

**SUBMITTAL TO THE FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**



ITEM: 11.1
(ID # 10265)

MEETING DATE:

Tuesday, December 10, 2019

FROM: FLOOD CONTROL DISTRICT:

SUBJECT: FLOOD CONTROL DISTRICT: Approval of On-Call Consulting Services Agreements Between the Riverside County Flood Control and Water Conservation District and Two Consultants – Digital Mapping Incorporated and Quantum Spatial, Inc. – for Aerial Imagery and/or Light Detection and Ranging Services for Fiscal Years 2019-2020 Through 2021-2022. [Total Cost \$1,200,000 – District Funds 100%]

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve two (2) Consulting Services Agreements between the Riverside County Flood Control and Water Conservation District ("District") and the following companies – Digital Mapping Incorporated and Quantum Spatial, Inc. (hereinafter collectively referred to as the "Consultants" or individually as a "Consultant") – for On-Call Aerial Imagery and/or Light Detection and Ranging Services for Fiscal Years 2019-2020 through 2021-2022;
2. Authorize the Chairwoman of the Board to execute the same on behalf of the District;
3. Authorize the General Manager-Chief Engineer or designee to approve, execute and amend any task orders issued under the Consulting Services Agreements within the limitation of the terms of the Consulting Services Agreements approved by the Board; and
4. Direct the Clerk of the Board to return three (3) executed Consulting Services Agreements for each Consultant to the District.

ACTION: Policy


Bob Cullen, Assistant Chief Engineer 11/20/2019

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Jeffries, seconded by Supervisor Washington and duly carried by unanimous vote, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Spiegel, Washington, Perez and Hewitt
Nays: None
Absent: None
Date: December 10, 2019
xc: Flood

Kecia R. Harper
Clerk of the Board

By: 
Deputy

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FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost
COST	\$400,000	\$400,000	\$1,200,000	\$0
NET COUNTY COST	\$0	\$0	\$0	\$0
SOURCE OF FUNDS: See Additional Fiscal Information			Budget Adjustment: No	
			For Fiscal Year: 19/20 – 21/22	

C.E.O. RECOMMENDATION: Approval

BACKGROUND:

Summary

The multi-year Consulting Services Agreements ("Agreements") set the terms and conditions by which the Consultants will provide services in support of the District's aerial imagery and/or light detection and ranging ("LiDAR") data compilation on an as-needed basis. These Agreements will allow the District to obtain aerial imagery and LiDAR data for the creation of detailed mapping for floodplains and District projects, digital terrain models, and to rapidly record and map the limits of severe flooding events. Each Agreement is for a not-to-exceed amount of \$200,000 in any fiscal year, with a further cap of \$600,000 for the entire term (Fiscal Years 2019-2020 to Fiscal Year 2021-2022). The District will fairly apportion the work among the Consultants based on a number of factors including, but not limited to, work load, continuity, special expertise and strength specific to the project.

County Counsel has approved the Agreements as to legal form. The Consultants have executed their respective Agreements.

Impact on Residents and Businesses

Costs incurred under these Agreements will be funded by ad valorem property tax revenue and entail no new fees, taxes or bonded indebtedness.

Additional Fiscal Information

Sufficient funding is available in the District's budget for Fiscal Year 2019-2020 and will be included in the proposed budget(s) for Fiscal Years 2020-2021 and 2021-2022, as appropriate.

<u>Contractor</u>	<u>FY 19/20 Agreement Maximum</u>	<u>FY 20/21 Agreement Maximum</u>	<u>FY 21/22 Agreement Maximum</u>	<u>Estimated Total Agreement Maximum</u>
1. Digital Mapping Incorporated	\$200,000	\$200,000	\$200,000	\$600,000
3. Quantum Spatial, Inc.	\$200,000	\$200,000	\$200,000	\$600,000

SOURCE OF FUNDS: (Continued)

- 25110 947400 525440 Zone 1 Const/Maint/Misc Professional Services

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- 25120 947420 525440 Zone 2 Const/Maint/Misc Professional Services
- 25130 947440 525440 Zone 3 Const/Maint/Misc Professional Services
- 25140 947460 525440 Zone 4 Const/Maint/Misc Professional Services
- 25150 947480 525440 Zone 5 Const/Maint/Misc Professional Services
- 25160 947500 525440 Zone 6 Const/Maint/Misc Professional Services
- 25170 947520 525440 Zone 7 Const/Maint/Misc Professional Services

Contract History and Price Reasonableness

The District published an RFQ – FCARC-00153 Aerial Imaging and Light Detection and Ranging (LIDAR) Services – on March 29, 2019; it closed on April 19, 2019. Three firms responded, and a selection committee comprised of District employees reviewed each firm's qualifications. Digital Mapping Incorporated and Quantum Spatial, Inc. were selected based on relevant experience, technical competence, past performance and their proposed work plan.

ATTACHMENTS:

1. Consulting Services Agreement - Digital Mapping Incorporated
2. Consulting Services Agreement - Quantum Spatial, Inc.

RKM:blm
P8/228134



Jason Farin, Senior Management Analyst

12/3/2019



Gregory P. Priamos, Director County Counsel

11/21/2019

CONSULTING SERVICES AGREEMENT
Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 through FY 2021/2022

This Consulting Services Agreement ("Agreement") dated as of December 10, 2019 is entered into by and between the Riverside County Flood Control and Water Conservation District, a body politic, hereinafter called "DISTRICT", and DIGITAL MAPPING INCORPORATED, a California corporation, hereinafter called "CONSULTANT".

1. PROJECT

CONSULTANT shall provide on-call professional services in support of DISTRICT's aerial imagery and/or Light Detection and Ranging (LiDAR) data, and in accordance with applicable federal, state, and local laws and regulations.

2. ON-CALL SERVICES

As requested by DISTRICT, CONSULTANT shall provide those services as described in the "Scope of Services", attached hereto as Exhibit "A" on an on-call basis. During the term of this Agreement, DISTRICT may request CONSULTANT to submit one or more proposals for the services for which CONSULTANT is selected pursuant to Exhibit "A". In the event DISTRICT finds CONSULTANT's proposal acceptable, DISTRICT may issue one or more Task Orders, the form of which shall generally conform with the "Task Order Approval Form" (attached hereto as Exhibit "D"). CONSULTANT understands and expressly agrees that the execution of this Agreement by CONSULTANT and/or the submission of any proposal to furnish services does not guarantee the assignment or approval of any subsequent Task Order(s).

3. PERSONNEL

A. Project Manager

For each Task Order, DISTRICT shall designate a staff representative who shall act as DISTRICT's Project Manager ("Project Manager") for the Task Order. In the

event DISTRICT changes its Project Manager, it shall notify CONSULTANT in writing.

B. CONSULTANT's Representative

CONSULTANT shall appoint a Designated Representative for each assigned Task Order who shall be responsible for coordinating all aspects of the assigned Task Order. CONSULTANT's Designated Representative shall be available to DISTRICT's Project Manager at reasonable times. In the event CONSULTANT changes its Designated Representative, it shall notify DISTRICT in writing.

C. Substitution of Key Personnel

At the time of Task Order approval, CONSULTANT shall identify to DISTRICT's Project Manager the Key Personnel who are responsible for executing the Task Order. Should one or more of the identified Key Personnel become unavailable, CONSULTANT may substitute other personnel of equal or greater competence upon DISTRICT's written approval. In the event that DISTRICT and CONSULTANT cannot come to an agreement regarding substitution of the Key Personnel, DISTRICT may terminate the Task Order pursuant to the applicable provisions of this Agreement.

4. TERM

The term of this Agreement shall become effective on the date it is executed and shall remain in effect through the required date for completion of an assigned Task Order, provided that such Task Order was approved prior to June 30, 2021 and is to be completed by June 30, 2022.

5. COMPENSATION

CONSULTANT shall receive compensation for all services satisfactorily performed and expenses incurred under this Agreement in accordance with the terms of the approved

Task Order(s). The annual maximum sum amount of any and all of the Task Orders approved pursuant to this Agreement shall not exceed Two Hundred Thousand Dollars (\$200,000) in any given year. The cumulative total of all task orders shall not exceed Six Hundred Thousand Dollars (\$600,000) over the entire term of this Agreement.

6. PAYMENT

Payment shall be made in accordance with the Compensation/Fee Rate Schedule attached to an approved Task Order. Upon satisfactory performance of CONSULTANT's services pursuant to DISTRICT approved scope of services in the Task Order, DISTRICT shall make payment to CONSULTANT within thirty (30) days after receipt of appropriate invoice(s) from CONSULTANT. DISTRICT shall not pay interest or finance charges on any outstanding balance(s).

CONSULTANT shall keep employee and expense records according to customary accounting methods and such records shall, upon request, be made available for inspection by DISTRICT to verify CONSULTANT's invoices. Unless otherwise agreed, all invoices shall itemize charges to conform to the scope of services in the approved Task Order. In the event of any conflict between the scope of services or provisions in the approved Task Order and the associated portion(s) of work as set forth in Exhibits "A", "B" and "C", the services approved in the Task Order shall govern.

DISTRICT shall notify CONSULTANT of any disputed charges within thirty (30) days of receipt of CONSULTANT's invoice. DISTRICT reserves the right to withhold payment for work that is not invoiced in a timely manner or if CONSULTANT has not satisfactorily performed the services.

7. INVOICES

All work shall be invoiced in a timely manner. All invoices shall be mailed directly to DISTRICT's Accounts Payable Section. Each invoice shall include the following information:

- A. Purchase Order Number associated with the approved Task Order (as provided by DISTRICT).
- B. Billing Period (indicating the date(s) when the services were rendered).

Itemized invoices shall be mailed following completion of requested services. If progress payments are agreed upon, then they shall be processed monthly. Monthly invoices shall be mailed to DISTRICT no later than the 15th day of the month following the end of the Billing Period. Incomplete invoices will be returned to CONSULTANT for correction.

8. PROJECT PERFORMANCE

A. Commencement of Services

CONSULTANT shall commence performance of the services for each Task Order upon receipt of DISTRICT's approved Task Order.

B. Time of Completion

Time is of the essence in the performance of this Agreement. CONSULTANT shall complete services in accordance with the schedule(s) set forth in the approved Task Order(s).

9. LICENSES

At all times while performing services under this Agreement, CONSULTANT, its employees, agents, contractors, and subcontractors shall maintain professional licenses as required by the laws of the State of California, including but not limited to Chapter 15 of Division 3 of the Business and Professions Code (Professional Land Surveyors' Act).

10. STANDARD OF CARE

While performing the services, CONSULTANT shall exercise the reasonable professional care and skill customarily exercised by reputable members of CONSULTANT's profession practicing in the State of California, and shall use reasonable diligence and best judgment while exercising CONSULTANT's professional skill and expertise. By executing this Agreement, CONSULTANT represents and maintains that CONSULTANT has the necessary experience and expertise to skillfully perform all services, duties, and obligations required by this Agreement and to fully and adequately complete each approved Task Order.

By entering into this Agreement, CONSULTANT assumes responsible charge of the work pursuant to Section 8703 of the Professional Land Surveyors' Act; Chapter 15 (commencing with Section 8700) of Division 3 of the Business and Professions Code, where applicable; and shall be wholly responsible for the completeness and accuracy of all calculations, data, measurements, calibration, plans, specifications, computer files, maps, field notes, reports, estimates, and any other materials prepared pursuant to this Agreement, and shall check all such material accordingly.

11. ERRORS AND OMISSIONS

In the event CONSULTANT's data, imagery, LiDAR data, reports, flight provisions, estimates, or any work products contain any errors or omissions that cause DISTRICT to incur additional expense beyond what would have otherwise resulted if there were no errors or omissions in CONSULTANT's data, imagery, LiDAR data, reports, flight provisions, estimates, or any work products, such additional expense shall be borne solely by CONSULTANT.

12. AERIAL IMAGING AND LIGHT DETECTION AND RANGING (LiDAR)

SERVICES

A. Specifications and Standards

All work shall be performed in accordance with DISTRICT standards, as described in Exhibits "B" and "C", attached hereto and made a part hereof, and any special criteria established by DISTRICT for specific task or services. All deliverables prepared by CONSULTANT pursuant to this Agreement shall be prepared in accordance with Exhibits "B" and "C" and/or current DISTRICT practices, regulations, policies, procedures, and standards where applicable. All deliverables shall be subject to review and approval by DISTRICT.

Services provided by CONSULTANT under this Agreement shall be performed in a manner consistent with that standard of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

B. Control Surveys

Unless otherwise specified herein, DISTRICT shall provide CONSULTANT with primary survey control monuments including both horizontal (California Coordinate System) and vertical control positions. DISTRICT shall assign a staff Land Surveyor to coordinate with CONSULTANT in connection with any work assigned under this Agreement.

C. Quality Control

CONSULTANT shall implement and maintain effective quality control procedures throughout all phases of assigned task and/or services. CONSULTANT shall have a quality control plan in effect during the entire time task and/or services are being performed under this Agreement. The plan shall establish a process whereby all calculations and documents prepared under this

Agreement are independently checked, corrected, and back-checked, and all pertinent job related correspondence and memoranda are bound in appropriate job files. Evidence that the quality control plan is functional may be requested by DISTRICT. All documents and any other items submitted to DISTRICT for review shall be initialed by CONSULTANT's project manager, or his designee, as being fully checked and that the preparation of the material followed the quality control plan established for the work.

13. NOTICES

Any and all notices sent or required to be sent to the parties of this Agreement will be mailed by first class mail, postage prepaid, to the following addresses:

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
1995 Market Street
Riverside, CA 92501
Attn: Finance Division

DIGITAL MAPPING
INCORPORATED
21062 Brookhurst Street, #101
Huntington Beach, CA 92646
Attn: Gencaga Aliyazicioglu

14. REQUIRED INSURANCE

CONSULTANT shall not commence operations until DISTRICT has been furnished with original certificate(s) of insurance and original certified copies of endorsements and, if requested, certified original policies of insurance including all endorsements and any and all other attachments as required in this Section.

Without limiting or diminishing CONSULTANT's obligation to indemnify or hold DISTRICT harmless, CONSULTANT shall procure and maintain or cause to be maintained, at its sole cost and expense, the following insurance coverages during the term of this Agreement. As respects to the insurance section only, DISTRICT herein refers to the Riverside County Flood Control and Water Conservation District, the County of Riverside, its agencies, districts, special districts, and departments, their respective

directors, officers, Board of Supervisors, employees, elected or appointed officials, agents, or representatives as Additional Insureds.

A. Workers' Compensation

If CONSULTANT has employees as defined by the State of California, CONSULTANT shall maintain statutory Workers' Compensation Insurance (Coverage A) as prescribed by the laws of the State of California. Policy shall include Employers' Liability (Coverage B) including Occupational Disease with limits not less than \$1,000,000 per person per accident. Policy shall be endorsed to waive subrogation in favor of DISTRICT.

B. Commercial General Liability

Commercial General Liability: Insurance Services Office Form CG 00 01 covering Commercial General Liability on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than \$2,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

If the owner/operator maintains broader coverage and/or higher limits than the minimums shown above, DISTRICT requires and shall be entitled to the broader coverage and/or higher limits maintained by the owner/operator. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to DISTRICT.

Policy shall name DISTRICT as Additional Insureds.

C. Vehicle Liability

If vehicles or mobile equipment are used in the performance of the obligations under this Agreement, then CONSULTANT shall maintain liability insurance for all owned, non-owned or hired vehicles so used in an amount not less than \$1,000,000 per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this Agreement or be no less than two (2) times the occurrence limit. Policy shall name DISTRICT as Additional Insureds.

