are hereby incorporated herein by reference.

FIELD OF INVENTION

[002] The present invention is in the field of measuring roofing dimensions and other attributes, and more particularly pertains to the use of aerial imagery in that field.

BACKGROUND

[003] Roof measuring, for example, dimension, length and areas has been done for many years, such as in connection with for estimating and bidding roofing jobs. Also, for many years, companies and products have offered such estimation services and reporting software reports using aerial imagery on which roof line outlines are traced, dimensions and areas are automatically based on those tracings, and vertical elevations (via pitch or otherwise) are included in mathematical models.

[004] The present invention is an improvement on such aerial imagery, systems and processes, providing non-obvious features that enhance convenience, flexibility, and/or accuracy.

SUMMARY

[005] The claims, and only the claims, define the invention. The present invention includes several, but not necessarily all, of creating a first layer and a second layer, in computer memory and substantially overlapping at least a segment of line from said first layer with at least a segment of another line from said second layer, wherein said first non-dimensional attribute is different from said second non-dimensional attribute; and/or an interactive computer file, said interactive computer file including: length numeric values and at least one user length field enabling a client with said interactive file to override at least one of said length numeric values, where said area operator may automatically recalculate area based on said length field override; and/or, providing at least one computer input field for a user to input first location data generally

corresponding to the location of the building; on said imagery of an area providing a visual marker that is moveable on said computer monitor around a region, said marker initially corresponding to said first location data, wherein said marker may be moved to a final location on top of the building to more precisely identify the location of the building roof structure; and providing a computer input capable of signaling user-acceptance of the final location of said marker; and/or other features, optionally combined in various ways as set forth in the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[006] FIG. 1 is one example of a flow chart of acts according to the present invention.

[007] FIG. 2 is another example of a flow chart of acts according to the present invention.

[008] FIG. 3 is another example of a flow chart of acts according to the present invention.

[009] FIG. 4A is one example of a computer screen shot to enter an address.

[0010] FIG. 4B is one example of a computer screen shot depicting imagery and a marker based on an address.

[0011] FIG. 4C is a computer screen shot like FIG. 4B with the marker moved over a selected building.

[0012] FIG. 4D is a computer screen shot and/or reporting confirming selection of a building.

[0013] FIG. 5A is an example of reporting.

- [0014]** FIG. 5B is another example of a screen shot and/or reporting.
- [0015]** FIG. 5C is another example of a screen shot and/or reporting.
- [0016]** FIG. 5D is another example of a screen shot and/or reporting.
- [0017]** FIG. 5E is another example of a screen shot and/or reporting.
- [0018]** FIG. 5F is another example of a screen shot and/or reporting.
- [0019]** FIG. 5G is another example of a screen shot and/or reporting.
- [0020]** FIG. 5H is another example a screen shot and/or of reporting.
- [0021]** FIG. 5I is another example of a screen shot and/or reporting.
- [0022]** FIG. 6 is another example of a screen shot and/or reporting.
- [0023]** FIG. 7A is a top plan view of aerial imagery of a building roof structure.
- [0024]** FIG. 7B is a display of the imagery of FIG. 7A with some optional features.
- [0025]** FIG. 7C depicts the imagery of FIG. 7A with shadowing.
- [0026]** FIG. 7D depicts FIG. 7C with the addition of computer generated line.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0027] For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the examples, sometimes referred to as embodiments, illustrated and/or described herein. Those are mere examples. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended. Such alterations and further modifications in the described processes, systems or devices, any further applications of the

principles of the invention as described herein, are contemplated as would normally occur to one skilled in the art to which the invention relates, now and/or in the future in light of this document.

[0028] As used in the claims and the specification, the following terms have the following definitions:

[0029] The term "adjustment roof plane" means a roof plane, having at least three border lines, that may be hidden (partially or totally) from view from some or all aerial imagery and which may be included to add to (or subtract from) an aggregate roof area or other attributes.

[0030] The term "aerial imagery" means pictures, normally including photographs (visual light, infrared, color, black and white, or otherwise) taken from an overhead view (straight down, oblique, or otherwise) with respect to a building roof. This may include imagery taken from airplanes, satellites, balloons, or otherwise.

[0031] The term "attributes" means one or more distinguishing or identifying characteristic.

[0032] The term "border line" means a line segment, straight, curved, free form or otherwise that generally corresponds with the edge of a roof plane.

[0033] The term "building" means a real estate structure, such as for example, a house, condominium, office building, outbuilding, garage, warehouse, factory or otherwise.

[0034] The term "client" means a person or entity that orders or obtains an aerial imagery report.

[0035] The term "computer input" means data, information and/or signals provided by a computer user. This may include numbers, words, mouse clicks, "enter", check boxes, dialog boxes, and otherwise.

[0036] The term "computer monitor" includes any computer screen or other visual output, including projectors, flat panel screens, LCD screens, LED screens and otherwise that provide visual output from a computer.

[0037] The term "computer processing means" means computer hardware and software, including computer memory, microprocessors, computer code and computer logic to provide digital computing.

[0038] The term "contrast" means discernable relative differences in lightness and darkness.

[0039] The term "deliverable" means that which is or may be delivered to a client, including printed and/or electronic reports and information.

[0040] The term "digital" means using numeric digits, specifically including binary digits.

[0041] The term "direct proportion" means that one or more variables that change as a function as another value in a generally linear function.

[0042] The term "dissects" means to sub-divide into two or more parts.

[0043] The term "electronic drawing" means to draw lines and/or shapes electronically via computer. This can include pixel-based drawings, vector-based drawings, and/or otherwise.

[0044] The term "field" means a location for computer data input and/or output of a value having at least one corresponding associated place in computer memory.

[0045] The term "final location" is the relative spot for placing a marker. This normally corresponds to unique latitude and longitude coordinates.

[0046] The term "generating" means to make or create.

[0047] The term "imagery database" means a computer database containing aerial imagery computer files and the associated location coordinates.

[0048] The term "interactive computer file" is a computer file in which a user may input and/or override one or more numeric values stored in memory as part of the file.

[0049] The term "internet-based imagery" means imagery, such as aerial imagery, which is accessible through an internet access connection. One popular example is Google® Earth.

[0050] The term "latitude and longitude coordinates" mean numeric coordinates for a location on the planet corresponding to latitude (east, west) and longitude (north, south).

[0051] The term "layer" means a part of a graphic computer file that visually overlays one or more other parts and which has at least partially transparent portions allowing visualizations of parts/layers below it.

[0052] The term "lines" means a straight, curved, and/or free form segment.

[0053] The term "location data" means information which uniquely identifies geographic position. This may include latitude and longitude coordinates, street addresses and/or otherwise.

[0054] The term "non-dimensional attribute" means an attribute other than a numeric value, such as other than length, width, height, or area.

[0055] The term "numeric values" means alphanumeric numbers, and/or their binary equivalent.

[0056] The term "operator" means a mathematical function including, but not limited to multiplication, division, addition, subtraction, sum, average, square root and/or the foregoing with or without constant and/or co-efficient.

[0057] The term "orientation" means the direction of something with respect to something else.

[0058] The term "outline" means the path or collection of lines generally coinciding with the outside of a shape.

[0059] The term "outline drawing" means drawing of lines around an outline.

[0060] The term "over said imagery" means position on top of and in alignment with underlying Imagery.

[0061] The term "override" means to substitute or replace one value for another value. This may be done with numeric values, non-dimensional attributes and otherwise.

[0062] The term "perimeter lines" means a line or lines that outline the outer most edge of a roof structure. This can include, but is not limited to, a roof free edge with a gutter and to a roof free edge without a gutter.

[0063] The term "pitch numeric value" is a single numeric value corresponding to the pitch or slope of a portion of roofing.

[0064] The term "proportioning" means to increase or decrease the size of a line, outline or other object to directly proportional to the change in another object.

[0065] The term "region" means a location on earth that is depicted in aerial imagery. Ordinarily, it will include at least one entire building structure, and preferably, will include at least some features, such as streets, trees, or other buildings adjacent the building structure.

[0066] The term "report" means one or more pages or screen shots, or both, made available to a user including aerial imagery and/or data from such imagery. This includes, but is not limited to, one or more interactive computer files.

[0067] The term "roof flashing edge" means an edge where roofing meets with a generally vertical structure, such as a wall, typically with flashing.

[0068] The term "roof free edge with a gutter" means the unbound edge of a roof with a rain drainage gutter.

[0069] The term "roof free edge without a gutter" means the unbound edge of a roof without a rain drainage gutter.

[0070] The term "roof hip" means an edge where two roof planes meet to form a generally upward sloping ridge.

[0071] The term "roof pitch" means the slope of a roof plane. It may be expressed in angles, ratios, or otherwise. This includes stating the rise over run, as well as stating merely the rise in view of an assumed or industry standard run. For example, a slope of 6 inch rise for every 12 inch run (horizontal") may be stated to be a "6" pitch.

[0072] The term "roof plane" means a generally planer, segment of a roof.

[0073] The term "roof ridge" means an edge where two generally upward sloping roof planes meet.

[0074] The term "roof structure" means the top of a building which shelters the building from weather.

[0075] The term "roof valley" means an edge where two generally downward sloping roof planes meet.

[0076] The term "street address data" means the location typically used by postal identification, typically including at least one numeric value and at least one street name, and further typically including a zip code or other postal code and/or a town and state or province.

[0077] The term "street address look up field" means a computer field for entry of street address data.

[0078] The term "substantially overlapping" means that where one line, in whole or in substantial part, coincides with another line in terms of direction and

overlap. This may include situations where the respective lines are of substantially different length, or not.

[0079] The term "substituent triangles" means two or more congruent triangles which collectively form a subset of another geometric shape.

[0080] The term "tracing" means drawing around an outline or along a line or feature depicted in Imagery.

[0081] The term "user-acceptance" means an affirmative step or series of steps or computer input, undertaken by user to make a selection.

[0082] The term "vector direction" means, in relative space, either two dimensionally or three dimensionally where a vector is pointing.

[0083] The term "visual marker" is a shape, pointer, label, icon, avatar or other indicator which is movable or displayable on a computer screen and which may be visually differentiated from other objects on the computer screen.

[0084] The term "visually depicting" means to show or illustrate something on a computer monitor as a graphical image.

[0085] Articles and phases such as, "the", "a", "an", "at least one", and "a first", are not limited to mean only one, but rather are inclusive and open ended to also include, optionally, two or more of such elements.

[0086] The language used in the claims is to only have its plain and ordinary meaning, except as explicitly defined above. Such plain and ordinary meaning is inclusive of all consistent dictionary definitions from the most recently published Webster's dictionaries and Random House dictionaries.

[0087] Referring to the drawing figures, these are only examples of the invention, and the invention is not limited to what is shown in the drawings.

DETAILED DESCRIPTION OF THE DRAWINGS

[0088] Referring to FIG. 1, a process for determining attributes of a roof structure 501 (see FIGS. 4B, 4C) of a real-world three-dimensional building 500 may optionally comprise several acts. This may include viewing on a computer monitor 100 in digital aerial imagery 1 of a region 502 (see FIGS. 4B, 4C) including the roof structure 501. Ordinarily, the roof structure will have one or more roof planes, and unless the roof is a simple single-plane roof, will have at least two or more roof planes. In FIG. 1, the act of creating of a first layer drawing 2 is undertaken. Such act may be used by the ultimate end-user enabled by the software, but optionally and more preferably is done by a commercial vendor based on an order placed by a user. Such order may be placed by telephone, on-line, such as on computer screen 100 as shown in FIGS. 4A-4D, by mail, email or otherwise.

[0089] The creation of the first line drawing 2 may be done a multitude of ways, in one example is illustrated in FIGS. 5A-5I and FIG. 6, discussed further below. Likewise, in FIG. 1 creating a second layer drawing 3 is another act. For example, in FIG. 5D, various roof planes are denoted by letters A-P. For example, the roof plane 515 denoted by the letter "O" may be drawn in a second layer, whereas roof plane 516 indicated by the letter "D" may be in a first layer. In such example, roof plane 515 and roof plane 516 have substantially overlapping segments 4 (see FIG. 1). For example, along the upper edge of plane 515

appears the number "5" denoting a five foot line; whereas, plane 516 has the substantially overlapping line denoted by "7" indicating a seven foot line segment of roof plane 516. Such seven foot roof segment of plane 516 may comprise a perimeter line (part of the 56.78 feet perimeter length of plane D depicted in table 520 of report 550 of FIG. 5I); whereas, the substantially overlapping five foot length of plane 515 may comprise a second non-dimensional attribute, namely flashing, such as step flashing line (part of the 37.01 feet of step flashing for plane O depicted in table 521 of FIG. 5I). Accordingly, this is one example of substantially overlapping lines such as segment of line A and segment of line E set forth in the claims, each having respective first and second non-dimensional attributes. This allows for separate reporting of such non-dimensional attributes, such as the length of perimeter, the length of step flashing or otherwise. Such non-dimensional attributes may be of any type. As mere examples that have use in the roofing industry include the non-dimensional attributes of roof ridge, roof hip, roof valley, roof flashing edge, perimeter line, roof free edge with a gutter, and roof free edge without a gutter. For example, line 510a in FIG. 6 is an example of a roof ridge, whereas line 511a and line 513a are each examples of a roof valley. Line 512a in FIG. 6 is an example of a perimeter edge, which also happens to comprise a roof free edge without a gutter. Optionally, while not illustrated, if line 512a had, or were to have, a gutter along it, then it would be in that case a perimeter line and be a roof free edge with a gutter. FIG. 6. also depicts an optional table and/or fields showing the non-dimensional attributes at 507 and the total values for them at 508. This can include the area of roofing

509, the linear ridge feet 510, linear valley feet 511, starter/perimeter linear feet 512, step flashing 513, and/or others.

[0090] Another optional feature is computer processing means for calculating a vector direction corresponding to roof pitch for a roof plane. Optionally, this may be based on at least one of said non-dimensional attributes of roof plane outline lines and their orientation. Such computer processing means typically includes computer logic and/or code with a set of rules to establish such vector. Examples of such vector are shown in FIG. 5E. Specifically, they are preferably shown as arrows. In the illustrated example, they are ordinarily indicated as arrows pointing in the downward direction, corresponding to the downward direction of rain flow. Optionally, there may be other illustrations, including an upwardly directed arrow, although this is not preferred. For example, vector 516d is shown in a downwardly directed arrow with a number 6 next to it. This depicts the vector corresponding roof plane 516, namely plane D previously discussed. As seen, the value "6" for the pitch is entered at field 516c in the table also showing the area (for that particular roof plane D at field 516a) 357.93 sq. ft. as shown at field 516b. Note further with respect to roof plane 515 (plane "O") as illustrated in the table at field 515a, it likewise has a roof pitch of "6" shown at 515c. The total area of roof plane "O" is 111.35 sq. ft. in this particular example, as shown at 515b.

[0091] An example of computer programming to determine pitch direction is as follows.

[0092] 1.) Pitch will run towards a perimeter line. If only one perimeter line pitch goes towards the perimeter (most standard roofs, all but the ends of hips);

[0093] 2.) If there are multiple perimeters that are not parallel, look for ridge. If there is only a single ridge line and it is parallel to one of the perimeter lines, pitch runs from the ridge towards the perimeter. (Perimeters that are not straight and have small outcroppings where the roof extends further down the same slope).

[0094] 3.) If a shape has no multiple perimeters and multiple ridges where none are parallel, take an average of the ridge angles and see if that direction is perpendicular to a perimeter line. If so, that direction is the direction of the pitch. (The end of hip roofs).

[0095] Most planes are resolved by the above acts, 2 and/or 3. Acts 4 and 5, below, are also optional but preferred, and address totally enclosed roof planes which most standard roofs do not have.

[0096] 4.) If there are no perimeter lines and a single ridge line, the pitch is from the ridge.

[0097] 5.) If there are no perimeter lines and multiple ridge lines, once finding the pitch for all other shapes look at the ridges and the shared shapes. If the shared shape has a pitch directly away (is perpendicular) from the shared ridge, use that ridge as if it were 2 (from above). If the other pitch goes at an angle to the ridge, look at other ridges.

[0098] The case where you can make it past act 5 and not have pitch direction is for completely enclosed shapes where all sides are valleys at the intersection of multiple planes, set forth in this optional act:

[0099] 6.) take the average slope of all other planes connected via shared lines and average the slope direction of the planes, whose pitch runs into the plane in question; use that direction as the pitch direction for the plane.

[00100] Variations on that logic, including changing the order, and/or combining or splitting acts, may optionally be used. For example, rather than beginning with logic looking to run pitch towards a perimeter, the logic could begin to look to first run the pitch vector away from a ridge line, although this is less preferred.

[00101] As illustrated in report 550 as seen in FIG. 5E, the visual depiction of pitch vectors, such as 516d may help visualize the shape, orientation, pitches of the roof structure and/or roof planes.

[00102] Optionally, one or more deliverables to the client include one or more reports such as report 550. Report 550 may include one or more of the features as depicted in the various drawings of FIGS. 5A-5I and/or FIG. 6 and/or FIGS 7A-7D, alone or combination.

[00103] Optionally, such report may be printed on a piece of paper, or provided on a non-interactive computer file such as a .pdf (Adobe® Acrobat®) type image or otherwise, illustrated on a computer screen for the user to print out (web based or otherwise) and/or delivered on recordable media such USB drive, floppy disk, CD, DVD, email attachment or otherwise. However, preferably, such

file is delivered as an interactive computer file. For example, referring again to FIG. 5E, the pitch value as shown in the table, such as the 6 pitch for plane D and 516c allows the person, the end-user or otherwise, to enter at least one pitch numeric value. This pitch numeric value may correspond to roof pitch of the roof plane. Hence, in FIG. 5E, one or more of the pitch values in computer fields corresponding to the table, may be empty or null. They may allow a person, such as an end user, to data input via their computer, the pitch value. For example, this may be based on the end user, or one of their agents, taking field measurements of the roof to provide the input. As such, value 516c may be entered to be "6" corresponding to a 6 pitch (e.g., 6" vertical rise for every 12" of horizontal run). Such value "6" may be changed, updated, or overridden.

[00104] As can be appreciated in three-dimensional geometry, given the shape of plane D (516) the value of the pitch ordinarily will affect the overall area of such roofing (see e.g. FIG. 5F, area value 516b).

[00105] Mathematical equations demonstrating-area relationship for a sloped, rectangular roof plane are known, an example of which is set forth below:

$$\text{Area} = W \times Z$$

$$Z = \text{square root of: } (X^2 + Y^2)$$

Where:

W = width

X = horizontal run

Y = vertical rise

Z = hypotenuse of X-Y-Z right triangle.

[00106] Other, geometries may be calculated using known math, coefficients and/or tables. See for example: *Miller, Mark; Miller's Guide to Roofing* (2005) ISBN 0-07-145144-7. Thus, in combination with the perimeter measurements supplied with the report based on the creation of roof plane D from the imagery, the addition of the roof pitch value may lead to the calculation such as in the example 357.93 sq. ft. shown at 516b. Likewise, for plane O, the value of "6" may be entered in the table at 515c to arrive at the area calculation 515b as previously described. It should be appreciated, that optionally these pitch values may be provided by the end user or other persons based on field measurement. However, optionally, they also may be based on measurements and/or computer calculations precisely, by estimate or otherwise, such as by viewing oblique imagery such as region image 502 shown in FIG. 4B. In such case, for example, a vendor may provide default values (and/or absolute values) for the pitch and the table shown at FIG. 5E. In an interactive computer file with such fields being interactive, and with operators to calculate area taking into account pitch, preferably part of said file, even with such default values based on oblique imagery the end user would be free to override them, such as for example if they determine that field measurements indicate a different pitch.

[00107] Another optional feature may include other attributes deliverable to the client including an interactive computer file. For example, the length values of lines forming an outline of a drawing may be overridden. For example, referring again to FIG. 5D, a reference line 514 is depicted. In this one example, it is depicted in the parenthetical quote ("R"), although this is not required. In such

case, it is denoted "26" corresponding to 26 ft. in length. Note that all dimensions in this case may be converted to or express in metric, rather than English units, although for purpose of illustration English dimensions are utilized here.

