



Orange County Purchasing Department
714 Polk Street Orange, TX 77630
Phone 409-882-7902 Fax 409-670-4170

NOTICE TO BIDDERS

Orange County Commissioners' Court will accept sealed competitive bids at the Orange County Purchasing Agent's Office located at 714 Polk Street, Orange, Texas, on the following requirements:

BID NAME: UPDATING CAMERA SYTEM AT EOC
BID NO: IFB-22308
DUE DATE/TIME: 2:00 PM, CST, OCTOBER 26, 2022
MAIL OR DELIVER TO: Orange County Purchasing Department
714 Polk Street
Orange, TX 77630

Bid instructions and specifications are available at www.co.orange.tx.us or the office of the Orange County Purchasing Agent located at 714 Polk Street, Orange, Texas, 77630. Phone 409-882-7903.

The successful bidders will offer quality products and/or services meeting or exceeding Orange County's specifications on an as needed basis. Payment for these products and/or services will be funded from the American Rescue Plan Act Funding.

Orange County reserves the right to award this bid by unit, or by lump sum to the most qualified responsible bidder and to increase or decrease quantities as it deems necessary. Orange County also reserves the right to waive any or all formalities and/or technicalities or to reject any or all bids if in the best interest of the County.

Orange County hereby notifies all bidders that it will affirmatively assure that minority enterprises are afforded full opportunity to submit Bids in response to this bid invitation, and that they will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

Tim Funchess
Purchasing Agent
County of Orange Texas

IFB-22308
UPDATING CAMERA SYSTEM AT EOC

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Instructions to Bidders

Bid Submission

Bids must be submitted with an original copy to the following address:

BID NAME: UPDATING CAMERA SYSTEM AT EOC
BID NO: IFB-22308
DUE DATE/TIME: 2:00 PM, CST, OCTOBER 26, 2022
MAIL OR DELIVER TO: Orange County Purchasing Department
714 Polk Street
Orange, TX 77630

Bids will be accepted at the above address until the time and date specified herein, and immediately after will be publicly opened. All Bids shall be sealed in an envelope and **plainly marked with the Bid Name, Bid Number, Due Date, and the Bidder's Name and Address. Late Bids will not be accepted and will be returned unopened to the bidder.** All Bids submitted in response to this invitation shall become the property of Orange County and will be a matter of public record available for review.

Any prospective respondent desiring any explanation or interpretation of the bid/proposal must make a written request which must be received by Orange County Purchasing at least five (5) business days prior to the scheduled time for the bid/proposal opening. The request must be addressed to Tim Funchess, Orange County Purchasing Agent, tfunchess@co.orange.tx.us or 714 Polk Street, Orange, Texas, 77630. Request received after the deadline will be not be responded to due to the time constraints.

IT IS THE BIDDER/PROPOSER RESPONSIBILITY TO VERIFY THE ISSUANCE OF ADDENDA IN REGARD TO THIS BID/RFP.

ADDENDA SHALL BE POSTED ON THE ORANGE COUNTY TEXAS WEBSITE www.co.orange.tx.us. BIDDER/PROPOSER MUST MONITOR THE ORANGE COUNTY WEBSITE FOR ANY ADDENDA OR ADDITIONAL INSTRUCTIONS.

ORANGE COUNTY SHALL NOT BE RESPONSIBLE FOR FAILED INTERNET CONNECTIONS OR POWER INTERRUPTIONS.

BIDDER IS RESPONSIBLE FOR RETURNING ALL REQUIRED PAGES. ADDITIONALLY, FAILURE TO RETURN ALL REQUIRED FORMS COULD RESULT IN A BID BEING DECLARED AS NON-RESPONSIVE.

General Terms and Conditions of Bid and Term Contract

Preparation of Bids

The bid shall be legibly printed in ink or typed. If a unit price or extension already entered is to be altered, it shall be crossed out and initialed in ink by the bidder. The bid shall be legally signed and shall include the complete address of the bidder. Orange County is exempt from Federal and State Sales Taxes, and such taxes shall not be included in bid prices.

Rejection or Withdrawal

Submission of additional terms, conditions or agreements with the bid document are grounds for deeming a bid non-responsive and may result in bid rejection. Orange County reserves the right to reject any and all bids and to waive any informalities and minor irregularities or defects in bids. Bids may be withdrawn in person by a bidder or authorized representative, provided their identity is made known and a receipt is signed for the bid, but only if the withdrawal is made prior to the time set for receipt of bids. Bids are an irrevocable offer and may not be withdrawn within 90 days after opening date.

Award

The bid will be awarded to the responsible, responsive bidder(s) whose bid, conforming to the solicitation, will be most advantageous to Orange County – price and other factors considered. Unless otherwise specified in this IFB, Orange County reserves the right to accept a bid in whole or in part, and to award by item or by group, whichever is deemed to be in the best interest of Orange County. Any bidder who is in default to Orange County at the time of submittal of the bid shall have that bid rejected. Orange County reserves the right to clarify any contractual terms with the concurrence of the Contractor; however, any substantial nonconformity in the offer, as determined by Orange County, shall be deemed non-responsive and the offer rejected. In evaluating bids, Orange County shall consider the qualifications of the bidders, and, where applicable, operating costs, delivery time, maintenance requirements, performance data, guarantees of materials and equipment. In addition, Orange County may conduct such investigation as it deems necessary to assist in the evaluation of a bid and to establish the responsibility, qualifications, and financial ability of the bidders to fulfill the contract. Orange County reserves the right to award this contract on the basis of lowest and best bid in accordance with the laws of the State of Texas, to waive any formality or irregularity, to make awards to more than one offeror, and/or to reject any or all bids. In the event the lowest dollar offeror meeting specifications is not awarded a contract, Offeror may appear before the Commissioners' Court and present evidence concerning Offeror responsibility after officially notifying the Office of the Purchasing Agent of Offeror's intent to appear. Orange County shall not be responsible for any effort or cost expended in the preparation of a response to this IFB. There will not be a debriefing meeting after award of this contract.

Contract

A response to an IFB is an offer to contract with Orange County based upon the terms, conditions, and specifications contained in the IFB. Bids do not become contracts unless and until they are executed by Orange County, eliminating a formal signing of a separate contract. For that reason, all of the terms and conditions of the contract are contained in the IFB, unless any of the terms and conditions is modified by an IFB Amendment, a Contract Amendment, or by mutually agreed terms and conditions in the contract documents.

Fiscal Funding

A multi-year lease or lease/purchase arrangement (if requested by the Special Requirements/Instructions), or any contract continuing as a result of an extension option, must include fiscal funding out. If, for any reason, funds are not appropriated to continue the lease or contract, said lease or contract shall become null and void. After expiration of the lease, leased equipment shall be removed by the offeror from the using department without penalty of any kind or form to Orange County. All charges and physical activity related to delivery, installation, removal and redelivery shall be the responsibility of the offeror. Orange County is operated and funded on an October 1 to September 30 basis; accordingly, the County reserves the right to terminate, without liability to the County, any contract for which funding is not available. Orange County is operated and funded on an October 1 to September 30 basis; accordingly, the County reserves the right to terminate, without liability to the County, any contract for which funding is not available.

Addenda and Changes to Bid Documents

Each addendum or change issued in relation to this IFB document will be on file in the office of the Purchasing Agent, and will be posted on the Orange County Purchasing web site www.orange.tx.us as soon as possible. It shall be the bidder's responsibility to make inquiry as to change or addenda issued, and to monitor the web site. All such changes or addenda shall become part of the contract and all bidders shall be bound by such addenda. Vendors are responsible for monitoring the web site in order to remain informed on addenda. Vendors shall acknowledge receipt of all addenda with submission of Bid.

Specifications

Unless otherwise stated by the bidder, the bid will be considered as being in accordance with Orange County's applicable standard specifications, and any special specifications outlined in the bid document. References to a particular trade name, manufacturer's catalogue, or model number are made for descriptive purposes to guide the bidder in interpreting the requirements of Orange County, and should not be construed as excluding bids on other types of materials, equipment, and supplies. However, the bidder, if awarded a contract, will be required to furnish the particular item referred to in the specifications or description unless departure or substitution is clearly noted and described in the bid. Orange County reserves the right to determine if equipment/ product being bid are an acceptable alternate. All goods shall be new and unused unless otherwise so stated in the bid. Any unsolicited alternate bid, or any changes, insertions, or omissions to the terms and conditions, specifications, or any other requirements of the bid, may be considered non-responsive.

Interpretation of Bid and/or Contract Documents

All inquiries shall be made within a reasonable time prior to the date and time fixed for the bid opening, in order that a written response in the form of an addendum, if required, can be processed before the Bids are opened. Inquiries received that are not made in a timely fashion may or may not be considered.

Currency

Prices calculated by the bidder shall be stated in U.S. dollars.

Pricing

Prices shall be stated in units of quantity specified in the bid documents. In case of discrepancy in computing the amount of the bid, the unit price shall govern.

Notice to Proceed/Purchase Order

the successful bidder may not commence work under this contract until authorized to do so by the Purchasing Agent.

Certification

By signing the offer section of the Offer to Contract page, bidder certifies:

The submission of the offer did not involve collusion or other anti-competitive practices. The bidder has not given, offered to give, nor intends to give at any time hereafter, any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to any public servant in connection with the submitted offer. The bidder hereby certifies that the individual signing the bid is an authorized agent for the bidder and has the authority to bind the bidder to the contract.

Minority-Women Business Enterprise Participation

It is the desire of Orange County to increase the participation of Minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the County does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms.

Grant Funding

Any contract entered into by the County that is to be paid from grant funds shall be limited to payment from the grant funding and the vendor/provider understands that the County has not set aside any County funds for the payment of obligations under a grant contract. If grant funding should become unavailable at any time for the continuation of services paid for by the grant, and further funding cannot be obtained for the contract, then the sole recourse of the provider shall be to terminate any further services under the contract and the contract shall be null and void.

HIPPA Compliance

Offeror agrees to comply with the Standards for Privacy of Individually Identifiable Health Information of the Health Insurance Portability and Accountability Act of 1996, PL 104-191 45 CFR Parts 160-164, as amended, and the Texas Medical Records Privacy Act, Texas Health and Safety Code Chapter 181, as amended, collectively referred to as "HIPPA" to the extent that the Offeror uses, disclosed or has access to protected health information as defined by HIPPA. Offeror may be required to enter a Business Associate Agreement pursuant to HIPPA.

Hold Harmless Agreement

Contractor, the successful offeror, shall indemnify and hold Orange County harmless from all claims for personal injury, death and/or property damage resulting directly or indirectly from contractor's performance. Contractor shall procure and maintain, with respect to the subject matter of this bid, appropriate insurance coverage including, as a minimum, public liability and property damage with adequate limits to cover contractor's liability as may arise directly or indirectly from work performed under terms of this bid. Certification of such coverage must be provided to Orange County Purchasing before any work begins.

Waiver of Subrogation

Offeror and offeror's insurance carrier waive any and all rights whatsoever with regard to subrogation against Orange County as an indirect party to any suit arising out of personal or property damages resulting from offeror's performance under this agreement.

Severability

If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

Recycled Materials

Orange County encourages the use of products made of recycled materials and shall give preference in purchasing to products made of recycled materials if the products meet applicable specifications as to quantity and quality. Orange County will be the sole judge in determining product preference application.

Scanned or Re-Typed Response

If in its Bid response, offeror either electronically scans, re-types, or in some way reproduces the County's published Bid package, then in event of any conflict between the terms and provisions of the County's published Bid specifications, or any portion thereof, and the terms and provisions of the Bid response made by offeror, the County's Bid specifications *as published* shall control. Furthermore, if an alteration of any kind to the County's published Bid specifications is only discovered after the contract is executed and is or is not being performed; the contract is subject to immediate cancellation.

Electronic Data

If offeror obtained the bid specifications on a disk in or web site order to prepare a response, the bid must be submitted in hard copy according to the instructions contained in this bid package. If, in its bid response, offeror makes any changes whatsoever to the County's published bid specifications, the County's Bid specifications as published shall control. It is preferred that you enter your data on the disk, do a print and then return disk and print out. You must return a hard copy bid and return the disk.

E-Mail Addresses Consent

Vendor affirmatively consents to the disclosure of its e-mail addresses that are provided to Orange County. This consent is intended to comply with the requirements of the Texas Public Information Act, Tex. Gov't Code Amn. 522.137 as amended, and shall survive termination of this agreement. This consent shall apply to e-mail addresses provided by Vendor, its employees, officers, and agents acting on Vendor's behalf and shall apply to any e-mail address provided in any form for any reason whether related to this Bid/Bid or otherwise.

Potential Conflicts of Interest

An outside consultant or contractor is prohibited from submitting a bid for services on an Orange County project of which the consultant or contractor was a designer or other previous contributor, or was an affiliate, subsidiary, joint venture or was in any other manner associated by ownership to any party that was a designer or other previous contributor. If such a consultant or contractor submits a prohibited bid, that bid shall be disqualified on the basis of conflict of interest, no matter when the conflict is discovered by Orange County. A conflict of interest questionnaire is included to be filled out and returned.

Governing Law

This invitation to bid is governed by the competitive bid requirements of the County Purchasing Act, Texas Local Government Code, §262.021 *et seq.*, as amended. Offerors shall comply with all applicable federal, state and local laws and regulations. Offeror is further advised that these requirements shall be fully governed by the laws of the State of Texas and that Orange County may request and rely on advice, decisions and opinions of the Attorney General of Texas and the County Attorney concerning any portion of these requirements.

Access to Records

In special circumstances, vendor may be required to allow duly authorized representatives of Orange County or the state and federal government access to contacts, books, documents, and records necessary to verify the nature and extent of the cost of services provided by vendor.

Governing Forms

In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, Orange County's interpretation shall govern.

Supplemental Materials

Offerors are responsible for including all pertinent product data in the returned bid package. Literature, brochures, data sheets, specification information, completed forms requested as part of the bid package and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements, which the offeror wishes to include as a condition of the bid, must also be in the bid package. Failure to include all necessary and proper supplemental materials may be cause to reject the entire bid.

Material/Color

Determination Selection of colors of materials is a right reserved by the using department unless otherwise specified in the bid. Unspecified colors shall be quoted as standard colors, NOT colors which require upcharges or special handling. Unspecified fabrics or vinyls should be construed as medium grade. If offeror fails to get color/material approvals prior to delivery of merchandise, the using department may refuse to accept the items and demand correct shipment without penalty, subject to other legal remedies.

Inspections

Orange County reserves the right to inspect any item(s) or service location for compliance with specifications and requirements and needs of the using department. If an offeror cannot furnish a sample of a bid item, where applicable, for review, or fails to satisfactorily show an ability to perform, the County can reject the bid as inadequate.

Testing

Orange County reserves the right to test equipment, supplies, material and goods bid for quality, compliance with specifications and ability to meet the needs of the user. Demonstration units must be available for review. Should the goods or services fail to meet requirements and/or be unavailable for evaluation, the bid is subject to rejection.

Disqualification of Offeror

Upon signing this bid document, an offeror offering to sell supplies, materials, services, or equipment to Orange County certifies that the offeror has not violated the antitrust laws of this state codified in Texas Business and Commerce Code §15.01, et seq., as amended, or the federal antitrust laws, and has not communicated directly or indirectly the bid made to any competitor or any other person engaged in such line of business. Any or all bids may be rejected if the County believes that collusion exists among the offerors. Bids in which the prices are obviously unbalanced may be rejected. If multiple bids are submitted by an offeror and after the bids are opened, one of the bids is withdrawn, the result will be that all of the bids submitted by that offeror will be withdrawn; however, nothing herein prohibits a vendor from submitting multiple bids for different products or services.

Assignment

The successful offeror may not assign, sell or otherwise transfer this contract without written permission of Orange County Commissioners Court.

Contract Obligation

Court must award the contract and the County Judge or other person authorized by the Orange County Court must sign the contract before it becomes binding on Orange County or the offerors. Binding agreements shall remain in effect until all products and/or services covered by this purchase have been satisfactorily delivered and accepted.

Digital Format

If offeror obtained the bid specifications in digital format in order to prepare a response, the bid must be submitted in hard copy, according to the instructions contained in this Bid package. If, in its response, offeror makes any changes whatsoever to the County's published Bid specifications, the County's bid

specifications **as published** shall control. Furthermore, if an alteration of any kind to the County's published bid specifications is only discovered after the contract is executed and is or is not being performed; the contract is subject to immediate cancellation.

Title Transfer

Title and Risk of Loss of goods shall not pass to Orange County until Orange County actually receives and takes possession of the goods at the point or points of delivery.

Estimated Quantities

Orange County estimates are based on quantities used the previous year. These projected estimates can be changed by various unforeseen factors, such as the weather, and changes in budgetary conditions. The estimated quantities also do not include orders placed by participating entities. Therefore, these contracts are based on actual annual needs on an as needed basis. There is no intent to buy indicated, or intended, and the County will only pay for material it has properly ordered and received by Orange County.

Participating Local Governments

A rider is attached to this bid to indicate the willingness of the bidder to supply materials to participating local governments at the same terms and conditions as is offered to Orange County within this bid, if the bidder is awarded the bid. Participation by the other local governments is solely at the option of those governments, and any contract, resulting is strictly between the individual agencies, and the bidder.

Method of Payment

Invoices shall be sent directly to the:

COUNTY AUDITOR'S OFFICE

123 S. 6th Street

ORANGE, TX 77630

Payments are processed after the Auditor's Office has been notified that the items have been received in good conditions and no unauthorized substitutions have been made. Invoices must detail the items delivered and must reference the Orange County Purchase Order Number for speed in processing. The County will only receive delivery for goods as required, and the County shall only be billed for goods ordered and delivered.

Equivalents of Equal Quality are Acceptable

Whenever an article or material is defined by describing a proprietary product, or by using the name of a manufacturer, the term "or equivalent" if not inserted, shall be implied. The specified article or material shall be understood as descriptive, not restrictive.

Substitutions after Award of the Contract

After the award of the contract, no substitutions will be made without prior approval from the County Purchasing Agent. Should any items on the contract be discontinued or otherwise become unattainable during the life of the contract, test will be made of substitutes at the discretion of the County Purchasing Agent.

Inclement Weather

In case of inclement weather or any other unforeseen event causing Orange County to close for business on the date of a bid/proposal submission deadline, the bid/proposal closing will automatically be postponed until the next business day Orange County is open.

Emergency/Declared Disaster Requirements

In the event of an emergency or if Orange County is declared a disaster area, by the County, State, or Federal Government, the Acceptance of Offer may be subjected to unusual usage. Contractor shall service the County during such an emergency or declared disaster under the same terms and conditions that apply during non-emergency/disaster conditions. The pricing as specified in this Acceptance of Offer

shall apply to serving the County's needs regardless of the circumstances. If Contractor is unable to supply the services under the terms of the Acceptance of Offer, the Contractor shall provide proof of such disruption and a copy of the invoice from Contractor's supplier(s). Additional profit margin as a result of supplying services during an emergency or declared disaster shall not be permitted. In the event that additional equipment, supplies, and materials are required during the declared disaster, additional shipping, handling and drayage fees may apply, if approved by Orange County.

General Conditions of Bid and Term Contract

1. Bid

1.1 Bids. All Bids must be submitted on the Bid form furnished in this package.

1.2 Authorized Signatures. The Bid must be executed personally by the vendor, duly authorized partner of the partnership, or duly authorized officer of the corporation. If executed by an agent, a power of attorney or other evidence of authority to act on behalf of the vendor shall accompany the Bid to become a valid Bid.

1.3 Late Bids. Bids must be in the office of the Orange County Purchasing Agent before or at the specified time and date Bids are due. Bids received after the submission deadline shall be rejected as non-responsive and returned unopened.

1.4 Withdrawal of Bids Prior to Bid Opening. A Bid may be withdrawn before the opening date by submitting a written request to the Purchasing Agent. If time allows, the bidder may submit a new Bid. Bidder assumes full responsibility for submitting a new Bid before or at the specified time and date Bids are due. Orange County reserves the right to withdraw a request for Bids before the opening date.

1.5 Withdrawal of Bids after Bid Opening. Bidder agrees that its offer may not be withdrawn or cancelled by the vendor for a period of ninety (90) days following the date and time designated for the receipt of Bids unless otherwise stated in the Bid and/or specifications.

1.6 Bid Amounts. Bids shall show net prices, extensions where applicable and net total. In case of conflict between unit price and extension, the unit price will govern. Any ambiguity in the Bid as a result of omission, error, unintelligible or illegible wording shall be interpreted in the favor of Orange County.

1.7 Exceptions and/or Substitutions. All Bids meeting the intent of the specifications and plans will be considered for award. Vendors taking exception to the specifications and plans, or offering substitutions, shall state these exceptions in the section provided. If Bid is made on an article other than the one specified, which a bidder considers comparable, the name and grade of said article must be specified in the Bid and sufficient specifications and descriptive data must accompany same to permit thorough evaluation. The absence of stated exceptions and/or substitutions shall indicate that the vendor has not taken any exceptions to the specifications and shall be responsible to perform in strict accordance with the specifications. As a matter of practice, Orange County rejects exception(s) and /or substitutions as non-responsive but reserves the right to accept any and/or all of the exception(s) and/or substitution(s) deemed to be in the best interest of Orange County.

1.8 Alternates. The Invitation for Bid and/or specifications may expressly allow bidder to submit an alternate Bid. Presence of such an offer shall not be considered an indication of non-responsiveness.

1.9 Descriptions. Unless otherwise specified, any reference to make, manufacturer and/or model used in the Bid specifications is merely descriptive and not restrictive, and is used only to indicate type, style, or quality of material desired.

1.10 Bid Alterations. Bids cannot be altered or amended after submission deadline. Any interlineations, alterations, or erasures made before opening time must be initialed by the signer of the Bid, guaranteeing authenticity.

1.11 Tax Exempt Status. Orange County is exempt from federal excise tax and state sales tax. Unless the Bid form or specifications specifically indicate otherwise, the Bid price must be net, exclusive of above-mentioned taxes and will be so construed. Therefore, the Bid price shall not include taxes. Orange County claims exemption from all sales and/or use taxes under Texas Tax Code §151.309, as amended. Texas Limited Sales Tax Exemption Certificates will be furnished upon written request to the Orange County Auditor

1.12 Quantities. Quantities indicated are estimated quantities only and are not a commitment to buy. Approximate usage does not constitute an order, but only implies the probable quantity that will be used. Commodities will be ordered on an as-needed basis. Bidder is responsible for accurate final counts.

1.13 Silence of Specifications for Complete Units. All materials, equipment and/or parts that will become a portion of the completed work, including items not specifically stated herein but, necessary to

render the service(s) complete and operational per the specifications, are to be included in the Bid price. Vendor may be required to furnish evidence that the service, as Bid, will meet or exceed these requirements.

1.14 General Bid Bond/Surety Requirements. Failure to furnish Bid bond or bonds will result in Bid being declared non-responsive. Non-responsive Bids will not be considered for award.

1.15 General Insurance Requirements. Failure to furnish Affidavit of Insurance, if required in these specifications, will result in Bid being declared non-responsive. Non-responsive Bids will not be considered for award.

1.16 Responsiveness. A responsive Bid shall substantially conform to the requirements of this Invitation to Bid and/or specifications contained herein. Bidders who substitute any other terms, conditions, specifications and/or requirements or who qualify their Bids in such a manner as to nullify or limit their liability to the contracting entity shall have their Bids deemed non-responsive. Also, Bids containing any clause that would limit contracting authority shall be considered non-responsive. Examples of nonresponsive Bids include but shall not be limited to: a) Bids that fail to conform to required delivery schedules as set forth in the Bid request; b) Bids with prices qualified in such a manner that the Bid price cannot be determined, such as with vague wording that may include "price in effect at the time of delivery," and c) Bids made contingent upon award of other Bids currently under consideration.

1.17 Responsible Standing of Bidder. To be considered for award, bidder must at least: have the ability to obtain adequate financial resources, be able to comply with required or proposed delivery/ completion schedule, have a satisfactory record of performance; have a satisfactory record of integrity and ethics, and be otherwise qualified and eligible to receive award.

1.18 Proprietary Data. Bidder may, by written request, indicate as confidential any portion(s) of a Bid that contain proprietary information, including manufacturing and/or design processes exclusive to the vendor. Orange County will protect from public disclosure such portions of a Bid, unless directed otherwise by legal authority, including existing Open Records Acts.

1.19 Public Bid Opening. Bidders are invited to be present at the opening of Bids. After the official opening of Bids, a period of not less than one week is necessary to evaluate Bids. The amount of time necessary for Bid evaluation may vary and is determined solely by the County. Following the Bid evaluation, all Bids submitted are available for public review.

2. Performance

2.1 Design, Strength, and Quality. Design, strength, and quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practices. The apparent silence of specifications and/or plans as to any detailed description concerning any point shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications and/or plans shall be made on the basis of this statement.

2.2 Age and Manufacture. All tangible goods being proposed must be new and unused, unless otherwise specified, in first-class condition, of current manufacture, and furnished ready to use. All items not specifically mentioned that are required for a complete unit shall be furnished.

2.3 Delivery Location. All deliveries will be made to the address(es) specified on the purchase order during normal working hours of 8:00 a.m. to 11:45 a.m. and 1:00 p.m. to 4:45 p.m., Monday through Friday, unless otherwise authorized by the Purchasing Agent or designee.

2.4 Delivery Schedule. Delivery time may be an important consideration in the evaluation of best value. The maximum number of days necessary for delivery ARO shall be stated in the space, if provided, on the Bid form.

2.5 Delivery Charges. All delivery and freight charges, F.O.B. destination shown on Orange County purchase order, as necessary to perform contract are to be included in the Bid price. Bids shall include all charges for delivery, packing, crating, containers, etc. Bids will be considered as being based on F.O.B. destination/delivered freight included. Unless otherwise stated by the bidder in writing on the Bid Form.

2.6 Installation Charges. All charges for assembly, installation and set-up shall be included in the Bid price. Unless otherwise stated, assembly, installation and set-up will be required.

2.7 Operating Instructions and Training. Clear and concise operating instructions and descriptive literature will be provided in English, if requested. On-site detailed training in the safe and efficient use and general

maintenance of item(s) purchased shall be provided as needed at the request of Orange County. Instructions and training shall be at no additional cost to the County.

2.8 Storage. Bidder agrees to provide storage of custom ordered materials, if requested, for up to thirty (30) calendar days.

2.9 Compliance with Federal, State, County, and Local Laws. Bids must comply with all federal, state, county and local laws, including, but not limited to, all applicable standard safety, emission, and noise control requirements. Any vehicles or equipment shall contain all standard safety, emission, and noise control requirements required for the types and sizes of equipment at the time of their manufacture. The contractor agrees, during the performance of work or service, to comply with all applicable codes and ordinances of Orange County or the State of Texas as they may apply, as these laws may now read, or as they may hereafter be changed or amended.

2.10 OSHA. The bidder will certify all equipment complies with all regulations and conditions stipulated under the Williams-Steiger Occupational Safety and Health Act of 1971, as amended. The successful bidder will further certify that all items furnished under this project will conform and comply with federal and State of Texas OSHA standards. The successful bidder will agree to indemnify and hold harmless Orange County for any and all damages that may be assessed against the County.

