



General Services Administration (GSA)
Federal Supply Service
Authorized Federal Supply Schedule
Price List

Supplement No. 3, Effective August 15, 2015

GSA Advantage!®

On-line access to contract ordering information, terms and conditions, up-to-date pricing, and the option to create an electronic delivery order are available through **GSA Advantage!®**, a menu-driven database system. The INTERNET address for **GSA Advantage!®** is:

<http://www.GSAAdvantage.gov>.

Contract Information

Schedule Title: Professional Services Schedule (PSS)

Industrial Group: 00CORP

Contract Number: GS-10F-0423R

For more information on ordering from Federal Supply Schedules click on the FSS Schedules button at <http://www.gsa.gov/schedules-ordering>.

Contract Period: August 15, 2005 – August 14, 2020

Contractor: Quantum Spatial, Inc.
1410 Indian Trail Rd
Norcross, GA 30093-2611
Phone: 770-564-9843 / Fax: 770-279-9568

Contract Administrator: Carol J. Augustin
caugustin@quantumspatial.com

Web Address: www.quantumspatial.com

Business Size (NAICS code 541620): Large Business (other than small)

Prices Shown Herein are Net (discount deducted)



Customer Information

- 1a. **Table of awarded special item number(s) with appropriate cross - reference to item descriptions and awarded price(s).**

SIN	Recovery	SIN Description	Page
899-1	899-1RC	Environmental Consulting Services	5
899-3	899-3RC	Environmental Training Services	6
899-7	899-7RC	Geographic Information Systems (GIS) Services	6

- 1c. **If the Contractor is proposing hourly rates, a description of all corresponding commercial job titles, experience, functional responsibility and education for those types of employees or subcontractors who will perform services shall be provided. If hourly rates are not applicable, indicate “Not applicable” for this item.**

See Pages 16 – 78

2. **Maximum order:** \$1,000,000
3. **Minimum order:** \$100
4. **Geographic coverage (delivery area):** Domestic delivery including all 50 states, Washington D.C., and Puerto Rico.
5. **Point(s) of production (city, county, and State or foreign country).**

KY Office
 523 Wellington Way
 Lexington, KY 40503-1394
 Phone: 859-277-8700
 Fax: 859-277-8901

GA Office
 1410 Indian Trail Road
 Norcross, GA 30093-2611
 Phone: 770-564-9843
 Fax: 770-279-9568

CO Office
 2955 Professional Place, Suite 320
 Colorado Springs, CO 80904
 Phone: 719-646-9141
 Fax: 859-277-8901

FL Office
 10033 MLK Street N, #200
 St. Petersburg, FL 33716-3830
 Phone: 727-576-9500
 Fax: 727-576-9600

MI Office
 315 West Huron Street, Suite 260
 Ann Arbor, MI 48103-4262
 Phone: 734-680-6424
 Fax: 859-277-8901

6. **Discount from list, prices or statement of net price.** Prices herein are net (discount deducted)
7. **Quantity discounts.** N/A
8. **Prompt payment terms.** N/A
- 9a. **Notification that Government purchase cards are accepted at or below the micro-purchase threshold.** Contact Contractor



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- 9b. **Notification whether Government purchase cards are accepted or not accepted above the micro-purchase threshold.** Contact Contractor
10. **Foreign items (list items by country of origin).** None
- 11a. **Time of delivery. (Contractor insert number of days.)** Per Task Order
- 11b. **Expedited Delivery. The Contractor will insert the sentence “Items available for expedited delivery are noted in this price list.” Under this heading. The Contractor may use a symbol of its choosing to highlight items in its price lists that have expedited delivery.** Contact Contractor
- 11c. **Overnight and 2-day delivery. The Contractor will indicate whether overnight and 2-day delivery are available. Also, the Contractor will indicate that the schedule customer may contact the Contractor for rates for overnight and 2-day delivery.** Overnight and 2-day delivery is available. Customer may contact the Contractor for rates for overnight and 2-day delivery.
- 11d. **Urgent Requirements. The Contractor will note in its price list the Urgent. Requirements” clause of its contract and advice agencies that they can also contact the Contractor’s representative to affect a faster delivery.** Contact Contractor
12. **F.O.B. point(s).** Same as Item 5.; Points of Production
- 13a. **Ordering address(es).**
- | | |
|--|---|
| CO Office (Steve Raber)
2955 Professional Place, Suite 320
Colorado Springs, CO 80904
Phone: 719-646-9141
Fax: 859-277-8901 | MI Office (Andrew Brenner)
315 West Huron Street, Suite 260
Ann Arbor, MI 48103-4262
Phone: 734-680-6424
Fax: 859-277-8901 |
|--|---|
- 13b. **Ordering procedures:** For supplies and services, the ordering procedures, information on Blanket Purchase Agreements (BPAs), and a sample EPA can be found at the GSA/FSS Schedule homepage (fss.gsa.gov/schedules).
14. **Payment address(es)**
- KY Office**
523 Wellington Way
Lexington, KY 40503-1394
15. **Warranty provision.** Contractor’s standard warranty.
16. **Export packing charges, if applicable.** N/A



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17. **Terms and conditions of Government purchase card acceptance (any thresholds above the micro-purchase level).** Contact Contractor
 18. **Terms and conditions of rental, maintenance, and repair (if applicable).** N/A
 19. **Terms and conditions of installation (if applicable).** N/A
 20. **Terms and conditions of repair parts indicating date of parts price lists and any discounts from list prices (if applicable).** N/A
 - 20a. **Terms and conditions for any other services (if applicable).** N/A
 21. **List of service and distribution points (if applicable).** N/A
 22. **List of participating dealers (if applicab1).** N/A
 23. **Preventive maintenance (if applicable).** N/A
 - 24a. **Special attributes such as environmental attributes (e.g., recycled content, energy efficiency, and/or reduced pollutants).** N/A
 - 24b. **If applicable, indicate that Section 508 compliance information is available on Electronic and Information Technology (EIT) supplies and services and show where full details can be found (e.g. contractor's website or other location.) The EIT standards can he found at www.Section508.gov/.** N/A
 25. **Data Universal Number System (DUNS) number.** 05-026-4662
 26. **Notification regarding registration in Central Contractor Registration (CCR) database.** Registered

COMPANY OVERVIEW

Founded in 1969, Quantum Spatial, Inc. is a full-service geospatial services firm, specializing in aerial imaging and data collection, photogrammetric mapping, GIS, remote sensing, and surveying services. Headquartered in Norcross, GA, we employ nearly 500 professional and technical staff in nine production facilities who are devoted exclusively to providing geospatial services to federal, state, and local agencies, as well as private sector customers. We have a strong group of professionals, including registered Certified Photogrammetrists, Certified Mapping Scientists, Professional Land Surveyors, Professional Surveyor and Mappers, and Professional Engineers – all with many years of experience in all facets of geospatial solutions.

SERVICES BY SIN

SIN 899-1RC: ENVIRONMENTAL CONSULTING SERVICES

1. Environmental Impact Statements Under NEPA. Quantum Spatial has extensive experience providing geospatial support to assist environmental impact statements (EIS) efforts. These services have included GIS development and spatial analysis, photointerpretation, digital elevation modeling, and 3D visualization. Quantum Spatial has developed GIS data coverages of topography, land use/land cover, streams and wetlands, roads, buildings, environmental contamination, historic structures, and archaeological sensitive sites to support EIS efforts. In addition, in support of an EIS to analyze and compare environmental, cultural, social, and economic impacts of five alternative highway routes for a 25-mile corridor, Quantum Spatial performed photointerpretation and GIS services. Land uses and vegetated cover types within the study area were classified, mapped, and plotted. A GIS was then created with coverages consisting of digital orthophotography, agricultural, archaeological, barren lands, mining, prime farmlands soils, floodplain, forest cover, hazardous materials, historic structures, parcel information, hydrography, wetlands, urban area features, transportation features, and digital elevation model data., data collection, map production, and impact analysis.

2. Endangered Species and/or Wetlands Analysis. For more than 25 years, Quantum Spatial has provided photointerpretation and GIS services to federal, state, and local clients to support endangered species and wetlands analysis. Quantum Spatial performed two simultaneous contracts with the U.S. Fish & Wildlife Service providing photointerpretation, remote sensing, reprographic, cartographic, and GIS data conversion services for the National Wetland Inventory Program to generate information on the characteristics, extent, and status of the nation's wetlands and deep water habitats.

3. Watershed and Other Natural Resource Management Plans. To support watershed and other natural resource management plans, Quantum Spatial has provided aerial data acquisition, including LiDAR, and GIS services for several clients. Quantum Spatial collected LiDAR data to support the statewide North Carolina Floodplain Mapping Program, one of the largest and the most comprehensive LiDAR terrain mapping programs ever undertaken in the U.S. The ultimate goal of this program is to update all floodplain maps (flood insurance rate maps) after the devastation caused by Hurricane Floyd.

Additionally, Quantum Spatial was involved in the water supply plan development for Pasco County, FL. This water supply plan was developed to assist the County in determining the availability of local sources of potable water for future use. Quantum Spatial's efforts were designed to help Pasco County better utilize its GIS to support sustainable development within the county. GIS services were provided to effectively link the County's comprehensive land use plan with the proposed water supply plan. Using ArcInfo GIS software, custom spatial overlay models were created, which simulated processes and predicted outcomes when forecasted agricultural types and acreages were linked with their associated water use requirements through the year 2015.

4. Archeological and/or Cultural Resource Management Plans. Quantum Spatial has assisted archeological and culture resources projects by performing photointerpretation and remote sensing techniques to pinpoint areas of potential interest at a project site, determine optimal access routes, and review historical data for change analysis. GIS techniques also enable archeologists to easily compare temporal and spatial statistics from recovered artifacts, perform complex overlay analyses, review cultural resources information with other environmental constraints data, integrate data from a variety of sources and stakeholders, and create informative maps that reflect findings. Quantum Spatial has performed overlay analysis using a GIS that was specifically designed and developed for a complex project to determine high, medium, and low potential archeological sites within the study area.

SIN 899-3RC: ENVIRONMENTAL TRAINING SERVICES

1. Customized Course Development and Computer-based Interactive Courses.

Quantum Spatial officers customized, on-site training services directly relating to environmental and GIS services. Specifically, these courses provide quality and timely information for professionals that are end users. The seminars are tailored to meet the needs of the environmental and GIS professional groups, providing information on project planning, new technology, data acquisition, accuracies, and typical delivery systems.

In addition to the actual training, our trainers are experts in developing customized documentation to support the courses. In fact, one of our trainers, Scott Hutchinson, co-authored *Inside ArcView GIS* (third edition). This 450-page published user manual is considered in the industry to be one of the most comprehensive ArcView guides available today. Trainer Mark Meade is responsible for course development and instruction, as well as serving as a columnist and contributing editor for POB Magazine, an international professional journal.

SIN 899-7RC: GEOGRAPHIC INFORMATION SYSTEMS (GIS) SERVICES

1. Mapping and Cartography. Quantum Spatial has successfully managed several large, complex cartographic contracts, providing multi-year support for a wide variety of federal agencies, including FEMA, NGA, USFWS, Defense Intelligence Agency, and USGS. Cartographic products included land use/land cover maps; terrain analysis overlays; topographic maps; flood insurance rate maps; wetlands maps; nautical charts; and general maps for atlas publications, thematic maps, and city graphics. Quantum Spatial uses a variety of cartographic production techniques to produce maps. In addition to the traditional color separation process (negative engraving, scribing, color proof, and type stick-up), our production techniques include digital cartographic map preparation for “digital-to-plate” capability.

2. Natural Resource Planning. To support natural resource planning, Quantum Spatial has provided photointerpretation, photogrammetric, and GIS techniques. Our experience includes developing a waterfowl habitat analysis model to determine the suitability of shallow water areas for nesting, developed a graphic user interface to the GIS and created composite overlays that were used to report the simultaneous impact

of all criteria. The composite overlays indicated wetland suitability, disturbance levels, and proximity to wildlife management areas. Quantum Spatial has used photogrammetric techniques to delineate and control each benthic species to obtain updated information regarding to benthic habitats. Quantum Spatial has provided our clients with multispectral imagery produced from an airborne digital camera for all intertidal oyster beds along the entire South Carolina coastline (an area encompassing 117 DOQQs). The collected data will be used by SC DNR for photointerpretation and image processing tasks. We have produced a spatially and thematically accurate ArcINFO land use/land cover database using aerial imagery produced from NAPP. Features were stereoscopically delineated based on the Florida Land Use, Cover, and Forms Classification System (FLUCCS).

3. Site Selection. Quantum Spatial has experienced staff dedicated to spatial analysis in support of site selection projects. The firm has conducted site selection studies for infrastructure expansion projects with construction costs totaling over \$500,000,000. Quantum Spatial manages site selection programs for some of the United States most active utilities. Our linear infrastructure siting methodology has been adopted by the Electric Power Research Institute as an international standard for siting electric transmission lines. Quantum Spatial has developed custom GIS software that automates site selection for a variety of projects. Quantum Spatial's site selection experts are experienced with facilitating internal and external stakeholder input into the site selection process using tools such as the Analytical Hierarchical Process for multi-criteria decision making and the Delphi process for consensus building.