[00108] In such case, even though the referenced dimension 26 is based on scaling that line off of the imagery, such as imagery 506 (see FIG. 6; FIG. 5C) there is an opportunity for greater precision. Such interactive computer file, for example, in the report page shown at FIG. 5D, the value 26 depicted there in connection with the reference may actually be the location of a data entry field. In such case, the field operator may determine that the precise measurements are not 26 feet, but rather are 26.15 feet. In such case, the user operator may enter in their computer by typing in the value "26.15" the reference line field, thereby overriding it from 26 to 26.15 in this hypothetical. In such case, the interactive computer file may use co-efficient and other ratios to proportion (by multiplication or otherwise) some, or preferably, each of the other lines of an outline in direct proportion to the plane field override. While the foregoing is mentioned in terms of the referenced mentioned 514, optionally the interactive computer file may provide multiple reference directions and/or all line values in their report may, optionally, be interactive and override fields. As mere examples, in FIG. 5D this could include fields for 510a, 511a, 512a and/or otherwise, including without limitation most or all numeric values.

[00109] Moreover, while not illustrated, optional report 550 may include a separate table and/or field entry point apart from the drawing of the building roof

structure 501 in which the reference line may be overridden instead or, or in addition to, fields directly overlying the aerial imagery and/or the drawn lines.

[00110] Optionally, but preferably, in addition to the length of the other lines being proportionally recalculated, likewise the area values, such as depicted in the area column of the table at FIG. 5E as well as the area values on FIG. 5F and/or FIG. 6 (see the total roofing area value 509 of 4096.95 sq. ft. may be automatically recalculated. This may be done in a separate application, in the interactive computer file (including with embedded operators), both or otherwise.

[00111] Various area calculations used in connection with computer data processing means are available based on known geometry. These could include things as simple as multiplying length times width of a single rectangle. They also may include modifying such area to take into account the additional area generated by pitch, as previously discussed. However, while not limited to this, preferably, taking advantage of the pixilated imagery that may be used, one optional feature in determining one or more areas of the respective roof planes is as follows. If you know the points (corners) of the shape and can order them in a clockwise (or optionally, counter-clockwise) fashion following the perimeter or outline of the shape, then the following algorithm can apply. Starting at the first endpoint, 0 (zero), while $N+1$ is less than the total ordered end points take the triangle made by the 3 points 0, N , and $N+1$ and compute the area of the triangle created, which is done by the dot product method using vectors created by going from 0 to N and 0 to $N+1$. Add this area to a running sum.

[00112] Note that when the three ordered endpoints are not in the proper order (they create a convex perimeter or outline of the shape that reduces the overall area as opposed to adding to), the dot product method of finding the area will return a (-) negative area which subtracts from the overall area in the running sum.

[00113] Dot product (2-Dimensional Vectors) can be expressed in the equation:

$$UV = U_1V_1 + U_2V_2$$

[00114] This can be used to find the area of the square that the two vectors produce. Dividing the result by two (2) gives the area of the triangle the two vectors produce.

[00115] Thus, in this way an example is provided of computer data processing means that dissects the outlines of the roof planes into substituent triangles and calculates the area of such triangles. The areas are aggregated to provide the area of respective roof planes, and the areas of such respective roof planes may in turn be aggregated (summed) to arrive at the total area of the roof structure. Examples of this are shown in the table in FIG. 5F and/or table 517 in FIG. 5H. Note also in FIG. 5H the report 550 may also include other tables and information, such as ridge length table 518 and/or valley length table 519.

[00116] Hence, in FIG. 2, aerial imagery 1 is used and perimeter drawings around roof planes are acts. Thereafter, one or more interactive computer files are delivered 6. The user may enter values in the interactive computer file 7,

such as pitch, length, or otherwise as discussed. This may result in the act of updating the report 8.

[00117] Another optional feature is to provide for user acceptance of the final location of a roof structure. One optional way to do this is to provide an internet based interface for the customer/user. One example of such is shown in FIGS. 4A-4D. For example, in FIG. 4A, computer screen 100 provides a place to enter an address, such as field 102 for address entry (denoted by label 101). In the illustrated example, the street address "1710 Strand Ave, Tybee Island, GA. 31328" may be entered in field 102 of the computer. The user may enter by clicking or otherwise button 103 to find that address. In response, computer screen 100 may appear like FIG. 4B. As such, it may depict imagery 502 of a region, the region including building 500 with its roof structure 501. Ordinarily, this includes not only the building structure 500, but also depicts adjacent buildings, trees, streets, and/or other features. Such imagery may come from a variety of places. One example could be Google® Earth imagery database which is web based and provides address location information. Such imagery covers much of the world, although it may or may not be comparatively low resolution imagery. In FIG. 4B, marker 106a is shown in the region 502, corresponding to the street address in field 102. Note further that while marker 106a is close to roof structure 501, it does not directly or perfectly correspond to roof structure 501. As such, the customer or other user may be allowed to move the marker (by click and dragging via computer mouse, arrows, or otherwise) to a final location 106b as depicted in FIG. 4C. Such final location is on top of the building 500 and

such movement more precisely identifies the location of the building roof structure 501 to be measured. Optionally, in FIG. 4C when said marker has been moved to final location 106b, the user may activate a selection confirmation, such as confirm selection button 104, enter, checkbox or otherwise. Optionally, to potentially start over the user may be afforded the option of hitting the cancel button 105 or merely logging off. However, if confirmed selection button 104 or other such user acceptance is activated, another screen (and/or report) optionally may be provided, such as screen 100 as depicted in FIG. 4D. While this may be a wide variety in the formats, in the one example provided, some or all of the regional image 502a may be depicted showing the marker in its final location 106b. Also, a checkbox may be providing a further reconfirmation that the users reviewed the image is correct. In this way, the end user/customer will be sure that when placing an order, the vendor is measuring the correct roof structure as opposed to, for example, measuring the nearby roof structure due to mistake/miscommunication. Optionally, as shown in FIG. 4D, fields may depict the address to be measured 108, the city 109, the state 110, the postal code 111, and otherwise. Optionally, a drop down box 112 may be provided corresponding to the number of planes ordered. Additionally, other options, such as rush processing 113 or other special features may be provided. Also optionally, a reference number or other such job number field 114 or claim number field 115 and/or other fields may be available. Thus, for example, a roofer having a job number and/or bidding pursuant to an insurance claim number and/or an insurance company doing the same may optionally enter data therein. When they

do so, optionally, such reference numbers and/or claim numbers may be reprinted or otherwise depicted on the deliverables to the client, such as report 550. This provides convenience to the end user/customer in that they may cross reference their deliverable report to their internal calendaring, docketing, invoicing, and/or job number system.

[00118] Also with reference to FIG. 4D, computer screen 100 and/or the reports may also depict latitude references and/or longitude references corresponding to the street address and/or more precisely to the final location 106b of the marker confirmed by the end user. Again, optionally, such latitude and longitude coordinates may be reflected in one or more of the reports.

[00119] Such translation to latitude and longitude coordinates also provides another optional feature. The present system and method may optionally include two or more separate imagery databases. For example, a lower resolution and/or less expensive image database such Google® Earth may be used as a first database, whereas a higher quality, higher resolution and/or more robust image database, such as by Pictometry International (as depicted here) may be used. Other vendors of imagery databases may be used and/or one may use their own image database(s). Thus, by translating the street address stated in longitude and latitude, it is easier to correlate to the second database. In this way, first imagery database from which the final location is selected may be internet based imagery having to corresponding street address look up field. Only further using the latitude and longitude coordinates to access imagery from a second imagery database, such as for example Pictometry's database. Thereafter, using the

imagery from the second database can generate in computer memory outline drawings around outlines corresponding to roof planes based on tracing from imagery from said second imagery database. Such outline drawings may include drawings such as depicted in FIGS. 5D, 5E, 5F, 5G and/or FIG. 6 and/or 7B-D for example. Additionally, since the first imagery database may merely be straight down, or plan views, whereas the second imagery may include a variety of oblique images, such as image 502 and 503 in FIG. 5A and/or oblique imagery 504 and 505 in FIG. 5B, as well as diagonal, top down imagery such as image 506 in FIG. 5C. This allows the optional, more complete image reporting to the client in report 550.

[00120] Such oblique imagery also permits the optional feature, as previously discussed, determining vertical measurements and/or roof pitches based on the imagery, as opposed to based on field measurements. Conversely, one can undertake this without any oblique imagery and/or any determination of vertical measurements or pitch, and instead rely on field measurements or other means for pitch.

[00121] In FIG. 3, the location data 4A is entered. Aerial imagery with a marker is provided 4B. A person moves the marker on the image of the building 4C. User acceptance of that marker position is then signaled 104a.

[00122] Mere examples of other optional features are depicted in FIG. 7A and 7B. A simplified diagrammatic image of building 700 includes roof structure 701. While several roof planes are illustrated, the particular focus is directed to roof planes 715 and 716. As illustrated in FIG. 7B, a first electronic drawing

(preferably in a first layer of the drawing) is made over the imagery comprising lines A, B and C. Moreover, a second electronic drawing (preferably, but not necessarily, in a second layer of the drawing) is made over to imagery comprising lines E, F, G and H. Note that in this illustrated example, at least a segment of line A is substantially overlapping with at least a segment of line E. Thus, for example, roof plane 715 outlined by E, F, G and H may comprise a flat roof (0 pitch) porch whereas the remainder of the roof structure 701 may comprise a hip roof over a rectangular house, the hip roof being depicted in a plan view with two triangles and two isosceles rhombuses, as shown.

[00123] Note further that FIG. 7B preferably is depiction of a deliverable, such as a report (and/or a screen shot), and optionally and more preferably is part of an interactive computer file. In this regard, it may include, optionally, table 720 and/or 721, as well as any of the other tables and/or fields and/or features previously depicted in the previous drawings. For example, table 721 includes at least columns with a line and a column for the attribute, which preferably in this context is the non-dimensional attribute. Note in the example of these substantially overlapping lines A and E, A has the attribute of being a gutter free edge, whereas E has the attribute label "common".

[00124] In this regard, the label "common" also corresponds to Line E' in connection with roof plane 717' illustrated in isolation as roof plane 717. Other terms may be used instead of "common", but this indication denotes two lines that are substantially overlapping and in which the main purpose of the line is merely for dissecting a common roof plane, normally for determining square feet

area, as opposed to a non-dimensional attribute. This is because such "common" lines, in a sense, are imaginary between roof plane 715 and roof plane 717' and/or 717. Alternatively, in the context of this building the attribute of line E could be "flashing" (instead of line Y being flashing) based on the reasonable assumption that this flat planed porch roof abuts the side of the building and has roof flashing along line Y. However, in such situation by denoting line E as flashing, in lieu of line Y, since they are of common length, this is merely a substitute for the total linear estimate of flashing of the type illustrated, for example at 513 (FIG. 6) and/or table 521 (FIG. 5I).

[00125] Plane 716 illustrates a minimum number of three lines, A, B and C, to denote the area of plane 716. Conversely, note that plane 715 includes not only three lines, lines E, F and G, but also a fourth line, line H since it is rectilinear. This is consistent with the claiming of the present invention being open-ended in that at least three lines are required to define a roof plane, but it may be more. Likewise, a plane may be defined by 5, 6, 7 or more lines depending on its particular geometry.

[00126] As mentioned, it is not required, but is preferable that the lines defining the respective plane 715 and 716 are separate from each other, and even more preferable that they be in separate computer file layers overlaying one another. This helps facilitate having differing attributes along a common line as previously described in connection with the substantial overlap of lines A and E. Optionally, in the report the lines may be shown in different colors (and/or patterns) designated for each non-dimensional attribute.

[00127] Moreover, one or more additional adjustment planes, such as adjustment plane 717 prime, also depicted as free standing adjustment plane 717 may optionally be provided. This allows generating computer memory at least one adjustment roofing plane, such as by drawing lines E', X, Y and Z (as well as others). This is useful for a variety of situations, such as, for example, to adjust for portions of the roof structure which are not fully visible from the aerial imagery. This is shown in FIG. 7A and 7B in that due to the overhanging eave of the hip roof of the house in plane 716, part of the porch's roof structure is hidden by the overhanging roof hang. This hidden portion is depicted by roof plane 717' and/or 717.

[00128] It should also be noted that optionally, this adjustment plane does not necessarily have to be graphically depicted, as shown in FIG. 7B. Rather, or in addition, an additional numeric field may be provided. For example, in FIG. 5F, the planes A-P are shown with their respective areas, and in some total of such areas. In this context, with or without a graphical depiction, an additional "plane" row may be provided denoted "adjustment" or otherwise with a numeric field allowing user entry of an area (square foot or otherwise) number be typed in or otherwise imported. Thus, the adjustment plane 717 (FIG. 7B) even if not graphically depicted, might have known dimensions of, for example, 20 feet wide, with a two foot pitch overhand, resulting in an additional 40 feet of area. In this situation, in the adjustment field the user might simply enter the value "40" in square footage terms for the adjustment field. This adjustment field will be added to the sum total, such as shown in the table of FIG. 5E. Note also that the

adjustment value may be negative for a variety of reasons, given the user the ability to override and reduce the total estimation of square footage for reasons of discounting, or other circumstances.

[00129] Thus, for example, in FIG. 7B at table 721, it is denoted in that table as plane 717 with corresponding area of 40 square feet may correspond to a report that it is 20 feet wide (line E prime times 2 feet deep under the eaves, lines X and/or Z, thereby resulting in the calculation of 40 square feet. Or, as described above, alternatively with or without graphic depiction of plane 717, the user might simply enter the value "40" square feet in the area field of table 721.

[00130] FIG. 7C and 7D, using the same structure of 7A and 7B, illustrates another feature which is optional, and may be used alone, or in connection with one or more of the features previously described. In particular, it provides for a computer data processing means that identifies light and dark contrast between adjacent roof planes, such as roof planes 716 and 718, and based on that automatically generates at least one border line, such as for example line 719 shown in FIG. 7D between such roof plane 716 and 718. In this regard, note that as illustrated in FIG. 7C and 7D, roof plane 716 is shown as shaded. This represented in imagery of shadowing, typically caused by sun or other lighting casting different degrees of shadow in brightness and darkness depending on the orientation of the roof plane with the source of the light. The generation of various lines, such as line 719, is automatically computer generated. This may be done by a variety of techniques borrowed from the separate field of computer face recognition used in connection with digital images such as for security

purposes. This may be done to create some or all of the line values, or more preferably at least starting point default lines drawing by the computer. However, optionally the default generation of the lines can be done after perimeter lines P, around the entire outer perimeter of the roof structure 701, having drawn ordinarily by a human user. This has the advantage of establishing a closed, finite area within the region for which the computer software automatically generates one or more of the lines separating the geometries of the separate roof planes. Preferably, this is done by generating and labeling discreet lines which may be overridden by the user, such as deleting extraneous or erroneous or duplicative lines and/or moving them. Moreover, optionally such lines may be generated as the subparts of geometric shapes set as presumptive default shapes common in roof planes. This normally would include rectangles, triangles and rhombuses.

[00131] Additionally, such automatic and/or default generation of lines may optionally be coupled with the previously described pitch generation algorithms. In this way, default pitches may be generated by the computer and depicted in the report output. Again, this can be overridden by the user, including the vendor of such report information.

[00132] Note also that in FIG. 7A-7D, the various lettered lines (A, B, C, E, F, G, H), are illustrated here slightly offset from the actual underlying line in the building imagery. In practice, preferably so as to maximize accuracy, there is not such offset. Rather, the offset is depicted here in FIG. 7A-D merely for drawing

clarity to separately depict the line in the aerial image from the computer drawn line overlaying the image.

[00133] Another optional feature is that the information, including reporting, may be made to interface electronically (and/or manually) with other products. For example, the information provided here may be uploaded or transferred to Xactimate™ Insurance estimating software known in the prior art. Naturally, this feature, while helpful, is not required.

What is claimed:

1. A process, comprising:

receiving first location data;

providing visual access to a first image corresponding to the first location data, the first image including a roof structure of a building;

providing a first computer input capable of signaling a designation from a user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;

receive a designation of the building roof structure within the first image;

responsive to receiving the designation of the building roof structure location, providing a second computer input capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and

subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure.

2. The process of claim 1, further comprising providing visual access to one or more outline drawing corresponding to the roof structure of the building.

3. The process of claim 2, further comprising providing one or more length dimension on the outline drawing.
4. The process of claim 3, wherein the length dimension is one or more of a perimeter of the roof structure, a length of a ridge of the roof structure, a total length of ridges of the roof structure, a length of a valley of the roof structure, a total length of valleys of the roof structure, a length of a flashing of the roof structure, and a total length of flashings of the roof structure.
5. The process of claim 2, further comprising providing one or more area dimension on the outline drawing.
6. The process of claim 2, further comprising providing one or more pitch dimension on the outline drawing.
7. The process of claim 2, further comprising providing one or more indicator of pitch direction on the outline drawing.
8. The process of claim 2, further comprising providing one or more non-dimensional attribute of the roof structure on the outline drawing.

9. The process of claim 2, further comprising, providing visual access to a nadir image from an imagery database corresponding to location coordinates of the building roof structure location, and wherein the outline drawing is super-imposed on the nadir image.

10. The process of claim 1, wherein the first image is taken from an overhead view with respect to the roof structure of the building.

11. A non-transitory computer memory storing computer logic, that when executed by computer hardware causes the computer hardware to:

receive first location data generally corresponding to a geographic location of a building;

provide visual access to a first image corresponding to the first location data, the first image including a roof structure of the building;

provide a first computer input capable of signaling a designation from a user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;

receive the designation of the building roof structure location;

responsive to receiving the designation of the building roof structure location, provide a second computer input capable of signaling user-acceptance of the building roof structure location within the

first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and

subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure.

12. The non-transitory computer memory of claim 11, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide visual access to one or more outline drawing corresponding to the roof structure of the building.

13. The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide at least one length dimension on the outline drawing.

14. The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide visual access to a nadir image of an imagery database corresponding to location coordinates of the building roof structure location, and wherein the outline drawing is super-imposed on the nadir image.

15. The non-transitory computer memory of claim 12, wherein said computer logic when executed by computer hardware causes the computer hardware to: provide one or more area dimension on the outline drawing.

16. The non-transitory computer memory of claim 11, wherein the first image is taken from an overhead view with respect to the roof of the building.

17. A method, comprising:

receiving, by a user, visual access to a first image of a region corresponding to first location data, the first image including a roof structure of a building;

signaling, by the user, a designation from the user of a building roof structure location within the first image, wherein the building roof structure location is a geographic position of the building roof structure and is different than the first location data;

signaling, by the user, user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and

subsequent to signaling the user-acceptance confirming the designation of the building roof structure location, receiving a report for the building roof structure; and

repairing or constructing a roof designated by the building roof structure location.

ABSTRACT

The present disclosure describes systems and processes, including processes in which first location data is received. Visual access to a first image corresponding to the first location data is provided, the first image including a roof structure of a building. A first computer input capable of signaling a designation from the user of a building roof structure location within the first image is provided. A designation of the building roof structure location within the first image is received. Responsive to receiving the designation of the building roof structure location, a second computer input capable of signaling user-acceptance of the building roof structure location within the first image is provided. Subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, a report of the roof structure is provided.