D. Professional Liability

CONSULTANT shall maintain Professional Liability Insurance providing coverage for CONSULTANT's performance of work included within this Agreement, with a limit of liability of not less than \$1,000,000 per occurrence and \$2,000,000 annual aggregate. If CONSULTANT's Professional Liability Insurance is written on a claims made basis rather than an occurrence basis, such insurance shall continue through the term of this Agreement and CONSULTANT shall purchase at his sole expense either 1) an Extended Reporting Endorsement (also known as Tail Coverage); or 2) Prior Dates Coverage from a new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that CONSULTANT has maintained continuous coverage with the same or original insurer. Coverage provided under items: 1), 2) or 3) will continue as long as the law allows.

E. Insurance Requirements for Aviation Services Including Unmanned Aircrafts (Drones)

Coverage shall be at least as broad as:

Aviation Liability Insurance on an "occurrence" basis, including products and completed operations, property damage, and bodily injury with limits no less than \$2,000,000 per occurrence, and \$4,000,000 in the aggregate. This coverage may also be provided by endorsement to a Commercial General Liability policy as describe in section 14.B of this agreement

F. General Insurance Provisions – All Lines:

- i. Any insurance carrier providing insurance coverage hereunder shall be admitted to the State of California and have an A.M. BEST rating of not less than an A: VIII (A: 8) unless such requirements are waived, in writing, by the County Risk Manager. If the County Risk Manager waives a requirement for a particular insurer such waiver is only valid for that specific insurer and only for one policy term.
- ii. CONSULTANT must declare its insurance self-insured retention for each coverage required herein. If any such self-insured retention exceed \$500,000 per occurrence each such retention shall have the prior written consent of the County Risk Manager before the commencement of operations under this Agreement. Upon notification of self-insured retention deemed unacceptable to DISTRICT, and at the election of the County Risk Manager, CONSULTANT's carriers shall either: 1) reduce or eliminate such self-insured retention with respect to this Agreement with DISTRICT; or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.
- iii. CONSULTANT shall cause CONSULTANT's insurance carrier(s) to furnish DISTRICT with 1) a properly executed original certificate(s) of

insurance and certified original copies of endorsements effecting coverage as required herein; and 2) if requested to do so orally or in writing by the County Risk Manager, provide original certified copies of policies including all endorsements and all attachments thereto, showing such insurance is in full force and effect. Further, said certificate(s) and policies of insurance shall contain the covenant of the insurance carrier(s) that a minimum of thirty (30) days written notice shall be given to DISTRICT prior to any material modification, cancellation, expiration, or reduction in coverage of such insurance. If CONSULTANT's insurance carrier(s) policies does not meet the minimum notice requirement found herein, CONSULTANT shall cause CONSULTANT's insurance carrier(s) to furnish a 30-day Notice of Cancellation Endorsement.

- iv. In the event of a material modification, cancellation, expiration, or reduction in coverage, this Agreement shall terminate forthwith, unless DISTRICT receives, prior to such effective date, another properly executed original certificate of insurance and original copies of endorsements or certified original policies, including all endorsements and attachments thereto, evidencing coverages set forth herein and the insurance required herein is in full force and effect. An individual authorized by the insurance carrier to do so on its behalf shall sign the original endorsements for each policy and the certificate of insurance.
- v. It is understood and agreed by the parties hereto that CONSULTANT's insurance shall be construed as primary insurance, and DISTRICT's insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory.

- vi. If during the term of this Agreement or any extension thereof there is a material change in the scope of services; or there is a material change in the equipment to be used in the performance of the scope of work which will add additional exposures (such as the use of aircraft, watercraft, cranes, etc.); or the term of this Agreement, including any extensions thereof, exceeds five (5) years, DISTRICT reserves the right to adjust the types of insurance required under this Agreement and the monetary limits of liability for the insurance coverages currently required herein, if, in the County Risk Manager's reasonable judgment, the amount or type of insurance carried by CONSULTANT has become inadequate.
- vii. CONSULTANT shall pass down the insurance obligations contained herein to all tiers of subcontractors working under this Agreement.
- viii. The insurance requirements contained in this Agreement may be met with a program(s) of self-insurance acceptable to DISTRICT.
- ix. CONSULTANT agrees to notify DISTRICT of any claim by a third party or any incident or event that may give rise to a claim arising from the performance of this Agreement.

15. INDEMNIFICATION

CONSULTANT shall indemnify and hold harmless DISTRICT (including its directors, officers, Board of Supervisors, elected and appointed officials, employees, agents, and representatives) from any and all liability, claim, damage, proceeding or action, present or future, based upon, arising out of, or in any way relating to CONSULTANT's (including its officers, employees, subcontractors, and agents) actual or alleged negligent, reckless, or willful misconduct, acts, or omissions related to this Agreement, performance under this Agreement, or failure to comply with the requirements of this Agreement,

including but not limited to: (a) property damage; (b) bodily injury or death; or (c) any other element of any kind or nature whatsoever.

CONSULTANT shall defend, at its sole expense, including all costs and fees (including but not limited to attorney fees, cost of investigation, defense, and settlements or awards), DISTRICT (including its directors, officers, Board of Supervisors, elected and appointed officials, employees, agents, and representatives) in any claim, proceeding, or action for which indemnification is required.

With respect to any of CONSULTANT's indemnification requirements, CONSULTANT shall, at its sole cost, have the right to use counsel of their own choice and shall have the right to adjust, settle, or compromise any such claim, proceeding, or action without the prior consent of DISTRICT, provided, however, that such adjustment, settlement, or compromise in no manner whatsoever limits or circumscribes CONSULTANT's indemnification obligations to DISTRICT.

CONSULTANT's indemnification obligations shall be satisfied when CONSULTANT has provided to DISTRICT the appropriate form of dismissal (or similar document) relieving DISTRICT from any liability for the claim, proceeding, or action involved. The specified insurance limits required in this Agreement shall in no way limit or circumscribe CONSULTANT's obligations to indemnify and hold harmless DISTRICT from third party claims.

In the event there is conflict between this section and California Civil Code Section 2782, this section shall be interpreted to comply with California Civil Code Section 2782. Such interpretation shall not relieve CONSULTANT from indemnifying DISTRICT and the County of Riverside (including its directors, officers, Board of Supervisors, elected and appointed officials, employees, agents, and representatives) to the fullest extent allowed by law.

16. WORK PRODUCT

CONSULTANT shall provide DISTRICT with all data, imagery, analog photography, LiDAR data, calculations, technical studies, plans, specifications, computer files, field notes, estimates, drawings, logs, maps, exhibits, reports, and any other documents as set forth in the approved Task Order(s). All data, imagery, analog photography, LiDAR data, calculations, technical studies, plans, specifications, computer files, field notes, drawings, logs, maps, exhibits, reports, and any other documents produced by CONSULTANT in the performance of the services as set forth in the approved Task Order(s) shall become and remain the sole property of DISTRICT. CONSULTANT shall not publish or transfer any material produced or resulting from activities supported by this Agreement without the written consent of the General Manager-Chief Engineer of DISTRICT. If any such material is subject to copyright or trademark, the parties agree that the right to any and all copyright and/or trademark in and to the material is expressly reserved to DISTRICT. If any such material is copyrighted, the parties hereto understand and agree that DISTRICT reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish, and use such material, in whole or in part, and to authorize others to do so, provided written credit is given the author.

17. TERMINATION

At any time during the term of this Agreement, DISTRICT may:

A. Agreement

- 1) Terminate this Agreement without cause upon providing CONSULTANT thirty (30) days written notice stating the extent and effective date of termination; or
- 2) Upon five (5) days written notice, terminate this Agreement for CONSULTANT default, if CONSULTANT refuses or fails to comply

with the provisions of this Agreement or fails to make progress so as to endanger performance and does not cure such failure within a reasonable period of time. In the event of such termination, DISTRICT may proceed with the work in any such manner it deems appropriate.

In the event DISTRICT issues a Notice of Termination, CONSULTANT shall: i) stop all work under this Agreement on the date specified in the Notice of Termination; and ii) transfer to DISTRICT and deliver in the manner and to the extent, if any, as directed by DISTRICT, any work product, data, or reports prepared by CONSULTANT, whether partially or fully completed.

In the event DISTRICT terminates this Agreement, DISTRICT shall make payment for all services performed in accordance with this Agreement to the date of termination, a total amount which bears the same ratio to the total maximum fee otherwise payable under this Agreement as the services actually bear to the total services necessary for performance of this Agreement. Notwithstanding any of the other provision of this Agreement, CONSULTANT rights under this Agreement shall terminate (except for fees accrued prior to the date of termination) upon dishonesty or a willful or material breach of this Agreement by CONSULTANT; or in the event of CONSULTANT's unwillingness or inability for any reason whatsoever to perform the duties hereunder; or if the Agreement is terminated pursuant to Section 28 (NON-DISCRIMINATION). In such event, CONSULTANT shall not be entitled to any further compensation under this Agreement. The rights and remedies of DISTRICT provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

B. Approved Task Order

Terminate an approved Task Order or portion thereof without cause upon providing CONSULTANT fourteen (14) days written notice stating the extent and effective date of termination. In the event DISTRICT issues a Notice of Termination for an approved Task Order, CONSULTANT shall: i) stop all work under the Task Order on the date specified in the Notice of Termination; and ii) transfer to DISTRICT and deliver in the manner, and to the extent, if any, as directed by DISTRICT, any work product, data, or reports prepared by CONSULTANT, whether partially or fully completed.

In the event DISTRICT terminates an approved Task Order, DISTRICT shall make payment for all services satisfactorily performed in accordance with the negotiated Task Order to the date of termination, a total amount which bears the same ratio to the total maximum fee otherwise payable under the Task Order as the services actually bear to the total services necessary for performance of the Task Order.

18. BASIC SERVICES OF CONSULTANT

The scope of services associated with the performance of any specific Task Order under this Agreement shall be expressly defined and agreed upon prior to the approval of the Task Order by DISTRICT's General Manager-Chief Engineer, or designee. Upon execution of this Agreement, the Chief of Surveying and Mapping Division shall be authorized to sign and approve any Task Orders issued under this Agreement. Any changes to the approved scope of services of a Task Order issued under this Agreement must be authorized by DISTRICT's General Manager-Chief Engineer, or designee, and shall be made in accordance with Section 22 (CHANGES TO TASK ORDER SCOPE OF SERVICES).

All work prepared by CONSULTANT shall be subject to the approval of DISTRICT's Project Manager. CONSULTANT shall allow Project Manager to inspect and review CONSULTANT's work in progress at any reasonable time. All imagery, LiDAR data and similar work products prepared for submission in the course of providing services under this Agreement shall be submitted to the Project Manager in draft form. In the event that Project Manager, in his or her sole discretion, determines the formally submitted work product to be incomplete or otherwise inadequate, CONSULTANT may be required to revise and resubmit the work at no additional cost to DISTRICT. Should CONSULTANT fail to make requested corrections in a timely manner, such corrections may be made by DISTRICT, and the cost thereof charged to CONSULTANT. Neither DISTRICT's review nor approval shall give rise to any liability or responsibility on the part of DISTRICT, or waive any of DISTRICT's rights, or relieve CONSULTANT of its professional responsibilities or obligations under this Agreement.

19. PREVAILING WAGE

CONSULTANT shall comply with all applicable provisions of the California State Labor Code regarding prevailing wages, Department of Industrial Relations Division of Apprenticeship Standards Labor and Labor Codes. All workers shall be paid not less than the general prevailing rate of wages and benefits for work of a similar character in the locality in which the work is performed, as provided in Labor Code Sections 1770 et seq. Pursuant to the Labor Code, DISTRICT has obtained for the Board of Supervisors of DISTRICT from the Director of the Department of Industrial Relations, State of California, his determinations of general prevailing rates of per diem wages applicable to the work, and for holiday and overtime work, including employer payments for health and welfare, pension, vacation, apprentices, and similar purposes for each craft, classification, or type of workman needed, as set forth on the schedule which is on file at

DISTRICT office, and which will be made available to any interested person upon request.

20. INDEPENDENT CONTRACTOR/NON-EXCLUSIVE AGREEMENT

CONSULTANT and the agents and employees of CONSULTANT shall act at all times in an independent capacity during the term of this Agreement and in the performance of the services to be rendered hereunder and shall not act as or shall not be and shall not in any manner be considered to be employees or agents of DISTRICT.

This is not an exclusive agreement between DISTRICT and CONSULTANT, and DISTRICT may obtain the same or similar services from another firm if DISTRICT determines that is appropriate. DISTRICT is not obligated to have CONSULTANT provide a specific minimum amount of services pursuant to this Agreement.

21. SUBCONTRACTING

CONSULTANT may, at CONSULTANT's own expense, retain or employ sub-consultants to accomplish certain portions of the work covered by this Agreement. However, except as specifically provided in the Compensation/Fee Rate Schedule attached to the approved Task Order or as expressly identified in this Agreement, no portion of the services pertinent to this Agreement shall be subcontracted without prior written approval and authorization by DISTRICT.

Should one or more of the sub-consultants, as identified in the Compensation/Fee Rate Schedule attached to the approved Task Order or as expressly identified in this Agreement, become unavailable, CONSULTANT may substitute other sub-consultants of equal or greater competence upon written approval by DISTRICT. In the event that DISTRICT and CONSULTANT cannot agree as to the substitution of the sub-consultant, DISTRICT may terminate the Task Order, pursuant to the applicable provisions of this Agreement.

In the event CONSULTANT subcontracts any portion of CONSULTANT's duties under this Agreement, CONSULTANT shall require its sub-consultants to comply with the terms of this Agreement in the same manner as required of CONSULTANT. The fact that CONSULTANT employs sub-consultants not in his regular employ shall not relieve CONSULTANT of any responsibility regarding the adequacy of the sub-consultant's work performed or services provided pursuant to this Agreement.

22. CHANGES TO TASK ORDER SCOPE OF SERVICES

CONSULTANT shall not perform any additional work or services outside the scope of an approved Task Order without the prior written approval of DISTRICT's General Manager-Chief Engineer or designee. If at any time during the performance of an approved Task Order CONSULTANT believes that it is necessary to include certain work or services which are not clearly covered under the scope of an approved Task Order, CONSULTANT shall immediately notify the Project Manager in writing of CONSULTANT's assertion that the work is out of scope. Said notification by CONSULTANT to the Project Manager shall not in any way be construed as proving that the work or services in question are outside the scope of the Task Order. The Project Manager must approve or reject CONSULTANT's assertion in writing. In the event the Project Manager determines that the work is out of scope and agrees with CONSULTANT, the additional work or services shall not be commenced until such additional work or services has been duly authorized by a new or revised Task Order that covers the new scope, cost, and schedule. In the event that such notification is not given or if the Project Manager is not afforded an opportunity to negotiate the appropriate fee for such additional services prior to CONSULTANT's commencement of such additional services, then CONSULTANT shall be deemed to have agreed to perform the work or services without any additional compensation and to have accepted sole responsibility for

the performance of said work or services. Extra work done or services performed without a new or revised Task Order from DISTRICT's General Manager-Chief Engineer, or designee, shall be considered unauthorized and shall not be paid for by DISTRICT.

At any time during the performance of an approved Task Order, DISTRICT may request that CONSULTANT perform extra services. Any work which is determined by DISTRICT to be necessary for the proper completion of the approved Task Order but which neither CONSULTANT nor DISTRICT reasonably anticipated would be necessary at the time the scope of services for the assigned Task Order was approved, must be authorized by DISTRICT's General Manager-Chief Engineer, or designee, by a new or revised Task Order. Upon execution of this Agreement, the Chief of Surveying and Mapping Division shall be authorized to approve and sign a new or revised Task Order to change the previously approved scope of services of any Task Order issued under this Agreement.

At any time during the performance of the Task Order, the Project Manager, upon providing five (5) days written notice to CONSULTANT, may delete services and the associated fees from the Task Order. In the event DISTRICT requests deletion of services from the Task Order, DISTRICT shall make payment for all services satisfactorily performed in accordance with the negotiated Task Order up to the effective date of deletion; the amount of the payment shall be prorated to the total services necessary for completion of the Task Order. Any work product developed for the deleted services shall be provided to DISTRICT.

