

BID DOCUMENTS FOR:



ITB #19-008

**CITY OF KEY WEST
COMPREHENSIVE CCTV SECURITY SYSTEM**

**ROAD SURVEILLANCE AND MONITORING
FOR DUVAL STREET, MALLORY SQUARE &
OUTER MOLE**

JANUARY 2019

CITY OF KEY WEST

MAYOR: TERI JOHNSTON

COMMISSIONERS:

JIMMY WEEKLEY

SAMUEL KAUFMAN

BILLY WARDLOW

GREGORY DAVILA

MARY LOU HOOVER

CLAYTON LOPEZ

**PREPARED BY:
City of Key West Port & Marine Services Department
Unified Network Consulting, LLC**

CITY OF KEY WEST

KEY WEST, FLORIDA

BID DOCUMENTS

for

COMPREHENSIVE CCTV SECURITY SYSTEM

**ROAD SURVEILLANCE AND MONITORING
DUVAL STREET, MALLORY SQUARE & OUTER
MOLE**

CONSISTING OF:

**BIDDING REQUIREMENTS
SUPPLEMENTAL INFORMATION
DRAWINGS**

CITY OF KEY WEST

JANUARY 2019

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PART 1

BIDDING REQUIREMENTS

INVITATION TO BID

Sealed Bids for City of Key West (CITY) “**COMPREHENSIVE CCTV SECURITY SYSTEM - ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE AND OUTER MOLE**” addressed to the City of Key West, will be received at the office of the City Clerk, 1300 White Street, Key West, Florida until **3:00 p.m.**, local time, on the **13th day of February 2019**, and then will be publicly opened and read. Any bids received after the time and date specified will not be considered.

Please submit one (1) original bid package and two (2) electronic copies on USB drives with a single PDF file of the entire bid package. Bid package shall be enclosed in a sealed envelope, clearly marked on the outside “**ITB #19-008 CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM – ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE AND OUTER MOLE**” addressed and delivered to the City Clerk at the address noted above.

The project contemplated consists of providing design, equipment, labor and materials necessary to accomplish the following:

- The City of Key West, Florida (City) plans to have comprehensive outdoor video surveillance system at designated locations on Duval Street, Mallory Square and Outer Mole designed and installed that will be the platform and basis for expanded services over a period of time.

The full Invitation to Bid may be obtained from Demand Star by Onvia and The City of Key West website. Please contact Demand Star at www.demandstar.com or call 1-800-711-1712 or www.cityofkeywest-fl.gov.

A Mandatory pre-bid meeting will be held in the conference room at City Hall, 1300 White Street, Key West, Florida on **January 15, 2019 at 2:30 p.m.**

EACH BID MUST BE SUBMITTED ON THE PRESCRIBED FORM AND ACCOMPANIED BY BID SECURITY AS PRESCRIBED IN THE INSTRUCTIONS TO BIDDERS, PAYABLE TO THE CITY OF KEY WEST, FLORIDA, IN AN AMOUNT NOT LESS THAN FIVE (5) PERCENT OF THE AMOUNT BID.

For information please contact Patti McLaughlin Director Information Technology Department by email at pmclauchlin@cityofkeywest-fl.gov. Verbal communications, per the City’s “Cone of Silence” ordinance is not allowed.

The Bidder shall furnish documentation showing that he/she is in compliance with the licensing requirements of County, and City licenses as would be required within ten days of the award. The successful Bidder must also be able to satisfy the City Attorney as to such insurance coverage and legal requirements as may be demanded by the Proposal in question. The CITY may reject BID for any and/or all of the following reasons: (1) for budgetary reasons, (2) if the proposer misstates or conceals a material fact in its bid, (3) if the proposal does not strictly conform to the law or is non-responsive to the bid requirements, (4) if the proposal is conditional, or (5) if a change of circumstances occurs making the purpose of the proposal unnecessary to the CITY, (6) if such rejection is in the best interest of the CITY. The CITY may also waive any minor formalities or irregularities in any proposal.

The CITY retains the right to award bid to the bidder or bidders that best meet the needs of the City.

INSTRUCTIONS TO BIDDERS

1.0 CONTRACT DOCUMENTS

A. FORMAT

The Bid Documents are divided into parts, divisions, and sections for convenient organization and reference.

B. DOCUMENT INTERPRETATION

Should there be any doubt as to the meaning or intent of said Bid Documents, the Bidder should request of the Director Information Technology Department, in writing (at least 8 calendar days prior to Bid opening) an interpretation thereof. Any interpretation or change in said Bid Documents will be made only in writing in the form of Addenda to the Documents, which will be furnished to all registered holders of Bid Documents. Bidders shall submit with their Bids, or indicate receipt of all Addenda. The Owner will not be responsible for any other explanation or interpretations of said Documents.

2.0 SCOPE OF SERVICES

Vendor shall provide necessary equipment, materials, and labor to complete the project as described in SUMMARY OF WORK

3.0 REQUIRED QUALIFICATIONS

A. Contractor Qualifications

- A. The prospective Bidder must meet the statutorily prescribed requirements before award of Contract by the CITY. Bidders must hold or obtain all licenses and/or certificates as required by the State and Local Statutes in order to bid and provide the product specified herein.
- B. Bidder must have experience with outdoor municipal long-range wireless deployments of over 2 miles and have deployed mesh network systems in a public safety environment. This should include Point to Point, Point to Multi Point, and Mesh networks.
- C. Bidder must have experience in the installation of PTZ cameras, fixed cameras, radio antennas and weatherproof equipment boxes on City or County traffic poles and Electric Company power poles. Installation is defined as the mounting of PTZ cameras, fixed cameras, radio antennas and weatherproof equipment boxes on City or County traffic poles and Electric Company power poles and connecting them to a power source and providing live and recorded video to a remote location via radio wireless system, with backup by cellular, and uplink by fiber-optic cable.
- D. Bidder must be certified by the manufacturer to resell, install and configure the specified equipment.

4.0 REFERENCES

- Provide a reference list containing (3) references for projects of similar scope. The reference list shall include the following items for each reference:

1. Project Name
2. Total Outlet Quantity
3. Security System Manufacturer
4. Completion Date for the Project (Month/Year)
5. Reference Contact Information (name, telephone number, email address)

4. TYPE OF BID

UNIT PRICE BID

Bid unit prices stated in this proposal include all costs and expenses for labor, equipment, materials, disposal and contractor's overhead and profit. Unit prices for the various work items are intended to establish a total price for completing the project in its entirety. All work and incidental costs shall be included for payment under the several scheduled items of the overall contract, and no separate payment will be made therefore.

5. PREPARATION OF BIDS

A. GENERAL

All blank spaces in the BID form must be filled in for all schedules and associated parts, as required, preferably in BLACK INK. All price information shall be clearly shown in both words and figures where required. No changes shall be made in the phraseology of the forms. Written amounts shall govern in case of discrepancy between the amounts stated in writing and the amounts stated in figures. In case of discrepancy between unit prices and extended totals, unit prices shall prevail.

Any BID shall be deemed informal which contains omissions, erasures, alterations, or additions of any kind, or prices uncalled for, or in which any of the prices are obviously unbalanced, or which in any manner shall fail to conform to the conditions of the published Invitation to BID.

Only one BID from any individual, firm, partnership, or corporation, under the same or different names, will be considered. Should it appear to the Owner that any Bidder is interested in more than one BID for work contemplated; all Bids in which such Bidder is interested will be rejected.

B. SIGNATURE

The Bidder shall sign his BID in the blank space provided therefor. If Bidder is a corporation, the legal name of the corporation shall be set forth above together with the signature of the officer or officers authorized to sign Contracts on behalf of the corporation. If Bidder is a partnership, the true name of the firm shall be set forth above together with the signature of the partner or partners authorized to sign Contracts in behalf of the partnership. If signature is by an agent, other than an officer of a corporation or a member of a partnership, a notarized power-of-attorney must be on file with the Owner prior to opening of Bids or submitted with the Bid otherwise the Bid will be regarded as not properly authorized.

C. ATTACHMENTS

Bidder shall complete and submit the following forms with his bid:

- Anti-Kickback Affidavit
- Sworn Statement under section 287.133(3)(a) Florida Statutes, on public entity crimes
- Non-Collusion Affidavit
- Indemnification Form
- Local Vendors Form
- City of Key West Business License Tax Receipt
- Domestic Partnership Affidavit
- Cone of Silence Affidavit
- Warranty information/ proposal (The City requires Bidder to warranty all materials and labor for two (2) years). Warranty to begin once the City determines the system is operating as specified in the specifications for a period of thirty (30) days. Bidder shall submit a warranty proposal to be included as part of a contract.

D. BID RESPONSE INSTRUCTIONS

- The Bid Response must include a response to each numbered Section. The response shall indicate either acceptance or exception of each line item.
- The Bid must include the Bidder's Scope of Work for all of the proposed services.
- The Bid must include bidder supplied server(s) for the Video systems. Use rack mounted model with redundant power supplies and RAID 6 disk mirroring. Include the most current Microsoft Server operating system software and labor to load all system software.
- The Bid must include the Bidder's detailed BOM list of components and detailed labor hours for a turnkey solution.
- If the Bidder is using a Sub-contractor for Lock Smith services, please provide detailed information for that company and confirm they will be covered under your required insurance.
- Provide the company's current insurance certificate.
- Provide a current Project List including the items for each Project:
 1. Project Name
 2. Project Contract Value
 3. Project Completion Date
 4. Quantity of Technicians assigned to Project
- Provide the warranty details provided by the proposed solutions.
- Provide warranty details provided by the Contractor.
- Provide a resume of the proposed Project Manager outlining their projects installed utilizing the proposed system manufacturer.
- Provide a list of any proposed subcontractors.
- Provide the subcontractor scope of work (if any).
- Claims and Suites:
 1. List all lawsuits or requested arbitration with regard to construction contracts over the past five (5) years.
 2. List all judgments, claims, arbitration proceedings, or suites pending against your organization.

3. State whether your organization has ever failed to complete any work.

6. MODIFICATION OR WITHDRAWAL OF BID

Prior to the time and date designated for receipt of Bids, any Bid submitted may be withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder or by telegram. If by telegram, written confirmation over the signature of the Bidder shall be mailed and postmarked on or before the date and time set for receipt of Bids. No Bid may be withdrawn after the time scheduled for opening of Bids unless the time specified in paragraph AWARD OF CONTRACT of these Instructions to Bidders shall have elapsed.

7. AWARD OF CONTRACT

Within 90 calendar days after the opening of Bids, the Owner will accept one of the Bids or will act in accordance with the following paragraphs. The acceptance of the Bid will be by written notice of award, mailed to the office designated in the Bid, or delivered to the Bidder's representative. In the event of failure of the lowest responsive, responsible Bidder to sign the Contract and provide an acceptable Performance Bond, Payment Bond, insurance certificate(s) and evidence of holding required licenses and certificates, the Owner may award the Contract to the next lowest responsive, responsible Bidder. Such award, if made, will be made within 120 days after the opening of Bids. Bidders will guarantee their Bid price(s) for up to 120 calendar days after Bid opening.

The CITY reserves the right to accept or reject any or all Bids and to waive any formalities and irregularities in said Bids.

8. BASIS OF AWARD

The award will be made by the Owner on the basis of the BID from the lowest, responsive, responsible BIDDER(s) which, in the Owner's sole and absolute judgment will best serve the interest of the Owner. Low bid(s) selection to be based on an hourly rate comparison.

9. EXECUTION OF CONTRACT

The successful Bidder shall, within 10 working days after receiving Notice of Award, sign and deliver to the Owner a Contract in the form hereto attached together with the insurance certificate examples of the bonds as required in the Contract Documents and evidence of holding required licenses and certificates. Within 10 working days after receiving the signed Contract from the successful Bidder, the Owner's authorized agent will sign the Contract. Signature by both parties constitutes execution of the Contract.

10. CONTRACT BONDS

A. PERFORMANCE AND PAYMENT BONDS

The successful Bidder shall file with the CITY, at the time of delivery of the signed Contract, a Performance Bond and Payment Bond on the form bound herewith, each in the full amount of the Contract price in accordance with the requirements of Florida Statutes Section 255.05 or 713.23, as applicable, as security for the faithful performance of the Contract and the payment of all persons supplying labor and materials for the construction of the work, and to cover all guarantees against defective workmanship or materials, or both, during the warranty period following the date of final acceptance of the work by the CITY. The Surety furnishing this bond shall have

a sound financial standing and a record of service satisfactory to the CITY, shall be authorized to do business in the State of Florida, and shall be listed on the current U.S. Department of Treasury Circular Number 570, or amendments thereto in the Federal Register, of acceptable Sureties for federal projects. The CONTRACTOR shall supply the OWNER with phone numbers, addresses, and contacts for the Surety and their agents. Pursuant to Section 255.05(7), Florida Statutes, in lieu of the bond required by law, the contractor may file with the city an alternative form of security in the form of cash, a money order, a certified check, a cashier's check or an irrevocable letter of credit.

A. POWER-OF-ATTORNEY

The Attorney-in-Fact (Resident Agent) who executes this Performance and Payment Bond in behalf of the Surety must attach a notarized copy of his power-of-attorney as evidence of his authority to bind the Surety on the date of execution of the bond. All Contracts, Performance and Payment Bonds, and respective powers-of-attorney will have the same date.

11. FAILURE TO EXECUTE CONTRACT AND FURNISH BOND

The Bidder who has a Contract awarded to him and who fails to promptly and properly execute the Contract or furnish the required Bonds shall forfeit the bid security that accompanied his bid, and the bid security shall be retained as liquidated damages by the CITY, and it is agreed that this said sum is a fair estimate of the amount of damages the CITY will sustain in case the Bidder fails to enter into a Contract or furnish the required Bonds. Bid security deposited in the form of cash, a certified check, or cashier's check shall be subject to the same requirement as a Bid Bond.

12. PUBLIC RECORDS REQUIREMENTS

In addition to other contract requirements provided by law, each public agency contract for services must include a provision that requires the Vendor to comply with public records laws, specifically to (a) keep and maintain public records that ordinarily and necessarily would be required by the public agency in order to perform the service; (b) provide the public with access to public records on the same terms and conditions that the public agency would provide the records and at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law; (c) ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law; and (d) meet all requirements for retaining public records and transfer, at no cost, to the public agency all public records in possession of the Vendor upon termination of the contract and destroy any duplicate public records that exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the public agency in a format that is compatible with the information technology systems of the public agency. If a Vendor does not comply with a public records request, the public agency shall enforce the contract provisions in accordance with the contract.

13. BIDDER'S DECLARATION AND UNDERSTANDING

The undersigned, hereinafter called the Bidder, declares that the only persons or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the Owner, and that the Bid is

made without any connection or collusion with any person submitting another Bid on this Contract.

The Bidder further declares that he has carefully examined the Contract Documents and that this Bid is made according to the provisions and under the terms of the Contract Documents, which Documents are hereby made a part of this Bid.

14. INDEMNITY LANGUAGE

To the fullest extent permitted by law, the VENDOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents and employees *(herein called the "indemnitees") from liabilities, damages, losses and costs, including but not limited to, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR, its Subcontractors or persons employed or utilized by them in the performance of the Contract. Claims by indemnitees for indemnification shall be limited to the amount of CONTRACTOR's insurance or \$1 million per occurrence, whichever is greater. The parties acknowledge that the amount of the indemnity required hereunder bears a reasonable commercial relationship to the Contract and it is part of the project specifications or the bid documents, if any.

The indemnification obligations under the Contract shall not be restricted in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the VENDOR under Workers' Compensation acts, disability benefits acts, or other employee benefits acts, and shall extend to and include any actions brought by or in the name of any employee of the VENDOR or of any third party to whom VENDOR may subcontract a part or all of the Work. This indemnification shall continue beyond the date of completion of the work.

15. CERTIFICATES OF INSURANCE

Bidder agrees to furnish the Owner, before commencing the work under this Contract, the certificates of insurance as specified below.

VENDOR is to secure, pay for, and file with the City of Key West, prior to commencing any work under the Contract, all certificates for workers' compensation, public liability, and property damage liability insurance, and such other insurance coverages as may be required by specifications and addenda thereto, in at least the following minimum amounts with specification amounts to prevail if greater than minimum amounts indicated. Notwithstanding any other provision of the Contract, the VENDOR shall provide the minimum limits of liability insurance coverage as follows:

Auto Liability	\$1,000,000	Combined Single Limit
General Liability	\$2,000,000	Aggregate (Per Project)
	\$2,000,000	Products Aggregate
	\$1,000,000	Any One Occurrence
	\$1,000,000	Personal Injury
	\$ 300,000	Fire Damage/Legal
Additional Umbrella Liability	\$1,000,000	Occurrence / Aggregate

VENDOR shall furnish an original Certificate of Insurance indicating, and such policy providing coverage to, City of Key West named as an additional insured on a PRIMARY and NON-CONTRIBUTORY basis utilizing an ISO standard endorsement at least as broad as CG 2010 (11/85) or its equivalent, (combination of CG 20 10 07 04 and CG 20 37 07 04, providing coverage for completed operations, is acceptable) including a waiver of subrogation clause in favor of City of Key West on all policies. VENDOR will maintain the General Liability and Umbrella Liability insurance coverages summarized above with coverage continuing in full force including the additional insured endorsement until at least 3 years beyond completion and delivery of the work contracted herein.

Notwithstanding any other provision of the Contract, the VENDOR shall maintain complete workers' compensation coverage for each and every employee, principal, officer, representative, or agent of the VENDOR who is performing any labor, services, or material under the Contract. Further, VENDOR shall additionally maintain the following minimum limits of coverage:

Bodily Injury Each Accident	\$1,000,000
Bodily Injury by Disease Each Employee	\$1,000,000
Bodily Injury by Disease Policy Limit	\$1,000,000

VENDOR shall provide the City of Key West with a Certificate of Insurance verifying compliance with the workman's compensation coverage as set forth herein and shall provide as often as required by the City of Key West such certification which shall also show the insurance company, policy number, effective and expiration date, and the limits of workman's compensation coverage under each policy.

CONTRACTOR's insurance policies shall be endorsed to give 30 days written notice to the City of Key West in the event of cancellation or material change, using form CG 02 24, or its equivalent.

Certificates of Insurance submitted to the City of Key West will not be accepted without copies of the endorsements being requested. This includes additional insured endorsements, cancellation/material change notice endorsements, and waivers of subrogation. Copies of USL&H Act and Jones Act endorsements will also be required if necessary. PLEASE ADVISE YOUR INSURANCE AGENT ACCORDINGLY.

VENDOR will comply with any and all safety regulations required by any agency or regulatory body including but not limited to OSHA. VENDOR will notify City of Key West immediately by telephone at (305) 809-3811 any accident or injury to anyone that occurs on the jobsite and is related to any of the work being performed by the CONTRACTOR.

SURETY AND INSURER QUALIFICATIONS

All bonds, insurance contracts, and certificates of insurance shall be either executed by or countersigned by a licensed resident agent of the Surety or insurance company, having his place of business in the State of Florida, and in all ways complying with the insurance laws of the State of Florida. Further, the said Surety or insurance company shall be duly licensed and qualified to do business in the State of Florida.

16. TIME OF COMPLETION

The time of completion of the work to be performed under this Contract is the essence of the

Contract. When the Contractor receives a Notice to Proceed, he shall commence work as soon as possible and shall complete all work within the number of calendar days stipulated in this Proposal.

The term of this contract will be **45 calendar days**.

17. ADDENDA

The Bidder hereby acknowledges that he has received Addenda No's. 1, 2, _____, and agrees that all addenda issued are hereby made part of the Contract Documents, and the Bidder further agrees that his Bid(s) includes all impacts resulting from said addenda.

* * * * *



City of Key West
1300 White Street
Key West, FL 33040

ADDENDUM NO. 1

ITB #19-008 CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM – ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE AND OUTER MOLE

The information contained in this Addendum adds information to be included in the Bid and is hereby made a part of the Contract Documents. The referenced bid package is hereby addended in accordance with the following items:

QUESTIONS and CLARIFICATIONS

1. Sign-in sheet attached.
2. Local Vendor Form Attached
3. *Question:* Location of devices on the assigned pole locations:
(Height from ground and nearest provider on pole)
-Height for Camera (PTZ)
-Height for fixed camera(s) (2 total per pole)
-Height for enclosure(s) (2 total per pole)

Answer: In the range of 10' to 15' from the ground. See attached diagram from Keys Energy. There is a written requirement for one enclosure per pole

4. *Question:* System Storage
-What RAID level is to be used on the server (if any)
-Is any provisional planning for additional camera streams to be recorded expected in install or just what is needed?

Answer: RAID Level defined in the ITB. Calculate the performance specification requirement and then explain how growth can be achieved

5. *Question:* Input Power at remote sites (Provided by others)
-Model and part number of device providing power
-Input power to this device shall be what?
-Output power from this device shall be what? (And Amp rating)
-Height on pole of this device

Answer: The enclosure is clearly defined in the ITB. Keys Energy will require the following be installed with the enclosure: To be provided by Integrator for electrical connection:

- Riser including weatherhead

- Breaker
- Sealtite conduit from breaker to the equipment box

6. Question: Line of sight for radios

-Based on google earth images and assumed restrictions of usable height, line of sight at an unobstructed height seems unlikely. Please clarify restrictions and space (height) allowed.

Answer: There should be line of sight for the radio pathways, if foliage becomes an issue we will work on having that cleared from the pathway.

7. *Question:* Do not see any scope of work requiring a lock smith, access control or wiring a door contact. Please clarify.

Answer: Not Applicable

8. *Question:* Have the cameras to be installed been approved by HARC?

Answer: No. Housing may need to be painted. HARC has indicated approvals will be at staff level.

9. Question: Warranty Information/Proposal. Is anything other than the Integrator stating 2 year warranty required

Answer: Warranty information/ proposal (The City requires Bidder to warranty all materials and labor for two (2) years). Warranty to begin once the City determines the system is operating as specified in the specifications for a period of thirty (30) days. Bidder shall submit a warranty proposal to be included as part of a contract

All other elements of the Contract and Bid documents, including the bid date shall remain unchanged.

All Bidders shall acknowledge receipt and acceptance of this **Addendum No. 1** by submitting the addendum with their proposal. Proposals submitted without acknowledgement or without this Addendum may be considered non-responsive.


Signature

Integrated Fire & Security Solutions, Inc.

Name of Business



City of Key West
1300 White Street
Key West, FL 33040

ADDENDUM NO. 2

**ITB #19-008 CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM –
ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY
SQUARE AND OUTER MOLE**

The information contained in this Addendum adds information to be included in the Bid and is hereby made a part of the Contract Documents. The referenced bid package is hereby addended in accordance with the following items:

QUESTIONS and CLARIFICATIONS

1. Addendum No. 1 did not include the attachments that were listed. They are included with this addendum:
 - Sign-in sheet.
 - Local Vendor Form
 - Diagram from Keys Energy

All other elements of the Contract and Bid documents, including the bid date shall remain unchanged.