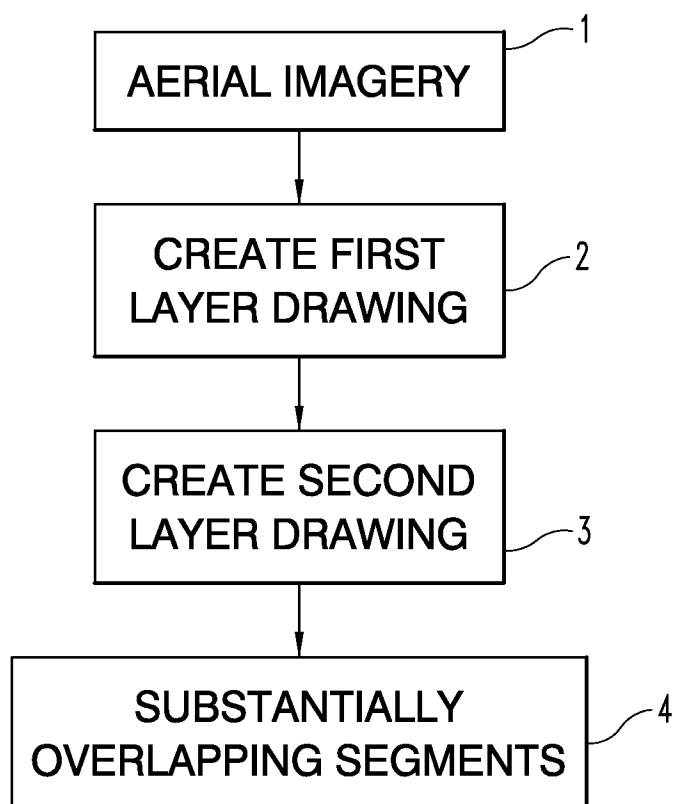


Fig. 1

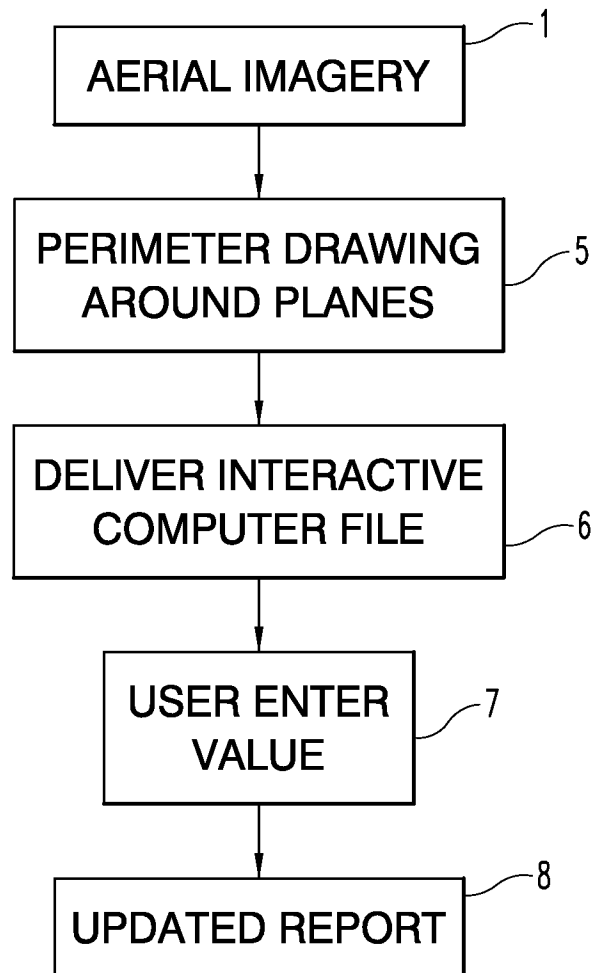


Fig. 2

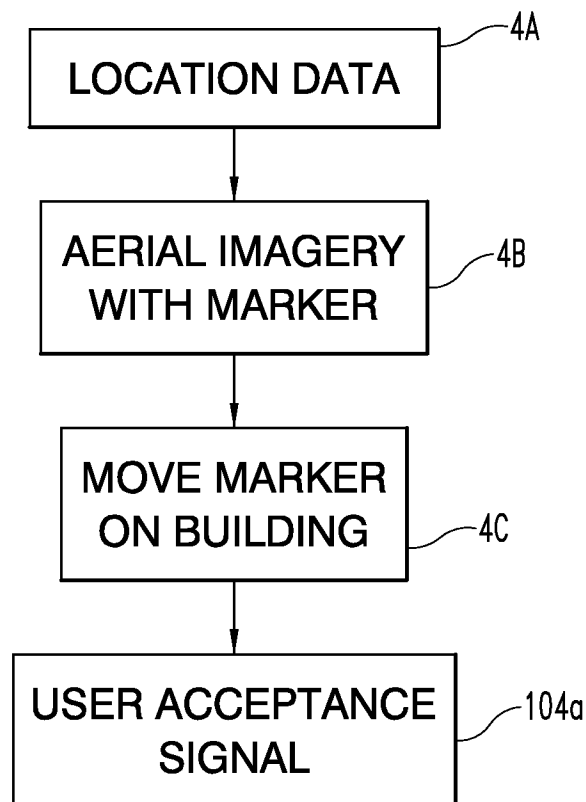


Fig. 3

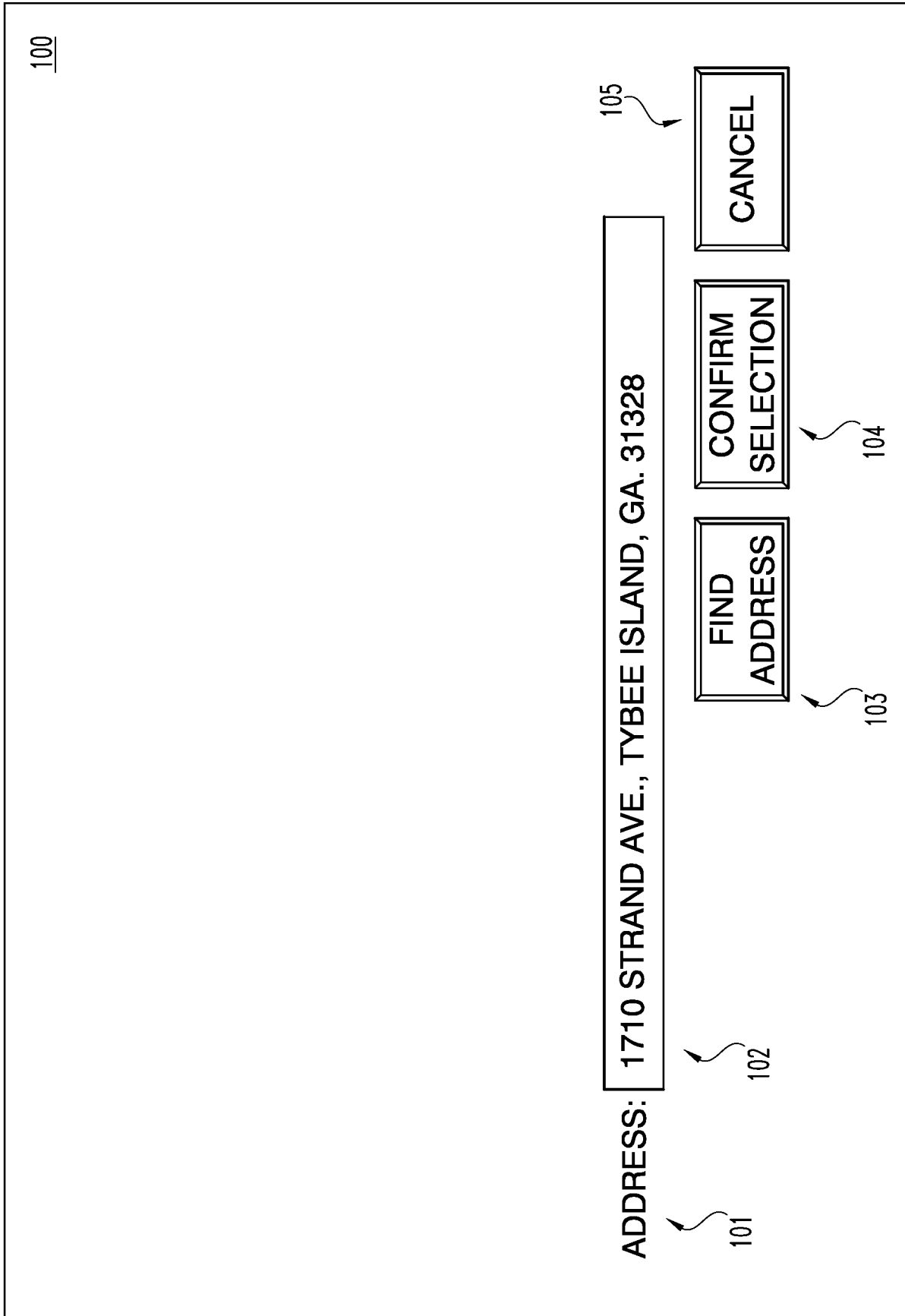


Fig. 4A

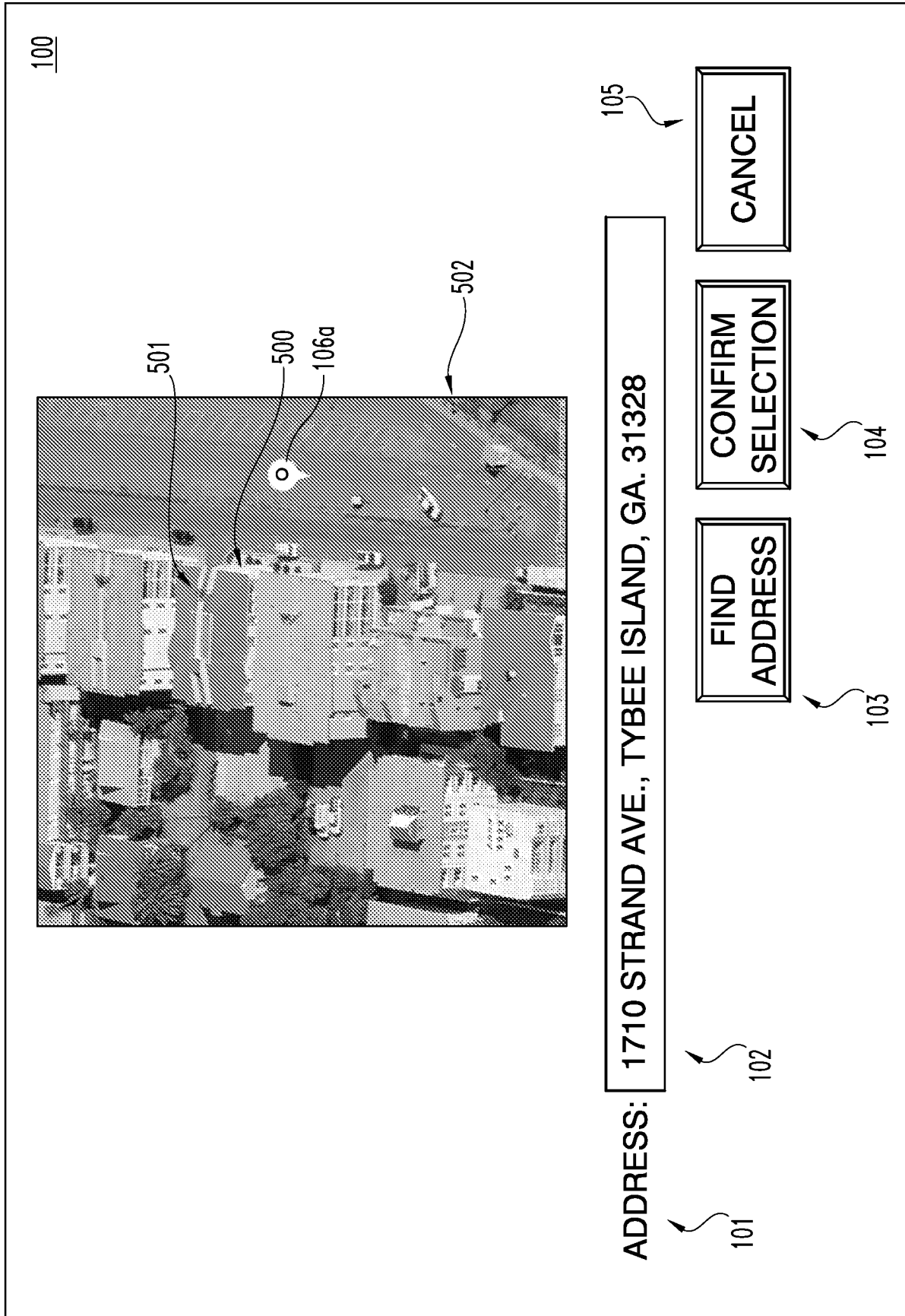


Fig. 4B

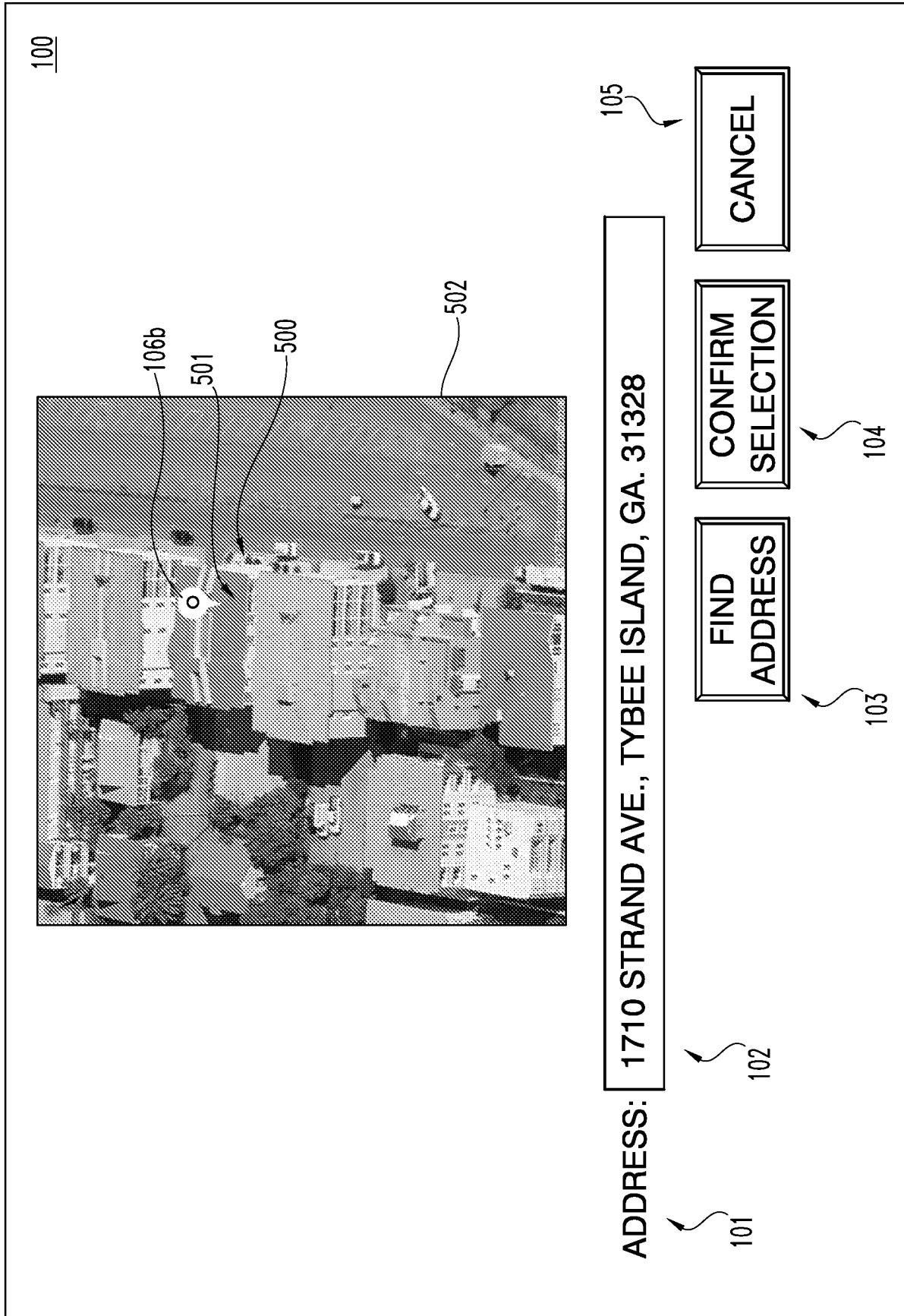


Fig. 4C

ADDRESS TO BE MEASURED:	
1710 STRAND AVE. 108	
CITY:	TYBEE ISLAND 109
STATE:	GA. 110
ZIP CODE	31328 111
NUMBER OF PLANES	112
RUSH PROCESSING	113
OPTIONAL:	
REFERENCE NUMBER:	114
CLAIM NUMBER:	115
ADD TO CART 116	



100

106b

502a

☒ I have reviewed the image and confirm my selection is correct.