4. Pollution Analysis. Pollution has been a concern for federal and state agencies for many years. Quantum Spatial has assisted the Tennessee Valley Authority map non-point sources of pollution for approximately 200 square miles of Elk River, TN watershed. Quantum Spatial photointerpreted land use/land cover as well as livestock operations; whether this operation was confined, unconfined, or adjacent to water; and the size of the animal population. Drainage conditions and stream order were identified, and road conditions and the location and condition of on-site septic systems were photointerpreted. Other features that were captured include riparian conditions, imperviousness of land use/land cover, and geologic features. The photointerpreted data was delineated directly onto the 1:24,000-scale color infrared aerial photography using mirror stereoscopes and was transformed to a stable base for digital data capture into ArcINFO. An overlay analysis was then performed using the digital ArcINFO data to produce pollutant loading of land use/land cover and livestock operations, storm and sanitary drainage patterns, and soils data for estimating soils loss. The GIS was used to assist in developing a decision support system for improving and protecting water resources of the watershed.

5. Emergency Preparedness Planning. Since September 11th, there has been a substantial push for our nation to be more prepared in the event of emergencies. Quantum Spatial has been a part of this push. Working in cooperation with the NGA, USGS has initiated the 133 Urban Areas Program, an ambitious effort to map the 133 most populous metropolitan areas in the country at 0.3-meter resolution and three-meter horizontal accuracy. Products produced will primarily support planning and

response activities related to natural and man-made disasters, although they will also have derivative benefits to the public and will be made available to the commercial sector through the USGS National Map Program. Quantum Spatial has acquired photography over numerous metropolitan areas including: Atlanta, GA; Birmingham, Montgomery, and Huntsville, AL; Chattanooga and Knoxville, TN; Lexington and Louisville, KY; and Jackson, MS. Digital orthophotos have since been developed for Atlanta, GA and Jackson, MS.

6. Geologic Logs, Topographic Data, 3D/4D Interactive Visualization. Quantum Spatial has a long history of offering 3D visualizations products and services to a wide variety of federal and non-federal clients. 3D visualization is a common end product of our geospatial generation efforts, and is a natural extension of our daily work within the defense and engineering community. Quantum Spatial has selected and georeferenced photography of a project area to provide uniform coverage to envision a transportation design project area. Rectified images were mosaicked and then draped over USGS DEMs to provide a 3-D terrain visualization model of the area. This product was utilized within the ERDAS Virtual GIS extension to provide realistic fly-through technology.

7. Data Interpretation. Quantum Spatial has a vast degree of both classified and unclassified experience using photointerpretation and remote sensing techniques to perform land use/land cover, wetlands, forest typing, habitat, aquatic vegetation, geohydrologic, and non-point pollution analyses. Projects range from site-specific environmental impact studies to large database inventory projects. Examples of our photointerpretation experience for each type of analysis are provided in the table below.

DESCRIPTION OF WORK

Aerial Imaging and Data Collection

Precision aerial photography is a critical component of accurate surveys and mapping. Quantum Spatial offers a fleet of aircraft equipped with precision cameras and state-of-the-art navigation equipment that enables the capturing of a wide range of aerial photography and digital imagery products. Our experienced crews have completed thousands of photo missions using both analog and digital cameras, providing imagery products in support of utilities, transportation, floodplain mapping, engineering design, and environmental mapping.

Airworthy Aircraft. Quantum Spatial owns and operates FAA-certified aircraft to provide aerial photo missions. Each aircraft is capable of supporting virtually any type of traditional and digital aerial photogrammetric mission and are equipped with airborne Global Positioning Systems (GPS) receivers, Inertial Measurement Units (IMU), forward-motion compensation (FMC), and gyro-stabilized camera mounts.

Traditional and Digital Aerial Photography Acquisition. ***Traditional and Digital Aerial Photography Acquisition.*** In support of traditional aerial photo missions, Quantum Spatial offers USGS tested and calibrated analog photogrammetric cameras. Additionally, Quantum Spatial owns and operates Z/I Imaging Digital Mapping Cameras (DMC®) and a Vexcel UltraCamX digital camera system. Our camera systems are designed to support aerial photogrammetric missions that demand both high resolution

and accuracy. As digital replacements for film-based photogrammetric mapping cameras, the camera systems feature breakthrough technologies that produce successful projects – from small-scale mapping operations to precision, high-resolution corridor engineering projects.

LiDAR Data Acquisition. Quantum Spatial is an industry leader in the collection and processing of airborne Light Detection and Ranging (LiDAR) information. LiDAR is an active remote sensing system that uses airborne laser scanning technology to emit pulses of light to illuminate the terrain. Quantum Spatial utilizes the latest in LiDAR technology, operating Optech Gemini ALTM systems. Our Gemini's are capable of an impressive 167 kHz laser pulse frequency, yielding the most advanced technology available. Additionally, we employ the Leica Geosystems ALS50-II sensor – that allows data capture at MPIA (Multi Pulse In Air) rates up to 150kHz, while offering improved accuracy. In addition to acquisition, Quantum Spatial utilizes a variety of technologies to process the acquired, raw LiDAR information — converting ASCII point samplings to finished digital elevation models, surface terrain models, and digital contour products.

Applanix DSS 439. Quantum Spatial utilizes the latest in aerial imaging – the Applanix DSS 439 (RapidOrtho™ DualCam). The DSS 439 system is technology engineered to maximize the system's capability in generating high-quality color and color infrared (CIR) digital geospatial imaging products. This system is an end-to-end solution that deals with data collection plus a complete workflow to produce ortho-mapping products in a seamless environment. The DSS 439 adds a second DSS camera with a monochromatic CCD array specifically configured to capture Near Infra Red (NIR) imagery. Additionally, the DSS 439 offers full LiDAR integration options for fixed wing installations.

Photogrammetric Mapping

Since 1969, Quantum Spatial has provided a wide range of photogrammetric mapping services including aerotriangulation, stereocompilation for planimetric and topographic mapping, orthophoto generation, and complete photographic laboratory services in support of photogrammetry programs.

Aerotriangulation. Our team has performed in-house aerotriangulation to support photogrammetric compilation and orthophoto production for many years. Intergraph ISAT aerotriangulation software is the software package most often utilized by our staff to determine the position and rotation angles of each of the acquired aerial photos and to establish their relationship to the ground.

Stereo Compilation. Our stereo compilation experts are highly experienced providing both large scale (1"=20') and small scale (1"=2,000') planimetric and terrain feature extraction in support of topographic mapping. The scope of our project experience ranges from small, engineering level survey and mapping projects to comprehensive and extensive statewide mapping initiatives.

Digital Orthophotography. Over the years, Quantum Spatial has compiled and delivered tens of thousands of black-and-white, color, and color infrared (CIR)

orthophotos. A considerable amount of our experience stems from our seven consecutive USGS contracts where we developed the digital orthophoto production process used by USGS for the National Mapping Program, as well as the USGS-accepted, second-generation production process (using new aerial photography and previous aerotriangulation and control to update existing orthophotos).

Photographic Laboratory / Scanning. In addition to our traditional photographic laboratory services, Quantum Spatial provides high resolution, photogrammetric quality scanning capable for digitizing color, CIR, and black-and-white photos. Quantum Spatial owns and operates the most state-of-the-art scanners in the photogrammetric marketplace today. They are capable of bearing multiple resolutions from 7.5 to 20 microns.

Geographic Information Systems

Since 1985, Quantum Spatial has offered the full spectrum of GIS services from data conversion to application development and implementation. During this timeframe, we have developed proven work flow, management, and QA/QC plans that allow us to effectively provide these “end-to-end” GIS services for federal, public, and private clients with large and complex data needs.

Data Capture / Conversion. Our large CADD and GIS projects have all required the conversion of digital data, the digitizing of paper maps and manuscripts, working in different projections and datums, and setting up an automated QC program. This experience has established Quantum Spatial as the industry leaders in data conversion of complex data needs. We perform these services for a variety of natural resources, cadastral, infrastructure, and cultural features. Our experience includes CADD and GIS projects like nationwide wetlands mapping, forest mapping, cultural features in foreign countries, and storm drain inventories for local, state, and federal customers.

Database Design. The hub of a modern enterprise GIS lies in the database, and its design and development is critical to a successful GIS implementation. Quantum Spatial is experienced with ArcGIS and the new geodatabase data model. Modular, scalable, and extensible in nature, this new object-relational data model and enabling ESRI-based technology (ArcSDE and ArcIMS) allows the construction and deployment of true enterprise GIS solutions. We also have extensive experience implementing enterprise GIS solutions utilizing a variety of relational databases such as Oracle, Sybase, and MS Access.

Application Software Development. In addition, Quantum Spatial has extensive computer programming and application development expertise, including developing decision-making tools for transportation, water resources, emergency management, environmental science, and planning disciplines; and developing Graphical User Interfaces (GUIs) to enhance data conversion, softcopy functions, and integration of different systems. Our GIS software expertise includes, but is not limited to, ArcGIS, ArcInfo, ArcView, Intergraph MGE, MicroStation, and AutoCAD Map. Quantum Spatial’s programmers routinely provide AML, Avenue, Visual Basic, and C code for ESRI products; and MDL, UCM, C, C++, and Micro CSL code for Intergraph products.

These programmers also have experience providing database programming for Oracle, Microsoft SQL, dBase, Informix, Access, or INFO. GUIs, side-bar menus, and buttons have been developed for our MicroStation and MGE clients; and GUIs and decision support and web-based applications have been developed using ArcGIS.

Training. Quantum Spatial is a nationally recognized provider of customized, on-site GIS training, specializing in ESRI, AutoCAD, and Intergraph software. Since 1990, more than 400 students have been trained by our staff. We have also developed many custom data-specific course instructions. In fact, one of Quantum Spatial's GIS Experts co-authored **Inside ArcView GIS 8.3**. This 500-page published user manual is considered in the industry to be one of the most comprehensive ArcView guides available today.

3-D Visualization. Quantum Spatial has a long history of offering 3-D visualization products and services to a wide variety of federal and non-federal clients. The team uses a variety 3-D modeling and simulation tools, including use of the latest in high-end graphics rendering hardware technologies. Additionally, we employ a number of methods to build visual representations, utilizing both CADD- and geospatial information-based software solutions. Some successful example applications of these techniques include military planning and simulation; law enforcement and emergency management; planning and design for transportation engineering; and community outreach.

Remote Sensing

Since the early 1990s, Quantum Spatial has been a recognized leader in the remote sensing industry and provides an unmatched ability to acquire and analyze remotely sensed imagery. We possess the specialized software tools and successful past project experience working with all types of remotely sensed data including multispectral, hyperspectral, and radar.

Photointerpretation. Our team is highly experienced in photointerpretation and feature extraction, having more than 30 years of experience providing these services to a variety of federal, state, and local government customers. Although our roots stem from the conventional photointerpretation world, Quantum Spatial has provided extensive softcopy interpretation and feature extraction services for a wide range of applications since 1997. Our team utilizes the latest in 3-D softcopy feature extraction technology to provide greater speed, accuracy, and integration of collected feature information.

Image Processing / Change Detection. Quantum Spatial offers full-service image processing and analysis services utilizing a host of commercial satellite imagery sensors such as Landsat, SPOT, AVHRR, RADARSAT, and IRS, as well as remotely sensed data collected from aircraft equipped with multispectral and hyperspectral sensors. Additionally, Quantum Spatial also has more than 30 years of specialized experience working with sensitive U.S. government sources of data, and routinely provides imagery processing and analysis services for a host of Department of Defense and U.S. Intelligence community customers. Quantum Spatial utilizes a host of commercially available image processing software solutions such as Leica Geosystems



ERDAS Imagine software to provide geocoding, image mosaicking, radiometric enhancing, histogram matching, color balancing, and 3-D visualization services.

Thematic Mapping. Quantum Spatial offers an unmatched ability to acquire and analyze remotely sensed imagery; our subject matter experts offer the skills, background, and in-depth specialized experience to analyze virtually any type of remotely sensed information including multispectral, hyperspectral, and radar data. Utilizing a combination of visual recognition and/or spectral analysis techniques, our analysts identify homogenous areas within an image, and then group and classify these areas into regions that are used to represent specific themes on a map. Making this possible, Quantum Spatial employs a variety of traditional image interpretation and automated softcopy image processing methods and techniques to generate thematic mapping products for applications such as land use/land cover, wetlands mapping, and terrain analysis.