23. DISPUTES

- A. In the event CONSULTANT considers any work demanded of CONSULTANT to be outside the requirements of this Agreement, or if CONSULTANT considers any order, instruction, or decision of DISTRICT to be unfair, CONSULTANT

shall promptly, upon receipt of such order, instruction, or decision, ask for a written confirmation of the same whereupon CONSULTANT shall proceed without delay to perform the work or to conform to the order, instruction, or decision. However, if CONSULTANT finds such order, instruction, or decision unsatisfactory, CONSULTANT shall, within twenty-one (21) calendar days after receipt of same, file a written protest with DISTRICT stating clearly and in detail its objections and reasons therefor. Except for such protests or objections as are made of record in the manner specified and within the time stated herein, and except for such instances where the basis of a protest could not reasonably have been foreseen by CONSULTANT within the time limit specified for protest, CONSULTANT hereby waives all grounds for protests or objections to orders, instruction, or decisions of DISTRICT and hereby agrees that, as to all matters not included in such protests, the orders, instructions, and decisions of DISTRICT will be limited to matters properly falling within DISTRICT's authority.

- B. Any controversy or claim arising out of or relating to this Agreement which cannot be resolved by mutual agreement may be settled by arbitration, provided that the parties hereto mutually agree to submit to arbitration.
- C. Neither the pendency of a dispute nor its consideration by arbitration shall excuse CONSULTANT from full and timely performance in accordance with the terms of this Agreement.

24. ASSIGNMENT

Neither this Agreement nor any part thereof shall be assigned by CONSULTANT without the prior written consent of DISTRICT and approval by DISTRICT Board of Supervisors. The following events shall not be deemed an assignment and would not require prior written consent by DISTRICT:

- A. A partner in a partnership may transfer all or part of his/her or its interest in the partnership: 1) to another partner of the partnership; 2) by intestate succession or testamentary disposition on the partner's death; 3) by a gift to a partner's spouse or children to a trustee for the partner's spouse or children or both; 4) to a corporation if, immediately after the transfer, the partner making the transfer continues to own at least 50 percent of that corporation's voting shares.
- B. Any merger, consolidation, or other reorganization of CONSULTANT, or the sale of other transfer of a non-controlling percentage of the capital stock or interest of CONSULTANT, or the sale of not more than 50 percent of the value of CONSULTANT's assets.

For any of the above events not deemed as an assignment, such events shall require written notice to DISTRICT at least 30 days prior to the occurrence of such event.

25. CONFLICT OF INTEREST

CONSULTANT covenants that it presently has no interest, including but not limited to, other projects or independent contracts, and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. CONSULTANT further covenants that in the performance of this Agreement, no person having any such interest shall be employed or retained by it under this Agreement.

26. JURISDICTION/LAW/SEVERABILITY

This Agreement is to be construed in accordance with the laws of the State of California. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions shall be declared severable and shall be given full force and effect to the extent possible.

Any legal action, in law or equity, related to the performance or interpretation of this Agreement shall be filed only in the Superior Court for the State of California located in Riverside, California, and the parties waive any provision of law providing for a change of venue to another location. Prior to the filing of any legal action, the parties shall be obligated to attend a mediation session with a neutral mediator to try to resolve the dispute.

27. WAIVER

Any waiver by DISTRICT of any breach of any one or more of the terms of this Agreement shall not be construed to be a waiver of any subsequent or other breach of the same or any other term thereof. Failure on the part of DISTRICT to require exact, full, and complete compliance with any terms of this Agreement shall not be construed as in any manner changing the terms hereof, or estopping DISTRICT from enforcement hereof.

28. NON-DISCRIMINATION

In the performance of the terms of this Agreement, CONSULTANT shall not engage in nor permit others he may employ to engage in discrimination in the employment of persons because of the race, color, national origin or ancestry, religion, physical handicap, disability as defined by the Americans with Disabilities Act (ADA), medical condition, marital status or sex of such persons, in accordance with the provision of California Labor Code Section 1735 and, to the extent they shall be found to be applicable hereto, shall comply with the provisions of the California Fair Employment and Housing Act (Government Code Section 12900 et seq.), and the Federal Civil Rights Act of 1964 (P.L. 88-352).

In the event of CONSULTANT's noncompliance with the nondiscrimination provisions of this Agreement, DISTRICT shall impose such Agreement sanctions as it determines to be appropriate including, but not limited to:

A. Withholding of payments to CONSULTANT under the Agreement until CONSULTANT complies;

B. Cancellation, termination, or suspension of the Agreement in whole or in part.

CONSULTANT shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under this Agreement.

29. EDD REPORTING REQUIREMENTS

In order to comply with child support enforcement requirements of the State of California, DISTRICT may be required to submit a Report of Independent Contractor(s) form DE 542 to the Employment Development Department ("EDD"). CONSULTANT agrees to furnish the required data and certifications to DISTRICT within 10 days of notification of award of Agreement when required by EDD. This data will be transmitted to governmental agencies charged with the establishment and enforcement of child support orders. Failure of CONSULTANT to timely submit the data and/or certificates required may result in the contract being awarded to another consultant. In the event a contract has been issued, failure of CONSULTANT to comply with all federal and state reporting requirements for child support enforcement or to comply with all lawfully served Wage and Earnings Assignments Orders and Notices of Assignment shall constitute a material breach of Agreement. If CONSULTANT has any questions concerning this reporting requirement, please call 916.657.0529. CONSULTANT should also contact its local Employment Tax Customer Service Office listed in the telephone directory in the State Government section under "Employment Development Department" or access their Internet site at www.edd.ca.gov.

30. FORCE MAJEURE

If either of the Parties cannot comply with any provision of this Agreement due to causes beyond its reasonable control, and which could not have been reasonably anticipated,

such as acts of God, acts of war, civil disorders, or other similar acts, such party shall not be held liable for such failure to comply.

31. DISCREPANCIES

In the event of any conflict between the scope of services or provisions in the approved Task Order and the associated portion(s) of work as set forth in Exhibits "A", "B" and "C", the services approved in the Task Order shall govern.

32. NON-APPROPRIATION OF FUNDS

It is mutually agreed and understood that the obligation(s) of DISTRICT are limited by and contingent upon the availability of DISTRICT funds for the reimbursement of CONSULTANT's fees. In the event that such funds are not forthcoming for any reason, DISTRICT shall immediately notify CONSULTANT in writing. This Agreement shall be deemed terminated and have no further force and effect immediately upon receipt of DISTRICT's notification by CONSULTANT. In the event of such termination, CONSULTANT shall be entitled to reimbursement of its costs in accordance with Section 5 (COMPENSATION) and Section 6 (PAYMENT).

33. RECORD RETENTION/AUDITS

A. CONSULTANT shall retain complete and accurate records relating to the nature and extent of CONSULTANT's costs incurred while providing services authorized under this Agreement for at least three (3) years from the date of the final payment to CONSULTANT under this Agreement or completion of any audit commenced within the three year period. These records shall, upon written request, be made available for inspection by DISTRICT.

B. DISTRICT, the County of Riverside, the State of California, or any of their duly authorized representatives shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement.

CONSULTANT agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records.

34. ALTERATION

No alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the Parties hereto and no oral understanding or agreement not incorporated herein shall be binding on any of the Parties hereto.

35. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter hereof. Any modifications to the terms of this Agreement must be in writing and signed by the Parties herein.

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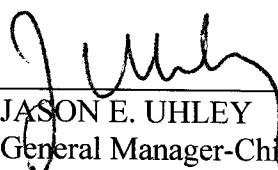
IN WITNESS WHEREOF, the parties hereto have executed this Agreement on

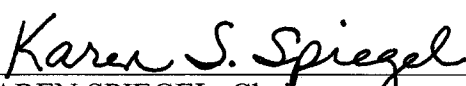
DEC 1 0 2019

(to be filled in by Clerk of the Board)

RECOMMENDED FOR APPROVAL:

**RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

By: 
JASON E. UHLEY
General Manager-Chief Engineer

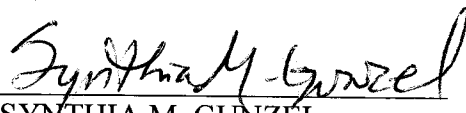
By: 
KAREN SPIEGEL, Chairwoman
Riverside County Flood Control and Water
Conservation District Board of Supervisors

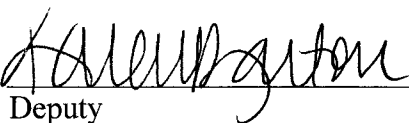
APPROVED AS TO FORM:

ATTEST:

GREGORY P. PRIAMOS
County Counsel

KECIA HARPER
Clerk of the Board


By: 
SYNTHIA M. GUNZEL
Chief Deputy County Counsel

By: 
Deputy

(SEAL)

Consulting Services Agreement with Digital Mapping Incorporated
Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 to FY 2021/2022
10/08/19
RKM:blm

DIGITAL MAPPING INCORPORATED

By: 
GENCAGA ALIYAZICIOĞLU
Project Manager / CFO

Consulting Services Agreement with Digital Mapping Incorporated
Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 to FY 2021/2022
10/08/19
RKM:blm

Exhibit "A" Scope of Services

A. SCOPE OF SERVICES

The Consultant will provide any one or more of the following mapping services on an on-call basis:

- Analog black and white photography
- Analog color photography
- Digital imagery
- Light Detection and Ranging (LiDAR) data

B. REQUIREMENTS FOR IMAGERY/LIDAR

1. Requirements for Analog Imagery

All aspects of the aerial flight and acquisition of aerial photography to follow industry best practices. Specifications for aerial photograph have been included in Section C below.

2. Requirements for Digital Imagery

All aspects of the aerial flight and acquisition of aerial photography to follow industry best practices. State the manufacturer and model of the digital sensor you will be using.

- 2.1. Provide color digital imagery with 60% forward overlap and 30% side overlap.
- 2.2. When airborne GPS is required, provide the raw airborne GPS data as the District will process the data. District survey staff will have a minimum of two base stations running at the time of the flight so coordination will need to take place between the Consultant and District survey staff. District survey staff will provide the ground receiver information.
 - 2.2.1. Provide the exterior orientation elements X, Y, Z, T, omega, kappa, and phi.
 - 2.2.2. Provide the pilot's log sheet.
 - 2.2.3. Provide a detailed diagram of the separation between the GPS antenna and the camera.
 - 2.2.4. The flight window is from 10:30 a.m. to 2:30 p.m. and will only be flown Monday through Thursday as District survey crews do not work on Fridays or weekends.

Exhibit "A"
Scope of Services

- 2.3. Provide the imagery in 8- and 12-bit format and compress using a Q-factor of 5.
 - 2.4 When labeling the images, the job name, photo scale, date, and exposure number should be shown on the first exposure only. All subsequent exposures should have date and exposure number only. Date in upper left corner and photo number in upper right corner. Number photos as indicated on the flight plan. Use aerial font size 14.
3. **Requirements for LiDAR Data**

All aspects of the LiDAR and acquisition to follow industry best practices.

Provide LiDAR generated bare earth Digital Terrain Model (DTM) all points file and a separate file with model key points. High resolution DTM having a vertical accuracy of 95% at 0.6 feet and 90% at 0.5 feet and, as a separate option, a DTM having a vertical accuracy of 95% at 1.2 feet and 90% at 1.0 foot, when checked in flat open terrain.

Exhibit "B"

Specifications for Aerial Photography

1. Aircraft and Crew
 - 1.1 All aircraft shall be maintained and operated in accordance with regulations of the Federal Aviation Administration and the Civil Aeronautics Board. The recommended FAA preflight inspection of the aircraft and instruments must be performed prior to each photographic mission. Aircraft shall have a service ceiling (with operating load of crew, camera, film, oxygen, and other required equipment) not less than 5% above the highest altitude necessary to achieve the smallest photographic scale required. If the project is in controlled air space, the appropriate Air Traffic Control Center (AIRTCC) must be contacted. If the project area includes a military installation, the contractor must comply with security regulations. At the flight altitudes required for this photography, the aircraft shall have flight characteristics to provide a stable platform for the operation of the camera that will not degrade the orientation or the resolution of the photographic image.
 - 1.2 The design of the aircraft shall be such that when the camera is mounted, an unobstructed view is obtained, shielded from the exhaust gasses, oil, effluence, and air turbulence.
 - 1.2.1 If an aircraft camera has a port glass it shall be preferably 50mm thick but not less than 37mm thick. The surface finish shall be 80/50 or better. Glass material shall be polished crown, group category M, Mil Specs Mil-W-1366F (ASG) October 1975, C-I optical quality or better. The physical characteristics of any port glass shall be reported to the District on request.
 - 1.2.2 The camera shall be mounted vertically in the aircraft in a mount designed to isolate the camera from vibration of the aircraft. Angular vibration of the camera shall be reduced to such a level so as to have no significant detrimental effect on resolution.
 - 1.2.3 The camera window shall be mounted in material eliminating excessive mechanical stress to the window. The opening shall be designed so that the field of view is unobstructed when the camera is mounted.
 - 1.3 Individual crew members shall have two years or more apprenticeship in flying photographic missions for aerial surveys. In addition, it is desirable that crew members have meaningful prior experience with the same type camera and aircraft to which assigned.
2. Camera and Associated Equipment

Exhibit "B"

Specifications for Aerial Photography

2.1 The camera will be a metric quality vertical format aerial mapping of nominal focal length of 152mm with format dimensions of 230mm x 230mm. The lens must meet the requirements outlined below based on a U.S. Geological Survey Report of Camera Calibration. Failure of the camera to meet all of the specified requirements shall be cause for rejection of the proposal.

2.1.1 Lens shall be corrected for the spectral range of the film used. The lens shall meet or exceed all the requirements outlined in items (a), (b), (c), and (d) below.

- (a) Calibrated focal length - 153.0mm \pm 3.0mm;
- (b) Usable angular field - at least 90°;
- (c) Radial distortion in the usable angular field, based on the calibrated focal length referred to the calibrated principal point (point of symmetry), shall not exceed 12 μ m for any tested point, and 16 of the tested points shall have radial distortion values not exceeding 5 μ m.
- (d) Resolution - The lens should have an Area Weighted Average Resolution (AWAR) of at least 72.0 line pairs per millimeter as determined by the U.S. Geological Survey Report of Calibration. The following table lists the minimum acceptable radial and tangential lens resolution at various field angles.

Field angle	0°	7.5°	15°	22.5°	30°	35°	40°
<u>Line pairs per mm</u>							
Radial	95	87	67	57			
Tangential	95	80	70	67	67	57	45

2.1.2 Filters - Only optical filters provided by the lens manufacturer meeting the same optical specifications shall be used. The filter shall have surfaces parallel within 10 seconds of arc and its optical quality shall be such that its addition to the camera shall not cause an undesirable reduction in image definition. The light fall-off in cameras having an angle of view larger than 60 degrees shall be compensated by a graded (anti-vignetting) filter.

2.1.3 Shutter - The camera shall be equipped with a between-the-lens shutter with variable speed settings such that in conjunction with flight height and aircraft speed, the camera will produce high definition photographs at full

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 through FY 2021/2022

Exhibit "B"

Specifications for Aerial Photography

aperture. The shutter shall have a minimum efficiency of 70 percent at a speed of 1/200 second.