LATITUDE REFERENCE:
38.7492

LONGITUDE REFERENCE:
-85.2748

Fig. 4D

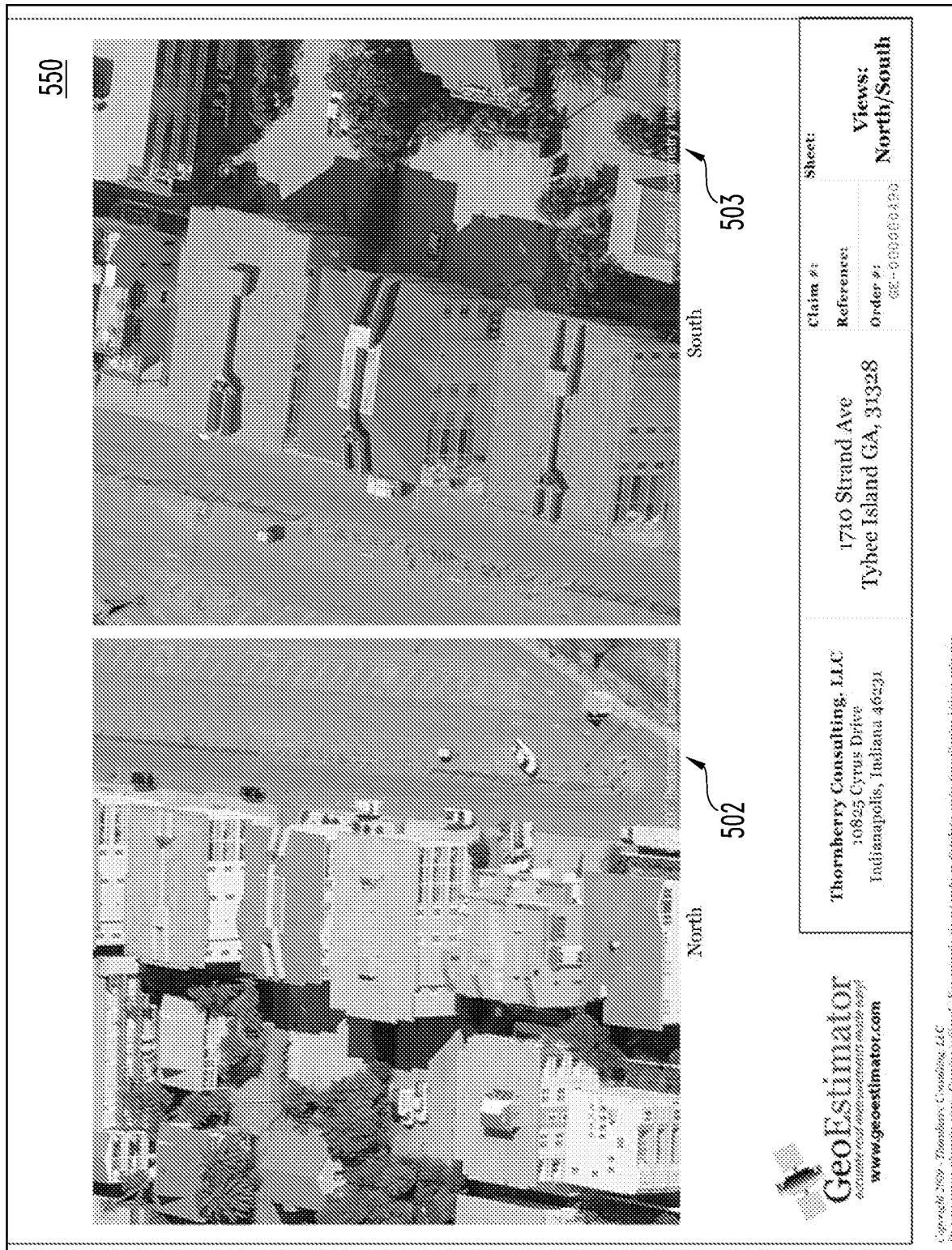


Fig. 5A

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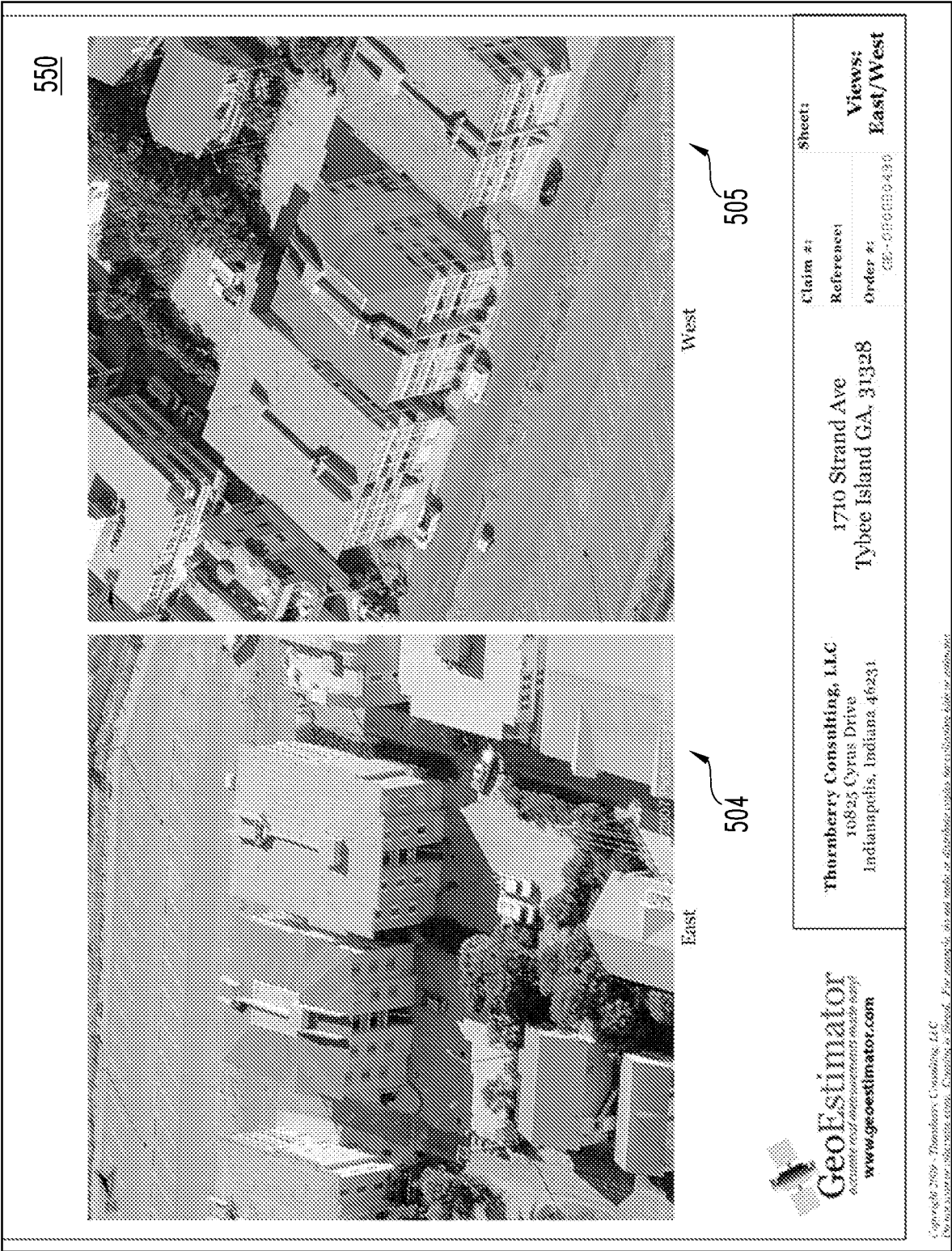


Fig. 5B

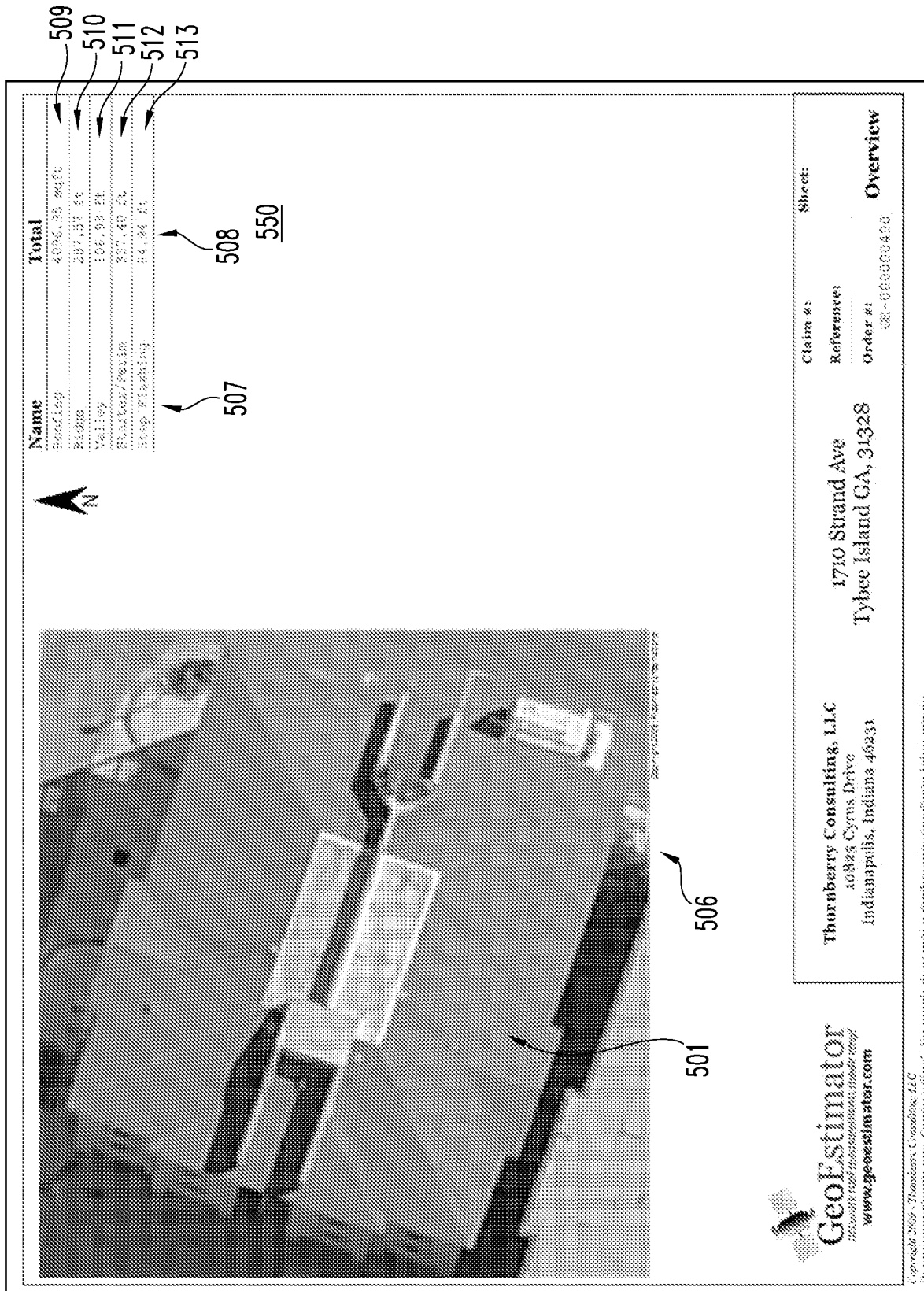


Fig. 5C

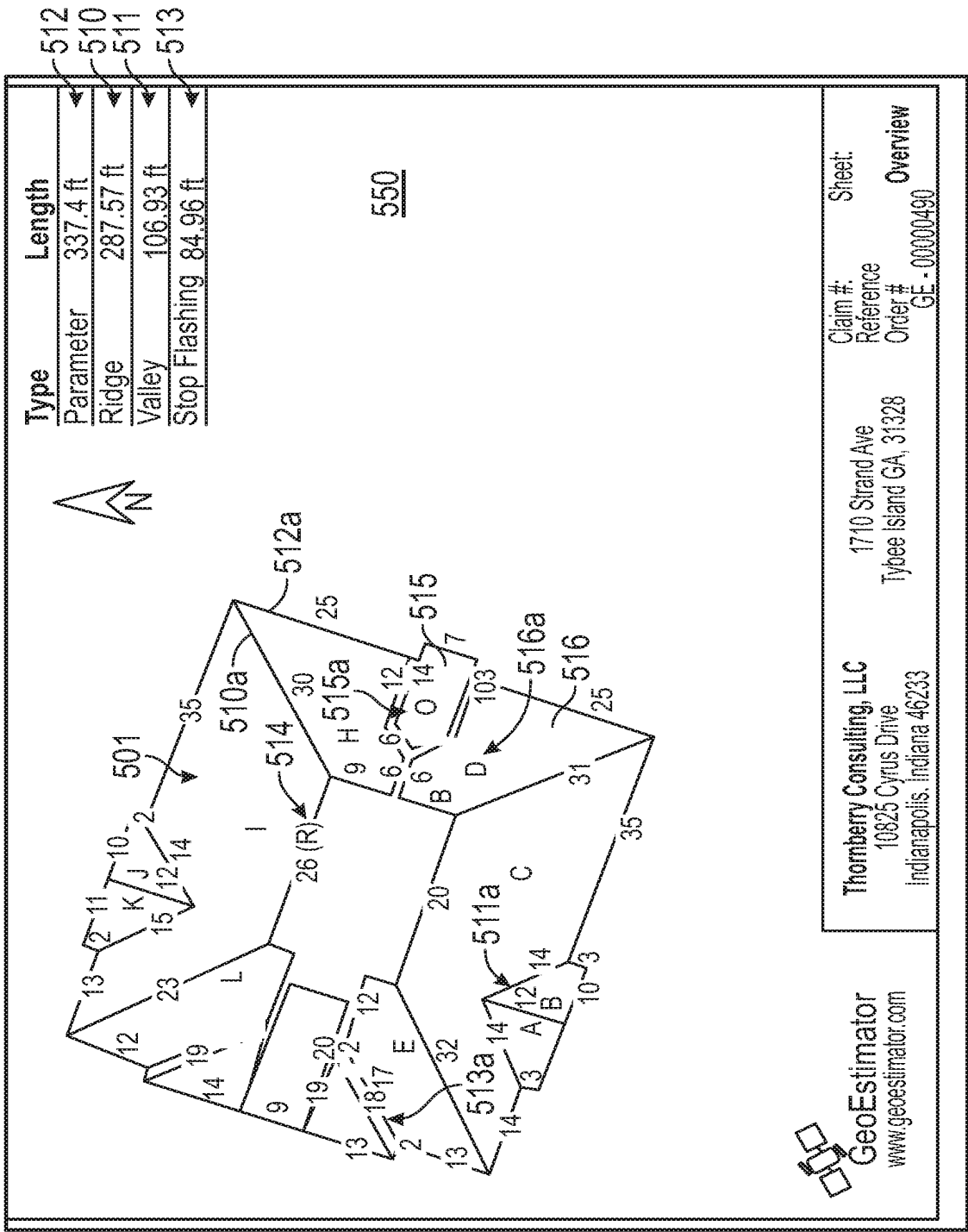


FIG. 5D

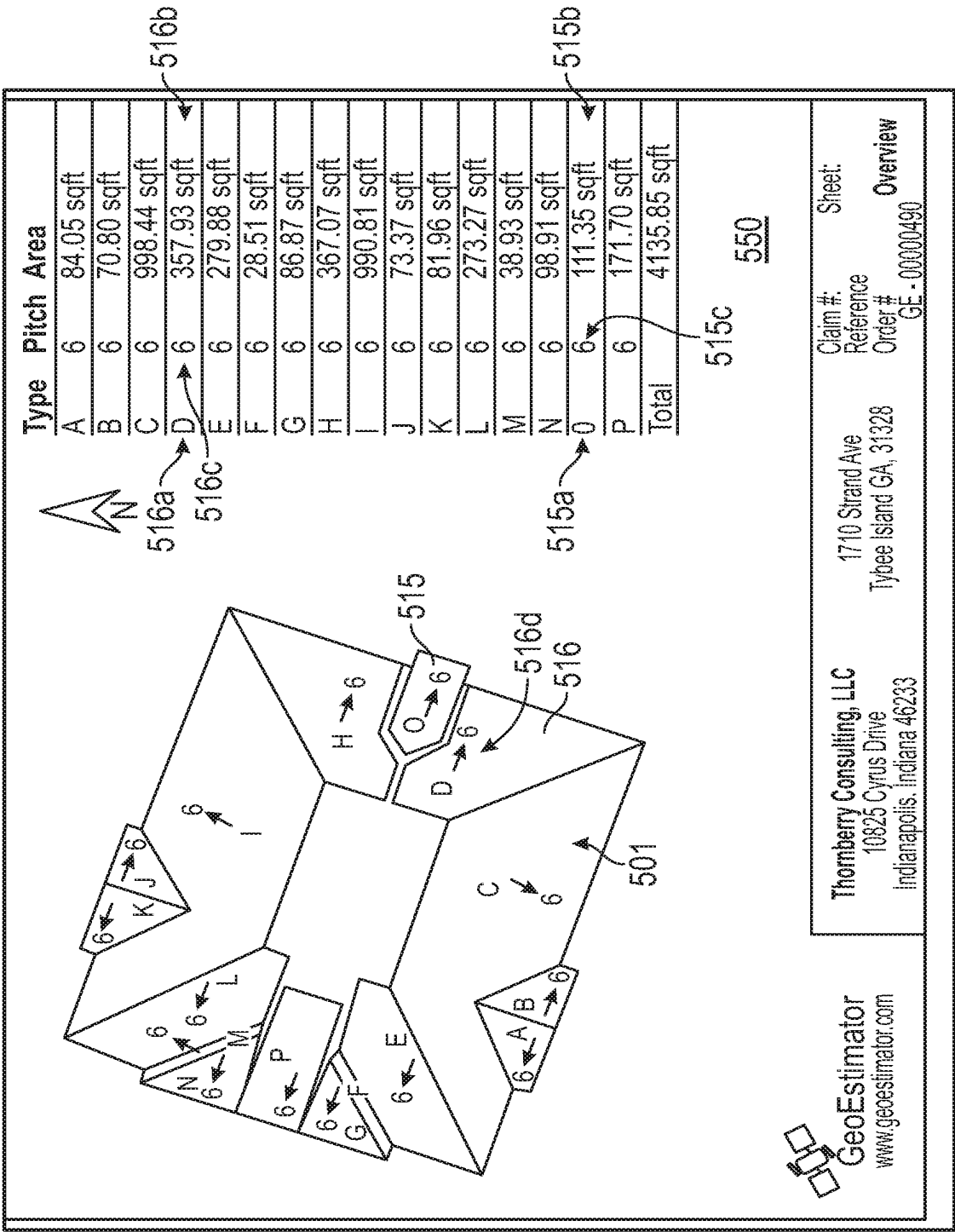


FIG. 5E

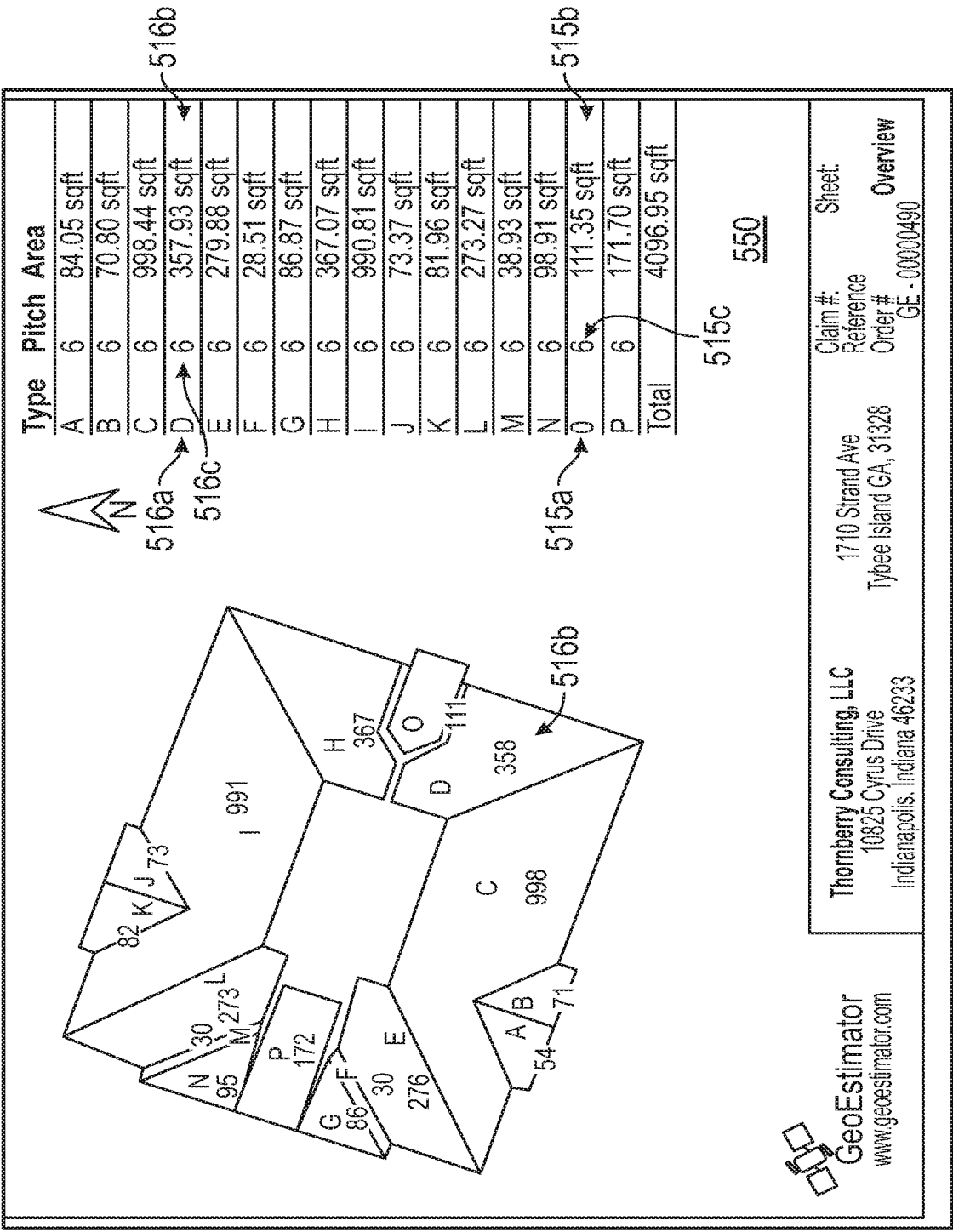


FIG. 5F

Roofing		Ridge		Ridge	
Plane	Area	Plane	Length	Plane	Length
A	84.05 sqft	A	11.79 ft	A	14.36 ft
B	70.80 sqft	B	0 ft	B	13.39 ft
C	888.44 sqft	C	89.99 ft	C	0 ft
D	357.93 sqft	D	8.08 ft	D	7.08 ft
E	275.88 sqft	E	16.84 ft	E	17.08 ft
F	29.51 sqft	F	17.86 ft	F	0 ft
G	85.87 sqft	G	0 ft	G	0 ft
H	367.07 sqft	H	38.94 ft	H	5.94 ft
I	990.81 sqft	I	58.65 ft	I	29.48 ft
J	73.37 sqft	J	12.15 ft	J	0 ft
K	81.99 sqft	K	0 ft	K	0 ft
L	273.27 sqft	L	12.10 ft	L	19.08 ft
M	38.03 sqft	M	19.08 ft	M	0 ft
N	98.91 sqft	N	0 ft	N	0 ft
O	111.35 sqft	O	0 ft	O	0 ft
P	171.70 sqft	P	0 ft	P	0 ft
Total	4095.95 sqft	Total	287.57 ft	Total	108.93 ft
517		518		519	
550		550		550	