2.11 Patents and Copyrights. The successful vendor agrees to protect the County from claims involving infringements of patents and/or copyrights.

2.12 Samples, Demonstrations and Testing. At Orange County's request and direction, bidder shall provide product samples and/or testing of items Bid to ensure compliance with specifications. Samples, demonstrations and/or testing may be requested at any point prior to or following Bid award. Samples, demonstrations and/or testing may be requested upon delivery and/or any point during the term of resulting contract. All samples (including return thereof), demonstrations, and/or testing shall be at the expense of the bidder/vendor.

2.13 Acceptability. All articles enumerated in the Bid shall be subject to inspection by an officer designated for that purpose by Orange County. If found inferior to the quality called for, or not equal in value to the specifications, deficient in workmanship or otherwise, this fact shall be certified to the Purchasing Agent, who shall have the right to reject the whole or any part of the same. Items and/or work determined to be contrary to specifications must be replaced at the vendor's expense. Inferior items not retrieved by the vendor within thirty (30) calendar days or an otherwise agreed upon time, shall become the property of the County. If disposal of such items warrants an expense, an amount equal to the disposal expense will be deducted from amounts payable to the vendor.

2.14 Maintenance. Maintenance required for equipment Bid should be available in Orange County by a manufacturer authorized maintenance facility. Cost for this service shall be shown on the Bid sheet as requested or on a separate sheet, as required. If Orange County opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and should be priced accordingly.

2.15 Material Safety Data Sheets. Under the "Hazardous Communications Act," common known as the "Texas Right to Know Act," a bidder must provide the user department, with each delivery, material safety data sheets which are applicable to hazardous substances defined in the Act. Failure of the bidder to furnish this documentation will be cause to reject any Bid applying thereto.

2.16 Evaluation. Evaluation shall be used as a determinant as to which services are the most efficient and/or most economical for the County. It shall be based on all factors having a bearing on price and performance of the items in the user environment. All Bids are subject to tabulation by the Orange County Purchasing Department and recommendation to Orange County Commissioners' Court. Compliance with all Bid requirements and needs of the using department are considered in evaluating Bids. Pricing is not the only criteria for making a recommendation. The Orange County Purchasing Department reserves to right to contact any bidder, at any time, to clarify, verify or requirement information with regard to this Bid.

3. Purchase Orders and Payment

3.1 Purchase Orders. A purchase order(s) shall be generated by the Orange County Purchasing Agent to the successful vendor. The purchase order number must appear on all itemized invoices and packing slips. The County will not be held responsible for any work orders placed and/or performed without a valid current

purchase order number. Payment will be made for all services rendered and accepted by the contract administrator for which a valid invoice has been received.

3.2 Invoices. All invoices shall reference the Purchase Order number. Invoices shall reference a detailed description for each item invoiced. If an item purchased and itemized on the invoice does not correspond to an item in any of the categories awarded to the vendor, invoice shall reference the item as "N/C" to indicate that it is a non-contract item. This requirement is to assist the County in verifying contract pricing on all invoices. Payment will be made under terms of net thirty (30) days unless otherwise agreed upon by seller and the purchasing department.

3.3 Prompt Payment. In accordance with the State of Texas Prompt Payment Act, Article 601f V.T.C.S., payment will be made after receive and acceptance by the County of the merchandise ordered and of a valid invoice. Successful bidder(s) is required to pay subcontractors within ten (10) days after the successful bidder receives payment from the County.

4. Contract

4.1 Contract Definition. The General Conditions of Bid and Terms of Contract, Specifications, Plans, Bid Forms, Addenda, and any other documents made a part of this Bid shall constitute the complete Bid. This Bid, when duly accepted by Orange County, shall constitute a contract equally binding between the successful bidder and Orange County.

4.2 Contract Agreement. Once a contract is awarded, the unit prices offered by the successful bidder shall remain firm for the term of the contract. Contract shall commence on date of award.

4.3 Change Order. No different or additional terms will become part of this contract with the exception of a change order. No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing and at the discretion and approval of Orange County. No change order will be binding unless signed by an authorized representative of the County and the vendor.

4.4 Price Re-determination. A price re-determination may be requested at the time of annual renewal. All requests for price re-determination shall be in written form. Cause for such request, i.e., manufacturer's direct cost, postage rates, Railroad Commission rates, Federal/State minimum wage law, Federal/State unemployment taxes, F.I.C.A, Insurance Coverage Rates, etc., shall be substantiated in writing by the source of the cost increase. The bidder's past experience of honoring contracts at the Bid price will be an important consideration in the evaluation of the lowest and best Bid. Orange County reserves the right to accept or reject any/all requests for price re-determination as it deems to be in the best interest of the County.

4.5 Termination. Orange County reserves the right to terminate the contract for default if the bidder breached any of the terms therein, including warranties of bidder or if the bidder becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu of any other remedies which Orange County may have in law or equity. Default may be construed as, but not limited to, failure to deliver the proper goods and/or service within the proper amount of time, and/or to properly perform any and all services required to Orange County's satisfaction and/or to meet all other obligations and requirements. Contracts may be terminated without cause upon thirty (30) days' written notice to either party unless otherwise specified. Orange County reserves the right to award canceled contract to the next lowest bidder. Bidder, in submitting this Bid, agrees that Orange County shall not be liable to prosecution for damages in the event that the County declares the bidder in default.

4.6 Conflict of Interest. Employees of the County are not permitted to maintain financial interest in, or receive payment, directly or indirectly, borrow from, lend to, invest in, or engage in any substantial financial transaction with any individual, organization, supplier, or subcontractor who does business with the County without disclosure. When conflict of interest is discovered, it shall be grounds for termination of contract.

4.7 Injuries or Damages Resulting from Negligence. Successful vendor shall defend, indemnify and save harmless Orange County and all its officers, agents and employees from all suits, actions, or other claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person, persons, or property on account of any negligent act or fault of the successful vendor, or of any agent, employee, subcontractor or supplier in the execution of, or performance under, any contract which may result from Bid award. Successful vendor shall pay any judgment with cost which may be obtained against Orange County growing out of such injury or damages.

4.8 Interest by Public Officials. No public official shall have interest in this contract, in accordance with Texas Local Government Code.

4.9 Warranty. Offerors shall furnish all data pertinent to warranties or guarantees which may apply to items in the Bid. Offerors may not limit or exclude any implied warranties. Offeror warrants that product sold to the County shall conform to the standards established by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event product does not conform to OSHA Standards, where applicable, Orange County may return the product for correction or replacement at the offeror's expense. If offeror fails to make the appropriate correction within a reasonable time, Orange County may correct at the offeror's expense.

4.10 Uniform Commercial Code. The successful vendor and Orange County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.

4.11 Venue. This agreement will be governed and construed according to the laws of the State of Texas. This agreement is performable in the County of Orange, Texas.

4.12 Sale, Assignment, or Transfer of Contract. The successful vendor shall not sell, assign, transfer or convey this contract, in whole or in part, without the prior written consent of Orange County.

4.13 Silence of Specifications. The apparent silence of these specifications as to any detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this state

Factors of Award

The bid award shall be based on, but not necessarily limited to the following factors:

- a. Total bid price
- b. Unit Price
- c. Delivery Date, delivery terms and lead time
- d. Results of testing samples
- e. Special needs and requirements of Orange County
- f. Vendor's past performance record with Orange County
- g. Orange County's evaluation of vendor's ability to perform the requirements of the contract
- h. Estimated costs for supplies, maintenance, etc.
- i. Estimated surplus value

Federal Contract Required Clauses

The activation of any Contract resulting from this Bid/RFP will be subject to FEMA reimbursement. Therefore, the following contract clauses will be required, where applicable, pursuant to 2 C.F.R. 200.326 and 2 C.F.R. Part 200, Appendix II, and shall, where applicable, form a part of any contract resulting from this Bid/RFP:

A. DAMAGES, 2 CFR §200.326 Appendix II to Part 200 (A)

- (1) All work to be performed under this AGREEMENT shall be timely commenced. A breach of this AGREEMENT by Contractor would cause substantial delay in the completion of the required services affecting the safety and welfare of the public.
- (2) In the event of Contractor's breach of its performance obligations, County shall have all rights and remedies against Contractor as provided by law.

B. TERMINATION RIGHTS, 2 CFR §200.326 Appendix II to Part 200 (B)

- (1) **Termination for Convenience:** Whenever the interests of the County so require, County may terminate the parties' Agreement, in whole or in part, for the convenience of the County. County shall give Contractor thirty (30) days prior written notice of termination specifying the portions of the Agreement to be terminated and when such termination will become effective. If only portions of the parties' agreement are terminated, Contractor has the right to withdraw from the parties'

Agreement, without adverse action or claims. In the event of a termination for convenience by County, Contractor shall be entitled to payment for all work and services performed by it up to the effective date of such termination.

- (2) **Termination for Cause:** The County may, by written notice of default to Contractor, terminate the parties' Agreement, in whole or in part, if the Contractor fails to satisfactorily perform any provisions of the parties' agreement after a period of ten (10) following Contractor's receipt of a Notice of Deficiency provided by County.

C. EQUAL EMPLOYMENT OPPORTUNITY CLAUSE (2 CFR §200.326 Appendix II to Part 200 (C))

If applicable to the work and services performed by Contractor under the RFP, during the performance of any Agreement, Contractor shall comply with the Equal Employment Opportunity Clause (41 CFR 60-1.4(b)):

- (1) Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (3) Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other agreement or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor for purpose of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Agreement or with any of the said rules, regulations or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (7) Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of subparagraphs 1 through 7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive

Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or contractor. Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: provided, however, that in the event Contractor becomes involved in, or is threatened with, litigation with a subcontractor or contractor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

D. DAVIS-BACON ACT AND COPELAND “ANTI-KICKBACK” ACT, 2 CFR §200.326 Appen. II to Part 200 (D)

- (1) **Bacon-Davis Act:** Applicable to construction or repair of public buildings or public works. see FEMA Public Assistance Program and Policy Guide, Ch.2(V)(G)(2), page 32 (FP 104-009-2/January 2016);
- (2) **Copeland “Anti-Kickback” Act:** In contracts subject to the Davis-Bacon Act, Contractor shall comply with the Copeland “Anti-Kickback” Act (40 U.S.C. §3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that the contractor and subcontractor must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The Government must report all suspected or reported violations to the appropriate Federal agency.
- (3) If applicable to the work and services performed by Contractor under the parties’ Agreement:
 - (a) Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this Agreement.
 - (b) Contractor or subcontractor shall insert in any subcontract the clause above and such other clauses as FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontract with all of these contract clauses.
 - (c) A breach of the Agreement clause above may be grounds for termination of the Agreement, and for debarment as a contractor and subcontractor as provided in 29 C.F.R. §5.12.

E. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT, 2 CFR §200.326 Appendix II to Part 200 (E) (40 U.S.C. 3701-3708)

Contracts in excess of \$100,000 that involve the employment of mechanics or laborers shall comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor and its subcontractors shall compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week.

- (1) **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

- (2) Violation: liability for unpaid wages: liquidated damages. In the event of any violation of the clause set forth in paragraph (I) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (I) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (I) of this section.
- (3) Withholding for unpaid wages and liquidated damages. The Government shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
- (4) The contractor and subcontractor shall insert in any subcontract the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts.

F. RIGHTS TO INVENTIONS MADE UNDER A CONTRACT OR AGREEMENT, 2 CFR §200.326 Appendix II to Part 200 (F)

If applicable to the work and services performed by Contractor under the parties' AGREEMENT and if the Federal award meets the definition of "funding agreement" under 37 CFR §401.2 (a) and the GOVERNMENT wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the GOVERNMENT must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business."

G. CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT, 2 CFR §200.326 Appendix II to Part 200 (G)

Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA). Contractor shall include the foregoing requirements in each subcontract exceeding \$100,000.

H. ENERGY EFFICIENCY AND CONSERVATION, 2 CFR §200.326 Appendix II to Part 200 (H)

If applicable to the work and services performed by Contractor under the parties' AGREEMENT, Contractor shall comply with the mandatory standards and policies of the state regulation promulgated in accordance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).

I. DEBARMENT AND SUSPENSION, 2 CFR §200.326 Appendix II to Part 200 (I)

- (1) This Agreement is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the Contractor is required to verify that none of the contractor, its principals (defined at 2

C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

- (2) The Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- (3) This certification is a material representation of fact relied upon by GOVERNMENT. If it is later determined that the Contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to GOVERNMENT, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.
- (4) The Contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C AGREEMENT is valid and throughout the period of performance. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

J. BYRD ANTI-LOBBYING AMENDMENT, 2 CFR §200.326 Appendix II to Part 200 (J)

Contractor must file with the GOVERNMENT the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. If not provided with the bid response, Contractor must complete and submit the Certification Regarding Lobbying Form.

K. PROCUREMENT OF RECOVERED MATERIALS, 2 CFR §200.326 Appendix II to Part 200 (K) and 2 CFR §200.322)

- (1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired-
 - (a) Competitively within a timeframe providing for compliance with the contract performance schedule;
 - (b) Meeting contract performance requirements; or
 - (c) At a reasonable price.
- (2) Information about this requirement is available at EPA's Comprehensive Procurement Guidelines web site, <http://www.epa.gov/cpg/>. The list of EPA-designate items is available at <http://www.epa.gov/cpg/products/htm>.

L. AGREEMENTING WITH SMALL AND MINORITY BUSINESSES, WOMEN'S BUSINESS ENTERPRISES, AND LABOR SURPLUS AREA FIRMS (2 CFR §200.321)

Should the Contractor subcontract any of the work under this AGREEMENT, Contractor shall take the following affirmative steps: place qualified small and minority businesses and women's business enterprises on solicitation lists; assure that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources; divide total requirements, when

economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises; establish delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

M. ACCESS TO RECORDS

- (1) Contractor agrees to provide GOVERNMENT, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representative's access to any books, documents, papers, and records of the Contractor which are directly pertinent to this AGREEMENT for the purposes of making audits, examinations, excerpts, and transcriptions.
- (2) Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- (3) Contractor agrees to provide the FEMA Administrator or his authorized representatives' access to construction or other work sites pertaining to the work being completed under the contract.

N. SEAL, LOGO AND FLAGS

Contractor shall not use the U.S. Department of Homeland Security's seal(s), logos, crests, or reproductions of flags or likenesses of the U.S. Department of Homeland Security's agency officials without specific FEMA preapproval.

O. COMPLIANCE WITH FEDERAL LAW, REGULATIONS AND EXECUTIVE ORDERS

This is an acknowledgement that FEMA financial assistance will be used to fund the AGREEMENT only. Contractor will comply will all federal law, regulations, executive orders, FEMA policies, procedures, and directives.

P. NO OBLIGATION BY FEDERAL GOVERNMENT

The Federal Government is not a party to this AGREEMENT and is not subject to any obligations or liabilities to GOVERNMENT, Contractor, or any other party pertaining to any matter resulting from the contract.

Q. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

General Conditions of Bid and Term Contract

Insurance Requirements

Purchase Order will NOT be released until vendor provides all required documents to Orange County Purchasing.

Failure to furnish Affidavit of Insurance, if required in these specifications, will result in Bid being declared non-responsive. Non-responsive Bids will not be considered for award. Before commencing work, the successful

bidder shall be required, at his own expense, to furnish the Orange County Purchasing Agent within ten (10) days of notification of award with certified copies of all insurance policies showing the following insurance coverage to be in force throughout the term of the contract. No Purchase Order will be released until all required documents are provided to Orange County Purchasing.

- (a) Commercial General Liability insurance at minimum combined single limits of \$1,000,000.00 per-occurrence and \$1,000,000.00 general aggregate for bodily injury and property damage, which coverage shall include products/completed operations, (1,000,000.00 products/completed operations aggregate). Coverage for products/completed operations must be maintained for a least two (2) years after the construction work is completed. Coverage must be written on an occurrence form Contractual liability must be maintained with respect to the contractor's obligations contained in the contract. The general aggregate limit must be at least two (2) times the per-occurrence limit. A per-project aggregate endorsement must be included.
- (b) Workers Compensation insurance at statutory limits, including employer's liability coverage at minimum limits of \$500,000.00 per occurrence each accident/\$500,000.00 by disease per-occurrence/\$500,000.00 by disease aggregate.
- (c) Commercial Automobile Liability insurance at minimum combined single limits of \$1,000,000.00 per-occurrence for bodily injury and property damage, including owned, non-owned and hired vehicle coverage.

The required limits may be satisfied by any combination of primary, excess or umbrella liability insurances, provided the primary policy complies with the above requirements and the excess umbrella is following form. The successful bidder may maintain reasonable and customary deductibles, subject to approval by Orange County.

A comprehensive general liability insurance form may be used in lieu of a commercial general liability insurance form. In this event, coverage must be written on an occurrence basis, at limits of \$1,000,000.00 per-occurrence, combined single limit; and coverage must include a broad form comprehensive general liability endorsement, coverage for products/completed operations, and broad form contractual liability covering the obligations included in the contract.

With reference to the foregoing insurance requirement, the successful bidder shall specifically endorse applicable insurance policies as follows:

1. Orange County shall be named as an additional insured with respect to general liability.
2. All liability policies shall contain cross liability and severability of interest clauses
3. A waiver of subrogation in favor of Orange County shall be contained in the workers compensation, general liability, and automobile liability coverage.
4. All insurance policies shall be endorsed to require the insurer to immediately Orange County of any material change in the insurance coverage.
5. All insurance policies shall be endorsed to the effect that Orange County will receive at least sixty (60) days' notice prior to cancellation, non-renewal or termination of the insurance.

All insurance shall be purchased from an insurance company that meets the following requirements:

1. A financial rating of A: VII or better as assigned by the BEST Rating Company.
2. Licensed and admitted to do business in the State of Texas

All insurance must be written on forms filed with and approved by the Texas State Board of Insurance. Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent, and shall contain provisions representing and warranting the following:

The company is licensed and admitted to do business in the State of Texas, and is a subscriber to

The Federal/State Guaranty Fund if applicable.

The insurances set forth by the insurance company are underwritten on forms, which have been

Approved by the Texas State Board of Insurance.

Sets forth all endorsements and insurance coverage's according to requirements and instructions

Contained herein.

Shall specifically set forth the notice of cancellation or termination provisions to Orange County.

General Conditions of Bid and Term Contract

Workers' Compensation Insurance

Purchase Order will NOT be released until vendor provides all required documents to Orange County Purchasing.

1 Definitions:

1.1. **Certificate of coverage ("Certificate")** – A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement, TWCC-81, TWCC-82, TWCC-83, or TWCC-84 showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

1.2. **Duration of the project** – Includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

1.3. **Persons providing services on the project ("subcontractor") in article 406.096** –

Includes all persons or entities performing all or part of the services under the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractor, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" includes, without limitation, providing, hauling or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

2. The Contractor shall provide coverage, based on proper reporting of classification code and payroll amounts and filing any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all employees of the contractor providing services on the project, for the duration of the project.

3. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.

4. If the coverage period shown on the Contractor's current certificate of coverage ends during the duration of the project, the Contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.

5. The Contractor shall obtain from each person providing services on a project, and provide to the governmental entity:

5.1. A certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and

5.2. No later than ten (10) days after receipt by the Contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate ends during the duration of the project.

6. The Contractor shall retain all required certificates of coverage for the duration of the project and for one (1) year thereafter.

7. The Contractor shall notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

8. The Contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.

9. The Contractor shall contractually require each person with whom it contracts to provide services on a project to:

9.1 Provide coverage, based on reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all its employees providing services on the project, for the duration of the project.

9.2. Provide to the Contractor, prior to that person beginning work on the project a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project.

9.3. Provide the Contractor, prior to the end of coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.

9.4. Obtain from each person with whom it contracts, and provide to the Contractor:

9.4.1. A certificate of coverage, prior to the other person beginning work on the project; and

9.4.2. The coverage period, if the coverage period shown on the current certificate of a new certificate of coverage showing extension of coverage, prior to the end of coverage ends during the duration of the project.

9.5. Retain all required certificates of coverage on file for the duration of the project and for one (1) year thereafter.

9.6. Notify the governmental entity in writing by certified mail or personal delivery, within ten (10) days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and

9.7. Contractually require each person with whom it contracts to perform as required by paragraphs I.1. – I.7., with the certificates of coverage to be provided to the person for whom they are providing services.

10. By signing this contract or providing or causing to be provided a certificate of coverage, the Contractor is representing to the governmental entity that all employees of the contractor who will provide services of the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.

11. The Contractor's failure to comply with any of these provisions is a breach of contract by the Contractor which entitles the governmental entity to declare the contract void if the Contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

**IFB- 22308 – UPDATING CAMERA SYSTEM AT EOC
OFFER FORM**

To Orange County:

We hereby offer and agree to furnish the materials or service in compliance with all terms, conditions, specifications, and amendments in the Invitation for Bid and any written exceptions in the offer. We understand that the items in this Invitation for Bid, including, but not limited to, all required certificates are fully incorporated herein as a material and necessary part of the contract.

The undersigned hereby states, under penalty of perjury, that all information provided is true, accurate, and complete, and states that he/she has the authority to submit this bid, which will result in a binding contract if accepted by Orange County.

We acknowledge receipt of the following amendment(s): _____, _____, _____, _____.

I certify, under penalty of perjury, that I have the legal authorization to bind the firm hereunder:

Company Name	For clarification of this offer, contact:
Address	Name
City State Zip	Phone Fax
Signature of Person Authorized to Sign	E-mail
Printed Name	
Title	

Bidder Shall Return Completed Form with Offer

IFB- 22308 – UPDATING CAMEERA SYSTEM AT EOC

ACCEPTANCE OF OFFER

The Offer is hereby accepted for the following item:

IFB-22308 – Updating Camera System at the EOC

The Contractor is now bound to sell the materials or services listed by the attached contract and based upon the Invitation for Bid, including all terms, conditions, specifications, amendments, etc., and the Contractor's Offer as accepted by Orange County. The Contractor has not been authorized to commence any billable work or to provide any material or service under this contract until Contractor receives a purchase order and/or a notice to proceed from the Orange County Purchasing Agent.

Countersigned:

Orange County Judge

Date

Attest:

Orange County Clerk

**IFB- 22308 – UPDATING CAMERA SYSTEM AT EOC
VENDOR REFERENCES**

Please list at least three (3) companies or governmental agencies (preferably a municipality) where the same or similar products and/or services as contained in this specification package were recently provided.

REFERENCE ONE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Contract Period: _____ Scope of Work: _____

REFERENCE TWO

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Contract Period: _____ Scope of Work: _____

REFERENCE THREE

Government/Company Name: _____

Address: _____

Contact Person and Title: _____

Phone: _____ Fax: _____

Contract Period: _____ Scope of Work: _____

Bidder Shall Return Completed Form with Offer

SPECIAL REQUIREMENTS INSTRUCTIONS

Vendor Registration: System for Award Management (SAM)

Note: Vendors doing business with Orange County **are required** to be registered with The System for Award Management (SAM), **with an “active” status.**

The Purchasing Department prior to procuring or entering into contract(s) for any goods/services will check the exclusion or debarment record of the vendor using the System for Award Management (SAM) and document by printing out the verification. The System for Award Management (SAM) is the Official U.S. Government System that consolidated the capabilities of CCR/FedReg, ORCA, and EPLS. A copy of the screen print indicating the vendor is not excluded or debarred at the time of the procurement will be included with the paperwork for that purchase and retained with the procurement records.

This policy applies to the procurement of all good(s) or services(s) regardless of unit price or quantity. Vendor(s) will be verified before issuing any new purchase order, blanket purchase order, and contract or single time purchase. Vendor(s) will be verified prior to extending, renegotiating a follow-on contract, or entering into a new contract. Bid respondents are highly encouraged to check their firm’s SAM status prior to bid submission.

The Purchasing Department shall verify all vendors, utilizing the System for Award Management (SAM).

The Purchasing Department will:

1. Go to the EPLS Website (<https://.SAM.Gov>).
2. The Purchasing Agent or their agent will search the EPLS system for the vendor.
3. If the vendor is found to be debarred, the vendor may not be used.
4. If the vendor is found not to be debarred, print the screen page and retain with the procurement documentation.

Vendors may register at NO COST directly at the SAM website: <https://www.sam.gov>.

SPECIAL REQUIREMENTS INSTRUCTIONS

Submission of FORM 1295 – Texas Ethics Commission – Form Below

As of January 1, 2016, per House Bill 1295, the Texas Ethics Commission (TEC) requires **all awarded vendors** to complete a Certificate of Interested Parties (Form 1295) at the time of notification of award.

FORM 1295, Complete Instructions, and Login Instruction are available via the Texas Ethics Commission:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

Awarded Vendors must visit the TEC website link below, enter the required information on Form 1295, and print a copy of the completed form. The form will include a certification of filing that will contain a unique certification number.

At the time of award, the Orange County Purchasing Department will submit a request to the Awarded Vendor to both:

1. Submit Form 1295 online via the Texas Ethics Commission website link:

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

2. Submit a printed copy of Form 1295, signed by an Authorized Agent of the awarded vendor and with this bid.

CERTIFICATE OF INTERESTED PARTIES

FORM 1295

Complete Nos. 1 - 4 and 6 if there are interested parties. Complete Nos. 1, 2, 3, 5, and 6 if there are no interested parties.	OFFICE USE ONLY
1 Name of business entity filing form, and the city, state and country of the business entity's place of business.	
2 Name of governmental entity or state agency that is a party to the contract for which the form is being filed.	

3 Provide the identification number used by the governmental entity or state agency to track or identify the contract, and provide a description of the services, goods, or other property to be provided under the contract.

4 Name of Interested Party	City, State, Country (place of business)	Nature of Interest (check applicable)	
		Controlling	Intermediary

5 Check only if there is NO interested Party.

6 AFFIDAVIT I swear, or affirm, under penalty of perjury, that the above disclosure is true and correct.

Signature of authorized agent of contracting business entity

AFFIX NOTARY STAMP / SEAL ABOVE

Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20_____, to certify which, witness my hand and seal of office.

Signature of officer administering oath Printed name of officer administering oath Title of officer administering oath

ADD ADDITIONAL PAGES AS NECESSARY

NOTE: VENDOR MUST SUBMIT FORM 1295 WITH OFFER

SPECIAL REQUIREMENTS INSTRUCTIONS

CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

- (a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

- (2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

- (a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

- (1) the date that the vendor:
 - (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
 - (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or
- (2) the date the vendor becomes aware:
 - (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
 - (B) that the vendor has given one or more gifts described by Subsection (a); or
 - (C) of a family relationship with a local government officer.

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

FORM CIQ

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

2 Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.

6 Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

Date

NOTE: VENDOR MUST SUBMIT FORM CIQ WITH OFFER

LOCAL GOVERNMENT OFFICER CONFLICTS DISCLOSURE STATEMENT

Section 176.003 of the Local Government Code requires certain local government officers to file this form. A "local government officer" is defined as a member of the governing body of a local governmental entity; a director, superintendent, administrator, president, or other person designated as the executive officer of a local governmental entity; or an agent of a local governmental entity who exercises discretion in the planning, recommending, selecting, or contracting of a vendor. This form is required to be filed with the records administrator of the local governmental entity not later than 5 p.m. on the seventh business day after the date on which the officer becomes aware of the facts that require the filing of this statement.