- 2.1.4 Magazine Platen - The camera shall be equipped with an approved means of flattening the film at the instant of exposure. The platen against which the film is pressed shall not depart from a true plane by more than 15 um when the camera/magazine vacuum is applied.
- 2.1.5 Fiducial Marks - The camera shall record eight (8) fiducial marks which are clear and well defined on each negative. The marks shall be located in each corner and at the center of each side. The corner fiducial marks shall form a quadrilateral whose sides are equal within 0.050mm. The midside fiducial marks shall be equidistant within 0.050mm from the adjacent corner fiducial marks. Lines joining opposite pairs of fiducial marks shall intersect at an angle of $90^\circ \pm 30''$. The intersection of the lines shall indicate the true position of the principal point of autocollimation within 0.030mm.
- 2.1.6 Stereomodel Flatness - The average departure from flatness (at negative scale) for two computer simulated stereomodels may not exceed 15um for any symmetrically arranged point tested by USGS. The difference between the highest and lowest value shall not exceed 25 um. The average of values given for points tested by USGS (which are averages themselves) shall not exceed 7.5 um.
- 2.1.7 Calibration Report - The contractor shall provide a camera calibration report prepared by the U.S. Geological Survey Optical Calibration Laboratory which reflects the current condition of the camera to be used. The report shall be based on the Laboratory's standard tests and measurements made after complete assembly of all parts of the camera unit with the light filters in place. This report must be dated within three years of the date of the photography. The combination of camera cone, lens, camera body, and magazine(s) submitted for testing shall be, if acceptable, the only combination used for this project. Use of additional equipment shall be equally certified. The camera shall be recalibrated if there is any reason to believe that the dimensional relationship of the lens, fiducial marks, and film plane have been disturbed by partial disassembly or unusual mechanical shock. The camera must be resubmitted for recalibration at the contractor's expense. The District reserves the right to restrict the use of any camera based upon data contained in the calibration report or based upon operational results.

Exhibit "B"
Specifications for Aerial Photography

- 2.2 Forward Motion Compensation is required for all photography requested at 3000 feet above mean terrain and for all requested photographic coverage at altitudes lower than 3000 feet above mean terrain. The contractor shall provide the proper equipment as well as the experience in the use of Forward Motion Compensation.
 - 2.3 The camera shall be installed in a mount which attenuates the effects of aircraft vibration. The mount should be regularly serviced and maintained.
3. Aerial Film and Image Quality
- 3.1 Aerial Film
 - 3.1.1 The type of film to be used shall be unexpired and have a dimensional stable polyester base.
 - 3.1.2 Color and panchromatic emulsions shall be sensitive to the entire visible spectrum with an extended red sensitivity. Color infrared and black and white infrared emulsions shall be sensitive to the visible and near infrared spectrum from 400 to 900 nanometers.
 - 3.1.3 Extreme care shall be exercised to ensure proper exposure to minimize vignetting due to differential exposure. This differential shall not exceed that which would result from a basic 1/3 stop difference in exposure.
 - 3.1.4 The conditions of the film stock to be used shall be such that when the unexposed film is processed it shall be free of stains, discoloration, or brittleness that can be attributed to aging or improper storage and the base-plus-fog density for all negative films and the minimum density for all color reversal films shall conform to the manufacturer's predicted density levels.
 - 3.2 Storage and Handling
 - 3.2.1 Storage and handling of all photographic film shall be in accordance with the manufacturer's recommendation. All aerial film shall be stored in the original containers to prevent any exchange in moisture between the rolls and their surroundings up to the time they are exposed. The film shall not be rolled tightly on spools or in any way stretched, buckled, distorted, or exposed to direct sunlight or other sources of heat.
 - 3.2.2 Adverse storage conditions can affect the color emulsion layers as well as overall sensitivity. Unexposed color films that are to be stored for several months shall be stored at 0° to -10° Fahrenheit (-18° to -23° Celsius).

Exhibit "B"
Specifications for Aerial Photography

- 3.2.3 Color infrared film stored in the field prior to use shall be refrigerated at all times at a temperature of approximately 40° Fahrenheit (4° Celsius) or lower.
- 3.3 Processing and Drying
- 3.3.1 All black and white and color aerial film shall be processed in a sensitometrically controlled process using the manufacturer's recommended process monitoring system. Prior to processing the film, a calibrated 21-step sensitometric wedge (in .15 nominal density increments) shall be exposed on one end of the roll of film and become a permanent part of the roll.
- 3.3.2 The film shall be thoroughly fixed and washed to ensure archival quality. The residual thiosulfate content of the processed black and white film should not exceed 0.04 milligrams per square inch as measured using a Kodak Hypo Estimator and Hypo Test Solution HT-2 or other approved method.
- 3.3.3 Processing and drying of film shall be carried out without affecting the metric quality specified in paragraph 3.4.1. At no time shall the film be subjected to extreme temperature and humidity changes.
- 3.3.4 The processed film shall be free from chemicals, stains, tears, scratches, abrasions, watermarks, finger marks, lint, dirt, light streaks, static marks, and any other physical defects that would interfere with the intended purpose of the photography.
- 3.4 Metric Quality of Processed Film
- 3.4.1 The original processed film or contact diapositives produced from them shall not contain residual Y-parallaxes after relative orientation in excess of 20 micrometers anywhere in the model. The dimensional change in any direction across a 9" distance shall not exceed 127 micrometers.
- 3.5 Image Quality of Processed Film
- 3.5.1 The imagery on the aerial film shall be clear and sharp and evenly exposed across the format. The film shall be free from clouds, cloud shadows, smoke, haze, snow, shadows, crimps, scratches, and any other blemishes which interfere with the intended purpose of the photography. Allowances will be made for unavoidable shadows, permanent snow fields, or reflectance from water bodies.

Exhibit "B"
Specifications for Aerial Photography

3.5.2 When there is doubt concerning the sharpness (resolution) of images obtained on the original film, a comparison will be made of well-defined edges by:

- A 3X enlargement on film; and/or
- Comparison to a calibrated matrix in a visual edge-matched comparator; and/or
- Edge traces in a microdensitometer; and/or
- A combination of these methods.

If the imagery is obviously degraded, the original film shall be rejected for poor image quality.

3.5.3 Density measurements will be taken on processed film using a transmission densitometer with a 2mm probe for scales 1/36,000 and larger and with a 1mm probe for scales 1/36,000 and smaller. Readings will be made no closer than 1-1/2 feet from the image edge. Densities for black and white films shall be:

(a) Black and white negative film density measurement.

Max Base-Plus-Fog	.20 ± .10
D-Min	.40 ± .10
D-Max	1.50

Base-Plus-Fog shall be measured between and at the edges of the negative frame, and conform with the manufacturer's predicted density value. The minimum usable density shall be no less than 0.30 and maximum usable density no more than 1.50 after deducting Base-Plus-Fog density. The average density range aim point should be 1.0 and the minimum no less than 0.55.

3.5.4 Maximum photographic image and color quality control is required when exposing and processing color infrared film. The color infrared film shall be exposed and processed to the manufacturer's recommendations unless otherwise required in project specifications. It is recommended that the following color balance test be conducted prior to using the film on a project. Remove approximately 3 feet of unexposed film from the outside wrap. Expose a 21-step sensitometric wedge (0.15 density increments) on the film strip, and process it using the manufacturer's recommended process tolerances. The color balance shall be established by obtaining two points

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Exhibit "B"

Specifications for Aerial Photography

on the characteristic curve at D=1.0, one being at the midpoint of the two visible-light curves, and the second at the point of intersection of D=10 with the IR-curve. A color balance aim point of 20 has been determined empirically to be optimum for most applications. The processed stepwedge will become part of the roll from which they were removed. These stepwedges will be maintained on file and used as criteria for acceptable color balance of the exposed and processed film. Exposed and processed film which does not have a color balance within $\pm .06 \text{ Log E}$ of the color balance aim point will be cause for rejection.

3.5.5 The camera instrument panel and all fiducial marks shall be sharp and clearly legible on all processed film.

3.5.6 All exposed color films should be processed as soon as possible to avoid desirable color balance shifts.

4. Photographic Operations

4.1 Photography shall not be secured when the ground is obscured by haze, snow, smoke, dust, flood waters, or environmental factors that may obscure ground detail. Clouds and/or shadows of clouds shall not appear in the photograph. The solar altitude shall be defined by the application but in general it should not be less than 30 degrees when aerial negatives are exposed. Priorities will be provided to the contractor by the District prior to the date of photography and the contractor shall follow these priorities consistent with local flight conditions and logical flight planning. For projects which will have targeted ground control points, photographic operations must be coordinated with the placing of targets so that a minimum of time will elapse between targeting and photography.

4.2 The camera should be checked to be sure it is properly secured onto the mount and that all cable connections are tight. The camera lens, filters, and camera port must be inspected to assure that the surfaces are not scratched, stretched, or discolored and that they are free of foreign particles and condensation.

4.2.1 The camera magazine must be clean, firmly seated on the camera. The transport system must be operating properly and the correct information entered into the data block recording devices.

4.3 Flight Lines - The District will provide flight maps, pdf, and dgn files for the location of the flight lines. All flying shall be done in strict conformance with the instructions and the intended locations specified on the flight maps. Flight lines shall be

Exhibit "B"
Specifications for Aerial Photography

continuous and straight with no breaks throughout the entire length of the flight line unless otherwise specified. Each project shall be flown in its entirety with the same camera. The maximum angle of deviation between the actual flight path and the specified flight line shall not exceed three degrees at any point on the lines. Reflights for rejected exposures shall include the entire flight line unless the flight line contains more than 15 exposures in which case a portion of the flight line may, with permission of District, be replaced.

- 4.3.1 Every effort shall be made to avoid breaks within individual flight lines. Where breaks within a flight line are necessary, the entire flight line composed of the resulting segments shall meet all of the requirements set forth in these Specifications. Where breaks occur, these shall have an overlap of at least four frames to ensure a stereo model of overlap or tie. All photos within a single flight line shall be acquired with the same aerial camera and with the camera oriented in the same direction.
- 4.3.2 Exposures acquired to replace rejected, damaged, lost, or otherwise destroyed exposures shall fully conform to these Specifications. Replacement exposures shall be acquired with the same aerial camera(s) used to acquire the original exposures and shall be exposed as nearly as possible to the same day and lighting conditions as the original exposures.
- 4.4 Flight Height - Departures from flight heights required to produce the desired photo scale shall not exceed -2% or +5% unless changed by Air Route Traffic Control Centers.
- 4.5 Changes in the course of the aircraft between successive overlapping photographs within a flight line shall not exceed three degrees.
- 4.6 While exposing aerial photography, the camera shall be compensated for crab of the aircraft with a resultant error not exceeding three degrees.
- 4.7 Exposure Overlap - The overlap shall be sufficient to provide full stereoscopic coverage as follows:
 - 4.7.1 Endlap - Forward overlap in the line of flight shall average not less than 57% or more than 62% at the mean elevation of the terrain, unless otherwise specified. Individual forward overlaps shall not be less than 55% or more than 68%, except in the situation where a forward overlap in areas of low elevation must exceed 68% to attain the minimum 55% forward overlap in adjacent areas of higher elevation. Wherever there is a change in direction

Exhibit "B"

Specifications for Aerial Photography

between two flight lines (other than between adjacent parallel flight lines), junction areas between the adjoining flight lines shall be covered stereoscopically by both lines.

- 4.7.2 Sidelap - Any flight line with an exposure having sidelap (overlap of parallel strips of vertical photography) of less than twenty percent or more than forty percent may be rejected. Sidelap, per strip, shall average thirty percent, plus or minus five percent.
- 4.8 The combined effect of aircraft course corrections, crab, and tilt shall result in an apparent crab not greater than five degrees on successive photographs. Apparent crab is defined as the angle between a line joining fiducial marks in the direction of flight and the line between the indicated principal point and the conjugate image of the indicated principal point of the adjacent photograph within the same line of flight.
- 4.9 The tilt within a single frame shall not exceed four degrees nor shall the difference in tilt between two consecutive overlapping frames within a flight line exceed four degrees. The average tilt for all negatives of the same nominal scale shall not exceed one degree.
- 4.10 All film shall be exposed using the fastest shutter speed possible when the aperture is set at its optimum value in consideration of the optical resolution and image motion.
- 4.11 Each roll of aerial film shall have an unexposed leader at least ten frames in length. This unexposed leader will be used to expose a sensitometric wedge before processing. Whenever a roll of aerial film is used in a discontinuous fashion, such as from one day to the next or from a morning flight to an afternoon flight, a spacer at least four frames in length shall be rolled forward just prior to the commencement of taking new photographs.
- 4.12 All film shall be exposed using the fastest shutter speed possible when the aperture is set at its optimum value in consideration of the optical resolution and image motion.
5. Preliminary Checks
- 5.1 Each roll of aerial film shall be processed as soon as possible after it is exposed. Navigation of the flight lines and image quality shall be quick-checked for compliance with these Specifications.

Exhibit "B"

Specifications for Aerial Photography

5.2 Reflights shall be immediately ordered for the purpose of securing replacement exposures for all frames which fail to meet minimum standards set forth in these specifications, provided ground conditions have not yet terminated the photographic "season".

6. Deliverable Products

Photography shall be taken as early as possible in the flying season once the flight conditions are met. Priorities will be provided to the contractor by the District prior to the date of photography and the contractor shall follow these priorities consistent with local flight conditions and logical flight planning. For projects which will have targeted ground control points, photographic operations must be coordinated with the placing of targets so that a minimum of time will elapse between targeting and photography. Notification shall be sent to the District once a project has been flown. Exposure of the film shall be in accordance with the manufacturer's recommendations and with a goal toward achieving density requirements set forth in paragraph 3.5.3. The negatives shall be clear and sharp in detail, free from light streaks and static marks, and of uniform tone and degree of contrast to permit ground details to show clearly in all scene reflectance, with particular emphasis on pattern recognition in the shadow areas.

6.1 Aerial Film

6.1.1 The exposed/processed aerial film should be delivered in accordance with the stipulations of delivery schedule and delivery address.

6.1.2 Each processed roll or partial roll of aerial film shall be kept in roll form, on the spool, and in the metal or plastic container supplied by the film manufacturer. Rejected exposures shall be removed. All flights belonging to a project shall be in the **same** container.

6.2 Color and Black and White Contact Prints

The contractor is to furnish three complete sets of 9" x 9" contact color prints of all color flights and one complete set of 9" x 9" contact prints of all black and white flights, unless otherwise specified. Contact prints shall be made on an automatic dodging printer on medium weight resin-coated paper on which ink and pencil can be used on both sides.

6.2.1 The photographic emulsion shall be of fine grain and have a suitable light sensitivity range and contrast for the making of prints from the aerial film exposed under this contract. Outdated materials shall not be used.

Exhibit "B"
Specifications for Aerial Photography

- 6.2.2 Processing, including exposure, development, fixation, washing, and drying of all photographic materials, shall result in finished photographic prints having a fine grain quality, a normal, uniform density, and such tone and contrast that all photographic details shall show clearly within the dark and light tone areas as well as in areas with intermediate tones. Adequate grades of contact paper and proper laboratory procedures shall be used to achieve the best prints possible. Excessive variance in tone or contrast between adjoining prints shall be cause for rejection.
- 6.2.3 Photographic prints shall be trimmed as specified by the District. When trimmed, always leave the camera fiducial marks, GPS, and other data recorded in the border of each image. Prints showing fiducial marks of inadequate clarity and definition or prints omitting fiducial marks shall be rejected.
- 6.2.4 All prints shall be clear and free from chemical stains, blemishes, uneven spots, air bells, light streaks or fog, and other defects which would, in the opinion of the District, interfere with their intended purpose. Prints shall be delivered to the District in a smooth, flat, and usable condition.
- 6.2.5 Titling and Labeling - All lettering shall be positioned as closely as possible to the inside leading edge of the format of the exposure. The characters used for making the exposures shall be 3/16 inch, drafted or stamped with opaque ink to avoid deformation of the film as to what is manifested with heat embossed titles. The lettering shall clearly show on all copies of the photographs perpendicular to the line of flight, as indicated in the attached "Method of Negative Identification", Exhibit "B".