Surveys

Quantum Spatial has a wealth of knowledge and experience in performing aerial photogrammetric control surveying. Beginning more than 30 years ago with conventional surveying methods, our services have expanded through the years to include ground-based GPS control surveying, airborne GPS, and inertial techniques. Our team is an industry leader in the procurement of airborne GPS technology. To date, Quantum Spatial has successfully completed thousands of airborne GPS missions nationwide, utilizing the Leica Geosystems software for precise photo event determinations. All of Quantum Spatial's aircraft are equipped with navigational GPS receivers, as well as airborne GPS technologies. Additionally, Quantum Spatial has robust ground survey capabilities, and provides substantial support of aerial data acquisition and photogrammetric survey operations. We currently provide the full spectrum of professional surveying services, utilizing the latest in survey equipment, software, and techniques including the use of advanced dual frequency GPS receivers.

GSA LABOR CATEGORIES AND CONTRACT PRICES (inclusive of 0.75% IFF)

Labor Category	Year 11	Year 12	Year 13	Year 14	Year 15
	08/15/2015 to 08/14/2016	08/15/2016 to 08/14/2017	08/15/2017 to 08/14/2018	08/15/2018 to 08/14/2019	08/15/2019 to 08/14/2020
Accountant	\$101.61	\$105.67	\$109.90	\$114.30	\$118.87
Administrative	\$55.74	\$57.97	\$60.29	\$62.70	\$65.21
CADD Editor (Supervisory)	\$81.45	\$84.71	\$88.09	\$91.62	\$95.28
CADD Technician II	\$79.82	\$83.01	\$86.33	\$89.79	\$93.38
CADD Technician I	\$63.53	\$66.07	\$68.71	\$71.46	\$74.32
Cartographic Specialist	\$82.64	\$85.94	\$89.38	\$92.95	\$96.67
Cartographic Technician	\$60.62	\$63.04	\$65.56	\$68.19	\$70.91
Certified Photogrammetrist	\$122.72	\$127.63	\$132.74	\$138.05	\$143.57



Labor Category	Year 11	Year 12	Year 13	Year 14	Year 15
	08/15/2015 to 08/14/2016	08/15/2016 to 08/14/2017	08/15/2017 to 08/14/2018	08/15/2018 to 08/14/2019	08/15/2019 to 08/14/2020
Computer Programmer II	\$162.33	\$168.82	\$175.58	\$182.60	\$189.90
Computer Programmer I	\$127.42	\$132.51	\$137.81	\$143.33	\$149.06
Database Administrator	\$78.18	\$81.31	\$84.56	\$87.95	\$91.46
Digital Ortho Technician	\$88.97	\$92.53	\$96.23	\$100.08	\$104.08
Documentation Specialist	\$78.18	\$81.31	\$84.56	\$87.95	\$91.46
Geodesist	\$134.25	\$139.62	\$145.21	\$151.02	\$157.06
Geodetic Survey Manager	\$283.24	\$294.57	\$306.35	\$318.60	\$331.35
Geodetic Survey Technician	\$118.49	\$123.23	\$128.16	\$133.29	\$138.62
Geo-Processing Supervisor	\$105.88	\$110.12	\$114.52	\$119.10	\$123.87
Geospatial Analyst	\$94.94	\$98.74	\$102.69	\$106.80	\$111.07
Geospatial Business Analyst	\$134.84	\$140.23	\$145.84	\$151.68	\$157.74
Geospatial Solutions Architect	\$161.72	\$168.19	\$174.92	\$181.91	\$189.19
GIS Analyst II	\$100.26	\$104.27	\$108.44	\$112.78	\$117.29
GIS Analyst I	\$97.26	\$101.15	\$105.20	\$109.40	\$113.78
GIS Data Manager	\$100.05	\$104.05	\$108.21	\$112.54	\$117.04
GIS Supervisor	\$124.07	\$129.03	\$134.19	\$139.56	\$145.14
GIS Specialist	\$118.50	\$123.24	\$128.17	\$133.30	\$138.63
GIS Technician II	\$74.31	\$77.28	\$80.37	\$83.59	\$86.93
GIS Technician I	\$63.41	\$65.95	\$68.58	\$71.33	\$74.18
GIS Application Developer II	\$127.34	\$132.43	\$137.73	\$143.24	\$148.97
GIS Application Developer I	\$110.00	\$114.40	\$118.98	\$123.74	\$128.68
GIS Systems Analyst III	\$81.45	\$84.71	\$88.09	\$91.62	\$95.28
GIS Systems Analyst II	\$74.93	\$77.93	\$81.04	\$84.28	\$87.66
GIS Systems Analyst I	\$70.05	\$72.85	\$75.76	\$78.79	\$81.94
Graphics Specialist	\$129.36	\$134.53	\$139.92	\$145.51	\$151.33
Imagery Analyst II	\$88.15	\$91.67	\$95.34	\$99.15	\$103.12
Imagery Analyst I	\$68.62	\$71.36	\$74.22	\$77.19	\$80.27
LiDAR Supervisor	\$146.61	\$152.48	\$158.57	\$164.92	\$171.51
LiDAR Specialist	\$95.04	\$98.84	\$102.80	\$106.91	\$111.18
Photo Interpreter	\$75.04	\$78.04	\$81.16	\$84.41	\$87.79
Photo Services Technician	\$64.07	\$66.63	\$69.30	\$72.07	\$74.95
Photogrammetric Manager	\$147.75	\$153.66	\$159.80	\$166.19	\$172.84



Labor Category	Year 11	Year 12	Year 13	Year 14	Year 15
	08/15/2015 to 08/14/2016	08/15/2016 to 08/14/2017	08/15/2017 to 08/14/2018	08/15/2018 to 08/14/2019	08/15/2019 to 08/14/2020
Photogrammetric Technician	\$86.25	\$89.70	\$93.29	\$97.02	\$100.90
Pilot	\$88.87	\$92.42	\$96.12	\$99.97	\$103.97
Principal	\$161.27	\$167.72	\$174.43	\$181.41	\$188.66
Production Manager	\$132.32	\$137.61	\$143.12	\$148.84	\$154.80
Professional Engineer	\$161.27	\$167.72	\$174.43	\$181.41	\$188.66
Program Manager	\$165.00	\$171.60	\$178.46	\$185.60	\$193.03
Project Manager, Sr	\$165.00	\$171.60	\$178.46	\$185.60	\$193.03
Project Manager	\$119.51	\$124.29	\$129.26	\$134.43	\$139.81
QA/QC Manager	\$146.61	\$152.48	\$158.57	\$164.92	\$171.51
Remote Sensing Analyst	\$108.00	\$112.32	\$116.81	\$121.49	\$126.34
Security Administrator	\$99.18	\$103.15	\$107.28	\$111.57	\$116.03
Sensor Operator	\$79.46	\$82.64	\$85.95	\$89.39	\$92.96
Shipping Clerk	\$62.82	\$65.33	\$67.95	\$70.67	\$73.49
Softcopy Technician	\$85.23	\$88.64	\$92.18	\$95.87	\$99.71
Software Engineer	\$147.57	\$153.47	\$159.61	\$165.99	\$172.63
Stereo Compiler	\$69.97	\$72.77	\$75.68	\$78.71	\$81.86
Survey - Registered Land Surveyor	\$114.03	\$118.59	\$123.33	\$128.27	\$133.40
Survey - GPS Supervisor/Computations	\$70.56	\$73.38	\$76.32	\$79.37	\$82.55
Survey - Supervisor	\$89.59	\$93.17	\$96.90	\$100.77	\$104.80
Survey - Party Chief	\$81.48	\$84.74	\$88.13	\$91.65	\$95.32
Survey - Technician	\$60.80	\$63.23	\$65.76	\$68.39	\$71.12
Survey - Aid	\$49.06	\$51.02	\$53.06	\$55.18	\$57.39
System Administrator / Manager	\$118.98	\$123.73	\$128.68	\$133.83	\$139.18

SCA CATEGORIES – Non Exempt Employees

SCA Eligible Contract Labor Category	SCA Equivalent Code - Title		WD Number
Accountant	01013	ACCOUNTING CLERK III	05-2221
Administrative	01020	ADMINISTRATIVE ASSISTANT	05-2221
CADD Editor (Supervisory)	30063	DRAFTER/CAD OPERATOR III	05-2221
CADD Technician II	30062	DRAFTER/CAD OPERATOR II	05-2221
CADD Technician I	30061	DRAFTER/CAD OPERATOR I	05-2221
Cartographic Technician	30030	CARTOGRAPHIC TECHNICIAN	05-2221
Computer Programmer II	14072	COMPUTER PROGRAMMER II	05-2221



SCA Eligible Contract Labor Category	SCA Equivalent Code - Title	WD Number
Computer Programmer I	14071 COMPUTER PROGRAMMER I	05-2221
Digital Ortho Technician	14043 COMPUTER OPERATOR III	05-2221
Geodetic Survey Technician	14043 COMPUTER OPERATOR III	05-2221
Geospatial Analyst	14043 COMPUTER OPERATOR III	05-2221
GIS Analyst II	14042 COMPUTER OPERATOR II	05-2221
GIS Analyst I	14041 COMPUTER OPERATOR I	05-2221
GIS Supervisor	14044 COMPUTER OPERATOR IV	05-2221
GIS Technician II	14042 COMPUTER OPERATOR II	05-2221
GIS Technician I	14041 COMPUTER OPERATOR I	05-2221
GIS Application Developer II	14074 COMPUTER PROGRAMMER IV	05-2221
GIS Application Developer I	14073 COMPUTER PROGRAMMER III	05-2221
GIS Systems Analyst III	14103 COMPUTER SYSTEMS ANALYST III	05-2221
GIS Systems Analyst II	14102 COMPUTER SYSTEMS ANALYST II	05-2221
GIS Systems Analyst I	14101 COMPUTER SYSTEMS ANALYST I	05-2221
Graphics Specialist	15080 GRAPHIC ARTIST	05-2221
Imagery Analyst II	14042 COMPUTER OPERATOR II	05-2221
Imagery Analyst I	14041 COMPUTER OPERATOR I	05-2221
LiDAR Specialist	14074 COMPUTER PROGRAMMER IV	05-2221
LiDAR Supervisor	14073 COMPUTER PROGRAMMER III	05-2221
Photo Interpreter	30063 DRAFTER/CAD OPERATOR III	05-2221
Photo Services Technician	99510 PHOTOFINISHING WORKER	05-2221
Photogrammetric Technician	14045 COMPUTER OPERATOR V	05-2221
Sensor Operator	13074 PHOTOGRAPHER IV	05-2221
Survey - Party Chief	99830 SURVEY PARTY CHIEF	05-2221
Survey - Technician	99832 SURVEYING TECHNICIAN	05-2221
Survey - Aid	99831 SURVEYING AIDE	05-2221
System Administrator / Manager		05-2221
<p>The Service Contract Act (SCA) is applicable to this contract and includes SCA applicable labor categories. The prices for the indicated SCA labor categories are based on the U.S. Department of Labor Wage Determination Number(s) identified in the matrix. The prices offered are based on the preponderance of where work is performed and should work be performed in an area with lower SCA rates, resulting in lower wages being paid, the task order prices will be discounted accordingly.</p>		

LABOR CATEGORY DESCRIPTIONS begin on next page



Labor Category:	ACCOUNTANT
Description of Duties/Responsibilities:	<p>Manages the firm's financial and accounting functions including: budgeting, forecasting, cash management, preparation of financial statements, job cost accounting, and contract administration.</p> <p>Finance/Accounting</p> <ul style="list-style-type: none"> ✓ Prepares monthly, quarterly, and year-end financial statements ✓ Prepares and maintains budget, income projections, and cash flow ✓ Monitors the company's overhead expenditure on a monthly basis ✓ Maintains relationships and communications with company CPAs, clients, vendors, and bankers ✓ Supervises the company's insurance coverage ✓ Supervises Accounts Payable and perform A/P duties as necessary ✓ Supervises payroll and performs payroll as necessary. <p>Project Accounting</p> <ul style="list-style-type: none"> ✓ Reviews and maintains project financial files ✓ Prepares customer billings ✓ Sets up and manages project accounting formats ✓ Adheres to current company contract review and approval procedures ✓ Develops and implements process improvements ✓ Assists Project Managers in billing reviews ✓ Monitors financial job files for completeness. <p>Cash Management</p> <ul style="list-style-type: none"> ✓ Monitors the firm's cash position on a daily basis ✓ Maintains internal controls ✓ Monitors and regulates the firm's purchases
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Accounting
Experience:	7+ years of business accounting experience working within a professional services environment



Labor Category:	ADMINISTRATIVE
Description of Duties/Responsibilities:	<p>Initiates and coordinates the clerical and secretarial functions required in effective implementation of administrative policies of an administrative unit.</p> <ul style="list-style-type: none"> ✓ Performs typing and transcription duties as required ✓ Establishes procedures that implement operational policies ✓ Interprets policies and procedures as established by superiors ✓ Drafts correspondence and/or other reports as requested ✓ Composes correspondence independently ✓ Arranges, participates in, and implements, as directed, conferences and committee meetings ✓ Signs in behalf of superior, as delegated, his or her name to correspondence, requisitions, vouchers, and other forms of consequence ✓ Performs related duties as assigned ✓ Ability to accurately deal with difficult dictation ✓ Ability to perform difficult typing duties ✓ Supervisory ability
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	High school or community college graduation (or equivalent experience)
Experience:	3 - 5 years of relative experience