All Bidders shall acknowledge receipt and acceptance of this **Addendum No. 2** by submitting the addendum with their proposal. Proposals submitted without acknowledgement or without this Addendum may be considered non-responsive.

A handwritten signature in blue ink, appearing to be "J. V.", is written over a horizontal line.

Signature

Integrated Fire & Security Solutions, Inc.

Name of Business

**LOCAL VENDOR CERTIFICATION PURSUANT TO
CITY OF KEY WEST ORDINANCE 09-22 SECTION 2-798**

The undersigned, as a duly authorized representative of the VENDOR listed herein, certifies to the best of his/her knowledge and belief, that the VENDOR meets the definition of a "Local Business." For purposes of this section, "local business" shall mean a business which:

- a. Principle address as registered with the FL Department of State located within 30 miles of the boundaries of the city, listed with the chief licensing official as having a business tax receipt with its principle address within 30 miles of the boundaries of the city for at least one year immediately prior to the issuance of the solicitation.
 - b. Maintains a workforce of at least 50 percent of its employees from the city or within 30 miles of its boundaries.
 - c. Having paid all current license taxes and any other fees due the city at least 24 hours prior to the publication of the call for bids or request for proposals.
- Not a local VENDOR pursuant to Ordinance 09-22 Section 2-798
 - Qualifies as a local VENDOR pursuant to Ordinance 09-22 Section 2-798

If you qualify, please complete the following in support of the self-certification & submit copies of your County and City business licenses. Failure to provide the information requested will result in denial of certification as a local business.

Business Name Integrated Fire & Security Solutions, Inc Phone: 1-888-955-0007

Current Local Address: 5680 1st Ave. Unit 3 Key West, FL 33040 Fax: (954) 455-0009
(P.O Box numbers may not be used to establish status)

Length of time at this address: 5 years

 Date: 2/11/19
Signature of Authorized Representative

STATE OF _____ COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 2015.

By _____, of _____
(Name of officer or agent, title of officer or agent) (Name of corporation acknowledging)

or has produced identification _____ as identification
(Type of identification)

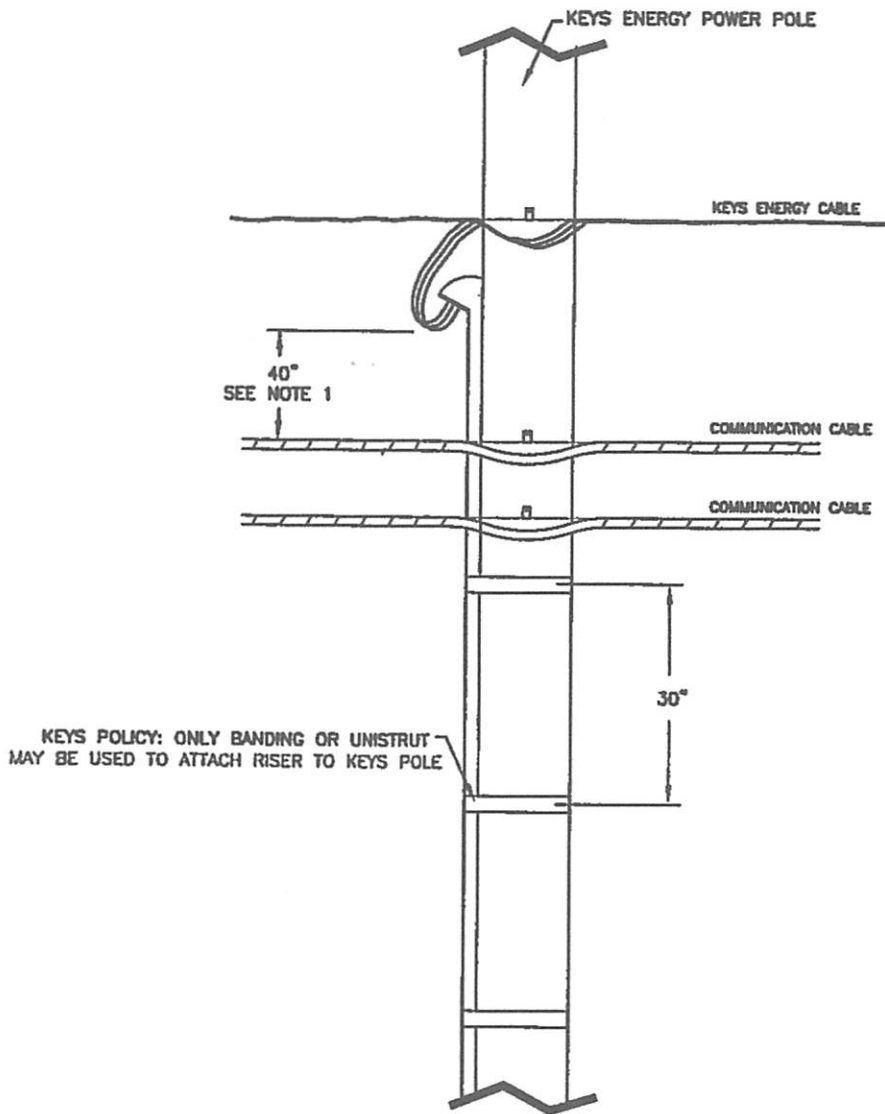
Signature of Notary

Print, Type or Stamp Name of Notary

Title or Rank

Return Completed form with
Supporting documents to:
City of Key West Purchasing

CUSTOMER RISER ATTACHMENT TO KEYS POLE



NOTE 1: PER NESC TABLE 238-1
NESC CODE 238B



KEYS ENERGY SERVICES
ENGINEERING DEPT. KEY WEST FL.

CUSTOMER RISER DETAILS FOR
ATTACHMENT TO KEYS POLE

DESIGNED BY: CATHERINE PEACE

APPROVED BY: *[Signature]*

DATE: 4-18-13

DRAWN BY: VIN SMITH

M-1430

SCALE: NONE

SHEET 1 OF 1

BID FORM

Project Title: **CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM – ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE AND OUTER MOLE**

Project No.: **ITB #19-008**

UNIT PRICE BID

The bidder agrees to furnish and install the System as specified and defined in this specification. Prices must include all materials, labor, engineering, coordination, programming, training, supervision, project management, testing and any other tasks required to deliver a working security system in accordance with this document. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. Pre-purchased Maintenance pricing for software assurance (no charge upgrades and updates) and for system component must be included for years listed. Alternate COMPREHENSIVE CCTV maintenance coverage may be provided as a separate line item. All work and incidental costs shall be included for payment under the several scheduled items of the overall contract, and no separate payment will be made therefore.

BIDDER'S INFORMATION

Company Name: Integrated Fire & Security Solutions


Address: 5680 1st Ave Unit 3
Key West, FL 33040

Contact Name: Jesus Carias

Email: jcarias@ifssi.com

Telephone: (888) 955-0007

Fax: (239) 415-4378

Signature:  _____ Date: 2/12/2018

1. Cost Itemization

1.1 Complete the following table **BY SITE** for the project:

PORT AREAS ITEMS	Quantity Supplied	Unit Hardware Cost	Extended Cost	Category Total
PTZ Cameras	2	\$5,625.00	\$11,250.00	\$11,250.00
Fixed Cameras	5	\$2,440.00	\$12,200.00	\$12,200.00
Installation and/or labor cost	93	\$145.00	\$13,485.00	\$13,485.00
Radio Network	10	\$2,380.00	\$23,800.00	\$23,800.00
Outdoor Enclosures and POE switches	5	\$6,256.00	\$31,280.00	\$31,280.00
TOTAL			\$92,015.00	\$92,015.00
DUVAL STREET ITEMS	Quantity Supplied	Unit Hardware Cost	Extended Cost	Category Total
PTZ Cameras	4	\$5,625.00	\$22,500.00	\$22,500.00
Fixed Cameras	8	\$1,852.00	\$14,816.00	\$14,816.00
Installation and/or labor cost	210	\$145.00	\$30,450.00	\$30,450.00
Radio Network	32	\$2,380.00	\$76,160.00	\$76,160.00
Outdoor Enclosures and POE switches	13	\$6,256.00	\$81,328.00	\$81,328.00
TOTAL			\$225,254.00	\$225,254.00
CORE SYSTEM ITEMS	Quantity Supplied	Unit Hardware Cost	Extended Cost	Category Total
Site Survey	1	\$1,664.44	\$1,664.44	\$1,664.44
Server Hardware	1	\$32,395.00	\$32,395.00	\$32,395.00
Miscellaneous Hardware	1	\$37,448.39	\$37,448.39	\$37,448.39
Software License Cost	19	\$260.43	\$4,498.17	\$4,498.17
Installation and/or labor cost	31	\$145.00	\$4,495.00	\$4,495.00
Radio Network	N/A	N/A	N/A	N/A
Outdoor Enclosures and POE switches	N/A	N/A	N/A	N/A
TOTAL			\$ 80,501.00	\$ 80,501.00

1.2 Complete the following table as a project summary:

ITEM	Hardware Cost	Software Cost	Total
SYSTEM			
Video Surveillance	\$278,491.68		\$278,491.68
Software and Licensing By System		\$ 4,948.06	\$ 4,948.06
Servers	\$ 34,813.25		\$ 34,813.25
SERVICES			

Project Management		\$ 3,981.00	\$ 3,981.00
Installation and programming		\$ 48,301.31	\$48,301.31
Training		\$ 925.00	\$ 925.00
Prepare As Built Drawings		\$ 456.70	\$ 456.70
Mobilization*		\$ 2,707.00	\$ 2,707.00
General/Supp. Conditions*		\$ 6,777.00	\$ 6,777.00
Demobilization*		\$ 2,500.00	\$ 2,500.00
Payment and Performance Bond		\$ 10,719.00	\$10,719.00
Permits		\$ 3,150.00	\$ 3,150.00
TOTAL PROJECT COSTS			\$397,770.00
<i>In Words:</i> Four hundred Thirty one Thousand Six hundred Eighteen Dollars and fifty One Cents			
MONTHLY FEE TO CLEAN CAMERA LENS			\$ 2,810.00
System Maintenance	Annual Fee for full on site service	OPTION FOR Annual Fee for Software/Tech support only	
Year 1	Included in Contract	Included in Contract	
Year 2	Included in Contract	Included in Contract	
Year 3	\$ 66,981.00 Parts & Labor	Included in Contract	

Acts of God Not Included
 Acts of God Not Included
 Acts of God Not Included

***Total for Mobilization/Demobilization/General/Supp. Conditions cannot total more than 10% of Construction Cost**

2. Total System Cost Installed

The pricing information quoted above must be valid for a period of 90 days from the receipt of this bid.

***Bidders may submit a request to use alternate equipment other than that specified above. Request must be in writing and must be submitted no later than 10-days prior to bidding. City will review the request to determine if equipment proposed meets the required specifications. City will respond to bidder in writing accepting or denying the alternate. The City’s decision is final.**

SUBCONTRACTORS

The Bidder further proposes that the following subcontracting firms or businesses will be awarded subcontracts for the following portions of the work in the event that the Bidder is awarded the Contract:

N/A

Portion of Work

N/A

Name

Street City State Zip

Portion of Work

Name

Street City State Zip

SURETY

Westchester Fire Insurance Company whose address is

436 Walnut St., Philadelphia, PA, 19106
Street City State Zip

704.927.6006 Catherine Thompson
Phone Resident Agent

BIDDER

The name of the Bidder submitting this Bid is _____

Integrated Fire & Security Solutions doing business
at

5680 1st Ave unit 3, Key West, FL, 33040
Street City State Zip

jcarias@ifssi.com
email address

which is the address to which all communications concerned with this Bid and with the Contract shall be sent.

The names of the principal officers of the corporation submitting this Bid, or of the partnership, or of all persons interested in this Bid as principals are as follows:

Name	Title
<u>John Peterson</u>	<u>Chief Operating Officer</u>
<u>Justin Peterson</u>	<u>President</u>
<u>Jesus Carias</u>	<u>Vice President</u>
_____	_____

If Sole Proprietor or Partnership

IN WITNESS hereto the undersigned has set his (its) hand this ____ day of _____ 20__.

Signature of Bidder

Title

If Corporation

IN WITNESS WHEREOF the undersigned corporation has caused this instrument to be executed and its seal affixed by its duly authorized officers this ____ day of _____ 20__.

(SEAL)



Integrated Fire & Security Solutions
Name of Corporation

By _____

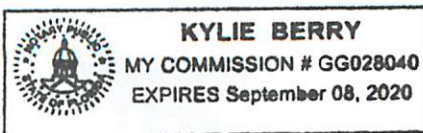
Title _____

Attest _____
Secretary

Sworn and subscribed before me this 8 day of February 2019.

NOTARY PUBLIC, State of Florida, at Large

My Commission Expires: September 08, 2020



Kylie Berry

FLORIDA BID BOND

BOND NO. N/A

AMOUNT: \$

KNOW ALL MEN BY THESE PRESENTS, that Integrated Fire & Security Solutions, Inc.

hereinafter called the PRINCIPAL, and Westchester Fire Insurance Company

a corporation duly organized under the laws of the State of PA

having its principal place of business at 436 Walnut St., Philadelphia, PA 19106

in the State of PA,

and authorized to do business in the State of Florida, as SURETY, are held and firmly bound unto

City of Key West

hereinafter CITY OF KEY WEST called the OBLIGEE, in the sum of Five Percent of Amount Bid

DOLLARS (\$ 5% of Bid) for

the payment for which we bind ourselves, our heirs, executors, administrators, successors, and

assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS BOND IS SUCH THAT:

WHEREAS, the PRINCIPAL is herewith submitting his or its Bid Proposal for **ITB #19-008
CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM – ROAD
SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE
AND OUTER MOLE** , said Bid Proposal, by reference thereto, being hereby made a part

hereof.

WHEREAS, the PRINCIPAL contemplates submitting or has submitted a bid to the OBLIGEE for the furnishing of all labor, materials (except those to be specifically furnished by the CITY), equipment, machinery, tools, apparatus, means of transportation for, and the performance of the work covered in the Proposal and the detailed Specifications, entitled:

**ITB #19-008 CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM –
ROAD SURVEILLANCE AND MONITORING –
DUVAL STREET, MALLORY SQUARE AND OUTER MOLE**

WHEREAS, it was a condition precedent to the submission of said bid that a cashier's check, certified check, or bid bond in the amount of 5 percent of the base bid be submitted with said bid as a guarantee that the Bidder would, if awarded the Contract, enter into a written Contract with the CITY for the performance of said Contract, within 10 working days after written notice having been given of the award of the Contract.

NOW, THEREFORE, the conditions of this obligation are such that if the PRINCIPAL within 10 consecutive calendar days after written notice of such acceptance, enters into a written Contract with the OBLIGEE and furnishes the Performance and Payment Bonds, each in an amount equal to 100 percent of the base bid, satisfactory to the CITY, then this obligation shall be void; otherwise the sum herein stated shall be due and payable to the OBLIGEE and the Surety herein agrees to pay said sum immediately upon demand of the OBLIGEE in good and lawful money of the United States of America, as liquidated damages for failure thereof of said PRINCIPAL.

Signed and sealed this 13 day of February, 2019.

Integrated Fire & Security Solutions, Inc.

By [Signature]
PRINCIPAL

Westchester Fire Insurance Company

SURETY

By [Signature]
Attorney-In-Fact Catherine Thompson

Power of Attorney

WESTCHESTER FIRE INSURANCE COMPANY

Know all men by these presents: That WESTCHESTER FIRE INSURANCE COMPANY, a corporation of the Commonwealth of Pennsylvania pursuant to the following Resolution, adopted by the Board of Directors of the said Company on December 11, 2006, to wit:

RESOLVED, that the following authorizations relate to the execution, for and on behalf of the Company, of bonds, undertakings, recognizances, contracts and other written commitments of the Company entered into the ordinary course of business (each a "Written Commitment"):

- (1) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise.
- (2) Each duly appointed attorney-in-fact of the Company is hereby authorized to execute any Written Commitment for and on behalf of the Company, under the seal of the Company or otherwise, to the extent that such action is authorized by the grant of powers provided for in such persons written appointment as such attorney-in-fact.
- (3) Each of the Chairman, the President and the Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to appoint in writing any person the attorney-in-fact of the Company with full power and authority to execute, for and on behalf of the Company, under the seal of the Company or otherwise, such Written Commitments of the Company as may be specified in such written appointment, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (4) Each of the Chairman, the President and Vice Presidents of the Company is hereby authorized, for and on behalf of the Company, to delegate in writing any other officer of the Company the authority to execute, for and on behalf of the Company, under the Company's seal or otherwise, such Written Commitments of the Company as are specified in such written delegation, which specification may be by general type or class of Written Commitments or by specification of one or more particular Written Commitments.
- (5) The signature of any officer or other person executing any Written Commitment or appointment or delegation pursuant to this Resolution, and the seal of the Company, may be affixed by facsimile on such Written Commitment or written appointment or delegation.


FURTHER RESOLVED, that the foregoing Resolution shall not be deemed to be an exclusive statement of the powers and authority of officers, employees and other persons to act for and on behalf of the Company, and such Resolution shall not limit or otherwise affect the exercise of any such power or authority otherwise validly granted or vested.

Does hereby nominate, constitute and appoint Catherine Thompson, Jennifer B Gullett, Matthew W Varner, Walter Caldwell, all of the City of CHARLOTTE, North Carolina, each individually if there be more than one named, its true and lawful attorney-in-fact, to make, execute, seal and deliver on its behalf, and as its act and deed any and all bonds, undertakings, recognizances, contracts and other writings in the nature thereof in penalties not exceeding Twenty million dollars & zero cents (\$20,000,000.00) and the execution of such writings in pursuance of these presents shall be as binding upon said Company, as fully and amply as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its principal office,

IN WITNESS WHEREOF, the said Stephen M. Haney, Vice-President, has hereunto subscribed his name and affixed the Corporate seal of the said WESTCHESTER FIRE INSURANCE COMPANY this 29 day of March 2011.

WESTCHESTER FIRE INSURANCE COMPANY




Stephen M. Haney, Vice President

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF PHILADELPHIA ss.

On this 29 day of March, AD. 2011 before me, a Notary Public of the Commonwealth of Pennsylvania in and for the County of Philadelphia came Stephen M. Haney, Vice-President of the WESTCHESTER FIRE INSURANCE COMPANY to me personally known to be the individual and officer who executed the preceding instrument, and he acknowledged that he executed the same, and that the seal affixed to the preceding instrument is the corporate seal of said Company; that the said corporate seal and his signature were duly affixed by the authority and direction of the said corporation, and that Resolution, adopted by the Board of Directors of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at the City of Philadelphia the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
KAREN E. BRANDT, Notary Public
City of Philadelphia, Phila. County
My Commission Expires September 26, 2014


Notary Public

I, the undersigned Assistant Secretary of the WESTCHESTER FIRE INSURANCE COMPANY, do hereby certify that the original POWER OF ATTORNEY, of which the foregoing is a substantially true and correct copy, is in full force and effect.

In witness whereof, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of the Corporation, this 13 day of February, 2019




William L. Kelly, Assistant Secretary

THIS POWER OF ATTORNEY MAY NOT BE USED TO EXECUTE ANY BOND WITH AN INCEPTION DATE AFTER March 29, 2013.

ANTI-KICKBACK AFFIDAVIT

STATE OF FL)

: SS

COUNTY OF Lee)

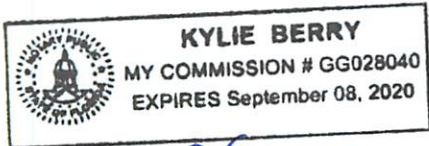
I, the undersigned hereby duly sworn, depose and say that no portion of the sum herein bid will be paid to any employees of the City of Key West as a commission, kickback, reward or gift, directly or indirectly by me or any member of my firm or by an officer of the corporation.

By: [Signature]

Sworn and subscribed before me this 8th day of FEBRUARY 2019.

NOTARY PUBLIC, State of Florida at Large

My Commission Expires: September 08, 2020



[Signature]

* * * * *

**SWORN STATEMENT UNDER SECTION 287.133(3)(A)
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with Bid or Proposal for _____
City of Key West-Road Surveillance ITB 19-008

2. This sworn statement is submitted by Integrated Fire & Security Solutions, Inc
(name of entity submitting sworn statement)
whose business address is 5680 1st Ave Unit 3, Key West, Florida, 33040

and (if applicable) its Federal Employer Identification Number (FEIN) is _____
75-3213855

(If the entity has no FEIN, include the Social Security Number of the individual
signing this sworn statement _____)

3. My name is _____
(please print name of individual signing)
and my relationship to the entity named above is _____

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any bid or contract for goods or services to be provided to any public or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means

1. A predecessor or successor of a person convicted of a public entity crime; or
2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another

person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies).

X Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

____ There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

____ The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

____ The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

John Peterson
(signature)
2/8/19
(date)

STATE OF FL

COUNTY OF Lee

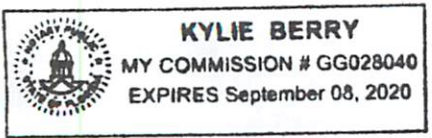
PERSONALLY, APPEARED BEFORE ME, the undersigned authority,

John Peterson who, after first being sworn by me, affixed his/her
(name of individual signing)

signature in the space provided above on this 8 day of February 2019.

My commission expires: September 08, 2020

[Signature]
NOTARY PUBLIC

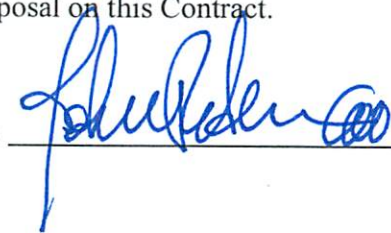


* * * * *

NON-COLLUSION AFFIDAVIT

STATE OF FLORIDA)
 :
SS COUNTY OF ~~MONROE~~)
 LEE

I, the undersigned hereby declares that the only persons or parties interested in this Proposal are those named herein, that this Proposal is, in all respects, fair and without fraud, that it is made without collusion with any official of the Owner, and that the Proposal is made without any connection or collusion with any person submitting another Proposal on this Contract.

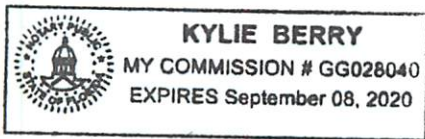
By: 

Sworn and subscribed before me this

8 day of February, 2019.