All material shall be delivered to the following address:

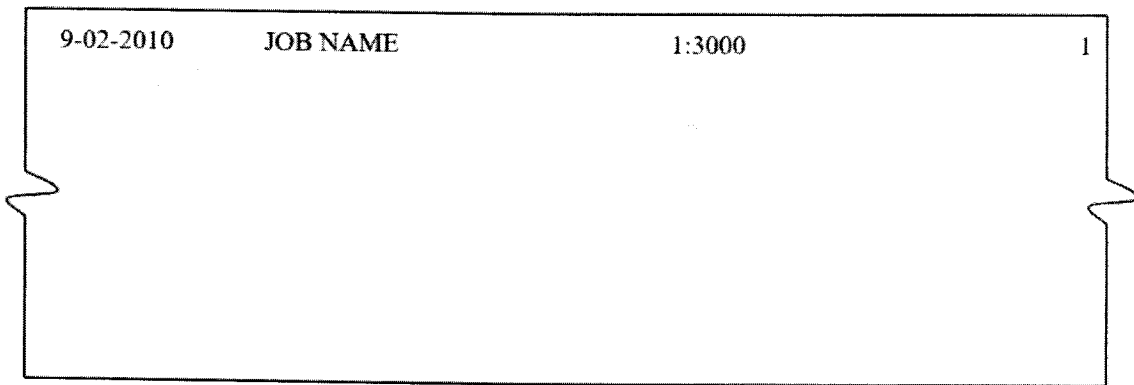
Riverside County Flood Control and Water Conservation District
Photogrammetry Section
1995 Market Street
Riverside, CA 92501
Attn: Keith Ream

Schedule of Delivery - Materials shall be delivered to the District within 30 days after date of aerial photography.

Exhibit "C"

Method of Negative Identification for 9" x 9" Photos

The exposure numbers shall be consecutive for the entire project. The exposure number shall be in the upper right corner of the photograph printed from each exposure to be read as one looks northerly along the flight line or easterly if lines are east-west. The date of photography shall be in the upper left corner. When labeling the images, the District would like the job name, photo scale, date, and exposure number on the first exposure only. All subsequent exposures should have the date and exposure number only.



SAMPLE I - NOT TO SCALE

INFORMATION ABOVE TO BE NOTED ON FIRST EXPOSURE

Exhibit "D"
Task Order Approval Form

CONSULTANT: _____

PROJECT NAME: _____

The Scope of Services for this Task Order, a copy of which is attached hereto as Exhibit "B" and incorporated herein by this reference, shall constitute an approved Task Order pursuant to the Agreement between DISTRICT and CONSULTANT dated @ ("AGREEMENT"). CONSULTANT agrees to perform the services described in Exhibit "A" for a fee amount of \$@, unless otherwise modified by the DISTRICT's Project Manager in a subsequent Task Order Approval. All charges shall be consistent with the Compensation terms pursuant to Section 5 of the AGREEMENT and incorporated herein by this reference.

Performance of the services shall be subject to the terms and conditions contained in the AGREEMENT.

Dated this _____ day of _____
(To be filled in by General Manager-Chief Engineer)

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

By: _____
JASON E. UHLEY
General Manager-Chief Engineer

[CONSULTANT]

By: _____
[NAME OF AUTHORIZED REPRESENTATIVE]
[Title]

CONSULTING SERVICES AGREEMENT
Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 through FY 2021/2022

This Consulting Services Agreement ("Agreement") dated as of December 10, 2019 is entered into by and between the Riverside County Flood Control and Water Conservation District, a body politic, hereinafter called "DISTRICT", and QUANTUM SPATIAL, INC., a Wisconsin corporation, hereinafter called "CONSULTANT".

1. PROJECT

CONSULTANT shall provide on-call professional services in support of DISTRICT's aerial imagery and/or Light Detection and Ranging (LiDAR) data, and in accordance with applicable federal, state, and local laws and regulations.

2. ON-CALL SERVICES

As requested by DISTRICT, CONSULTANT shall provide those services as described in the "Scope of Services", attached hereto as Exhibit "A" on an on-call basis. During the term of this Agreement, DISTRICT may request CONSULTANT to submit one or more proposals for the services for which CONSULTANT is selected pursuant to Exhibit "A". In the event DISTRICT finds CONSULTANT's proposal acceptable, DISTRICT may issue one or more Task Orders, the form of which shall generally conform with the "Task Order Approval Form" (attached hereto as Exhibit "D"). CONSULTANT understands and expressly agrees that the execution of this Agreement by CONSULTANT and/or the submission of any proposal to furnish services does not guarantee the assignment or approval of any subsequent Task Order(s).

3. PERSONNEL

A. Project Manager

For each Task Order, DISTRICT shall designate a staff representative who shall act as DISTRICT's Project Manager ("Project Manager") for the Task Order. In the

event DISTRICT changes its Project Manager, it shall notify CONSULTANT in writing.

B. CONSULTANT's Representative

CONSULTANT shall appoint a Designated Representative for each assigned Task Order who shall be responsible for coordinating all aspects of the assigned Task Order. CONSULTANT's Designated Representative shall be available to DISTRICT's Project Manager at reasonable times. In the event CONSULTANT changes its Designated Representative, it shall notify DISTRICT in writing.

C. Substitution of Key Personnel

At the time of Task Order approval, CONSULTANT shall identify to DISTRICT's Project Manager the Key Personnel who are responsible for executing the Task Order. Should one or more of the identified Key Personnel become unavailable, CONSULTANT may substitute other personnel of equal or greater competence upon DISTRICT's written approval. In the event that DISTRICT and CONSULTANT cannot come to an agreement regarding substitution of the Key Personnel, DISTRICT may terminate the Task Order pursuant to the applicable provisions of this Agreement.

4. TERM

The term of this Agreement shall become effective on the date it is executed and shall remain in effect through the required date for completion of an assigned Task Order, provided that such Task Order was approved prior to June 30, 2021 and is to be completed by June 30, 2022.

5. COMPENSATION

CONSULTANT shall receive compensation for all services satisfactorily performed and expenses incurred under this Agreement in accordance with the terms of the approved

Task Order(s). The annual maximum sum amount of any and all of the Task Orders approved pursuant to this Agreement shall not exceed Two Hundred Thousand Dollars (\$200,000) in any given year. The cumulative total of all task orders shall not exceed Six Hundred Thousand Dollars (\$600,000) over the entire term of this Agreement.

6. PAYMENT

Payment shall be made in accordance with the Compensation/Fee Rate Schedule attached to an approved Task Order. Upon satisfactory performance of CONSULTANT's services pursuant to DISTRICT approved scope of services in the Task Order, DISTRICT shall make payment to CONSULTANT within thirty (30) days after receipt of appropriate invoice(s) from CONSULTANT. DISTRICT shall not pay interest or finance charges on any outstanding balance(s).

CONSULTANT shall keep employee and expense records according to customary accounting methods and such records shall, upon request, be made available for inspection by DISTRICT to verify CONSULTANT's invoices. Unless otherwise agreed, all invoices shall itemize charges to conform to the scope of services in the approved Task Order. In the event of any conflict between the scope of services or provisions in the approved Task Order and the associated portion(s) of work as set forth in Exhibits "A", "B" and "C", the services approved in the Task Order shall govern.

DISTRICT shall notify CONSULTANT of any disputed charges within thirty (30) days of receipt of CONSULTANT's invoice. DISTRICT reserves the right to withhold payment for work that is not invoiced in a timely manner or if CONSULTANT has not satisfactorily performed the services.

7. INVOICES

All work shall be invoiced in a timely manner. All invoices shall be mailed directly to DISTRICT's Accounts Payable Section. Each invoice shall include the following information:

- A. Purchase Order Number associated with the approved Task Order (as provided by DISTRICT).
- B. Billing Period (indicating the date(s) when the services were rendered).

Itemized invoices shall be mailed following completion of requested services. If progress payments are agreed upon, then they shall be processed monthly. Monthly invoices shall be mailed to DISTRICT no later than the 15th day of the month following the end of the Billing Period. Incomplete invoices will be returned to CONSULTANT for correction.

8. PROJECT PERFORMANCE

A. Commencement of Services

CONSULTANT shall commence performance of the services for each Task Order upon receipt of DISTRICT's approved Task Order.

B. Time of Completion

Time is of the essence in the performance of this Agreement. CONSULTANT shall complete services in accordance with the schedule(s) set forth in the approved Task Order(s).

9. LICENSES

At all times while performing services under this Agreement, CONSULTANT, its employees, agents, contractors, and subcontractors shall maintain professional licenses as required by the laws of the State of California, including but not limited to Chapter 15 of Division 3 of the Business and Professions Code (Professional Land Surveyors' Act).

10. STANDARD OF CARE

While performing the services, CONSULTANT shall exercise the reasonable professional care and skill customarily exercised by reputable members of CONSULTANT's profession practicing in the State of California, and shall use reasonable diligence and best judgment while exercising CONSULTANT's professional skill and expertise. By executing this Agreement, CONSULTANT represents and maintains that CONSULTANT has the necessary experience and expertise to skillfully perform all services, duties, and obligations required by this Agreement and to fully and adequately complete each approved Task Order.

By entering into this Agreement, CONSULTANT assumes responsible charge of the work pursuant to Section 8703 of the Professional Land Surveyors' Act; Chapter 15 (commencing with Section 8700) of Division 3 of the Business and Professions Code, where applicable; and shall be wholly responsible for the completeness and accuracy of all calculations, data, measurements, calibration, plans, specifications, computer files, maps, field notes, reports, estimates, and any other materials prepared pursuant to this Agreement, and shall check all such material accordingly.

11. ERRORS AND OMISSIONS

In the event CONSULTANT's data, imagery, LiDAR data, reports, flight provisions, estimates, or any work products contain any errors or omissions that cause DISTRICT to incur additional expense beyond what would have otherwise resulted if there were no errors or omissions in CONSULTANT's data, imagery, LiDAR data, reports, flight provisions, estimates, or any work products, such additional expense shall be borne solely by CONSULTANT.

12. AERIAL IMAGING AND LIGHT DETECTION AND RANGING (LiDAR)SERVICESA. Specifications and Standards

All work shall be performed in accordance with DISTRICT standards, as described in Exhibits "B" and "C", attached hereto and made a part hereof, and any special criteria established by DISTRICT for specific task or services. All deliverables prepared by CONSULTANT pursuant to this Agreement shall be prepared in accordance with Exhibits "B" and "C" and/or current DISTRICT practices, regulations, policies, procedures, and standards where applicable. All deliverables shall be subject to review and approval by DISTRICT.

Services provided by CONSULTANT under this Agreement shall be performed in a manner consistent with that standard of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

B. Control Surveys

Unless otherwise specified herein, DISTRICT shall provide CONSULTANT with primary survey control monuments including both horizontal (California Coordinate System) and vertical control positions. DISTRICT shall assign a staff Land Surveyor to coordinate with CONSULTANT in connection with any work assigned under this Agreement.

C. Quality Control

CONSULTANT shall implement and maintain effective quality control procedures throughout all phases of assigned task and/or services. CONSULTANT shall have a quality control plan in effect during the entire time task and/or services are being performed under this Agreement. The plan shall establish a process whereby all calculations and documents prepared under this

Agreement are independently checked, corrected, and back-checked, and all pertinent job related correspondence and memoranda are bound in appropriate job files. Evidence that the quality control plan is functional may be requested by DISTRICT. All documents and any other items submitted to DISTRICT for review shall be initialed by CONSULTANT's project manager, or his designee, as being fully checked and that the preparation of the material followed the quality control plan established for the work.

13. NOTICES

Any and all notices sent or required to be sent to the parties of this Agreement will be mailed by first class mail, postage prepaid, to the following addresses:

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT
1995 Market Street
Riverside, CA 92501
Attn: Finance Division

QUANTUM SPATIAL, INC.
N 6216 Resource Drive
Sheboygan Falls, WI 53085
Attn: Melissa Christie

14. REQUIRED INSURANCE

CONSULTANT shall not commence operations until DISTRICT has been furnished with original certificate(s) of insurance and original certified copies of endorsements and, if requested, certified original policies of insurance including all endorsements and any and all other attachments as required in this Section.

Without limiting or diminishing CONSULTANT's obligation to indemnify or hold DISTRICT harmless, CONSULTANT shall procure and maintain or cause to be maintained, at its sole cost and expense, the following insurance coverages during the term of this Agreement. As respects to the insurance section only, DISTRICT herein refers to the Riverside County Flood Control and Water Conservation District, the County of Riverside, its agencies, districts, special districts, and departments, their respective

directors, officers, Board of Supervisors, employees, elected or appointed officials, agents, or representatives as Additional Insureds.

A. Workers' Compensation

If CONSULTANT has employees as defined by the State of California, CONSULTANT shall maintain statutory Workers' Compensation Insurance (Coverage A) as prescribed by the laws of the State of California. Policy shall include Employers' Liability (Coverage B) including Occupational Disease with limits not less than \$1,000,000 per person per accident. Policy shall be endorsed to waive subrogation in favor of DISTRICT.

B. Commercial General Liability

Commercial General Liability: Insurance Services Office Form CG 00 01 covering Commercial General Liability on an "occurrence" basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than \$2,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

If the owner/operator maintains broader coverage and/or higher limits than the minimums shown above, DISTRICT requires and shall be entitled to the broader coverage and/or higher limits maintained by the owner/operator. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to DISTRICT.

Policy shall name DISTRICT as Additional Insureds.

C. Vehicle Liability

If vehicles or mobile equipment are used in the performance of the obligations under this Agreement, then CONSULTANT shall maintain liability insurance for all owned, non-owned or hired vehicles so used in an amount not less than \$1,000,000 per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this Agreement or be no less than two (2) times the occurrence limit. Policy shall name DISTRICT as Additional Insureds.

D. Professional Liability

CONSULTANT shall maintain Professional Liability Insurance providing coverage for CONSULTANT's performance of work included within this Agreement, with a limit of liability of not less than \$1,000,000 per occurrence and \$2,000,000 annual aggregate. If CONSULTANT's Professional Liability Insurance is written on a claims made basis rather than an occurrence basis, such insurance shall continue through the term of this Agreement and CONSULTANT shall purchase at his sole expense either 1) an Extended Reporting Endorsement (also known as Tail Coverage); or 2) Prior Dates Coverage from a new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that CONSULTANT has maintained continuous coverage with the same or original insurer. Coverage provided under items: 1), 2) or 3) will continue as long as the law allows.

E. Insurance Requirements for Aviation Services Including Unmanned Aircrafts (Drones)

Coverage shall be at least as broad as:

Aviation Liability Insurance on an "occurrence" basis, including products and completed operations, property damage, and bodily injury with limits no less than \$2,000,000 per occurrence, and \$4,000,000 in the aggregate. This coverage may also be provided by endorsement to a Commercial General Liability policy as describe in section 14.B of this agreement

F. General Insurance Provisions – All Lines:

- i. Any insurance carrier providing insurance coverage hereunder shall be admitted to the State of California and have an A.M. BEST rating of not less than an A: VIII (A: 8) unless such requirements are waived, in writing, by the County Risk Manager. If the County Risk Manager waives a requirement for a particular insurer such waiver is only valid for that specific insurer and only for one policy term.
- ii. CONSULTANT must declare its insurance self-insured retention for each coverage required herein. If any such self-insured retention exceed \$500,000 per occurrence each such retention shall have the prior written consent of the County Risk Manager before the commencement of operations under this Agreement. Upon notification of self-insured retention deemed unacceptable to DISTRICT, and at the election of the County Risk Manager, CONSULTANT's carriers shall either: 1) reduce or eliminate such self-insured retention with respect to this Agreement with DISTRICT; or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.
- iii. CONSULTANT shall cause CONSULTANT's insurance carrier(s) to furnish DISTRICT with 1) a properly executed original certificate(s) of

insurance and certified original copies of endorsements effecting coverage as required herein; and 2) if requested to do so orally or in writing by the County Risk Manager, provide original certified copies of policies including all endorsements and all attachments thereto, showing such insurance is in full force and effect. Further, said certificate(s) and policies of insurance shall contain the covenant of the insurance carrier(s) that a minimum of thirty (30) days written notice shall be given to DISTRICT prior to any material modification, cancellation, expiration, or reduction in coverage of such insurance. If CONSULTANT's insurance carrier(s) policies does not meet the minimum notice requirement found herein, CONSULTANT shall cause CONSULTANT's insurance carrier(s) to furnish a 30-day Notice of Cancellation Endorsement.