Labor Category:	CADD EDITOR (Supervisory)
Description of Duties/Responsibilities:	<p>Supervises CADD drafting and design support for Project Managers.</p> <ul style="list-style-type: none"> ✓ Obtains work assignments of either specific design elements or CADD drafting from Project Manager with an allocated budget ✓ Completes detailed drawings from sketches, plans, specification, and written and verbal instructions using computer-aided drafting programs ✓ Revises or changes drawings, traces and/or copies existing drawings and completes simple calculations with specific instructions ✓ Understands and follows the company's standard CADD procedures for layering and standard drawing procedures for sheet layout ✓ Maintains schedules and offers progress reports ✓ Reviews all work for completeness and accuracy prior to submitting to Project Manager for review ✓ Uses corporate check sheets set up for quality control on each project ✓ Provides an accurate accounting of time spent on projects with descriptions for each time entry on a weekly basis
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography or related discipline
Experience:	3 - 5 years of relative experience, 2 years in a supervisory capacity



Labor Category:	CADD TECHNICIAN II
Description of Duties/Responsibilities:	<p>Produces, updates, or edits planimetric and topographic maps using computerized drafting methods. Utilizes CADD and cartographic software such as Microstation, AutoCAD, ArcGIS, etc.</p> <ul style="list-style-type: none"> ✓ Creates, manipulates, edits, revises existing maps, graphs, and charts to close tolerances ✓ Ensures mapping techniques and standards comply with the Client Specifications and general cartographic principals and standards ✓ Uses a computer-aided drafting and design (CADD) system to create and maintain a geographic information system to meet standards and to merge geographic data with roadway information ✓ May occasionally use manual drafting methods; assigns codes to map features and enters data to create digital cartographic data bases
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography or related discipline
Experience:	2 – 4 years of relative experience



Labor Category:	CADD TECHNICIAN I
Description of Duties/Responsibilities:	<p>Produces, updates, or edits planimetric and topographic maps using computerized drafting methods. Utilizes CADD and cartographic software such as Microstation, AutoCAD, ArcGIS, etc.</p> <ul style="list-style-type: none"> ✓ Creates, manipulates, edits, revises existing maps, graphs, and charts to close tolerances ✓ Ensures mapping techniques and standards comply with the Client Specifications and general cartographic principals and standards ✓ Uses a computer-aided drafting and design (CADD) system to create and maintain a geographic information system to meet standards and to merge geographic data with other information ✓ May occasionally use manual drafting methods; assigns codes to map features and enters data to create digital cartographic data bases.
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography or a related discipline
Experience:	1 – 2 years of relative experience



Labor Category:	CARTOGRAPHIC SPECIALIST
Description of Duties/Responsibilities:	<p>Performs complex mapping tasks involved in preparing a variety of digital and/or analog maps; corrects existing maps and records, or re-maps existing areas.</p> <ul style="list-style-type: none"> ✓ Knowledge of current cartographic principles and practices involved in the preparation of maps ✓ Prepares maps from various sources/descriptions, surveys, geospatial datasets, aerial photographs, and related records ✓ Conducts research (e.g., title searches) to establish correct attribution, description, and labeling of features (e.g., parcel ownerships) ✓ Segregates, combines, revises, and calculates the area of features ✓ Inputs and updates GIS data and creates maps utilizing GIS technology ✓ Proofs and reviews new maps completeness and adherence to standards ✓ Revises maps according to changes made ✓ As necessary, operates traditional drafting equipment such as drafting machine, lettering equipment, templates, blueprint machine, and workstation ✓ Knowledge of the uses, techniques, and care of drawing instruments and machines ✓ Knowledge of computer based mapping and processes to develop maps utilizing GIS systems ✓ Makes computations necessary for cartographic activities ✓ Interprets legal descriptions and survey data
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, Cartography, Land Surveying, Engineering Technology or related discipline
Experience:	4+ years of cartographic or drafting experience including cadastral mapping

Labor Category:	CARTOGRAPHIC TECHNICIAN
Description of Duties/Responsibilities:	<p>Provides technical assistance to professional Cartographers in connection with the construction or revision of maps and charts. Involves the solution of technical problems that require primarily the application of a practical knowledge of the methods and techniques by which maps and charts are constructed.</p> <ul style="list-style-type: none"> ✓ Knowledge of current cartographic principles and practices involved in the preparation of maps ✓ Collects, evaluates, and selects source materials ✓ Compiles information from source materials and develops a plan for using the information in accordance with product specifications ✓ Obtains reliable measurements of earth's surface features such as elevations and distances from source imagery and/or other collateral data, by using geoprocessing and/or photogrammetric techniques and equipment ✓ Reviews and edits map and chart manuscripts ✓ Knowledge of the uses, techniques, and technologies associated with GIS, CADD, and other mapping software and hardware
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, Cartography, Land Surveying, Engineering Technology or related discipline
Experience:	1 – 2 years of cartographic or drafting experience including cadastral mapping

Labor Category:	CERTIFIED PHOTOGRAMMETRIST
Description of Duties/Responsibilities:	<p>Plans, coordinates, and directs activities of workers concerned with conducting aerial surveys and preparing topographic materials from aerial imagery, LIDAR, and other data; analyzes survey objectives and specifications, utilizing knowledge of survey uses, such as municipal and ecological planning, property and utility mapping, and petroleum and mineral exploration.</p> <ul style="list-style-type: none"> ✓ Selects most appropriate and economical survey methods, using knowledge of capabilities of aerial imagery and applications of remote sensing ✓ Estimates cost of survey ✓ Advises customers and department supervisors regarding flights for aerial imagery, LIDAR, and other technologies, and plans for ground surveys designed to establish base lines, elevations, and other geodetic measurements ✓ Prepares charts and tables for aerial navigation, to specify flight path, altitude, and airspeed of sensor aircraft ✓ Computes geodetic measurements and interprets survey data from ground or aerial imagery to determine position, shape, and elevation of geomorphic and topographic features ✓ Conducts research in surveying and mapping methods and procedures, using knowledge of techniques of photogrammetric compilation, electronic data processing, and flight and control planning ✓ May direct one or more phases of technical operations concerned with preparing survey proposals, negotiating with clients, scheduling activities, conducting surveys, processing data, reviewing work quality, and training and assigning personnel ✓ May be required to analyze source data and develop products, and related cartographic materials requiring technical mastery of photogrammetric techniques and principles. ✓ Prepares original maps, charts, and drawings, from various data sources and survey data, and applies standard mathematical formulas and photogrammetric techniques to identify, scale, and orient geodetic points, elevations, and other planimetric or topographic features and cartographic detail.
Training:	Applicable technical training
Certifications / Registrations:	Registration as a Professional Surveyor in one or more states, Certification as Photogrammetrist by the American Society of Photogrammetry and Remote Sensing (ASPRS)
Education:	Bachelor's Degree in Surveying, Geography, Geomatics, GIS, or related discipline
Experience:	5 – 10 years of progressive experience in photogrammetry, engineering, forestry, geology, planning, etc.



Labor Category:	COMPUTER PROGRAMMER II (new)
Description of Duties/Responsibilities:	<p>Possesses advanced technical expertise in the areas of system design and architecture, application development, database process design, and coding principals.</p> <ul style="list-style-type: none"> ✓ Proficient in scripting and macro languages, particularly focused on GIS systems and geospatial technologies ✓ Technical expertise in the development of GIS applications for the Internet, data modeling techniques, and application of Esri extensions for advanced spatial analysis and modeling ✓ Proficient in state-of-the-art programming development languages, Internet markup languages, APIs, and other technologies related to application development
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Computer Science, geography, GIS, or related field
Experience:	4+ years of relative experience



Labor Category:	COMPUTER PROGRAMMER I (formerly Computer Programmer)
Description of Duties/Responsibilities:	<p>Possesses technical expertise in the areas of system design and architecture, application development, database process design, and coding principals.</p> <ul style="list-style-type: none"> ✓ Proficient in scripting and macro languages ✓ Technical expertise in the development of applications for the Internet, data modeling techniques, and application of extensions for advanced computing ✓ Proficient in state-of-the-art programming development languages, Internet markup languages, APIs, and other technologies related to application development
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Computer Science or related field
Experience:	2 – 4 years of relative experience



Labor Category:	DATABASE ADMINISTRATOR
Description of Duties/Responsibilities:	<p>Works with relational database management systems software and determines ways to organize and store data.</p> <ul style="list-style-type: none"> ✓ Knowledge and experience with Esri database design, development, and administration ✓ Knowledge and experience with multiple, current relational database management system technologies and software (e.g., Oracle/SQL, SQL Server, PostgreSQL, MS Access, etc.) ✓ Identifies user requirements ✓ Develops database schemas, entity relationship diagrams, and workflows ✓ Maintains, administers, tests and coordinates modifications to database systems, and ensures optimal system performance ✓ Understands information technology (IT) platforms on which databases run
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Computer Science or related field
Experience:	4+ years of relative experience



Labor Category:	DIGITAL ORTHO TECHNICIAN
Description of Duties/Responsibilities:	<p>Executes the day-to-day project production assignments.</p> <ul style="list-style-type: none"> ✓ Reviews project specification and project instructions ✓ Executes ortho production processes to specification, budget, and delivery schedules using computerized software packages such as Intergraph-ZI OrthoPro, OrthoVista, Image Rectifier, IRAS/C, Microstation, ERDAS Imagine, Adobe Photoshop, and other commercial and proprietary software packages and scripts ✓ Documents production indexes and forms; as well as for utilizing elevation model data ✓ Archives images and data on a daily basis ✓ Quality control and assurance activities ✓ Participates in the training and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, Geo-Science, Computer Science, or related discipline
Experience:	1 – 2 years of relative experience



Labor Category:	DOCUMENTATION SPECIALIST
Description of Duties/Responsibilities:	<p>Provides direct support to company managers in the development of metadata, reports, and other documentation for various projects.</p> <ul style="list-style-type: none"> ✓ Knowledge of geospatial technologies and their applications ✓ Proficient in the use of software and tools related to the development of metadata, documentation, and on-line help files for projects and applications ✓ Knowledge and experience with various metadata standards (e.g., FGDC, ISO, etc.) ✓ Uses expert technical writing skills in the development of metadata, project reports, and other documentation
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree
Experience:	4+ years of relative experience

Labor Category:	GEODESIST
Description of Duties/Responsibilities:	<p>Serves as a senior expert and technical advisor in the field of geodesy. Provides expert analyses and techniques development, and/or maintenance of client relationship programs. Conceives, plans, and conducts geodetic work, often in unexplored areas where there is little or no theory to guide experimentations; new techniques/ approaches need to be devised.</p> <ul style="list-style-type: none"> ✓ Analyzes the results of applied research and puts the information into operational form (typical examples include requirement to investigate effects of horizontal crustal motion, incorporation of GPS for vertical ellipsoidal elevations, adjustment techniques, the U.S. GPS satellite system, other satellite positioning systems, and the spatial reference system) ✓ Maintains contact with federal, state, and local users of geodetic data and analyzes potential requirements to assure the needs of users are met ✓ Reviews technical work of national and international bodies dealing with geodetic problems, data management and information technologies, activities and standards ✓ Participates in the management of the organization as a key technical advisor, involving continuous interfacing with all levels of management ✓ Responsible for specification, verification, testing, and implementation of computer software development, and coordinate adjustment procedures (includes preparing specifications, user requirements, input formats, and output requirements for software needs) ✓ Restores, evaluates, corrects, and interprets historical geodetic data that are at risk of being lost ✓ Provides advice and guidance in the preparation of specifications for evaluation or development of contracts ✓ Plans, directs, organizes, and conducts technical evaluation and/or development of unique and specialized projects ✓ As required, schedules meetings, workshops, and briefings with user surveying, mapping, and scientific organizations, both national and international, to educate and advise users on the use of geodetic data
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geodesy, Civil Engineering, Surveying, or related field; Master's Degree preferred
Experience:	4+ years of relative experience



Labor Category:	GEODETTIC SURVEY MANAGER
Description of Duties/Responsibilities:	<p>Works with Project Managers to define survey requirements for given projects. Plans, organizes, directs, and coordinates the administrative functions and technical projects of the geodetic survey program.</p> <ul style="list-style-type: none"> ✓ Advanced knowledge of concepts of the Global Positioning System (GPS) ✓ Advanced knowledge of conventional survey techniques and procedures ✓ Performs GPS, Inertial and LiDAR processing using proprietary software ✓ Performs fieldwork as needed for quick turn-around projects ✓ Plans work operations and estimates office and field survey project work load ✓ Makes recommendations regarding resources and equipment needs ✓ Recommends long-range plans, schedules, and priorities ✓ Directs the development of new methods and routines ✓ Reviews work to see that objectives are met and to assure that completed projects conform to established standards ✓ Spot checks work for quality assurance purposes ✓ Ensures that staff maintains current knowledge and training with regards to software, hardware, and current techniques and standards ✓ Establishes and maintains coordination with Project Managers of any given discipline ✓ Responsible for the department's quality control and troubleshoots problems
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geodesy, Civil Engineering, Geo-Science, or other related field
Experience:	7+ years of relative experience