A local government officer commits an offense if the officer knowingly violates Section 176.003, Local Government Code. An offense under this section is a misdemeanor.

Refer to chapter 176 of the Local Government Code for detailed information regarding the requirement to file this form.

INSTRUCTIONS FOR COMPLETING THIS FORM

The following numbers correspond to the numbered boxes on the other side.

- 1. Name of Local Government Officer.** Enter the name of the local government officer filing this statement.
- 2. Office Held.** Enter the name of the office held by the local government officer filing this statement.
- 3. Name of vendor described by Sections 176.001(7) and 176.003(a), Local Government Code.** Enter the name of the vendor described by Section 176.001(7), Local Government Code, if the vendor: a) has an employment or other business relationship with the local government officer or a family member of the officer as described by Section 176.003(a)(2)(A), Local Government Code; b) has given to the local government officer or a family member of the officer one or more gifts as described by Section 176.003(a)(2)(B), Local Government Code; or c) has a family relationship with the local government officer as defined by Section 176.001(2-a), Local Government Code.
- 4. Description of the nature and extent of each employment or other business relationship and each family relationship with vendor named in item 3.** Describe the nature and extent of the employment or other business relationship the vendor has with the local government officer or a family member of the officer as described by Section 176.003(a)(2)(A), Local Government Code, and each family relationship the vendor has with the local government officer as defined by Section 176.001(2-a), Local Government Code.
- 5. List gifts accepted, if the aggregate value of the gifts accepted from vendor named in item 3 exceeds \$100.** List gifts accepted during the 12-month period (described by Section 176.003(a)(2)(B), Local Government Code) by the local government officer or family member of the officer from the vendor named in item 3 that in the aggregate exceed \$100 in value.
- 6. Affidavit.** Signature of local government officer.

Local Government Code § 176.001(2-a): "Family relationship" means a relationship between a person and another person within the third degree by consanguinity or the second degree by affinity, as those terms are defined by Subchapter B, Chapter 573, Government Code.

Local Government Code § 176.003(a)(2)(A):

- (a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

- (2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

**LOCAL GOVERNMENT OFFICER
CONFLICTS DISCLOSURE STATEMENT**

FORM CIS

(Instructions for completing and filing this form are provided on the next page.)

<p>This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.</p> <p>This is the notice to the appropriate local governmental entity that the following local government officer has become aware of facts that require the officer to file this statement in accordance with Chapter 176, Local Government Code.</p>	<p>OFFICE USE ONLY</p> <p>Date Received _____</p>
<p>1 Name of Local Government Officer</p>	
<p>2 Office Held</p>	
<p>3 Name of vendor described by Sections 176.001(7) and 176.003(a), Local Government Code</p>	
<p>4 Description of the nature and extent of each employment or other business relationship and each family relationship with vendor named in Item 3.</p>	
<p>5 List gifts accepted by the local government officer and any family member, if aggregate value of the gifts accepted from vendor named in Item 3 exceeds \$100 during the 12-month period described by Section 176.003(a)(2)(B).</p> <p>Date Gift Accepted _____ Description of Gift _____</p> <p>Date Gift Accepted _____ Description of Gift _____</p> <p>Date Gift Accepted _____ Description of Gift _____</p> <p style="text-align: center;">(attach additional forms as necessary)</p>	
<p>6 AFFIDAVIT</p> <p style="text-align: center;">I swear under penalty of perjury that the above statement is true and correct. I acknowledge that the disclosure applies to each family member (as defined by Section 176.001(2), Local Government Code) of this local government officer. I also acknowledge that this statement covers the 12-month period described by Section 176.003(a)(2)(B), Local Government Code.</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">Signature of Local Government Officer</p> <p>AFFIX NOTARY STAMP / SEAL ABOVE</p> <p>Sworn to and subscribed before me, by the said _____, this the _____ day of _____, 20_____, to certify which, witness my hand and seal of office.</p> <p>_____ Signature of officer administering oath Printed name of officer administering oath Title of officer administering oath</p>	

NOTE: VENDOR MUST SUBMIT FORM CIS WITH OFFER

Contractor Acknowledgement of Stormwater Management Program

I hereby acknowledge that I am aware of the stormwater management program and standard operating procedures developed by Orange County in compliance with the TPDES General Permit No. TXR040000. I agree to comply with all applicable best management practices and standard operating procedures while conducting my services for Orange County. I agree to conduct all services in a manner that does not introduce illicit discharges of pollutants to streets, stormwater inlets, drainage ditches or any portion of the drainage system. The following materials and/or pollutant sources must not be discharged to the drainage system as a result of any services provided:

1. Grass clippings, leaves, mulch, rocks, sand, dirt or other waste materials resulting from landscaping activities, (except those materials resulting from ditch mowing or maintenance activities)
2. Herbicides, pesticides and/or fertilizers, (except those intended for aquatic use)
3. Detergents, fuels, solvents, oils and/or lubricants, other equipment and/or vehicle fluids,
4. Other hazardous materials including paints, thinners, chemicals or related waste materials,
5. Uncontrolled dewatering discharges, equipment and/or vehicle wash waters,
6. Sanitary waste, trash, debris, or other waste products
7. Wastewater from wet saw machinery,
8. Other pollutants that degrade water quality or pose a threat to human health or the environment.

Furthermore, I agree to notify Orange County immediately of any issue caused by or identified by _____ that is believed to be an immediate threat to human health or the environment.

(Company/Contractor)

Contractor Signature

Date

Printed Name

Title

Bidder Shall Return Completed Form with Offer

RESIDENCE CERTIFICATION/TAX FORM

Pursuant to Texas Government Code §2252.001 *et seq.*, as amended, Orange County requests Resident Certification. §2252.001 *et seq.* of the Government Code provides some restrictions on the awarding of governmental contracts; pertinent provisions of §2252.001 are stated below:

- (3) "Nonresident bidder" refers to a person who is not a resident.
- (4) "Resident bidder" refers to a person whose principal place of business is in this state, including a contractor whose ultimate parent company or majority owner has its principal place of business in this state.

- I certify that _____ [company name] is a Resident Bidder of Texas as defined in Government Code §2252.001.
- I certify that _____ [company name] is a Nonresident Bidder as defined in Government Code §2252.001 and our principal place of business is _____ (city and state).

Taxpayer Identification Number (T.I.N.):	
Company Name submitting bid/proposal:	
Mailing address:	
If you are an individual, list the names and addresses of any partnership of which you are a general partner:	

Property: List all taxable property owned by you or above partnerships in Orange County.

Orange County Tax Acct. No.*	Property address or location**

* This is the property amount identification number assigned by the Orange County Appraisal District.
 ** For real property, specify the property address or legal description. For business property, specify the address where the property is located. For example, office equipment will normally be at your office, but inventory may be stored as a warehouse or other location.

Bidder Shall Return Completed Form with Offer

Good Faith Effort (GFE) Determination Checklist

This information must be submitted with your bid.

Bidder intends to utilize subcontractors/subconsultants in the fulfillment of this contract (if awarded).

Yes No

Instructions: In order to determine if a “Good Faith Effort” was made in soliciting HUBs for subcontracting opportunities, the following checklist and supporting documentation shall be completed by the Prime Contractor/Consultant, and returned with the Prime Contractor/ Consultant’s bid. This list contains the **minimum** efforts that should be put forth by the Prime Contractor/Consultant when attempting to achieve or exceed the goals of HUB Subcontractor participation. The Prime Contractor/Consultant may extend his/her efforts in soliciting HUB Subcontractor participation beyond what is listed below.

Did the Prime Contractor/Consultant . . .

- Yes No 1. To the extent practical, and consistent with standard and prudent industry standards, divide the contract work into the smallest feasible portions, to allow for maximum HUB Subcontractor participation?
- Yes No 2. **Notify** in writing a reasonable number of HUBs, allowing sufficient time for effective participation of the planned work to be subcontracted?
- Yes No 3. **Provide** HUBs that were genuinely interested in bidding on a subcontractor, adequate information regarding the project (i.e., plans, specifications, scope of work, bonding and insurance requirements, and a point of contact within the Prime Contractor/Consultant’s organization)?
- Yes No 4. **Negotiate** in good faith with interested HUBs, and not reject bids from HUBs that qualify as lowest and responsive bidders?
- Yes No 5. **Document** reasons HUBs were rejected? Was a written rejection notice, including the reason for rejection, provided to the rejected HUBs?
- Yes No 6. If Prime Contractor/Consultant has zero (0) HUB participation, **please explain the reasons why.**

If “No” was selected, please explain and include any pertinent documentation with your bid.

If necessary, please use a separate sheet to answer the above questions.

Printed Name of Authorized Representative

Signature

Title

Date

Bidder Shall Return Completed Form with Offer

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 1 OF 4

This information must be submitted with your bid.

Bidder intends to utilize subcontractors/subconsultants in the fulfillment of this contract (if awarded).

Yes No

Prime Contractor: _____ HUB: Yes No

HUB Status (Gender & Ethnicity): _____

Address: _____
Street City State Zip

Phone (with area code): _____ Fax (with area code): _____

Project Title & No.: _____ IFB/RFP No.: _____

Total Contract: \$ _____ Total HUB Subcontract(s): \$ _____

Construction HUB Goals: 12.8% MBE:: _____ % 12.6% WBE: _____ %

Sub-goals: 1.7 African-American, 9.7% Hispanic, 0.7% Native American, 0.8% Asian American.
Use these goals as a guide to diversify.

FOR HUB OFFICE USE ONLY:

Verification date HUB Program Office reviewed and verified HUB Sub information _____ Date: _____ Initials: _____

PART I. HUB SUBCONTRACTOR DISCLOSURE

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: Texas Bldg & Procurement Comm. Texas Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Bidder Shall Return Completed Form with Offer

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 2 OF 4

HUB SUBCONTRACTOR DISCLOSURE

PART I: Continuation Sheet

(Duplicate as Needed)

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: Tx. Bldg & Procurement Comm. Orange County Tx Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

HUB Subcontractor Name: _____

HUB Status (Gender & Ethnicity): _____

Certifying Agency: Tx. Bldg & Procurement Comm. Orange County Tx Unified Certification Prog.

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

**All HUB Subcontractor Participation may be verified with the
HUB Subcontractor(s) listed on Part I.**

Bidder Shall Return Completed Form with Offer

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 3 OF 4

PART II: STATEMENT OF NON-COMPLIANCE FOR NOT MEETING HUB SUBCONTRACTING GOALS

Please complete Good Faith Effort (GFE) Checklist and attach any supporting documentation.

Our firm was unable to meet the HUB goals for this project for the following reasons:

- All subcontractors to be utilized are "Non-HUBs." (Complete Part III)
- HUBs were solicited but did not respond.
- HUBs solicited were not competitive.
- HUBs were unavailable for the following trade(s):
- Other: _____

Was the Orange County HUB Office contacted for assistance in locating HUBs? Yes No

PART III: DISCLOSURE OF OTHER "NON-HUB" SUBCONTRACTS

The bidder shall use this area to provide a listing of all "Non-HUB" Subcontractors, including suppliers, that will perform under this project. A list of those "Non-HUB" Subcontractors the bidder selects, after bid submission, shall be provided to the Purchasing Office not later than five (5) calendar days after being notified that bidder is the apparent low bidder. A list of those "Non-HUB" Subcontractors that are selected after contract award must be provided **immediately** after their selection.

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Bidder Shall Return Completed Form with Offer

Historically Underutilized Business (HUB) Subcontracting Participation Declaration Form

PAGE 4 OF 4

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

Subcontractor Name: _____

Address: _____
Street City State Zip

Contact person: _____ Title: _____

Phone (with area code): _____ Fax (with area code): _____

Proposed Subcontract Amount: \$ _____ Percentage of Prime Contract: _____ %

Description of Subcontract Work to be Performed: _____

I hereby certify that I have read the *HUB Program Instructions and Information*, truthfully completed all applicable parts of this form, and **attached any necessary support documentation as required**. I fully understand that intentionally falsifying information on this document may result in my not receiving a contract award or termination of any resulting contract.

Name (print or type): _____

Title: _____

Signature: _____

Date: _____

E-mail address: _____

Contact person that will be in charge of invoicing for this project:

Name (print or type): _____

Title: _____

Date: _____

E-mail address: _____

Bidder Shall Return Completed Form with Offer

**Orange County Texas
House Bill 89 Verification**

I, _____ (Person name), the undersigned
representative of _____ (Company or Business name) _____

_____ (hereafter referred to as company) being an adult over the age of eighteen (18) years
of age, after being duly sworn by the undersigned notary, do hereby depose and verify under oath that the
company named-above, under the provisions of Subtitle F, Title 10, Government Code Chapter 2270:

1. Does not boycott Israel currently; and
2. Will not boycott Israel during the term of the contract.

Pursuant to Section 2270.001, Texas Government Code:

1. *“Boycott Israel” means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes; and*
2. *“Company” means a for-profit sole proprietorship, organization, association, corporation, partnership, joint venture, limited partnership, limited liability partnership, or any limited liability company, including a wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of those entities or business associations that exist to make a profit.*

DATE

SIGNATURE OF COMPANY REPRESENTATIVE

On this the _____ day of _____, 20____, personally appeared
_____, the above-named person, who after by me being duly
sworn, did swear and confirm that the above is true and correct.

NOTARY SEAL

NOTARY SIGNATURE

Date

Bidder Shall Return Completed Form with Offer

Orange County Texas
SENATE BILL 252 CERTIFICATION

On this day, I, Tim Funchess, the Purchasing Representative for Orange County, Texas, pursuant to Texas Government Code, Chapter 2252, Section 2252.152 and Section 2252.153, certify that I did review the website of the Comptroller of the State of Texas concerning the listing of companies that is identified under Section 806.051, Section 807.051 or Section 2253.253 and I have ascertained that the below-named company is not contained on said listing of companies which do business with Iran, Sudan or any Foreign Terrorist Organization.

Company Name

RFP or Vendor number

CERTIFICATION CHECK PERFORMED BY:

Purchasing Representative

Date

IFB-22308 CAMERA SYSTEM FOR EOC

Advertisement and Invitation for Bids **Orange County American Rescue Plan Act Funding**

The County will receive bids for CAMERA SYSTEM AT THE EOC until 2:00 .P.M on OCTOBER 26, 2022 at ORANGE COUNTY PURCHASING 714 POLK STREET ORANGE, TX 77630. The bids will be publicly opened and read aloud at 2:00 P.M. on OCTOBER 26 ,2022.

Bids are invited for items and quantities as follows:

1. MATERIALS
2. EQUIPMENT
3. LABOR

Bid/Contract Documents, including Technical Specifications are on file at (address(s) at which specifications can be obtained).

A bid bond in the amount of 5 percent of the bid issued by an acceptable surety is required with each bid for those contracts that exceed \$100,000. A certified check or bank draft payable to the the _____ or negotiable U.S. Government Bonds (as par value) may be submitted in lieu of the Bid Bond.

Orange County reserves the right to reject any or all bids or to waive any informalities in the bidding.

Bids may be held by the _____ for a period not to exceed 60 days from the date of the bid opening for the purpose of reviewing the bids and investigating the bidders' qualifications prior to the contract award.

Orange County _____ (contracting officer), (title) _____ (date)

All contractors and/or subcontractors who are debarred, suspended or otherwise excluded from or ineligible for participation on federal assistance programs may not undertake any activity in part or in full under this project.

INSTRUCTION TO BIDDERS

1. Interpretations or Addenda

No oral interpretations will be made to any bidder. Each request for an interpretation shall be made in writing to tfunctioness@co.orange.tx.us, no less than seven (7) days prior to the bid opening. Each interpretation made will be in the form of an Addendum to the contract documents and will be distributed to all parties holding contract documents no less than seven (7) days prior to the bid opening. It is, however, the bidder's responsibility to make inquiry as to any addenda issued. All such addenda shall become part of the contract documents and all bidders shall be bound by such addenda.

2. Alternate bid items

No alternate bids or bid items will be considered unless they are specifically requested by the technical specifications.

3. Bids

- a) All bids must be submitted on the forms provided and are subject to all requirements of the Contract Documents, including the Drawings.
- b) All bids must be regular in every respect and no interlineation, excisions or special conditions may be made or included by the bidder.
- c) Bid documents, including the bid, and the bid bond shall be sealed in an envelope and clearly labeled with the words "Bid Documents," the project number, name of bidder and the date and time of bid opening.
- d) The Grant Recipient may consider as irregular any bid on which there is an alteration of or departure from the bid form and, at its option, may reject any irregular bid.
- e) If a contract is awarded, it will be awarded to a responsible bidder on the basis of the lowest/best bid and the selected alternate bid items, if any.

4. Bid Modifications Prior to Bid Opening

Any Bidder may modify its bid in writing at any time prior to the scheduled closing time for receipt of bids, provided such modification is received by the Grant Recipient prior to the bid closing time. The modification should not reveal the bid price but should provide the addition, subtractions or other modifications so that the final prices or terms will not be known by the Grant Recipient until the sealed bid is open. Likewise, any Bidder may modify a bid by submitting a supplemental bid in person prior to the scheduled closing time for receipt of bids. Such supplemental bid should mention only additions or subtractions to the original bid so as to not reveal the final prices or terms to the Grant Recipient until the sealed bid is open.

5. Bid Bond

A bid bond in the amount of 5% of the bid issued by an acceptable surety is required with each bid for contracts that exceed \$100,000. A certified check or bank draft payable to the Grant Recipient or negotiable U.S. Government Bonds (as par value) may be submitted in lieu of the Bid Bond.

6. Corrections

Erasures or other corrections in the bid must be noted over the signature of the bidder.

7. Time for Receiving Bids

Bids received prior to the advertised hour of opening shall be kept securely sealed. The officer appointed to open the bids shall decide when the specified time has arrived and no bid received thereafter will be considered.

8. Opening of Bids

The Grant Recipient shall, at the time and place fixed for the opening of bids, publicly open and read aloud each bid, irrespective of any irregularities therein.

9. Withdrawal of Bids

Bidder may withdraw the Bid before the time fixed for the opening of Bids by communicating its purpose in writing to the Grant Recipient. Upon receipt of such notice, the unopened Bid will be returned to the Bidder. The bid guaranty of any bidder withdrawing his bid in accordance with the above will be returned promptly.

10. Award of Contract/Rejection of Bids

The contract will be awarded to the responsive, responsible Bidder submitting the lowest/best bid. The bidder selected will be notified at the earliest possible date. The Grant Recipient reserves the right to reject any or all bids where such rejection is in its interest.

11. Execution of Agreement

The failure of the successful bidder to execute the agreement and supply the required bonds thirty (30) days from the date of the notice of award, or within such extended period as the Grant Recipient may grant shall constitute a default and the Grant Recipient may, at its option either award the contract to the next lowest responsible bidder, or re-advertise for bids. In either case, the Grant Recipient may charge against the bidder the difference between the amount of the bid, and the amount for which a contract is subsequently executed irrespective of whether this difference exceeds the amount of the bid bond. If a more favorable bid is received through re-advertisement, the defaulting bidder shall have no claim against the Grant Recipient for a refund.

12. Equal Employment Opportunity

Bidder is required to ensure that employees and applicants for employment are not discriminated against because of race, color, religion, sex, sexual identity, gender identity, or national origin, and must comply with other civil rights requirements.

13. Certification Regarding Lobbying –

Contractors who apply or bid for an award of \$100,000 or more shall provide the required certification that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining an Federal contract, grant or any other award covered by 31 USC § 1352.

BID PROPOSAL- MATERIALS ONLY

INCLUDE THIS SHEET WITH PROPOSAL. BE SURE TO ALSO INCLUDE ALL SPECIFICATIONS, COMPLETED FORMS, DRAWINGS, ETC. AS DESCRIBED IN BID DOCUMENTS.

Item No.	Description	Qty.	Unit	Unit Price	Total Cost
1			EA	\$ _____	\$ _____
2			EA	\$ _____	\$ _____
3			EA	\$ _____	\$ _____
4			EA	\$ _____	\$ _____
5			EA	\$ _____	\$ _____
6			EA	\$ _____	\$ _____
				TOTAL BID	\$ _____

ACKNOWLEDGMENT OF ADDENDA

It is the bidder's responsibility to make inquiry to the County regarding issuance of any addenda. Bidder hereby acknowledges receipt of the following (please initial as applicable):

Addendum 1: _____
 Addendum 2: _____
 Addendum 3: _____

Proposal Submitted By:

Company: _____

Address: _____

EIN /Tax ID #: _____

 Signature of Authorized Representative

 Printed Name / Title

Vehicle Maintenance and Safety:

The Supervisor shall:

1. Show the employee where to find copies of the daily equipment checklist and give instruction on how to fill them out properly.
2. Instruct the employee on the proper use of a spotter for backing in accordance with the County Risk Management Policy.
3. Require that the employee use seat belts in all Orange County vehicles in accordance to the County Risk Management Policy.
4. Advise the employee on operator's maintenance versus mechanic's responsibilities.
5. Advise the employee on the proper accident reporting procedures and the time limits for reporting injuries and vehicle accidents.

Precinct Barn Safety:

The Supervisor shall:

1. Require that each employee keeps their work place clean, neat, and make the extra efforts to improve the appearance and safety of all precinct barns and maintenance areas.
 2. Advise each employee to forward suggestions that may improve safety to the Risk Management Coordinator.
 3. Advise each employee to notify him if an unsafe condition exists.
-
-

USE OF COUNTY EQUIPMENT AND OTHER PROPERTY

I. PURPOSE

To set forth general supervisory guidelines to avoid improper use and abuse of county vehicles and property.

II. SCOPE

This policy applies to all county employees.

III. POLICY

County property shall not be appropriated for personal use. All county property shall be used for its proper and intended purpose, and shall be used in a manner so as to minimize abuse of such property, as well as wear and tear on the property.

- A. Protection of Office & Other County Equipment. All office equipment, tools, and any other county equipment, shall be returned to their proper storage locations at the close of each business day. County property shall not be removed from county premises, except where specifically authorized by the relevant department head/elected official.
- B. Damage to County Property. Intentional or negligent damage to county property shall not be tolerated. Employees who do so may be subject to discipline, including, but not limited to, termination, and may be required to pay restitution for the damaged property. See also Policy No. 410: Standards of Conduct.
- C. County Vehicles. County vehicles shall be utilized for work related purposes only. Only authorized county employees shall drive or otherwise utilize county vehicles.
 1. Overnight Travel. Where an employee is authorized to utilize a county vehicle for overnight travel, the employee's spouse and children may accompany the employee on the travel. See also Policy No. 330: Travel.
 2. Sheriff's Department Personnel. Nothing in this policy shall be construed to prohibit Sheriff's Department personnel from utilizing county vehicles to transport prisoners from location to location, as necessary as part of their job duties.
 3. Improper Use of County Vehicles. Any employee who is found to have utilized a county vehicle for personal reasons, other than an emergency, may be subject to discipline, up to and including, termination, and may be required to pay restitution for the value of the misappropriated use.

4. Activities Strictly Prohibited. Employees are STRICTLY FORBIDDEN from engaging in any of the following activities while operating a County Owned Vehicle:
 - a. Checking, reading, or sending text messages or email messages on a cellular or other electronic device;
 - b. Taking and/or posting of any photographs or videos;
 - c. Checking social networks, using the Internet, watching movies or videos, playing games, or any other use of any smartphone apps;
 - d. Reading or looking at maps, newspapers, magazines, or any other written or photographic material; and
 - e. Applying makeup or any performing any other grooming activities.

5. Activities Strongly Discouraged. Employees are strongly discouraged from engaging in any activity while operating a County Owned Vehicle that could cause distraction. The County requires Employees to use their best judgment when engaging in such activities, and to engage in such activities in the safest manner possible.
 - a. Employees should refrain from cell phone usage unless such use is absolutely necessary. If it is necessary to use a cell phone, a hands-free device should be used. Further, the cellular device should be positioned where the employee can access without taking their eyes off the road, and should take such precautions as hanging up if conditions become hazardous, and place calls when the vehicle is not moving.
 - b. GPS navigation devices may be used while driving as long as they are set up in a manner that does not obscure the driver's view. Any destination(s) should be entered/changed while the vehicle is not moving. Cell phones may be used as navigation devices if the phone is placed in a support device so that the driver does not need to hold or unlock the phone while driving in order to receive directions.
 - c. Other distractions such as eating, drinking, tuning radios, or adjustment of climate controls should also be avoided and done only when traffic conditions safely permit and when they can be done without taking attention away from driving.

6. All Laws, Rules, and Standards Must be Followed. County employees are required to abide by all state and local laws, as well as all rules, regulations, and policies as may be established by the Orange County Commissioners Court. Employees are further expected to maintain the highest possible ethical and moral standards, and to operate County vehicles in a manner that will reflect positively upon the County.

- D. Performance of County Duties in Personal Vehicles. Any County Employee who is driving his or her own personal vehicle while in the course of scope of the performance of any work for the County is bound by the same rules and prohibitions set forth herein for the operation of County Owned vehicles.
- E. Employees who violate this policy will be subject to disciplinary actions, up to and including employment termination.

CONTRACT IFB-22308

THIS AGREEMENT made this the _____ day of _____, _____, by and between _____ (a corporation organized and existing under the laws of the State of _____) (a partnership consisting of _____) (an individual trading as _____) [Note 1] hereinafter called the "Contractor", and _____ hereinafter called the "County."

WITNESSETH, that the Contractor and the County for the considerations stated herein mutually agree as follows:

ARTICLE 1. Statement of Work. The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, equipment and services, including utility and transportation services, and perform and complete all work required for the construction of the Improvements embraced in the Project; namely, _____ [Note 2] for the _____ American Rescue Plan Act project, all in strict accordance with the contract documents including all addenda thereto, numbered _____, dated _____ and _____, all as prepared by _____ acting and in these contract documents preparation, referred to as the "Engineer".

Special Notes:

Note 1. Strike out the terms not applicable.

Note 2. Identify the principal items of Contract such as grading, paving, water mains, sewer lines, treatment facilities, etc.

ARTICLE 2. The Contract Price. The County will pay the Contractor for the performance of the Contract in current funds, for the total quantities of work performed at the unit prices stipulated in the Bid for the several respective items of work completed subject to additions and deductions as provided in _____ hereof.

Alternate Pricing Techniques: In the event the statutory provisions require the contract price to be a fixed sum, in the absence of an approved form, the following should be substituted for Article 2 above.

"ARTICLE 2. The Contract Price. The County will pay the Contractor for the performance of the Contract, in current funds, subject to additions and deductions as provided in Section 109 hereof, the sum of _____ Dollars (\$_____)."

ARTICLE 3. The Contract. The executed contract documents shall consist of the following components:

- | | |
|------------------------------|---|
| a. This Agreement (pgs. 1-3) | f. General Conditions, Part I |
| b. Addenda | g. Special Conditions |
| c. Invitation for Bids | h. Technical Specifications |
| d. Instructions to Bidders | i. Drawings (as listed in the Schedule of Drawings) |
| e. Signed Copy of Bid | j. [Add any applicable documents] |

ARTICLE 4. Performance. Work, in accordance with the Contract dated _____, _____, shall commence on or before _____, _____, and Contractor shall complete the WORK

within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, _____.