GeoEstimator
www.geoestimator.com

Thornberry Consulting, LLC
10825 Cyrus Drive
Indianapolis, Indiana 46233

Claim #: 1710 Strand Ave
Reference Tybee Island GA, 31328
Order # GE - 000000490

Sheet: Overview



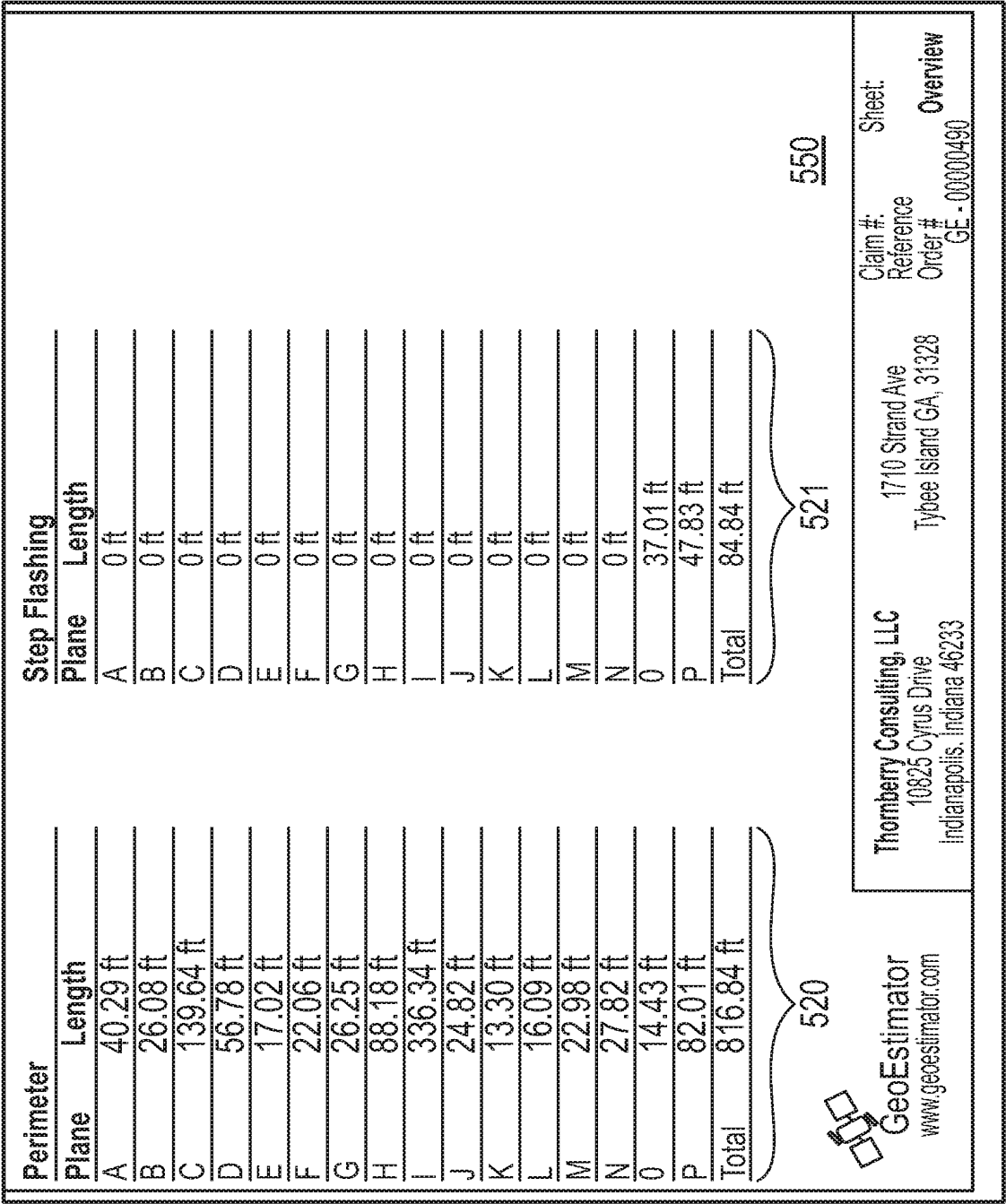


FIG. 5I

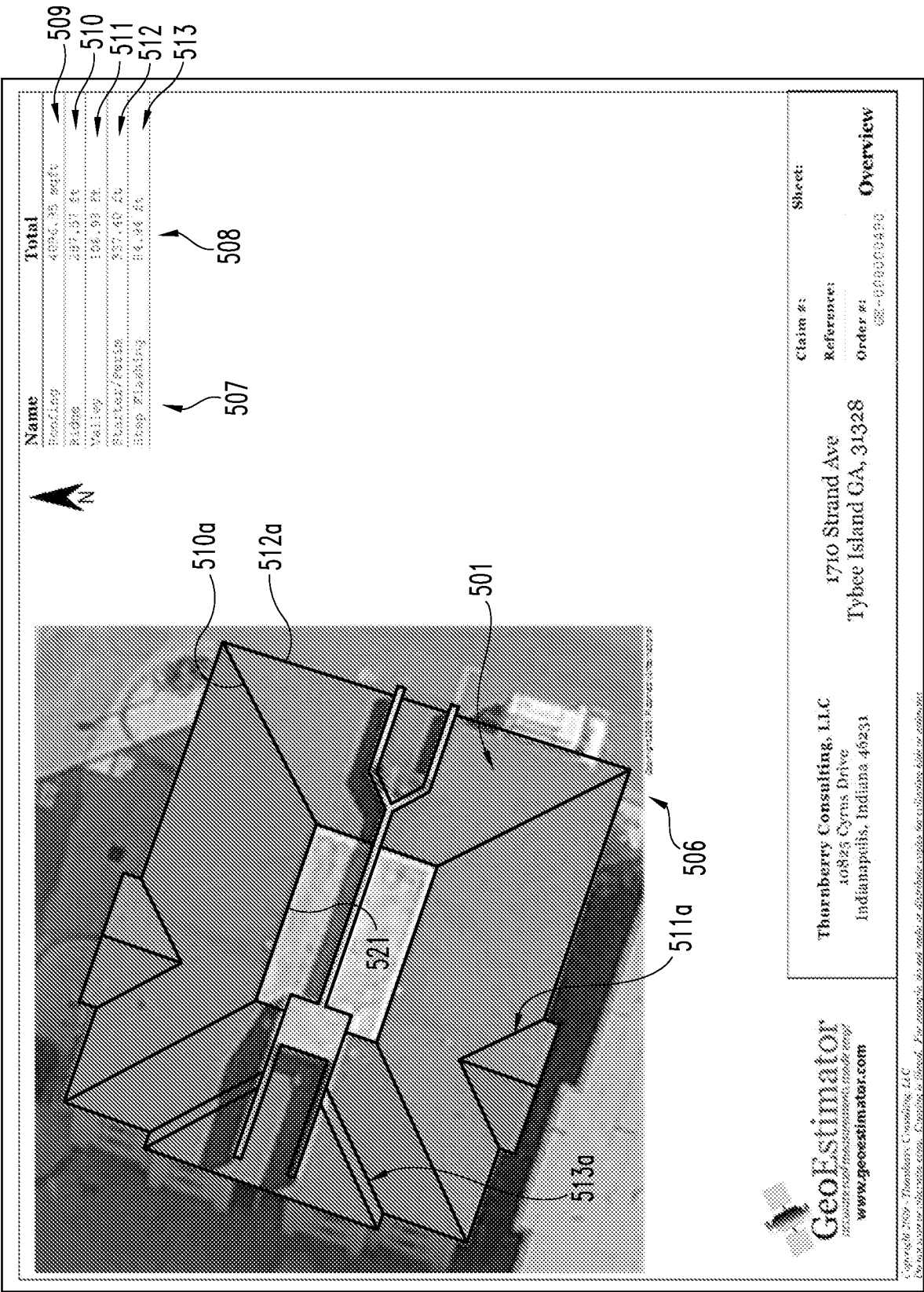


Fig. 6

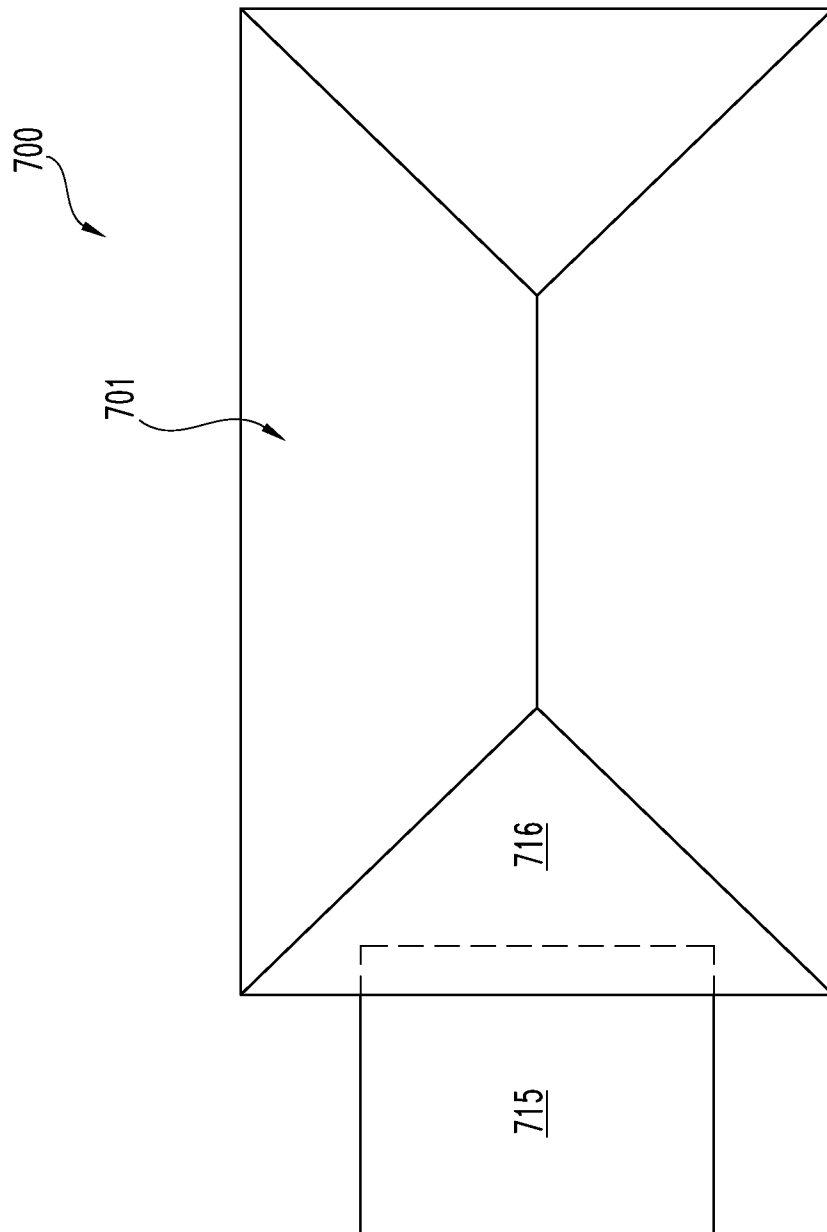


Fig. 7A

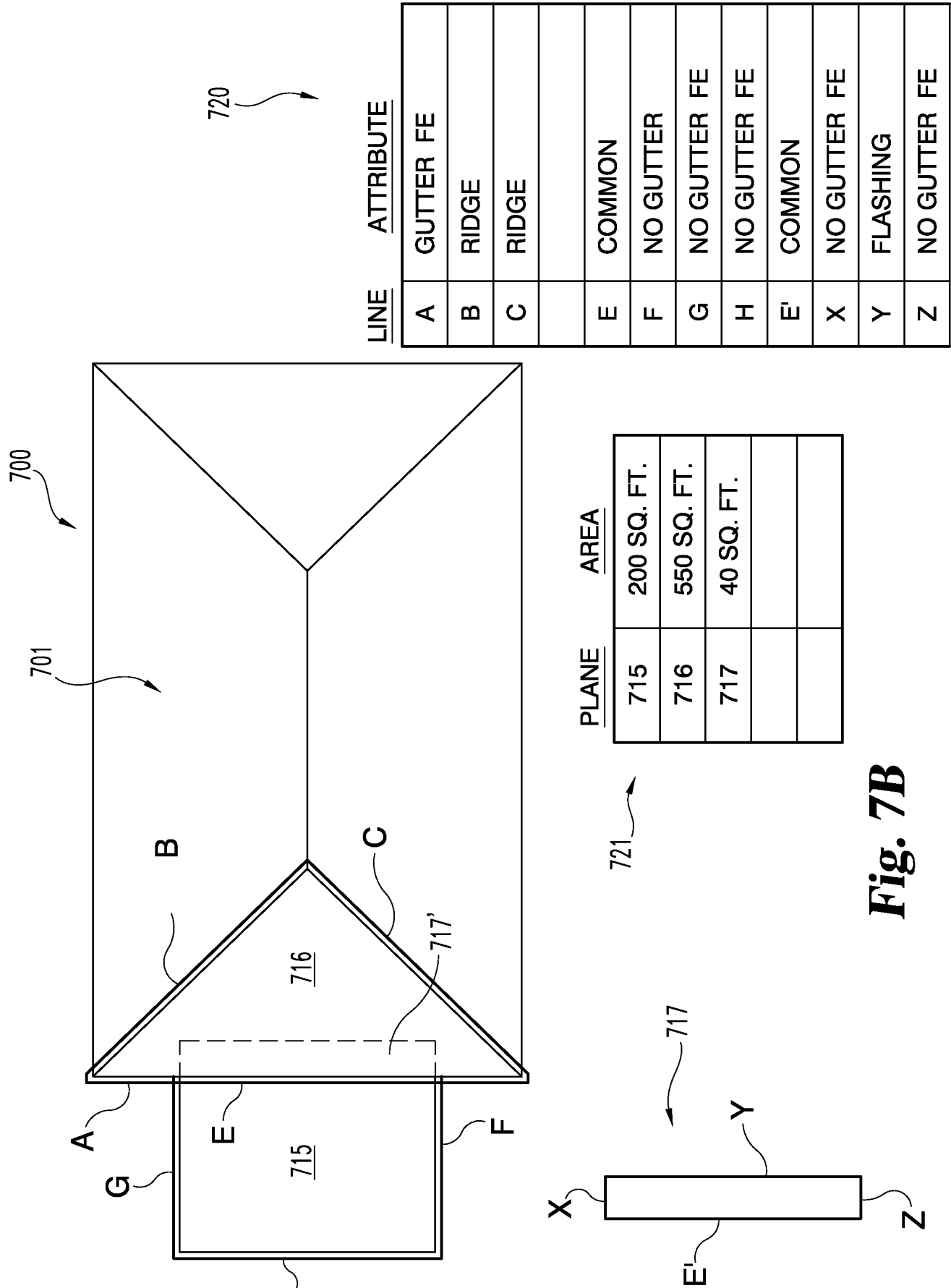


Fig. 7B

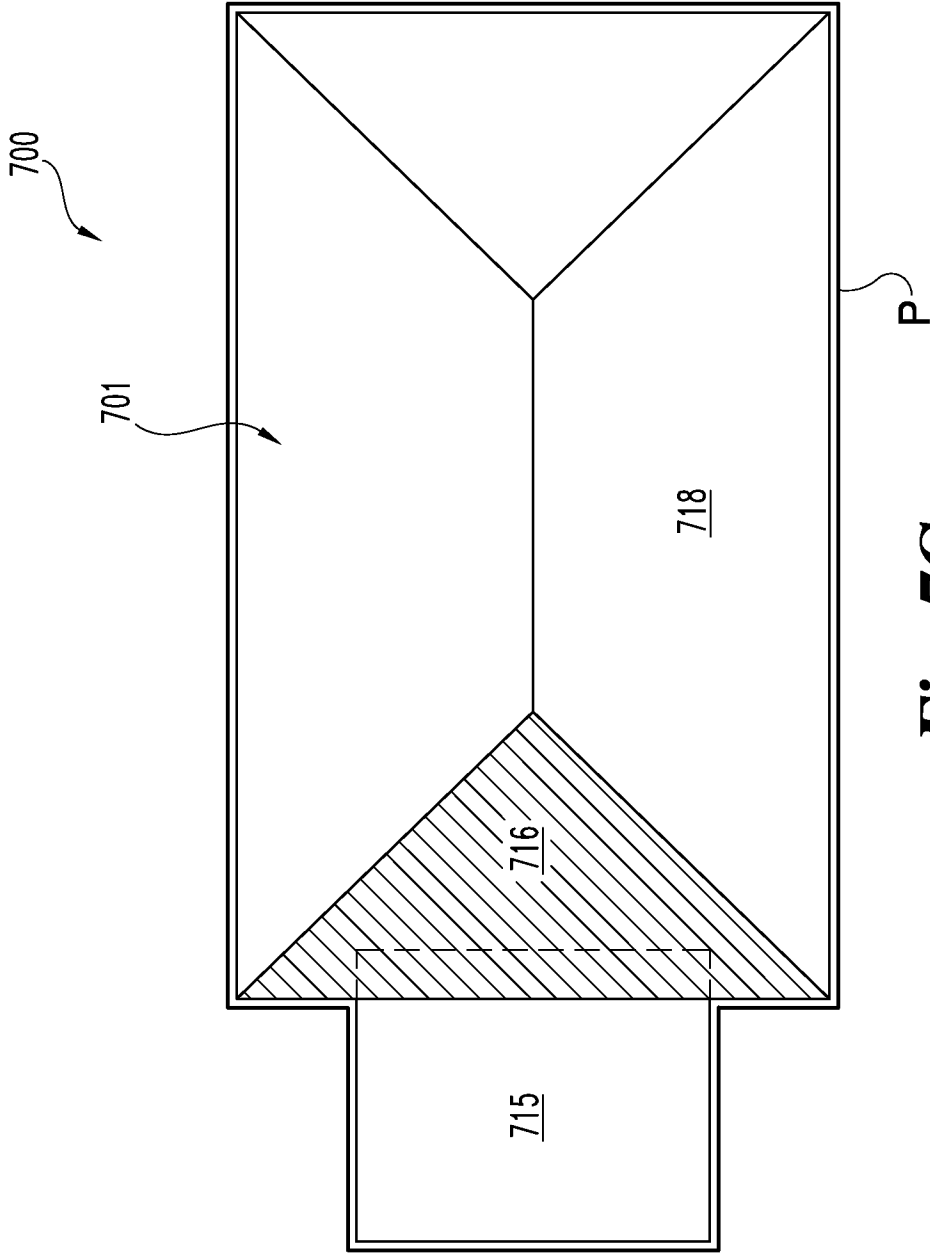


Fig. 7C

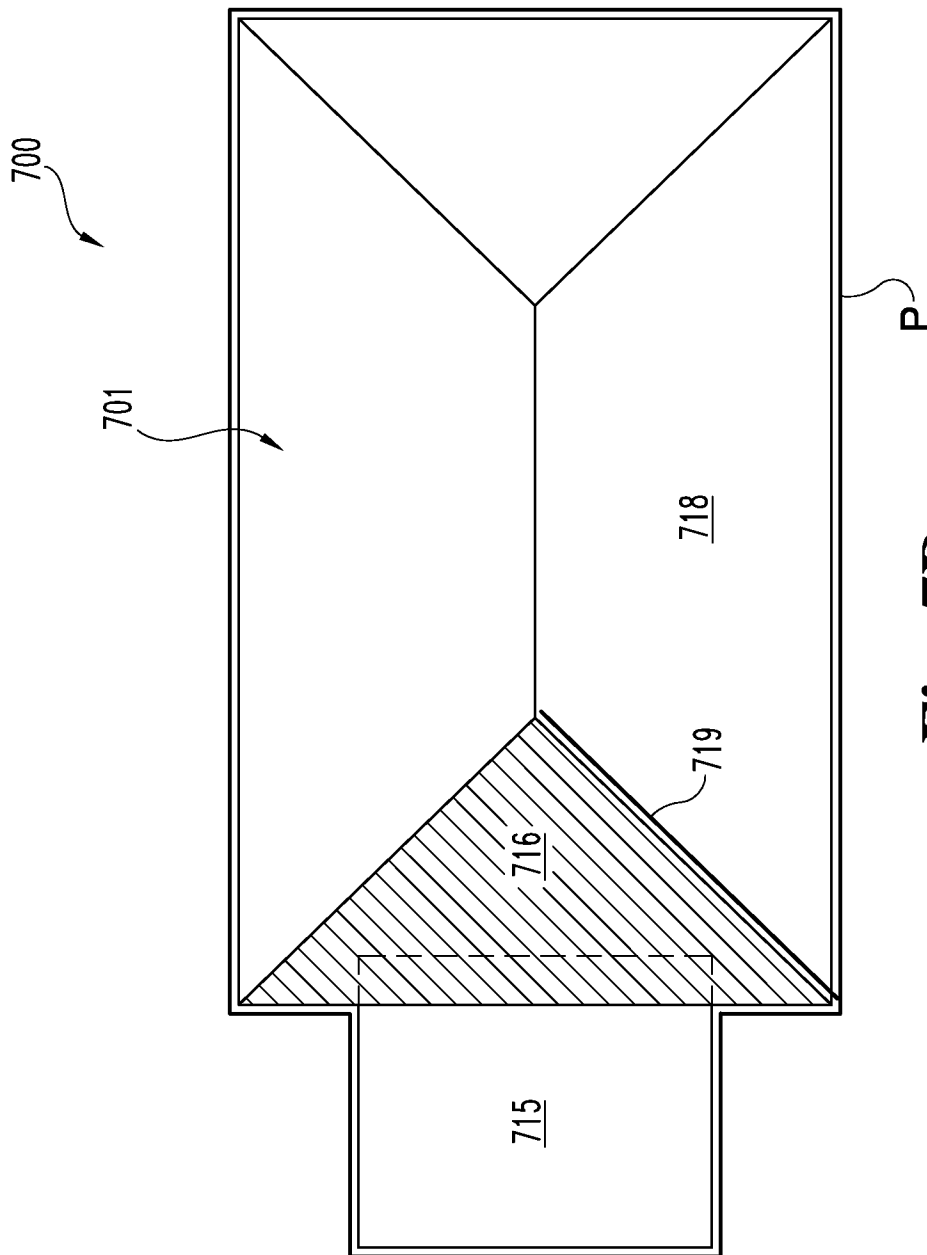


Fig. 7D

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Dale R. Thornberry, Chris T. Thornberry and Mark F. GarringerApplication No./Patent No.: _____ Filed/Issue Date: HerewithTitled: SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING AERIAL IMAGERYPictometry International Corp. _____, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