Labor Category:	GEODETIC SURVEY TECHNICIAN
Description of Duties/Responsibilities:	<p>Performs high-quality GPS data collection and processing including the planning, processing, interpretation and report generation for GPS projects. Handles complex projects requiring multiple tasks and activities.</p> <ul style="list-style-type: none"> ✓ Understands the concepts of the Global Positioning System (GPS) ✓ Understands conventional survey techniques and procedures ✓ Coordinates with supervisor and co-workers to achieve highest possible efficiency ✓ Performs GPS, Inertial, and LiDAR processing using proprietary software ✓ Performs fieldwork as needed for quick turn-around projects ✓ Maintains communication with supervisor concerning progress of work and discrepancies of job details
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geodesy, Civil Engineering, Geo-Science, or other related field
Experience:	4+ years of relative experience



Labor Category:	GEO-PROCESSING SUPERVISOR (formerly Digital Ortho Supervisor)
Description of Duties/Responsibilities:	<p>Works with Project Managers to define and implement geoprocessing services for given projects. Directs production staff toward set goals.</p> <ul style="list-style-type: none"> ✓ Directs/supervises and reports on the performance of geoprocessing department systems and production (e.g., digital ortho production, LIDAR data processing and product development, etc.) ✓ Recommends the development of new methods and routines to assure optimum utilization of all technicians and equipment ✓ Ensures that staff maintains current knowledge and training with regards to software, hardware, and current techniques and standards ✓ Establishes and maintains coordination between the geoprocessing staff and Project Managers of any given discipline ✓ Develops and maintains estimating guidelines for work assignments ✓ Assists with estimates for new projects ✓ Responsible for the department's quality control ✓ Troubleshoots problems ✓ Participates in the selection, training, and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Certification as Photogrammetrist by the American Society of Photogrammetry and Remote Sensing (ASPRS)
Education:	Bachelor's Degree in Geography, Geo-Science, Computer Science, or related discipline
Experience:	3 – 5 years of relative experience, 2 years in a supervisory capacity



Labor Category:	GEOSPATIAL ANALYST
Description of Duties/Responsibilities:	<p>Performs a variety of responsibilities ranging from technical use, implementation, or integration of geospatial applications to writing and presentation of geospatial practices, standards, and applications.</p> <ul style="list-style-type: none"> ✓ Practices a variety of geospatial analyses including the development and integration of GIS, imagery and other remote sensing technologies and applications for various projects and web-based applications. ✓ Strong understanding of geospatial technologies and interoperability specifications, including web-mapping services and technologies ✓ Works with database management systems such as Oracle, SQL, etc. ✓ Experienced with various geospatial processing software including GIS (e.g., Esri ArcGIS suite of software), image processing (e.g., Hexagon's suite of software including ERDAS Imagine, Leica and Intergraph products), LiDAR processing software, etc. ✓ Familiar with geospatial information, technology, standards, and geospatial programs within Federal, state and local governments (e.g., Federal Geographic Data Committee (FGDC), Data.gov, National Spatial Data Infrastructure (NSDI), USGS LiDAR standards, etc.
Training:	Applicable technical training
Certifications / Registrations:	NA
Education:	Bachelor's Degree in Geography, Remote Sensing, Engineering, Computer Science, or related discipline
Experience:	4+ years of relative experience



Labor Category:	GEOSPATIAL BUSINESS ANALYST (new)
Description of Duties/Responsibilities:	<p>Conducts geospatial business process analysis, including eliciting, organizing, translating/simplifying, analyzing, managing, and communicating user needs and requirements.</p> <ul style="list-style-type: none"> ✓ Assists in developing GIS/IT business cases and relationships to other business systems ✓ Assesses and validates user activities to determine how a particular solution can fulfill requirements ✓ Uses sophisticated methods, metrics, and tools to achieve business benefits and organizational/corporate goals ✓ Documents, recommends, and makes process and configuration changes to one or more operating functions ✓ Drives design and/or review of test cases, processes change requests, and manages project scope, acceptance, installation, and system deployment
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in business, Computer Science, GIS, or related field
Experience:	2 – 4 years of experience



Labor Category:	GEOSPATIAL SOLUTIONS ARCHITECT (new)
Description of Duties/Responsibilities:	<p>Leads and oversees all aspects of project life cycles, from initial kickoff through requirements analysis, design and implementation phases for projects within a specific solution area</p> <ul style="list-style-type: none"> ✓ Provides strong technical expertise in software and applications development; multi-tiered web-driven applications and solutions; systems design, development, and integration (using Agile methods); GIS architecture and geospatial technologies; database, and information technology ✓ Responsible for providing architectural direction (design and technology) as part of the process of developing, customizing, integrating, and maintaining systems ✓ Possesses knowledge and experience designing solutions that utilize Esri's ArcGIS Suite; design and redesign of a web GIS platforms; implementation of new ArcSDE architecture; ArcGIS migration; etc. ✓ Applies knowledge of spatial data including Esri's ArcSDE geodatabase and feature class formats ✓ Designs server hardware configurations, based on best practices for systems integration (e.g., Esri's best practices) ✓ Involved in more than one project at one time depending on the size and scope of the initiatives ✓ Uses strong interpersonal and written communications skills ✓ Provides technical oversight for solution development initiatives. ✓ Reports to the architecture team and works closely with assigned Project Managers ✓ Maintains a challenging role as a member of both Architecture and Project teams
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Computer Science, Information Technology, GIS, or related field
Experience:	7+ years of progressively advancing experience in GIS/IT



Labor Category:	GIS ANALYST II (new)
Description of Duties/Responsibilities:	<p>Participates in defining user requirements, data collection, GIS analysis, GIS data development and conversion, data entry, and documentation. Manipulates GPS and other data, and other forms of data development.</p> <ul style="list-style-type: none"> ✓ Performs technical work in data collection processing, updating, maintenance and analysis procedures ✓ Assists in developing and maintaining GIS hardware and software ✓ Develops and utilizes GIS scripting and spatial models in analysis and geo-processing ✓ Develops and utilizes geospatial relational database technologies ✓ Assists in preparation of presentations and training for client and office personnel to ensure standard GIS practices are observed
Training:	Strong GIS skills and computer proficiency, including the use of scripting/macro languages and software coding.
Certifications / Registrations:	Professional GIS Certification preferred.
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	4+ years of GIS experience



Labor Category:	GIS ANALYST I (formerly GIS Analyst)
Description of Duties/Responsibilities:	<p>Participates in defining user requirements, data collection, GIS analysis, GIS data development and conversion, data entry, and documentation. Manipulates GPS and other data, and other forms of data development.</p> <ul style="list-style-type: none"> ✓ Performs technical work in data collection processing, updating, maintenance and analysis procedures ✓ Assists in developing and maintaining GIS hardware and software ✓ Develops and utilizes GIS scripting and spatial models in analysis and geo-processing ✓ Develops and utilizes geospatial relational database technologies ✓ Assists in preparation of presentations and training for client and office personnel to ensure standard GIS practices are observed
Training:	Basic GIS skills and knowledge, and computer proficiency. Basic knowledge and understanding of scripting/macro languages for geo-processing preferred.
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field.
Experience:	1+ years of GIS experience



Labor Category:	GIS DATA MANAGER (new)
Description of Duties/Responsibilities:	<p>Ensures corporate geospatial datasets are organized, stored, managed, and served according to data management policies and plans, within enterprise and non-enterprise GIS environments.</p> <ul style="list-style-type: none"> ✓ Coordinates with GIS users, IT professionals, business analysts, and project managers ✓ Ensures that appropriate metadata is created and saved to registry ✓ Manages changes to data structure according to evolving requirements ✓ Maintains documentation and data management plans and standard operating procedures ✓ Supports broad, corporate GIS functions ✓ Creates map products using various geospatial software programs according to established standards ✓ Uses GIS skills, knowledge of relational database management systems, and information technology (IT)
Training:	Applicable technical training
Certifications / Registrations:	Professional GIS Certification preferred
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	2 – 4 years of GIS experience



Labor Category:	GIS SUPERVISOR
Description of Duties/Responsibilities:	<p>Supervises and reviews the work of a unit of GIS analysts, technicians, and other staff. Performs professional level work related to the development and implementation of systems, databases, and GIS related applications to create, maintain, display, and update base map, regional coverages and other GIS related spatial databases within a comprehensive geographic information system.</p> <ul style="list-style-type: none"> ✓ Provides supervision, training, and work review to a work unit, including organizing and assigning the work to ensure coordination and completion of assignments ✓ Plans, develops, coordinates, and modifies complex systems to create a comprehensive GIS for clients ✓ Acts as a liaison with client agencies to determine current automated and manual systems, define needs, coordinate system integration, and define required output and user documentation ✓ Conducts a variety of analytical studies related to the development and implementation of the GIS system including evaluating alternatives, making recommendations and preparing technical reports ✓ Prepares a variety of technical reports, correspondence, manuals, procedures and other written materials ✓ Makes presentations to clients regarding the GIS system ✓ Explains system hardware and software and ensures that applications are appropriate ✓ Monitors developments in the GIS usage and determines their potential effect upon the client's system, recommends procedural and equipment changes to ensure system updating ✓ Attends training meetings to enhance knowledge of GIS system use ✓ Applies and documents new techniques as they are implemented ✓ Participates in the selection, training and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Professional GIS certification preferred
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	5+ years of GIS experience, 2 years in a supervisory capacity



Labor Category:	GIS SPECIALIST
Description of Duties/Responsibilities:	<p>Works with related software and programs to create and maintain data and/or maps that can be combined with geographically referenced data. Creates maps and graphs, using GIS software and related equipment.</p> <ul style="list-style-type: none"> ✓ Applies specialized knowledge in GIS analysis, geo-statistics, geo-processing, and spatial modeling ✓ Designs and updates geospatial databases, applying additional knowledge of spatial feature representations ✓ Writes reports and documentation for various aspects of geospatial projects ✓ Conducts research to locate and obtain existing databases ✓ Gathers, analyzes, and integrates spatial data from staff and determine how best the information can be displayed using GIS ✓ Compiles geographic data from a variety of sources including censuses, field observation, satellite imagery, aerial data, existing maps, and other data ✓ Meets with users to define data needs, project requirements, required outputs, or to develop applications ✓ Enters new map data using the principles of cartography including coordinate systems, longitude, latitude, elevation, topography, and map scales ✓ Analyzes geographic relationships among varying types of data ✓ Prepares metadata and other documentation ✓ Operates and maintains GIS system hardware and software ✓ Presents information to users and answer questions
Training:	Strong GIS skills and computer proficiency with GIS software, such as Esri's ArcGIS suite, Oracle Spatial, etc., including the use of scripting/macro languages and software coding
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field; Master's Degree preferred
Experience:	5+ years of GIS experience



Labor Category:	GIS TECHNICIAN II
Description of Duties/Responsibilities:	<p>Performs digital data capture and attribution in an efficient and consistent manner. Accomplishes simple and complex Quality Control by plot and on screen to assure adherence to technical specifications. Identifies consistent error types, training needs, and process improvements.</p> <ul style="list-style-type: none"> ✓ Performs data capture and attribution according to standard operating procedures and instructions ✓ Identifies procedural problems ✓ Identifies, modifies, and implements process improvements ✓ Interprets technical specifications and manuals ✓ Maintains documentation of procedures ✓ Maintains technical documents ✓ Assists in preparation of estimates/bids/cost proposals ✓ Proficient in the use of GIS software ✓ Identifies causes for consistent error types ✓ As necessary, communicates with clients, subcontractors, and vendors to ensure quality product
Training:	Applicable technical training
Certifications / Registrations:	N/
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	2 – 4 years of GIS experience



Labor Category:	GIS TECHNICIAN I
Description of Duties/Responsibilities:	<p>Performs digital data capture and attribution in an efficient and consistent manner. Accomplishes simple Quality Control by plot and on screen to assure adherence to technical specifications. Identifies consistent error types, training needs, and process improvements.</p> <ul style="list-style-type: none"> ✓ Performs data capture and attribution according to standard operating procedures and instructions ✓ Identifies procedural problems ✓ Identifies, modifies, and implements process improvements ✓ Interprets technical specifications and manuals ✓ Maintains documentation of procedures ✓ Maintains technical documents ✓ Proficient in the use of GIS software ✓ Identifies causes for consistent error types
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	1 – 2 years of GIS experience