This Agreement, together with other documents enumerated in this ARTICLE 3, which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, forms the Contract between the parties hereto. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3 shall govern, except as otherwise specifically stated.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed in *triplicate* (Note 3) original copies on the day and year first above written. (Note 3)

(The Contractor)

By _____ [Note 4]

Title _____

(County)

By _____

Title _____

Special Notes:

Note 3. The number of copies to be executed by the parties should be stated in the agreement in the space provided. Such additional signed copies shall be prepared as may be required by the surety companies and others.

Note 4. Supply a description of the Contractor (e.g., proprietorship, partnership, and corporation).

Corporate Certifications

I, _____, certify that I am the _____ of the corporation named as Contractor herein; that _____, who signed this Agreement on behalf of the Contractor, was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.

Corporate
Seal

(Corporate Secretary)

**GENERAL CONDITIONS - PART I
FOR MATERIALS ONLY**

Materials/Equipment

General Contract Conditions

1. Materials and Workmanship

- a) Unless otherwise specifically provided for in the Technical Specifications, all materials and articles utilized in the work shall be new and the best grade available. Where equipment, materials, or articles are referred to in the Technical Specifications as "equal to" any particular standard, the Engineer shall decide the question of equality.
- b) The successful bidder shall furnish to the Grant Recipient for approval the manufacturer's detailed specifications for all mechanical, other special equipment and all materials or articles, together with full information as to type, performance characteristics, and all other pertinent information as required.
- c) Materials specified by reference to the number or symbol of a specific standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in the Technical specifications shall have full force and effect as though printed therein.

2. Samples and Tests

- a) Approval of any materials shall be general only and shall not constitute a waiver of the Grant Recipient's right to demand full compliance with Contract requirements. After actual deliveries, the Engineer will have such check tests made as he deems necessary in each instance and may reject materials and equipment and accessories for cause, even though such materials and articles have been given general approval.
- b) Except as otherwise specifically stated in the Contract, the costs of sampling and testing will be divided as follows:
 - The Contractor shall furnish without extra cost, including packing and delivery charges, all samples required for testing purposes, except those samples taken on the project by the Engineer;
 - The Contractor shall assume all costs of re-testing materials which fail to meet contract requirements;
 - The Contractor shall assume all costs of testing materials offered in substitution for those found deficient; and
 - The Grant Recipient will pay all other expenses.

3. Compliance with Clean Air and Federal Water Pollution Control Acts [for contracts > \$150K]

- a) Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. 7401 et. seq., and the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251-1387. Violations must be reported to the awarding agency and the Regional Office of the Environmental Protection Agency (EPA).
- b) Materials shall be free of any hazardous materials, except as may be specifically provided for in the specifications.

4. Equal Opportunity Clause

- a) The Contractor hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR chapter 60, which is paid for in whole or in part with grant funds the following equal opportunity clause:

During the performance of this contract, the contractor agrees as follows:

- (1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (3) The Contractor will not discourage or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- (4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

- (7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- (8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.
- b) The Contractor further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the Contractor agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

5. Section 109 of the Housing and Community Development Act of 1974

No person in the United States shall on the ground of race, color, national origin, religion, or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

6. Age Discrimination Act of 1975. The Contractor shall comply with the Age Discrimination Act of 1975 which provides that no person in the United States shall on the basis of age be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

7. Debarment and Suspension (Executive Orders 12549 and 12689)

A contract award (see 2 CFR 180.220) must not be made to parties listed on the government-wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR Part 1986 Comp., p. 189) and 12689 (3 CFR Part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

8. Access to Records

The U.S. Department of Treasury, Inspectors General, the Comptroller General of the United States, and the Texas Division of Emergency Management and the County, or any of their authorized representatives, shall have access to any documents, papers, or other records of the Contractor which are pertinent to the ARPA award, in order to make audits, examinations, excerpts, and transcripts and to closeout the County's ARPA contract with the Department of Treasury.

9. Retainage of Records

Grantees or subgrantees must retain all required records for three years after grantees or subgrantees make final payments and all other pending matters are closed.

10. Termination for Cause *[for Contracts > \$10K]*

If the Contractor fails to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contractor violates any of the covenants, conditions, agreements, or stipulations of this Agreement, the County shall have the right to terminate this Agreement by giving written notice to the Contractor of such termination and specifying the effective date thereof, which shall be at least five days before the effective date of such termination. In the event of termination for cause, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared by the Contractor pursuant to this Agreement shall, at the option of the County, be turned over to the County and become the property of the County. In the event of termination for cause, the Contractor shall be entitled to receive reasonable compensation for any necessary services actually and satisfactorily performed prior to the date of termination.

Notwithstanding the above, the Contractor shall not be relieved of liability to the County for damages sustained by the County by virtue of any breach of contract by the Contractor, and the County may set-off the damages it incurred as a result of the Contractor's breach of contract from any amounts it might otherwise owe the Contractor.

11. Termination for Convenience of the County.*[for Contracts > \$10K]*

County may at any time and for any reason terminate Contractor's services and work at County's convenience upon providing written notice to the Contractor specifying the extent of termination and the effective date. Upon receipt of such notice, Contractor shall, unless the notice directs otherwise, immediately discontinue the work and placing of orders for materials, facilities and supplies in connection with the performance of this Agreement.

12. Liquidated Damages

Since the actual damages for any delay under this contract are impossible to determine, the Contractor shall be liable for and shall pay to the Grant Recipient the sum of One Hundred Dollars (\$100.00) as fixed, agreed and liquidated damages for each calendar day of delay from the above stipulated time for delivery.

- (a) Unless otherwise specifically provided for in the technical specifications, all workmanship, equipment, materials and articles incorporated in the work shall be new and the best grade of the respective kinds for the purpose. Where equipment, materials, articles or workmanship are referred to in the technical specifications as "equal to" any particular standard, the Engineer shall decide the question of equality.
- (b) The Contractor shall furnish to the County for approval the manufacturer's detailed specifications for all machinery, mechanical and other special equipment, which he contemplates installing together with full information as to type, performance characteristics, and all other pertinent information as required, and shall likewise submit for approval full information concerning all other materials or articles which he proposes to incorporate.
- (c) Machinery, mechanical and other equipment, materials or articles installed or used without such prior approval shall be at the risk of subsequent rejection.
- (d) Materials specified by reference to the number or symbol of a specific standard, shall comply with requirements in the latest revision thereof and any amendment or supplement thereto in effect on the date of the Invitation for Bids, except as limited to type, class or grade, or modified in the technical specifications shall have full force and effect as though printed therein.
- (e) The County may require the Contractor to dismiss from the work such employee or employees as the County or the Engineer may deem unqualified.

13. Conflicts of interest.

- (a) Governing Body. No member of the governing body of the County and no other officer, employee, or agent of the County, who exercises any functions or responsibilities in connection with administration, construction, engineering, or implementation of award between the Department of Treasury and the County, shall have any personal financial interest, direct or indirect, in the Contractor or this Contract; and the Firm shall take appropriate steps to assure compliance.
- (b) Other Local Public Officials. No other public official, who exercises any functions or responsibilities in connection with the planning and carrying out of administration, construction, engineering or implementation of the ARPA award between the Department of Treasury and the County, shall have any personal financial interest, direct or indirect, in the Contractor or this Contract; and the Contractor shall take appropriate steps to assure compliance.

(a) The Contractor and Employees. The Contractor warrants and represents that it has no conflict of interest associated with the ARPA award between the Department of Treasury and the County or this Contract. The Contractor further warrants and represents that it shall not acquire an interest, direct or indirect, in any geographic area that may benefit from the ARPA award between the Department of Treasury and the County or in any business, entity, organization or person that may benefit from the award. The Contractor further agrees that it will not employ an individual with a conflict of interest as described herein.

14. Debarment and Suspension (Executive Orders 12549 and 12689)

The Contractor certifies, by entering into this Contract, that neither it nor its principals are presently debarred, suspended, or otherwise excluded from or ineligible for participation in federally-assisted programs under Executive Orders 12549 (1986) and 12689 (1989). The term "principal" for purposes of this Contract is defined as an officer, director, owner, partner, key employee, or other person with primary management or supervisory responsibilities, or a person who has a critical influence on or substantive control over the operations of the Contractor. The Contractor understands that it must not make any award or permit any award (or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs under Executive Order 12549, "Debarment and Suspension."

15. Section 504 Rehabilitation Act of 1973, as amended.

The Contractor agrees that no otherwise qualified individual with disabilities shall, solely by reason of his/her disability, be denied the benefits of, or be subjected to discrimination, including discrimination in employment, under any program or activity receiving federal financial assistance.

16. Contract Period

The work to be performed under this contract shall commence within the time stipulated by the County in the Notice to Proceed, and shall be fully completed within 180 calendar days thereafter.

17. Gender Neutral - Gender References

When necessary, unless the context clearly requires otherwise, any gender-specific or gender-neutral term in this Contract (for example, he, she, it, etc.) is to be read as referring to any other gender or to no gender.

18. Title VI of the Civil Rights Act of 1964

The sub-grantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S.C. §

2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement.

19. Americans with Disabilities Act

Contractor shall not discriminate against a qualified individual with a disability and shall comply with the Americans with Disabilities Act, P.L. 101-336, 42 U.S.C. 12101 et seq. and any properly promulgated rules and regulations related thereto.

**NONCOLLUSION AFFIDAVIT OF PRIME BIDDER
(Include with Bid)**

State of Texas)

County of _____)

_____, being first duly sworn, deposes and says that:

(1) He/She is _____ of _____, the Bidder that has submitted the attached Bid;

(2) He/She is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

(3) Such Bid is genuine and is not a collusive or sham Bid;

(4) Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly with another Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix an overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the _____ (Local Public Agency) or any person interested in the proposed Contract; and

(5) The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(Signed) _____

Title

Subscribed and sworn to me this _____ day of _____.

By: _____
Notary Public

My commission expires _____

Certification Regarding Lobbying

(To be submitted with each bid or offer exceeding \$100,000)

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (c) The undersigned shall require that the language paragraph 1 and 2 of this anti-lobbying certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995).

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.

Signature of Contractor's Authorized Official

Printed Name and Title of Contractor's Authorized Official

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

FORM

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of vendor who has a business relationship with local governmental entity.

2 **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an update to a completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 Name of local government officer about whom the information is being disclosed.

Name of Officer

4 Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this CIQ as necessary.

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

Yes No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

Yes No

5 Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or has an ownership interest of one percent or more.

6 Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at <http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm>. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

- (A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or agency of a federal, state, or local governmental entity;
- (B) a transaction conducted at a price and subject to terms available to the public; or
- (C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

- (i) a contract between the local governmental entity and vendor has been executed;
- (ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed;
- (ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

- (1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);
- (2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding gifts described by Section 176.003(a-1); or
- (3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator no later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals, bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

TECHNICAL SPECIFICATIONS

SECTION 28 21 00
VIDEO SECURITY SURVEILLANCE MANAGEMENT SYSTEM

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. SECURITY CAMERAS
 - 1. PNM-9000VD
 - 2. PNM-9322VQP
 - 3. TID-600R
 - 4. GRANDSTREAM AVM-1 IP STATION
 - 5. XND-9082RV
 - 6. XNF-8010RW
 - 7. XNP-9300RW
 - 8. XNV-9082R
 - 9. KBC NETWORKS WES4 SERIES
- B. SOFTWARE & HARDWARE
 - 1. WISENET WAVE VMS
 - 2. NETWORK VIDEO APPLIANCES

1.2 RELATED SECTIONS

- A. Division 28 - Electrical.

1.3 REFERENCES

- A. Code of Federal Regulations (CFR).
- B. Institute of Electrical and Electronics Engineers (IEEE):
 - 1. 802.3 Ethernet Standards.
- C. International Electrotechnical Commission (IEC).
- D. International Organization for Standardization (ISO):
 - 1. ISO / IEC 10918 - Information technology - Digital compression and coding of continuous-tone still images: Requirements and guidelines; JPEG.
 - 2. ISO / IEC 14496-10 - Information Technology - Coding Of Audio-Visual Objects - Part 10: Advanced Video Coding; MPEG-4 Part 10 (ITU H.264).
 - 3. ISO / IEC 23008-2 - High Efficiency Coding And Media Delivery In Heterogeneous Environments - Part 2: High Efficiency Video Coding; MPEG-H Part 2 (ITU H.265, HEVC).
- E. European Standard (EN):
 - 1. EN 50121 - Railway Applications. Electromagnetic Compatibility.
 - 2. EN 50155 - Railway applications - Rolling stock - Electronic equipment.
 - 3. EN 50130-4 - Alarm Systems. Electromagnetic Compatibility. Product Family Standard: Immunity Requirements For Components Of Fire, Intruder, Hold Up, CCTV, Access Control And Social Alarm Systems.
 - 4. CE EN 50581 - Technical Documentation For The Assessment Of Electrical And Electronic Products With Respect To The Restriction Of Hazardous Substances.

5. EN 55022 Class A - Information Technology Equipment - Radio Disturbance Characteristics - Limits And Methods Of Measurement.
 6. EN 61000-3-2-A2 - Electromagnetic Compatibility (EMC) - Part 3-2: Limits - Limits For Harmonic Current Emissions (Equipment Input Current: 16 A Per Phase).
 7. EN 61000-3-3 - Electromagnetic Compatibility (EMC) - Part 3-3: Limits - Limitation Of Voltage Changes, Voltage Fluctuations And Flicker In Public Low-Voltage Supply Systems, For Equipment With Rated Current less than or equal to 16 A Per Phase And Not Subject To Conditional Connection.
- F. European Union Safety Standards (CE).
- G. Federal Communications Commission (FCC):
1. FCC Rules and Regulation of Title 47 of CFR Part 15 Subpart B Class A.
- H. Open Network Video Interface Forum (ONVIF):
1. ONVIF - Profiles S Specification.
- I. Underwriters Laboratories (UL):
1. UL listed.
- J. United States Military Standard (MIL-STD):
1. MIL-STD-810F - Environmental Engineering Considerations and Laboratory Tests.

1.4 DEFINITIONS

- A. Abbreviations:
1. ARP - Address Resolution Protocol.
 2. DHCP - Dynamic Host Configuration Protocol.
 3. DNR - Digital Noise Reduction.
 4. DDNS - Dynamic Domain Name Server.
 5. fps - frames per second.
 6. GUI - Graphical User Interface.
 7. HDD - Hard Disk Drive.
 8. HTTP - Hypertext Transfer Protocol.
 9. ICMP - Internet Control Message Protocol.
 10. IGMP - Internet Group Management Protocol
 11. IP - Internet Protocol.
 12. iSCSI - Internet Small Computer System Interface.
 13. JBOD - Just a Bunch of Disks.
 14. JPEG - Joint Photographic Experts Group.
 15. MJPEG - Motion JPEG.
 16. MP - Megapixel.
 17. MPEG - Moving Pictures Experts Group.
 18. NAS - Network Attached Storage.
 19. NTP - Network Time Protocol.
 20. POS - Point of Sale.
 21. PPPoE - Point to Point Protocol over Ethernet.
 22. RAID - Redundant Array of Independent Disks (Drives).
 23. RTP - Real-Time Transport Protocol.
 24. RTCP - Real-Time Control Protocol.
 25. RTSP - Real-Time Streaming Protocol.
 26. SMTP - Simple Mail Transfer Protocol.
 27. SNMP - Simple Network Management Protocol.
 28. SSL - Secure Sockets Layer.
 29. TCP - Transmission Control Protocol.
 30. UDP - User Datagram Protocol.
 31. UPnP - Universal Plug and Play.

32. VMS - Video Management System.
33. PoS - Point of Sales.
34. VA - Video Analytics.
35. PnP - Plug and Play.
36. ARB - Auto Recovery Backup.
37. NVR - Network Video Recorder.
38. RAID - Redundant Array of Independent Disks.

B. Definitions:

1. JBOD: A collection of hard disks that have not been configured to act as a redundant array of independent disks (RAID) array.
2. GOV (Group of Video object planes): A set of video frames for H.264 and H.265 compression, indicating a collection of frames from the initial I-Frame (key frame) to the next I-Frame. GOV consists of 2 kinds of frames: I-Frame and P-Frame.
3. WiseStream: Smart Codec that controls quantization parameter in H.265 and H.264 to efficiently manage bitrate of the video stream and reduce the storage required.
4. Dynamic GOV: Dynamic assignment of GOV length based on the complexity of the scene to efficiently manage bitrate of the video stream and reduce the storage required.
5. Dynamic fps: Dynamic assignment of frames per second based on the complexity of the scene to efficiently manage bitrate of the video stream and reduce the storage required.
6. ARB (Auto Recovery Backup): Automatic backup mechanism that enables WiseNet cameras to store videos on to SD card during failures and stream it to the storage device after recovery.
7. Failover: A feature that automatically switches to a redundant or standby device upon failure or unexpected shutdown of an active device.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Solution Proposal: System Integrator shall submit the Solution Proposal.
- C. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Manufacturer's printed or electronic data sheets.
 2. Manufacturer's installation and operation manuals.
 3. Warranty documentation.
- D. Shop Drawings: Include details of construction, interface of equipment, and relationship with adjacent construction.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. System Integrator shall provide the following as part of the System Solution:
 1. Complete product and technical data specification sheets that include all material and equipment and shall be available freely online.
 2. List of all equipment with part numbers, manufacturer, firmware, and assigned IP addresses.
 3. Locations and details for all components to be installed under this scope of work.
 4. Placement Diagram showing the proposed location of all system hardware devices.
 5. System Calculation of all network bandwidth and storage requirements for System

Servers to ensure proper planning of computing and networking infrastructure.

- C. Installer Qualifications: Minimum 2 year experience installing similar products. Installers shall be trained and authorized by the Manufacturer to install, integrate, test, and commission the system.

1.7 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- B. Handling: Handle materials to avoid damage.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.10 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.11 WARRANTY

- A. The security system VMS software and labor furnished by the System Integrator including wiring, software, hardware and third party products shall be fully warranted for parts, materials and labor for a minimum of 1 year from date of the final acceptance of the Video Surveillance System.
- B. Manufacturer shall provide a limited 3 year warranty for the product to be free of defects in material and workmanship.
- C. Software Licensing and Warranty:
 1. Software licensing should be on a per device basis (e.g. 1 x license for 1 IP Camera or I/O device) with no base license for additional features or capabilities.
 2. The VMS Software should be completely free for live streaming or playback of offline media files (images, videos).
 3. Lifetime software upgrades shall be provided by the Manufacturer without cost and without the need for an annual maintenance agreement.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Hanwha Techwin, which is located at: 500 Frank W. Burr Blvd.; Teaneck, NJ 07666; Toll Free Tel: 877-213-1222; Fax: 201-373-0124; Email:[request info \(customerservice@hanwha.com\)](mailto:requestinfo(customerservice@hanwha.com);); Web:<https://www.hanwhasecurity.com>
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 SECURITY CAMERAS

A. PNM-9000VD

1. EQUIPMENT

- a. Manufacturer: Hanwha Techwin <http://www.hanwha-security.com/>
- b. Model PNM-9000VD
- c. Alternates: None

2. GENERAL DESCRIPTION

- a. The camera shall provide multi directional view and produce video in various view mode.
- b. Video Compression and Transmission – The multi-directional camera shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously
 - a) H.265 and H.264 – Maximum of 30 fps at all resolutions
 - b) MJPEG – Maximum of 30 fps at all resolutions
 - 2) The multi-directional camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, bit rate, and other video settings.
 - 3) The multi-directional camera shall have two lenses and each lens shall provide the following resolutions.
 - a) 16:9 aspect ratio : 2560x1440, 1920 x 1080, 1280 x 720, 800 x 448, 640 x 360
 - b) 4:3 aspect ratio : 2560x1920, 1280 x 960, 1024 x 768, 800 x 600, 640 x 480, 320 x 240
 - c) 5:4 aspect ratio : 1280 x 1024, 720 x 576
 - d) 3:2 aspect ratio : 720 x 480
 - 4) The camera shall support unicast video streaming up to 20 users.
 - 5) The camera shall support multicast video streaming
 - 6) The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 - 7) The multi-directional camera shall provide WiseStream II , Dynamic GOV and Dynamic fps to efficiently manage bit rate of the video stream and reduce storage.
- c. Camera – The multi-directional camera device shall have the following physical and performance properties:
 - 1) IK10 rated for protection against impacts.
 - 2) IP66 for protection against dust and water.
 - 3) The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
 - 4) The camera shall be able to configure 32 privacy masking areas with rectangle.
 - 5) The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range up to 120dB.
 - 6) Supporting digital image stabilization the camera shall be able to measure movements in three axes and accurately enhance images from distortions caused by instability.
- d. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
 - 1) Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
 - 2) Detection of logical events of specified conditions from the camera's video

- a) Tampering, Loitering, Directional Detection, Virtual Line, Enter/Exit, (Dis)Appear
 - b) Fog Detection, Motion Detection, Face Detection, Defocus Detection
- e. Interoperability – The multi-directional camera shall be ONVIF Profile S and G compliant.
- f. The multi-directional camera shall possess the following further characteristics:
- 1) Built-in web server, accessed via non-plugin browsers including Google Chrome, IE11, MS Edge, Mozilla Firefox and Apple Safari.
 - 2) Micro SD/SDHC/SDXC memory card options, with configurable pre-alarm and post-alarm recording intervals
 - 3) NAS recording option with configurable pre-alarm and post-alarm recording intervals
 - 4) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Alarm input
 - 2) Motion detection
 - 3) Video & Audio analytics
 - 4) Network disconnect
 - b) available notification means upon trigger:
 - 1) File upload via FTP and e-mail
 - 2) Notification via e-mail
 - 3) Local storage (SD/SDHC/SDXC card) or NAS recording at event triggers.
 - 5) Pixel Counter available in the plug-in web viewer.
 - 6) PoE capable
 - 7) IP66, IK10 capable

3. DETAILED SPECIFICATIONS

- a. Video
- 1) Imaging device 1/1/8" 10MP CMOS(optional 3 different Lens)
 - 2) Image Pixels Effective: 2616 (H) x 1976 (V)
 - 3) Scanning Progressive
 - 4) Minimum illumination Color: 0.16Lux (F1.6, 1/30sec, 30IRE),B/W: 0.16Lux (F1.6, 1/30sec, 30IRE)
 - 5) S/N Ratio 50dB
- b. Lens:
- 1) Focal Length 3.7mm for SLA-5M3700D4.6mm for SLA-5M4600D7.0mm for SLA-5M7000D
 - 2) Max. Aperture Ratio F1.6 (for SLA-5M3700D, SLA-5M4600D, SLA-5M7000D)
 - 3) Field of View H: 95.8°, V: 70°, D:123.6° for SLA-5M3700DH: 76.1°, V: 56.8°, D:96.8° for SLA-5M4600DH: 49.5°, V: 36.9°, D:62.2° for SLA-5M7000D
 - 4) Lens Type Fixed focal
 - 5) Mount Type M12 Lens module with main unit
- c. Pan & Tilt & Rotate
- 1) Pan -90° ~ +90° (for SLA-5M3700D, SLA-5M4600D, SLA-5M7000D)
 - 2) Tilt +36° ~ +73° (for SLA-5M3700D)+21° ~ +85° (for SLA-5M4600D)+12° ~ +93° (for SLA-5M7000D)
 - 3) Rotate -180° ~ +180° (for SLA-5M3700D, SLA-5M4600D, SLA-5M7000D)
- d. Operational Functions

- | | | |
|------------------|---------------------------------|--|
| 1) | Camera Title characters) | Off / On (Displayed up to 85 characters) |
| a) | W/W characters | English / Numeric / Special |
| b) | China Chinese characters | English / Numeric / Special / |
| c) | Common | Multi-line (Max. 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution |
| 2) | Day/night Setting Schedule | Auto (Electrical) / Color / B/W / |
| 3) | Backlight Compensation | Off / BLC / HLC / WDR |
| 4) | WDR | 120dB |
| 5) | Contrast Enhancement | Off / On (SSDR) |
| 6) | Digital Noise Reduction filter) | Off / On (SSNR5 : 2D+3D Noise filter) |
| 7) | Digital Image Stabilization | Off / On (built-in Gyro sensor) |
| 8) | Defog | Off / Manual / Auto |
| 9) | Motion Detection | Off / On (8ea, 8-point polygonal) |
| 10) | Privacy Masking | Off / On (32 zones, polygonal)- Color: Gray / Green / Red / Blue / Black / White- Zoom ratio option for mask mode- Mosaic |
| 11) | Gain Control | Off / Low / Middle / High |
| 12) | White Balance | ATW / AWC / Manual / Indoor / Outdoor (Including Mercury and Sodium) |
| 13) | LDC | Off / On (5 Level with Min/Max) |
| 14) | Electronic shutter speed | Min / Max / Anti-flicker (2 ~ 1/12,000sec) |
| 15) | Digital zoom | Support |
| 16) | Image Rotation | Flip: Off / On Mirror: Off / On Hallway view(90°/270°) |
| 17) | Alarm Triggers | Analytics, Network disconnect |
| 18) | Alarm Events | File Upload via FTP and E-mail, Notification via E-mail, Local storage (SD/SDHC/SDXC) or NAS recording, Alarm output, Handover |
| 19) | Pixel Counter | Support |
| 20) | Storage | Micro SD/SDHC/SDXC 512GB (256GB x 2 slots) , NAS support |
| 21) | Intelligent video analytics | Tampering, Loitering, Directional Detection, Fog Detection, Virtual Line, Enter/Exit, (Dis) Appear, Motion Detection, Face Detection, Defocus Detection |
| e. Video Streams | | |
| 1) | Video compression | H.265, H.264, MJPEG |
| 2) | Resolution | 2560 x 1920, 2560 x 1440, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768, 800 x 600, 800 x 448, 720 x 576, 720 x 480, 640 x 480, 640 x 360, 320 x 240 |
| 3) | Maximum frame rate: | |
| a) | H.265 / H.264: | Max. 30fps at all resolutions |
| b) | MJPEG: | Max. 30fps at all resolutions |
| 4) | Smart Codec | Manual mode (Area-based : 5ea) |
| 5) | WiseStream II | Support |
| 6) | Bitrate Control Method | H.265 / H.264: CBR or |
| | VBR MJPEG: VBR | |
| 7) | Streaming Capability profiles) | Multiple streaming (Up to 10 profiles) |

- | | | |
|-----|--------------------|--|
| 8) | Streaming method | Unicast / Multicast |
| 9) | Simultaneous Users | 20 maximum (Unicast) |
| 10) | Profile set | Max. 10 ea |
| 11) | Interoperability | ONVIF Profile S / G , SUNAPI |
| 12) | Webpage Language | English, Korean, Chinese, French,
Italian, Spanish, German,
Japanese, Russian, Swedish, Portuguese, Czech, Polish,
Turkish, Dutch, Hungary, Greek |

f. Network

- 1) Connectivity 10/100 Base-T Ethernet via RJ-45 connector
- 2) Protocol
 - a) IP v4 / v6, TCP, UDP
 - b) Configuration: DHCP
 - c) Web service: HTTP, HTTPS
 - d) Network Service: ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP
 - e) Media: RTP, RTCP, RTSP, SRTP
 - f) Multicast: IGMP
 - g) Notifications: FTP, SMTP
 - h) Remote Access: PPPoE
- 3) DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
- 4) QoS – Layer 3 DSCP
- 5) Security Feature
 - a) User password protection
 - b) The device shall not provide a manufacture default password. Default password change shall be required to access the camera.
 - c) A minimal level of password complexity shall be required by the camera.
 - d) The camera shall not have a manufacture back-door password.
 - e) The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
 - f) IP address filtering – List of allowed or blocked IP addresses
 - g) HTTPS(SSL) login authentication
 - h) HTTPS(SSL) secured communication
 - i) Digest login authentication
 - j) User access log
 - k) 802.1x authentication
- 6) Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
- 7) Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
- 8) Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
- 9) Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings to a file and restore these camera settings if needed.
- 10) Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.