NOTARY PUBLIC, State of Florida at Large

My Commission Expires: September 08, 2020



CITY OF KEY WEST INDEMNIFICATION FORM

To the fullest extent permitted by law, the VENDOR expressly agrees to indemnify and hold harmless the City of Key West, their officers, directors, agents and employees (herein called the "indemnitees") from any and all liability for damages, including, if allowed by law, reasonable attorney's fees and court costs, such legal expenses to include costs incurred in establishing the indemnification and other rights agreed to in this Paragraph, to persons or property, caused in whole or in part by any act, omission, or default by VENDOR or its subcontractors, material men, or agents of any tier or their employees, arising out of this agreement or its performance, including any such damages caused in whole or in part by any act, omission or default of any indemnitee, but specifically excluding any claims of, or damages against an indemnitee resulting from such indemnitee's gross negligence, or the willful, wanton or intentional misconduct of such indemnitee or for statutory violation or punitive damages except and to the extent the statutory violation or punitive damages are caused by or result from the acts or omissions of the VENDOR or its subcontractors, material men or agents of any tier or their respective employees.

Indemnification by VENDOR for Professional Acts. VENDOR hereby agrees to indemnify the City of Key West and each of its parent and subsidiary companies and the directors, officers and employees of each of them (collectively, the "indemnitees"), and hold each of the indemnitees harmless, against all losses, liabilities, penalties (civil or criminal), fines and expenses (including reasonable attorneys' fees and expenses) (collectively, "Claims") to the extent resulting from the performance of VENDOR's negligent acts, errors or omissions or intentional acts in the performance of VENDOR's services, or any of their respective affiliates, under this Agreement. If claims, losses, damages, and judgments are found to be caused by the joint or concurrent negligence of the City of Key West and VENDOR, they shall be borne by each party in proportion to its negligence.

VENDOR:

INTEGRATED FIRE + SEC. SOLUTIONS SEAL:

1970 DANIA DR. FORE HAYES, FL 33907
Address

[Signature]
Signature

JOHN PETERSON
Print Name

COO
Title

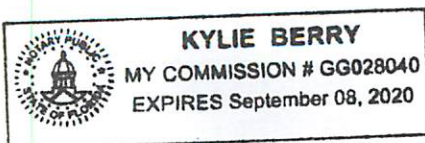
DATE:

2/8/19



NOTARY PUBLIC, State of Florida at Large

My Commission Expires: September 08, 2020



[Signature]

EQUAL BENEFITS FOR DOMESTIC PARTNERS AFFIDAVIT

STATE OF FL)

: SS

COUNTY OF LEE)

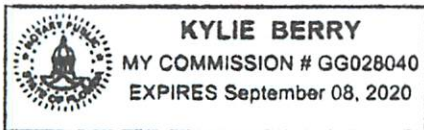
I, the undersigned hereby duly sworn, depose and say that the firm of INTEGRATED FIRE + SECURITY SOLUTIONS provides benefits to domestic partners of its employees on the same basis as it provides benefits to employees' spouses, per City of Key West Code of Ordinances Sec. 2-799.

By: [Signature]

Sworn and subscribed before me this 8 day of February 2019.

NOTARY PUBLIC, State of Florida at Large

My Commission Expires: September 08, 2020



[Signature]

* * * * *

CONE OF SILENCE AFFIDAVIT

STATE OF FL)

: SS

COUNTY OF LEE)

I, the undersigned hereby duly sworn, depose and say that all owner(s), partners, officers, directors, employees and agents representing the firm of _____ have read and understand the limitations and procedures regarding communications concerning City of Key West Code of Ordinances Sec. 2-773 Cone of Silence.

By: [Signature]

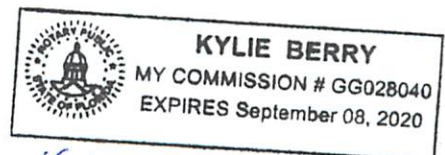
Sworn and subscribed before me this

8 day of February 20 19.

NOTARY PUBLIC, State of Florida at Large

My Commission Expires: September 08, 2020

* * * * *



[Signature]

BIDDER'S CHECKLIST

(Note: The purpose of this checklist is to serve as a reminder of major items to be addressed in submitting a bid and is not intended to be all inclusive. It does not alleviate the Bidder from the responsibility of becoming familiar with all aspects of the Contract Documents and Proper completion and submission of his bid.)

1. All Bid Documents thoroughly read and understood
2. All blank spaces in Bid filled in black ink.
3. Total and unit Prices added correctly.
4. Addenda acknowledged.
5. Bid signed by authorized officer.
6. Bidder familiar with federal, state, and local laws, ordinances, rules and regulations affecting the proposed purchase.
7. Bidder, if successful, able to obtain and/or demonstrate possession of required licenses and certificates within (10) ten days after receiving a Notice of Award.
8. Bid submitted intact with the volume containing the Bidding Requirements, Contract Forms and Conditions of the Contract, one (1) original, two (2) USB drives.
9. Bid Documents submitted in sealed envelope and addressed and labeled in conformance with the instructions in the Invitation to Bid.
10. Anti-kickback Affidavit; Public Entity Crime Form; City of Key West Indemnification Equal Benefits for Domestic Partners Affidavit; Local Vendors Form. Cone of Silence, and Proof of Insurance
11. Description of proposed work including layout; Equipment Cut Sheets; Warranty Information/Proposal; SUMMARY OF WORK Requirements

PART 2
CONTRACT FORMS

DRAFT CONTRACT

This Contract, made and entered into this _____ day of _____ 20____,

by and between the City of Key West, hereinafter called the "Owner", and _____

Integrated Fire & Security Solutions, Inc.

hereinafter called the "Vendor";

WITNESSETH:

The Vendor, in consideration of the sum to be paid him by the Owner and of the covenants and agreements herein contained, hereby agrees at his own proper cost and expense to do all the work and furnish all the materials, tools, labor, and all appliances, machinery, and appurtenances for **ITB #19-008 CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM – ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE AND OUTER MOLE** , Key West, Florida to the extent of the Bid made by the Vendor, dated the day of _____ 20____, all in full compliance with the Contract Documents referred to herein.

The CONTRACT DOCUMENTS, including the signed copy of the BID, BIDDING REQUIREMENTS, SPECIFICATIONS and DRAWINGS are hereby referred to and by reference made a part of this Contract as fully and completely as if the same were fully set forth herein and are mutually cooperative therewith.

In consideration of the performance of the work as set forth in these Contract Documents, the Owner agrees to pay to the Vendor the amount BID as adjusted in accordance with the Contract Documents, or as otherwise herein provided, and to make such payments in the manner and at the times provided in the Contract Documents.

The Vendor agrees to complete the work within **forty-five (45)** calendar days of Notice to Proceed and to accept as full payment hereunder the amounts computed as determined by the Contract Documents and based on the said BID.

The Vendor agrees to remedy all defects appearing in the work or developing in the materials furnished and the workmanship performed under this Contract during the warranty period after the date of final acceptance of the work by the Owner, and further agrees to indemnify and hold the Owner harmless from any costs encountered in remedying such defects.

It is agreed that the Contract, based upon the BID, shall be fully complete within the stated number of consecutive calendar days from the date the Notice to Proceed is issued.

In the event the Vendor fails to complete the work within the time limit or extended time limit agreed upon, as more particularly set forth in the Contract Documents, **liquidated damages** shall be paid at a rate of **\$250 per day**. Sundays and legal holidays shall be included in determining days in default.


This contract will automatically expire upon completion of the project. Vendor warranty obligations remain in effect.

IN WITNESS WHEREOF, we, the parties hereto, each herewith subscribe the same this

_____ Day of _____, 20____.

CITY OF KEY WEST

By _____
James K. Scholl, City Manager

VENDOR
By  _____

Printed Jesus Carias

Title Vice President

APPROVED AS TO FORM

Attorney for Owner

* * * * *

FLORIDA PERFORMANCE BOND

BOND NO. _____

AMOUNT: \$ _____

KNOW ALL MEN BY THESE PRESENTS, that in accordance with Florida Statutes Section 255.05 _____

with offices at _____

hereinafter called the CONTRACTOR (Principal), and

_____ with offices at _____

a corporation duly organized and existing under and by virtue of the laws of the State of Florida, hereinafter called the SURETY, and authorized to transact business within the State of Florida, as SURETY, are held and firmly bound unto the **CITY OF KEY WEST**, hereinafter called the CITY (Obligee), in the sum of:

_____ DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which, well and truly be made to the CITY, the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract hereto attached, with the CITY, dated _____, 20__, to furnish at his own cost, charges, and expense all the necessary materials, equipment, and/or labor in strict and express accordance with said Contract and the Contract Documents as defined therein, all of which is made a part of said Contract by certain terms and conditions in said Contract more particularly mentioned, which Contract, consisting of the various Contract Documents is made a part of this Bond as fully and completely as if said Contract Documents were set forth herein;

NOW THEREFORE, the conditions of this obligation are such that if the above bounden CONTRACTOR:

1. Shall in all respects comply with the terms and conditions of said Contract and his obligation there under, including the Contract Documents (which include the scope of work and conditions as prepared by the CITY, invitation to bid, instructions to bidders, the CONTRACTOR'S bid as accepted by the above CITY, the bid and contract performance and payment bonds (Not required as part of this contract), and all addenda, if any, issued prior to the opening of bids), being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying PRINCIPAL with labor, materials, or supplies, used directly or indirectly by PRINCIPAL in the prosecution of the work provided for in the contract; and

3. Pays CITY all losses, costs, expenses, damages, attorney’s fees, including appellate proceedings, injury or loss of whatever kind and however arising including, without limitation, delay damages to which said CITY may be subject by reason of any wrongdoing, misconduct, want of care or skill, negligence, failure of performance, breach, failure to petition within the prescribed time, or default, including patent infringements, on the part of said CONTRACTOR, his agents or employees, in the execution or performance of said Contract; and

4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this obligation shall be void; otherwise, to remain in full force and effect for the term of said Contract.

AND, the said Surety for value received, hereby stipulates and agrees that no change involving any extension of time, or addition to the terms of the Contract Documents, or to the work to be performed, or materials to be furnished there under shall affect said obligation of said Surety on this Bond, and the said Surety does hereby waive notice of any such changes, extension of time, alterations, or additions of the terms of the Contract Documents, or to the work.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

IN WITNESS WHEREOF, the above parties bonded together have executed this instrument

this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____

(SEAL)

ATTEST

SURETY

By: _____

(SEAL)

ATTEST

FLORIDA PAYMENT BOND

BOND NO. _____

AMOUNT: \$ _____

KNOW ALL MEN BY THESE PRESENTS, that in accordance with Florida Statutes Section 255.05, _____

with offices at _____
hereinafter called the CONTRACTOR, (Principal), and

with offices at _____

a corporation duly organized and existing under and by virtue of the laws of the State of _____

_____, hereinafter called the SURETY, and authorized to transact business within the State of Florida, as SURETY, are held and firmly bound unto CITY OF KEY WEST, hereinafter called the City (Obligee), in the sum of:

_____ DOLLARS(_____),
lawful money of the United States of America, for the payment of which, well and truly be made to the CITY, and the CONTRACTOR and the SURETY bind themselves and each of their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents as follows:

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT:

WHEREAS, the CONTRACTOR has executed and entered into a certain Contract for

ITB #19-008 CITY OF KEY WEST -COMPREHENSIVE CCTV SECURITY SYSTEM – ROAD SURVEILLANCE AND MONITORING – DUVAL STREET, MALLORY SQUARE AND OUTER MOLE attached hereto, with

the CITY, dated _____,
_____, 20___, to furnish at his own cost, charges, and expense the necessary materials, equipment, and/or labor in strict and express accordance with said Contract and the plans, drawings (if any), and specifications prepared by the CITY, all of which is made a part of said Contract by certain terms and conditions in said Contract more particularly mentioned, which Contract, consisting of the various Contract Documents specifically mentioned herein and relative hereto, is made a part of this Bond as fully and completely as if said Contract Documents were set forth herein.

NOW THEREFORE, the conditions of this obligation are such that if the above bounden CONTRACTOR shall in all respects comply with the terms and conditions of said Contract and his obligation thereunder, including the Contract Documents, which include Scope of work and conditions prepared by the CITY, invitation to bid, instructions to bidders, the

CONTRACTOR’S bid as accepted by the CITY, the bid and contract and payment bonds (Not required as part of this contract), and all addenda, if any, issued prior to the opening of bids), and further that if said CONTRACTOR shall promptly make payments to all persons supplying materials, equipment, and/or labor, used directly or indirectly by said CONTRACTOR or subcontractors in the prosecution of the work for said contract in accordance with Florida Statutes, Section 255.05 or Section 713.23, then this obligation shall be void; otherwise to remain in full force and effect for the term of said contract, including and all guarantee periods as specifically mentioned in said Contract Documents.

AND, the said SURETY for value received, hereby stipulates and agrees that no change involving any extension of time, or addition to the terms of the Contract or to the work to be performed, or materials to be furnished thereunder, or in the Contract Documents and specifications accompanying the said contract shall affect said obligation of said SURETY on this Bond, and the said SURETY does hereby waive notice of any such changes, extension of time, alternations, or additions of the terms of the Contract, or to the work, to the Contract Documents, or to the specifications.

Claimant shall give written notice to the CONTRACTOR and the SURETY as required by Section 255.05 or Section 713.23, Florida Statutes. Any action instituted against the CONTRACTOR or SURETY under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2) or Section 713.23, Florida Statutes.

IN WITNESS WHEREOF, the above parties bounded together have executed this instrument

this _____ day of _____, 20__, the name and corporate seal of each corporate party being hereto affixed and those presents duly signed by its undersigned representative, pursuant to authority of its governing body.

CONTRACTOR

By: _____

(SEAL)

ATTEST

SURETY

By: _____

(SEAL)

ATTEST

LICENSE REQUIREMENT AND COST

License required for this Project. Vendor must have a general contractor license or registration.

Cost Not To Exceed \$410.00.

CITY OF KEY WEST BUSINESS LICENSE TAX RECEIPT

A City of Key West Business License Tax Receipt is required for this project. Vendor must have a general contractor license or registration. Cost not to exceed \$410.00.

City of Key West Business License Tax Receipt may be found on the city website.

<http://www.keywestcity.com/egov/docs/1162843921181.htm>

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Article

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DEFINITIONS

Whenever in the Contract Documents the following terms are used, the intent and meaning shall be interpreted as follows:

1. AS APPROVED

The words "as approved", unless otherwise qualified, shall be understood to be followed by the words "by the ENGINEER for conformance with the Contract Document".

2. AS SHOWN, AND AS INDICATED

The words "as shown" and "as Indicated" shall be understood to be followed by the words "on the Drawings".

3. BIDDER

The person or persons, partnership, firm, or corporation submitting a Bid for the work contemplated.

4. CONTRACT DOCUMENTS

The "Contract Documents" consist of the Bidding Requirements, Contract Forms, Conditions of the Contract, Specifications, Drawings, all modifications thereof incorporated into the Documents before their execution, Change Orders, and all other requirements incorporated by specific reference thereto. These form the Contract.

5. CONTRACTOR

The person or persons, partnership, firm, or corporation who enters into the Contract awarded him by the OWNER.

6. CONTRACT COMPLETION

The "Contract Completion" is the date the OWNER accepts the entire work as being in compliance with the Contract Documents, or formally waives nonconforming work to extent of nonconformity, and issues the final payment in accordance with the requirements set forth in Article, "Final Payment" of these General Conditions.

7. DAYS

Unless otherwise specifically stated, the term "days" will be understood to mean calendar days. Business day or working day means any day other than Saturday, Sunday, or legal holiday.

8. DRAWINGS

The term "Drawings" refers to the official Drawings, profiles, cross sections, elevations, details, and other working drawings and supplementary drawings, or reproductions thereof, signed by the ENGINEER, which shows the location, character, dimensions, and details of the work to be performed. Drawings may either be bound in the same book as the balance of the Contract Documents, or bound in separate sets, and are a part of the Contract Documents, regardless of the method of binding.

9. ENGINEER

The person or organization identified as such in the Contract Documents. The Term "ENGINEER" means ENGINEER or his authorized representative.

10. NOTICE

The term "notice" or the requirement to notify, as used in the Contract Documents or applicable state or federal statutes, shall signify a written communication delivered in person or by registered mail to the individual, or to a member of the firm, or to an officer of the corporation for whom it is intended. Certified or registered mail shall be addressed to the last business address known to him who gives the notice.

11. OR EQUAL

The term "or equal" shall be understood to indicate that the "equal" product is equivalent to or better than the product named in function, performance, reliability, quality, and general configuration. Determination of equality in reference to the project design requirements will be made by the ENGINEER. Such equal products shall not be purchased or installed by the CONTRACTOR without written authorization.

12. OWNER

The person, organization, or public body identified as such in the Contract Documents.

13. PLANS (See Drawings)

14. SPECIFICATIONS

The term "Specifications" refers to those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the

work and certain

administrative details applicable thereto. Where standard specifications, such as those of ASTM, AASHTO, etc., have been referred to, the applicable portions of such standard specifications shall become a part of these Contract Documents. If referenced specifications conflict with specifications contained herein, the requirements contained herein shall prevail.

15. NOTICE TO PROCEED

A written notices given by the OWNER to the CONTRACTOR (with a copy to the ENGINEER) fixing the date on which the Contract time will commence to run and on which the CONTRACTOR shall start to perform his obligation under the Contract Documents. The Notice to Proceed will be given within 30 days following the execution of the Contract by the OWNER.

16. SUBSTANTIAL COMPLETION

“Substantial Completion” shall be that degree of completion of the Project or a defined portion of the Project, as evidenced by the ENGINEER’s written notice of Substantial Completion, sufficient to provide the OWNER, at his discretion, the full-time use of the Project or defined portion of the Project for the purposes for which it was intended. “Substantial Completion” of an operating facility shall be that degree of completion that has provided a minimum of 7 continuous days of successful, trouble-free, operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the ENGINEER. All equipment contained in the work, plus all other components necessary to enable the OWNER to operate the facility in a manner that was intended, shall be complete on the substantial completion date.

17. WORK

The word “work” within these Contract Documents shall include all material, labor, tools, and all appliances, machinery, transportation, and appurtenances necessary to perform and complete the Contract, and such additional items not specifically indicated or described which can be reasonably inferred as belonging to the item described or indicated and as required by good practice to provide a complete and satisfactory system or structure. As used herein, “provide” shall be understood to mean “furnish and install, complete in-place”.

CONTRACT DOCUMENTS

18. INTENT OF CONTRACT DOCUMENTS

The Contract Documents are complementary, and what is called for by one shall be as binding as if called for by all. The intent of the Documents is to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning.

Reference to standard specifications, manuals, or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect on the first published date of the Invitation to Bid, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their consultants, agents, or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any ENGINEER’s consultants, agents, or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of Article LIMITATIONS ON ENGINEER’S RESPONSIBILITIES.

19. DISCREPANCIES AND OMISSIONS

Any discrepancies or omissions found in the Contract Documents shall be reported to the ENGINEER immediately. The ENGINEER will clarify discrepancies or omissions, in writing, within a reasonable time.

In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

- A. CONTRACT
- B. BID
- C. SUPPLEMENTARY CONDITIONS
- D. INVITATION TO BID
- E. INSTRUCTIONS TO BIDDERS
- F. GENERAL CONDITIONS
- G. SPECIFICATIONS
- H. DRAWINGS

Addenda shall take precedence over all sections referenced therein. Figure dimensions on Drawings shall take precedence over scale dimensions. Detailed Drawings shall take precedence over general Drawings.

20. CHANGES IN THE WORK

The OWNER, without notice to the Sureties and without invalidating the Contract, may order changes in the work within the general scope of the Contract by altering, adding to, or deducting from the work, the Contract being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, except as specifically adjusted at the time of ordering such change.

In giving instructions, the ENGINEER may order minor changes in the work not involving extra cost and not inconsistent with the purposes of the Project, but otherwise, except in an emergency endangering life and property, additions or deductions from the work shall be performed only in pursuance of an approved Change Order from the OWNER, countersigned by the ENGINEER.

If the work is reduced by alterations, such action shall not constitute a claim for damages based on loss of anticipated profits.

21. EXAMINATION AND VERIFICATION OF CONTRACT DOCUMENTS

The CONTRACTOR shall thoroughly examine and become familiar with all of the various parts of these Contract Documents and determine the nature and location of the work, the general and local conditions, and all other matters, which can in any way affect the work under this Contract. Failure to make an examination necessary for this determination shall not release the CONTRACTOR from the obligations of this Contract. No verbal agreement or conversation with any officer, agent, or employee of the OWNER or with the ENGINEER either before or after the execution of this Contract shall affect or modify any of the terms or obligations herein contained.

22. DOCUMENTS TO BE KEPT ON THE JOBSITE

The CONTRACTOR shall keep one copy of the Contract Documents on the job- site, in good order, available to the ENGINEER and to his representatives.

The CONTRACTOR shall maintain on a daily basis at the

jobsite, and make available to the ENGINEER on request, one current record set of the Drawings which have been accurately marked to indicate all modifications in the completed work that differ from the design information shown on the Drawings. Upon Substantial completion of the work, the CONTRACTOR shall give the ENGINEER one complete set of these marked up record Drawings.

23. ADDITIONAL CONTRACT DOCUMENTS

Copies of Contract Documents or Drawings may be obtained on request from the ENGINEER and by paying the actual cost of reproducing the Contract Documents or Drawings.

24. OWNERSHIP OF CONTRACT DOCUMENTS

All portions of the Contract Documents, and copies thereof furnished by the ENGINEER are instruments of service for this Project. They are not to be used on other work and are to be returned to the ENGINEER on request at the completion of the work. Any reuse of these materials without specific written verification or adaptation by the ENGINEER will be at the risk of the user and without liability or legal expense to the ENGINEER. Such user shall hold the ENGINEER harmless from any and all damages, including reasonable attorneys' fees, from any and all claims arising from any such reuse. Any such verification and adaptation shall entitle the ENGINEER to further compensation at rates to be agreed upon by the user and the ENGINEER.

THE ENGINEER

25. AUTHORITY OF THE ENGINEER

The ENGINEER will be the OWNER's representative during the construction period. His authority and responsibility will be limited to the provisions set forth in these Contract Documents. The ENGINEER will have the Authority to reject work that does not conform to the Contract Documents. However, neither the ENGINEER's authority to act under this provision, nor any decision made by him in good faith either to exercise or not to exercise such authority, shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any SUBCONTRACTOR, their respective Sureties, any of their agents or employees, or any other person performing any of the work.