Labor Category:	GIS APPLICATION DEVELOPER II (new)
Description of Duties/Responsibilities:	<p>Provides senior level expertise in designing, developing, testing, implementing, administering, and supporting new and existing medium- and large-sized GIS applications and spatial analysis tools; using various software / scripting code, applications programming interfaces (APIs), and development platforms.</p> <ul style="list-style-type: none"> ✓ Develops custom GIS applications, including client/server and web-based solutions, to support business requirements ✓ Experienced with ArcGIS Server architecture and API's ✓ Troubleshoots complex technical problems ✓ Applies analytical and advanced design techniques in developing new programs or systems or modifying existing ones ✓ Codes and/or tests programs and resolves related problems in large, complex systems ✓ Develops system documentation and training materials for GIS tools and applications ✓ Provides server configuration, installation, and management on various platforms ✓ Builds web services and other web solutions, and integrates with relational database management systems (e.g., Oracle, SQL Server). ✓ Assists with the migration of old systems to new systems
Training:	<ul style="list-style-type: none"> ✓ Programming languages: .NET, Java, C#, C++, etc. ✓ Scripting languages: Python, JSP, JavaScript, HTML, SQL, XML, AXL, AML ✓ APIs: HTML5/JavaScript, FLEX, Silverlight ✓ GIS Software: ArcGIS suite of products, including ArcSDE and ArcGIS Server with REST/JSON
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, or Computer Science, Master's Degree preferred
Experience:	5+ years of GIS Application Development experience



Labor Category:	GIS APPLICATION DEVELOPER I (formerly GIS Application Developer)
Description of Duties/Responsibilities:	<p>Develops, tests, implements, and supports new and existing small and medium sized GIS applications and spatial analysis tools, using various software/scripting code, applications programming interfaces (APIs), and development platforms.</p> <ul style="list-style-type: none"> ✓ Develops custom GIS applications, including client/server and web-based solutions, to support business requirements ✓ Knowledgeable of ArcGIS Server architecture and API's ✓ Troubleshoots technical problems ✓ Applies analytical and advanced design techniques in developing new programs or systems or modifying existing ones ✓ Codes and/or tests programs and resolves related problems in small to medium sized systems ✓ Develops system documentation and training materials for GIS tools and applications ✓ Provides server configuration, installation, and management on various platforms ✓ Builds web services and other web solutions, and integrates with relational database management systems (e.g., Oracle, SQL Server). ✓ Assists with the migration of old systems to new systems
Training:	<ul style="list-style-type: none"> ✓ Programming languages: NET, Java, C#, C++, etc. ✓ Scripting languages: Python, JSP, JavaScript, HTML, SQL, XML, AXL, AML ✓ APIs: HTML5, JavaScript, FLEX, Silverlight ✓ GIS Software: ArcGIS suite of products, including ArcSDE and ArcGIS Server with REST/JSON
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	2+ years of GIS Application Development experience



Labor Category:	GIS SYSTEMS ANALYST III
Description of Duties/Responsibilities:	<p>Assists in GIS development projects and define system requirements and translates the requirements into GIS application design specifications.</p> <ul style="list-style-type: none"> ✓ Analyzes image data requirements for user departments ✓ Implements and manages image databases, maps, and related products ✓ Conducts technical reviews of GIS systems involving imagery, remote sensing, and photogrammetry applications ✓ Performs image processing analysis and integrates image related products into GIS mapping projects ✓ Provides technical assistance and training to user departments ✓ Writes documentation on procedures, standards, and training requirements ✓ Performs digital image processing including: satellite image manipulation, aerial image interpretation, and data analysis ✓ Coordinates the acquisition of imageries ✓ Participates in the training and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	4+ years of GIS experience

Labor Category:	GIS SYSTEMS ANALYST II
Description of Duties/Responsibilities:	<p>Assists in GIS development projects and define system requirements and translates the requirements into GIS application design specifications.</p> <ul style="list-style-type: none"> ✓ Analyzes image data requirements for user departments ✓ Implements and manages image databases, maps, and related products ✓ Conducts technical reviews of GIS systems involving imagery, remote sensing, and photogrammetry applications ✓ Performs image processing analysis and integrates image related products into GIS mapping projects ✓ Provides technical assistance and training to user departments ✓ Writes documentation on procedures, standards, and training requirements ✓ Performs digital image processing including: satellite image manipulation, aerial image interpretation, and data analysis ✓ Coordinates the acquisition of imageries ✓ Participates in the training and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	2 – 4 years of GIS experience



Labor Category:	GIS SYSTEMS ANALYST I
Description of Duties/Responsibilities:	<p>Assists in GIS development projects and defines system requirements and translates the requirements into GIS application design specifications.</p> <ul style="list-style-type: none"> ✓ Analyzes image data requirements for user departments ✓ Implements and manages image databases, maps, and related products ✓ Conducts technical reviews of GIS systems involving imagery, remote sensing, and photogrammetry applications ✓ Performs image processing analysis and integrates image related products into GIS mapping projects ✓ Provides technical assistance and training to user departments ✓ Writes documentation on procedures, standards, and training requirements ✓ Performs digital image processing including: satellite image manipulation, aerial image interpretation, and data analysis ✓ Coordinates the acquisition of imageries
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, Computer Science, or related field
Experience:	1 – 2 years of GIS experience

Labor Category:	GRAPHICS SPECIALIST (new)
Description of Duties/Responsibilities:	<p>Applies creativity and graphic design skills, using related software and programs, to create and maintain graphics, storyboards, outreach materials, documentation, website interfaces and applications, etc., all focused on particular end-user experiences.</p> <ul style="list-style-type: none"> ✓ Uses knowledge of current graphic design software to produce graphic art and visual materials for promotions, advertisements, videos, packaging, and informative and instructional material through a variety of media outlets such as websites and other digital and printed media ✓ Frequently integrates data and/or maps and graphics that can be combined with geographically referenced data ✓ Meets with users to define graphics needs, project requirements, required outputs, or to develop user interfaces ✓ Generates and manipulates graphic images, animations, sound, text and video into consolidated and seamless multimedia programs ✓ Remains abreast of technological advances in the field identifies areas of use in the organization ✓ Uses knowledge of standard concepts, practices, and procedures within GIS/remote sensing/geospatial fields
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree
Experience:	2 – 4 years of experience

Labor Category:	IMAGERY ANALYST II
Description of Duties/Responsibilities:	<p>Performs hard or soft copy analysis, complex Quality Control, and is capable of complex cartographic transfer.</p> <ul style="list-style-type: none"> ✓ Uses hardcopy or digital compilation, production, and analysis techniques for various types of remotely sensed data (e.g., imagery, LiDAR, etc.) ✓ Performs simple and complex cartographic transfer Interprets technical specifications and manuals ✓ Identifies, evaluates, and compiles topographic features ✓ Provides field verification ✓ Checks for consistency between datasets and other analyst's work ✓ Conducts research to gather available collateral data for assigned projects ✓ Identifies procedural problems ✓ Identifies, modifies, and implements process improvement ✓ Perform simple and complex Quality Control ✓ Works on multiple and complex projects ✓ Communicates with clients on technical matters ✓ Prepares textual data as required
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Cartography, Geography, Land Surveying, or related discipline
Experience:	2 – 4 years of relative experience



Labor Category:	IMAGERY ANALYST I
Description of Duties/Responsibilities:	<p>Performs hard or soft copy analysis, simple Quality Control, and simple cartographic transfer.</p> <ul style="list-style-type: none"> ✓ Uses hardcopy or digital compilation, production, and analysis techniques for various types of remotely sensed data (e.g., imagery, LIDAR, etc.) ✓ Performs simple cartographic transfer ✓ Identifies, evaluates, and compiles topographic features ✓ Provides field verification ✓ Checks for consistency between sheets and other analysts ✓ Conducts research to gather available collateral data for assigned projects ✓ Performs simple Quality Control ✓ Prepares textual data as required
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Cartography, Geography, Land Surveying, or related discipline
Experience:	1 – 2 years of relative experience



Labor Category:	LIDAR SUPERVISOR
Description of Duties/Responsibilities:	<p>Supervises and/or performs topographic and/or bathymetric LIDAR, photogrammetric, or geodetic science data capture and creation from aerial, mobile, or fixed platforms. Performs mapping and product generation tasks relating to LIDAR data capture and creation. Defines projects, writes specifications, lays out projects, and approves client deliverables. Directs and trains technical staff in the use of topographic and/or bathymetric LIDAR data collection, creation, and delivery tools; LIDAR processing and product generation; and QA/QC tools and processes.</p> <ul style="list-style-type: none"> ✓ Reads, analyzes, and interprets general business documents, professional journals, technical procedures, or governmental regulations ✓ Presents information in one-on-one and small group situations ✓ Writes technical specifications, procedures, and applications ✓ Applies mathematical concepts to project situations ✓ Presents topographic and/or bathymetric LIDAR systems information to staff and clients ✓ Knowledge of photogrammetry and geodesy concepts, and LIDAR-specific software applications
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Engineering or Geography
Experience:	3 – 5 years of relative experience, 2 years in a supervisory capacity



Labor Category:	LIDAR SPECIALIST
Description of Duties/Responsibilities:	<p>Performs any or all LiDAR capture and production workflow functions, and applies knowledge of terrain and surface models, photogrammetric and geodetic science concepts.</p> <ul style="list-style-type: none"> ✓ Conducts LiDAR calibration, classification, point cloud editing, and product generation (terrain and surface models), as required, with topographic and/or bathymetric LiDAR data ✓ Assists in planning aerial, mobile, or ground-based LiDAR acquisition projects ✓ Assists in writing technical specifications, procedures, and applications ✓ Applies mathematical concepts to project situations ✓ Knowledge of LiDAR, photogrammetry and geodesy concepts, and uses LiDAR-specific software applications ✓ Reads, analyzes, and interprets general business documents, professional journals, technical procedures, or governmental regulations
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Engineering, Geography, Remote Sensing, or related degree.
Experience:	2+ years of relative experience

Labor Category:	PHOTO INTERPRETER
Description of Duties/Responsibilities:	<ul style="list-style-type: none"> ✓ Calculates scales of an image/photograph and maps of unknown scale ✓ Distinguishes various features in aerial photographs, digital imagery, or other geospatial datasets, through monoscopic or stereoscopic means. ✓ Uses analog and/or digital image sources, along with other collateral data, to extract natural and manmade features such as land cover, wetlands, aquatic features, cultural features, or terrain-related information ✓ Makes various qualitative and quantitative estimates for interpreted features such as type, size, density, volume, etc. ✓ Lays out and implements an aerial photo sample ✓ Uses applicable geospatial processing and office automation software (e.g., GIS software, MS Office, etc.) to edit, manipulate, and present data ✓ Constructs and evaluates spatial databases
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, or Computer Science
Experience:	4+ years of relative experience

Labor Category:	PHOTO SERVICES TECHNICIAN
Description of Duties/Responsibilities:	<p>Prints and develops film from aerial photographic negatives and other type film using photographic equipment and knowledge of photographic processing, mixes photographic chemicals and cleans automatic film processing machines, exposes contact prints and enlargements from negatives as well as multi-element exposures on film and or paper.</p> <ul style="list-style-type: none"> ✓ Reads work orders to determine photographic techniques required ✓ Adjusts camera settings for reduction or enlargement of image, according to work order specifications, and set or activate timer that controls exposure time of film ✓ Feeds exposed film into film processor machine that develops, fixes, washes, and dries film ✓ Tends one or more machines that automatically develop, fix, wash, and dry photographic prints: threads leaders (paper strips) around rollers, through processing tanks and dryer, around polished drum, and onto take-up reel ✓ Maintains production records ✓ Examines film to verify that reproduced image meets quality standards ✓ Operates aerial photo digital film scanner
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	High school diploma
Experience:	1 – 2 years of relative experience



Labor Category:	PHOTOGRAMMETRIC MANAGER
Description of Duties/Responsibilities:	<p>Works with Project Managers to define photogrammetric projects. Directs the photogrammetric production staff toward set goals. Plans and implements improvements for the production department. Responsible for creating digital orthos, planimetric databases, and topologic data structures for elevation models, point clouds, and contours using photogrammetric software, tools and methods. Also develop techniques, processes, and procedures to improve the quality and throughput of photogrammetric database development.</p> <ul style="list-style-type: none"> ✓ Directs the production of geospatial projects with aerial, satellite, mobile, or other geospatial datasets ✓ Directs the development of planimetric, contour, and/or street centerline/addressing data and databases ✓ Directs the performance of production tasks ✓ Recommends long-range plans, schedules, budgets and priorities ✓ Recommends state-of-the-art products in both hardware and software ✓ Ensures that staff maintains current knowledge and training with regards to software, hardware, and current techniques and standards ✓ Establishes and maintains coordination between staff and Project Managers ✓ Develops and maintains estimating guidelines for work assignments ✓ Prepares estimates for new projects ✓ Responsible for the department's quality control ✓ Troubleshoots problems ✓ Participates in the selection, training, and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Certification as Photogrammetrist by the American Society of Photogrammetry and Remote Sensing (ASPRS)
Education:	Bachelor's Degree in Geography, Geo-Science, Computer Science, Civil Engineering or related discipline
Experience:	7+ years of relative experience, 3 years in a supervisory capacity