- g. Electrical
 - 1) Power
 - a) Input Voltage / Current PoE
 - b) Power Consumption PoE : 12.95W, Typical : 12.00W
- h. Mechanical And Environmental
 - 1) Color/Material White / Aluminum
 - 2) Dimensions (W x H) Ø197.6 x 84mm (7.78" x 3.31")
 - 3) Weight 1,250g (2.76 lb)
 - 4) Conduit hole 1/2"
 - 5) Temperature
 - a) Operating -40°C ~ +55°C (-40°F ~ +131°F)
 - b) Storage -50°C ~ +60°C (-58°F ~ +140°F)
 - 6) Humidity Less than 90% RH
 - 7) Ingression Protection IP66
 - 8) Vandal Resistance IK10

B. PNM-9322VQP

1. EQUIPMENT

- a. Manufacturer: Hanwha Techwin <http://www.hanwha-security.com/>
- b. Model PNM-9322VQP
- c. Alternates: none

2. GENERAL DESCRIPTION

- a. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
 - a) H.265 and H.264 – maximum of 30/25fps(60Hz/50Hz) at 5M resolution maximum of 60/50fps(60Hz/50Hz) at 2M resolution
 - b) MJPEG – maximum of 30/25fps(60Hz/50Hz)
 - 2) The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
 - 3) The 5M lenses shall be able to configure various resolution selections.
 - a) 16:9 aspect ratio : 2560x1440, 1920x1080, 1280x720, 800x448
 - b) 4:3 aspect ratio : 2560x1920, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c) 5:4 aspect ratio : 1280x1024, 720x576
 - d) 3:2 aspect ratio : 720x480
 - 4) The 2M lenses shall be able to configure various resolution selections.
 - a) 16:9 aspect ratio : 1920x1080, 1280x720, 800x448, 640x360
 - b) 4:3 aspect ratio : 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c) 5:4 aspect ratio : 1280x1024, 720x576
 - d) 3:2 aspect ratio : 720x480
 - 5) The camera shall support unicast video streaming up to 20 users.
 - 6) The camera shall support multicast video streaming up to 10 profiles.
 - 7) The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the

- application shall be available for both iOS and Adroid, free of charge with search keyword, 'Wisenet Mobile'.
- 3) Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
- 4) NAS recording option with configurable pre-alarm and post-alarm recording intervals
- 5) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Analytics
 - 2) Network disconnect
 - 3) Alarm input with NW I/O Box
 - b) available notification means upon trigger:
 - 1) File Upload via FTP and E-mail
 - 2) Notification via E-mail
 - 3) Local storage (SD / SDHC / SDXC) or NAS recording at event triggers
 - 4) Alarm output with NW I/O Box
 - 5) PTZ preset
 - 6) Handover
- 6) Pixel Counter available in the web viewer.
- 7) HPoE capable
- 8) IP66, IK10

C. Decoding performance in web viewer depends on CPU/GPU performance of user

1. DETAILED SPECIFICATIONS

- a. Video (PTZ)
 - 1) Imaging device 1/2.8" CMOS
 - 2) Scanning Progressive
 - 3) Minimum Illumination Color: 0.05Lux(1/30sec, F1.6)B/W: 0.05Lux(1/30sec, F1.6)
- b. Lens (PTZ)
 - 1) Focal length 4.44~142.6mm(32x) zoom
 - 2) Max. Aperture Ratio F1.6(Wide) - F4.4(Tele)
 - 3) Field of View H: 61.8°(Wide)~2.19°(Tele)V: 36.2°(Wide)~1.24°(Tele)
 - 4) Min. Object Distance Wide:1.5m, Tele:2m
 - 5) Focus Control Auto / Manual / One shot AF
 - 6) Lens Type DC auto iris
- c. Lens Model
 - 1) SLA-2M1200P (12mm Zoom Ratio)
 - a) Imaging Device 1/2.8" 2MP CMOS
 - b) Effective Pixels 1945(H) x 1109(V)
 - c) Min. illumination Color 0.055 lux (F2.0, 1/30sec)B/W 0.0055 lux (F2.0, 1/30sec)
 - d) Focal Length 12.0mm fixed
 - e) Max. Aperture Ratio F2.0
 - f) Field of View H : 26.3°, V : 14.9°, D : 30.0°
 - 2) SLA-2M2400D (2.4mm Zoom Ratio)
 - a) Imaging Device 1/2.8" 2MP CMOS
 - b) Effective Pixels 1945(H) x 1109(V)
 - c) Min. illumination Color 0.055 lux (F2.0, 1/30sec)B/W 0.0055 lux (F2.0, 1/30sec)
 - d) Focal Length 2.4mm fixed
 - e) Max. Aperture Ratio F2.0
 - f) Field of View H : 135.4°, V : 71.2°, D : 161.6°
 - 3) SLA-2M2800D (2.8mm Zoom Ratio)

- a) Imaging Device 1/2.8" 2MP CMOS
- b) Effective Pixels 1945(H) x 1109(V)
- c) Min. illumination Color 0.055 lux (F2.0, 1/30sec)B/W 0.0055 lux (F2.0, 1/30sec)
- d) Focal Length 2.8mm fixed
- e) Max. Aperture Ratio F2.0
- f) Field of View H : 107.4°, V : 62.2°, D : 122.0°
- 4) SLA-2M3600D (3.6mm Zoom Ratio)
 - a) Imaging Device 1/2.8" 2MP CMOS
 - b) Effective Pixels 1945(H) x 1109(V)
 - c) Min. illumination Color 0.055 lux (F2.0, 1/30sec)B/W 0.0055 lux (F2.0, 1/30sec)
 - d) Focal Length 3.6mm fixed
 - e) Max. Aperture Ratio F2.0
 - f) Field of View H : 94.8°, V : 49.3°, D : 114.3°
- 5) SLA-2M6000D (6.0mm Zoom Ratio)
 - a) Imaging Device 1/2.8" 2MP CMOS
 - b) Effective Pixels 1945(H) x 1109(V)
 - c) Min. illumination Color 0.055 lux (F2.0, 1/30sec)B/W 0.0055 lux (F2.0, 1/30sec)
 - d) Focal Length 6.0mm fixed
 - e) Max. Aperture Ratio F2.0
 - f) Field of View H : 50.4°, V : 28.8°, D : 58.1°
- 6) SLA-5M3700P (3.7mm Zoom Ratio)
- 7) SLA-5M4600P (4.6mm Zoom Ratio)
- 8) SLA-5M7000P (7.0mm Zoom Ratio)
- d. PTZ (5 channel)
 - 1) PAN 360° Endless
 - 2) PAN Speed Max. 700°/sec, Manual: 0.024°/sec~250°/sec
 - 3) TILT 190° (-5°~185°)
 - 4) TILT Speed Max. 700°/sec, Manual: 0.024°/sec~250°/sec
 - 5) Sequence Preset(300ea), Swing, Group(128ea), Trace(4ea), Tour, Auto Run, Schedule
 - 6) Preset Accuracy ±0.2°
- e. PTR
 - 1) PAN -90° ~ 90°
 - 2) TILT 10° ~ 97°
 - 3) Rotate Range -180° ~ 180°
- f. Operational Functions
 - 1) Camera Title Off / On (Displayed up to 85 characters)
 - a) W/W characters English / Numeric / Special
 - b) China Special characters English / Chinese / Numeric /
 - c) Common Multi-line (Max. 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution
 - 2) Direction Indicator Support
 - 3) Day/Night Setting 1~4ch : Auto(Electrical), 5ch(PTZ) : Auto(ICR)
 - 4) Backlight Compensation Off / BLC / HLC / WDR / SSCR
 - 5) WDR 2MP 150dB, 5MP 120dB
 - 6) Digital Noise Reduction (DNR) Support (SSNR V)

- 7) Digital Image Stabilization (DIS) Support
 - 8) Defog Support
 - 9) Motion Detection Off / On (8ea, 8-point polygonal)
 - 10) Privacy Masking 1~4CH: 32ea, polygonal zones / 5CH: rectangle zones- Color: Grey / Green / Red / Blue / Black / White- Mosaic
 - 11) Gain Control Low / Middle / High
 - 12) White Balance ATW / AWC / Manual / Indoor / Outdoor
 - 13) Electronic Shutter Speed Min / Max / Anti-flicker (2 ~ 1/12,000sec)
 - 14) Image Rotation Flip, Mirror, Hallway view(90°/270°)
 - 15) Alarm I/O Input 1ea / Output 2ea
 - 16) Alarm Triggers Analytics, Network disconnect
 - 17) Alarm Events File upload via FTP and e-mailNotification via e-mailSD/SDHC/SDXC recording at event triggersAlarm output
 - 18) Pixel Counter Support
 - 19) Webpage Language English, Korean, Chinese, French, Italian, Spanish, German, Japanese, Russian, Swedish, Portuguese, Czech, Polish, Turkish, Dutch, Hungarian, Greek
 - 20) Storage Micro SD/SDHC/SDXC 4slot 256GB(Each CH)
 - 21) Analytics Defocus detection, Directional detection, Face detection, Fog detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line
 - 22) Auto Tracking Support
 - 23) Memory 5GB RAM, 1280MB Flash
- g. Video Streams
- 1) Video compression H.265, H.264, MJPEG
 - 2) Resolution [5MP]2560x1920, 2560x1440, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 320x240[2MP]1920x1080, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
 - 3) Maximum Framerate
 - a) H.265 / H.264 [5M]H.265/H.264: Max. 30fps/25fps(60Hz/50Hz)[2M]H.265/H.264: Max. 60fps/50fps(60Hz/50Hz)
 - b) MJPEG Max. 30/25fps(60Hz/50Hz)
 - 4) Video out CVBS : 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)
 - 5) Smart Codec Manual Mode (area-based : 5EA)
 - 6) WiseStream II Support
 - 7) Bitrate Control Method H.265 / H.264: CBR or VBRMJPEG: VBR
 - 8) Streaming Capability Multiple streaming (Up to 10 profiles)
 - 9) Streaming method Unicast / Multicast
 - 10) Simultaneous Users Unicast (20 users) / Multicast (128 user)
 - 11) Profile set Max. 10 ea
 - 12) Interoperability ONVIF Profile S / T, SUNAPI(HTTP API)
- h. Network

- 1) Connectivity – Metal Shielded RJ-45(10/100BASE-T)
 - 2) Protocol
 - a) IP v4 / v6, TCP, UDP
 - b) Configuration: DHCP, LLDP
 - c) Web service: HTTP, HTTPS
 - d) Network Service: ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP
 - e) Media: RTP, RTCP, RTSP
 - f) Unicast: SRTP
 - g) Multicast: IGMP, PIM-SM
 - h) Notifications: FTP, SMTP
 - i) Remote Access: PPPoE
 - 3) DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
 - 4) QoS – Layer 3 DSCP
 - 5) Security Feature
 - a) User password protection
 - b) The device shall not provide a manufacture default password. Default password change shall be required to access the camera.
 - c) A minimal level of password complexity shall be required by the camera.
 - d) The camera shall not have a manufacture back-door password.
 - e) The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
 - f) IP address filtering – List of allowed or blocked IP addresses
 - g) HTTPS(SSL/TLS) login authentication
 - h) HTTPS(SSL/TLS) secured communication
 - i) Digest login authentication
 - j) User access log
 - k) 802.1X Authentication(EAP-TLS, EAP-LEAP)
 - l) Device Certificate(Hanwha Techwin Root CA)
 - 6) Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
 - 7) Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
 - 8) Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
 - 9) Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings to a file and restore these camera settings if needed.
 - 10) Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.
- i. Electrical
 - 1) Power
 - a) Input Voltage / Current HPoE(IEEE802.3bt, Class 8)
 - b) Power Consumption HPoE: Max 65W, Typical 34W
 - j. Mechanical And Environmental
 - 1) Color/Material White / Aluminum
 - 2) RAL Code RAL9003
 - 3) Dimensions (W x H)

		Ø367.8x335.7mm(Ø144.8"x132.2")
4)	Weight	7.05kg(15.54lb)
5)	Temperature	
	a) Operating	-40°C~+55°(-40°F ~ +131°F)
	b) Storage	-50°C~+60°C (-58°F~+140°F)
6)	Humidity	
	a) Operating condensing)	Less than 95% RH (non-
	b) Storage condensing)	Less than 95% RH (non-
7)	Ingression Protection	IP66
8)	Vandal Resistance	IK10

D. TID-600R

1. EQUIPMENT

- a. Manufacturer: Hanwha Techwin <http://www.hanwha-security.com/>
- b. Model TID-600R
- c. Alternates: None

2. GENERAL DESCRIPTION

- a. Video Compression and Transmission – The intercom shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
 - a) H.265 and H.264 – maximum of 60/50FPS(60Hz/50Hz) at all resolution
 - b) MJPEG – maximum of 30fps/25fps(60Hz/50Hz)
 - 2) The intercom shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
 - 3) The intercom shall be able to configure various resolution selections.
 - a) 16:9 aspect ratio : 1920x1080, 1280x720, 800x448,640x360
 - b) 4:3 aspect ratio : 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c) 5:4 aspect ratio : 1280x1024, 720x576
 - d) 3:2 aspect ratio : 720x480
 - 4) The camera shall support unicast video streaming up to 20 users.
 - 5) The camera shall support multicast video streaming.
 - 6) The intercom shall support multicast video streaming up to 10 profiles.
 - 7) The intercom shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 - 8) The intercom shall provide WiseStream, Dynamic GOV and Dynamic FPS to efficiently manage bit rate of the video stream and reduce storage.
- b. Camera – The intercom device shall have the following physical and performance properties:
 - 1) True day/night operation with scheduling and options for external devices.
 - a) Low light level operation to 0.018 lux at F1.6 in color mode.
 - b) Black and white mode operation to 0 lux with IR LED on.

- 2) The intercom shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range up to 150dB.
 - 3) The intercom shall support digital noise reduction using both 2D and 3D noise reduction technology.
 - 4) The intercom shall be able to configure 32 privacy masking areas with polygonal zones.
 - 5) The intercom shall have the defog feature to remove fogginess of scene which can be triggered automatically from the fog detection event.
- c. Intelligence and Analytics – The intercom shall have a suite of intelligent analytic functions.
- 1) Analytics event
 - a) IVA
 - 1) Directional detection, Appear/Disappear, Virtual line, Enter/Exit, Loitering, intrusion
 - b) Motion detection
 - 1) Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
 - c) Tampering
 - d) Fog detection
 - e) Audio detection
 - f) Shock detection
 - g) Sound classification
 - 1) Detection and classification of the following sound.
 - a) Scream
 - b) Gunshot
 - c) Explosion
 - d) Crashing glass
- d. Interoperability – The intercom shall be ONVIF Profile S.
- e. The intercom shall possess the following further characteristics:
- 1) Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
 - 2) NAS recording option with configurable pre-alarm and post-alarm recording intervals
 - 3) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Analytics
 - 2) Network disconnect
 - 3) Alarm input
 - 4) App event
 - 5) Time schedule
 - b) available notification means upon trigger:
 - 1) File upload(image) : e-mail/FTP
 - 2) Notification : e-mail
 - 3) Recording : SD/SDHC/SDXC or NAS recording at event triggers
 - 4) Alarm output
 - 5) Handover(PTZ preset, Send message by HTTP/HTTPS)
 - 6) Audio clip playback
 - 4) Pixel Counter available in the web viewer.
 - 5) IP65/IK08/NEMA4x
 - 6) This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to

effectively protect your product and property from transient voltage, thunderstroke, communication interruption.

- f. Call functionality
 - 1) The intercom shall support SIP for integration with VoIP, peer-to-peer or integrated into SIP/PBX.
 - 2) The intercom shall support touchless call.
 - 3) Call group will
- g. Access control functionality
 - 1) The intercom shall support remote control using DTMF codes.
 - 2) DTMF code can be entered up to 4 digits (from 0 to 9)
 - 3) Account can be allowed to add up to 4 user using Register.

E. IP VIDEO ATTENDANT STATION

1. EQUIPMENT

- a. Manufacturer: Grandstream
- b. Model AVM-1
- c. Alternates: None

2. The intercom shall have a built in web server.

- a. The web viewer shall provide a monitoring screen which displays live intercom video and simultaneously provides same-screen access to the following functions:
 - 1) Live view window size
 - 2) Resolution setting
 - 3) Image (snapshot) capture
 - 4) Manual recording to SD or NAS
 - 5) Audio/microphone control
 - 6) Access recorded data playback and intercom configuration menus
- b. The web viewer shall provide a playback screen which provides access to the following functions:
 - 1) Recorded data search using date and time range
 - 2) Recorded data search using event type
 - 3) Play a recorded video by event triggering
 - 4) Set playback speed
 - 5) Play audio if present
 - 6) Generate a backup copy of saved video data
- c. The web viewer shall provide a setup screen which provides access to the following configuration settings and functions in the intercom:
 - 1) Digital video profile to include compression type, maximum or target bit rate, frame rate, multicast parameters, and crop encoding area
 - 2) User profile to include password, access level, authentication
 - 3) Date and time
 - 4) Network settings and IP version
 - a) DDNS
 - b) IP filtering
 - c) SSL/TLS, including certificate management
 - d) 802.1x authentication
 - e) Quality of Service settings
 - f) SNMP to include version selection and settings
 - g) Auto IP configuration
 - 5) Video setup
 - a) Flip / mirror mode
 - b) Video output type
 - c) Privacy zone
 - 6) Audio setup to include source, audio codec type, gain and bit rate.
 - 7) Intercom settings to configure image preset, sensor frame capture,

- dynamic range, white balance, back light, exposure, day/night operation, on-screen display, sharpness, contrast, color level and lens distortion correction.
- 8) Event detection setup to configure notification parameters, recording rules, time schedule, tamper protection, motion detection and event triggers
- 9) System function to control reboot, upgrade, check system and event logs and application (SDK) management
- 10) View profile information

3. DETAILED SPECIFICATIONS

a. Video

- 1) Imaging device 1/2.8" CMOS
- 2) Scanning Progressive
- 3) Minimum Illumination Color: 0.018Lux (F1.6, 1/30sec),
B/W: 0Lux(IR LED On)
- 4) Video out CVBS : 1.0 Vpp/75Ω composite,
720x480(N), 720x576(P) for installation

b. Lens

- 1) Focal length 1.6mm fixed focal
- 2) Max. Aperture Ratio F1.6
- 3) Field of View H : 108°, V : 114°, D : 180°
- 4) Min. Object Distance 0.3m(0.98ft)
- 5) Focus Control Fixed

c. Operational Functions

- 1) IR Viewable Length 5m(16.4ft)
- 2) Camera Title Off / On (Displayed up to 85 characters)
- 3) Day/Night Setting Auto (ICR) / Color / B/W / Schedule
- 4) Backlight Compensation Off / BLC / HLC / WDR(150dB)
- 5) Digital Noise Reduction (DNR) SSNR V
- 6) Digital Image Stabilization (DIS) Support
- 7) Defog Support
- 8) Motion Detection Off / On (8ea, 8-point polygonal)
- 9) Privacy Masking Off / On (32ea, Poligonal zones)-
Color: Grey / Green / Red / Blue / Black / White- Mosaic
- 10) Gain Control Off / Low / Middle / High
- 11) White Balance ATW / AWC / Manual / Indoor / Outdoor
- 12) Electronic Shutter Speed Min / Max / Anti-flicker (2 ~ 1/12,000sec)
- 13) Image Rotation Flip: Off / OnMirror: Off / On
- 14) Alarm I/O Input 2ea / Output 1ea, Relay out
1ea (DC 12V Max. 550mA with 2A adapter)Tampering Switch, Touchless call
- 15) Alarm Triggers Analytics, Network disconnect, Alarm input
- 16) Alarm Events File upload(image) : e-mail/FTP
Notification : e-mailRecording : SD/SDHC/SDXC or NAS recording
at event triggersAlarm outputHandover(PTZ preset, Send message by HTTP/HTTPS/TCP)Audio clip playback
- 17) Audio Streaming Two-way/One-way selectable, Full duplex, Echo cancellation and noise reduction
- 18) Audio in Built-in MIC
- 19) Audio out Built-in speaker, 85dB at 0.5m
- 20) Pixel Counter Support

- 21) Storage Micro SD/SDHC/SDXC 1slot
256GB
- 22) Analytics Directional detection, Motion
detection, Appear/DisappearEnter/Exit, Loitering, Tampering,
Virtual line, Audio detectionShock detection, Sound classification
- 23) Memory 2GB RAM
- d. Video Streams
 - 1) Video compression H.265, H.264, MJPEG
 - 2) Resolution 1920x1080,
1280x1024,1280x960, 1280x720,1024x768, 800x600, 800x448,
720x576, 720x480, 640x360, 320x240
 - 3) Maximum Framerate
 - a) H.265 / H.264 H.265/H.264: Max.
60fps/50fps(60Hz/50Hz)
 - b) MJPEG Max. 30fps/25fps(60Hz/50Hz)
 - 4) Smart Codec Manual(5ea area),
Low/Middium/High
 - 5) WiseStream Off/Low/Medium/High
 - 6) Bitrate Control Method H.265 / H.264: CBR or
VBRMJPEG: VBR
 - 7) Streaming Capability Unicast(20 users) /
MulticastMultiple streaming(Up to 10 profiles)
 - 8) Streaming method Unicast / Multicast
 - 9) Simultaneous Users 20 maximum (Unicast)
 - 10) Profile set Max. 10 ea
 - 11) Interoperability ONVIF Profile S, SUNAPI(HTTP
API), Wisenet Open Platform
- e. Network
 - 1) Connectivity Metal shielded RJ-
45(10/100BASE-T)
 - 2) Protocol
 - a) IP v4 / v6, TCP, UDP
 - b) Configuration: DHCP, LLDP
 - c) Web service: HTTP, HTTPS
 - d) Network Service: ARP, Bonjour, DNS, ICMP, NTP, PIM-SM,
SNMPv1/v2c/v3(MIB-2), UPnP
 - e) Media: RTP, RTCP, RTSP, SIP 2.0
 - f) Unicast: SRTP
 - g) Multicast: IGMP, PIM-SM
 - h) Notifications: FTP, SMTP
 - 3) DDNS – The intercom shall support DDNS services offered by the
manufacturer and others publicly available service offerings
 - 4) QoS – Layer 3 DSCP
 - 5) Security Feature
 - a) User password protection
 - b) The device shall not provide a manufacture default
password. Default password change shall be required to
access the intercom.
 - c) A minimal level of password complexity shall be required by
the intercom.
 - d) The intercom shall not have a manufacture back-door
password.
 - e) The manufacturer shall provide a tool that provides the
ability to make password changes to multiple intercoms at
the same time.
 - f) IP address filtering – List of allowed or blocked IP addresses

- g) HTTPS(SSL/TLS) login authentication
- h) HTTPS(SSL/TLS) secured communication
- i) Digest login authentication
- j) User access log
- k) 802.1X Authentication(EAP-TLS, EAP-LEAP)
- l) Device Certificate(Hanwha Techwin Root CA, pre-installed)
- 6) Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
- 7) Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple intercoms simultaneously.
- 8) Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple intercoms at the same time (not requiring access to individual intercoms).
- 9) Intercom backup setting – The manufacturer shall provide a program that provides the ability to save multiple intercom settings to a file and restore these intercom settings if needed.
- 10) Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other intercom settings.
- f. Electrical
 - 1) Power
 - a) Input Voltage PoE, 12VDC
 - b) Power Consumption PoE: Max 12.95W, typical 9.1W
12VDC: Max 17.6W, typical 7W ※12VDC power consumption includes 12VDC/550mA relay out
- g. Mechanical And Environmental
 - 1) Color/Material Dark Gray / Aluminum
 - 2) RAL Code RAL7022
 - 3) Dimensions (W x H x D) Ø49x165x48mm(1.93x6.50x1.89")
 - 4) Weight 490g(1.08 lb)
 - 5) Skin Cover SBC-165W
 - 6) Temperature
 - a) Operating -30 °C ~ 55 °C(-22°F ~ +131°F)
 - b) Storage -50°C ~ +55°C(-58°F ~ +131°F)
 - 7) Humidity
 - a) Operating Less than 95% RH (non-condensing)
 - b) Storage Less than 90% RH (non-condensing)
 - 8) Ingression Protection IP65, NEMA4x
 - 9) Vandal Resistance IK08
- h. DORI
 - 1) Detect (25PPM/ 8PPF) 25.4m(83.33ft)
 - 2) Observe (63PPM/ 19PPF) 10.02m(32.87ft)
 - 3) Recognize (125PPM/ 38PPF) 5.01m(16.43ft)
 - 4) Identify (250PPM/ 76PPF) 2.5m(8.2ft)

F. XND-9082RV

1. EQUIPMENT

- a. Manufacturer: Hanwha Techwin <http://www.hanwha-security.com/>
- b. Model XND-9082RV
- c. Alternates: None

2. GENERAL DESCRIPTION

- a. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
 - a) H.265 and H.264 – maximum of 30/25fps(60Hz/50Hz) at all resolution
 - b) MJPEG – maximum of 15/12fps(60Hz/50Hz)
 - 2) The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
 - 3) The camera shall be able to configure various resolution selections.
 - a) 16:9 aspect ratio : 3840x2160, 3328x1872, 3072x1728, 2688x1520, 1920x1080, 1280x720, 800x448, 640x360
 - b) 4:3 aspect ratio : 2592x1944, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c) 5:4 aspect ratio : 1280x1024, 720x576
 - d) 3:2 aspect ratio : 720x480
 - 4) The camera shall support unicast video streaming up to 20 users.
 - 5) The camera shall support multicast video streaming up to 10 profiles.
 - 6) The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 - 7) The camera shall provide WiseStream II , Dynamic GOV and Dynamic fps to efficiently manage bit rate of the video stream and reduce storage.
- b. Camera – The camera device shall have the following physical and performance properties:
 - 1) IK10 rated for protection against impacts.
 - 2) True day/night operation with scheduling and options for external devices.
 - a) Low light level operation to 0.05 lux at F1.2 in color mode and 0 lux in IR mode.
 - 3) The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range.
 - 4) The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
 - 5) The camera shall be able to configure 32 privacy masking areas with polygonal zones.
 - 6) The camera shall have the defog feature to remove fogginess of scene which can be triggered automatically from the fog detection event.
 - 7) The camera shall provide video display on smart phone (iPhone, Android) to adjust viewing angle, rotation and focus.
- c. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
 - 1) Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
 - 2) Motion detection hand-over to PTZ cameras. The camera shall be able to call a preset of PTZ camera when motion event is triggered.
 - 3) Detection of logical events of specified conditions from the camera's video
 - a) Defocus detection

- b) Directional detection
- c) Motion detection
- d) Digital auto tracking
- e) Appear/Disappear
- f) Enter/Exit
- g) Loitering
- h) Tampering
- i) Virtual line
- j) Audio detection
- k) Sound classification
- l) Shock detection
- m) Face/upper body detection
- n) Fog detection
- 4) Business Intelligence features
 - a) People counting
 - b) Queue management
 - c) Heatmap
- 5) Detection and classification of the following sound.
 - a) Scream
 - b) Gunshot
 - c) Explosion
 - d) Crashing glass
- d. Interoperability – The camera shall be ONVIF Profile S / G and T compliant.
- e. The camera shall possess the following further characteristics:
 - 1) Built-in web server, accessed via non-plugin browsers including Google Chrome, MS Edge, Mozilla Firefox and Apple Safari.
 - 2) The camera shall provide streaming to multiple smart phones with DDNS provided freely from the manufacturer. In addition, the application shall be available for both iOS and Adroid, free of charge with search keyword, 'Wisenet Mobile'.
 - 3) Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
 - 4) NAS recording option with configurable pre-alarm and post-alarm recording intervals
 - 5) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Analytics
 - 2) Network disconnect
 - 3) Alarm input
 - b) available notification means upon trigger:
 - 1) File Upload via FTP and E-mail
 - 2) Notification via E-mail
 - 3) Local storage (SD / SDHC / SDXC) or NAS recording at event triggers
 - 4) Alarm output
 - 5) PTZ preset
 - 6) Handover
 - 7) Audio playback
 - 6) Pixel Counter available in the web viewer.
 - 7) PoE capable
 - 8) IP52, IK10
 - 9) This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstrike, communication interruption.