26. DUTIES AND RESPONSIBILITIES OF THE ENGINEER

The ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the work and to determine, in general, if the work is proceeding in accordance with the intent of the Contract Documents. He will not make comprehensive or continuous review or observation to check quality or quantity of the work, and he will not be responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work. Visits and observations made by the ENGINEER shall not relieve the CONTRACTOR of his obligation to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

The ENGINEER will make recommendations to the OWNER, in writing, on all claims of the OWNER or the CONTRACTOR arising from interpretation or execution of the Contract Documents. Such recommendations will be of factual and/or technical nature, and will not include the legal interpretation of the Contract Documents. Any necessary legal interpretation of the Contract Document will be made by the OWNER. Such recommendation shall be necessary before the CONTRACTOR can receive additional money under the terms of the Contract. Changes in work ordered by the ENGINEER shall be made in compliance with Article CHANGES IN THE WORK.

One or more project representatives may be assigned to observe the work. It is understood that such project representatives shall have the authority to issue notice of nonconformance and make decisions within the limitations of the authority of the ENGINEER. The CONTRACTOR shall furnish all reasonable assistance required by the ENGINEER or project representatives for proper observation of the work. The above-mentioned project representatives shall not relieve the CONTRACTOR of his obligations to conduct comprehensive inspections of the work and to furnish materials and perform acceptable work, and to provide adequate safety precautions, in conformance with the intent of the Contract.

27. LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for

CONTRACTOR's failure to perform or furnish the work in accordance with the Contract Documents.

ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any SUBCONTRACTOR, any supplier, or of any other person or organization performing or furnishing any of the work.

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory", or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of this Article.

28. REJECTED WORK

Any defective work or nonconforming materials or equipment that may be discovered at any time prior to expiration of the warranty period shall be removed and replaced by work which shall conform to the provisions of the Contract Documents. Any material condemned or rejected shall be removed at once from the project site.

Failure on the part of the ENGINEER to condemn or reject bad or inferior work or to note nonconforming materials or equipment on CONTRACTOR submittals shall not be construed to imply acceptance of such work. The OWNER shall reserve and retain all of its rights and remedies at law against the CONTRACTOR and its Surety for correction of any and all latent defects discovered after the guarantee period.

29. LINES AND GRADES

Lines and grades shall be established as provided in the supplementary conditions. All stakes, marks, and other reference information shall be carefully preserved by the CONTRACTOR, and in case of their careless or unnecessary destruction or removal by him or his employees, such stakes, marks, and other information shall be replaced at the CONTRACTOR's expense.

30. SUBMITTALS

After checking and verifying all field measurements and after complying with applicable procedures specified in Division I, GENERAL REQUIREMENTS, CONTRACTOR shall submit to ENGINEER, in accordance with the schedule for submittals for review, shop drawings, electrical diagrams, and catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment), which shall bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submittal. All submittals shall be identified as ENGINEER may require. The data shown shall be complete with respect to quantities, dimensions specified, performance and design criteria, materials, and similar data to enable ENGINEER to review the information. CONTRACTOR shall also submit to ENGINEER for review, with such promptness as to cause no delay in work, all samples required by the Contract Documents. All samples shall have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission and shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which intended.

Before submission of each submittal, CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar data with respect thereto and reviewed or coordinated each submittal with other submittals and with the requirements of the work and the Contract Documents.

At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the submittal may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each shop drawing submitted to ENGINEER for review and approval of each variation.

ENGINEER will review submittals with reasonable promptness, but ENGINEER's review will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences, or procedures of construction (except where a specific means, method, technique, sequence, or procedure of construction is indicated in or required by the Contract Documents) or to safety

precautions or programs incident thereto. The review of a separate item as such will not indicate review of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of shop drawings and submit as required new samples for review. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals.

ENGINEER's review of submittals shall not relieve CONTRACTOR from the responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated therein or accompanying the shop drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the shop drawings or from responsibility for having complied with the provisions herein.

Where a shop drawing or sample is required by the specifications, any related work performed prior to ENGINEER's review and approval of the pertinent submission shall be at the sole expense and responsibility of the CONTRACTOR.

31. DETAIL DRAWINGS AND INSTRUCTIONS

The ENGINEER will furnish, with reasonable promptness, additional instructions by means of Drawings or otherwise, if, in the ENGINEER's opinion, such are required for the proper execution of the work. All such Drawings and instructions will be consistent with the Contract Documents, true developments thereof, and reasonably inferable there from.

THE CONTRACTOR AND HIS EMPLOYEES

32. CONTRACTOR, AN INDEPENDENT AGENT

The CONTRACTOR shall independently perform all work under this Contract and shall not be considered as an agent of the OWNER or of the ENGINEER, nor shall the CONTRACTOR's SUBCONTRACTOR's or employees be subagents of the OWNER or of the ENGINEER.

33. SUBCONTRACTING

Unless modified in the Supplementary Conditions, within 10 days after the execution of the Contract, the

CONTRACTOR shall submit to the ENGINEER the names of all SUBCONTRACTORS proposed for the work, including the names of any SUBCONTRACTORS that were submitted with the Bid. The CONTRACTOR shall not employ any SUBCONTRACTORS to which the OWNER may object to as lacking capability to properly perform work of the type and scope anticipated.

The CONTRACTOR is as fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS and of persons either directly or indirectly employed by them as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relationship between any SUBCONTRACTOR and the OWNER or ENGINEER.

34. INSURANCE AND LIABILITY

A. GENERAL

The CONTRACTOR shall provide (from insurance companies acceptable to the OWNER) the insurance coverage designated hereinafter and pay all costs.

Before commencing work under this Contract, the CONTRACTOR shall furnish the OWNER with certificates of insurance specified herein showing the type, amount class of operations covered, effective dates, and date of expiration of policies, and containing substantially the following statement:

“The insurance covered by this certificate shall not be canceled or materially altered, except after 30 days’ written notice has been received by the OWNER.”

In case of the breach of any provision of this Article, the OWNER, at his option, may take out and maintain, at the expense of the CONTRACTOR, such insurance as the OWNER may deem proper and may deduct the cost of such insurance from any monies which may be due or become due the CONTRACTOR under this Contract.

B. CONTRACTOR AND SUBCONTRACTOR INSURANCE

The CONTRACTOR shall not commence work under this Contract until he has obtained all the insurance required hereunder and such insurance has been reviewed by the OWNER, nor shall the CONTRACTOR allow any SUBCONTRACTOR to commence work on his subcontract until insurance specified below has been

obtained. Review of the insurance by the OWNER shall not relieve or decrease the liability of the CONTRACTOR hereunder.

C. COMPENSATION AND EMPLOYER’S LIABILITY INSURANCE

The CONTRACTOR shall maintain during the life of this Contract the statutory amount of Workmen's Compensation Insurance, in addition, Employer's Liability Insurance in an amount as specified in the Supplementary Conditions, for each occurrence, for all of his employees to be engaged in work on the project under this Contract. In case any such work is subcontracted, the Contractor shall require the Subcontractor to provide similar Worker's Compensation and Employer's Liability Insurance for all of the Subcontractor's employees to be engaged in such work.

D. GENERAL LIABILITY INSURANCE (INCLUDING AUTOMOBILE)

The CONTRACTOR shall maintain during the life of this Contract such general liability, completed operations and products liability, and automobile liability insurance as will provide coverage for claims for damages for personal injury, including accidental death, as well as for claims for property damage, which may arise directly or indirectly from performance of the work under this Contract. The general liability policy shall include contractual liability assumed by the CONTRACTOR under Article INDEMNITY. Coverage for property damage shall be on a “broad form” basis with no exclusions for “X, C & U”. The amount of insurance to be provided shall be as specified in the Supplementary Conditions.

In the event any work under this Contract is performed by a SUBCONTRACTOR, the CONTRACTOR shall be responsible for any liability directly or indirectly arising out of the work performed by the SUBCONTRACTOR, to the extent such liability is not covered by the SUBCONTRACTOR’s insurance.

The OWNER and ENGINEER, their officers, agents, and employees shall be named as Additional Insured’s on the CONTRACTOR’s and any SUBCONTRACTOR’S general liability and automobile liability insurance policies for any claims arising out of work performed under this Contract.

E. BUILDERS RISK ALL RISK INSURANCE

Unless otherwise modified in the Supplementary Conditions, the CONTRACTOR shall secure and

maintain during the life of this Contract, Builders Risk All Risk Insurance coverage in an amount equal to the full value of the facilities/ work performed under this Contract/ construction. Such insurance shall include coverage for earthquake, landslide, flood, collapse, loss due to the results of faulty workmanship or design, and all other normally covered risks, and shall provide for losses to be paid to the CONTRACTOR, OWNER, and ENGINEER as their interests may appear.

The OWNER and ENGINEER, their officers, agents, and employees shall be named as additional insured's on the CONTRACTOR's and any SUBCONTRACTOR's Builders Risk All Risk insurance policies for any claims arising out of work performed under this Contract.

This insurance shall include a waiver of subrogation as to the ENGINEER, the OWNER, the CONTRACTOR, and their respective officers, agents, employees and SUBCONTRACTORS.

F. NO PERSONAL LIABILITY OF PUBLIC OFFICIALS

In carrying out any of the provisions hereof in exercising any authority granted by the Contract, there will be no personal liability upon any public official.

35. INDEMNITY

To the maximum extent permitted by law, the Contractor shall indemnify and defend the Owner and the Engineer, and their officers, employees, agents, and sub-consultants, from all claims and losses, including attorney's fees and litigation costs arising out of property losses or health, safety, personal injury, or death claims by the Contractor, its subcontractors of any tier, and their employees, agents, or invitees regardless of the fault, breach of Contract, or negligence of the Owner or Engineer, excepting only such claims or losses that have been adjudicated to have been caused solely by the negligence of the Owner or the Engineer and regardless of whether or not the Contractor is or can be named a party in a litigation.

36. EXCLUSION OF CONTRACTOR CLAIMS

In performing its obligations, the ENGINEER and its consultants may cause expense for the CONTRACTOR or its SUBCONTRACTORS and equipment or material suppliers. However, those parties and their sureties shall maintain no direct action against the ENGINEER, its officers, employees, agents, and consultants for any claim arising out of, in connection with, or resulting from the

engineering services performed or required to be performed.

37. TAXES AND CHARGES

The CONTRACTOR shall withhold and pay any and all sales and use taxes and all withholding taxes, whether State or Federal, and pay all Social Security charges and also all State Unemployment Compensation charges, and pay or cause to be withheld, as the case may be, any and all taxes, charges, or fees or sums whatsoever, which are now or may hereafter be required to be paid or withheld under any laws.

38. REQUIREMENTS OF STATE LAW FOR PUBLIC WORKS PROJECTS

When the Contract Documents concern public works of the state or any county, municipality, or political subdivision created by its laws, the applicable statutes shall apply. All parties to this Contract shall determine the contents of all applicable statutes and comply with their provisions throughout the performance of the Contract.

39. CODES, ORDINANCES, PERMITS AND LICENSES

The CONTRACTOR shall keep himself fully informed of all local codes and ordinances, as well as state and federal laws, which in any manner affect the work herein specified. The CONTRACTOR shall at all times comply with said codes and ordinances, laws, and regulations, and protect and indemnify the OWNER, the ENGINEER and their respective employees, and its officers and agents against any claim or liability arising from or based on the violation of any such laws, ordinances, or regulations. All permits, licenses and inspection fees necessary for prosecution and completion of the work shall be secured and paid for by the CONTRACTOR, unless otherwise specified.

40. SUPERINTENDENCE

The CONTRACTOR shall keep at the project site, competent supervisory personnel. The CONTRACTOR shall designate, in writing, before starting work, a project superintendent who shall be an employee of the CONTRACTOR and shall have complete authority to represent and to act for the CONTRACTOR. ENGINEER shall be notified in writing prior to any change in superintendent assignment. The CONTRACTOR shall give efficient supervision to the work, using his best skill and attention. The CONTRACTOR shall be solely responsible for all construction means, methods,

techniques, and procedures, and for providing adequate safety precautions and coordinating all portions of the work under the Contract. It is specifically understood and agreed that the ENGINEER, its employees and agents, shall not have control or charge of and shall not be responsible for the construction means, methods, techniques, procedures, or for providing adequate safety precautions in connection with the work under Contract.

41. RECEPTION OF ENGINEER'S COMMUNICATIONS

The superintendent shall receive for the CONTRACTOR all communications from the ENGINEER. Communications of major importance will be confirmed in writing upon request from the CONTRACTOR.

The ENGINEER may schedule project meetings for the purposes of discussing and resolving matters concerning the various elements of the work. Time and place for these meetings and the names of persons required to be present shall be as determined by the ENGINEER. CONTRACTOR shall comply with these attendance requirements and shall also require his SUBCONTRACTORS to comply.

42. SAFETY

The CONTRACTOR shall be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and property during performance of the work. This requirement shall apply continuously and not be limited to normal working hours. Safety provisions shall conform to U.S. Department of Labor (OSHA), and all other applicable federal, state, county, and local laws, ordinances, codes, and regulations. Where any of these are in conflict, the more stringent requirement shall be followed. The CONTRACTOR's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth therein.

The CONTRACTOR shall develop and maintain for the duration of this Contract, a safety program that will effectively incorporate and implement all required safety provisions. The CONTRACTOR shall appoint an employee who is qualified and authorized to supervise and enforce compliance with the safety program.

The duty of the ENGINEER to conduct construction review of the work does not include review or approval of the adequacy of the CONTRACTOR's safety program, safety supervisor, or any safety measures taken in, on, or

near the construction site.

The CONTRACTOR, as a part of his safety program, shall maintain at his office or other well-known place at the jobsite, safety equipment applicable to the work as prescribed by the aforementioned authorities, all articles necessary for giving first-aid to the injured, and shall establish the procedure for the immediate removal to a hospital or a doctor's care of persons (including employees) who may be injured on the jobsite.

If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the ENGINEER and the OWNER. In addition, the CONTRACTOR must promptly report in writing to the ENGINEER all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.

If a claim is made by anyone against the CONTRACTOR or any SUBCONTRACTOR on account of any accident, the CONTRACTOR shall promptly report the facts in writing to the ENGINEER, giving full details of the claim.

43. PROTECTION OF WORK AND PROPERTY

The CONTRACTOR shall at all times safely guard and protect from damage the OWNER's property, adjacent property, and his own work from injury or loss in connection with this Contract. All facilities required for protection by federal, state, or municipal laws and regulations and local conditions must be provided and maintained.

The CONTRACTOR shall protect his work and materials from damage due to the nature of the work, the elements, carelessness of other CONTRACTORS, or from any cause whatever until the completion and acceptance of the work. All loss or damages arising out of the nature of the work to be done under these Contract Documents, or from any unforeseen obstruction or defects which may be encountered in the prosecution of the work, or from the action of the elements, shall be sustained by the CONTRACTOR.

44. RESPONSIBILITY OF CONTRACTOR TO ACT IN AN EMERGENCY

In case of an emergency which threatens loss or injury of property, and/or safety of life, the CONTRACTOR shall act, without previous instructions from the OWNER or ENGINEER, as the situation may warrant. The

CONTRACTOR shall notify the ENGINEER thereof immediately thereafter. Any claim for compensation by the CONTRACTOR, together with substantiating documents in regard to expense, shall be submitted to the OWNER through the ENGINEER and the amount of compensation shall be determined by agreement.

45. MATERIALS AND APPLIANCES

Unless otherwise stipulated, the CONTRACTOR shall provide and pay for all materials, labor, water, tools, equipment, heat, light, fuel, power, transportation, construction equipment and machinery, appliances, telephone, sanitary facilities, temporary facilities and other facilities and incidentals necessary for the execution and completion of the work.

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of good quality. The CONTRACTOR shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

In selecting and/or approving equipment for installation in the Project, the OWNER and ENGINEER assume no responsibility for injury or claims resulting from failure of the equipment to comply with applicable federal, state, and local safety codes or requirements, or the safety requirements of a recognized agency, or failure due to faulty design concepts, or defective workmanship and materials.

46. CONTRACTORS' AND MANUFACTURERS' COMPLIANCE WITH STATE SAFETY, OSHA, AND OTHER CODE REQUIREMENTS

The completed work shall include all necessary permanent safety devices, such as machinery guards and similar ordinary safety items required by the state and federal (OSHA) industrial authorities and applicable local and national codes. Further, any features of the work subject to such safety regulations shall be fabricated, furnished, and installed (including OWNER-furnished equipment) in compliance with these requirements. CONTRACTORS and manufacturers of equipment shall be held responsible for compliance with the requirements included herein. CONTRACTORS shall notify all equipment suppliers and SUBCONTRACTORS of the provisions of this Article.

47. SUBSTITUTION OF MATERIALS

Except for OWNER-selected equipment items, and items where no substitution is clearly specified, whenever any

material, article, device, product, fixture, form, type of construction, or process is indicated or specified by patent or proprietary name, by name of manufacturer, or by catalog number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the material or process desired. This procedure is not to be construed as eliminating from competition other products of equal or better quality by other manufacturers where fully suitable in design, and shall be deemed to be followed by the words "or equal". The CONTRACTOR may, in such cases, submit complete data to the ENGINEER for consideration of another material, type, or process that shall be substantially equal in every respect to that so indicated or specified. Substitute materials shall not be used unless approved in writing. The ENGINEER will be the sole judge of the substituted article or material.

48. TESTS, SAMPLES, AND OBSERVATIONS

The CONTRACTOR shall furnish, without extra charge, the necessary test pieces and samples, including facilities and labor for obtaining the same, as requested by the ENGINEER. When required, the CONTRACTOR shall furnish certificates of tests of materials and equipment made at the point of manufacture by a recognized testing laboratory.

The OWNER, ENGINEER, and authorized government agents, and their representatives shall at all times be provided safe access to the work wherever it is in preparation or progress, and the CONTRACTOR shall provide facilities for such access and for observations, including maintenance of temporary and permanent access.

If the Specifications, laws, ordinances, or any public authority require any work, to be specially tested or approved, the CONTRACTOR shall give timely notice of its readiness for observations. If any work should be covered up without approval or consent of the ENGINEER, it shall, if required by the ENGINEER, be uncovered for examination at the CONTRACTOR's expense.

Reexamination of questioned work may be ordered by the ENGINEER, and, if so ordered, the work shall be uncovered by the CONTRACTOR. If such work is found to be in accordance with the Contract Documents, the OWNER will pay the cost of uncovering, exposure, observation, inspection, testing and reconstruction. If such work is found to be not in accordance with the Contract Documents, the CONTRACTOR shall correct

the defective work, and the cost of reexamination and correction of the defective work shall be paid by the CONTRACTOR.

49. ROYALTIES AND PATENTS

The CONTRACTOR shall pay all royalty and licenses fees, unless otherwise specified. The CONTRACTOR shall defend all suits or claims for infringement of any patent rights and shall save the OWNER and the ENGINEER harmless from any and all loss, including reasonable attorneys' fees, on account thereof.

50. CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

If the work should be stopped under an order of any court or other public authority for a period of more than 3 months, through no act or fault of the CONTRACTOR, its SUBCONTRACTORS, or respective employees or if the ENGINEER should fail to make recommendation for payment to the OWNER or return payment request to CONTRACTOR for revision within 30 days after it is due, or if the OWNER should fail to pay the CONTRACTOR within 30 days after time specified in Article PARTIAL PAYMENTS, any sum recommended by the ENGINEER, then the CONTRACTOR may, upon 15 days' written notice to the OWNER and the ENGINEER, stop work or terminate this Contract and recover from the OWNER payment for all acceptable work performed and reasonable termination expenses, unless said default has been remedied.

51. CORRECTION OF DEFECTIVE WORK DURING WARRANTY PERIOD

The CONTRACTOR hereby agrees to make, at his own expense, all repairs or replacements necessitated by defects in materials or workmanship, provided under terms of this Contract, and pay for any damage to other works resulting from such defects, which become evident within 2 years after the date of final acceptance of the work or within 2 years after the date of substantial completion established by the ENGINEER for specified items of equipment, or within such longer period as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. Un-remedied defects identified for correction during the warranty period but remaining after its expiration shall be considered as part of the obligations of the warranty. Defects in material, workmanship, or equipment which are remedied as a result of obligations of the warranty shall subject the remedied portion of the work to an extended warranty period of 2 years after the defect has been remedied.

The CONTRACTOR further assumes responsibility for a similar guarantee for all work and materials provided by SUBCONTRACTORS or manufacturers of packaged equipment components. The effective date for the start of the guarantee or warranty period for equipment qualifying as substantially complete is defined in Article SUBSTANTIAL COMPLETION, AND Article SUBSTANTIAL COMPLETION DATE, in these General Conditions.

The CONTRACTOR also agrees to hold the OWNER and the ENGINEER harmless from liability of any kind arising from damage due to said defects. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order for same from the OWNER. If the CONTRACTOR fails to make the repairs and replacements promptly, or in an emergency where delay would cause serious risk, or loss, or damage, the OWNER may have the defective work corrected or the rejected work removed and replaced, and the CONTRACTOR and his Surety shall be liable for the cost thereof.

PROGRESS OF THE WORK

52. BEGINNING OF THE WORK

Following execution of the Contract, the CONTRACTOR shall meet with the OWNER and ENGINEER relative to his arrangements for prosecuting the work.

53. SCHEDULES AND PROGRESS REPORTS

Prior to starting the construction, the CONTRACTOR shall prepare and submit to the ENGINEER, a progress schedule showing the dates on which each part or division of the work is expected to be started and finished, and a preliminary schedule for submittals. The progress schedule for submittals shall be brought up to date and submitted to the ENGINEER at the end of each month or at such other times the ENGINEER may request.

The CONTRACTOR shall forward to the ENGINEER, at the end of each month, an itemized report of the delivery status of major and critical items of purchased equipment and material, including shop drawings and the status of shop and field fabricated work. These progress reports shall indicate the date of the purchase order, the current percentage of completion, estimated delivery, and cause of delay, if any.

If the completion of any part of the work or the delivery of materials is behind the submitted progress schedule, the CONTRACTOR shall submit in writing a plan acceptable to the OWNER and ENGINEER for bringing the work up to schedule.

The OWNER shall have the right to withhold progress payments for the work if the CONTRACTOR fails to update and submit the progress schedule and reports as specified.

54. PROSECUTION OF THE WORK

It is expressly understood and agreed that the time of beginning, rate of progress, and time of completion of the work are the essence of this Contract. The work shall be prosecuted at such time, and in or on such part or parts of the Project as may be required, to complete the Project as contemplated in the Contract Documents and the progress schedule.

If the CONTRACTOR desires to carry on work at night or outside the regular hours, he shall give timely notice to the ENGINEER to allow satisfactory arrangements to be made for observing the work in progress.

55. OWNER'S RIGHT TO RETAIN IMPERFECT WORK

If any part or portion of the work completed under this Contract shall prove defective and not in accordance with the Drawings and Specifications, and if the imperfection in the same shall not be of sufficient magnitude or importance as to make the work dangerous or unsuitable, or if the removal of such work will create conditions

which are dangerous or undesirable, the OWNER shall have the right and authority to retain such work but will make such deductions in the final payment therefore as may be just and reasonable.