- iv. In the event of a material modification, cancellation, expiration, or reduction in coverage, this Agreement shall terminate forthwith, unless DISTRICT receives, prior to such effective date, another properly executed original certificate of insurance and original copies of endorsements or certified original policies, including all endorsements and attachments thereto, evidencing coverages set forth herein and the insurance required herein is in full force and effect. An individual authorized by the insurance carrier to do so on its behalf shall sign the original endorsements for each policy and the certificate of insurance.
- v. It is understood and agreed by the parties hereto that CONSULTANT's insurance shall be construed as primary insurance, and DISTRICT's insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory.

- vi. If during the term of this Agreement or any extension thereof there is a material change in the scope of services; or there is a material change in the equipment to be used in the performance of the scope of work which will add additional exposures (such as the use of aircraft, watercraft, cranes, etc.); or the term of this Agreement, including any extensions thereof, exceeds five (5) years, DISTRICT reserves the right to adjust the types of insurance required under this Agreement and the monetary limits of liability for the insurance coverages currently required herein, if, in the County Risk Manager's reasonable judgment, the amount or type of insurance carried by CONSULTANT has become inadequate.
- vii. CONSULTANT shall pass down the insurance obligations contained herein to all tiers of subcontractors working under this Agreement.
- viii. The insurance requirements contained in this Agreement may be met with a program(s) of self-insurance acceptable to DISTRICT.
- ix. CONSULTANT agrees to notify DISTRICT of any claim by a third party or any incident or event that may give rise to a claim arising from the performance of this Agreement.

15. INDEMNIFICATION

CONSULTANT shall indemnify and hold harmless DISTRICT (including its directors, officers, Board of Supervisors, elected and appointed officials, employees, agents, and representatives) from any and all liability, claim, damage, proceeding or action, present or future, based upon, arising out of, or in any way relating to CONSULTANT's (including its officers, employees, subcontractors, and agents) actual or alleged negligent, reckless, or willful misconduct, acts, or omissions related to this Agreement, performance under this Agreement, or failure to comply with the requirements of this Agreement,

including but not limited to: (a) property damage; (b) bodily injury or death; or (c) any other element of any kind or nature whatsoever.

CONSULTANT shall defend, at its sole expense, including all costs and fees (including but not limited to attorney fees, cost of investigation, defense, and settlements or awards), DISTRICT (including its directors, officers, Board of Supervisors, elected and appointed officials, employees, agents, and representatives) in any claim, proceeding, or action for which indemnification is required.

With respect to any of CONSULTANT's indemnification requirements, CONSULTANT shall, at its sole cost, have the right to use counsel of their own choice and shall have the right to adjust, settle, or compromise any such claim, proceeding, or action without the prior consent of DISTRICT, provided, however, that such adjustment, settlement, or compromise in no manner whatsoever limits or circumscribes CONSULTANT's indemnification obligations to DISTRICT.

CONSULTANT's indemnification obligations shall be satisfied when CONSULTANT has provided to DISTRICT the appropriate form of dismissal (or similar document) relieving DISTRICT from any liability for the claim, proceeding, or action involved. The specified insurance limits required in this Agreement shall in no way limit or circumscribe CONSULTANT's obligations to indemnify and hold harmless DISTRICT from third party claims.

In the event there is conflict between this section and California Civil Code Section 2782, this section shall be interpreted to comply with California Civil Code Section 2782. Such interpretation shall not relieve CONSULTANT from indemnifying DISTRICT and the County of Riverside (including its directors, officers, Board of Supervisors, elected and appointed officials, employees, agents, and representatives) to the fullest extent allowed by law.

16. WORK PRODUCT

CONSULTANT shall provide DISTRICT with all data, imagery, analog photography, LiDAR data, calculations, technical studies, plans, specifications, computer files, field notes, estimates, drawings, logs, maps, exhibits, reports, and any other documents as set forth in the approved Task Order(s). All data, imagery, analog photography, LiDAR data, calculations, technical studies, plans, specifications, computer files, field notes, drawings, logs, maps, exhibits, reports, and any other documents produced by CONSULTANT in the performance of the services as set forth in the approved Task Order(s) shall become and remain the sole property of DISTRICT. CONSULTANT shall not publish or transfer any material produced or resulting from activities supported by this Agreement without the written consent of the General Manager-Chief Engineer of DISTRICT. If any such material is subject to copyright or trademark, the parties agree that the right to any and all copyright and/or trademark in and to the material is expressly reserved to DISTRICT. If any such material is copyrighted, the parties hereto understand and agree that DISTRICT reserves a royalty-free, non-exclusive, and irrevocable license to reproduce, publish, and use such material, in whole or in part, and to authorize others to do so, provided written credit is given the author.

17. TERMINATION

At any time during the term of this Agreement, DISTRICT may:

A. Agreement

- 1) Terminate this Agreement without cause upon providing CONSULTANT thirty (30) days written notice stating the extent and effective date of termination; or
- 2) Upon five (5) days written notice, terminate this Agreement for CONSULTANT default, if CONSULTANT refuses or fails to comply

with the provisions of this Agreement or fails to make progress so as to endanger performance and does not cure such failure within a reasonable period of time. In the event of such termination, DISTRICT may proceed with the work in any such manner it deems appropriate.

In the event DISTRICT issues a Notice of Termination, CONSULTANT shall: i) stop all work under this Agreement on the date specified in the Notice of Termination; and ii) transfer to DISTRICT and deliver in the manner and to the extent, if any, as directed by DISTRICT, any work product, data, or reports prepared by CONSULTANT, whether partially or fully completed.

In the event DISTRICT terminates this Agreement, DISTRICT shall make payment for all services performed in accordance with this Agreement to the date of termination, a total amount which bears the same ratio to the total maximum fee otherwise payable under this Agreement as the services actually bear to the total services necessary for performance of this Agreement. Notwithstanding any of the other provision of this Agreement, CONSULTANT rights under this Agreement shall terminate (except for fees accrued prior to the date of termination) upon dishonesty or a willful or material breach of this Agreement by CONSULTANT; or in the event of CONSULTANT's unwillingness or inability for any reason whatsoever to perform the duties hereunder; or if the Agreement is terminated pursuant to Section 28 (NON-DISCRIMINATION). In such event, CONSULTANT shall not be entitled to any further compensation under this Agreement. The rights and remedies of DISTRICT provided in this section shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Agreement.

B. Approved Task Order

Terminate an approved Task Order or portion thereof without cause upon providing CONSULTANT fourteen (14) days written notice stating the extent and effective date of termination. In the event DISTRICT issues a Notice of Termination for an approved Task Order, CONSULTANT shall: i) stop all work under the Task Order on the date specified in the Notice of Termination; and ii) transfer to DISTRICT and deliver in the manner, and to the extent, if any, as directed by DISTRICT, any work product, data, or reports prepared by CONSULTANT, whether partially or fully completed.

In the event DISTRICT terminates an approved Task Order, DISTRICT shall make payment for all services satisfactorily performed in accordance with the negotiated Task Order to the date of termination, a total amount which bears the same ratio to the total maximum fee otherwise payable under the Task Order as the services actually bear to the total services necessary for performance of the Task Order.

18. BASIC SERVICES OF CONSULTANT

The scope of services associated with the performance of any specific Task Order under this Agreement shall be expressly defined and agreed upon prior to the approval of the Task Order by DISTRICT's General Manager-Chief Engineer, or designee. Upon execution of this Agreement, the Chief of Surveying and Mapping Division shall be authorized to sign and approve any Task Orders issued under this Agreement. Any changes to the approved scope of services of a Task Order issued under this Agreement must be authorized by DISTRICT's General Manager-Chief Engineer, or designee, and shall be made in accordance with Section 22 (CHANGES TO TASK ORDER SCOPE OF SERVICES).

All work prepared by CONSULTANT shall be subject to the approval of DISTRICT's Project Manager. CONSULTANT shall allow Project Manager to inspect and review CONSULTANT's work in progress at any reasonable time. All imagery, LiDAR data and similar work products prepared for submission in the course of providing services under this Agreement shall be submitted to the Project Manager in draft form. In the event that Project Manager, in his or her sole discretion, determines the formally submitted work product to be incomplete or otherwise inadequate, CONSULTANT may be required to revise and resubmit the work at no additional cost to DISTRICT. Should CONSULTANT fail to make requested corrections in a timely manner, such corrections may be made by DISTRICT, and the cost thereof charged to CONSULTANT. Neither DISTRICT's review nor approval shall give rise to any liability or responsibility on the part of DISTRICT, or waive any of DISTRICT's rights, or relieve CONSULTANT of its professional responsibilities or obligations under this Agreement.

19. PREVAILING WAGE

CONSULTANT shall comply with all applicable provisions of the California State Labor Code regarding prevailing wages, Department of Industrial Relations Division of Apprenticeship Standards Labor and Labor Codes. All workers shall be paid not less than the general prevailing rate of wages and benefits for work of a similar character in the locality in which the work is performed, as provided in Labor Code Sections 1770 et seq. Pursuant to the Labor Code, DISTRICT has obtained for the Board of Supervisors of DISTRICT from the Director of the Department of Industrial Relations, State of California, his determinations of general prevailing rates of per diem wages applicable to the work, and for holiday and overtime work, including employer payments for health and welfare, pension, vacation, apprentices, and similar purposes for each craft, classification, or type of workman needed, as set forth on the schedule which is on file at

DISTRICT office, and which will be made available to any interested person upon request.

20. INDEPENDENT CONTRACTOR/NON-EXCLUSIVE AGREEMENT

CONSULTANT and the agents and employees of CONSULTANT shall act at all times in an independent capacity during the term of this Agreement and in the performance of the services to be rendered hereunder and shall not act as or shall not be and shall not in any manner be considered to be employees or agents of DISTRICT.

This is not an exclusive agreement between DISTRICT and CONSULTANT, and DISTRICT may obtain the same or similar services from another firm if DISTRICT determines that is appropriate. DISTRICT is not obligated to have CONSULTANT provide a specific minimum amount of services pursuant to this Agreement.

21. SUBCONTRACTING

CONSULTANT may, at CONSULTANT's own expense, retain or employ sub-consultants to accomplish certain portions of the work covered by this Agreement. However, except as specifically provided in the Compensation/Fee Rate Schedule attached to the approved Task Order or as expressly identified in this Agreement, no portion of the services pertinent to this Agreement shall be subcontracted without prior written approval and authorization by DISTRICT.

Should one or more of the sub-consultants, as identified in the Compensation/Fee Rate Schedule attached to the approved Task Order or as expressly identified in this Agreement, become unavailable, CONSULTANT may substitute other sub-consultants of equal or greater competence upon written approval by DISTRICT. In the event that DISTRICT and CONSULTANT cannot agree as to the substitution of the sub-consultant, DISTRICT may terminate the Task Order, pursuant to the applicable provisions of this Agreement.

In the event CONSULTANT subcontracts any portion of CONSULTANT's duties under this Agreement, CONSULTANT shall require its sub-consultants to comply with the terms of this Agreement in the same manner as required of CONSULTANT. The fact that CONSULTANT employs sub-consultants not in his regular employ shall not relieve CONSULTANT of any responsibility regarding the adequacy of the sub-consultant's work performed or services provided pursuant to this Agreement.

22. CHANGES TO TASK ORDER SCOPE OF SERVICES

CONSULTANT shall not perform any additional work or services outside the scope of an approved Task Order without the prior written approval of DISTRICT's General Manager-Chief Engineer or designee. If at any time during the performance of an approved Task Order CONSULTANT believes that it is necessary to include certain work or services which are not clearly covered under the scope of an approved Task Order, CONSULTANT shall immediately notify the Project Manager in writing of CONSULTANT's assertion that the work is out of scope. Said notification by CONSULTANT to the Project Manager shall not in any way be construed as proving that the work or services in question are outside the scope of the Task Order. The Project Manager must approve or reject CONSULTANT's assertion in writing. In the event the Project Manager determines that the work is out of scope and agrees with CONSULTANT, the additional work or services shall not be commenced until such additional work or services has been duly authorized by a new or revised Task Order that covers the new scope, cost, and schedule. In the event that such notification is not given or if the Project Manager is not afforded an opportunity to negotiate the appropriate fee for such additional services prior to CONSULTANT's commencement of such additional services, then CONSULTANT shall be deemed to have agreed to perform the work or services without any additional compensation and to have accepted sole responsibility for

the performance of said work or services. Extra work done or services performed without a new or revised Task Order from DISTRICT's General Manager-Chief Engineer, or designee, shall be considered unauthorized and shall not be paid for by DISTRICT.

At any time during the performance of an approved Task Order, DISTRICT may request that CONSULTANT perform extra services. Any work which is determined by DISTRICT to be necessary for the proper completion of the approved Task Order but which neither CONSULTANT nor DISTRICT reasonably anticipated would be necessary at the time the scope of services for the assigned Task Order was approved, must be authorized by DISTRICT's General Manager-Chief Engineer, or designee, by a new or revised Task Order. Upon execution of this Agreement, the Chief of Surveying and Mapping Division shall be authorized to approve and sign a new or revised Task Order to change the previously approved scope of services of any Task Order issued under this Agreement.

At any time during the performance of the Task Order, the Project Manager, upon providing five (5) days written notice to CONSULTANT, may delete services and the associated fees from the Task Order. In the event DISTRICT requests deletion of services from the Task Order, DISTRICT shall make payment for all services satisfactorily performed in accordance with the negotiated Task Order up to the effective date of deletion; the amount of the payment shall be prorated to the total services necessary for completion of the Task Order. Any work product developed for the deleted services shall be provided to DISTRICT.

23. DISPUTES

- A. In the event CONSULTANT considers any work demanded of CONSULTANT to be outside the requirements of this Agreement, or if CONSULTANT considers any order, instruction, or decision of DISTRICT to be unfair, CONSULTANT

shall promptly, upon receipt of such order, instruction, or decision, ask for a written confirmation of the same whereupon CONSULTANT shall proceed without delay to perform the work or to conform to the order, instruction, or decision. However, if CONSULTANT finds such order, instruction, or decision unsatisfactory, CONSULTANT shall, within twenty-one (21) calendar days after receipt of same, file a written protest with DISTRICT stating clearly and in detail its objections and reasons therefor. Except for such protests or objections as are made of record in the manner specified and within the time stated herein, and except for such instances where the basis of a protest could not reasonably have been foreseen by CONSULTANT within the time limit specified for protest, CONSULTANT hereby waives all grounds for protests or objections to orders, instruction, or decisions of DISTRICT and hereby agrees that, as to all matters not included in such protests, the orders, instructions, and decisions of DISTRICT will be limited to matters properly falling within DISTRICT's authority.

- B. Any controversy or claim arising out of or relating to this Agreement which cannot be resolved by mutual agreement may be settled by arbitration, provided that the parties hereto mutually agree to submit to arbitration.
- C. Neither the pendency of a dispute nor its consideration by arbitration shall excuse CONSULTANT from full and timely performance in accordance with the terms of this Agreement.