G. Decoding performance in web viewer depends on CPU/GPU performance of user

1. DETAILED SPECIFICATIONS

- a. Video
 - 1) Imaging device 1/2.8" CMOS
 - 2) Image Pixels 3840(H)x2160(V)
 - 3) Scanning Progressive
 - 4) Minimum Illumination Color: 0.05Lux (F1.2, 1/30sec),
B/W: 0Lux(IR LED On)
- b. Lens:
 - 1) Focal length 2.8~8.4mm(3x) motorized
varifocal
 - 2) Max. Aperture Ratio F1.2(Wide)~F2.8(Tele)
 - 3) Field of View H: 114°(Wide)~40.2°(Tele)V:
62.0°(Wide)~22.5°(Tele)D:133.0°(Wide)~46.3°(Tele)
 - 4) Min. Object Distance 0.7m (2.23ft)
 - 5) Focus Control Simple focus
 - 6) Lens Type DC auto iris, P iris
- c. PTR
 - 1) PAN 0°~360°
 - 2) TILT -45°~85°
 - 3) Rotate Range 0°~355°
- d. Operational Functions
 - 1) IR Viewable Length 40m(131.23ft)
 - 2) Camera Title Off / On (Displayed up to 85
characters)
 - a) W/W English / Numeric / Special
characters
 - b) China English / Chinese / Numeric /
Special characters
 - c) Common Multi-line (Max. 5), Color
(Grey/Green/Red/Blue/Black/White),Transparency, Auto
scale by resolution
 - d) Image BMP 20x20 pixel
 - 3) Day/Night Setting Auto (ICR) / Color / B/W / External
/ Schedule
 - 4) Backlight Compensation Off / BLC / HLC / WDR
 - 5) WDR extremeWDR (120dB)
 - 6) Digital Noise Reduction (DNR) Support (SSNR V)
 - 7) Digital Image Stabilization (DIS) Support (built-in gyro sensor)
 - 8) Defog Support
 - 9) Motion Detection Off / On (8ea, 8-point polygonal)
 - 10) Privacy Masking Off / On (32 zones, polygonal)-
Color: Grey / Green / Red / Blue / Black / White- Mosaic
 - 11) Auto Gain Control Off / Low / Middle / High
 - 12) White Balance ATW / Narrow ATW / AWC /
Manual / Indoor / Outdoor
 - 13) LDC Support
 - 14) Electronic Shutter Speed Min / Max / Anti-flicker (1/5 ~
1/12,000sec)
 - 15) Digital PTZ Support (Preset, Group)
 - 16) Image Rotation Flip: Off / OnMirror: Off /
OnHallway view: 0° / 90° / 270°
 - 17) Alarm I/O 2 configurable I/O ports (total 2
I/O port)
 - 18) Alarm Triggers Alarm Input, Analytics, Network
Disconnection

- 19) Alarm Events File Upload via FTP and E-mail, Notification via E-mail,SD/SDHC/SDXC or NAS recording at event triggers,Alarm output, Handover, PTZ preset, Audio playback
- 20) Pixel Counter Support
- 21) Storage Micro SD/SDHC/SDXC 512GB (256GB x 2 slots)
- 22) Analytics Defocus detection, Directional detection, Motion detection,Fog detection, Digital auto tracking, Appear/Disappear, Enter/Exit, Loitering,Tampering, Virtual line, Audio detection, Sound classification,Shock detection, Face/upper body detection
- 23) Video Out (Installation) CVBS: 1.0 Vp-p / 75Ω composite, 720x480(N), 720x576(P)USB: Micro USB type B, 1280 x 720 for installation
- 24) Memory 4GB RAM, 512MB Flash
- e. Video Streams
 - 1) Video compression H.265, H.264, MJPEG
 - 2) Resolution 3840x2160, 3328x1872, 3072x1728, 2592x1944, 2688x1520, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480,640x360, 320x240
 - 3) Maximum Framerate
 - a) H.265 / H.264 H.265/H.264: Max. 30fps/25fps(60Hz/50Hz)
 - b) MJPEG Max. 15/12fps(60Hz/50Hz)
 - 4) Smart Codec Manual Mode (area-based : 5EA)
 - 5) WiseStream II Support
 - 6) Bitrate Control Method H.265 / H.264: CBR or VBRMJPEG: VBR
 - 7) Streaming Capability Multiple streaming (Up to 10 profiles)
 - 8) Streaming method Unicast / Multicast
 - 9) Simultaneous Users 20 maximum (Unicast)
 - 10) Profile set Max. 10 ea
 - 11) Interoperability ONVIF Profile S / G / T, SUNAPI(HTTP API), Open Platform
- f. Audio
 - 1) Audio In Selectable(mic in/line in/Built-in mic)Supply voltage: 2.5V DC(4mA), Input impedance: 2K Ohm
 - 2) Audio Out Line out, Max. output level 1Vrms
 - 3) Audio Compression G.711 u-law /G.726 SelectableG.726(ADPCM) 8KHz, G.711 8KHzG.726: 16Kbps, 24Kbps, 32Kbps, 40KbpsAAC-LC: 48Kbps at 16KHz
- g. Network
 - 1) Connectivity – Shielded RJ-45(10/100/1000BASE-T)
 - 2) Protocol
 - a) IP v4 / v6, TCP, UDP
 - b) Configuration: DHCP, LLDP
 - c) Web service: HTTP, HTTPS
 - d) Network Service: ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP
 - e) Media: RTP, RTCP, RTSP
 - f) Unicast: SRTP (TCP, UDP Unicast)
 - g) Multicast: IGMP
 - h) Notifications: FTP, SMTP

- i) Remote Access: PPPoE
 - 3) DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
 - 4) QoS – Layer 3 DSCP
 - 5) Security Feature
 - a) User password protection
 - b) The device shall not provide a manufacture default password. Initial password setting shall be required to access the camera.
 - c) A minimal level of password complexity shall be required by the camera.
 - d) The camera shall not have a manufacture back-door password.
 - e) The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
 - f) IP address filtering – List of allowed or blocked IP addresses.
 - g) SRTP secured video communication for multicast.
 - h) Digest login authentication.
 - i) User access log.
 - j) 802.1X Authentication (EAP-TLS, EAP-LEAP)
 - k) Device Certificate (Hanwha Techwin Root CA)
 - l) HTTPS(SSL/TLS) login authentication and secured video communication with TLS v1.3
 - m) Disk encryption on SD card recording (AES-256)
 - n) File encryption on local disk recording via web browser (AES-256)
 - o) Mutual Authentication (Client Authentication) for secure communication
 - p) CyberSecurity assurance program UL CAP (UL 2900-1)
 - 6) Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
 - 7) Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
 - 8) Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
 - 9) Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings to a file and restore these camera settings if needed.
 - 10) Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.
- h. Electrical
 - 1) Power
 - a) Input Voltage / Current PoE(IEEE802.3af), 12VDC
 - b) Power Consumption PoE : typ 10.7W, max 12.95W 12VDC : typ 9.0W, max 11.5W Power redundancy failover
- i. Mechanical And Environmental
 - 1) Color/Material White / Aluminum, Hard-coated dome bubble
 - 2) RAL Code RAL9003
 - 3) Dimensions (W x H) Ø160x125mm(6.30x4.92")

- 4) Weight 1.6 kg (3.53 lb)
- 5) Temperature
 - a) Operating -25°C ~ +60°C (-13°F ~ +140°F)
 - b) Storage -50°C ~ +60°C (-58°F ~ +140°F)
- 6) Humidity
 - a) Operating Less than 95% RH (non condensing)
 - b) Storage Less than 90% RH
- 7) Environmental Rating:
 - a) Mechanical (Vandal) Protection IK10
 - b) Water/Dust Ingress Protection IP52
- j. DORI
 - 1) Detect (25PPM/ 8PPF) Wide: 49.9m(163.71ft) / Tele: 209.9m(688.65ft)
 - 2) Observe (63PPM/ 19PPF) Wide: 19.9m(65.29ft) / Tele: 83.9m(275.26ft)
 - 3) Recognize (125PPM/ 38PPF) Wide: 10.0m(32.80ft) / Tele: 42.0m(137.80ft)
 - 4) Identify (250PPM/ 76PPF) Wide: 5.0m(16.40ft) / Tele: 21.0m(68.90ft)

H. XNF-8010RW

1. EQUIPMENT

- a. Manufacturer: Hanwha Techwin <http://www.hanwha-security.com/>
- b. Model XNF-8010R
- c. Alternates: None

2. GENERAL DESCRIPTION

- a. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
 - a) H.265 and H.264 – maximum of 30 fps at all resolution
 - b) MJPEG – maximum of 15 fps
 - 2) The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
 - 3) The camera shall be able to configure various resolution selections in four view modes.
 - a) Original View: 2048x2048, 1280x1280, 1080x1080, 960x960, 768x768, 720x720, 640x640, 480x480
 - b) Single Panorama: 2048x512, 1920x480, 1280x320, 640x160, 704x176
 - c) Double Panorama: 2048x1024, 1920x960, 1280x640, 640x320, 704x352
 - d) Quad View: 2048x1536, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 704x576
 - 4) The camera shall be able to stream at least 10 independent video stream types using unicast protocol.
 - 5) The camera shall support multicast and unicast video streaming.
 - 6) The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 - 7) The camera shall provide smart codec (WiseStream, Dynamic

- GOV, and Dynamic fps) to efficiently manage bit rate of the video stream and reduce storage while producing video quality that is visually equal to the one without smart codec.
- b. Camera – The camera device shall have the following physical and performance properties:
 - 1) It shall provide Wi-Fi interface which can stream video to a smart phone for installation purposes. The smart phone application shall be available in iOS and Android for free of charge with search keyword, 'Wisenet Installation'. Wi-Fi dongle is required for Wi-Fi connection.
 - 2) The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range up to 120dB.
 - 3) Automated, manual, scheduled, or externally triggered day and night operation with infrared cut filter. Images are available in color or black and white.
 - a) Low light level operation to 0.1 lux (F1.6) in color mode and 0 (IR LED on) in black and white mode.
 - 4) The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
 - 5) Configurable 32 privacy masking regions utilizing a polygon
 - 6) Defog feature to remove fogginess of scene which can be triggered automatically from fog detection event.
 - c. Intelligence and Analytics – The camera shall have a suite of integral intelligent operations and analytic functions to include:
 - 1) Motion detection with eight definable detection areas with eight point polygonal zones, minimum/maximum object size.
 - 2) Motion detection hand-over to PTZ cameras. The camera shall be able to call a preset of PTZ camera when motion event is triggered.
 - 3) Detection of logical events of specified conditions from the camera's video
 - a) Tampering
 - b) Loitering
 - c) Directional detection
 - d) Virtual line
 - e) Enter/Exit
 - f) (Dis)Appear,
 - g) Audio detection
 - 4) Detection and classification of the following sound.
 - a) Scream
 - b) Gunshot
 - c) Explosion
 - d) Crashing glass
 - 5) Business Intelligence
 - a) People Counting
 - b) Heatmap
 - c) Queue Management
 - d. Interoperability – The camera shall be ONVIF Profile S and G compliant. Moreover it shall allow users to install third party applications from the manufacturer's partners through Open Platform and the list of available applications and partners shall be available from the manufacturer's homepage.
 - e. The camera shall possess the following further characteristics:
 - 1) Built-in web server, accessed via standard browsers including Internet Explorer, Firefox, Chrome & Safari.
 - 2) The camera shall provide streaming to multiple smart phones with

DDNS provided freely from the manufacturer. In addition, the application shall be available for both iOS and Adroid, free of charge with search keyword, 'Wisenet Mobile'.

- 3) Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
- 4) NAS recording option with configurable pre-alarm and post-alarm recording intervals
- 5) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Alarm input
 - 2) Motion detection
 - 3) Video & Audio analytics
 - 4) Network disconnect
 - b) available notification means upon trigger:
 - 1) File Upload Via FTP and E-mail
 - 2) Notification Via E-mail
 - 3) Local storage (SD / SDHC / SDXC) or NAS recording at event triggers
 - 4) External output
- 6) Pixel Counter available in the web viewer.
- 7) PoE capable

3. DETAILED SPECIFICATIONS

a. Video

- 1) Imager
 - a) Sensor: 1/1.8" 6MP CMOS
 - 1) pixels per sensor: 3096 (H) x 2094 (V) total; 2048 (H) x 2048 (V) effective
 - 2) scanning : progressive
 - b) Minimum illumination
 - 1) Color mode: 0.1Lux (F1.6)
 - 2) Black & white mode: 0Lux
 - c) S/N Ratio 50dB
 - d) Video Out (Installation) CVBS: 1.0 Vpp / 75Ω composite, 714 x 480(N), 702 x 576(P)USB: micro USB type B for installation
 - e) The following features with control settings shall be available:
 - 1) Camera Title Off / On (Displayed up to 85 characters per line)
 - a) W/W: English / Numeric / Special characters
 - b) China: English / Numeric / Special / Chinese characters
 - c) Common: Multi-line (Max. 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution
 - 2) Day/night setting: Auto (ICR) / Color / B/W / External / Schedule
 - 3) Backlight compensation (BLC): Off / BLC / HLC, WDR
 - 4) WDR 120dB
 - 5) Contrast Enhancement Off / On (Samsung Super Dynamic Range)
 - 6) Digital Noise Reduction (DNR): Off / On (Samsung Super Noise Reduction V)2D + 3D Noise Filter

- 7) Digital Image Stabilization Off / On
- 8) Defog Off / Auto / Manual
- 9) Motion Detection Off / On (8ea, 8point polygonal zones)Handover to PTZ
- 10) Privacy Masking Off / On (32ea, polygonal zones)- Color: Gray/Green/Red/Blue/Black/White- Mosaic
- 11) Gain Control Off / Low / Middle / High
- 12) White Balance ATW / AWC / Manual / Indoor / OutdoorIncluding Mercury and Sodium
- 13) Electronic shutter speed:
 - a) settings: min, max, anti-flicker (2 ~ 1/12,000sec)
- 14) Digital PTZ 8x digital zoom, (preset, group)
- 15) Image flip: Off / On
- 16) Image mirror: Off / On
- 17) Alarm I/O Input 1ea / Output 1ea
- 18) Alarm Triggers Alarm Input, Motion detection, Video & Audio analytics, Network disconnect
- 19) Alarm Events File Upload Via FTP and E-mail, Notification Via E-mail, Local storage (SD / SDHC / SDXC) or NAS recording at event triggers, External output
- 20) Pixel Counter Available in the web viewer.
- 21) Viewing Composition Fisheye, Single Panorama, Double PanoramaQuad View (Fisheye + 4PTZ), Fisheye + 8PTZ
- f) Lens: 1.6mm
 - 1) Max. Aperture Ratio F1.6
 - 2) Angle of view: H: 192°(Wide) V: 192°, D: 192°
 - 3) Min. Object Distance 0.3m (0.98ft)
 - 4) Focus Control Simple Focus, Manual, Remote control via network
 - 5) Lens Type Fixed
 - 6) Mount Type Board-in Type
- 2) Video Streams
 - a) The camera shall be able to produce 10 video profiles, each of which may have the following properties:
 - 1) Encoding type:
 - a) H.265
 - b) H.264
 - c) MJPEG
 - 2) Resolution:
 - a) Original View: 2048x2048, 1280x1280, 1080x1080, 960x960, 768x768, 720x720, 640x640, 480x480
 - b) Single panorama : 2048x512, 1920x480, 1280x320, 640x160, 704x176

- c) Double panorama : 2048x1024, 1920x960, 1280x640, 640x320, 704x352
 - d) Quad View : 2048x1536, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 704 x 576
 - 3) Maximum frame rate
 - a) H.265 and H.264: Max. 30 fps at all resolutions
 - b) MJPEG: Max. 15 fps
 - 4) Smart Codec WiseStream II , Dynamic GOV, Dynamic fps
 - 5) Bit rate control method:
 - a) H.265 and H.264
 - 1) target bitrate level control
 - 2) constant bit rate (CBR) or variable bit rate (VBR)
 - b) MJPEG
 - 3) target bitrate level control
 - 4) variable bit rate (VBR)
 - 3) Number of multi-streaming profiles: 10 maximum
 - 4) Simultaneous users (total): 20 maximum (unicast)
 - 5) Storage and Recording
 - a) The camera shall have onboard SD card storage
 - 1) Card type: Micro SD/SDHC/SDXC
 - 2) Capacity: 512 GB (256 GB x 2 slots)
 - 3) Image content on the card shall have the ability to be downloaded to a selected destination.
 - b) NAS
 - 6) Interoperability - Video streams shall be capable of supporting ONVIF protocol, profiles S and G.
 - 7) Single Images - The camera shall support image screenshot and export.
 - 8) The camera shall support open platform to allow users to install third party applications.
- b. Network
- 1) Connectivity: 10/100 Base-T Ethernet via RJ-45 connector
 - 2) Protocols supported:
 - a) Transmission Control Protocol (TCP), Internet Protocol (IP) v4 and v6, User Datagram Protocol (UDP)
 - b) Configuration: Dynamic Host Configuration Protocol (DHCP)
 - c) Web services: Hypertext Transfer Protocol (HTTP), Secure HTTP (HTTPS)
 - d) Network services: Address Resolution Protocol (ARP), Bonjour, Domain Name System (DNS), Internet Control Message Protocol (ICMP), Network Time Protocol (NTP), Protocol Independent Multicast-Sparse Mode (PIM-SM), Simple Network Management Protocol (SNMP v1/2c/3 – MIB-2), Universal Plug and Play (UPnP)
 - e) Media: Real-Time Transport Protocol (RTP), Real-Time Control Protocol, Real-Time Streaming Protocol (RTSP)
 - f) Multicast: Internet Group Management Protocol (IGMP)
 - g) Notifications: File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP)
 - h) Remote Access: Point-to-Point Protocol over Ethernet (PPPoE)
 - 3) DDNS – The camera shall support DDNS services offered by the

- 4) Manufacturer and other publicly available service offerings.
- 4) Quality of Service (QoS) – Layer 3 DSCP
- 5) Security features:
 - a) user password protection
 - b) IP address filtering - list of allowed or blocked IP addresses
 - c) HTTPS(SSL) login authentication
 - d) HTTPS(SSL) secured communications
 - e) Digest login authentication
 - f) User access log
 - g) 802.1x authentication
- 6) Discovery - Manufacturer shall offer a discovery program to identify all devices of his manufacture on the network.
- 7) Configuration – Manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
- c. Electrical
 - 1) Power
 - a) Input Voltage / Current 12V DC, PoE
 - b) Power Consumption: Max. 11W (12V DC), Max. 12W (PoE)
- d. Mechanical And Environmental
 - 1) Material: Aluminium
 - 2) Dimensions (W x H): Ø146 x 54.8mm (Ø5.75" x 2.16")
 - 3) Weight 730g (1.61 lb)
 - 4) Temperature:
 - a) Operating: -10° C to 55° C (-14° F to 131° F)
 - b) Storage: -50° C to 60° C (-58° F to 140° F)
 - 5) Humidity: 0 ~ 90%, non-condensing

I. XNP-9300RW

1. EQUIPMENT

- a. Manufacturer : Hanwha Techwin(<http://www.hanwha-security.com/>)
- b. Model : XNP-9300RW
- c. Alternates : None

2. GENERAL DESCRIPTION

- a. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
 - a) H.265 and H.264 : Max. 30/25FPS(60Hz/50Hz)
 - b) MJPEG : Max. 30/25FPS(60Hz/50Hz)
 - 2) The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
 - 3) The camera shall be able to configure various resolution selections.
 - a) 16:9 aspect ratio : 3840x2160, 2592x1464, 1920x1080, 1280x720, 800x448, 640x360
 - b) 4:3 aspect ratio : 2592x1944, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c) 5:4 aspect ratio : 1280x1024, 720x576
 - d) 3:2 aspect ratio : 720x480

- 4) The camera shall support unicast video streaming up to 20 users.
 - 5) The camera shall support multicast video streaming up to 10 profiles.
 - 6) The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 - 7) The camera shall provide WiseStream II, Dynamic GOV and Dynamic FPS to efficiently manage bit rate of the video stream and reduce storage.
- b. Camera – The camera device shall have the following physical and performance properties:
- 1) Built-in wiper is for get rid of water or dust initially
 - 2) IK10 rated for protection against impacts for camera body.
 - 3) True day/night operation with scheduling and options for external devices.
 - a) Low light level operation to 0.1 lux at F1.6 in color mode and 0 lux in black and white mode with IR illumination on.
 - 4) The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range.
 - 5) The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
 - 6) The camera shall be able to configure 32 privacy masking areas with polygonal zones.
 - 7) The camera shall have the defog feature to remove fogginess of scene which can be triggered automatically from the fog detection event.
 - 8) The camera shall provide video display on smart phone (iPhone, Android) to adjust viewing angle, rotation and focus.
- c. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
- 1) Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
 - 2) Detection of logical events of specified conditions from the camera's video
 - a) Directional detection
 - b) Fog detection
 - c) Face detection
 - d) Motion detection
 - e) Appear/Disappear
 - f) Enter/Exit
 - g) Loitering
 - h) Tampering
 - i) Virtual line
 - j) Shock detection
 - k) Audio detection with NW I/O Box (External Device)
 - l) Sound classification with NW I/O Box (External Device)
 - 3) Detection and classification with NW I/O Box of the following sound.
 - a) Scream
 - b) Gunshot
 - c) Explosion
 - d) Crashing glass
- d. Interoperability – The camera shall be ONVIF Profile S / G and T compliant.
- e. The camera shall possess the following further characteristics:
- 1) Built-in web server, accessed via non-plugin browsers including Google Chrome, IE11, MS Edge, Mozilla Firefox and Apple Safari.

- 2) The camera shall provide streaming to multiple smart phones with DDNS provided freely from the manufacturer. In addition, the application shall be available for both iOS and Adroid, free of charge with search keyword, 'Wisenet Mobile'.
- 3) Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
- 4) NAS recording option with configurable pre-alarm and post-alarm recording intervals
- 5) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Analytics
 - 2) Network disconnect
 - 3) Alarm input with NW I/O Box
 - b) available notification means upon trigger:
 - 1) File Upload via FTP and E-mail
 - 2) Notification via E-mail
 - 3) Local storage (SD / SDHC / SDXC) or NAS recording at event triggers
 - 4) Alarm output with NW I/O Box
 - 5) PTZ preset
 - 6) Handover
- 6) Pixel Counter available in the web viewer.
- 7) HPoE capable
- 8) IP66, IK10, NEMA4X
- 9) This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunder stroke, communication interruption.