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[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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STATEMENT UNDER 37 CFR 3.73(c)

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☐ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Marc Brockhaus

Signature

Marc A. Brockhaus

Printed or Typed Name

02/01/2019

Date

Attorney for Applicant

Title or Registration Number

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

30589

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

30589

OR

☐	Firm or Individual Name	DUNLAP CODDING, P.C.		
	Address	P.O. Box 16370		
	City	Oklahoma City	State OK	Zip 73113
	Country	US		
	Telephone	405-607-8600	Email	mbrockhaus@dunlapcoddng.com

Assignee Name and Address: Pictometry International Corp.
25 Methodist Hill Drive
Rochester, NY 14623

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	<i>David Silverman</i>	Date	7/27/2018
Name	David Silverman	Telephone	425-408-8481
Title	General Counsel, Pictometry International Corp.		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as
necessary)

Complete if Known

Application No.	
Filing Date	Herewith
First Named Inventor	Dale R. Thornberry
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Patent Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	
	P1	4,497,551	Lapeyre	02/05/1985	
	P2	5,319,541	Blanchard et al.	06/07/1994	
	P3	5,625,827	Krause et al.	04/29/1997	
	P4	5,633,995	McClain	05/27/1997	
	P5	5,699,444	Palm	12/16/1997	
	P6	5,995,765	Kaneko et al.	11/30/1999	
	P7	6,323,885	Wiese	11/27/2001	
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	P9	6,396,491	Watanabe et al.	05/28/2002	
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	P11	6,496,184	Freeman et al.	12/17/2002	
	P12	6,636,803	Hartz, Jr. et al.	10/21/2003	
	P13	6,766,282	Schettine	07/20/2004	
	P14	6,798,925	Wagman	09/28/2004	
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	P16	6,859,768	Wakelam et al.	02/22/2005	
	P17	6,980,690	Taylor et al.	12/27/2005	

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Application No.	
Filing Date	Herewith
First Named Inventor	Dale R. Thornberry
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

P18	7,003,400	Bryant	02/21/2006
P19	7,006,977	Attra et al.	02/28/2006
P20	7,046,839	Richer et al.	05/16/2006
P21	7,085,400	Holsing et al.	08/01/2006
P22	7,133,570	Schreier et al.	11/07/2006
P23	7,164,883	Rappaport et al.	01/16/2007
P24	7,239,761	Weilenmann	07/03/2007
P25	7,305,983	Meder et al.	12/11/2007
P26	7,324,666	Zoken et al.	01/29/2008
P27	7,343,268	Kishikawa	03/11/2008

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Publication Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY
	PB1	2002/0154174	Redlich et al.	10/24/2002
	PB2	2005/0038636	Wakelam et al.	02/17/2005
	PB3	2005/0288959	Eraker et al.	12/29/2005
	PB4	2006/0200311	Arutunian et al.	09/07/2006
	PB5	2006/0282235	Thomas et al.	12/14/2006
	PB6	2008/0105045	Woro	05/08/2008
	PB7	2008/0221843	Shenkar et al.	09/11/2008
	PB8	2008/0262789	Pershing et al.	10/23/2008

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Form 6-2 and Form 6-2.1

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Application No.

Filing Date

Herewith

First Named Inventor

Dale R. Thornberry

Art Unit

Unknown

Examiner Name

Unknown

Attorney Docket No.

6338.497

	PB9	2009/0132436	Pershing et al.	05/21/2009	
	PB10	2010/0110074	Pershing	05/06/2010	
	PB11	2010/0114537	Pershing	05/06/2010	
	PB12	2010/0179787	Pershing et al.	07/15/2010	
	PB13	2009/0141020	Freund et al.	06/04/2009	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	<u>Foreign Document No.</u> ² Country Code ⁴ - Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYY	176
	F1	WO20000029806	Friedhelm et al.	05/25/2000	
	F2	AU2008230031	Eagle View Technologies, Inc.	11/05/2009	
	F3	AU2010219392	Eagle View Technologies, Inc.	09/30/2010	

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL1	OLOF HENRICSSON, The Role of Color Attributes and Similarity Grouping in 3-D Building Reconstruction, Institute of Photogrammetry and Geodesy, Zurich, Switzerland
	NPL2	CC-Modeler: a topology generator for 3-D city models, abstract, May 15, 1998
	NPL3	ARMIN GRUEN and HINHUA WANG; CC-Modeler: A Topology Generator for 3-D City Models, Inst. of Geodesy and Photogrammetry, Zurich, Switzerland
	NPL4	MICROSOFT'S MSN VIRTUAL EARTH: The Map is the Search Platform; February 6, 2009

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as
necessary)

Complete if Known

Application No.	
Filing Date	Herewith
First Named Inventor	Dale R. Thornberry
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL5	EAGLE VIEW TECHNOLOGIES; Eagle View Measurements Premium Report; October 22, 2008
	NPL6	"Automatic House Reconstruction", http://www.vision.ee.ethz.ch/projects/Amobe_l/recons.html , accessed 3/15/2010
	NPL7	"PhotoModeler-Measure and Model Real-World Objects From Photographs", http://www.photomodeler.com/products/photomodeler.htm , accessed on 03/15/2010.
	NPL8	Baillard C. et al., "Automatic Reconstruction Of Piecewise Planar Models From Multiple Views", Dept. of Engineering Science, University of Oxford
	NPL9	Chevrier C., et al., "Interactive 3D Reconstruction For Urban Areas: An Image Based Tool", CAAD Futures 2001.pp. 1-13.
	NPL10	Debevec, Paul E. et al., "Modeling and Rendering Architecture From Photographs: A Hybrid Geometry-And-Image Based Approach", University of California at Berkeley, 1996.
	NPL11	"Pictometry Announces Software and Web-based Solution For Engineers, Architects, and Planners", Press Release dated January 22, 2004, Rochester, NY.
	NPL12	Automated Systems Research, http://www.asrsoft.com/about.html , accessed 5/22/2009
	NPL13	Claim Rep Measure Roof, http://www.claimrep.com/roofSize.htm , accessed on 5/22/2009
	NPL14	GeoSpan Aerial Imagery, http://www.geospan.com/products-services.asp , accessed on 5/22/2009

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Form 6-2 and Form 6-2.1

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Art Unit	Unknown
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	NPL15	GULCH, E., MULLER, H., LABE, T., RAGIA, L., "On The Performance Of Semi-Automatic Building Extraction", University Bonn, Germany, 1998.
	NPL16	How To Calculate Roof Pitches in 3D From 2D Drawings, 12/17/2007, http://connected.typepad.com/connected/2007/12/how-to-calculat.html , accessed on 5/22/2009
	NPL17	http://eagleviewmeasurements.com , "Eagle View Roof Measurement" accessed 5/22/2009
	NPL18	http://estimagic.com/roofing/about-roofing-estimating.html , "About Estimagic Roof Estimator", accessed 08/22/2008
	NPL19	MILLER, Mark R., "Miller's Guide To Framing And Roofing, McGraw-Hill Companies, Inc., New York, 2005, pp. 131-136, 162-163.
	NPL20	Pictometry Online Demo, www.youtube.com/watch?v=JURSK7oOODO , accessed on 2/6/2009
	NPL21	Precigeo, http://www.precigeo.com/ , accessed on 5/22/2009
	NPL22	Roof Area Calculator; http://www.construction-resource.com/calculators/roof-area.php , accessed on 5/22/2009
	NPL23	Roof Master Roof Estimating Software, http://www.vectortec.com/roofmaster_roofing_estimating_software.htm , accessed on 5/22/2009
	NPL24	Rooflogic Drawings and Takeoffs From Satellite Images, http://www.rooflogic.com/Products/Satellite/ , accessed on 5/22/2009
	NPL25	SkyTek Imaging, http://www.skytekimaging.com/ourservices.html , accessed on 5/22/2009

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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	NPL26	SNYDER, J., BARR, A., "Ray Tracing Complex Models Containing Surface Tessellations", California Institute of Technology, Pasadena, CA July 1987, pp. 119-128.
	NPL27	Somay Roof Calculator, http://www.somay.com/roof_coatings/roof_calculate/roof_calculate.html , accessed on 5/22/2009
	NPL28	VINCENTY, T., "Direct And Inverse Solutions Of Geodesics On The Ellipsoid With Application Of Nested Equations", Warren AFB, Wyoming, April 1975, pp. 88-93.
	NPL29	Ways To Determine or Calculate Roof Pitch or Roof Slope Using a Carpenters Level; http://roofgenius.com/roofpitch.htm , accessed 5/22/2009
	NPL30	Delaney, Kevin J., "Searching For Clients From Above", The Wall Street Journal, July 31, 2007.
	NPL31	Faugeras et al., "3-D Reconstruction of Urban Scenes From Image Sequences", IN RIA, 2004, France, Sept. 11, 1997.
	NPL32	Henricsson, O. et al., "3-D Building Reconstruction with ARUBA: A Qualitative and Quantitative Evaluation," Institute of Geodesy and Photogrammetry, Switzerland, 1997, 12 pages.
	NPL33	http://www.precigeo.com/ , "Solar Professionals, Insurance Adjusters, Roofing and Landscape Estimators: Use Precigeo To Get Rapid, Accurate and Visually Compelling Sketches and Measurements, accessed on 3/15/10.
	NPL34	Poullis et al., "Photogrammetric Modeling And Image-Based Rendering For Rapid Virtual Environment Creation", University of Southern California, Institute For Creative Technologies

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Attorney Docket No.	6338.497

NON-PATENT DOCUMENTS

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	NPL35	Scholze, Stephan, "A Probabilistic Approach To Building Roof Reconstruction", A Dissertation Submitted To The Swiss Federal Institute Of Technology Zurich, 2002.
	NPL36	Ziegler et al., 3D Reconstruction Using Labeled Image Regions, Eurographics Symposium on Geometry Processing, 2003.

Examiner Signature:

Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number.

2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.

3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.

6 Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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necessary)

Complete if Known

Application No.

Filing Date

Herewith

First Named Inventor

Dale R. Thornberry

Art Unit

Examiner Name

Attorney Docket No.

6338.497

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Patent Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Publication Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	<u>Foreign Document No.</u> ² Country Code ⁴ - Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYY	T ⁶

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL01	XACTWARE SOLUTIONS, INC., Brief on Behalf of Appellant, IPR2016-00593 and IPR2016-00594, filed 03/05/2018.

Examiner Signature:

Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number.

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⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.

⁶ Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	35036660
Application Number:	16265338
International Application Number:	
Confirmation Number:	2545
Title of Invention:	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY
First Named Inventor/Applicant Name:	Dale R. Thornberry
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Lori Martin
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	6338.497
Receipt Date:	01-FEB-2019
Filing Date:	
Time Stamp:	15:38:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal of New Application	6338497_Transmittal.pdf	63348	no	1
			8db0b23a534b4a479ac7edd852fa876bdba5575d		

Warnings:

Information:					
2	Application Data Sheet	6338497_ADS.pdf	6659300 8bfc7c406e80f235f1668f6d274b17478b9e04c9	no	8
Warnings:					
Information:					
This is not an USPTO supplied ADS fillable form					
3		6338497_Application.pdf	219885 b19705124b0b43d86396e36eafa4a6c2d5d4c770	yes	38
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	31	
	Claims		32	37	
	Abstract		38	38	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	6338497_Drawings.pdf	2600912 aca6f76e8ba89f3f843ead63d5eee70554d4f6bd	no	21
Warnings:					
Information:					
5	Assignee showing of ownership per 37 CFR 3.73	6338497_Statement.pdf	94462 c93ffd263635ec5dbc1441f9239656992cf87927	no	2
Warnings:					
Information:					
6	Power of Attorney	6338497_POA.pdf	58521 b5f16778c2068ef89f9a75e0bbcb74dafc9e8373	no	1
Warnings:					
Information:					

7	Information Disclosure Statement (IDS) Form (SB08)	6338497_IDS.pdf	373432 df5c290de449f84291a647b96878519997eae92f	no	8
Warnings:					
Information:					
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Total Files Size (in bytes):			10069860		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/265,338	02/01/2019	Dale R. Thornberry	6338.497

CONFIRMATION NO. 2545

FORMALITIES LETTER



OC000000105978025

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

Date Mailed: 02/20/2019

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
- The application search fee must be submitted.
- The application examination fee must be submitted.
- Surcharge as set forth in 37 CFR 1.16(f) must be submitted.

The surcharge is due for any one of:

- late submission of the basic filing fee, search fee, or examination fee,
- late submission of inventor's oath or declaration,
- filing an application that does not contain at least one claim on filing, or
- submission of an application filed by reference to a previously filed application.

SUMMARY OF FEES DUE:

The fee(s) required within **TWO MONTHS** from the date of this Notice to avoid abandonment is/are itemized below. No entity status discount is in effect. If applicant is qualified for small entity status, a written assertion of small entity status must be submitted to establish small entity status. (See 37 CFR 1.27). If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- \$ 300 basic filing fee.
- \$ 160 surcharge.
- \$ 660 search fee.
- \$ 760 examination fee.
- \$(0) previous unapplied payment amount.
- \$ 1880 TOTAL FEE BALANCE DUE.

Items Required To Avoid Processing Delays:

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):

Dale R. Thornberry
Chris T. Thornberry
Mark F. Garringer

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice".
<https://portal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/vvan/

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 16/265,338	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	660
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760
TOTAL CLAIMS (37 CFR 1.16(j))	17	minus 20 = *			OR	x 100 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *				x 460 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
			TOTAL			TOTAL	1720
* If the difference in column 1 is less than zero, enter "0" in column 2.							
APPLICATION AS AMENDED - PART II							
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)
	Total (37 CFR 1.16(i))	*	Minus **	=	x =	OR	x =
	Independent (37 CFR 1.16(h))	*	Minus ***	=	x =	OR	x =
	Application Size Fee (37 CFR 1.16(s))					OR	
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					OR	
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.							



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/265,338	02/01/2019		0.00	6338.497	17	3

CONFIRMATION NO. 2545

FILING RECEIPT



0000000105978024

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

Date Mailed: 02/20/2019

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Dale R. Thornberry, Carmel, IN;
Chris T. Thornberry, Indianapolis, IN;
Mark F. Garringer, Eaton, IN;

Applicant(s)

Pictometry International Corp., Rochester, NY;

Power of Attorney: The patent practitioners associated with Customer Number 30589

Domestic Priority data as claimed by applicant

This application is a CON of 15/943,337 04/02/2018 PAT 10197391
which is a CON of 15/005,977 01/25/2016 PAT 9933254
which is a CON of 14/018,943 09/05/2013 PAT 9244589
which is a CON of 13/774,478 02/22/2013 PAT 8542880
which is a CON of 12/470,984 05/22/2009 PAT 8401222

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/15/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/265,338**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

Title

SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

Electronic Patent Application Fee Transmittal

Application Number:	16265338			
Filing Date:	01-Feb-2019			
Title of Invention:	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY			
First Named Inventor/Applicant Name:	Dale R. Thornberry			
Filer:	Marc Alan Brockhaus/Lori Martin			
Attorney Docket Number:	6338.497			
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	300	300
UTILITY SEARCH FEE	1111	1	660	660
UTILITY EXAMINATION FEE	1311	1	760	760
Pages:				
Claims:				
Miscellaneous-Filing:				
LATE FILING FEE FOR OATH OR DECLARATION	1051	1	160	160
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1880

Electronic Acknowledgement Receipt

EFS ID:	35776400
Application Number:	16265338
International Application Number:	
Confirmation Number:	2545
Title of Invention:	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY
First Named Inventor/Applicant Name:	Dale R. Thornberry
Customer Number:	30589
Filer:	Marc Alan Brockhaus/Lori Martin
Filer Authorized By:	Marc Alan Brockhaus
Attorney Docket Number:	6338.497
Receipt Date:	19-APR-2019
Filing Date:	01-FEB-2019
Time Stamp:	12:33:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 1880
RAM confirmation Number	041919INTEFSW12345700
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (SB06)	fee-info.pdf	37120	no	2
			f3104aecceb1103e3c40c00bc2fe2c604fb3018		
Warnings:					
Information:					
Total Files Size (in bytes):			37120		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
16/265,338	02/01/2019		1880	6338.497	17	3

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

CONFIRMATION NO. 2545
UPDATED FILING RECEIPT



Date Mailed: 09/24/2019

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Dale R. Thornberry, Carmel, IN;
Chris T. Thornberry, Indianapolis, IN;
Mark F. Garringer, Eaton, IN;

Applicant(s)

Pictometry International Corp., Rochester, NY;

Power of Attorney: The patent practitioners associated with Customer Number 30589

Domestic Priority data as claimed by applicant

This application is a CON of 15/943,337 04/02/2018 PAT 10197391
which is a CON of 15/005,977 01/25/2016 PAT 9933254
which is a CON of 14/018,943 09/05/2013 PAT 9244589
which is a CON of 13/774,478 02/22/2013 PAT 8542880
which is a CON of 12/470,984 05/22/2009 PAT 8401222

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/15/2019

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 16/265,338**

Projected Publication Date: 01/02/2020

Non-Publication Request: No

Early Publication Request: No

Title

SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

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technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/265,338	02/01/2019	Dale R. Thornberry	6338.497

CONFIRMATION NO. 2545

INFORMAL NOTICE



OC000000111369277

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

Date Mailed: 09/24/2019

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

- A properly executed inventor's oath or declaration has not been received for the following inventor(s):
Dale R. Thornberry
Chris T. Thornberry
Mark F. Garringer

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/zmoguss/

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 16/265,338				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	300			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	660			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	760			
TOTAL CLAIMS (37 CFR 1.16(j))	17	minus 20 = *			OR	x 100 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *				x 460 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00			
			TOTAL			TOTAL	1720			
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/265,338	02/01/2019	Dale R. Thornberry	6338.497

CONFIRMATION NO. 2545

PUBLICATION NOTICE



OC000000113679379

30589
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

Title:SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

Publication No.US-2020-0003554-A1

Publication Date:01/02/2020

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <https://portal.uspto.gov/pair/PublicPair>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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NOTICE OF ALLOWANCE AND FEE(S) DUE