56. OWNER'S RIGHT TO DO WORK

Should the CONTRACTOR neglect to prosecute the work in conformance with the Contract Documents or neglect or refuse at his own cost to remove and replace work rejected by the ENGINEER, then the OWNER may notify the Surety of the condition, and after 10 days' written notice to the CONTRACTOR and the Surety, or without notice if an emergency or danger to the work or public exists, and without prejudice to any other right which the OWNER may have under Contract, or otherwise, take over that portion of the work which has been improperly or non-timely executed, and make good the deficiencies and deduct the cost thereof from the payments then or thereafter due the CONTRACTOR.

57. OWNER'S RIGHT TO TRANSFER EMPLOYMENT

If the CONTRACTOR should abandon the work or if he should persistently or repeatedly refuse or should fail to make prompt payment to SUBCONTRACTORS for material or labor, or to persistently disregard laws, ordinances, or to prosecute the work in conformance with the Contract Documents, or otherwise be guilty of a substantial violation of any provision of the Contract or any laws or ordinance, then the OWNER may, without prejudice to any other right or remedy, and after giving the CONTRACTOR and Surety 10 days' written notice, transfer the employment for said work from the CONTRACTOR to the Surety. Upon receipt of such notice, such Surety shall enter upon the premises and take possession of all materials, tools, and appliances thereon for the purpose of completing the work included under this Contract and employ by Contract or otherwise, any qualified person or persons to finish the work and provide the materials therefore, in accordance with the Contract Documents, without termination of the continuing full force and effect of this Contract. In case of such transfer of employment to such Surety, the Surety shall be paid in its own name on estimates according to the terms hereof without any right of the CONTRACTOR to make any claim for the same or any part thereof.

If, after the furnishing of said written notice to the Surety, the CONTRACTOR and the Surety still fail to make reasonable progress on the performance of the work, the OWNER may terminate the employment of the CONTRACTOR and take possession of the premises and

of all materials, tools, and appliances thereon and finish the work by whatever method he may deem expedient and charge the cost thereof to the CONTRACTOR and the Surety. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the expense of completing the Contract, including compensation for additional managerial and administrative services, shall exceed such unpaid balance, the CONTRACTOR and the Surety shall pay the difference to the OWNER.

58. DELAYS AND EXTENSION OF TIME

If the CONTRACTOR is delayed in the progress of the work by any act or neglect of the OWNER or the ENGINEER, or by any separate CONTRACTOR employed by the OWNER, or by strikes, lockouts, fire, adverse weather conditions not reasonably anticipated, or acts of Nature, and if the CONTRACTOR, within 48 hours of the start of the occurrence, gives written notice to the OWNER of the cause of the potential delay and estimate of the possible time extension involved, and within 10 days after the cause of the delay has been remedied, the CONTRACTOR gives written notice to the OWNER of any actual time extension requested as a result of the aforementioned occurrence, then the Contract time may be extended by change order for such reasonable time as the ENGINEER determines. It is agreed that no claim shall be made or allowed for any damages, loss, or expense which may arise out of any delay caused by the above referenced acts or occurrences other than claims for the appropriate extension of time.

No extension of time will be granted to the CONTRACTOR for delays occurring to parts of the work that have no measurable impact on the completion of the total work under this Contract. No extension of time will be considered for weather conditions reasonably anticipated for the area in which the work is being performed. Reasonably anticipated weather conditions will be based on official records of monthly precipitation and other historical data. Adverse weather conditions, if determined to be of a severity that would impact progress of the work, may be considered as cause for an extension of Contract completion time.

Delays in delivery of equipment or material purchased by the CONTRACTOR or his SUBCONTRACTORS, including OWNER-selected equipment shall not be considered as a just cause for delay, unless the OWNER determines that for good cause the delay is beyond the control of the CONTRACTOR. The CONTRACTOR shall be fully responsible for the timely ordering, scheduling, expediting, delivery, and installation of all

equipment and materials.

Within a reasonable period after the Contractor submits to the Owner a written request for an extension of time, the Engineer will present his written opinion to the Owner as to whether an extension of time is justified, and, if so, his recommendation as to the number of days for time extension. The Owner will make the final decision on all requests for extension of time.

59. DIFFERING SITE CONDITIONS

The CONTRACTOR shall promptly, and before the conditions are disturbed, give a written notice to the OWNER and ENGINEER of:

- A. Subsurface or latent physical conditions at the site which differ materially from those indicated in this contract,
- B. Unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract.

The ENGINEER will investigate the site conditions promptly after receiving the notice. If the conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performing any part of the work under this Contract, whether or not changed as a result of the conditions, and equitable adjustment shall be made under this Article and the Contract modified in writing accordingly.

No request by the CONTRACTOR for an equitable adjustment to the Contract under this Article will be allowed, unless the CONTRACTOR has given the written notice required; provided that the time prescribed above for giving written notice may be extended by the OWNER.

No request by the CONTRACTOR for an equitable adjustment to the Contract for differing site conditions will be allowed if made after final payment under this Contract.

60. LIQUIDATED DAMAGES

Should the CONTRACTOR fail to complete the work, or any part thereof, in the time agreed upon in the Contract or within such extra time as may have been allowed for delays by extensions granted as provided in the Contract, the CONTRACTOR shall reimburse the OWNER for the additional expense and damage for each calendar day,

Sundays and legal holidays included, that the Contract remains uncompleted after the Contract completion date. It is agreed that the amount of such additional expense and damage incurred by reason of failure to complete the work is the per-diem rate, as stipulated in the Bid. The said amount is hereby agreed upon as a reasonable estimate of the costs which may be accrued by the OWNER after the expiration of the time of completion. It is expressly understood and agreed that this amount is not to be considered in the nature of a penalty, but as liquidated damages which have accrued against the CONTRACTOR. The OWNER shall have the right to deduct such damages from any amount due, or that may become due the CONTRACTOR, or the amount of such damages shall be due and collectible from the CONTRACTOR or Surety.

61. OTHER CONTRACTS

The OWNER reserves the right to let other Contracts in connection with the work. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.

If any part of the work under this Contract depends for proper execution or results upon the work of any other CONTRACTOR, utility service company or OWNER, the CONTRACTOR shall inspect and promptly report to the ENGINEER in writing any patent or apparent defects to deficiencies in such work that render it unsuitable for such proper execution and results. The CONTRACTOR's failure to so report shall constitute acceptance of the work by others as being fit and proper for integration with work under this Contract, except for latent or non-apparent defects and deficiencies in the work.

62. USE OF PREMISES

The CONTRACTOR shall confine his equipment, the storage of materials and the operation of his workers to limits shown on the Drawings or indicated by law, ordinances, permits, or directions of the ENGINEER, and shall not unreasonably encumber the premises with his materials. The CONTRACTOR shall provide, at his own expense, the necessary rights-of-way and access to the work, which may be required outside the limits of the OWNER's property and shall furnish the ENGINEER copies of permits and agreements for use of the property outside that provided by the OWNER.

The CONTRACTOR shall not load nor permit any part of the structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part

of the work or adjacent property to stresses or pressures that will endanger it.

63. SUBSTANTIAL COMPLETION DATE

The ENGINEER may issue a written notice of substantial completion for the purpose of establishing the starting date for specific equipment guarantees, and to establish the date that the OWNER will assume the responsibility for the cost of operating such equipment. Said notice shall not be considered as final acceptance of any portion of the work or relieve the CONTRACTOR from completing the remaining work within the specified time and in full compliance with the Contract Documents. See SUBSTANTIAL COMPLETION under DEFINITIONS of these General Conditions.

64. PERFORMANCE TESTING

Operating equipment and systems shall be performance tested in the presence of the ENGINEER to demonstrate compliance with the specified requirements. Performance testing shall be conducted under the specified design operating conditions or under such simulated operating conditions as recommended or approved by the ENGINEER. Schedule such testing with the ENGINEER at least one week in advance of the planned date for testing.

65. OWNER'S USE OF PORTIONS OF THE WORK

Following issuance of the written notice of Substantial Completion, the OWNER may initiate operation of the facility. Such use shall not be considered as final acceptance of any portion of the work, nor shall such use be considered as cause for an extension of the Contract completion time, unless authorized by a Change Order issued by the OWNER.

66. CUTTING AND PATCHING

The CONTRACTOR shall do all cutting, fitting, or patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by work of other CONTRACTORS shown upon or reasonably implied by the Drawings.

67. CLEANING UP

The CONTRACTOR shall, at all times, keep property on which work is in progress and the adjacent property free from accumulations of waste material or rubbish caused by employees or by the work. Upon completion of the

construction, the CONTRACTOR shall remove all temporary structures, rubbish, and waste materials resulting from his operations.

PAYMENT

68. PAYMENT FOR CHANGE ORDERS

The OWNER's request for quotations on alterations to the work shall not be considered authorization to proceed with the work prior to the issuance of a formal Change Order, nor shall such a request justify any delay in existing work. Quotations for alterations to the work shall include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and profit. OWNER may require detailed cost data in order to substantiate the reasonableness of the proposed costs.

Any compensation paid in conjunction with the terms of a Change Order shall comprise total compensation due the CONTRACTOR for the work or alteration defined in the Change Order. By signing the Change Order, the CONTRACTOR acknowledges that the stipulated compensation includes payment for the work or alteration plus all payment for the interruption of schedules, extended overhead, delay, or any other impact claim or ripple effect, and by such signing specifically waives any reservation or claim for additional compensation in respect to the subject Change Order.

At the OWNER's option, payment or credit for any alterations covered by a Change Order shall be determined by one or a combination of the methods set forth in A, B, or C below, as applicable:

A. UNIT PRICES

Those unit prices stipulated in the Bid shall be utilized where they are applicable. In the event the Change Order results in a change in the original quantity that is materially and significantly different from the original bid quantity, a new unit price shall be negotiated upon demand of either party. Unit prices for new items included in the Change Order shall be negotiated and mutually agreed upon.

B. LUMP SUM

A total lump sum for the work negotiated and mutually acceptable to the CONTRACTOR and the OWNER.

Lump sum quotations for modifications to the work shall

include substantiating documentation with an itemized breakdown of CONTRACTOR and SUBCONTRACTOR costs, including labor, material, rentals, approved services, overhead, and profit, all calculated as specified under "C" below.

C. COST REIMBURSEMENT WORK

The term "cost reimbursement" shall be understood to mean that payment for the work will be made on a time and expense basis, that is, on an accounting of the CONTRACTOR's forces, materials, equipment, and other items of cost as required and used to do the work.

If the method of payment cannot be agreed upon prior to the beginning of the work, and the OWNER directs by written Change Order that the work be done on a cost reimbursement basis, then the CONTRACTOR shall furnish labor, and furnish and install equipment and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual cost of the following:

1. Labor including foremen for those hours they are assigned and participating in the cost reimbursement work (actual payroll cost, including wages, fringe benefits as established by negotiated labor agreements, labor insurance, and labor taxes as established by law). No other fixed labor burdens will be considered, unless approved in writing by the OWNER.
2. Material delivered and used on the designated work, including sales tax, if paid by the CONTRACTOR or his SUBCONTRACTOR.
3. Rental or equivalent rental cost of equipment, including necessary transportation for items having a value in excess of \$100.

Rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances shall not exceed the current rental rates prevailing in the locality. The rentals allowed for equipment will, in all cases, be understood to cover all fuel, supplies, repairs, and renewals, and no further allowances will be made for those items, unless specific agreement to that effect is made.
4. Additional bond, as required and approved by the OWNER.
5. Additional insurance (other than labor insurance) as required and approved by the OWNER.

In addition to items 1 through 5 above, an added fixed fee for general overhead and profit shall be negotiated and allowed for the CONTRACTOR (or approved SUBCONTRACTOR) actually executing the Cost Reimbursement work.

An additional fixed fee shall be negotiated and allowed the CONTRACTOR for the administrative handling of portions of the work that are executed by an approved SUBCONTRACTOR. No additional fixed fee will be allowed for the administrative handling of work executed by a SUBCONTRACTOR of a SUBCONTRACTOR, unless by written permission from the OWNER.

The added fixed fees shall be considered to be full compensation, covering the cost of general supervision, overhead, profit, and any other general expense. The CONTRACTOR's records shall make clear distinction between the direct costs of work paid for on a cost reimbursement basis and the costs of other work. The CONTRACTOR shall furnish the ENGINEER report sheets in duplicate of each day's cost reimbursement work no later than the working day following the performance of said work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the CONTRACTOR, SUBCONTRACTOR or other forces. The daily report sheets shall provide names or identifications and classifications of workers, the hourly rate of pay and hours worked, and also the size, type, and identification number of equipment and hours operated.

Material charges shall be substantiated by valid copies of vendors' invoices. Such invoices shall be submitted with the daily report sheets, or, if not available, they shall be submitted with subsequent daily report sheets. Said daily report sheets shall be signed by the CONTRACTOR or his authorized agent.

The OWNER reserves the right to furnish such materials and equipment as he deems expedient and the CONTRACTOR shall have no claim for profit or added fees on the cost of such materials and equipment. To receive partial payments and final payment for cost reimbursement work, the CONTRACTOR shall submit to the ENGINEER, detailed and complete documented verification of the CONTRACTOR's and any of his SUBCONTRACTORS' actual costs involved in the cost reimbursement work. Such costs shall be submitted within 30 days after said work has been performed.

69. PARTIAL PAYMENTS

A. GENERAL

Nothing in this Article shall be construed to affect the right, hereby reserved, to reject the whole or any part of the aforesaid work, should such work be later found not to comply with the provisions of the Contract Documents. All estimated quantities of work for which partial payments have been made are subject to review and correction on the final estimate. Payment by the OWNER and acceptance by the CONTRACTOR of partial payments based on periodic estimates of quantities of work performed shall not, in any way, constitute acceptance of the estimated quantities used as a basis for computing the amounts of the partial payments.

B. ESTIMATE

At least 30 days before each progress payment falls due, as specified in the Supplementary Conditions, the CONTRACTOR shall submit to the ENGINEER a detailed estimate of the amount earned during the preceding month for the separate portions of the work, and request payment. As used in this Article, the words "amount earned" means the value, on the date of the estimate for partial payment, of the work completed in accordance with the Contract Documents, and the value of approved materials delivered to the project site suitable stored and protected prior to incorporation into the work.

ENGINEER will, within 7 days after receipt of each request for payment, either indicate in writing a recommendation of payment or present the request to OWNER, or return the request to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may, within 7 days, make the necessary corrections and resubmit the request.

ENGINEER may refuse to recommend the whole or any part of any payment if, in his opinion, it would be incorrect to make such representations to OWNER. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended to such an extent as may be necessary in ENGINEER's opinion to protect the OWNER from loss because:

1. The work is defective, or completed work has been damaged requiring correction or replacement;
2. Written claims have been made against OWNER or Liens have been filed in connection with the work;

3. The Contract Price has been reduced because of Change Orders;
4. OWNER has been required to correct defective work or complete the work in accordance with Article OWNER'S RIGHT TO DO WORK;
5. Of CONTRACTOR's unsatisfactory prosecution of the work in accordance with the Contract Documents; or
6. CONTRACTOR's failure to make payment to SUBCONTRACTORS or for labor, materials, or equipment.

C. DEDUCTION FROM ESTIMATE

Unless modified in the Supplementary Conditions, deductions from the estimate will be as described below:

1. The OWNER will deduct from the estimate, and retain as part security, 10 percent of the amount earned for work satisfactorily completed. A deduction and retainage of 10 percent will be made on the estimated amount earned for approved items of material delivered to and properly stored at the jobsite but not incorporated into the work. When the work is 50 percent complete, the OWNER may reduce the retainage to 5 percent of the dollar value of all work satisfactorily completed to date provided the CONTRACTOR is making satisfactory progress and there is no specific cause for a greater retainage. The OWNER may reinstate the retainage up to 10 percent if the OWNER determines, at his discretion, that the CONTRACTOR is not making satisfactory progress or where there is other specific cause for such withholding.

D. QUALIFICATION FOR PARTIAL PAYMENT FOR MATERIALS DELIVERED

Unless modified in the Supplementary Conditions, qualification for partial payment for materials delivered but not yet incorporated into the work shall be as described below:

1. Materials, as used herein, shall be considered to be those items which are fabricated and manufactured material and equipment. No consideration shall be given to individual purchases of less than \$200 for any one item.

2. To receive partial payment for materials delivered to the site, but not incorporated in the work, it shall be necessary for the CONTRACTOR to include a list of such materials on the Partial Payment Request. At his sole discretion, the ENGINEER may approve items for which partial payment is to be made. Partial payment shall be based on the CONTRACTOR's actual cost for the materials as evidenced by invoices from the supplier. Proper storage and protection shall be provided by the CONTRACTOR, and as approved by the ENGINEER. Final payment shall be made only for materials actually incorporated in the work and, upon acceptance of the work, all materials remaining for which advance payments had been made shall revert to the CONTRACTOR, unless otherwise agreed, and partial payments made for these items shall be deducted from the final payment for the work.

3. CONTRACTOR warrants and guarantees that title to all work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER at the time of payment free and clear of all liens, claims, security interests, and encumbrances.

4. If requested by the ENGINEER, the CONTRACTOR shall provide, with subsequent pay requests, invoices receipted by the supplier showing payment in full has been made.

E. PAYMENT

After deducting the retainage and the amount of all previous partial payments made to the CONTRACTOR from the amount earned, the amount due will be made payable to the CONTRACTOR. Recommendations for payment received by the OWNER less than 9 days prior to the scheduled day for payment will not be processed or paid until the following month.

70. CLAIMS FOR EXTRA WORK

In any case where the CONTRACTOR deems additional time or compensation will become due him under this Contract for circumstances other than those defined in Article DELAYS AND EXTENSION OF TIME, the CONTRACTOR shall notify the ENGINEER, in writing, of his intention to make claim for such time or compensation before he begins the work on which he bases the claim, in order that such matters may be settled, if possible, or other appropriate action taken. The notice

of claim shall be in duplicate, in writing, and shall state the circumstances and the reasons for the claim, but need not state the amount. If such notification is not given or if the ENGINEER is not afforded proper facilities by the CONTRACTOR for keeping strict account of actual cost, then the CONTRACTOR hereby agrees to waive the claim for such additional time or compensation. Such notice by the CONTRACTOR, and fact that the ENGINEER has kept account of the cost as aforesaid, shall not in any way be construed as proving the validity of the claim.

No extension of time will be granted to the CONTRACTOR for delays resulting from extra work that have no measurable impact on the completion of the total Work under this Contract. Claims for additional time or compensation shall be made in itemized detail and submitted, in writing, to the OWNER and ENGINEER within 10 days following completion of that portion of the work for which the CONTRACTOR bases his claim. Failure to make the claim for additional compensation in the manner and within the time specified above shall constitute waiver of that claim. In case the claim is found to be just, it shall be allowed and paid for as provided in Article PAYMENT FOR CHANGE ORDERS.

71. RELEASE OF LIENS OR CLAIMS

The CONTRACTOR shall indemnify and hold harmless the OWNER from all claims for labor and materials furnished under this Contract. Prior to the final payment, the CONTRACTOR shall furnish to the OWNER, as part of his final payment request, a certification that all of the CONTRACTOR's obligations on the Project have been satisfied and that all monetary claims and indebtedness have been paid. The CONTRACTOR shall furnish complete and legal effective releases or waivers, satisfactory to the OWNER, of all liens arising out of or filed in connection with the work.

72. FINAL PAYMENT

Upon completion of all the work under this Contract, the CONTRACTOR shall notify the ENGINEER, in writing, that he has completed his part of the Contract and shall request final payment. Upon receipt of such notice the ENGINEER will inspect and, if acceptable, submit to the OWNER his recommendation as to acceptance of the completed work and as to the final estimate of the amount due the CONTRACTOR. Upon approval of this final estimate by the OWNER and compliance by the CONTRACTOR with provisions in Article RELEASE OF LIENS OR CLAIMS, and other provisions as may be applicable, the OWNER shall pay to the CONTRACTOR

all monies due him under the provisions of these Contract Documents.

73. NO WAIVER OF RIGHTS

Neither the inspection by the OWNER, through the ENGINEER or any of his employees, nor any order by the OWNER for payment of money, nor any payment for, or acceptance of, the whole or any part of the work by the OWNER or ENGINEER, nor any extension of time, nor any possession taken by the OWNER or its employees, shall operate as a waiver of any provision of this Contract, or any power herein reserved to the OWNER, or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach. Acceptance or final payment shall not be final and conclusive with regards to latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the OWNER's rights under the warranty.

74. ACCEPTANCE OF FINAL PAYMENT CONSTITUTES RELEASE

The acceptance by the CONTRACTOR of the final payment shall release the OWNER and the ENGINEER, as representatives of the OWNER, from all claims and all liability to the CONTRACTOR for all things done or furnished in connection with the work, and every act of the OWNER and others relating to or arising out of the work except claims previously made in writing and still unsettled. No payment, however, final or otherwise, shall operate to release the CONTRACTOR or his Sureties from obligations under this Contract and the Performance Bond, Payment Bond, and other bonds and warranties, as herein provided.

SUPPLEMENTARY CONDITIONS

The General Conditions are hereby revised as follows:

ARTICLE 9 "ENGINEER"

Add the following:

Wherever in these Documents the word "Engineer" appears, it shall be understood to mean the City of Key West, Director, Port & Marine Services or authorized representatives.

ARTICLE 12 "OWNER"

Add the following:

Wherever in these Documents the word "Owner" appears, it shall be understood to mean the City of Key West whose address is 1300 White Street, Key West, Florida 33040.

ARTICLE 32 "CONTRACTOR, AN INDEPENDENT AGENT"

Add the following:

Assignment of any part or the whole of this Contract shall be subject to review and approval of the City Commission.

PART 3

SPECIFICATIONS AND PHOTOGRAPHS

SUMMARY OF WORK

The City of Key West, Florida (City) plans to have COMPREHENSIVE CCTV outdoor video surveillance system designed and installed that will be the platform and basis for expanded services over a period of time. This solution will include:

1. A redundant radio ring as the outdoor network to support the camera locations plotted in this ITB.
2. A radio head end at fire station #2 that will interconnect via City provided fiber link to the main IT data center at City Hall, where the system servers will be located.
3. IP Video Surveillance cameras that meet the specific specifications detailed in this ITB.
4. The licensed capability to support (30) concurrent mobile users to view (2) multiple images on City provided mobile devices, accessed through the Cellular network to a City provided secure internet link at the main IT center at City Hall.
5. An HD work station, specified in this ITB that will be located in the dispatch center at the Key West Police Station, connected via City provided fiber link to the main IT data center at City Hall, where the solution servers will be located.
6. The City will provide all of the required LAN ports and Fiber uplinks at:
 - a. Fire Station #2
 - b. City Hall IT Data Center
 - c. City Police Department Dispatch Center

This ITB covers the requirements for a comprehensive, Redundant Radio Ring Network and Video Surveillance solution for this project. Standard operations for the City are that all of the cameras, radio links and servers will be as redundant as possible for true 24 hour/7 day a week service.