3. DETAILED SPECIFICATIONS

a. Video

- 1) Imaging device : 1/2.8" CMOS
- 2) Scanning : Progressive
- 3) Minimum Illumination
 - a) Color : 0.1Lux (F1.6, 1/30sec),
 - b) B/W : 0Lux(IR LED On)

b. Lens

- 1) Focal length : 5~150mm(30x) zoom
- 2) Digital Zoom : 32x
- 3) Max. Aperture Ratio : F1.6(Wide) - F4.56(Tele)
- 4) Field of View
 - a) H : 57.42°(Wide)~2.19°(Tele)
 - b) V : 33.54°(Wide)~1.25°(Tele)
- 5) Min. Object Distance : 3m(9.84ft)
- 6) Focus Control : Oneshot AF, Focus save
- 7) Lens Type : DC auto iris

c. PTR

- 1) PAN : 360° Endless
- 2) PAN Speed
 - a) Max. 500°/sec
 - b) Manual : 0.024°/sec~250°/sec
- 3) TILT : 110° (-20°~90°)
- 4) TILT Speed
 - a) Max. 350°/sec
 - b) Manual : 0.024°/sec~250°/sec
- 5) Sequence : Preset(300ea), Swing, Group(6ea), Trace, Tour, Auto Run, Schedule

- 6) Preset Accuracy : $\pm 0.1^\circ$, Pan/Tilt correction
- d. Operational Functions
 - 1) IR Viewable Length : 200m(656.17ft)
 - 2) Camera Title
 - a) Off / On (Displayed up to 85 characters)
 - b) W/W : English / Numeric / Special characters
 - c) Common : Multi-line (Max. 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution
 - d) Image : BMP 200x200 pixel
 - 3) Day/Night Setting : Auto (ICR) / Color / B/W / External / Schedule
 - 4) Backlight Compensation : Off / BLC / HLC / WDR
 - 5) WDR : extremeWDR(120dB)
 - 6) Contrast Enhancement : SSSDR
 - 7) Digital Noise Reduction (DNR) : Support (SSNR V)
 - 8) Digital Image Stabilization (DIS) : Support (built-in gyro sensor)
 - 9) Defog : Support
 - 10) Motion Detection : Off / On (8ea, 8-point polygonal)
 - 11) Privacy Masking : Off / On (32 zones, rectangular)
 - a) Color: Grey / Green / Red / Blue / Black / White
 - b) Mosaic
 - 12) Gain Control : Support
 - 13) White Balance : ATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium
 - 14) Electronic Shutter Speed : Min / Max / Anti-flicker (2 ~ 1/12,000sec)
 - 15) Image Rotation
 - a) Flip : Off / On
 - b) Mirror : Off / On
 - 16) Alarm I/O : Support with external NW I/O Box
 - 17) Alarm Triggers
 - a) Alarm Input(with NW I/O Box)
 - b) Analytics
 - c) Network Disconnection
 - 18) Alarm Events
 - a) File Upload via FTP and E-mail, Notification via E-mail,
 - b) SD/SDHC/SDXC or NAS recording at event triggers,
 - c) Alarm output with NW I/O Box, Handover, PTZ preset
 - 19) Pixel Counter : Support
 - 20) Storage : Micro SD/SDHC/SDXC 1TB (2 slots x 500GB)
 - 21) Analytics : Directional detection, Fog detection, Face detection, Motion detection, Appear/Disappear, Enter/Exit, Loitering, Tampering, Virtual line, Shock detection, Audio detection with NW I/O Box, Sound classification with NW I/O Box)
 - 22) Memory : 4GB RAM, 512MB Flash
- e. Video Streams
 - 1) Video compression : H.265, H.264, MJPEG
 - 2) Resolution : 3840x2160, 2592x1944, 2592x1464, 1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720, 1024x768, 800x600, 800x448, 720x576, 720x480, 640x480, 640x360, 320x240
 - 3) Maximum Framerate
 - a) H.265 / H.264 : Max. 30FPS/25FPS(60Hz/50Hz)
 - b) MJPEG : Max. 30/25FPS(60Hz/50Hz)
 - 4) Smart Codec
 - a) Manual Mode (area-based : 5EA)

- b) WiseStream II
- 5) Bitrate Control Method
 - a) H.265 / H.264 : CBR or VBR
 - b) MJPEG : VBR
- 6) Streaming Capability : Multiple streaming (Up to 10 profiles)
- 7) Streaming method : Unicast / Multicast
- 8) Simultaneous Users : 20 maximum (Unicast)
- 9) Profile set : Max. 10 ea
- 10) Interoperability
 - a) ONVIF Profile S / G / T
 - b) SUNAPI(HTTP API)
 - c) Open Platform
- f. Network
 - 1) Connectivity – Metal Shielded RJ-45(10/100/1000BASE-T)
 - 2) Protocol
 - a) IP v4 / v6, TCP, UDP
 - b) Configuration : DHCP, LLDP
 - c) Web service : HTTP, HTTPS
 - d) Network Service : ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP
 - e) Media : RTP, RTCP, RTSP
 - f) Unicast : SRTP
 - g) Multicast : IGMP, PIM-SM
 - h) Notifications : FTP, SMTP
 - 3) DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
 - 4) QoS – Layer 3 DSCP
 - 5) Security Feature
 - a) User password protection
 - b) The device shall not provide a manufacture default password. Default password change shall be required to access the camera.
 - c) A minimal level of password complexity shall be required by the camera.
 - d) The camera shall not have a manufacture back-door password.
 - e) The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
 - f) IP address filtering – List of allowed or blocked IP addresses
 - g) HTTPS(SSL/TLS) login authentication
 - h) HTTPS(SSL/TLS) secured communication
 - i) Digest login authentication
 - j) User access log
 - k) 802.1X Authentication(EAP-TLS, EAP-LEAP)
 - l) Device Certificate(Hanwha Techwin Root CA)
 - 6) Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
 - 7) Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
 - 8) Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
 - 9) Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings

- to a file and restore these camera settings if needed.
 - 10) Reporting – The manufacturer shall provide a tool that can generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.
 - g. Electrical
 - 1) Power
 - a) Input Voltage : HPoE(IEEE802.3bt, Class6, Type3)
 - b) Power Consumption : HPoE(Camera only): Max 42W, typical 20W
 - h. Mechanical And Environmental
 - 1) Color/Material
 - a) Body : White / Aluminum
 - b) Head : Black / Polycarbonate
 - 2) RAL Code
 - a) White : RAL9003
 - b) Black : RAL9005
 - 3) Dimensions (W x H) : Ø184.9x318.8mm(7.28x12.55")
 - 4) Weight : 5.4Kg(11.90lb)
 - 5) Temperature
 - a) Operating
 - 1) Normal : -40°C~+55°(-40°F ~ +131°F)
 - 2) Intermittent : -40°C~+60°C (-40°F ~ +140°F)
 - 3) Max Temperature based on NEMA-TS 2(2.2.7): +74°C(+165°F)
 - b) Storage : -50°C~+60°C (-58°F~+140°F)
 - 6) Humidity
 - a) Operating : Less than 95% RH (non-condensing)
 - b) Storage : Less than 90% RH (non-condensing)
 - 7) Ingression Protection : IP66, NEMA4X
 - 8) Vandal Resistance : IK10
 - i. DORI
 - 1) Detect (25PPM/ 8PPF) : Wide: 140.2m(460.0ft) / Tele: 4018.1m(13182.6ft)
 - 2) Observe (63PPM/ 19PPF) : Wide: 62.5m(184.0ft) / Tele: 1607.2m(5273.1ft)
 - 3) Recognize (125PPM/ 38PPF) : Wide: 28.0m(92.0ft) / Tele: 803.6m(2636.5ft)
 - 4) Identify (250PPM/ 76PPF) : Wide: 14.0m(46.0ft) / Tele: 401.8m(1318.3ft)
 - j. EMC & Safety
 - 1) FCC 47 CFR Part 15 Subpart B
- J. ANSI C63.4-2014 Class A
 - 1) IC Regulation ICES-003:2016
- K. ANSI C63.4-2014 Class A
 - 1) CE EMC-Directive 2014/30/EU
- L. EN 55032:2015 Class A
- M. EN 50130-4:2011+A1:2014
 - 1) VCCI-CISPR 32: Class A
 - 2) AS/NZS CISPR32:2015 Class A
 - 3) UL listed
 - 4) CE EN 50581:2012 (hazardous substances)
- b. Ingress Protection and Vandal Resistance

- 1) ANSI / IEC60529 – Degrees of Protection Provided by Enclosures – IP66/IP67
- 2) DIN40050 Part9 : IP6K9K
- 3) IEC EN 62262 - Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts : IK10
- 4) IEC 60068-2-75 : IK10

N. XNV-9082R

1. EQUIPMENT

- a. Manufacturer: Hanwha Techwin <http://www.hanwha-security.com/>
- b. Model XNV-9082R
- c. Alternates: None

2. GENERAL DESCRIPTION

- a. Video Compression and Transmission – The camera shall have the following properties relating to the video signals it produces.
 - 1) H.265, H.264 and MJPEG compression, each derived from a dedicated encoder and capable of being streamed independently and simultaneously.
 - a) H.265 and H.264 – maximum of 30/25fps(60Hz/50Hz) at all resolution
 - b) MJPEG – maximum of 15/12fps(60Hz/50Hz)
 - 2) The camera shall be able to configure up to 10 independent video stream profiles with differing encoding, quality, frame rate, resolution, and bit rate settings.
 - 3) The camera shall be able to configure various resolution selections.
 - a) 16:9 aspect ratio : 3840x2160, 3328x1872, 3072x1728, 2688x1520, 1920x1080, 1280x720, 800x448, 640x360
 - b) 4:3 aspect ratio : 2592x1944, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 320x240
 - c) 5:4 aspect ratio : 1280x1024, 720x576
 - d) 3:2 aspect ratio : 720x480
 - 4) The camera shall support unicast video streaming up to 20 users.
 - 5) The camera shall support multicast video streaming up to 10 profiles.
 - 6) The camera shall be able to configure Dynamic DNS (DDNS). DDNS shall be provided with no additional cost by the manufacturer.
 - 7) The camera shall provide WiseStream II, Dynamic GOV and Dynamic fps to efficiently manage bit rate of the video stream and reduce storage.
- b. Camera – The camera device shall have the following physical and performance properties:
 - 1) IK10+ rated for protection against impacts.
 - 2) True day/night operation with scheduling and options for external devices.
 - a) Low light level operation to 0.05 lux at F1.2 in color mode and 0 lux in IR mode.
 - 3) The camera shall be able to produce clear images in highly contrast scenes with multi-exposure wide dynamic range.
 - 4) The camera shall support digital noise reduction using both 2D and 3D noise reduction technology.
 - 5) The camera shall be able to configure 32 privacy masking areas with polygonal zones.
 - 6) The camera shall have the defog feature to remove fogginess of

- scene which can be triggered automatically from the fog detection event.
- 7) The camera shall provide video display on smart phone (iPhone, Android) to adjust viewing angle, rotation and focus.
- c. Intelligence and Analytics – The camera shall have a suite of intelligent analytic functions.
- 1) Motion detection with 8 definable detection areas with 8 point polygonal zones, and minimum/maximum object size.
 - 2) Motion detection hand-over to PTZ cameras. The camera shall be able to call a preset of PTZ camera when motion event is triggered.
 - 3) Detection of logical events of specified conditions from the camera's video
 - a) Defocus detection
 - b) Directional detection
 - c) Motion detection
 - d) Digital auto tracking
 - e) Appear/Disappear
 - f) Enter/Exit
 - g) Loitering
 - h) Tampering
 - i) Virtual line
 - j) Audio detection
 - k) Sound classification
 - l) Shock detection
 - m) Face/upper body detection
 - n) Fog detection
 - 4) Business Intelligence features
 - a) People counting
 - b) Queue management
 - c) Heatmap
 - 5) Detection and classification of the following sound.
 - a) Scream
 - b) Gunshot
 - c) Explosion
 - d) Crashing glass
- d. Interoperability – The camera shall be ONVIF Profile S / G and T compliant.
- e. The camera shall possess the following further characteristics:
- 1) Built-in web server, accessed via non-plugin browsers including Google Chrome, MS Edge, Mozilla Firefox and Apple Safari.
 - 2) The camera shall provide streaming to multiple smart phones with DDNS provided freely from the manufacturer. In addition, the application shall be available for both iOS and Adroid, free of charge with search keyword, 'Wisenet Mobile'.
 - 3) Micro SD/SDHC/SDXC memory card with configurable pre-alarm and post-alarm recording intervals
 - 4) NAS recording option with configurable pre-alarm and post-alarm recording intervals
 - 5) Alarms and notifications
 - a) alarm notification triggers:
 - 1) Analytics
 - 2) Network disconnect
 - 3) Alarm input
 - b) available notification means upon trigger:
 - 1) File Upload via FTP and E-mail
 - 2) Notification via E-mail
 - 3) Local storage (SD / SDHC / SDXC) or NAS recording

- at event triggers
- 4) Alarm output
- 5) PTZ preset
- 6) Handover
- 7) Audio playback
- 6) Pixel Counter available in the web viewer.
- 7) PoE capable
- 8) IP66/IP67/IP6K9K, IK10+, NEMA4X
- 9) This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstrike, communication interruption.

O. Decoding performance in web viewer depends on CPU/GPU performance of user

1. DETAILED SPECIFICATIONS

a. Video

- 1) Imaging device 1/2.8" CMOS
- 2) Image Pixels 3840(H)x2160(V)
- 3) Scanning Progressive
- 4) Minimum Illumination Color: 0.05Lux (F1.2, 1/30sec),
B/W: 0Lux(IR LED On)

b. Lens:

- 1) Focal length 2.8~8.4mm(3x) motorized varifocal
- 2) Max. Aperture Ratio F1.2(Wide)~F2.8(Tele)
- 3) Field of View H: 114°(Wide)~40.2°(Tele)V:
62.0°(Wide)~22.5°(Tele)D:133.0°(Wide)~46.3°(Tele)
- 4) Min. Object Distance 0.7m (2.23ft)
- 5) Focus Control Simple focus
- 6) Lens Type DC auto iris, P iris

c. PTR

- 1) PAN 0°~360°
- 2) TILT -45°~85°
- 3) Rotate Range 0°~355°

d. Operational Functions

- 1) IR Viewable Length 40m(131.23ft)
- 2) Camera Title Off / On (Displayed up to 85 characters)
 - a) W/W English / Numeric / Special characters
 - b) China English / Chinese / Numeric / Special characters
 - c) Common Multi-line (Max. 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto scale by resolution
 - d) Image BMP 20x20 pixel
- 3) Day/Night Setting Auto (ICR) / Color / B/W / External / Schedule
- 4) Backlight Compensation Off / BLC / HLC / WDR
- 5) WDR extremeWDR (120dB)
- 6) Digital Noise Reduction (DNR) Support (SSNR V)
- 7) Digital Image Stabilization (DIS) Support (built-in gyro sensor)
- 8) Defog Support
- 9) Motion Detection Off / On (8ea, 8-point polygonal)
- 10) Privacy Masking Off / On (32 zones, polygonal)-
Color: Grey / Green / Red / Blue / Black / White- Mosaic

- | | | |
|-----|---|--|
| 11) | Auto Gain Control | Off / Low / Middle / High |
| 12) | White Balance
Manual / Indoor / Outdoor | ATW / Narrow ATW / AWC / |
| 13) | LDC | Support |
| 14) | Electronic Shutter Speed
1/12,000sec) | Min / Max / Anti-flicker (1/5 ~ |
| 15) | Digital PTZ | Support (Preset, Group) |
| 16) | Image Rotation
OnHallway view: 0° / 90° / 270° | Flip: Off / OnMirror: Off / |
| 17) | Alarm I/O
I/O port) | 2 configurable I/O ports (total 2 |
| 18) | Alarm Triggers
Disconnection | Alarm Input, Analytics, Network |
| 19) | Alarm Events | File Upload via FTP and E-mail,
Notification via E-mail,SD/SDHC/SDXC or NAS recording at event
triggers,Alarm output, Handover, PTZ preset, Audio playback |
| 20) | Pixel Counter | Support |
| 21) | Storage
(256GB x 2 slots) | Micro SD/SDHC/SDXC 512GB |
| 22) | Analytics | Defocus detection, Directional
detection, Motion detection,Fog detection, Digital auto tracking,
Appear/Disappear, Enter/Exit, Loitering,Tampering, Virtual line,
Audio detection, Sound classification,Shock detection, Face/upper
body detection |
| 23) | Video Out (Installation) | CVBS: 1.0 Vp-p / 75Ω composite,
720x480(N), 720x576(P)USB: Micro USB type B, 1280 x 720 for
installation |
| 24) | Memory | 4GB RAM, 512MB Flash |
| e. | Video Streams | |
| 1) | Video compression | H.265, H.264, MJPEG |
| 2) | Resolution | 3840x2160, 3328x1872,
3072x1728, 2592x1944, 2688x1520,
1920x1080, 1600x1200, 1280x1024, 1280x960, 1280x720,
1024x768, 800x600, 800x448,
720x576, 720x480, 640x480,640x360, 320x240 |
| 3) | Maximum Framerate | |
| a) | H.265 / H.264
30fps/25fps(60Hz/50Hz) | H.265/H.264: Max. |
| b) | MJPEG | Max. 15/12fps(60Hz/50Hz) |
| 4) | Smart Codec | Manual Mode (area-based : 5EA) |
| 5) | WiseStream II | Support |
| 6) | Bitrate Control Method
VBRMJPEG: VBR | H.265 / H.264: CBR or |
| 7) | Streaming Capability
profiles) | Multiple streaming (Up to 10 |
| 8) | Streaming method | Unicast / Multicast |
| 9) | Simultaneous Users | 20 maximum (Unicast) |
| 10) | Profile set | Max. 10 ea |
| 11) | Interoperability | ONVIF Profile S / G / T,
SUNAPI(HTTP API), Open Platform |
| f. | Audio | |
| 1) | Audio In | Selectable(mic in/line in/Built-in
mic)Supply voltage: 2.5V DC(4mA), Input impedance: 2K Ohm |
| 2) | Audio Out | Line out, Max. output level 1Vrms |
| 3) | Audio Compression | G.711 u-law /G.726
SelectableG.726(ADPCM) 8KHz, G.711 8KHzG.726: 16Kbps, |

24Kbps, 32Kbps, 40Kbps AAC-LC: 48Kbps at 16KHz

g. Network

- 1) Connectivity – Shielded RJ-45(10/100/1000BASE-T)
- 2) Protocol
 - a) IP v4 / v6, TCP, UDP
 - b) Configuration: DHCP, LLDP
 - c) Web service: HTTP, HTTPS
 - d) Network Service: ARP, Bonjour, DNS, ICMP, NTP, PIM-SM, SNMP v1/2c/3 – MIB-2, UPnP
 - e) Media: RTP, RTCP, RTSP
 - f) Unicast: SRTP (TCP, UDP Unicast)
 - g) Multicast: IGMP
 - h) Notifications: FTP, SMTP
 - i) Remote Access: PPPoE
- 3) DDNS – The camera shall support DDNS services offered by the manufacturer and others publicly available service offerings
- 4) QoS – Layer 3 DSCP
- 5) Security Feature
 - a) User password protection
 - b) The device shall not provide a manufacture default password. Initial password setting shall be required to access the camera.
 - c) A minimal level of password complexity shall be required by the camera.
 - d) The camera shall not have a manufacturer back-door password.
 - e) The manufacturer shall provide a tool that provides the ability to make password changes to multiple cameras at the same time.
 - f) IP address filtering – List of allowed or blocked IP addresses.
 - g) SRTP secured video communication for multicast.
 - h) Digest login authentication.
 - i) User access log.
 - j) 802.1X Authentication (EAP-TLS, EAP-LEAP)
 - k) Device Certificate (Hanwha Techwin Root CA)
 - l) HTTPS(SSL/TLS) login authentication and secured video communication with TLS v1.3
 - m) Disk encryption on SD card recording (AES-256)
 - n) File encryption on local disk recording via web browser (AES-256)
 - o) Mutual Authentication (Client Authentication) for secure communication
 - p) CyberSecurity assurance program UL CAP (UL 2900-1)
- 6) Discovery – The manufacturer shall offer a discovery program to identify all devices of them on the network.
- 7) Configuration – The manufacturer shall offer a configuration program that remotely allows users to change settings on multiple cameras simultaneously.
- 8) Firmware upgrade – The manufacturer shall offer a program capable of upgrading multiple cameras at the same time (not requiring access to individual cameras).
- 9) Camera backup setting – The manufacturer shall provide a program that provides the ability to save multiple camera settings to a file and restore these camera settings if needed.
- 10) Reporting – The manufacturer shall provide a tool that can

generate a report including thumbnail view, MAC address, IP address, serial number and other camera settings.

- h. Electrical
 - 1) Power
 - a) Input Voltage / Current PoE(IEEE802.3af), 12VDC, 24VAC(Accessory)
 - b) Power Consumption PoE : typ 10.7W, max 12.95W12VDC : typ 9.0W, max 11.5W24VAC : typ 11.0W, max13.5WPower redundancy failover
- i. Mechanical And Environmental
 - 1) Color/Material White / Aluminum, Hard-coated dome bubble
 - 2) RAL Code RAL9003
 - 3) Dimensions (W x H) Ø180x125mm(7.09x4.92")
 - 4) Weight 1.9 kg (4.19 lb)
 - 5) Temperature
 - a) Operating -50°C ~ +60°C (-58°F ~ +140°F)* Start up should be done at above -30°C
 - b) Storage -50°C ~ +60°C (-58°F ~ +140°F)
 - 6) Humidity
 - a) Operating Less than 95% RH (non condensing)
 - b) Storage Less than 90% RH
 - 7) Environmental Rating:
 - a) Mechanical (Vandal) Protection IK10+, NEMA4X
 - b) Water/Dust Ingress Protection IP66 / IP67 / IP6K9K
- j. DORI
 - 1) Detect (25PPM/ 8PPF) Wide: 49.9m(163.71ft) / Tele: 209.9m(688.65ft)
 - 2) Observe (63PPM/ 19PPF) Wide: 19.9m(65.29ft) / Tele: 83.9m(275.26ft)
 - 3) Recognize (125PPM/ 38PPF) Wide: 10.0m(32.80ft) / Tele: 42.0m(137.80ft)
 - 4) Identify (250PPM/ 76PPF) Wide: 5.0m(16.40ft) / Tele: 21.0m(68.90ft)

P. WIRELESS TRANSMISSION

1. EQUIPMENT

- a. Manufacturer: KBC Networks
- b. Model WES4 SERIES
- c. Alternates: None

2.3 VIDEO MANAGEMENT SYSTEMS (VMS)

A. Video Management System (VMS) Standard

1. Software: Wisenet Wave v5.0 as manufactured by Hanwha Techwin America.

2. System Requirements:

- a. Open video platform designed for use in any video application.
- b. Specified Software: To include, free of charge, any API or SDKs necessary to integrate third party devices and systems.
- c. Specified Video Management Solution's Architecture: To include Desktop, Media Server, Mobile, and Cloud applications.

3. Software Components Characteristics: Four applications working seamlessly

together.

- a. Cloud Application: Enables simple remote connectivity, viewing, and management of an unlimited number of systems and users.
 - b. Media Server Application: Responsible for discovering, connecting to, and managing system users, devices, and associated data.
 - c. Desktop Application: Capable of acting as a stand-alone media player or as a client application for connecting to and managing systems.
 - d. Mobile Application: For iOS and Android devices that allows users to connect to, view, search, and control IP cameras over Wi-Fi or Data networks.
4. Built-In Developer and Integration Tools: Accessible from System Server's Web Admin Interface (compatible with all major browsers).
- a. Server API: SUNAPI implementation giving developers the ability to access every system feature available.
 - b. API Change Log: List of breaking changes in API from version to version.
 - c. Video Source Integration SDK: Integrate virtually any live or recorded video source (IP Cameras, NVRs, DVRs, etc.) into the VMS with methods for discovering, displaying, analyzing and recording video, as well as integrating device I/O ports and related motion detection information.
5. System Architecture:
- a. Server Hive Architecture:
 - 1) System servers are equal synchronizing system databases in real-time.
 - 2) Users can connect to any system server to see and manage entire system.
 - 3) Servers support automatic camera failover ensuring limited loss of video recording in event of hardware or network failure.
 - b. One-click System Wide Updates:
 - 1) System Administrators Capabilities:
 - a) Upgrade entire system via single button in Desktop Application.
 - b) Upgrade on demand to latest release or specific builds with specific functionality or bug fixes.
 - c. Use secure technologies for inter-application communication and security.
 - 1) Email Server: Client (Mobile, Desktop, Web) Communications - HTTPS Email - TLS / SSL - TLS; default option.
 - 2) Salted/Hashed Passwords: Local credentials protected using a salted MD5 hash, cloud credentials should use a complex multi-level hash.
 - d. The VMS will not require any licenses to increase the number of supported devices, users, or servers.

B. VMS Server Application:

1. Runs on the Following Operating Systems:
 - a. Microsoft:
 - 1) Windows 10 Professional, Windows 10 IOT Enterprise
 - 2) Windows Server 2019.
2. Minimum Compatible Computing Hardware:
 - a. Any hardware able to run a compatible operating system.
 - b. Capable of recording 128 dual-streaming IP cameras (256 streams) on a single core of an Intel Core i5 processor.
3. Performance:
 - a. Automatically discover, stream, and record any ONVIF Profile S IP camera located on same subnet as server application.
 - b. Manually discover, stream, and record RTSP, HTTP, or UDP (multicast, unicast) streams.

- c. Automatic camera failover without any additional licenses.
 - d. Unlimited number of users and custom user roles.
 - e. User Login Credential Management: LDAP / Active Directory / Open LDAP integration.
 - f. Record and Stream
 - 1) Video: H.264, H.265, and MJPEG.
 - 2) Audio: AAC, PCM (Mu-Law, A-law), g726, and MP3.
 - g. Transcode Streams on Demand: For delivery to 3rd party system devices.
 - 1) Codecs: H.265, H.264, MJPEG or WebM.
 - h. Pass-through high-res or low-res HLS streams from connected devices.
 - i. Support Addressing: IPv4 or IPv6.
 - j. Operator ability to change size of reserved disk space for storage drives.
 - k. Concurrent recording of all connected cameras / streams to two servers in real-time.
 - l. Server-side, CPU-based motion analysis for all connected IP cameras with no perceptible increase, less than 3 percent, in CPU usage.
- C. VMS Desktop Application:
1. Runs on the Following Operating Systems:
 - a. Microsoft:
 - 1) Windows 10
 - 2) Windows 10 IOT Enterprise Solutions.
 - 3) Windows Server 2019
 - b. Apple / Mac.
 - 1) OSX 10.12: Sierra.
 - 2) OSX 10.13: High Sierra.
 - 3) OSX 10.14: Mojave.
 2. Minimum Compatible Computing Hardware:
 - 1) Any hardware able to run a compatible operating system with a CPU that supports OpenGL 2.1 and Intel HD Graphics 3000 (or higher).
 - b. Will not require any dedicated graphics drive to work at full capacity; 64 streams on a 64 bit OS, 24 streams on a 32 bit OS, and use the CPU for all video decoding and rendering.
 3. Performance and Basis Structure:
 - a. Navigation Panel: Main menu button, an interactive cloud-login icon, tabbed layouts, minimize and maximize icons, a contextual help icon, and a close application icon.
 - b. Resource Panel (Left): Contains all system resources (Servers, Devices, Users, Layouts, Offline files, etc.) with collapsible structure and a keyword search mechanism to allow operators to quickly search for a display live streams / cameras, offline video and image files, or any combination thereof.
 - c. Notifications Panel (Right): Shows all system or rules-engine generated notifications which can be clicked on to display relevant resource in the viewing grid.
 - d. Timeline Panel (Bottom): Allows for navigation and search of recorded video files.
 - e. Viewing Grid (Main Viewing Area): A flexible adaptive grid interface which allows operators to create and share customized layouts of system resources.
 4. Operation: Allow operators to do the following.
 - a. Scroll to and zoom in on any zone of viewing grid.
 - b. Drag and drop to reassign cameras from one server to another server.
 - c. Via a flexible timeline, view dates of any and all archived video in the System for a specific camera, or groups of cameras.

- d. Manually Create Bookmarks: With start time, end time, name, description, and tags, for later search. Bookmarks must also be able to be created using the Rules engine.
- e. Execute a Smart Motion Search: By selecting a subset of a live camera stream with results shown in red on the flexible timeline. Smart Motion search should be able to search a year (12 months, 365 days) of archived video in less than one second.
- f. Search video archives by date and time with a responsive, adaptive timeline.
- g. View, Search and Export All system events, System bookmarks, System logs and Audit trail of operator actions and replay related video.
- h. Create and share lockable layouts.
- i. Modify and save a shared layout to affect an instantaneous change to that layout on the VMS Desktop application of any user connected to the system viewing that layout (when the system administrator saves the layout the layout will update in real time for any user viewing that layout).
- j. Support two-way audio between operators and supported devices.
- k. Support audio alerts as an action that can be played on users' computers or connected system devices.
- l. Force open an alarm layout triggered by any system or 3rd party event with one or many associated cameras or resources.
- m. Force users to set the camera's initial password upon enrollment for best cyber security practices.

2.4 NETWORK VIDEO APPLIANCES

- A. Selection Guide for Network Video Appliance (Recorder) NVA - Model selection guidance is based on the number of cameras to be managed at a site and should follow these general guidelines: please contact (xxxxxx) for assistance for storage calculations and specific model and quantity requirements
- B. Rackmount NVA – (2RU) Rack Unit
 - 1. Model: WRR-P-S202W1-xxxTB – Windows 10 Pro OS
 - 2. Model: WRR-P-S202S1-xxxTB – Windows Server 2019 OS
 - 3. General Description:
 - a. The Network Video Appliance (“Recording Server”) shall be an enterprise class 2RU rack-mount server providing storage scalability up to 224 TB with Wisenet WAVE pre-installed with 4 Professional licenses
 - b. Record Video and Audio: 470 Mbps bandwidth
 - c. The Manufacturer shall certify that the Recording Server has been designed and built for the purpose of recording surveillance video.
 - d. The Recording Server shall provide the capability for remote management, disaster recovery, and critical resource management.
 - e. The Recording Server shall have dual dedicated operating system drives to facilitate accelerated boot and application load times.
 - f. The Recording Server shall have redundant, hot-swappable, storage drives, cooling fans, and power supplies.
 - g. Video Storage
 - 1) Hard Drive Bays - Number: 12 Front and 2 Rear Hot Swappable Front mounted drives size 3.5”, Capacity 8 TB, 10 TB, 12 TB, 16 TB per drive, Speed: 7200 rpm
 - h. Pre-configured with Wisenet WAVE VMS.
 - 1) Preloaded with four professional licenses ensuring quick and easy development minimizing setup time.
 - 2) Remote monitoring environment for video and audio over network using a remote computer.