24. ASSIGNMENT

Neither this Agreement nor any part thereof shall be assigned by CONSULTANT without the prior written consent of DISTRICT and approval by DISTRICT Board of Supervisors. The following events shall not be deemed an assignment and would not require prior written consent by DISTRICT:

- A. A partner in a partnership may transfer all or part of his/her or its interest in the partnership: 1) to another partner of the partnership; 2) by intestate succession or testamentary disposition on the partner's death; 3) by a gift to a partner's spouse or children to a trustee for the partner's spouse or children or both; 4) to a corporation if, immediately after the transfer, the partner making the transfer continues to own at least 50 percent of that corporation's voting shares.
- B. Any merger, consolidation, or other reorganization of CONSULTANT, or the sale of other transfer of a non-controlling percentage of the capital stock or interest of CONSULTANT, or the sale of not more than 50 percent of the value of CONSULTANT's assets.

For any of the above events not deemed as an assignment, such events shall require written notice to DISTRICT at least 30 days prior to the occurrence of such event.

25. CONFLICT OF INTEREST

CONSULTANT covenants that it presently has no interest, including but not limited to, other projects or independent contracts, and shall not acquire any such interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. CONSULTANT further covenants that in the performance of this Agreement, no person having any such interest shall be employed or retained by it under this Agreement.

26. JURISDICTION/LAW/SEVERABILITY

This Agreement is to be construed in accordance with the laws of the State of California. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions shall be declared severable and shall be given full force and effect to the extent possible.

Any legal action, in law or equity, related to the performance or interpretation of this Agreement shall be filed only in the Superior Court for the State of California located in Riverside, California, and the parties waive any provision of law providing for a change of venue to another location. Prior to the filing of any legal action, the parties shall be obligated to attend a mediation session with a neutral mediator to try to resolve the dispute.

27. WAIVER

Any waiver by DISTRICT of any breach of any one or more of the terms of this Agreement shall not be construed to be a waiver of any subsequent or other breach of the same or any other term thereof. Failure on the part of DISTRICT to require exact, full, and complete compliance with any terms of this Agreement shall not be construed as in any manner changing the terms hereof, or estopping DISTRICT from enforcement hereof.

28. NON-DISCRIMINATION

In the performance of the terms of this Agreement, CONSULTANT shall not engage in nor permit others he may employ to engage in discrimination in the employment of persons because of the race, color, national origin or ancestry, religion, physical handicap, disability as defined by the Americans with Disabilities Act (ADA), medical condition, marital status or sex of such persons, in accordance with the provision of California Labor Code Section 1735 and, to the extent they shall be found to be applicable hereto, shall comply with the provisions of the California Fair Employment and Housing Act (Government Code Section 12900 et seq.), and the Federal Civil Rights Act of 1964 (P.L. 88-352).

In the event of CONSULTANT's noncompliance with the nondiscrimination provisions of this Agreement, DISTRICT shall impose such Agreement sanctions as it determines to be appropriate including, but not limited to:

A. Withholding of payments to CONSULTANT under the Agreement until CONSULTANT complies;

B. Cancellation, termination, or suspension of the Agreement in whole or in part.

CONSULTANT shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under this Agreement.

29. EDD REPORTING REQUIREMENTS

In order to comply with child support enforcement requirements of the State of California, DISTRICT may be required to submit a Report of Independent Contractor(s) form DE 542 to the Employment Development Department ("EDD"). CONSULTANT agrees to furnish the required data and certifications to DISTRICT within 10 days of notification of award of Agreement when required by EDD. This data will be transmitted to governmental agencies charged with the establishment and enforcement of child support orders. Failure of CONSULTANT to timely submit the data and/or certificates required may result in the contract being awarded to another consultant. In the event a contract has been issued, failure of CONSULTANT to comply with all federal and state reporting requirements for child support enforcement or to comply with all lawfully served Wage and Earnings Assignments Orders and Notices of Assignment shall constitute a material breach of Agreement. If CONSULTANT has any questions concerning this reporting requirement, please call 916.657.0529. CONSULTANT should also contact its local Employment Tax Customer Service Office listed in the telephone directory in the State Government section under "Employment Development Department" or access their Internet site at www.edd.ca.gov.

30. FORCE MAJEURE

If either of the Parties cannot comply with any provision of this Agreement due to causes beyond its reasonable control, and which could not have been reasonably anticipated,

such as acts of God, acts of war, civil disorders, or other similar acts, such party shall not be held liable for such failure to comply.

31. DISCREPANCIES

In the event of any conflict between the scope of services or provisions in the approved Task Order and the associated portion(s) of work as set forth in Exhibits "A", "B" and "C", the services approved in the Task Order shall govern.

32. NON-APPROPRIATION OF FUNDS

It is mutually agreed and understood that the obligation(s) of DISTRICT are limited by and contingent upon the availability of DISTRICT funds for the reimbursement of CONSULTANT's fees. In the event that such funds are not forthcoming for any reason, DISTRICT shall immediately notify CONSULTANT in writing. This Agreement shall be deemed terminated and have no further force and effect immediately upon receipt of DISTRICT's notification by CONSULTANT. In the event of such termination, CONSULTANT shall be entitled to reimbursement of its costs in accordance with Section 5 (COMPENSATION) and Section 6 (PAYMENT).

33. RECORD RETENTION/AUDITS

- A. CONSULTANT shall retain complete and accurate records relating to the nature and extent of CONSULTANT's costs incurred while providing services authorized under this Agreement for at least three (3) years from the date of the final payment to CONSULTANT under this Agreement or completion of any audit commenced within the three year period. These records shall, upon written request, be made available for inspection by DISTRICT.
- B. DISTRICT, the County of Riverside, the State of California, or any of their duly authorized representatives shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement.

CONSULTANT agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records.

34. ALTERATION

No alteration or variation of the terms of this Agreement shall be valid unless made in writing and signed by the Parties hereto and no oral understanding or agreement not incorporated herein shall be binding on any of the Parties hereto.

35. ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter hereof. Any modifications to the terms of this Agreement must be in writing and signed by the Parties herein.

//

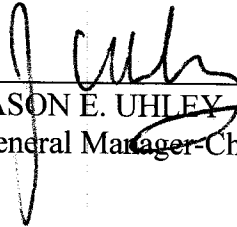
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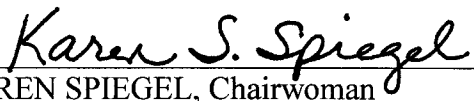
IN WITNESS WHEREOF, the parties hereto have executed this Agreement on

~~2019~~ DEC 10 2019
(to be filled in by Clerk of the Board)

RECOMMENDED FOR APPROVAL:

**RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT**

By: 
JASON E. UHLEY
General Manager-Chief Engineer


By: 
KAREN SPIEGEL, Chairwoman
Riverside County Flood Control and Water
Conservation District Board of Supervisors

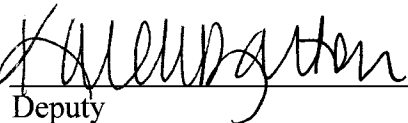
APPROVED AS TO FORM:

ATTEST:

GREGORY P. PRIAMOS
County Counsel

KECIA HARPER
Clerk of the Board

By: 
SYNTHIA M. GUNZEL
Chief Deputy County Counsel

By: 
Deputy

(SEAL)

Consulting Services Agreement with Quantum Spatial, Inc.
Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 to FY2021/2022
10/08/19
RKM:blm

QUANTUM SPATIAL, INC.

By: 

ROBERT VANDER MEER
Vice President

Consulting Services Agreement with Quantum Spatial, Inc.
Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 to FY2021/2022
10/08/19
RKM:blm

Exhibit "A"

Scope of Services

A. SCOPE OF SERVICES

The Consultant will provide any one or more of the following mapping services on an on-call basis:

- Analog black and white photography
- Analog color photography
- Digital imagery
- Light Detection and Ranging (LiDAR) data

B. REQUIREMENTS FOR IMAGERY/LIDAR

1. Requirements for Analog Imagery

All aspects of the aerial flight and acquisition of aerial photography to follow industry best practices. Specifications for aerial photograph have been included in Section C below.

2. Requirements for Digital Imagery

All aspects of the aerial flight and acquisition of aerial photography to follow industry best practices. State the manufacturer and model of the digital sensor you will be using.

2.1. Provide color digital imagery with 60% forward overlap and 30% side overlap.

2.2. When airborne GPS is required, provide the raw airborne GPS data as the District will process the data. District survey staff will have a minimum of two base stations running at the time of the flight so coordination will need to take place between the Consultant and District survey staff. District survey staff will provide the ground receiver information.

2.2.1. Provide the exterior orientation elements X, Y, Z, T, omega, kappa, and phi.

2.2.2. Provide the pilot's log sheet.

2.2.3. Provide a detailed diagram of the separation between the GPS antenna and the camera.

2.2.4. The flight window is from 10:30 a.m. to 2:30 p.m. and will only be flown Monday through Thursday as District survey crews do not work on Fridays or weekends.

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
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Exhibit "A"
Scope of Services

- 2.3. Provide the imagery in 8- and 12-bit format and compress using a Q-factor of 5.
- 2.4. When labeling the images, the job name, photo scale, date, and exposure number should be shown on the first exposure only. All subsequent exposures should have date and exposure number only. Date in upper left corner and photo number in upper right corner. Number photos as indicated on the flight plan. Use aerial font size 14.

3. **Requirements for LiDAR Data**

All aspects of the LiDAR and acquisition to follow industry best practices.

Provide LiDAR generated bare earth Digital Terrain Model (DTM) all points file and a separate file with model key points. High resolution DTM having a vertical accuracy of 95% at 0.6 feet and 90% at 0.5 feet and, as a separate option, a DTM having a vertical accuracy of 95% at 1.2 feet and 90% at 1.0 foot, when checked in flat open terrain.

Exhibit "B"

Specifications for Aerial Photography

1. Aircraft and Crew

1.1 All aircraft shall be maintained and operated in accordance with regulations of the Federal Aviation Administration and the Civil Aeronautics Board. The recommended FAA preflight inspection of the aircraft and instruments must be performed prior to each photographic mission. Aircraft shall have a service ceiling (with operating load of crew, camera, film, oxygen, and other required equipment) not less than 5% above the highest altitude necessary to achieve the smallest photographic scale required. If the project is in controlled air space, the appropriate Air Traffic Control Center (AIRTCC) must be contacted. If the project area includes a military installation, the contractor must comply with security regulations. At the flight altitudes required for this photography, the aircraft shall have flight characteristics to provide a stable platform for the operation of the camera that will not degrade the orientation or the resolution of the photographic image.

1.2 The design of the aircraft shall be such that when the camera is mounted, an unobstructed view is obtained, shielded from the exhaust gasses, oil, effluence, and air turbulence.

1.2.1 If an aircraft camera has a port glass it shall be preferably 50mm thick but not less than 37mm thick. The surface finish shall be 80/50 or better. Glass material shall be polished crown, group category M, Mil Specs Mil-W-1366F (ASG) October 1975, C-I optical quality or better. The physical characteristics of any port glass shall be reported to the District on request.

1.2.2 The camera shall be mounted vertically in the aircraft in a mount designed to isolate the camera from vibration of the aircraft. Angular vibration of the camera shall be reduced to such a level so as to have no significant detrimental effect on resolution.

1.2.3 The camera window shall be mounted in material eliminating excessive mechanical stress to the window. The opening shall be designed so that the field of view is unobstructed when the camera is mounted.

1.3 Individual crew members shall have two years or more apprenticeship in flying photographic missions for aerial surveys. In addition, it is desirable that crew members have meaningful prior experience with the same type camera and aircraft to which assigned.

2. Camera and Associated Equipment

Exhibit "B"

Specifications for Aerial Photography

2.1 The camera will be a metric quality vertical format aerial mapping of nominal focal length of 152mm with format dimensions of 230mm x 230mm. The lens must meet the requirements outlined below based on a U.S. Geological Survey Report of Camera Calibration. Failure of the camera to meet all of the specified requirements shall be cause for rejection of the proposal.

2.1.1 Lens shall be corrected for the spectral range of the film used. The lens shall meet or exceed all the requirements outlined in items (a), (b), (c), and (d) below.

- (a) Calibrated focal length - 153.0mm \pm 3.0mm;
- (b) Usable angular field - at least 90°;
- (c) Radial distortion in the usable angular field, based on the calibrated focal length referred to the calibrated principal point (point of symmetry), shall not exceed 12 μ m for any tested point, and 16 of the tested points shall have radial distortion values not exceeding 5 μ m.
- (d) Resolution - The lens should have an Area Weighted Average Resolution (AWAR) of at least 72.0 line pairs per millimeter as determined by the U.S. Geological Survey Report of Calibration. The following table lists the minimum acceptable radial and tangential lens resolution at various field angles.

Field angle	0°	7.5°	15°	22.5°	30°	35°	40°
<u>Line pairs per mm</u>							
Radial	95	87	67	57			
Tangential	95	80	70	67	67	57	45

2.1.2 Filters - Only optical filters provided by the lens manufacturer meeting the same optical specifications shall be used. The filter shall have surfaces parallel within 10 seconds of arc and its optical quality shall be such that its addition to the camera shall not cause an undesirable reduction in image definition. The light fall-off in cameras having an angle of view larger than 60 degrees shall be compensated by a graded (anti-vignetting) filter.

2.1.3 Shutter - The camera shall be equipped with a between-the-lens shutter with variable speed settings such that in conjunction with flight height and aircraft speed, the camera will produce high definition photographs at full

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 through FY 2021/2022

Exhibit "B"

Specifications for Aerial Photography

aperture. The shutter shall have a minimum efficiency of 70 percent at a speed of 1/200 second.

- 2.1.4 Magazine Platen - The camera shall be equipped with an approved means of flattening the film at the instant of exposure. The platen against which the film is pressed shall not depart from a true plane by more than 15 um when the camera/magazine vacuum is applied.
- 2.1.5 Fiducial Marks - The camera shall record eight (8) fiducial marks which are clear and well defined on each negative. The marks shall be located in each corner and at the center of each side. The corner fiducial marks shall form a quadrilateral whose sides are equal within 0.050mm. The midside fiducial marks shall be equidistant within 0.050mm from the adjacent corner fiducial marks. Lines joining opposite pairs of fiducial marks shall intersect at an angle of $90^{\circ} \pm 30''$. The intersection of the lines shall indicate the true position of the principal point of autocollimation within 0.030mm.
- 2.1.6 Stereomodel Flatness - The average departure from flatness (at negative scale) for two computer simulated stereomodels may not exceed 15um for any symmetrically arranged point tested by USGS. The difference between the highest and lowest value shall not exceed 25 um. The average of values given for points tested by USGS (which are averages themselves) shall not exceed 7.5 um.
- 2.1.7 Calibration Report - The contractor shall provide a camera calibration report prepared by the U.S. Geological Survey Optical Calibration Laboratory which reflects the current condition of the camera to be used. The report shall be based on the Laboratory's standard tests and measurements made after complete assembly of all parts of the camera unit with the light filters in place. This report must be dated within three years of the date of the photography. The combination of camera cone, lens, camera body, and magazine(s) submitted for testing shall be, if acceptable, the only combination used for this project. Use of additional equipment shall be equally certified. The camera shall be recalibrated if there is any reason to believe that the dimensional relationship of the lens, fiducial marks, and film plane have been disturbed by partial disassembly or unusual mechanical shock. The camera must be resubmitted for recalibration at the contractor's expense. The District reserves the right to restrict the use of any camera based upon data contained in the calibration report or based upon operational results.