Labor Category:	PHOTOGRAMMETRIC TECHNICIAN
Description of Duties/Responsibilities:	<p>Creates digital orthophotos, planimetric databases, and topologic data structures for elevation models, contours, and point clouds using photogrammetric software, tools and methods. Develops techniques, processes, and procedures to improve the quality and throughput of photogrammetric database development.</p> <ul style="list-style-type: none"> ✓ Produces geospatial projects with aerial, satellite, mobile, or other geospatial datasets ✓ Develops planimetric, contour, and/or street centerline/addressing data and databases for GIS implementations using photogrammetric methods ✓ Performs complex production tasks to high level of acceptance ✓ Conducts mapping and data processing
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, Geo-Science, Computer Science, Civil Engineering or related discipline
Experience:	1 – 2 years of relative experience



Labor Category:	PILOT
Description of Duties/Responsibilities:	<p>Pilots airplane or helicopter at specified altitudes and airspeeds, following designated flight lines, to conduct mapping of the earth's surface with various remote sensing technologies (e.g., multispectral/hyperspectral imaging, LIDAR, thermal, etc.). Sights along pointers (window blocking) to topographical landmarks and/or utilizes computer generated heading indicators.</p> <ul style="list-style-type: none"> ✓ Adjusts controls to hold aircraft on course, to ensure exposure stations are within strict tolerances ✓ Observes dials and moves controls to hold aircraft in level flight to eliminate contour errors in data caused by forward and lateral tilt of aircraft ✓ Reviews air ship's papers to ascertain factors, such as load weight, fuel supply, weather conditions, and flight route and schedule ✓ Orders changes in fuel supply, load, route, or schedule to ensure safety of flight ✓ Logs information, such as time in flight, altitude flown, and fuel consumed and other items as designated by the Company
Training:	Applicable technical training
Certifications / Registrations:	Must possess a single-engine and multi-engine commercial FAA license and hold a valid FAA medical certificate at all times.
Education:	Associates Degree in Aviation
Experience:	1,200 hours single-engine or multi-engine time (minimum) with an instrument rating.



Labor Category:	PRINCIPAL
Description of Duties/Responsibilities:	<p>Ultimately responsible for all aspects of the success of the firm.</p> <ul style="list-style-type: none"> ✓ Ensures high quality service is provided to all clients and taking action as necessary to maintain the firm's high reputation for excellent services ✓ Ensures sufficient numbers of employees are trained to assume the leadership of all key design and management functions within the firm, or recruiting top professional and management personnel to fill these positions ✓ Establishes effective long-range objectives, goals, and plans for the firm ✓ Provides guidance as required to the manager of finance and accounting regarding the investment of the firm's funds so that the funds are secure and an adequate return is earned ✓ Provides effective leadership to the whole firm and particularly to the managers and employees ✓ Delegates specific responsibilities to immediate subordinates to ensure that the firm's business plan is properly developed and implemented ✓ Maintains an effective organization through the provision and updating of suitable organization charts and position descriptions ✓ Ensures that appropriate management policies systems and procedures are prepared, updated regularly, implemented, and properly used ✓ Ensures that the firm has an effective top management financial information system, and that the reports prepared are used promptly each period to properly manage the firm's affairs ✓ Ensures effective systems of planning and control are maintained in the firm to review the performance of tasks delegated ✓ Ensures the manager of finance and accounting coordinates the preparation of budgets and cash flow projections and regularly reviews actual results being achieved ✓ Represents the firm when appropriate at top-level negotiations, discussions, contract signings, professional, and business meetings ✓ Reviews the performance of all managers and employees reporting directly to the Principal, and meeting with each immediate subordinate to discuss the manager's or employee's performance and career direction ✓ Initiates salary adjustments and bonus payment for all managers and employees ✓ Resolves disagreements promptly among managers and employees
Training:	Applicable technical training
Certifications / Registrations:	Professional certification / registration
Education:	Graduate degree in a related discipline
Experience:	10+ years of experience

Labor Category:	PRODUCTION MANAGER
Description of Duties/Responsibilities:	<p>Works with Project Managers to define production requirements for given geospatial projects. Managerial and administrative work in planning, organizing, directing and coordinating the administrative functions and technical projects of the stereo compilation department.</p> <ul style="list-style-type: none"> ✓ Directs the performance of stereo compilation department systems and production ✓ Recommends long-range plans, schedules, budgets and priorities ✓ Directs the development of new methods and routines to assure optimum utilization of all compilers and equipment ✓ Ensures that staff maintains current knowledge and training with regards to software, hardware, and current techniques and standards ✓ Establishes and maintains coordination between the production staff and Project Managers ✓ Develops and maintains estimating guidelines for work assignments ✓ Prepares estimates for new projects ✓ Responsible for the organization's quality control ✓ Troubleshoots problems ✓ Participates in the selection, training, and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Certification as Photogrammetrist by the American Society of Photogrammetry and Remote Sensing (ASPRS)
Education:	Bachelor's Degree in Engineering or Computer Science, Geography, Geo-Science, or related field
Experience:	7+ years of relative experience, 3 years in a supervisory capacity



Labor Category:	PROFESSIONAL ENGINEER
Description of Duties/Responsibilities:	<p>Plans and directs the accomplishment of product engineering objectives. Provides technical guidance and ensures sound engineering procedures and effective use of facilities.</p> <ul style="list-style-type: none"> ✓ Plans and directs the work of the engineering staff, placing particular emphasis on research and development to achieve product engineering objectives ✓ Organizes engineering staff to accomplish goals efficiently and authorizes recruitment of additional personnel as required ✓ Monitors progress of projects, confers with project engineers, and reviews reports to see that project is progressing according to schedule and within budgetary guidelines ✓ Works closely with Project Managers to establish long-range operating goals and expansion ✓ Participates in the selection, training, and development of new personnel
Training:	Continuing education to maintain state PE registrations
Certifications / Registrations:	State PE registrations as required
Education:	Bachelor's Degree in Engineering, Master's Degree in Engineering or Business Administration preferred
Experience:	7+ years of relative experience

Labor Category:	PROGRAM MANAGER (new)
Description of Duties/Responsibilities:	<p>Manages and administers contracts and oversees the work of associated multiple project managers.</p> <ul style="list-style-type: none"> ✓ Ensures high quality service is provided to all clients and takes action as necessary to maintain the firm's high reputation for excellent services ✓ Oversees and tracks all projects associated with indefinite delivery/indefinite quantity (IDIQ), multi-year contracts ✓ In collaboration with project managers, participates on technical projects and client meetings, as necessary ✓ Establishes effective long-term client relationships ✓ Provides effective leadership to the whole firm, project managers and employees ✓ Ensures effective systems of planning and control are maintained in the firm to review the performance of tasks delegated ✓ Ensures appropriate resources are available and balanced between projects ✓ Identifies opportunities and assists in proposal development ✓ Manages technical projects, as necessary ✓ Represents the firm when appropriate at top-level negotiations, discussions, contract signings, professional, and business meetings
Training:	Applicable technical training
Certifications / Registrations:	Project Management Professional (PMP) or equivalent, preferred
Education:	Bachelor's Degree in Geography, GIS, Business, Computer Science, or related field
Experience:	5+ years of relative experience



Labor Category:	PROJECT MANAGER, SENIOR
Description of Duties/Responsibilities:	<p>Ensures that budget, scope, schedule, and quality stay on track for the life of a project. Guides and coordinates all disciplines with outside consultants and end user. Responsible for fees and the profitability of a project. May also be a Principal-In-Charge on certain projects.</p> <ul style="list-style-type: none"> ✓ Prepares fees with input for the discipline involved ✓ Coordinates all disciplines for schedules, meetings, deadlines, etc. ✓ Maintains correspondence, contracts, etc. ✓ Manages changes of scopes and request additional fees ✓ Holds team meetings as required, coordinating project and ensuring everyone is on track. ✓ Coordinates Quality Control ✓ Works with department heads on personnel scheduling ✓ Reviews billing reviews for project ✓ Coordinates close out of project ✓ Contacts and coordinates closely with client, as needed ✓ Prepares specifications ✓ Responds to RFPs and prepares proposals ✓ Advises department heads and principals on employee performance on particular projects ✓ Provides information to principal and department heads on future projects so they can manage staffing ✓ Assists in preparation of coordination standards within the firm ✓ Participates in the selection, training, and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Project Manager Professional (PMP) or equivalent, preferred
Education:	Bachelor's Degree (commensurate training and experience can be substituted for degree)
Experience:	7+ years of relative experience, 5 years in a supervisory capacity



Labor Category:	PROJECT MANAGER
Description of Duties/Responsibilities:	<p>Ensures that budget, scope, schedule, and quality stay on track for the life of a project. Guides and coordinates all disciplines with outside consultants and end user. Responsible for fees and the profitability of a project. May also be a principal-in-charge on certain projects.</p> <ul style="list-style-type: none"> ✓ Prepares fees with input for the discipline involved ✓ Coordinates all disciplines for schedules, meetings, deadlines, etc. ✓ Maintains correspondence, contracts, etc. ✓ Manages changes of scopes and request additional fees ✓ Holds team meetings as required, coordinating project and ensuring everyone is on track. ✓ Coordinate Quality Control ✓ Works with department heads on personnel scheduling ✓ Reviews billing reviews for project ✓ Coordinates close out of project ✓ Contacts and coordinates closely with client, as needed ✓ Prepares specifications ✓ Responds to RFPs and prepares proposals ✓ Advises department heads and principals on employee performance on particular projects ✓ Provides information to principal and department heads on future projects so they can manage staffing ✓ Assists in preparation of coordination standards within the firm ✓ Participates in the selection, training, and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Project Manager Professional (PMP) or equivalent, preferred
Education:	Bachelor's Degree (commensurate training and experience can be substituted for degree)
Experience:	5+ years of relative experience, 3 years in a supervisory capacity



Labor Category:	QA/QC MANAGER
Description of Duties/Responsibilities:	<p>Administers the company quality program in accordance with company requirements.</p> <ul style="list-style-type: none"> ✓ Establishes procedures for maintaining high standards of quality and reliability ✓ Determines and enforces quality requirements in accordance with company needs, based on current regulations ✓ Organizes and promotes companywide quality improvement efforts ✓ Evaluates and develops improved techniques for the control of quality and reliability ✓ Implements and maintains the Company's quality program, reporting on the performance of the quality program for review and as a basis for improvement of the quality program ✓ Acts as liaison with external parties on matters relating to the quality program
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree
Experience:	5+ years of broad technical experience, of which at least 2 to 3 years should be in quality administration



Labor Category:	REMOTE SENSING ANALYST
Description of Duties/Responsibilities:	<p>Performs analysis on data from any variety of airborne, satellite, or fixed platform remote sensor systems. Participates in developing workflows and process improvements of technical systems and serves as liaison to vendors on various technical systems issues. Provides technical assistance for production staff as well as providing specialized training. Working knowledge of the electromagnetic spectrum and its properties, and how to apply image/data processing concepts in image processing, photogrammetric, and/or GIS systems software. Able to integrate traditional remote sensing into other application disciplines.</p> <ul style="list-style-type: none"> ✓ Understands active and passive sensor technologies (e.g., earth imaging optical satellites, aerial thermal, IFSAR, true color/multispectral systems, LiDAR, etc.) ✓ Prepares textual data as required ✓ Conducts research to gather available collateral data for assigned projects ✓ Uses hardcopy or digital compilation techniques ✓ Performs simple and complex cartographic transfer ✓ Interprets technical specifications and manuals ✓ Identifies, evaluates, and compiles topographic features ✓ Provides field verification ✓ Identifies procedural problems ✓ Identifies, modifies, and implements process improvement ✓ Performs simple and complex QC ✓ Trains and mentors entry-level and mid-level staff ✓ Assists in preparation of estimates/bids/cost proposals ✓ Works on multiple and complex projects ✓ Knowledge of image processing, photogrammetric, and GIS systems
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, GIS, or Remote Sensing, Master's Degree preferred
Experience:	4+ years of Remote Sensing Applications experience