AREAS COVERED

There are two primary Operational Areas that the City requires coverage for:

- City Port areas
 1. Mallory Square
 2. Mole Pier Cruise Ship checkpoint/Outer Mole Pier docking area

- Duval Street intersections at
 1. Greene Street
 2. Caroline Street
 3. Eaton Street
 4. Petronia Street

Please refer to PDF Drawing in Attachment A for camera sites and radio pathways. Attachment B is a Google Map from Keys Energy which shows all of their power pole locations.

For the purpose of this ITB, assume there are locations on Keys Energy power poles that will be available. **Include in your bid response job labor hours for a site survey to verify radio mounting locations and clear pathways for the point to point radio network.**

CAMERA LOCATIONS

City Port Areas

1. Mallory Square

There is a brick arch feature on the southern side of this public square. It currently has metered power that supports two previous PTZ cameras and a point to point radio antenna. The brick arch feature will support (3) new cameras; (1) PTZ camera in the middle and (2) fixed cameras at each end of the arch feature, cross firing over each other to get a complete view of the main public area and docked cruise ships, including a fixed brick pavilion in the center of the Square that is used for the security check point for cruise ships that docket Mallory.

On top of the Arch feature there will be a two sided radio link; one side pointed to Whitehead St. and the other side pointed to Duval Street.

2. Outer Mole

- A. At the Truman Waterfront Park where Eaton St. terminates into the park, there is a light standard facing the dock area on the Outer Mole Pier. That light pole will support (1) PTZ camera that will show the entire dock area where Cruise Ships dock.
- B. The Port security building/checkpoint is located at the west end of the Truman Waterfront (East Quay Road), next to the security gate between the City property and the US Navy property. All Cruise Ship passengers driven off and on the Mole Pier in Conch Trains and Trolleys pass through this checkpoint. There will be (3) fixed cameras attached to this building, (2) cameras on the street side, at each end of the building, cross firing over each other so that all passengers in the hired vehicles are visible while seated inside the vehicle, and the third camera will face the security gate for additional views.

At this location, the solution shall include eight POE LAN ports sufficient to power all three cameras, provide an uplink to the point to point radio and provide a LAN port for a local City provided PC, so that the (3) fixed cameras on the building can be direct viewed inside the building in addition to the direct feed to the core NVR servers.

Duval Street Intersections

Each of the (4) intersections will have (1) PTZ camera and (2) fixed cameras.

SYSTEM REQUIREMENTS

The required system is for security hardware and services for the new video surveillance and Radio network technologies (SYSTEM). The City is seeking Bids that will provide the capabilities to monitor and track events, monitor defined event thresholds, and to view, record and archive digital surveillance video for the defined coverage areas. The system must incorporate technologies to optimize transmission on available bandwidth, and provide capabilities to utilize Internet Protocol (IP) for communication from outside the City data network via the Internet. **All equipment must be new and capable of operating in current environment.** The details of the System requirements and features are fully described in later sections of this specification. All devices identified within this specification shall be provided by security contractor unless otherwise identified. The intent of the Documents is to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any work, materials, or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for.

The Video Surveillance functionality expected is as follows:

- Video Surveillance will run 24 hours, seven days a week.
- Video images will be stored for a minimum of **30 days** and then overwritten. The system will provide the ability to manually archive and save additional data.
- NVR shall be configured to store images from all cameras calculated with 100% motion.
- The standard recording speed will be calculated at 30 frames per second (FPS) per camera.
- All cameras shown are outdoor rated, megapixel, and must include design that prevents any fogging inside the camera with either a design that includes the ability to charge the interior with Nitrogen gas or has a built-in heater and/or blower.
- The System Administrator will have full access to view any of the cameras, via software from their PC. The primary viewing position will be in the HD Work Station at the Police Department Dispatch Center.

The solution must include all necessary components to provide complete connectivity as requested. See below for detailed product specifications

PHYSICAL ENVIRONMENT

The SYSTEM (Main Control Equipment) will be physically located inside one of the Data Cabinets in the existing City Data Center shown on the attached drawings. It is required that all SYSTEM computer server equipment be rack mounted in standard 19" equipment cabinets. The City will provide the UPS for any servers in the City Data Center.

Common Work Results for Electronic Safety and Security Conductors and Cables for Electronic Safety and Security

All branch pathways and cabling from the devices (network, etc.) shall be provided by bidder including ALL of the CAT6 shielded cable and/or CAT6 shielded patch cables to the IP cameras. All other security cabling should be included in the pricing for this Bid.

Labor and materials for terminating, affixing, and dressing of all devices shall be provided by the bidder and shall be included as an “Installation and Labor Cost” item in the pricing section of this document.

Power supplies, devices and connections for networked cameras, camera housings, controllers/panels cabinets and housings shall be provided by the bidder. Additionally, any cabling required to locally interconnect SYSTEM panels (I/O, relay or network patch cables) shall be provided by the vendor. Pricing for these items shall be designated on a separate line item within the pricing section.

The vendor shall include installation and design for configuration of user groups, camera tours, and user database population/integration from the City data sources.

Pathways for Electronic Safety and Security

All pathways shall be coordinated with the City and Keys Energy. All electrical boxes and local power outlets shall be provided by the vendor. Termination labor and materials of any of the SYSTEM components within the provided boxes shall be the responsibility of the SYSTEM vendor and shall be designated within the pricing section of this document.

PRODUCT SPECIFICATION

The SYSTEM shall consist of the following Manufacturers specific products:

Video Surveillance System: Avigilon Control Center Enterprise Software Package
Avigilon Control Center Gateway Software Package

IP Camera types: PTZ and Mini-dome, see chart below:

Minimum camera model requirements (add (1) Axis HE Micro SDXC card 256GB per camera)

Brand	Outdoor Day/Night
PTZ all locations	
Axis	Q6055-S
FIXED at port areas	
Axis	Q3517-SLVE
FIXED on Duval Street	
Axis	Q1786-LE

PLEASE NOTE that the bidder MUST provide redundant storage servers for the entire VMS solution that includes the following minimum specifications:

1. Avigilon HD NVR4 Premium or better, rack mounted server, including;
2. Redundant power supplies
3. RAID 6 storage configuration with adequate storage for the image files detailed in this document

PLEASE NOTE that the bidder MUST provide the primary work station for the Police Department Dispatch Center:

1. Avigilon HD-RMWS3-2MN HD Work Station
2. Avigilon ACC-USB-JOY Joystick
3. (2) 32" 4K video monitors (LG or Samsung)

REDUNDANT RADIO RING NETWORK

The City has reviewed two different Radio systems for this project, they both have provided engineering designs for this project. The City wants the best technical solution to support network growth geographically and from 400 MB to 1 GB duplex throughput.

Siklu Communications

Project designed with EH-600TX-ODU-PoE and EH-614TX-ODU-PoE Devices

Proxim Wireless

Project designed with Tsunami QB-10150L-LINK-US Devices

BIDDER MUST INCLUDE MANUFACTURER PROFESSIONAL SERVICES SUPPORT FOR INSTALLATION.

The City has found an outdoor rated enclosure that shall be included in this project:

PLEASE NOTE the bidder will provide the dedicated Outdoor rated/ruggedized POE LAN switch to power and connect all of the cameras, and radio antennas and other required LAN ports for this system. See ClearSite PPU-POE below.

ClearSite Communications

Enclosure (1) PPU-1

(1) PPU-POE

Will be needed per camera location

(For the Security Building at the Outer Mole provide (2) PPU-POE units)

Keys Energy requires that ALL attachments to their power poles can ONLY be done with Stainless Steel straps.

VIDEO SYSTEM SPECIFICATIONS

The SYSTEM shall meet the specifications detailed above.

The Video Surveillance component of the SYSTEM shall provide monitoring of the following components:

- IP based Digital Video Management System
- IP Fixed Camera
- IP Performance rated PTZ Camera
- Video storage server (NVR)

A. Digital Video Management System (DVMS)

The DVMS shall provide a digital video recording solution with the following features and capabilities:

- The DVMS shall support Network Video Recorders (NVR) manufactured and supported by the DVMS manufacturer.

- Shall include licensing for 3 concurrent users and 3 client installations (if applicable). Addition of users must not require a migration to or the purchase of another level of software platform to accommodate user licenses
- Recorded or live video shall be available from any workstation on the network
- The NVR shall be capable of storing and archiving a minimum of **30-days** worth of recorded video and provide high resolution playback from the megapixel cameras.
- NVR shall be configured to store images from all cameras calculated with 100% motion
- The standard recording speed will be calculated at 30 frames per second (FPS) per camera.
- The NVR (primary server and/or servers) shall be capable of processing all of the raw image feeds from all of the cameras for this solution. Configure primary server with enough multiple 1 GB NIC ports to support proper throughput from the Core LAN switch.
- Vendor shall provide pricing for DVMS and NVR hardware, and minimum specifications and hardware requirements (owner may choose to purchase directly through current computer vendor)
- The DVMS shall support TCP/IP via Ethernet
- The DVMS shall be modular in scale and support an unlimited number of cameras
- The DVMS shall be able to simultaneously record and display live video and display recorded video
- Recording shall be both event based and continuous
- All recordings shall be marked and available for playback and or archiving at any time
- Up to 30 concurrent mobile users shall be able to access any video feed from any recorder on the network
- User defined profiles with the ability to enforce user authentication for individuals and groups that have access to view live or recorded video
- Independent camera configuration for compression, brightness, and contrast
- The video archive server software shall be independent, providing the ability to user standard storage devices
- The archive server software shall provide the ability to manage and store video information from multiple video recorders to a central location
- The DVMS shall support an advanced matrix view of on-line camera views
- Cameras shall have the ability to be placed into multiple camera groups
- Cameras shall be included within the graphical display maps

B. Cameras

The cameras specified:

- Minimum camera model requirements (add (1) Axis HE Micro SDXC card 256GB per camera)

Brand	Outdoor Day/Night
PTZ all locations	
Axis	Q6055-S
FIXED at port areas	

Axis	Q3517-SLVE
FIXED on Duval Street	
Axis	Q1786-LE

- **Cameras should provide image file that can be digitally manipulated for pan, tilt and zoom.**
- Cameras shall support day/night functionality
- Cameras shall support Wide Dynamic Range
- Cameras shall support a minimum of 2+ megapixel and HD 1080p video resolution
- Cameras shall support remote focus and auto Iris control
- Cameras shall per capable of recording up to 30 frames per second (fps) for all resolutions
- Cameras shall be Power over Ethernet (PoE) Class 3 compliant.
- Cameras shall have an integrated housing
- Shall support H.264, Motion JPEG or MPEG-4 video streams
- All cameras/housings shall include appropriate mounting brackets/hardware for affixing cameras to walls/ceilings
- Cameras shall be capable of receiving external triggers from third party devices as well as triggers from motion detection to initiate alarms and image transmission
- Shall provide light sensitivity to 1 lux
- Cameras shall support TCP/IP over Ethernet of at least 100baseTX (Fast Ethernet)

PLEASE NOTE the bidder will provide the dedicated POE LAN switch to power and connect all of the cameras, and required LAN ports for this system.

DOCUMENTATION TRAINING AND SUPPORT

A. System Documentation

- The vendor shall document each component of the SYSTEM
- During installation, the vendor shall maintain a separate hard copy set of drawings, elementary diagrams, and wiring diagrams of the SYSTEM to be used for record drawings. This set shall be kept up to date will all changes and additions to all components of the SYSTEM.
- The final as-built documentation shall be provided to the owner within 30-days of final SYSTEM cutover. Copies shall be provided in a hard copy drawing set, and on a USB flash drive.

B. Submittal Documentation

- Prior to installation of any component, the vendor must submit to the Owner a Submittal Package consisting of the following information:
 1. Shop Drawings – Indicate all system device locations on architectural floor plans (AutoCAD file V-12 or newer and PDF file).
 2. Full schematic wiring information for all devices
 3. Product Data – Data sheets specifying manufacturer’s technical data for all material and equipment. An initial binder organized by sections as outlined in this document shall be included prior to initial project start.
 4. The vendor shall document each component of the SYSTEM

5. The vendor must allow two weeks for the Owner's review and comments
6. Any deviations to the approved Submittal Package must be accompanied by written Owner approval

At system acceptance and turn over to service, the vendor shall provide one complete hard copy of all of the documentation requested above so that the end user will have one "cook book" to look at in the future for system use, including contact information for ongoing service and training support.

C. Contractor System Cutover Support

- The Contractor shall provide on-site support for the entire cut-over period. Assume a total of (1) complete cut-over.
- At a minimum, the Contractor must provide the Project Foreman. The Project Foreman must remain on-site until dismissed by the Owner. The Contractor's Project Manager must be on-call for the duration of the cutover to assist the Project Foreman in the event assistance is required.
- The Contractor's on-site personnel must be equipped with toners, testers, and other miscellaneous equipment

D. General Training Requirements

The following section defines the training requirements associated with the implementation of the proposed system. These training requirements are an integral part of the system Bid. All pricing associated with training is to be included in the response.

- All SYSTEM user training must be performed at the Owner's site.
- The successful bidder will be required to equip a customer-provided training room with the enough working equipment to facilitate group training. The bidder must describe this equipment configuration.
- The bidder is required to provide sufficient training personnel to train 8 users over a period of 1 day.
- User training must cover all basic and enhanced features associated with each type of instrument installed as part of this ITB.
- The bidder agrees to perform all training in a time frame set by the Owner and as close to the cutover date as possible.
- The bidder agrees to provide at least 2 original manufacturer-supplied training materials and user guides for all equipment covered in this ITB. One full printed copy and one electronic copy
- The bidder agrees to provide training to 2 customer trainers to assist the customer ongoing training of personnel ("train the trainer").

E. System Administration Training

- The bidder must provide complete system administration training on all proposed systems for two administrators.
- Define the administration training course, what topics are covered, the length of time of the training and where the training is to be held.

- Describe any Manufacturer provided training or certification programs available to Owner personnel. Provide details on classroom training locations available, self-paced training, or online training modules.

F. Cabling Quantities

The Bidder shall provide the cabling type (18/2, 18/4, 22/4, etc.) The Bidder will be providing and installing all CAT 6 shielded cable to the IP cameras, (Note for cameras where an additional low voltage 18/2 power cable is required, the bidder will be providing this cable and shall coordinate the installation with the cabling vendor. Category 6 cables to IP camera devices SHOULD be included in the bidder's quote. The Bidder shall provide all other quantities required to install the security system and devices as specified. This quantity shall be equal to the footages identified in the selected vendor's shop drawings. **Deviations and costs from these quantities and the actual pulled quantities by cabling contractor shall be the responsibility of the bidder.**

This cabling will be purchased and installed as described above. The quantities shall include footages required for appropriate service loops and dressing in all technology rooms and pathways to door controllers. Any cabling required to terminate devices at door locations (for example from controllers to contacts, door hardware etc.) need not be included, since this is the responsibility of the bidder.

PHOTOGRAPHS



Intersection of Duval and Caroline



Intersection of Duval Eaton

Intersection of Duval and Front





Intersection of Duval and Greene

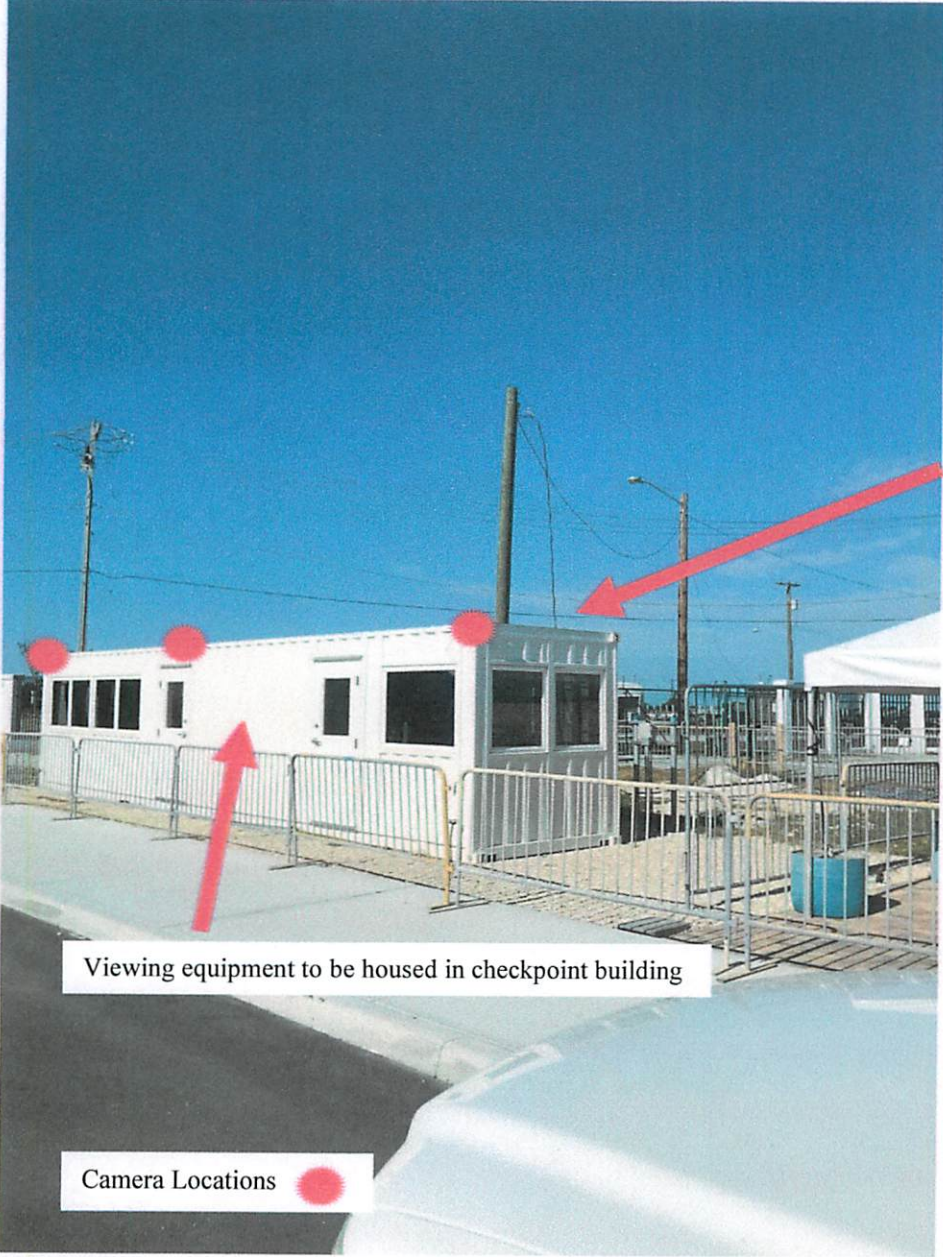


Intersection of Duval and Greene



Intersection of Duval and Petronia

Mole Pier Security Checkpoint



Mount cameras on existing building

Viewing equipment to be housed in checkpoint building

Camera Locations ●



Old cameras/antennas on arches at Mallory

Mallory Square Arches



Ocean Key House-Old location of antenna
that relayed video from Mallory to Outer
Mole Security Checkpoint



ATTACHMENT A



KEY WEST REDUNDANT RADIO RING PLAN

SCALE: 1/8" = 1'-0"

01

CITY HALL - NVR SERVERS, INTERNET CONNECTION & DEDICATED LINKS TO POLICE STATION & FIRE STATION #2

FIRE STATION #2 - RADIO HEAD-END & DEDICATED LINK TO CITY HALL

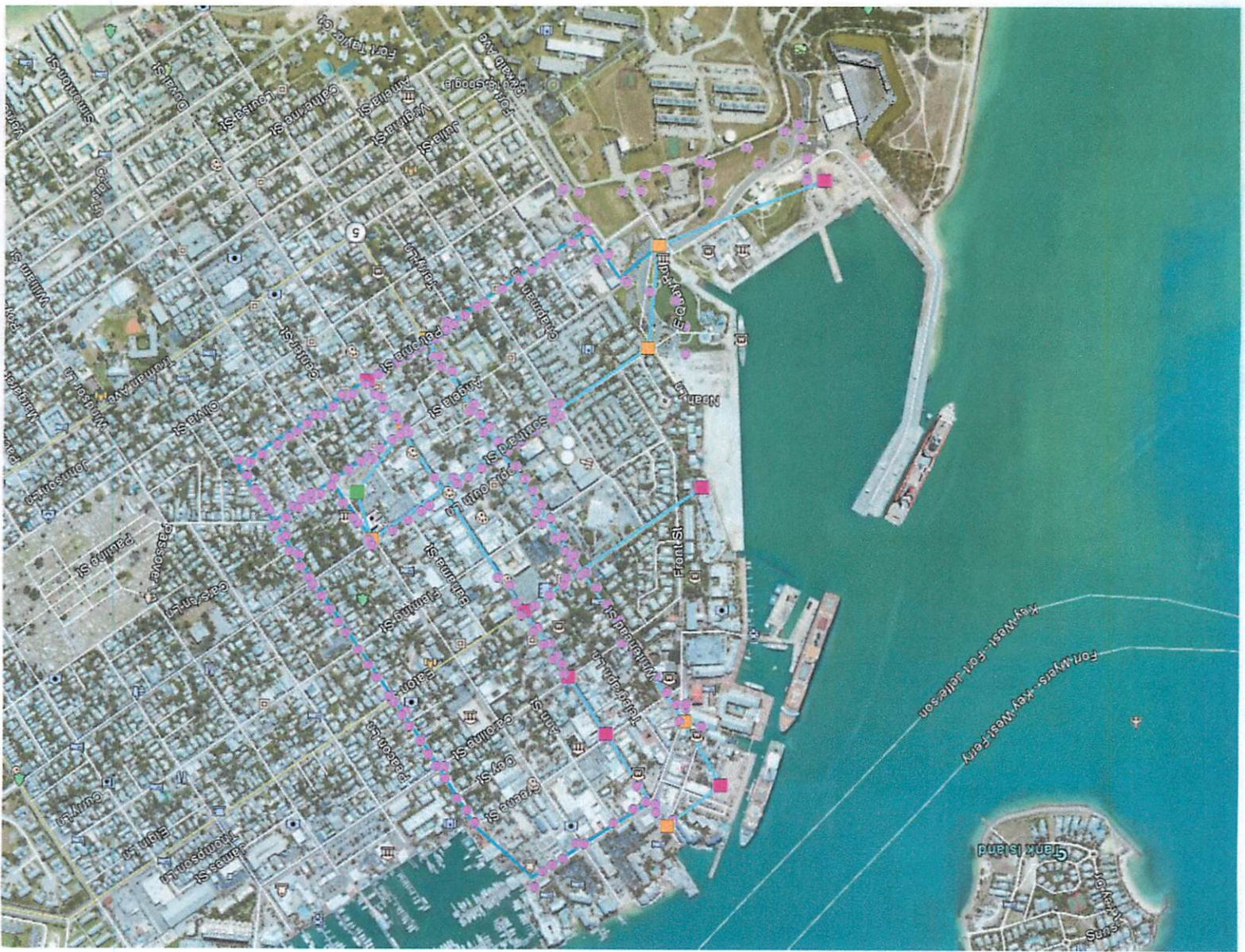


POLICE STATION - HD WORK STATION & DEDICATED LINK TO CITY HALL



- CITY HALL DATA CENTER
- CORE NETWORK / NVR SERVERS
- 2 GIG LINK (TRUNKED) (LAND BASED)
- TO NVR VLAN
- INTERNET ACCESS FOR (30) CONCURT
- RADIO HEAD END
- DIVERSE 1 GIG LINKS (4 GIG PORTS)
- TO FIRESTATION #2
- POLICE DEPT. DISPATCH
- 2 GIG LINK (TRUNKED) (LAND BASED)
- TO HD WORK STATION