- i. System:
 - 1) Processor: Intel® Xeon® Silver 4210 Scalable Processor.
 - 2) Memory: 16 GB DDR4
 - 3) Operating Systems: Windows 10 Pro, Server 2019 or Ubuntu 18.04
 - 4) OS Drive: 2 x 240GB Raid 1 SSD internally mounted.
 - 5) Dedicated GPU
- j. Network:
 - 1) Ports 4 x 1GbE RJ45
 - 2) Remote Management: via dedicated iDRAC port (Front: Micro-AB USB, Rear: RJ45)
 - 3) Additional Ports - Video output: VGA (1), 2. USB: (2) USB 3.0, Front (2) USB 2.0, Internal (1) USB 3.0
- k. RAID - RAID 6 configuration
 - 1) Controller: PERC H740P 8GB
- l. Electrical:
 - 1) Power: 100 to 240 VAC auto ranging
 - 2) Power Supply: 2 x 750W Redundant.
- m. Mechanical and Environmental:
 - 1) Keyboard and mouse included
 - 2) Color: Black / metal.
 - 3) Front Bezel and lock.
 - 4) Form Factor 2U Rack Mount Chassis. Sliding rails included.,
 - 5) Dimensions 19" (482.6mm) x 28.15" (646mm) x 3.4" (86.8mm)
 - 6) Weight: up to 73 lbs.
 - 7) Temperature; Operating and Storage: 50F – 95F degrees F
 - 8) Humidity: 5-90%, RH non-condensing.

2.5 SOFTWARE

A. WISENET WAVE VMS

1. VMS Software Components

- a. The System shall be comprised of four (4) applications which work together seamlessly.
 - 1) Cloud - a cloud application that enables simple remote connectivity, viewing, and management of an unlimited number of systems and users.
 - 2) Server - a media server responsible for discovering, connecting to, and managing system users, devices, and associated data.
 - 3) Desktop - a desktop application capable of acting as a stand-alone media player or as a client application for connecting to and managing systems.
 - 4) Mobile - a mobile application for iOS and Android devices that allows users to connect to, view, search, and control IP cameras over Wifi or Data networks.

2. VMS Developer & Integration Tools

- a. The VMS shall have built-in developer tools which are accessible from any System Server's Web Admin Interface (compatible with all major browsers) and should include, at a minimum:
 - 1) A Generic Events Generator - a tool which helps build HTTP Generic Event calls, a method of sending events from 3rd party systems to the VMS, which can be used to trigger system actions in the VMS.
 - 2) Server API – SUNAPI implementation that gives developers the ability to access every system feature available.
 - 3) API Change Log - list of breaking changes in API from version to version

- 4) Video Source Integration SDK - provides the ability to integrate virtually any live or recorded video source (IP Cameras, NVRs, DVRs, etc) into the VMS with methods for discovering, displaying, analyzing and recording video, as well as integrating device I/O ports and related motion detection information.
- 5) Storage SDK - provides the ability to integrate potential storage into System. It allows developers to read from or write to any storage location: local, remote, and even cloud one. Creating a storage plugin requires implementing standard functions such as: I/O stream, if file exist, delete file, list of files in the folder, etc.Storage SDK also contains an example for using an FTP server as a storage location.

3. VMS System Architecture

- a. The VMS shall have a Server Hive Architecture wherein:
 - 1) All servers in a system are equal and synchronize system databases in real-time
 - 2) A user can connect to any system server to see and manage the entire system
 - 3) Servers support automatic camera failover to ensure limited loss of video recording in the event of hardware or network failure.
 - 4) Servers will use a SQLite - a free database technology - included in the installation package
- b. The VMS shall support one-click system wide updates.
 - 1) System Administrators shall be able to upgrade an entire system via a single button in the Desktop Application.
 - 2) System Administrators shall be able to upgrade on demand to the latest release or specific builds with specific functionality or bug fixes
 - 3) System Administrators shall be able to apply an OTA (over-the-air) update
 - 4) System Administrators shall be able to generate a URL to download a portable system- specific update package in .zip file format which can be used to update servers without an active Internet connection.
- c. The VMS will use secure technologies for inter-application communication and security.
 - 1) OpenSSL for network connections - deprecated and insecure protocols and use only TLS v1+.
 - 2) Server to Client (Mobile, Desktop, Web) Communications – Option to force encryption between Client and Server for API data.
 - 3) Option to force HTTPS video traffic encryption between Client and Server.
 - 4) HTTPS Email notification - TLS / SSL - TLS is the default option for Email Server communications.
 - 5) Salted/Hashed Passwords - Local Credentials will be protected using a salted MD5 hash, Cloud Credentials should use a complex multi-level hash
- d. The VMS will not require any licenses to increase the number of supported devices, users, or servers.
- e. The system shall support scaling to support the maximum recommended system sizes shown below. The system shall support exceeding these recommended maximums by consulting with engineering support.
 - 1) The system shall support a maximum of 100 Servers in a system.
 - 2) The system shall support a maximum of 10,000 resources in a system.
 - 3) The system shall support a maximum of 1,000 concurrent users in

- a system.
4. - VMS Server Application
- B. Supported Operating Systems The VMS Server application shall be able to run on any of the following operating systems.
- | | | |
|---------------------|--|---|
| 1. Operating System | Windows 7,8,8.1,9, 10
2012, 2012 R2, 2016 (Long-term servicing channel)
Enterprise Ubuntu Linux
LTS: "Xenial Xerus"Ubuntu 18.04 LTS
NVIDIA Tx1 and Tx2 | Windows Server
Windows 10
Ubuntu 16.04
NVIDIA Jetson Support |
|---------------------|--|---|
- C. Minimum Compatible Computing Hardware
1. The VMS Server application will be capable of operating on any hardware able to run a compatible operating system.
 2. The VMS Server will be capable of recording 128 dual-streaming IP cameras (256 streams) on a single core of an Intel Core i3 processor.
- D. Initial Installation & Setup
1. The VMS Server application installer should not exceed 100 MB (megabytes).
 2. The VMS Server application should be a publicly available, free download.
 3. The VMS Server application should require no prerequisite proprietary or 3rd party software and database technologies during installation.
 4. The VMS Server installation process should require no user input once initiated
 5. After installation is complete the VMS server setup process will allow system administrators to create a new system or to merge newly installed server(s) with existing systems.
- E. Features
1. The VMS Server Application shall automatically discover, stream, and record any ONVIF Profile S IP camera located on the same subnet as the server application.
 2. The VMS Server Application shall manually discover, stream, and record RTSP, HTTP, or UDP (multicast, unicast) streams.
 3. The VMS Server application shall support up to 1000 concurrent TCP connections
 4. The VMS Server application shall record and stream video of any resolution and frame rate, limited only by hardware.
 5. The VMS Server application shall support automatic camera failover without any additional licenses.
 6. The VMS Server application will support an unlimited number of users and custom user roles
- F. The VMS Server application shall support any type of storage medium - HDD's, SSD's, SD cards, DAS, NAS, or other network-attached storage devices or locations.
- G. The VMS Server application shall support LDAP / Active Directory / Open LDAP integration for user login credential management
- H. The VMS Server application shall record and stream H.264, H.265, and MJPEG streams
- I. The VMS Server application shall record and stream AAC, PCM (Mu-Law, A-law), g726, and MP3 audio
- J. The VMS Server application shall transcode streams on demand for delivery to 3rd party systems or devices in H.265, H.264, MJPEG or WebM codecs.
- K. The VMS Server application shall be able to provide pass-through high or low-res HLS

streams from connected devices.

- L. The VMS Server application shall store archive indices in the same location as recorded video files
- M. The VMS Server application shall allow system administrators to recover archives from any storage medium using a re-index archive feature.
- N. The VMS Server application will contain a boolean events engine allowing operators to program and trigger system actions based on system, connected device, or HTTP events sent from 3rd party system or device.
- O. The VMS Server application shall be able to send HTTP PUT or GET requests to 3rd party systems or devices.
- P. The VMS Server application shall support IPv4 or IPv6 addressing
- Q. The VMS Server application shall allow operators to set custom network routing configurations for system servers to optimize network routing and usage.
- R. The VMS Server application shall allow operators to monitor the CPU, RAM, NIC, and HDD usage in real time.
- S. The VMS Server application shall track all operator actions to allow audits
- T. The VMS Server application shall generate automatic crash files every time there is an unexpected crash of the Server application.
- U. The VMS Server application shall allow operators to change the size of reserved disk space for storage drives.
- V. The VMS Server application shall automatically disable any system drive (drive containing the operating system) in computing hardware with more than one drive to ensure the operating system drive does not become full.
- W. The VMS Server application shall support configuration and events from binary I/O contacts on supported devices - including IP cameras and I/O devices.
- X. The VMS Server application shall support sending email notifications via SMTP using TLS, SSL or unsecured connections.
- Y. The VMS Server application shall support scheduled backup of recording archives to local, networked, or cloud storage locations.
- Z. The VMS Server application shall allow on-demand backup of recording archives to local, networked, or cloud storage locations.
- AA. The VMS Server application shall allow concurrent-recording of all connected cameras / streams to two (2) servers in real-time.
- BB. The VMS Server application will allow server-side, CPU-based motion analysis for all connected IP cameras with no perceptible increase (<3%) in CPU usage.
- CC. The VMS Server application will require no dedicated GPU in order to perform at maximum capacity.
- DD. The VMS Server application will have a web administration interface that allows users to view live or recorded video from a single camera at a time in high or low resolutions.

- EE. The VMS Server application will have a web administration interface that allows system administrators to view real-time server health monitoring statistics (CPU, NIC, and HDD usage).
- FF. The VMS Server application will have a web administration interface that allows operators to cloud merge two systems together or disconnect the VMS Server from the VMS cloud application.
- GG. The VMS Server application will have a web administration interface that allows users to view all available servers in the system.
- HH. The VMS Server application will have a web administration interface that allows operators to switch between server interfaces.
- II. The VMS Server application will have a hidden advanced page that gives system administrators the ability to modify advanced system settings.
- JJ. The VMS Server application will support any RAID configuration of storage medium
 1. - VMS Desktop Application
- KK. Supported Operating Systems
- LL. Operating System Versions

	Microsoft
Windows	Windows 7,8,8.1,9, 10
Windows Server 2012, 2012 R2, 2016 (Long-term servicing channel) 1607	Windows 10 Enterprise
Linux	Ubuntu
	Ubuntu 14.04 LTS
	Ubuntu 16.04 LTS: "Xenial Xerus"
Apple/Mac	Ubuntu 18.04 LTS
	OSX 10.11 "El Capitan"
	OSX 10.12 "Sierra"
	OSX 10.13 "High Sierra"
- MM. Minimum Hardware Requirements
 1. The VMS Desktop application will be capable of operating on any hardware able to run a compatible operating system with a CPU that supports OpenGL 2.1 and Intel HD Graphics 3000 (or higher).
 2. The VMS Desktop application shall not require any dedicated graphics drive to work at full capacity (64 streams on a 64 bit OS) and shall use the CPU for all video decoding and rendering.
- NN. Installation & Configuration
 1. The VMS Client application installer should not exceed 100 MB (megabytes).
 2. The VMS Client application should be a publicly available, free download.
 3. The VMS Client application should require no prerequisite proprietary or 3rd party software and database technologies during installation.
 4. The VMS Client installation process should require no user input once initiated.
- OO. Features
- PP. The VMS Desktop application will have the following basic structure:
 1. Navigation Panel - with a main menu button, an interactive cloud-login icon, tabbed layouts, minimize and maximize icons, a contextual help icon, and a close application icon.
 2. Resource Panel (Left) - contains all system resources (Servers, Devices, Users, Layouts, Offline files, etc.) with collapsible structure and a keyword search mechanism to allow operators to quickly search for a display live streams / cameras, offline video and image files, or any combination thereof.
 3. Notifications Panel (Right) - shows all system or rules-engine generated

- notifications which can be clicked on to display relevant resource in the Viewing Grid
4. Timeline Panel (Bottom) - allows for navigation and search of recorded video files
 5. Viewing Grid (Main Viewing Area) - a flexible adaptive grid interface which allows operators to create and share customized layouts of system resources.
- QQ. The VMS Desktop application shall allow operators to view and interact with the following types of media:
1. Live Streams: H.265, H.264, MJPEG
 2. Offline Media: AVI MKV MP4 MOV TS M2TS MPEG MPG FLV WMV 3GP JPG PNG GIF BMP TIFF
 3. I/O Devices: Status and Triggers
 4. Servers: Real-Time Server Health Monitoring Status
- RR. The VMS Desktop application shall allow the operator to scroll to zoom in to any part of the Viewing Grid.
- SS. The VMS Desktop application shall allow operator to drag & drop to reassign cameras from one server to another server.
- TT. The VMS Desktop application will have a flexible timeline that allows operators to view the dates of any and all archived video in the System for a specific camera, or groups of cameras.
- UU. The VMS Desktop application will allow operators to manually create bookmarks - with a start time, end time, name, description, and tags - for later search. Bookmarks shall also be able to be created using the Rules engine.
- VV. The VMS Desktop application shall allow operators to create Soft Triggers - programmable, customizable buttons which sit on top of streams in the Viewing Grid - to trigger any available system action.
- WW. The VMS Desktop application shall have icons located on the top of live camera streams which allow operators to dewarp fisheye cameras, control PTZ cameras, apply client-side image enhancement, execute smart motion search, create zoom windows, rotate items to any orientation, and activate stream or file info.
- XX. The VMS Desktop application shall allow operators to create Zoom Windows (up to 63 zoom windows on a single item in a 64 bit OS) - a magnified view of a part of a live stream, recorded videos, or static images.
- YY. The VMS Desktop application shall allow operators the ability to execute a Smart Motion search by selecting a subset of a live camera stream with results shown in red on the flexible timeline. Smart Motion search should be able to search a year (12 months, 365 days) of archived video in less than one (1) second.
- ZZ. The VMS Desktop application will allow users to search live cameras by name, manufacturer, IP address, MAC address, and status (e.g. live).
- AAA. The VMS Desktop application shall allow operators to search video archives by date and time with a responsive, adaptive timeline.
- BBB. The VMS Desktop application will allow operators to customize the background image of the application with supported image types.
- CCC. The VMS Desktop application will support digital mapping by allowing operators to add and customize background images - including opacity and number of grid points.

- DDD. The VMS Desktop application will utilize adaptive scaling technology to automatically switch between high and low resolution streams during live and recording playback to optimize CPU and network usage.
- EEE. The VMS Desktop application will allow operators to log in to the Cloud application in order to quickly connect to any shared system.
- FFF. The VMS Desktop application will allow operators to quickly switch between previously connected or cloud-accessible systems using searchable tiles that show system name and status.
- GGG. The VMS Desktop application will have a Storage Analytics feature allowing operators to analyze storage capacity of the system based on available drives and real-time and historical bandwidth analysis.
- HHH. The VMS Desktop application will allow management and configuration of all System devices, users, and resources in a single unified interface.
- III. The VMS Desktop application will allow fast-forward and fast-reverse of archived video up to 16x normal speed.
- JJJ. The VMS Desktop application will show operators which system server they are connected to.
- KKK. The VMS Desktop application will allow operators to connect to previous versions by automatically downloading and switching to compatible versions.
- LLL. The VMS Desktop applications will automatically discover available systems on the same network as the computer running the Desktop application.
- MMM. The VMS Desktop application will automatically recover and reconnect to a system in the instance the server the operator is connected to becomes inaccessible for any reason.
- NNN. The VMS Desktop application will allow operators to show or hide adaptive thumbnails in the timeline panel.
- OOO. The VMS Desktop application will allow operators to synchronize all items on a layout or disable synchronization to view live and recorded video at the same time.
- PPP. The VMS Desktop application will have adaptive settings dialogs, allowing operators to switch dialog content while the dialog is open by clicking on a resource.
- QQQ. The VMS Desktop application will allow batch configuration of camera recording schedules, fps, and quality.
- RRR. The VMS Desktop application will allow operators to drag and drop multiple system resources onto the Viewing Grid at the same time.
- SSS. The VMS Desktop Application will allow administrators to modify time synchronization settings for the system to utilize online resources (NTP servers) or to set a dedicated local time server.
- TTT. The VMS Desktop Application will allow system administrators to view a full list of system cameras and devices in a single dialog.
- UUU. The VMS Desktop application will allow operators to view, search and export all system events.

- VVV. The VMS Desktop application will allow operators to view, search and export all system bookmarks.
- WWW. The VMS Desktop application will allow operators to view, search, and export system logs.
- XXX. The VMS Desktop application will allow operators to view, search, and export an audit trail of all operator actions and replay related video.
- YYY. The VMS Desktop application will allow administrators to backup and restore the system database.
- ZZZ. The VMS Desktop application will allow administrators to create an unlimited number of custom user roles.
- AAAA. The VMS Desktop application will allow administrators to create and share lockable layouts.
- BBBB. The VMS Desktop application will allow administrators to update layouts in real time.
- CCCC. The VMS Desktop application will allow users to record their screen in full resolution and up to 30fps.
- DDDD. The VMS Desktop application will allow users to add a local folder to add local files for search and playback.
- EEEE. The VMS Desktop application will have a Video Wall mode which will allow operators to control the application remotely.
- FFFF. The VMS Desktop application will have a Media Player mode which will allow operators to use the application as a media player.
- GGGG. The VMS Desktop application will remember past system connections and user credentials and will allow operators to quickly search for and switch between systems.
- HHHH. The VMS Desktop application will allow operators to adjust the aspect ratio and streaming quality (high resolution or low resolution) of items displayed on the viewing grid.
- IIII. The VMS Desktop application will display I/O devices as an individual item on the viewing grid and allow operators to create custom names for inputs and output.
- JJJJ. The VMS Desktop application will allow users to customize the layout of I/O panels on the item in the viewing grid including indicators for inputs and buttons for outputs.
- KKKK. The VMS Desktop application will allow users to de-warp any fisheye lens using automatic calibration or manual calibration without the need for any third (3rd) party SDKs.
- LLLL. The VMS Desktop application will allow users to create fully customizable viewing tours which include any combination of live video streams, offline videos, images, websites (or URLs), I/O devices, and Server health monitoring status.
- MMMM. The VMS Desktop application will allow system administrators to modify and save a shared layout to affect an instantaneous change to that layout on the VMS Desktop application of any user connected to the system viewing that layout (when the system administrator saves the layout the layout will update in real time for any user viewing

that layout).

- NNNN. The VMS Desktop application will support two-way audio between operators and supported devices.
- OOOO. The VMS Desktop application will support audio alerts as an action that can be played on users' computers or connected system devices.
- PPPP. The VMS Desktop application will support PTZ presets and tours.
- QQQQ. The VMS Desktop application will support PTZ presets and tours in fisheye cameras using de-warp mode.
- RRRR. The VMS Desktop application will allow operators to schedule recording for connected cameras and devices with options to force minimum and maximum storage durations.
- SSSS. The VMS Desktop application will allow operators to configure pre and post recording for motion events.
- TTTT. The VMS Desktop application will allow operators to optimize camera streaming quality from connected devices automatically using low, medium, high, best quality selectors or manually in the camera.
- UUUU. The VMS Desktop application will allow users to export video by selecting an area on the timeline and right clicking to export.
- VVVV. The VMS Desktop application will support single video export in .avi, .mp4, or .mkv formats and will offer the option to transcode any client-side effects (image enhancement, de-warping, timestamps) as part of the exported video.
- WWWW. The VMS Desktop application will support multi-video export in an executable format to create a fully portable version of the VMS Desktop application including all exported video files.
- XXXX. The VMS Desktop application shall have a rapid review export feature which will allow operators to compress any length of video into a short video (e.g. export 8 hours of archives into a 30 second video clip).
- YYYY. The VMS Desktop application shall allow system administrators to activate or deactivate system licenses on Internet connected systems.
- ZZZZ. The VMS Desktop application shall allow users to force open an alarm layout triggered by any system or 3rd party event with one or many associated cameras or resources.
- AAAAA. The VMS Desktop application will have a hidden configurable method of increasing the amount of items allowed on the viewing grid.
- BBBBB. The VMS Desktop application shall allow users to adjust configuration of devices.
- CCCCC. The VMS Desktop application shall support keyboard shortcuts to control various interface options including PTZ mode, Smart Search mode, & layout control.
- DDDDD. VMS will allow analytics from Wisenet and other supported device with analytics (Axis, DW, Hikvision)
- EEEE. The VMS Desktop application will force users to set an initial password for Wisenet

camera upon enrollment, for best cyber security practices.

1. - Mobile Application

FFFFF. Supported Operating Systems

- | | | | | | | | |
|---------------------|---------|--------------------------|-------------|-----------|----------------------------|----------|--------|
| 1. Operating System | Android | Android 8.0, 8.1: "Oreo" | Android 9.0 | Apple iOS | iOS 11.4, 12.1, 12.2, 12.3 | Versions | Google |
|---------------------|---------|--------------------------|-------------|-----------|----------------------------|----------|--------|

GGGGG. Installation

1. The VMS Mobile application will be available as a free download from Google Play or Apple iTunes stores.

HHHHH. Features

1. The VMS Mobile application will automatically discover available Systems on a local area network (LAN).
2. The VMS Mobile application will store past system connections and credentials and will allow users to quickly search for switch between systems.
3. The VMS Mobile application will have adaptive streaming and automatically adjust the stream being displayed based on network speed.
4. The VMS Mobile application will allow users to adjust streaming resolutions manually.
5. The VMS Mobile application will allow users to search for cameras by name.
6. The VMS Mobile application will allow fisheye de-warping of any fisheye lens without the need for any 3rd party SDK.
7. The VMS Mobile application will allow users to view live video from one system.
8. The VMS Mobile application will allow users to log in to the VMS Cloud layer in order to view and access all systems shared with a user.
9. The VMS Mobile application will allow users to control the display of any connected "Lite Clients" in the system.
10. The VMS Mobile application will utilize a custom media player to render and display live thumbnails and video.
11. The VMS Mobile application will allow users to search video using a calendar.
12. The VMS Mobile application will allow users to search video using a flex timeline.
13. The VMS Mobile application will allow "Smart Motion Search" to search archived video by selecting an entire video or specific area.

IIIII. Supported Browsers

1. The VMS Cloud application will allow users to log in from any modern web browser (Google Chrome, Mozilla Firefox, Microsoft Edge, Opera, etc.) from any type of device (mobile, pc, etc.)

JJJJJ. Features

1. The VMS Cloud application will be an optional add-on to the VMS requiring no additional licensing.
2. The VMS Cloud application will allow users to connect an unlimited number of systems to a single user account.
3. The VMS Cloud application will allow system administrators to share access to a system using only an email address.
4. The VMS Cloud application will allow system administrators to assign custom user roles when sharing system access.
5. The VMS Cloud application will allow users to quickly search for and connect to cloud-connected systems by name.
6. The VMS Cloud application will allow operators to view live or recorded video from one camera at a time on any cloud-connected system.
7. The VMS Cloud application will first attempt a direct connection to system servers

- using NAT Traversal technology and will be able to proxy traffic to ensure access to a system in the case of ISP or routing issues.
8. The VMS Cloud application will allow an unlimited number of connected users and systems with no additional licensing.
 9. The VMS Cloud application will utilize secure networking technologies (OpenSSL, HTTPS) and a complex Salted MD5 hash for any stored passwords.
 10. The VMS Cloud application will allow two systems to be merged together to operate as one system without the need for port forwarding or local access.

PART 3 EXECUTION

3.1 PREPARATION

- A. System Integrator: Confirm the solution proposal planning and design with the installing contractor.
- B. The network design and configuration to be verified for compatibility and performance with the input/output devices.
- C. Network Configuration: Tested and qualified by Contractor prior to remote device installation.
- D. Equipment to be tested and configured in accordance with instructions provided by the System Integrator prior to installation.
- E. All firmware found in products to be the latest and most up-to-date provided by the manufacturer, or of a version as specified by the provider of the Video Management Application (VMA).
- F. All equipment requiring users to log on using a password to be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.
- G. Confirm hardware will be stored in an environment where temperature and humidity are in the range specified by the Manufacturer.

3.2 VIDEO SURVEILLANCE SYSTEM INSTALLATION, NECESSARY MOUNTING ACCESSORIES, AND PROGRAMMING

- A. Provide and install all equipment, software, materials, and labor to include system programming for a completely operational video management system described herein and included on the Project Drawings. These specifications and project drawings are complementary in describing the design intent of the security video management system.
- B. Before programming, meet with the project owner to determine system programming parameters, camera mounting location, desired field of view, analytics configuration and other system settings required to meet the owners' needs.
- C. Install cameras and other appurtenances level and plumb for a high quality, workman like installation.
- D. Provide and install all necessary mounting accessories to include caps, mounts, brackets, pendants, etc. as necessary for the environment to accommodate field of views required by the owner. Please find the appropriate options here: <https://www.hanwhasecurity.com/mount-selector/>

- E. Install power supplies and other auxiliary components at control stations unless otherwise indicated.
- F. If applicable, set PTZ/PTRZ pan unit and pan-and-tilt until stops to suit final camera position and to obtain the field of view required for the camera. Connect all controls and alarms, and adjust.
- G. Aim cameras as directed by engineer and/or owner. Optimize system settings both day and night for exact field of view, WDR, Day/Night, analytics, etc.
- H. Program camera system head end. Provide unique on-screen camera identification for all cameras with the following nomenclature:
 1. Camera title, date, and time
 2. Tours and Salvos (if required)
 3. On screen display feature tiles.
 4. Individual user settings and rights.
- I. Program all systems analytics and AI system parameters as directed by the engineer and/or owner.
- J. Unique individual user login settings and/or Active Directory integration as required.

3.3 CYBER SECURITY PROTECTION

- A. All equipment requiring users to log on using a password to be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed. Contractor shall implement all camera manufacturer's cyber security recommendations and configurations, following industry best practices per the camera manufacturer Cyber Hardening Guide.
- B. Document that all cameras do not have a default password.
- C. Document that all cameras have the latest firmware installed.
- D. Back up all camera settings and provide file to owner.
- E. Document that all servers and work stations have current version or Operating System (OS).
- F. Document that latest VMS version that is installed on all servers and work stations.
- G. Set user permissions and rules in VMS.

3.4 INSTALLATION

- A. Install products per manufacturer's recommendations and approved submittals.
 1. Comply with documentation provided by the System Integrator to insure all steps have been taken to provide a reliable, easy-to-operate system.
- B. Contractor personnel must comply with all applicable state and local licensing requirements.
- C. Before permanent installation of the system, the Contractor will test the system in conditions simulating the final installed environment witnessed by the System Integrator. Adjust as required until proper operation is achieved.