30589 7590 01/10/2020
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

EXAMINER	
FITZPATRICK, ATIBA O	
ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 01/10/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/265,338	02/01/2019	Dale R. Thornberry	6338.497	2545

TITLE OF INVENTION: SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	04/10/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

30589 7590 01/10/2020
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/265,338	02/01/2019	Dale R. Thornberry	6338,497	2545

TITLE OF INVENTION: SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	04/10/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
FITZPATRICK, ATIBA O	2662	382-100000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/265,338	02/01/2019	Dale R. Thornberry	6338.497	2545
30589	7590	01/10/2020	EXAMINER	
DUNLAP CODDING, P.C. PO BOX 16370 OKLAHOMA CITY, OK 73113			FITZPATRICK, ATIBA O	
			ART UNIT	PAPER NUMBER
			2662	
DATE MAILED: 01/10/2020				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/265,338	Applicant(s) Thornberry et al.	
	Examiner ATIBA O FITZPATRICK	Art Unit 2662	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 02/01/2019.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-17. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/ATIBA O FITZPATRICK/ Primary Examiner, Art Unit 2662	
--	--

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Limitations pertaining to "responsive to receiving the designation of the building roof structure location, providing a second computer input capable of signaling user-acceptance of the building roof structure location within the first image, wherein user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location; and subsequent to receiving the user-acceptance confirming the designation of the building roof structure location, providing a report for the building roof structure", in conjunction with other limitations present in the independent claims, distinguish over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Atiba Fitzpatrick whose telephone number is (571) 270-5255. The examiner can normally be reached on M-F 10:00am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for Atiba Fitzpatrick is (571) 270-6255.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

Art Unit: 2662

through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Atiba Fitzpatrick

/ATIBAO FITZPATRICK/

Primary Examiner, Art Unit 2662

<i>Search Notes</i> 	Application/Control No. 16/265,338	Applicant(s)/Patent Under Reexamination Thornberry et al.
	Examiner ATIBA O FITZPATRICK	Art Unit 2662

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
inventor search	01/06/2020	AF
EAST keyword search	01/06/2020	AF
G01B11/28; G06F17/5004; G06F3/04815; G06K9/00637; G06T7/602 combined with keywords	01/06/2020	AF

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	See interference search printout	01/06/2020	AF

/ATIBA O FITZPATRICK/ Primary Examiner, Art Unit 2662	
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Issue Classification 	Application/Control No. 16/265,338	Applicant(s)/Patent Under Reexamination Thornberry et al.
	Examiner ATIBA O FITZPATRICK	Art Unit 2662

CPC						
Symbol					Type	Version
G01B	/	11	/	28	F	2013-01-01
G06T	/	7	/	62	I	2017-01-01
G06F	/	3	/	04815	I	2013-01-01
G06K	/	9	/	00637	I	2013-01-01
G06F	/	30	/	13	I	2020-01-01
G06T	/	2207	/	10032	A	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 17	
/ATIBA O FITZPATRICK/ Primary Examiner, Art Unit 2662 (Primary Examiner) _____ (Date) 06 January 2020		O.G. Print Claim(s) 1	O.G. Print Figure 1

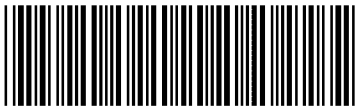
Issue Classification 	Application/Control No. 16/265,338	Applicant(s)/Patent Under Reexamination Thornberry et al.
	Examiner ATIBA O FITZPATRICK	Art Unit 2662

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G06K	/	9	/ 00
NON-CLAIMED			
/	/		

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
382	100

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	17	
/ATIBA O FITZPATRICK/ Primary Examiner, Art Unit 2662	06 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 16/265,338	Applicant(s)/Patent Under Reexamination Thornberry et al.
	Examiner ATIBA O FITZPATRICK	Art Unit 2662

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		10												
	2		11												
	3		12												
	4		13												
	5		14												
	6		15												
	7		16												
	8		17												
	9														

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 17	
/ATIBA O FITZPATRICK/ Primary Examiner, Art Unit 2662 (Primary Examiner) _____ (Date) 06 January 2020		O.G. Print Claim(s) 1	O.G. Print Figure 1

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as
necessary)

Complete if Known

Application No.	16265338
Filing Date	Herewith 02/01/2019
First Named Inventor	Dale R. Thornberry
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Patent Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	
	P1	4,497,551	Lapeyre	02/05/1985	
	P2	5,319,541	Blanchard et al.	06/07/1994	
	P3	5,625,827	Krause et al.	04/29/1997	
	P4	5,633,995	McClain	05/27/1997	
	P5	5,699,444	Palm	12/16/1997	
	P6	5,995,765	Kaneko et al.	11/30/1999	
	P7	6,323,885	Wiese	11/27/2001	
	P8	6,385,541	Blumberg et al.	05/07/2002	
	P9	6,396,491	Watanabe et al.	05/28/2002	
	P10	6,446,053	Elliott	09/03/2002	
	P11	6,496,184	Freeman et al.	12/17/2002	
	P12	6,636,803	Hartz, Jr. et al.	10/21/2003	
	P13	6,766,282	Schettine	07/20/2004	
	P14	6,798,925	Wagman	09/28/2004	
	P15	6,836,270	Du	12/28/2004	
	P16	6,859,768	Wakelam et al.	02/22/2005	
	P17	6,980,690	Taylor et al.	12/27/2005	

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Examiner Name	Unknown
Attorney Docket No.	6338.497

P18	7,003,400	Bryant	02/21/2006
P19	7,006,977	Attra et al.	02/28/2006
P20	7,046,839	Richer et al.	05/16/2006
P21	7,085,400	Holsing et al.	08/01/2006
P22	7,133,570	Schreier et al.	11/07/2006
P23	7,164,883	Rappaport et al.	01/16/2007
P24	7,239,761	Weilenmann	07/03/2007
P25	7,305,983	Meder et al.	12/11/2007
P26	7,324,666	Zoken et al.	01/29/2008
P27	7,343,268	Kishikawa	03/11/2008

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Publication Number Number-Kind Code 2 (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY
	PB1	2002/0154174	Redlich et al.	10/24/2002
	PB2	2005/0038636	Wakelam et al.	02/17/2005
	PB3	2005/0288959	Eraker et al.	12/29/2005
	PB4	2006/0200311	Arutunian et al.	09/07/2006
	PB5	2006/0282235	Thomas et al.	12/14/2006
	PB6	2008/0105045	Woro	05/08/2008
	PB7	2008/0221843	Shenkar et al.	09/11/2008
	PB8	2008/0262789	Pershing et al.	10/23/2008

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Attorney Docket No.	6338.497

	PB9	2009/0132436	Pershing et al.	05/21/2009	
	PB10	2010/0110074	Pershing	05/06/2010	
	PB11	2010/0114537	Pershing	05/06/2010	
	PB12	2010/0179787	Pershing et al.	07/15/2010	
	PB13	2009/0141020	Freund et al.	06/04/2009	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Foreign Document No. ² Country Code ⁴ - Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYY	16
	F1	WO20000029806	Friedhelm et al.	05/25/2000	
	F2	AU2008230031	Eagle View Technologies, Inc.	11/05/2009	
	F3	AU2010219392	Eagle View Technologies, Inc.	09/30/2010	

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL1	OLOF HENRICSSON, The Role of Color Attributes and Similarity Grouping in 3-D Building Reconstruction, Institute of Photogrammetry and Geodesy, Zurich, Switzerland
	NPL2	CC-Modeler: a topology generator for 3-D city models, abstract, May 15, 1998
	NPL3	ARMIN GRUEN and HINHUA WANG; CC-Modeler: A Topology Generator for 3-D City Models, Inst. of Geodesy and Photogrammetry, Zurich, Switzerland
	NPL4	MICROSOFT'S MSN VIRTUAL EARTH: The Map is the Search Platform; February 6, 2009

Substitute for form 1449/PTO
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NON-PATENT DOCUMENTS

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	NPL5	EAGLE VIEW TECHNOLOGIES; Eagle View Measurements Premium Report; October 22, 2008
	NPL6	"Automatic House Reconstruction", http://www.vision.ee.ethz.ch/projects/Amobe_l/recons.html , accessed 3/15/2010
	NPL7	"PhotoModeler-Measure and Model Real-World Objects From Photographs", http://www.photomodeler.com/products/photomodeler.htm , accessed on 03/15/2010.
	NPL8	Baillard C. et al., "Automatic Reconstruction Of Piecewise Planar Models From Multiple Views", Dept. of Engineering Science, University of Oxford
	NPL9	Chevrier C., et al., "Interactive 3D Reconstruction For Urban Areas: An Image Based Tool", CAAD Futures 2001.pp. 1-13.
	NPL10	Debevec, Paul E. et al., "Modeling and Rendering Architecture From Photographs: A Hybrid Geometry-And-Image Based Approach", University of California at Berkeley, 1996.
	NPL11	"Pictometry Announces Software and Web-based Solution For Engineers, Architects, and Planners", Press Release dated January 22, 2004, Rochester, NY.
	NPL12	Automated Systems Research, http://www.asrsoft.com/about.html , accessed 5/22/2009
	NPL13	Claim Rep Measure Roof, http://www.claimrep.com/roofSize.htm , accessed on 5/22/2009
	NPL14	GeoSpan Aerial Imagery, http://www.geospan.com/products-services.asp , accessed on 5/22/2009

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

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Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL15	GULCH, E., MULLER, H., LABE, T., RAGIA, L., "On The Performance Of Semi-Automatic Building Extraction", University Bonn, Germany, 1998.
	NPL16	How To Calculate Roof Pitches in 3D From 2D Drawings, 12/17/2007, http://connected.typepad.com/connected/2007/12/how-to-calculat.html , accessed on 5/22/2009
	NPL17	http://eagleviewmeasurements.com , "Eagle View Roof Measurement" accessed 5/22/2009
	NPL18	http://estimagic.com/roofing/about-roofing-estimating.html , "About Estimagic Roof Estimator", accessed 08/22/2008
	NPL19	MILLER, Mark R., "Miller's Guide To Framing And Roofing, McGraw-Hill Companies, Inc., New York, 2005, pp. 131-136, 162-163.
	NPL20	Pictometry Online Demo, www.youtube.com/watch?v=JURSK7oOODO , accessed on 2/6/2009
	NPL21	Precigeo, http://www.precigeo.com/ , accessed on 5/22/2009
	NPL22	Roof Area Calculator; http://www.construction-resource.com/calculators/roof-area.php , accessed on 5/22/2009
	NPL23	Roof Master Roof Estimating Software, http://www.vectortec.com/roofmaster_roofing_estimating_software.htm , accessed on 5/22/2009
	NPL24	Rooflogic Drawings and Takeoffs From Satellite Images, http://www.rooflogic.com/Products/Satellite/ , accessed on 5/22/2009
	NPL25	SkyTek Imaging, http://www.skytekimaging.com/ourservices.html , accessed on 5/22/2009

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as
necessary)

Complete if Known

Application No.	16265338
Filing Date	Herewith 02/01/2019
First Named Inventor	Dale R. Thornberry
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL26	SNYDER, J., BARR, A., "Ray Tracing Complex Models Containing Surface Tessellations", California Institute of Technology, Pasadena, CA July 1987, pp. 119-128.
	NPL27	Somay Roof Calculator, http://www.somay.com/roof_coatings/roof_calculate/roof_calculate.html , accessed on 5/22/2009
	NPL28	VINCENTY, T., "Direct And Inverse Solutions Of Geodesics On The Ellipsoid With Application Of Nested Equations", Warren AFB, Wyoming, April 1975, pp. 88-93.
	NPL29	Ways To Determine or Calculate Roof Pitch or Roof Slope Using a Carpenters Level; http://roofgenius.com/roofpitch.htm , accessed 5/22/2009
	NPL30	Delaney, Kevin J., "Searching For Clients From Above", The Wall Street Journal, July 31, 2007.
	NPL31	Faugeras et al., "3-D Reconstruction of Urban Scenes From Image Sequences", IN RIA, 2004, France, Sept. 11, 1997.
	NPL32	Henricsson, O. et al., "3-D Building Reconstruction with ARUBA: A Qualitative and Quantitative Evaluation," Institute of Geodesy and Photogrammetry, Switzerland, 1997, 12 pages.
	NPL33	http://www.precigeo.com/ , "Solar Professionals, Insurance Adjusters, Roofing and Landscape Estimators: Use Precigeo To Get Rapid, Accurate and Visually Compelling Sketches and Measurements, accessed on 3/15/10.
	NPL34	Poullis et al., "Photogrammetric Modeling And Image-Based Rendering For Rapid Virtual Environment Creation", University of Southern California, Institute For Creative Technologies

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as
necessary)

Complete if Known

Application No.	16265338
Filing Date	Herewith ^{02/01/2019}
First Named Inventor	Dale R. Thornberry
Art Unit	Unknown
Examiner Name	Unknown
Attorney Docket No.	6338.497

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL35	Scholze, Stephan, "A Probabilistic Approach To Building Roof Reconstruction", A Dissertation Submitted To The Swiss Federal Institute Of Technology Zurich, 2002.
	NPL36	Ziegler et al., 3D Reconstruction Using Labeled Image Regions, Eurographics Symposium on Geometry Processing, 2003.

Examiner Signature:

/ATIBA O FITZPATRICK/

Date Considered:

01/06/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number.

2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.

3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.

6 Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449/PTO
PTO/SB/08A and 08B
Form 6-2 and Form 6-2.1

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Use as many sheets as
necessary)

Complete if Known	
Application No.	16265338
Filing Date	Herewith 02/01/2019
First Named Inventor	Dale R. Thornberry
Art Unit	
Examiner Name	
Attorney Docket No.	6338.497

U. S. PATENT APPLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Patent Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Issue Date MM/DD/YYYY	

U. S. PATENT APPLICATION PUBLICATION DOCUMENTS

EXAM INIT.	Cite No. ¹	Publication Number Number-Kind Code ² (if known)	Name of Patentee or Applicant of Cited Document	Publications Date MM/DD/YYYY	

FOREIGN PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	<u>Foreign Document No.</u> ² Country Code ⁴ - Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM- DD-YYY	T ⁶

NON-PATENT DOCUMENTS

EXAM INIT.	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
	NPL01	XACTWARE SOLUTIONS, INC., Brief on Behalf of Appellant, IPR2016-00593 and IPR2016-00594, filed 03/05/2018.

/ATIBA O FITZPATRICK/	01/06/2020
Examiner Signature:	Date Considered:
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number. 2 See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. 5 Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. 6 Applicant is to place a check mark here if English language Translation is attached.	

Bibliographic Data

Application No: 16/265,338

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☐ No ☐ Met After Allowance

Verified and Acknowledged: /ATIBA O FITZPATRICK/

Examiner's Signature

Initials

Title:

SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
02/01/2019	382	2662	6338.497
RULE			

APPLICANTS

Pictometry International Corp., Rochester, NY,

INVENTORS

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Chris T. Thornberry Indianapolis, IN, UNITED STATES

Mark F. Garringer Eaton, IN, UNITED STATES

CONTINUING DATA

This application is a CON of 15943337 04/02/2018 PAT 10197391

15943337 is a CON of 15005977 01/25/2016 PAT 9933254

15005977 is a CON of 14018943 09/05/2013 PAT 9244589

14018943 is a CON of 13774478 02/22/2013 PAT 8542880

13774478 is a CON of 12470984 05/22/2009 PAT 8401222

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

02/15/2019

STATE OR COUNTRY

UNITED STATES

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OKLAHOMA CITY, OK 73113

UNITED STATES

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\$1,880

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	2	12/470984.app.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 12:56
L4	26	(THORNBERRY-DALE\$, THORNBERRY- CHRIS\$, GARRINGER-MARK\$).in.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/06 12:56
L5	42	("5319541" "6859768" "20100110074" "6496184" "20070150366" "5699444" "5625827" "6636803" "6798925" "20060282235" "7305983" "6446053" "7133551" "20100114537" "20100179787" "5633995" "6980690" "7324666" "7085400" "20030014224" "20020154174" "20060200311" "20090132436" "7003400" "6396491" "7239761" "20050038636" "7343268" "20080262789" "4497551" "7133570" "6766282" "7164883" "20080221843" "5995765" "7046839" "20050288959" "6323885" "6385541" "6836270" "7006977" "20080105045").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/06 12:56
L6	13	L5 and (marker mark\$3 index indicator tag\$4 label\$4 pin) near5 (moveable mov\$3 chang\$3 adjust\$4 updat\$3 alter\$3 vary\$3 modif\$4 edit\$4 calibrat\$4 refin\$4 tune tuning tuned fine\$2tun\$3 replac\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 12:56
L7	29	L5 not L6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 12:56
L8	10	roof with (image picture photograph\$4 frame video) and (latitud\$5 longitud\$5) with (image picture photograph\$4 frame video) with (plural\$3 poly many several numerous various multi dual multiple (more NEAR2 than) two three first second third all any every each additional subsequent another next) near2 (database knowledge\$3base)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:14
L9	7	roof with (image picture photograph\$4 frame video) and (latitud\$5 longitud\$5) with (image picture photograph\$4 frame video) with (database knowledge\$3base) and	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2020/01/06 13:14

		(plural\$3 poly many several numerous various multi dual multiple (more NEAR2 than) two three first second third all any every each additional subsequent another next) near2 (database knowledge\$3base) not L8	EPO; JPO; DERWENT; IBM_TDB			
L10	4	(US-20120120069-\$ or US-20100179787-\$ or US-20080262789-\$).did. or (US-8145578-\$).did.	US-PGPUB; USPAT	OR	ON	2020/01/06 13:14
L11	4	L10 and (plural\$3 poly many several numerous various multi dual multiple (more NEAR2 than) two three first second third all any every each additional subsequent another next) near2 (database knowledge\$3base)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:17
L12	42	("5319541" "6859768" "20100110074" "6496184" "20070150366" "5699444" "5625827" "6636803" "6798925" "20060282235" "7305983" "6446053" "7133551" "20100114537" "20100179787" "5633995" "6980690" "7324666" "7085400" "20030014224" "20020154174" "20060200311" "20090132436" "7003400" "6396491" "7239761" "20050038636" "7343268" "20080262789" "4497551" "7133570" "6766282" "7164883" "20080221843" "5995765" "7046839" "20050288959" "6323885" "6385541" "6836270" "7006977" "20080105045").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/06 13:17
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L14	2	roof with (image picture photograph\$4 frame video) and report\$4 with (latitud\$5 longitud\$5) with (image picture photograph\$4 frame video)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:17
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L17	8	(US-20100296693-\$ or US-20070107620-\$ or US-20050216147-\$ or US-20030095789-\$).did. or (US-7391956-\$ or US-7246007-\$ or US-6625383-\$ or US-6571052-\$).did.	US-PGPUB; USPAT	OR	ON	2020/01/06 13:17
L18	8	L17 and report\$4 with (latitud\$5	US-PGPUB;	OR	ON	2020/01/06

		longitud\$5)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			13:17
L19	1	L12 and report\$4 with (latitud\$5 longitud\$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:17
L20	20	L12 and (latitud\$5 longitud\$5)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:17
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L22	34	L12 and (database knowledge\$3base)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:18
L23	2	"20100110074".pn. and (outlin\$4 contour\$4 border\$4 trac\$4 arm\$3 boundar\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:18
L24	42	("5319541" "6859768" "20100110074" "6496184" "20070150366" "5699444" "5625827" "6636803" "6798925" "20060282235" "7305983" "6446053" "7133551" "20100114537" "20100179787" "5633995" "6980690" "7324666" "7085400" "20030014224" "20020154174" "20060200311" "20090132436" "7003400" "6396491" "7239761" "20050038636" "7343268" "20080262789" "4497551" "7133570" "6766282" "7164883" "20080221843" "5995765" "7046839" "20050288959" "6323885" "6385541" "6836270" "7006977" "20080105045").PN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/06 13:18
L25	3	(US-20060200311-\$ or US-20020154174- \$).did. or (US-6636803-\$).did.	US-PGPUB; USPAT	OR	ON	2020/01/06 13:20
L26	0	L25 and roof	US-PGPUB; USPAT; USOCR;	OR	ON	2020/01/06 13:20