ATTACHMENT B





Intersection of Duval Eaton

Intersection of Duval and Front





Intersection of Duval and Greene



Intersection of Duval and Greene




Intersection of Duval and Petronia

Mole Pier Security Checkpoint



Mount cameras on existing building

Viewing equipment to be housed in checkpoint building

Camera Locations 



Old cameras/antennas on arches at Mallory

Mallory Square Arches



Ocean Key House-Old location of antenna
that relayed video from Mallory to Outer
Mole Security Checkpoint



ATTACHMENT A



CITY OF KEY WEST
OUTDOOR SURVEILLANCE DATA NETWORK
REDUNDANT RADIO RING



TX DCS PSB #B18228

Issue Log		
No.	Description	Date
	PRESENTATION	10-31-18

KW.RRR
KEY WEST REDUNDANT
RADIO RING PLAN



CITY HALL DATA CENTER
CORE NETWORK / NVR SERVERS
2 GIG LINK (TRUNKED) (LAND BASED)
TO NVR VLAN
INTERNET ACCESS FOR (30) CONCURRENT MOBILE USERS

RADIO HEAD END
DIVERSE 1 GIG LINKS (4 GIG PORTS)
TO FIRESTATION #2

POLICE DEPT. DISPATCH
2 GIG LINK (TRUNKED) (LAND BASED)
TO HD WORK STATION

POLICE STATION - HD WORK STATION & DEDICATED LINK TO CITY HALL



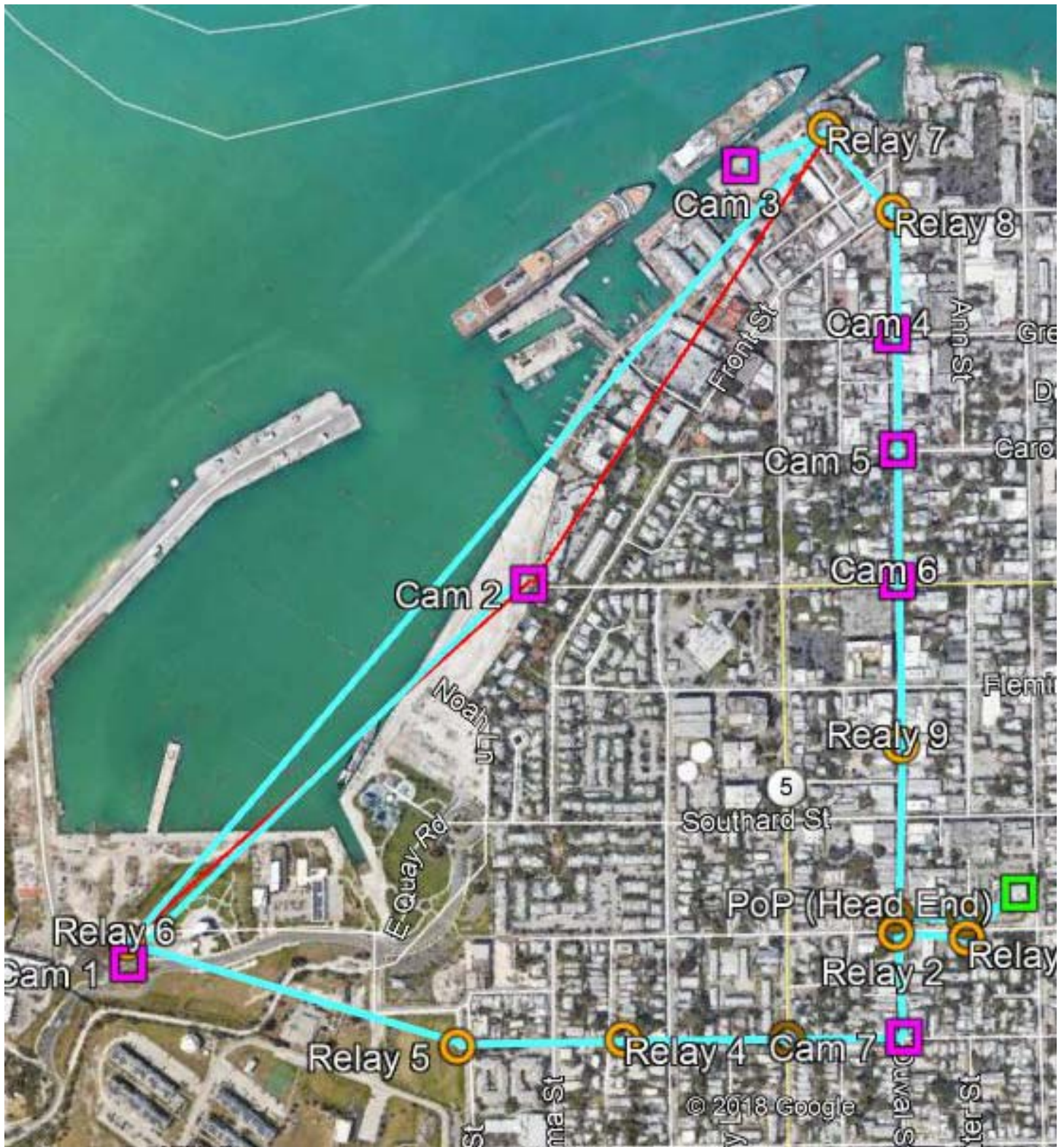
FIRE STATION #2 - RADIO HEAD-END & DEDICATED LINK TO CITY HALL

CITY HALL - NVR SERVERS, INTERNET CONNECTION & DEDICATED LINKS TO POLICE STATION & FIRE STATION #2

01 KEY WEST REDUNDANT RADIO RING PLAN
 SCALE: 1/8" = 1'-0"

ATTACHMENT B





Send this PDF to Sales at Avigilon (sales@avigilon.com) or your local Avigilon representative to receive a quote on this design.

Design Comments

City of Key West - NVR 1 - Storage Estimate

HD NVRs

NAME	MODEL	EXPANSIONS	STORAGE	TOTAL DATA	STORAGE TIME	STATUS
City of Key West - NVR 1	HD-NVR4-PRM-96TB-NA	n/a	96 TB	271.50 Mbps	40 days 20 hours	Valid

Cameras

NAME	MODEL	NVR	QTY	LENS	FL. (MM)	IPS	DUTY CYCLE	COMPRESSION	BITRATE
AXIS Q6055-S PTZ Camera	3rd party camera	City of Key West - NVR 1	6	N/A		30	24	Quality 6	11.50 Mbps
Axis Q3517-SLVE Port Location	3rd party camera	City of Key West - NVR 1	5	N/A		30	24	Quality 6	16.50 Mbps
Axis Q1786-LE Duval St	3rd party camera	City of Key West - NVR 1	8	N/A		30	24	Quality 6	15.00 Mbps

Scene Details

NAME	MOUNTING HEIGHT (FT)	TARGET HEIGHT (FT)	TARGET DISTANCE (FT)	SCENE WIDTH (FT)	MOUNTING ANGLE	MAXIMUM DISTANCE (FT)	PX/FT
AXIS Q6055-S PTZ Camera	8.5	6	16.5	16.8	64.9	56.1	114
Axis Q3517-SLVE Port Location	8.5	6	16.5	16.8	59.1	56.1	153.9
Axis Q1786-LE Duval St	8.5	6	16.5	16.8	59.1	56.1	153.9

City of Key West - NVR 1

Model: HD-NVR4-PRM-96TB-NA

Record Times

MODEL	QTY	TOTAL DAYS	FULL DAYS	HALF DAYS	QUARTER DAYS	LOW RES. DAYS
3rd party camera	6	40 days 20 hours	40 days 20 hours			0 days 0 hours
3rd party camera	5	40 days 20 hours	40 days 20 hours			0 days 0 hours
3rd party camera	8	40 days 20 hours	40 days 20 hours			0 days 0 hours

AVIGILON™ System Design Tool (SDT) v5.0



Reference Image



Reference images are captured under ideal conditions. Poor lighting, increased compression, or use of a lower quality lens will affect the quality of the images captured.

HD NVR4 Premium

Avigilon fourth generation HD Network Video Recorder Premium (NVR4) is our next generation of NVRs with the highest capacity, retention and throughput. It provides secure, reliable and scalable platforms for high performance end-to-end security solutions. Our network security recorders have Avigilon Control Center (ACC) and Avigilon Appearance Search[™] technology preloaded and configured for plug-and-play network video recording and management of multi-megapixel IP cameras, up to our industry-leading 7K (30 megapixel) HD Pro.



The Avigilon HD NVR4 Premium is a 2U rack mountable recorder specifically manufactured for the Avigilon ecosystem with the flexibility to expand your surveillance system. It leverages the full power of Avigilon Control Center (ACC) and Appearance Search technology to deliver the highest available throughput, retention, and availability in the NVR4 line. The NVR4 Premium can be used individually or as a cluster of NVRs designed for IP video and video analytics metadata storage. It's backed by the Avigilon three-year warranty, extendable up to five years, which provides businesses with support and onsite parts replacement for continuous recording and retention of video while minimizing disruptions to security operations.

The HD NVR4 Premium is an out-of-the-box, ready to deploy video recording platform designed for single site surveillance or to be distributed across multiple remote sites.

KEY FEATURES

- Configured for and preloaded with ACC[™] video management software
- Natively supports Avigilon Appearance Search technology
- Up to 1800 Mbps of total throughput – simultaneous recording, playback and live streaming
- Highly scalable and flexible capacity options — from 64TB to 157TB of recording for long-term video retention or high camera counts
- Hot-swappable components maintain video recording and playback operations even in the event of multiple simultaneous component failures
- Separate of operating system and video storage volumes to enable independent, non-disruptive maintenance
- An easy to access and maintain 2U rack mount chassis — includes a sliding rail kit and cable management system
- A three-year warranty with on-site parts replacement service

Specifications

SYSTEM		Video Management Software		Avigilon Control Center™ – compatible with Enterprise, Standard and Core editions	
Network Video Streaming Performance*	Network Connection	10 GbE - with multiple network connections	1 GbE		
	Recording Data Rate	Up to 1450 Mbps	Up to 600 Mbps		
	Playback and Live Streaming	Up to 350 Mbps (while simultaneously recording video)			
Recording Storage Capacity		Up to 180 TB raw, 157 TB effective (RAID 6)			
Hard Disk Drive Configuration		Video data — up to 18 x large form factor near-line SAS hard disk drives, hot-swappable, RAID 6 Operating system — 2 x M.2 SSD drives, RAID 1			
Network Interface		2 x 10 GbE SFP+ ports (transceivers not included) 2 x 1 GbE RJ-45 ports (1000Base-T)			
Memory		32GB DDR4			
Operating System		Microsoft Windows Server 2016			
Processor		Intel® Xeon®			
Video Outputs		VGA			
Local Viewing		No			
Out-of-band management		iDRAC9 Express			

* These performance figures are based on validation testing by Avigilon, using Avigilon Control Center software. For more information, contact Avigilon [Sales](#).

MECHANICAL		Form Factor		2U rack mount chassis	
Dimensions (LxWxH)	with bezel	751.3 mm x 482 mm x 86.8 mm; 29.58" x 18.98" x 3.41"			
	without bezel	737.5 mm x 482 mm x 86.8 mm; 29.04" x 18.98" x 3.41"			
Weight		46.3 kg (102 lbs) when fully populated with hard drives			

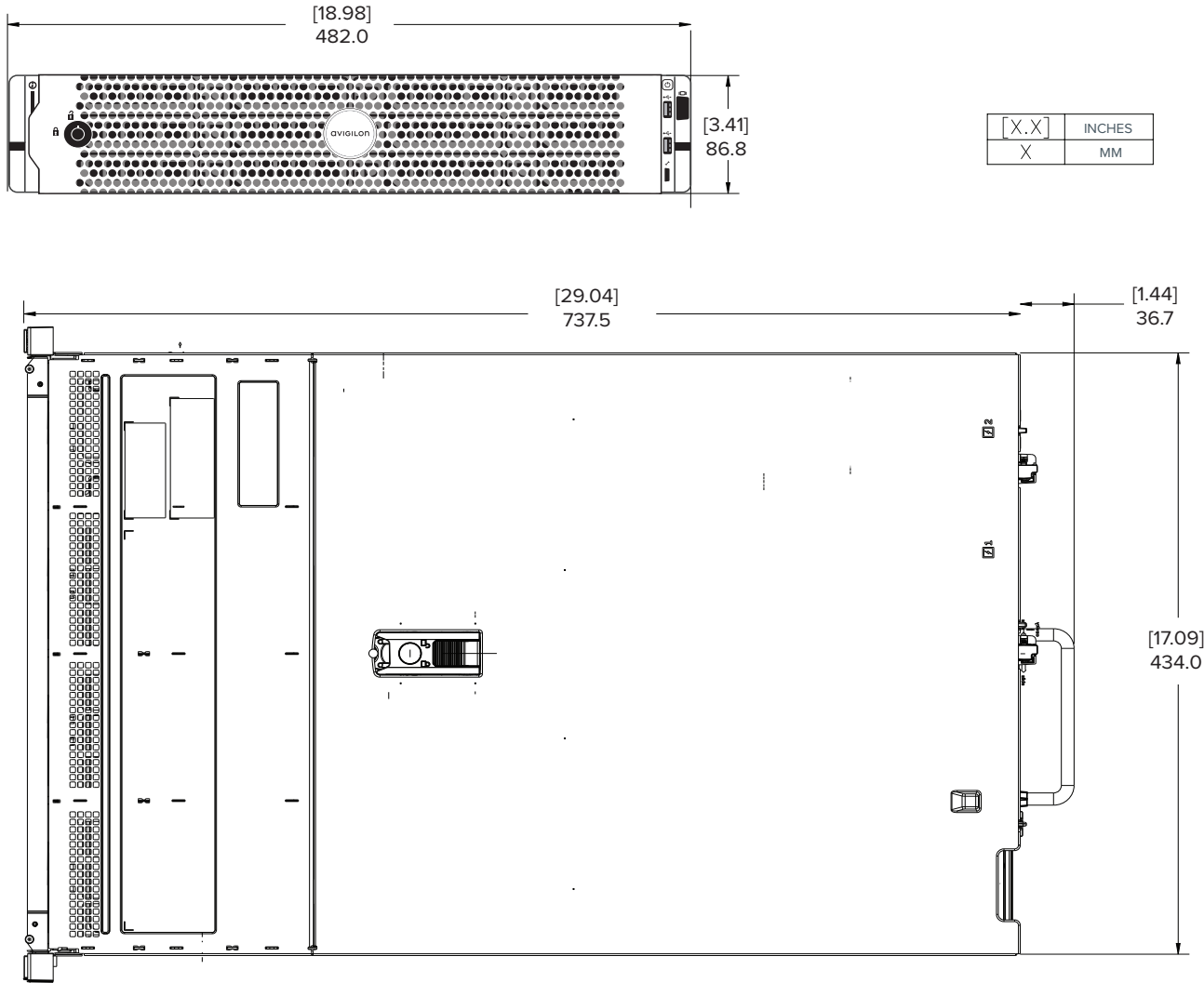
ELECTRICAL		Power Input		100 to 240 VAC, 50/60 Hz, auto-switching	
Power Supply		80 Plus rating redundant, hot-swappable			
Power Consumption		Average: 429 W (1+1) (1463.8 BTU/h), Maximum: 750 W (2559.1 BTU/h)			

ENVIRONMENTAL		Operating Temperature		10° C to 35° C (50° F to 95° F)	
Storage Temperature		-40° C to 65° C (-40° F to 149° F)			
Humidity		10% to 80% relative humidity with 29°C (84.2°F) maximum dew point			
Operating Vibration		0.26 Grms at 5 Hz to 350 Hz			
Storage Vibration		1.88 Grms at 10 Hz to 500 Hz for 15 min			
Operating Shock		Six consecutively executed shock pulses in the positive and negative x, y, and z axes of 6 G for up to 11ms			
Storage Shock		Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for up to 2 ms			
Max. Operating Altitude		3,048 m (10,000 ft)			
Storage Altitude		12,000 m (39,370 ft)			

SUPPLIED ACCESSORIES		Rack Rail System		Sliding rail system with cable management arm. Supports:	
		<ul style="list-style-type: none"> • Tool-less mounting in 19"-wide EIA-310-E compliant square hole and unthreaded round-hole 4-post racks • Tooled mounting in threaded hole 4-post racks 			
Bezel		1, front			
Power Cords		2			

CERTIFICATIONS		Certifications		UL, cUL, CE, BIS, BSMI, CCC, EAC, KC, NOM, NRCS, VCCI, RCM	
Safety		EN 60950-1:2006 / A1:2009 / A1:2010 / A12:2011 / A2:2013; UL/CSA/IEC 60950-1, 2 Ed + Am 1: 2009 + Am 2: 2013			
Electromagnetic Emissions		US CFR Title 47, FCC Part 2, 15; Canadian ICES-003(A) Issue 6; EN 55032:2012/ EN 55032:2015/ CISPR 32:2012/ CISPR 32:2015 (Class A); EN 61000-3-2:2014/ IEC 61000-3-2:2014 (Class D); EN 61000-3-3:2013/ IEC 61000-3-3:2013			
Electromagnetic Immunity		EN 55024:2010+A1:2015/CISPR 24:2010 + A1:2015			
Energy		Commission Regulation (EU) No. 617/2013			
ROHS		EN 50581:2012			

Outline Dimensions



Ordering Information

HD-NVR4-PRM-64TB	64 TB HD NVR4 Premium with Microsoft Windows Server 2016 Avigilon Control Center
HD-NVR4-PRM-96TB	96 TB HD NVR4 Premium with Microsoft Windows Server 2016 Avigilon Control Center
HD-NVR4-PRM-128TB	128 TB HD NVR4 Premium with Microsoft Windows Server 2016 Avigilon Control Center
HD-NVR4-PRM-157TB	157 TB HD NVR4 Premium with Microsoft Windows Server 2016 Avigilon Control Center
Avigilon Control Center licenses must be purchased separately. Avigilon Appearance Search Capacity Up to 100 cameras requires enterprise edition ACC	
HD-NVR4-PRM-2NDPS-AU	Redundant, hot-swappable power supply, for AU
HD-NVR4-PRM-2NDPS-EU	Redundant, hot-swappable power supply, for EU
HD-NVR4-PRM-2NDPS-NA	Redundant, hot-swappable power supply, for NA
HD-NVR4-PRM-2NDPS-UK	Redundant, hot-swappable power supply, for UK
HD-NVR4-SFPPLUS-DA	SFP+ 10GbE Twinax Direct Attach Cable 3m
HD-NVR4-SFPPLUS-SR	SFP+ 10GBASE-Short Range Transceiver



Avigilon Control CenterTM 6 Software



ACCTM software is easy-to-use video management software that optimizes the way security professionals manage and interact with high-definition video. It efficiently captures and stores high-definition video, while intelligently managing bandwidth and storage using our patented High Definition Stream Management (HDSM)TM technology. ACC 6 software combines an intuitive interface with advanced search functions called Avigilon Appearance SearchTM video analytics technology and Unusual Motion Detection (UMD). Avigilon Appearance Search technology and UMD are sophisticated deep learning artificial intelligence (AI) search engines that enable users to quickly locate a specific person or vehicle of interest or identify motion anomalies across all sites.



RECORDING NVR PLATFORMS PURPOSE-BUILT FOR ACC SOFTWARE AND AVIGILON APPEARANCE SEARCH TECHNOLOGY

ACC software is pre-installed and configured on HD Video Appliances, HD Network Video Recorders (NVRs), HD NVR Workstations, ACC Edge Solution (ES) HD Recorders, ACC ES Analytics Appliances and the H4 ES camera line. It also works as a stand-alone software, to meet the needs of a wide variety of installations. Our NVRs come pre-installed with a GPU to enable our patented Avigilon Appearance Search technology.

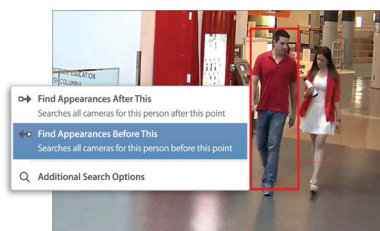


SELF-LEARNING VIDEO ANALYTICS

ACC video management software enables analytics events and alarms to be viewed and searched through an intuitive user interface. Real-time events and forensic capabilities detect and notify scene changes and rules violations.

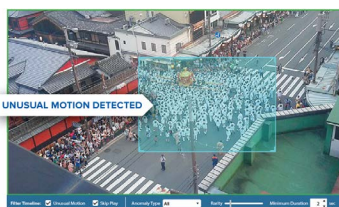
AVIGILON APPEARANCE SEARCH TECHNOLOGY

Avigilon Appearance Search technology is a sophisticated AI search engine for video data that incorporates the characteristics of a person's face. It sorts through hours of footage with ease, to quickly locate vehicles of interest or people even if items such as their clothing change over time across an entire site with ease. Using Avigilon Appearance Search technology can dramatically improve incident response time and enhance forensic investigations by allowing operators to build robust video evidence and create a powerful narrative of events. Avigilon Appearance Search technology permits users to initiate a search for a person by selecting certain specific physical descriptions. Confirmed matches can now be used to initiate additional searches from other ACC sites.



UNUSUAL MOTION DETECTION

UMD is an advanced artificial intelligence (AI) technology that brings a new level of automation to surveillance. Without any predefined rules, UMD technology continuously learns what typical activity in a scene looks like, and then detects and records motion anomalies. UMD is supported by the H4A, H4 SL and H4 Mini Domes camera lines.