Labor Category:	SECURITY ADMINISTRATOR
Description of Duties/Responsibilities:	<p>Develops, implements, and manages the overall processes for technical and physical risk management working with various IT and facilities.</p> <ul style="list-style-type: none"> ✓ Develops and implements policies, standards, and guidelines related to facilities and data security ✓ Manages and oversees the continuous monitoring and protection of data processing resources ✓ Evaluates suspected security breaches and recommends corrective and preventative action ✓ Negotiates and manages service level agreements with outside suppliers of protective services or data hosting ✓ Serves as the point-of-contact for computer security incident response planning, execution, and awareness ✓ Assists in the development of appropriate criteria needed to assess the compliance of security standards by new and existing applications and IT infrastructure ✓ Establishes and monitors formal certification programs regarding security standards relating to the planned acquisition and or procurement of new applications and or technologies ✓ Establishes and monitors formal certification programs regarding security standards of all personnel ✓ Coordinates administration of Access privileges for users by decentralized security administrators across the organization ✓ Assists in determining direction of new security process implementations ✓ Knowledge of software engineering practices or working knowledge of distributed software development environment preferred
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Associates Degree
Experience:	4+ years of Technology Security experience Experience with network security/firewall technologies, host and network based intrusion detection, deployments and establishing best practices is required



Labor Category:	SENSOR OPERATOR (formerly Camera Operator)
Description of Duties/Responsibilities:	<p>Operates aerial and other mapping sensors, such as digital imaging systems, topographic and bathymetric LiDAR systems, analog camera systems, and other technologies (e.g., thermal, oblique, hyperspectral, mobile, etc.). Integrates survey data with onboard instruments. Assists with mission planning, data processing, and quality control.</p> <ul style="list-style-type: none"> ✓ Performs map reading and basic aerial photo interpretation ✓ Performs basic math and analysis ✓ Performs technical equipment operation ✓ Ensures digital media and related source materials are safeguarded and archived ✓ Knowledge of sensor technologies, aerial film types and usage, photo scale, and basic sensor equipment maintenance ✓ Flies in company aircraft while performing technical duties in a variety of conditions and environments
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	High school diploma
Experience:	1 – 2 years of relative experience
Physical:	Binocular 20/20 correctable vision with either glasses or contact lenses; color vision, depth perception, and positive hand/eye coordination; full range of motion of hands, arms, fingers, and thumbs; prolonged sitting for up to two hours straight; ability to balance, climb, crawl, crouch, kneel, lift, pull, push, reach, sit, stand, stoop, walk, hear voice commands and communicate verbally.



Labor Category:	SHIPPING CLERK
Description of Duties/Responsibilities:	<p>Responsible for incoming and outgoing shipments. Responsible for accuracy of shipping documents and verifying receiving receipts.</p> <ul style="list-style-type: none"> ✓ Prepares shipping transmittals and air bills or mailing labels for each shipment. ✓ Prepares materials for shipping. ✓ Assures shipments are located in pick up area. ✓ Maintains shipping records. ✓ Reviews and approves shipping invoices from couriers. ✓ Checks and counts all items on received goods. ✓ Collects information for damage claims.
Training:	Microsoft Office Softwares
Certifications / Registrations:	N/A
Education:	High school diploma
Experience:	1 – 2 years of relative experience
Physical:	Physical effort required in lifting

Labor Category:	SOFTCOPY TECHNICIAN
Description of Duties/Responsibilities:	<p>Compiles geospatial data required for multiple-scale map production from scanned aerial photos and digital image sources. Applies standard photogrammetric techniques to geo-reference three-dimensional image information interpretable on digital imagery. Uses softcopy photogrammetric workstation technology to classify, measure and record features. Defines topography to standards as required by project specifications.</p> <ul style="list-style-type: none"> ✓ Performs classification and collection of topographic and planimetric data using digital stereo photogrammetric instruments ✓ Processes digital images for geospatial applications ✓ Applies advanced aerial survey and photogrammetric mapping principles in all efforts ✓ Applies photogrammetric technology utilizing softcopy stereo workstations to compile spatially related information from digital photographs ✓ Updates and corrects existing photogrammetrically compiled data utilizing new imagery
Training:	State-of-the-art photogrammetric and related CAD/GIS software experience
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Geography, Geo-Science, Computer Science, or related discipline
Experience:	1 – 2 years of relative experience



Labor Category:	SOFTWARE ENGINEER
Description of Duties/Responsibilities:	<p>Performs systems integration and development on software projects and may act as technical lead or project manager for those projects. Analyzes, designs, develops, and implements custom features and functions within systems and interfaces to integrate infrastructure and other systems. Develops appropriate controls and standards to ensure all functions of systems projects effectively work with all other applications and operating systems.</p> <ul style="list-style-type: none"> ✓ Understands a broad range of software technology concepts, scripting and coding languages, operating systems, practices, and procedures ✓ Performs engineering design evaluations for new software purchases and custom development ✓ Recommends alterations to design and development to improve quality of systems and procedures ✓ Serves as mentor to others within IT regarding complex technical issues
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Computer Science, or related field
Experience:	4+ years of relative experience



Labor Category:	STEREO COMPILER
Description of Duties/Responsibilities:	<p>Measures and collects digital vector features for topographical maps from aerial imagery and/or other stereoscopic data using analytical or softcopy stereo plotters for delineation of planimetric and topographic features.</p> <ul style="list-style-type: none"> ✓ Uses photogrammetric software and hardware to achieve the required interior, relative and absolute orientations of imagery ✓ Archives digitally collected data using network software as well as contact prints, diapositives and imagery ✓ Maintains documentation of features and data collected, times, and quality control
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Associates Degree (commensurate training and experience can be substituted for degree)
Experience:	1 – 2 years of relative experience
Physical:	Eyesight vision capability to accurately see 3-D imagery; good hand eye (both hands) coordination to manipulate specialized computer mouse; ability to sit for extended periods of time; attention to detail and ability to stay focused.



Labor Category:	SURVEY – REGISTERED LAND SURVEYOR
Description of Duties/Responsibilities:	<p>Performs a variety of in-office and field tasks associated with land surveying and civil engineering projects.</p> <ul style="list-style-type: none"> ✓ Consults with clients ✓ Prepares proposals and contracts ✓ Provides guidance and direction to field crew(s) ✓ Provides guidance and direction to engineering and surveying technicians ✓ Oversees survey aspects of civil engineering and other land surveying projects ✓ Oversees and/or directs preparation of all types of survey plans ✓ Prepares flood elevation certificates ✓ Researches and reviews deeds and plans ✓ Performs fieldwork associated with land surveying, engineering, and/or control surveys, using traditional and GPS methods ✓ Performs survey computations and data collection ✓ Performs computer-aided design and drafting
Training:	Continuing education to maintain state PLS registrations
Certifications / Registrations:	State PLS registrations as required
Education:	Associates Degree (commensurate training and experience can be substituted for degree)
Experience:	5 – 10 years of progressive experience on a survey crew



Labor Category:	SURVEY – GPS SUPERVISOR / COMPUTATIONS
Description of Duties/Responsibilities:	<p>Conducts all types of GPS and conventional surveys. Manages survey field crews.</p> <ul style="list-style-type: none"> ✓ Consults with clients ✓ Provides guidance and direction to field crews and subconsultants ✓ Oversees project workflow ✓ Obtains survey resources from within and outside the company ✓ Ensures proper GPS planning and field techniques for project success ✓ Proficient with static, RTK, and airborne processing systems and techniques
Training:	Applicable technical training
Certifications / Registrations:	Minimum Engineer-In-Training or Land Surveyor-In-Training
Education:	Associates Degree (commensurate training and experience can be substituted for degree)
Experience:	3 – 5 years of relative experience



Labor Category:	SURVEY – SUPERVISOR
Description of Duties/Responsibilities:	<p>Supervises the work of technical staff and lower-level survey office personnel.</p> <ul style="list-style-type: none"> ✓ Obtains survey resources from within and outside the corporation ✓ Manages production schedules for each task order and coordinates with other survey offices and subconsultants to keep projects on track ✓ Performs QC/QA of survey product deliverables ✓ Manages survey crews on a daily basis ✓ Ensures proper GPS planning and use of proper satellite geometry ✓ Signs and seals each project drawing ✓ Participates in the selection, training, and development of new personnel
Training:	Continuing education to maintain state PLS registrations
Certifications / Registrations:	State PLS registrations as required
Education:	Associates Degree (commensurate training and experience can be substituted for degree)
Experience:	3 – 5 years of relative experience, 2 years in a supervisory capacity



Labor Category:	SURVEY – PARTY CHIEF
Description of Duties/Responsibilities:	<p>Supervises field crews and coordinates field survey work. Receives broad assignments and verbal instructions, usually with little or no daily supervision.</p> <ul style="list-style-type: none"> ✓ Schedules field work and crew assignments ✓ Repairs and maintains of survey vehicles and equipment ✓ Prepares fieldwork budgets ✓ Contacts clients, contractors, field inspection personnel, and office engineering and planning staff ✓ Participates in the selection, training, and development of new personnel
Training:	Applicable technical training
Certifications / Registrations:	Registered Professional Land Surveyor preferred
Education:	Associates Degree (commensurate training and experience can be substituted for degree)
Experience:	2 – 4 years of relative experience, 2 years in a supervisory capacity

Labor Category:	SURVEY – TECHNICIAN
Description of Duties/Responsibilities:	<p>Operates traditional survey instruments required to perform surveys as directed by the Party Chief. Able to temporarily direct the survey crew during the absence of the Party Chief.</p> <ul style="list-style-type: none"> ✓ Gathers deeds, plats, drawings, and computations from company files, courthouse, public agencies, attorneys, etc. ✓ Collects horizontal and vertical control information from public agencies or other surveying firms ✓ Computes traverse and determines boundary lines and areas ✓ Prepares easement (right-of-way) packages ✓ Writes legal descriptions of properties ✓ Computes areas, courses, and distances for subdivision projects ✓ Prepares information to assist field survey crews with construction stake-outs and other surveys ✓ Abides by safety requirements ✓ Abides by traffic control and safety procedures for a variety of surveying and construction operations ✓ Performs care, cleaning, and use of a variety of surveying tools and equipment including field radios ✓ Operates, checks, and basic field adjustments on transits, total stations, total electronic station, data collectors, levels, compass, tribrachs, and tripods ✓ Demonstrates lot, area, and intersection (bearing-bearing, distance-distance, bearing-distance) computations ✓ Reduces and checks field notes for determination of positions and elevations ✓ Performs basic surveys: leveling, traversing, triangulation, trilateration, public land surveys, metes and bounds surveys, construction surveys, and photo control surveys ✓ Coordinates field work for a variety of standard types of surveys under the supervision of a Party Chief ✓ Observes sun and Polaris for true North determination ✓ Keeps neat and orderly field notes for standard surveying operations: leveling, traversing, topographic mapping, layout, as-built surveys, boundary surveys, profile and cross-section surveys ✓ Enters field data and produces positional information (i.e., leveling, traversing, stadia, topographic mapping) with either a hand-held calculator or micro-computer software ✓ Interprets control point records and data sheets, as well as locate points in the field
Training:	Courses in mathematics and surveying that are required in order to perform the above responsibilities
Certifications / Registrations:	N/A
Education:	High school diploma or equivalent
Experience:	1 – 2 years of relative experience



Labor Category:	SURVEY – AID
Description of Duties/Responsibilities:	<p>Assists in land surveying activities:</p> <ul style="list-style-type: none"> ✓ Holds level or stadia rod at designated points to assist in determining elevations and laying out stakes for map making, construction, mining, land, and other surveys ✓ Calls out reading or writes station number and reading in notebook ✓ Marks points of measurement with elevation, station number, or other identifying mark ✓ Measures distance between survey points, using steel or cloth tape or surveyor's chain ✓ Marks measuring point with keel (marking crayon), paint sticks, scratches, tacks, or stakes ✓ Places stakes at designated points and drives them into ground at specified elevation, using hammer or hatchet ✓ Cuts and clears brush and trees from line of survey, using brush hook, knife, ax, or other cutting tools
Training:	Courses in mathematics and surveying that are required in order to perform the above responsibilities
Certifications / Registrations:	N/A
Education:	High school diploma or equivalent
Experience:	1 year of relative experience



Labor Category:	SYSTEM ADMINISTRATOR / MANAGER
Description of Duties/Responsibilities:	<p>Provides overall support for the Company. Installs and maintains hardware, software, and operating systems; and recommendations for hardware and software purchases. Assists all Division users with problem solving.</p> <ul style="list-style-type: none"> ✓ Broad background in all systems used in company, with particular knowledge and experience with GIS systems administration (e.g., Esri ArcGIS suite of products) ✓ Expert knowledge of machine language ✓ Installs, maintains, and monitors security process and procedures ✓ Evaluates future technology needs ✓ Participates in proposal development ✓ Administrates computer operating systems ✓ Administrates client and server architectures ✓ Installs and maintains computers and peripherals ✓ Maintenance of graphic workstations ✓ Maintenance of databases (i.e. Oracle, Dbase) ✓ Sets up and maintains network systems ✓ Sets up and maintain system backup procedures ✓ Installs, maintains, and updates software ✓ Improves system efficiency by use of process improvements, hardware configuration, and/or software improvement
Training:	Applicable technical training
Certifications / Registrations:	N/A
Education:	Bachelor's Degree in Computer Science or related field
Experience:	5+ years of relative experience, 3 years in a supervisory capacity