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
L27	29	L24 and ("382"/\$, "345"/\$, "703"/\$, "715"/\$, "340"/\$).ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:20
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L29	349	nadir adj1 (image picture frame scan video photogra\$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:20
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L31	2	("20070220174").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/01/06 13:20
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		3371954-\$ or US-3321135-\$ or US-3279636-\$ or US-3186758-\$ or US-3186419-\$ or US-3180675-\$ or US-3161958-\$ or US-3160434-\$ or US-3143978-\$ or US-3141494-\$ or US-3096983-\$ or US-3085586-\$ or US-3069028-\$ or US-3053426-\$ or US-3011455-\$ or US-2895274-\$ or US-2882911-\$ or US-2860004-\$ or US-2723811-\$ or US-2715953-\$ or US-2576691-\$ or US-2513102-\$ or US-2414412-\$).did. or (US-2323665-\$ or US-2270506-\$ or US-2007514-\$ or US-1713503-\$ or US-1374386-\$).did. or (EP-0725326-\$ or CN-201539597-\$).did. or (EP-725326-\$).did. or (US-20150016689-\$).did.				
L33	82	L32 and (address\$4 position\$4 locat\$4 placed placement placing coordinat\$4 latitude longitude lat lon) with (marker tag\$4 label\$4 pin pushpin) same (image picture frame scan photogra\$4 picel pixel) near5 (archiv\$4 stor\$3 sav\$3 record\$3 memor\$4 repository database)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:24
L34	3	(US-20100296693-\$ or US-20110282537-\$).did. or (US-8818770-\$).did.	US-PGPUB; USPAT	OR	ON	2020/01/06 13:28
L35	3	L34 and (address\$4 position\$4 locat\$4 placed placement placing coordinat\$4 latitude longitude lat lon) with (marker tag\$4 label\$4 pin pushpin) same (image picture frame scan photogra\$4 picel pixel) near5 (retreiv\$4 provid\$4 access\$4 find\$3 get getting call)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:28
L36	15	(US-20120101783-\$ or US-20150094992-\$ or US-20100114537-\$ or US-20090208095-\$ or US-20140270355-\$ or US-20140132635-\$ or US-20140025343-\$ or US-20130211790-\$ or US-20130110558-\$ or US-20100110074-\$ or US-20100257487-\$ or US-20100142748-\$ or US-20080162380-\$).did. or (US-9135737-\$ or US-8731234-\$).did.	US-PGPUB; USPAT	OR	ON	2020/01/06 13:28
L37	15	L36 and (address\$4 position\$4 locat\$4 placed placement placing coordinat\$4 latitude longitude lat lon) same (image picture frame scan photogra\$4 picel pixel) near5 (database knowledge\$3base)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:28
L38	94	28 and (G01B11/28; G06F17/5004; G06F3/04815; G06K9/00637; G06T7/602).cpc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2020/01/06 13:36
L39	6	(US-20140237430-\$ or US-20140019166-\$ or US-20100296693-\$ or US-20120086850-\$ or US-20060137736-\$).did. or (US-20140019166-\$).did.	US-PGPUB; DERWENT	OR	ON	2020/01/06 13:38
L40	6	L39 and (address\$4 position\$4 locat\$4 placed placement placing coordinat\$4	US-PGPUB; USPAT;	OR	ON	2020/01/06 13:38

		latitude longitude lat lon) same (high\$3 great\$3 increas\$4 more above superior better best) near5 (resolution resolv\$4) with (image picture frame scan photogra\$4 picel pixel) near5 (database knowledge\$3base)	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
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EAST Search History (I nterference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	14	(((roof) with (image picture frame scan photogra\$4 picel pixel video) and (address\$4 position\$4 locat\$4 placed placement placing coordinat\$4 latitude longitude lat lon) with (marker tag\$4 label\$4 pin pushpin) same (image picture frame scan photogra\$4 picel pixel) near5 (retreiv\$4 provid\$4 access\$4 find\$3 get getting call)).clm.	US-PGPUB; USPAT	OR	ON	2020/01/06 12:50
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1/ 6/ 2020 1:44:51 PM
C:\ Users\ afitzpatrick\ Documents\ EAST\ Workspaces\ 15943337.wsp

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	16/265,338
	Filing Date	02/01/2019
	First Named Inventor	Dale R. Thornberry
	Art Unit	2662
	Examiner Name	Atiba O. Fitzpatrick
Total Number of Pages in This Submission		Attorney Docket Number 6338.497

ENCLOSURES (Check all that apply)		
☐ Fee Transmittal Form ☐ Fee Attached ☐ Amendment/Reply ☐ After Final ☐ Affidavits/declaration(s) ☐ Extension of Time Request ☐ Express Abandonment Request ☐ Information Disclosure Statement ☐ Certified Copy of Priority Document(s) ☐ Reply to Missing Parts/ Incomplete Application ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53	☐ Drawing(s) ☐ Licensing-related Papers ☐ Petition ☐ Petition to Convert to a Provisional Application ☐ Power of Attorney, Revocation Change of Correspondence Address ☐ Terminal Disclaimer ☐ Request for Refund ☐ CD, Number of CD(s) _____ ☐ Landscape Table on CD	☐ After Allowance Communication to TC ☐ Appeal Communication to Board of Appeals and Interferences ☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) ☐ Proprietary Information ☐ Status Letter ☒ Other Enclosure(s) (please identify below): See Remarks
Remarks ELECTRONICALLY TRANSMITTED: 1. SB21 Transmittal Form (1 pg); and 2. Declarations (4 pgs).		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	DUNLAP CODDING, P.C.		
Signature	/Ann M. Robl/		
Printed name	Ann M. Robl		
Date	01/21/2020	Reg. No.	71,541

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature	/Ann M. Robl/		
Typed or printed name	Ann M. Robl	Date	01/21/2020

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

SUBSTITUTE STATEMENT IN LIEU OF AN OATH OR DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (35 U.S.C. 115(d) AND 37 CFR 1.64)

Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY		
This statement is directed to: ☐ The attached application, OR ☒ United States application or PCT international application number <u>16/265,338</u> filed on <u>02/01/2019</u> .			
LEGAL NAME of inventor to whom this substitute statement applies:			
(E.g., Given Name (first and middle (if any)) and Family Name or Surname)			
Dale R. Thornberry			
Residence (except for a deceased or legally incapacitated inventor):			
City Carmel	State IN	Country US	
Mailing Address (except for a deceased or legally incapacitated inventor):			
13890 Wildcat Dr.			
City Carmel	State IN	Zip 46033	Country US
I believe the above-named inventor or joint inventor to be the original inventor or an original joint inventor of a claimed invention in the application. The above-identified application was made or authorized to be made by me. I hereby acknowledge that any willful false statement made in this statement is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.			
Relationship to the inventor to whom this substitute statement applies: ☐ Legal Representative (for deceased or legally incapacitated inventor only), ☒ Assignee, ☐ Person to whom the inventor is under an obligation to assign, ☐ Person who otherwise shows a sufficient proprietary interest in the matter (petition under 37 CFR 1.46 is required), or ☐ Joint Inventor.			

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Roof Exhibit 1002, Page 128

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

SUBSTITUTE STATEMENT

Circumstances permitting execution of this substitute statement:

- ☐ Inventor is deceased,
- ☐ Inventor is under legal incapacity,
- ☐ Inventor cannot be found or reached after diligent effort, or
- ☒ Inventor has refused to execute the oath or declaration under 37 CFR 1.63.

If there are joint inventors, please check the appropriate box below:

- ☒ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) naming the entire inventive entity has been or is currently submitted.

OR

- ☐ An application data sheet under 37 CFR 1.76 (PTO/AIA/14 or equivalent) has not been submitted. Thus, a Substitute Statement Supplemental Sheet (PTO/AIA/11 or equivalent) naming the entire inventive entity and providing inventor information is attached. See 37 CFR 1.64(b).

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

Name: **David Silverman** Date (Optional):

Signature: *David Silverman* DocuSigned by: **APPLICANT** 03F3AD20C9DC4CA...

PERSON EXECUTING THIS SUBSTITUTE STATEMENT:

If the applicant is a juristic entity, list the applicant name and the title of the signer:

Pictometry International Corp.

Applicant Name:

Title of Person Executing This Substitute Statement: **General Counsel**

The signer, whose title is supplied above, is authorized to act on behalf of the applicant.

Residence of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent):

City **Bothell** State **WA** Country **US**

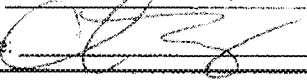
Mailing Address of the signer (unless provided in an application data sheet, PTO/AIA/14 or equivalent)**25 Methodist Hill Drive**

City **Rochester** State **NY** Zip **14623** Country **US**

Note: Use an additional PTO/AIA/02 form for each inventor who is deceased, legally incapacitated, cannot be found or reached after diligent effort, or has refused to execute the oath or declaration under 37 CFR 1.63.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING AERIAL IMAGERY
As the below named inventor, I hereby declare that: This declaration is directed to: ☐ The attached application, or ☒ United States application or PCT international application number <u>13/786,699</u> filed on <u>03/06/2013</u> The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Chris T. Thornberry</u> Date (Optional): <u>7/15/2013</u> Signature:  Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING AERIAL IMAGERY
--------------------	--

As the below named inventor, I hereby declare that:

This declaration is directed to

☐

The attached application, or

☒

United States application or PCT international application number 13/786,699

filed on 03/06/2013

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor Mark F. Garringer

Date (Optional): 4/19/13

Signature: 

Note: An application data sheet (PTO/SB4 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 5 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1480, Alexandria, VA 22313-1480. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1480, Alexandria, VA 22313-1480.

If you need assistance in completing the form, call 1-800-PTO-6199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	38354257
Application Number:	16265338
International Application Number:	
Confirmation Number:	2545
Title of Invention:	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY
First Named Inventor/Applicant Name:	Dale R. Thornberry
Customer Number:	30589
Filer:	Ann M. Robl/Lori Martin
Filer Authorized By:	Ann M. Robl
Attorney Docket Number:	6338.497
Receipt Date:	21-JAN-2020
Filing Date:	01-FEB-2019
Time Stamp:	16:08:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	6338497_Transmittal.pdf	155693	no	1
			f55d91cba830ba96198d534bc1df9088c4c03969		

Warnings:

Information:					
2	Oath or Declaration filed	6338497_Declarations.pdf	380781	no	4
			144eaeeba1b3e5857c284a7da3f98ba5706bb66a		
Warnings:					
Information:					
Total Files Size (in bytes):				536474	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	16/265,338
	Filing Date	02/01/2019
	First Named Inventor	Dale R. Thornberry
	Art Unit	2662
	Examiner Name	Atiba O. Fitzpatrick
Total Number of Pages in This Submission	Attorney Docket Number	6338.497

ENCLOSURES (Check all that apply)		
☐ Fee Transmittal Form ☐ Fee Attached ☐ Amendment/Reply ☐ After Final ☐ Affidavits/declaration(s) ☐ Extension of Time Request ☐ Express Abandonment Request ☐ Information Disclosure Statement ☐ Certified Copy of Priority Document(s) ☐ Reply to Missing Parts/ Incomplete Application ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53	☐ Drawing(s) ☐ Licensing-related Papers ☐ Petition ☐ Petition to Convert to a Provisional Application ☐ Power of Attorney, Revocation Change of Correspondence Address ☐ Terminal Disclaimer ☐ Request for Refund ☐ CD, Number of CD(s) _____ ☐ Landscape Table on CD	☐ After Allowance Communication to TC ☐ Appeal Communication to Board of Appeals and Interferences ☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) ☐ Proprietary Information ☐ Status Letter ☒ Other Enclosure(s) (please identify below): See Remarks
Remarks ELECTRONICALLY TRANSMITTED: 1. SB21 Transmittal Form (1 pg); and 2. PTOL-85 (1 pg).		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm Name	DUNLAP CODDING, P.C.		
Signature	/Ann M. Robl/		
Printed name	Ann M. Robl		
Date	04/10/2020	Reg. No.	71,541

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature	/Ann M. Robl/		
Typed or printed name	Ann M. Robl	Date	04/10/2020

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

30589 7590 01/10/2020
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Ann M. Robl	(Typed or printed name)
/Ann M. Robl/	(Signature)
04/10/2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/265,338	02/01/2019	Dale R. Thornberry	6338.497	2545

TITLE OF INVENTION: SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1000	\$0.00	\$0.00	\$1000	04/10/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
FITZPATRICK, ATIBA O	2662	382-100000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. DUNLAP CODDING, P.C.
2. _____
3. _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Pictometry International Corp.

Rochester, New York

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

- ☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Ann M. Robl/

Date 04/10/2020

Typed or printed name Ann M. Robl

Registration No. 71,541

Electronic Patent Application Fee Transmittal				
Application Number:		16265338		
Filing Date:		01-Feb-2019		
Title of Invention:		SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY		
First Named Inventor/Applicant Name:		Dale R. Thornberry		
Filer:		Ann M. Robl/Lori Martin		
Attorney Docket Number:		6338.497		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1000	1000

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1000

Electronic Acknowledgement Receipt

EFS ID:	39120744
Application Number:	16265338
International Application Number:	
Confirmation Number:	2545
Title of Invention:	SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY
First Named Inventor/Applicant Name:	Dale R. Thornberry
Customer Number:	30589
Filer:	Ann M. Robl/Lori Martin
Filer Authorized By:	Ann M. Robl
Attorney Docket Number:	6338.497
Receipt Date:	10-APR-2020
Filing Date:	01-FEB-2019
Time Stamp:	10:13:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$ 1000
RAM confirmation Number	E202040A14286883
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	6338497_Transmittal.pdf	151944	no	1
			52e6fc752fb693f1cc8a1dd261ba19a6ee571d8		
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	6338497_PartB.pdf	104851	no	1
			1d74a2cdefbdc4ef48bef1adb11c767894fad223		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30084	no	2
			ee3df40512b5e0d73e70a2a6455ecb6523766cd6		
Warnings:					
Information:					
Total Files Size (in bytes):			286879		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/265,338	05/12/2020	10648800	6338.497	2545

30589 7590 04/22/2020
DUNLAP CODDING, P.C.
PO BOX 16370
OKLAHOMA CITY, OK 73113

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Dale R. Thornberry, Carmel, IN;
Pictometry International Corp., Rochester, NY;
Chris T. Thornberry, Indianapolis, IN;
Mark F. Garringer, Eaton, IN;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court _____ for the District of Delaware _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED 12/29/2021	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF PICTOMETRY INTERNATIONAL CORP.		DEFENDANT ROOFR INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 9,183,538 B2	11/10/2015	Pictometry International Corp.
2 US 10,648,800 B2	5/12/2020	Pictometry International Corp.
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the District of Delaware _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 1:21-cv-01852-RGA	DATE FILED 12/29/2021	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF EAGLE VIEW TECHNOLOGIES, INC., and PICTOMETRY INTERNATIONAL CORP.,		DEFENDANT ROOFR INC.
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 9,183,538 B2	11/10/2015	Pictometry International Corp.
2 US 10,648,800 B2	5/12/2020	Pictometry International Corp.
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☒ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 8,170,840 B2	5/1/2012	Eagle View Technologies, Inc.
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

CORRESPONDENCE ADDRESS CHANGE

APPLICATION #	FILING OR 371(C) DATE	REQUEST ID
16/265,338	02/01/2019	37733

The following fields have been changed to Customer Number 189081 on 08/10/2022 via Patent Center in view of the certification copied below that authorized the change.

- Correspondence Address

The address for Customer Number 189081 is:

189081 - EagleView
PO BOX 16370
OKLAHOMA CITY , OK 73113

I certify, in accordance with 37 CFR 1.4(d)(4), that I am :

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature	Name	Registration #
/Ann Robl/	ANN ROBL	71541

FEE ADDRESS CHANGE

APPLICATION #	FILING OR 371(C) DATE	REQUEST ID
16/265,338	02/01/2019	37733

The following fields have been changed to Customer Number 189081 on 08/10/2022 via Patent Center in view of the certification copied below that authorized the change.

- Maintenance Fee Address

The address for Customer Number 189081 is:

189081 - EagleView
PO BOX 16370
OKLAHOMA CITY, OK 73113

I certify, in accordance with 37 CFR 1.4(d)(4), that I am :

An attorney or Agent of Record registered to practice before the Patent and Trademark Office who has been given power of attorney in this application

Signature	Name	Registration #
/Ann Robl/	ANN ROBL	71541

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:



Practitioners associated with Customer Number:

189081

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:



The address associated with Customer Number:

189081

OR

☐	Firm or Individual Name			
	Address			
	City		State	Zip
	Country			
	Telephone			Email

Assignee Name and Address: Pictometry International Corp.
25 Methodist Hill Drive
Rochester, NY 14623

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	/Rebecca Unruh/	Date	August 10, 2022
Name	Rebecca Unruh	Telephone	
Title	Deputy General Counsel, IP and Transactions, Pictometry International Corp.		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	16/265,338
Filing Date	02/01/2019
First Named Inventor	Dale R. Thornberry
Art Unit	2662
Examiner Name	Atiba O. Fitzpatrick
Attorney Docket Number	6338.497

ENCLOSURES (Check all that apply)

☐ Fee Transmittal Form	☐ Drawing(s)	☐ After Allowance Communication to TC
☐ Fee Attached	☐ Licensing-related Papers	☐ Appeal Communication to Board of Appeals and Interferences
☐ Amendment/Reply	☐ Petition	☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
☐ After Final	☐ Petition to Convert to a Provisional Application	☐ Proprietary Information
☐ Affidavits/declaration(s)	☒ Power of Attorney, Revocation Change of Correspondence Address	☐ Status Letter
☐ Extension of Time Request	☐ Terminal Disclaimer	☒ Other Enclosure(s) (please identify below):
☐ Express Abandonment Request	☐ Request for Refund	See Remarks
☐ Information Disclosure Statement	☐ CD, Number of CD(s) _____	
	☐ Landscape Table on CD	
☐ Certified Copy of Priority Document(s)	Remarks	
☐ Reply to Missing Parts/Incomplete Application	ELECTRONICALLY TRANSMITTED:	
☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53	1. SB21 Transmittal Form (1 pg); and	
	2. Power of Attorney (1 pg).	

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	DUNLAP CODDING, P.C.		
Signature	/Ann M. Robl/		
Printed name	Ann M. Robl		
Date	08/16/2022	Reg. No.	71,541

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	/Ann M. Robl/		
Typed or printed name	Ann M. Robl	Date	08/16/2022

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
16/265,338

RECEIPT DATE / TIME
08/18/2022 05:33:08 PM ET

ATTORNEY DOCKET #
6338.497

Title of Invention

SYSTEM AND PROCESS FOR ROOF MEASUREMENT USING IMAGERY

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # 10648800

CONFIRMATION # 2545

FILED BY Lori Martin

PATENT CENTER # 60887433

FILING DATE 02/01/2019

CUSTOMER # 189081

FIRST NAMED
INVENTOR Dale R. Thornberry

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY ANN ROBL

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
6338497__Transmittal.pdf	1	Transmittal Letter	153 KB
6338497__POA.pdf	1	Power of Attorney	87 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
6338497__Transmittal.pdf	A3E3A2F99B4DDAEB213F40D25D9224942B9B76ECC7E1D61E 03939A05F112B13A416805B77A59801B71137CABB19F2C47B7 E2D62B325E47838D228AF52B12085C

6338497_POA.pdf

ADAE6AB07970FC3FEB5F3BA58964A7EC0D5C7215FDE5BC80
E66296B9D8EE5CB8455B1A5EE8A84E72BDCEA66519EF94E2
73334E53338EEBE835B90E52036A63FD

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/265,338	02/01/2019	Dale R. Thornberry	6338.497

189081
EagleView
PO BOX 16370
OKLAHOMA CITY, OK 73113

CONFIRMATION NO. 2545
POWER OF ATTORNEY NOTICE



Date Mailed: 08/29/2022

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/18/2022.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/nrhayden/



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www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/265,338	02/01/2019	Dale R. Thornberry	

189081
EagleView
PO BOX 16370
OKLAHOMA CITY, OK 73113

CONFIRMATION NO. 2545
POA ACCEPTANCE LETTER



Date Mailed: 08/29/2022

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/18/2022.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

/nrhayden/