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
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Exhibit "B"

Specifications for Aerial Photography

- 2.2 Forward Motion Compensation is required for all photography requested at 3000 feet above mean terrain and for all requested photographic coverage at altitudes lower than 3000 feet above mean terrain. The contractor shall provide the proper equipment as well as the experience in the use of Forward Motion Compensation.
 - 2.3 The camera shall be installed in a mount which attenuates the effects of aircraft vibration. The mount should be regularly serviced and maintained.
3. **Aerial Film and Image Quality**
- 3.1 **Aerial Film**
 - 3.1.1 The type of film to be used shall be unexpired and have a dimensional stable polyester base.
 - 3.1.2 Color and panchromatic emulsions shall be sensitive to the entire visible spectrum with an extended red sensitivity. Color infrared and black and white infrared emulsions shall be sensitive to the visible and near infrared spectrum from 400 to 900 nanometers.
 - 3.1.3 Extreme care shall be exercised to ensure proper exposure to minimize vignetting due to differential exposure. This differential shall not exceed that which would result from a basic 1/3 stop difference in exposure.
 - 3.1.4 The conditions of the film stock to be used shall be such that when the unexposed film is processed it shall be free of stains, discoloration, or brittleness that can be attributed to aging or improper storage and the base-plus-fog density for all negative films and the minimum density for all color reversal films shall conform to the manufacturer's predicted density levels.
 - 3.2 **Storage and Handling**
 - 3.2.1 Storage and handling of all photographic film shall be in accordance with the manufacturer's recommendation. All aerial film shall be stored in the original containers to prevent any exchange in moisture between the rolls and their surroundings up to the time they are exposed. The film shall not be rolled tightly on spools or in any way stretched, buckled, distorted, or exposed to direct sunlight or other sources of heat.
 - 3.2.2 Adverse storage conditions can affect the color emulsion layers as well as overall sensitivity. Unexposed color films that are to be stored for several months shall be stored at 0° to -10° Fahrenheit (-18° to -23° Celsius).

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
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Exhibit "B"

Specifications for Aerial Photography

- 3.2.3 Color infrared film stored in the field prior to use shall be refrigerated at all times at a temperature of approximately 40° Fahrenheit (4° Celsius) or lower.
- 3.3 Processing and Drying
- 3.3.1 All black and white and color aerial film shall be processed in a sensitometrically controlled process using the manufacturer's recommended process monitoring system. Prior to processing the film, a calibrated 21-step sensitometric wedge (in .15 nominal density increments) shall be exposed on one end of the roll of film and become a permanent part of the roll.
- 3.3.2 The film shall be thoroughly fixed and washed to ensure archival quality. The residual thiosulfate content of the processed black and white film should not exceed 0.04 milligrams per square inch as measured using a Kodak Hypo Estimator and Hypo Test Solution HT-2 or other approved method.
- 3.3.3 Processing and drying of film shall be carried out without affecting the metric quality specified in paragraph 3.4.1. At no time shall the film be subjected to extreme temperature and humidity changes.
- 3.3.4 The processed film shall be free from chemicals, stains, tears, scratches, abrasions, watermarks, finger marks, lint, dirt, light streaks, static marks, and any other physical defects that would interfere with the intended purpose of the photography.
- 3.4 Metric Quality of Processed Film
- 3.4.1 The original processed film or contact diapositives produced from them shall not contain residual Y-parallaxes after relative orientation in excess of 20 micrometers anywhere in the model. The dimensional change in any direction across a 9" distance shall not exceed 127 micrometers.
- 3.5 Image Quality of Processed Film
- 3.5.1 The imagery on the aerial film shall be clear and sharp and evenly exposed across the format. The film shall be free from clouds, cloud shadows, smoke, haze, snow, shadows, crimps, scratches, and any other blemishes which interfere with the intended purpose of the photography. Allowances will be made for unavoidable shadows, permanent snow fields, or reflectance from water bodies.

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Aerial Imagery and/or Light Detection and Ranging Services
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Exhibit "B"
Specifications for Aerial Photography

3.5.2 When there is doubt concerning the sharpness (resolution) of images obtained on the original film, a comparison will be made of well-defined edges by:

- A 3X enlargement on film; and/or
- Comparison to a calibrated matrix in a visual edge-matched comparator; and/or
- Edge traces in a microdensitometer; and/or
- A combination of these methods.

If the imagery is obviously degraded, the original film shall be rejected for poor image quality.

3.5.3 Density measurements will be taken on processed film using a transmission densitometer with a 2mm probe for scales 1/36,000 and larger and with a 1mm probe for scales 1/36,000 and smaller. Readings will be made no closer than 1-1/2 feet from the image edge. Densities for black and white films shall be:

(a) Black and white negative film density measurement.

Max Base-Plus-Fog	.20 ± .10
D-Min	.40 ± .10
D-Max	1.50

Base-Plus-Fog shall be measured between and at the edges of the negative frame, and conform with the manufacturer's predicted density value. The minimum usable density shall be no less than 0.30 and maximum usable density no more than 1.50 after deducting Base-Plus-Fog density. The average density range aim point should be 1.0 and the minimum no less than 0.55.

3.5.4 Maximum photographic image and color quality control is required when exposing and processing color infrared film. The color infrared film shall be exposed and processed to the manufacturer's recommendations unless otherwise required in project specifications. It is recommended that the following color balance test be conducted prior to using the film on a project. Remove approximately 3 feet of unexposed film from the outside wrap. Expose a 21-step sensitometric wedge (0.15 density increments) on the film strip, and process it using the manufacturer's recommended process tolerances. The color balance shall be established by obtaining two points

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
FY 2019/2020 through FY 2021/2022

Exhibit "B"

Specifications for Aerial Photography

on the characteristic curve at $D=1.0$, one being at the midpoint of the two visible-light curves, and the second at the point of intersection of $D=10$ with the IR-curve. A color balance aim point of 20 has been determined empirically to be optimum for most applications. The processed stepwedge will become part of the roll from which they were removed. These stepwedges will be maintained on file and used as criteria for acceptable color balance of the exposed and processed film. Exposed and processed film which does not have a color balance within $\pm .06 \text{ Log E}$ of the color balance aim point will be cause for rejection.

3.5.5 The camera instrument panel and all fiducial marks shall be sharp and clearly legible on all processed film.

3.5.6 All exposed color films should be processed as soon as possible to avoid desirable color balance shifts.

4. Photographic Operations

4.1 Photography shall not be secured when the ground is obscured by haze, snow, smoke, dust, flood waters, or environmental factors that may obscure ground detail. Clouds and/or shadows of clouds shall not appear in the photograph. The solar altitude shall be defined by the application but in general it should not be less than 30 degrees when aerial negatives are exposed. Priorities will be provided to the contractor by the District prior to the date of photography and the contractor shall follow these priorities consistent with local flight conditions and logical flight planning. For projects which will have targeted ground control points, photographic operations must be coordinated with the placing of targets so that a minimum of time will elapse between targeting and photography.

4.2 The camera should be checked to be sure it is properly secured onto the mount and that all cable connections are tight. The camera lens, filters, and camera port must be inspected to assure that the surfaces are not scratched, stretched, or discolored and that they are free of foreign particles and condensation.

4.2.1 The camera magazine must be clean, firmly seated on the camera. The transport system must be operating properly and the correct information entered into the data block recording devices.

4.3 Flight Lines - The District will provide flight maps, pdf, and dgn files for the location of the flight lines. All flying shall be done in strict conformance with the instructions and the intended locations specified on the flight maps. Flight lines shall be

CONSULTING SERVICES AGREEMENT

Aerial Imagery and/or Light Detection and Ranging Services
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Exhibit "B"

Specifications for Aerial Photography

continuous and straight with no breaks throughout the entire length of the flight line unless otherwise specified. Each project shall be flown in its entirety with the same camera. The maximum angle of deviation between the actual flight path and the specified flight line shall not exceed three degrees at any point on the lines. Reflights for rejected exposures shall include the entire flight line unless the flight line contains more than 15 exposures in which case a portion of the flight line may, with permission of District, be replaced.

- 4.3.1 Every effort shall be made to avoid breaks within individual flight lines. Where breaks within a flight line are necessary, the entire flight line composed of the resulting segments shall meet all of the requirements set forth in these Specifications. Where breaks occur, these shall have an overlap of at least four frames to ensure a stereo model of overlap or tie. All photos within a single flight line shall be acquired with the same aerial camera and with the camera oriented in the same direction.
- 4.3.2 Exposures acquired to replace rejected, damaged, lost, or otherwise destroyed exposures shall fully conform to these Specifications. Replacement exposures shall be acquired with the same aerial camera(s) used to acquire the original exposures and shall be exposed as nearly as possible to the same day and lighting conditions as the original exposures.
- 4.4 Flight Height - Departures from flight heights required to produce the desired photo scale shall not exceed -2% or +5% unless changed by Air Route Traffic Control Centers.
- 4.5 Changes in the course of the aircraft between successive overlapping photographs within a flight line shall not exceed three degrees.
- 4.6 While exposing aerial photography, the camera shall be compensated for crab of the aircraft with a resultant error not exceeding three degrees.
- 4.7 Exposure Overlap - The overlap shall be sufficient to provide full stereoscopic coverage as follows:
 - 4.7.1 Endlap - Forward overlap in the line of flight shall average not less than 57% or more than 62% at the mean elevation of the terrain, unless otherwise specified. Individual forward overlaps shall not be less than 55% or more than 68%, except in the situation where a forward overlap in areas of low elevation must exceed 68% to attain the minimum 55% forward overlap in adjacent areas of higher elevation. Wherever there is a change in direction

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between two flight lines (other than between adjacent parallel flight lines), junction areas between the adjoining flight lines shall be covered stereoscopically by both lines.

- 4.7.2 Sidelap - Any flight line with an exposure having sidelap (overlap of parallel strips of vertical photography) of less than twenty percent or more than forty percent may be rejected. Sidelap, per strip, shall average thirty percent, plus or minus five percent.
- 4.8 The combined effect of aircraft course corrections, crab, and tilt shall result in an apparent crab not greater than five degrees on successive photographs. Apparent crab is defined as the angle between a line joining fiducial marks in the direction of flight and the line between the indicated principal point and the conjugate image of the indicated principal point of the adjacent photograph within the same line of flight.
- 4.9 The tilt within a single frame shall not exceed four degrees nor shall the difference in tilt between two consecutive overlapping frames within a flight line exceed four degrees. The average tilt for all negatives of the same nominal scale shall not exceed one degree.
- 4.10 All film shall be exposed using the fastest shutter speed possible when the aperture is set at its optimum value in consideration of the optical resolution and image motion.
- 4.11 Each roll of aerial film shall have an unexposed leader at least ten frames in length. This unexposed leader will be used to expose a sensitometric wedge before processing. Whenever a roll of aerial film is used in a discontinuous fashion, such as from one day to the next or from a morning flight to an afternoon flight, a spacer at least four frames in length shall be rolled forward just prior to the commencement of taking new photographs.
- 4.12 All film shall be exposed using the fastest shutter speed possible when the aperture is set at its optimum value in consideration of the optical resolution and image motion.
5. Preliminary Checks
- 5.1 Each roll of aerial film shall be processed as soon as possible after it is exposed. Navigation of the flight lines and image quality shall be quick-checked for compliance with these Specifications.

Exhibit "B"

Specifications for Aerial Photography

5.2 Reflights shall be immediately ordered for the purpose of securing replacement exposures for all frames which fail to meet minimum standards set forth in these specifications, provided ground conditions have not yet terminated the photographic "season".

6. Deliverable Products

Photography shall be taken as early as possible in the flying season once the flight conditions are met. Priorities will be provided to the contractor by the District prior to the date of photography and the contractor shall follow these priorities consistent with local flight conditions and logical flight planning. For projects which will have targeted ground control points, photographic operations must be coordinated with the placing of targets so that a minimum of time will elapse between targeting and photography. Notification shall be sent to the District once a project has been flown. Exposure of the film shall be in accordance with the manufacturer's recommendations and with a goal toward achieving density requirements set forth in paragraph 3.5.3. The negatives shall be clear and sharp in detail, free from light streaks and static marks, and of uniform tone and degree of contrast to permit ground details to show clearly in all scene reflectance, with particular emphasis on pattern recognition in the shadow areas.

6.1 Aerial Film

6.1.1 The exposed/processed aerial film should be delivered in accordance with the stipulations of delivery schedule and delivery address.

6.1.2 Each processed roll or partial roll of aerial film shall be kept in roll form, on the spool, and in the metal or plastic container supplied by the film manufacturer. Rejected exposures shall be removed. All flights belonging to a project shall be in the **same** container.

6.2 Color and Black and White Contact Prints

The contractor is to furnish three complete sets of 9" x 9" contact color prints of all color flights and one complete set of 9" x 9" contact prints of all black and white flights, unless otherwise specified. Contact prints shall be made on an automatic dodging printer on medium weight resin-coated paper on which ink and pencil can be used on both sides.

6.2.1 The photographic emulsion shall be of fine grain and have a suitable light sensitivity range and contrast for the making of prints from the aerial film exposed under this contract. Outdated materials shall not be used.

Exhibit "B"
Specifications for Aerial Photography

- 6.2.2 Processing, including exposure, development, fixation, washing, and drying of all photographic materials, shall result in finished photographic prints having a fine grain quality, a normal, uniform density, and such tone and contrast that all photographic details shall show clearly within the dark and light tone areas as well as in areas with intermediate tones. Adequate grades of contact paper and proper laboratory procedures shall be used to achieve the best prints possible. Excessive variance in tone or contrast between adjoining prints shall be cause for rejection.
- 6.2.3 Photographic prints shall be trimmed as specified by the District. When trimmed, always leave the camera fiducial marks, GPS, and other data recorded in the border of each image. Prints showing fiducial marks of inadequate clarity and definition or prints omitting fiducial marks shall be rejected.
- 6.2.4 All prints shall be clear and free from chemical stains, blemishes, uneven spots, air bells, light streaks or fog, and other defects which would, in the opinion of the District, interfere with their intended purpose. Prints shall be delivered to the District in a smooth, flat, and usable condition.
- 6.2.5 Titling and Labeling - All lettering shall be positioned as closely as possible to the inside leading edge of the format of the exposure. The characters used for making the exposures shall be 3/16 inch, drafted or stamped with opaque ink to avoid deformation of the film as to what is manifested with heat embossed titles. The lettering shall clearly show on all copies of the photographs perpendicular to the line of flight, as indicated in the attached "Method of Negative Identification", Exhibit "B".

All material shall be delivered to the following address:

Riverside County Flood Control and Water Conservation District
Photogrammetry Section
1995 Market Street
Riverside, CA 92501
Attn: Keith Ream

Schedule of Delivery - Materials shall be delivered to the District within 30 days after date of aerial photography.

Exhibit "C"

Method of Negative Identification for 9" x 9" Photos

The exposure numbers shall be consecutive for the entire project. The exposure number shall be in the upper right corner of the photograph printed from each exposure to be read as one looks northerly along the flight line or easterly if lines are east-west. The date of photography shall be in the upper left corner. When labeling the images, the District would like the job name, photo scale, date, and exposure number on the first exposure only. All subsequent exposures should have the date and exposure number only.

9-02-2010	JOB NAME	1:3000	1
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SAMPLE I - NOT TO SCALE

INFORMATION ABOVE TO BE NOTED ON FIRST EXPOSURE

Exhibit "D"
Task Order Approval Form

CONSULTANT: _____

PROJECT NAME: _____

The Scope of Services for this Task Order, a copy of which is attached hereto as Exhibit "B" and incorporated herein by this reference, shall constitute an approved Task Order pursuant to the Agreement between DISTRICT and CONSULTANT dated @ ("AGREEMENT"). CONSULTANT agrees to perform the services described in Exhibit "A" for a fee amount of \$@, unless otherwise modified by the DISTRICT's Project Manager in a subsequent Task Order Approval. All charges shall be consistent with the Compensation terms pursuant to Section 5 of the AGREEMENT and incorporated herein by this reference.

Performance of the services shall be subject to the terms and conditions contained in the AGREEMENT.

Dated this _____ day of _____
(To be filled in by General Manager-Chief Engineer)

RIVERSIDE COUNTY FLOOD CONTROL
AND WATER CONSERVATION DISTRICT

By: _____
JASON E. UHLEY
General Manager-Chief Engineer

[CONSULTANT]

By: _____
[NAME OF AUTHORIZED REPRESENTATIVE]
[Title]