Advanced Avigilon Control Center Features



HDSM™ Technology

Efficiently compresses and preserves image quality while intelligently managing HD image transmission throughout the Avigilon system — sending only the requested portions of captured images to operator workstations.



HDSM SmartCodec™ Technology Support

Avigilon HDSM SmartCodec technology automatically optimizes compression levels for regions in a scene, to maximize bandwidth while still maintaining image quality.



Avigilon Appearance Search Technology

Allows you to quickly search recorded video to find instances of a person or vehicle across all sites using cameras with Avigilon self-learning analytics. Search for a person by selecting specific physical descriptions, including upper lower clothing color, hair color and gender.



Intelligent Search

Powerful search tools enable you to quickly search recorded video for motion, the presence of classified objects (people or vehicles), background changes in the scene (thumbnail search), and for events.



Simple Camera and Server Installation

Plug-and-play capabilities for NVRs and cameras that automatically identify themselves on the network, without manual configuration or searching.



Avigilon Presence Detector™ Support

The Avigilon Presence Detector (APD) sensor is a small form factor impulse radar device with self-learning radar analytics that accurately detects the presence of a person even if they have stopped moving or are hidden. It has the ability to detect presence through blankets, cardboard, wood and drywall.



License Plate Recognition (LPR) Analytics

ACC 6.10 and above feature an upgraded LPR analytics engine with easy configuration and improved accuracy for faster security response. Multiple license match lists can each trigger a unique ACC rule on match.



ACM™-ACC interoperability

Receives, processes, and acts on ACM door events, hardware input events, and access grants, enabling operators to unlock access doors directly from a camera view. Identity Verification enables users to see ACM credentials dynamically displayed with ACC camera views. Identity Search enables users to visually verify access events, and initiate an Appearance Search across the entire site for the same person.



Alarm Escalation

Allows the creation of complete end-to-end workflows for the monitoring, assignment, and acknowledgement of alarms.



ACC Mobile Software

Push alarm notifications, live and recorded alarm video, audio talkdown, self-learning video analytics overlays, and digital output triggers for Android™ and iOS mobile devices.



Detailed Management, Monitoring, and Reporting of System Status and Security

Detailed logs of storage, network, and overall system status to ensure the highest possible system uptime for critical applications.



POS Transaction Engine

Link HD surveillance footage (viewed instantly) with transaction data to address compliance requirements and reduce shrinkage and theft.



Scalable Integration with External Systems

Distributed architecture features .NET-based and REST-based APIs that can easily be integrated with other systems, such as access control and building management.



ONVIF® Profile S Conformant VMS

ONVIF profile S conformance ensures interoperability between IP based ONVIF security devices regardless of manufacturer.



Unusual Motion Detection

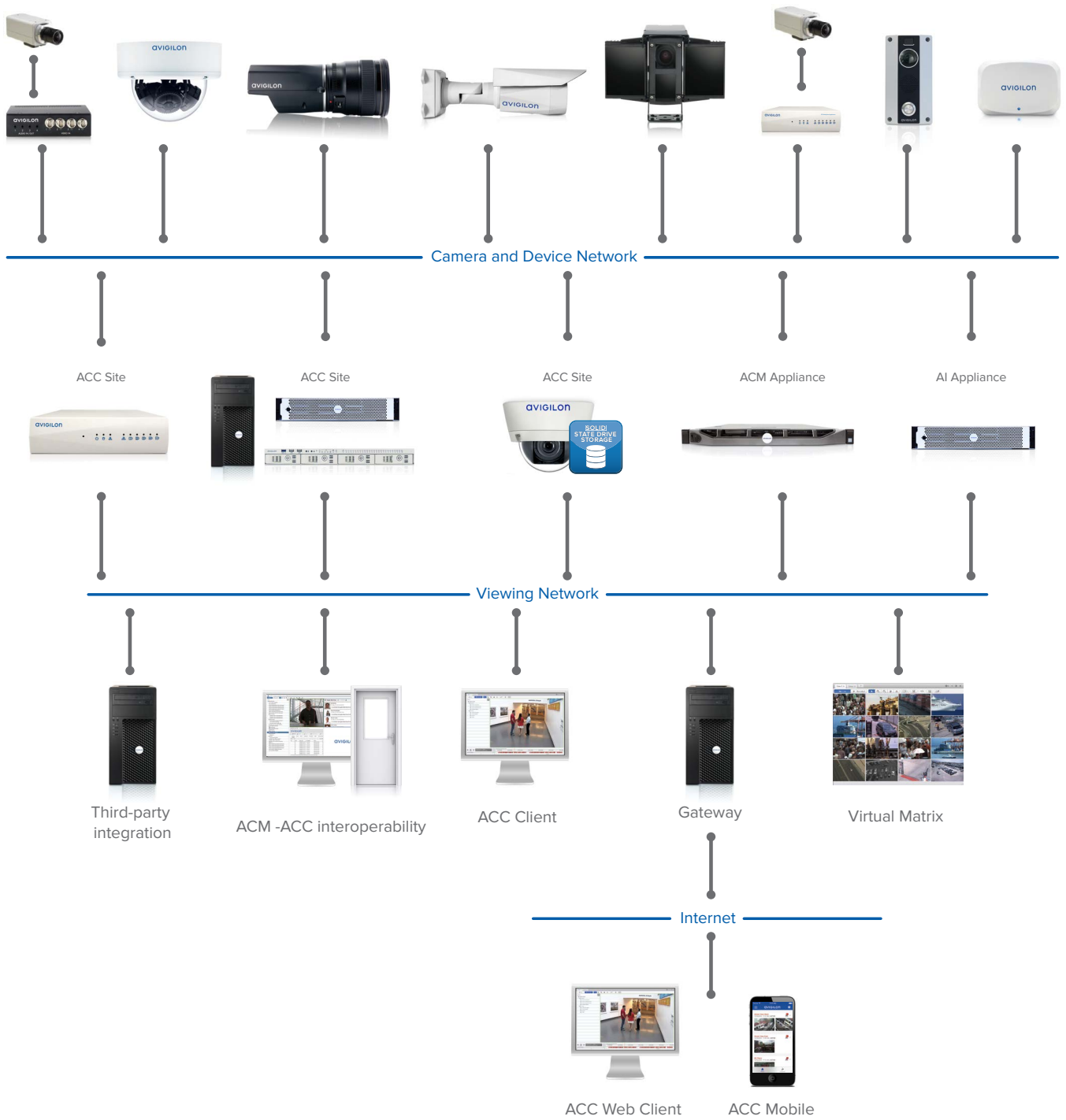
UMD enables fast video search and is designed to reduce hours of work to minutes by narrowing potentially thousands of motion events to a handful. This allows operators to focus their attention on video footage needing further investigation.



H4 Video Intercom Support

Video Intercom support provides operators with visual and audio verification of visitors. The H4 Video Intercom integration uses wide dynamic range and echo canceling technologies for clear viewing and two-way communication with visitors.

System Architecture



Core, Standard & Enterprise

To create a system most suited for your surveillance needs, the Avigilon Control Center software is offered in three editions: Core, Standard and Enterprise. The Enterprise edition includes more advanced features for a sophisticated solution, whereas the Standard edition is used for more focused needs or for those looking to transition to HD surveillance in a cost-effective way. ACC Core software is an entry-level version of our award-winning software that delivers advanced high definition surveillance capabilities, ease of use, and superior image quality to smaller implementations. No matter what the size of your installation, you can customize a solution that is right for you.



SYSTEM	CORE	STANDARD	ENTERPRISE
Number of cameras per server	24	75	300+
Number of cameras per site	24	75	10 000+
Number of servers per site	1	1	100+
Number of client licenses per server	2	10	Unlimited
High Definition Stream Management (HDSM) Technology	Yes	Yes	Yes
HDSM SmartCodec Technology Support	Yes	Yes	Yes
Dual Streaming for ONVIF compliant cameras	Yes	Yes	Yes
DEVICE SUPPORT	CORE	STANDARD	ENTERPRISE
Automatic device discovery	Yes	Yes	Yes
Third-party IP cameras & encoders	Yes	Yes	Yes
HD Pro cameras	No	No	Yes
Avigilon Presence Detector (APD) sensor	Yes	Yes	Yes
H4 HD cameras with self-learning video analytics	Yes	Yes	Yes
HD cameras with self-learning video analytics	Yes	Yes	Yes
HD Micro Dome, HD Multisensor, HD Panoramic, HD PTZ, IR PTZ, H4 Fisheye, H4 SL cameras, H4 Mini Dome	Yes	Yes	Yes
H4 Video Intercom	Yes	Yes	Yes
ONVIF compliant cameras & encoders	Yes	Yes	Yes
Avigilon encoders	Yes	Yes	Yes
Avigilon Artificial Intelligence Appliance	No	No	Yes
H.264 support	Yes	Yes	Yes
MPEG4 support	Yes	Yes	Yes
MJPEG support	Yes	Yes	Yes
JPEG2000 support	Yes	Yes	Yes
CLIENT	CORE	STANDARD	ENTERPRISE
Powerful, easy-to-use client interface	Yes	Yes	Yes
Video analytics overlays (Self-learning video analytics, Unusual Motion Detection)	Yes	Yes	Yes
Joystick support	Yes	Yes	Yes
ACC Mobile 2 app / HTML5 Web Client / Gateway	Yes	Yes	Yes
ACC Mobile 3 Preview app / Web Endpoint including mobile alarm notifications	Yes	Yes	Yes
Saved views	No	Yes	Yes
Maps with configurable icons and camera thumbnail previews	No	Yes	Yes
Web pages	No	Yes	Yes
Active Directory import	No	No	Yes
Windows user authentication	No	No	Yes
Two Factor Authentication	Yes	Yes	Yes
Password strength meter	Yes	Yes	Yes
Editable Site View	Yes	Yes	Yes
Intelligent Virtual Matrix	No	No	Yes
Collaborative investigations	No	No	Yes
Multi-camera export with optional password protection	Yes	Yes	Yes
Multi-camera privacy blurred export from Appearance Search	No	No	Yes
Live export	Yes	Yes	Yes
Hourly configurable recording schedule	Yes	Yes	Yes

SEARCHING	CORE	STANDARD	ENTERPRISE
Avigilon Appearance Search Technology	No	No	Yes
Search for a person by selecting specific physical descriptions (Gender, Hair color, Upper body clothing color, Lower body clothing color)	No	No	Yes
Search for a person by Identity supplied by ACM	No	Yes	Yes
Unusual Motion Detection Timeline filtering with Skip Play	Yes	Yes	Yes
Intelligent motion search	Yes	Yes	Yes
Thumbnail search	Yes	Yes	Yes
Event search	Yes	Yes	Yes
POS transaction search	No	Yes	Yes
Alarm search	No	No	Yes
License plate event search	No	No	Yes

ADD-ON MODULES AND INTEGRATIONS	CORE	STANDARD	ENTERPRISE
Point of Sale Transaction Engine	No	Yes	Yes
Avigilon developed and supported integrations	No	Yes*	Yes
3rd party system integrations	No	Yes	Yes

*CommScope iPatch, RS2 AccessIt, DDS Amadeus 5 and DSX only

AVIGILON'S ACCESS CONTROL MANAGER (ACM) AND ACC SYSTEM INTEROPERABILITY	CORE	STANDARD	ENTERPRISE
ACM system door and panel input event triggers	No	Yes	Yes
ACM system door access grants	No	Yes	Yes
ACM system shared operator access	No	Yes	Yes
ACM Identity Verification	No	Yes	Yes
ACM Identity Search	No	Yes	Yes

ADDITIONAL FEATURES	CORE	STANDARD	ENTERPRISE
E-Mail event notification (motion & system event)	Yes	Yes	Yes
Central station notifications including ANSI/SIA DC-09-2013	No	Yes	Yes
Digital input email trigger	No	Yes	Yes
Manual digital output trigger	No	Yes	Yes
Audio recording	No	Yes	Yes
Audio output	No	Yes	Yes
Rule triggers	No	51	Unlimited
Avigilon Presence Detector event trigger	No	Yes	Yes
Self-learning video analytics event configuration	No	Yes	Yes
Avigilon Artificial Intelligence Appliance analytics configuration	No	No	Yes
Redundant recording	No	No	Yes
Failover connections	No	No	Yes
ACC Client alarm notifications and escalation	No	No	Yes
One-time Video Archive	No	No	Yes
Tiered Storage Management with Continuous Archive	No	No	Yes
License Plate Recognition with multiple match lists	No	No	Yes
Two person authenticated recorded video viewing	Yes	Yes	Yes
Camera Replacement	Yes	Yes	Yes
Standby/Privacy mode for cameras	No	Yes	Yes

For the most current list of integrations and add-ons supported by Avigilon Control Center software, please visit avigilon.com.

System Requirements

NOTE: For all Windows versions, it is recommended that the latest Microsoft service pack is deployed. NVR recording throughput and retention times can vary according to the number of cameras, camera resolution, estimated percent of motion, continuous recording settings and predefined retention period. For full server performance, choose an Avigilon Certified Solution option.

AVIGILON CONTROL CENTER CLIENT SOFTWARE

AVIGILON CERTIFIED SOLUTIONS	DISPLAY MODEL NUMBER	KEY FEATURES
2 Monitor Professional High Performance Remote Monitoring Workstation	HD-RMWS3-2MN	<ul style="list-style-type: none"> • Preloaded with Avigilon Control Center (ACC) Client software. • Supports high resolution monitors. • Includes the adapters and accessories for quick deployment. • Avigilon warranty and support included.
4 Monitor Professional High Performance Remote Monitoring Workstation	HD-RMWS4-4MN	
SOFTWARE SYSTEM REQUIREMENTS	MINIMUM	RECOMMENDED
Operating System	Windows 7 (32-bit or 64-bit), Windows 8.1 (32-bit or 64-bit) or Windows 10 (32-bit or 64-bit) Microsoft .NET 4.6.2	Windows 10 (64-bit) Microsoft .NET 4.6.2
Processor	Intel® dual-core CPU (2.0 GHz)	Intel® Core™ i5 (Quad-core, 3.3 GHz)
System RAM	4 GB DDR3	8 GB DDR4
Video Card	PCI Express, DirectX 10.0 compliant with 256 MB RAM	NVIDIA® Quadro P620
Network Interface	1 Gbps	1 Gbps
Hard Disk Space	500 MB	500 MB

AVIGILON CONTROL CENTER SERVER SOFTWARE

AVIGILON CERTIFIED SOLUTIONS	DISPLAY MODEL NUMBER	KEY FEATURES
HD NVR Premium	HD-NVR4-PRM-64TB / 96TB / 128TB / 157TB	<ul style="list-style-type: none"> • Optimized for video surveillance applications in a 24/7/365 environment • ACC Server software is preinstalled, configured and enhanced for optimal system compatibility • Certified for the Avigilon surveillance environment - ACC software, LPR, Mobile Gateway, Analytics, HDSM and 1-30MP cameras • High throughputs of up to 1800 Mbps • Documented network architecture for a wide variety of applications • Avigilon enhanced warranty and premium support included • Access to Avigilon System Design Tool (SDT) to calculate storage requirements
HD NVR Standard	HD-NVR4-STD-16TB / 24TB / 32TB / 48TB	
HD NVR Value	HD-NVR3-VAL-3TB / 6TB / 12TB / 18TB	
SOFTWARE SYSTEM REQUIREMENTS	MINIMUM	RECOMMENDED
Operating System	Windows Server 2012, Windows Server 2012 R2, Windows 7 (64-bit), Windows 8.1 (64-bit) or Windows 10 (64-bit), Windows Server 2016	Windows Server 2016
Processor	x86 64 bit dual-core (1.9 GHz)	Intel® Xeon® E5 v3 (6 cores, 1.9GHz)
System RAM	4 GB DDR3	16 GB DDR4
Network Interface	1 Gbps	4 x 1 Gbps
Hard Drives	SATA-II 7200 RPM Enterprise Class Hard Drives	SATA-III 7200 RPM Enterprise Class Hard Drives

AVIGILON CONTROL CENTER SERVER WORKSTATION

AVIGILON CERTIFIED SOLUTIONS	DISPLAY MODEL NUMBER	KEY FEATURES
HD Video Appliance	VMA-AS2-8P2 / VMA-AS2-8P4 / VMA-AS2-16P06 VMA-AS2-16P09 / VMA-AS2-16P12 / VMA-AS2-24P12 VMA-AS2-24P18 / VMA-AS2-24P24	<ul style="list-style-type: none"> • Preloaded and configured with Avigilon Control Center (ACC) video management software • High-performance recording capacity • Throughputs of up to 400 Mbps • Avigilon warranty and support included • Access to Avigilon System Design Tool (SDT) to calculate storage requirements
ACC ES HD Recorder	VMA-RPO-4P2 / VMA-RPO-4P4	
ACC ES Analytics Appliance	VMA-RPA-4P2 / VMA-RPA-4P4	
HD NVR Workstation	HD-NVRWS3-8TB	
SOFTWARE SYSTEM REQUIREMENTS	MINIMUM	RECOMMENDED
Operating System	Windows Server 2012, Windows Server 2012 R2, Windows 7 (64-bit), Windows 8.1 (64-bit) or Windows 10 (64-bit)	Windows 10 (64-bit)
Processor	Intel Quad-core CPU (2.0 GHz)	Intel Core i5 (Quad-core, 3.3 GHz)
System RAM	4 GB DDR3	8 GB DDR4
Network Interface	1 Gbps	1 Gbps
Video Card	PCI Express, DirectX 10.0 compliant with 256 MB RAM	NVIDIA Quadro P620
Hard Drives	SATA-II 7200 RPM Hard Drives	SATA-III 7200 RPM Hard Drives

AVIGILON APPEARANCE SEARCH TECHNOLOGY

Avigilon Appearance Search technology requires the ACC Analytics Service to be installed on the same computer as the ACC Server software, and must meet the listed system requirements:

AVIGILON CERTIFIED SOLUTIONS	DISPLAY MODEL NUMBER	KEY FEATURES
Analytics Kit for Avigilon Appearance Search Software	HD-NVR-ANK2-1	Tested and verified to provide enough processing power to run Avigilon Appearance Search feature.

SOFTWARE SYSTEM REQUIREMENTS

NVIDIA CUDA Compute Capability	5.0 or above; Windows x86_64 Driver Version 397.44 or above
GPU Memory	4 GB or above

AVIGILON CONTROL CENTER GATEWAY

Avigilon Control Center Gateway can be installed on the same computer as the ACC Server software, but for optimal performance results it is recommended that the Gateway be installed separately. The Gateway can handle up to 36 concurrent video streams if installed on a computer with the listed requirements (with recommended specs).

SOFTWARE SYSTEM REQUIREMENTS	MINIMUM	RECOMMENDED
Operating System	Windows Server 2016, Windows Server 2012, Windows Server 2012 R2, Windows 7 (64-bit), Windows 8.1 (64-bit) or Windows 10 (64-bit) Microsoft .NET 4.6.2	Windows 10 (64-bit) Microsoft .NET 4.6.2
Processor	Intel quad-core CPU (2.0 GHz)	Intel Core i5 (Quad-core, 3.3 GHz)
System RAM	4 GB DDR3	8 GB DDR4
Hard Disk Space	500 MB	500 MB

AVIGILON CONTROL CENTER WEB CLIENT

Avigilon Control Center Web Client can be accessed from the listed web browsers.

Web Browsers	Internet Explorer version 9.0 or later Chrome version 20 or later	Firefox® version 15 or later Safari version 9.0 or later
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AVIGILON CONTROL CENTER MOBILE 2.X SOFTWARE

Avigilon Control Center Mobile (ACC Mobile) version 2.x is currently only available for the listed device platforms.

Platforms	Android version 5.x or later	iPad with iOS 7 or later iPhone with iOS 7 or later iPod touch with iOS 7 or later
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AVIGILON CONTROL CENTER MOBILE 3.X SOFTWARE PREVIEW

ACC Mobile version 3.x is currently only available for the listed device platforms and requires the ACC Web Endpoint software. The ACC Web Endpoint software comes pre-installed on ACC ES HD Recorder and ACC ES Analytics Appliance. For NVR systems and HD Video Appliances, it should be installed on the same server as the ACC Server software.

Platforms	Android version 5.0 or later	iPad with iOS 10 or later iPhone with iOS 10 or later iPod touch with iOS 10 or later
Processor	n/a	64-bit (Apple A7 or later)

AVIGILON CONTROL CENTER LPR PLUGIN

Avigilon Control Center LPR Plugin is supported on the listed operating systems.

Operating System	Windows Server 2012, Windows Server 2012 R2, Windows 7 (64-bit), Windows 8.1 (64-bit) or Windows 10 (64-bit), Windows Server 2016
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Avigilon certified solutions are recommended for LPR solutions.

2 Monitor Professional High Performance Remote Monitoring Workstation

The innovative Avigilon™ hardware solutions portfolio provides a secure, reliable, and scalable platform from small sites and large systems. Our high-performance HD remote monitoring workstation enables you to add to an existing Avigilon system for superior monitoring and protection.



The professional high performance remote monitoring workstations are designed to achieve the highest performance for a client workstation within an Avigilon HD Surveillance System. Pre-loaded with Avigilon Control Center™ Client software, the remote monitoring workstation is easily installed to accompany NVR products and to add an additional monitoring station to existing systems, with support for two high resolution monitors* and up to a total of 72 video streams.

KEY FEATURES

Preloaded with Avigilon Control Center High Definition Network Video Management Client Software

Supports up to two high resolution monitors*

Supports viewing up to 72 video streams simultaneously

Desktop form factor

Video adapters, keyboard and mouse included

*Monitor sold separately

Specifications

SYSTEM	Viewing Streams	Up to 72			
	Operating System	Microsoft® Windows Embedded Standard 7			
	Processor	6th Gen Intel® Core™ i5-6600			
	Memory	8 GB DDR4 RAM			
	Network Interface	2 Gigabit Ethernet RJ-45 ports (1000Base-T)			
	Video Outputs	2 Active (1 DisplayPort and 1 DVI-I)			
	Optical Drive	DVD-RW			
	Supported Monitor Interfaces	Up to 2 combinations of DP, DVI and/or HDMI (with supplied accessories)			
MECHANICAL	Form Factor	Desktop			
	Dimensions (WxHxD)	175 mm x 360 mm x 435 mm; 6.89" x 14.17" x 17.12"			
	Weight	9.24 kg (20.35 lbs)			
ELECTRICAL	Power Input	100 to 240 VAC, 50/60 Hz, auto-switching			
	Power Supply	Single non-redundant			
	Power Consumption	290 W			
ENVIRONMENTAL	Operating Temperature	5° C to 35° C (41° F to 95° F)			
	Storage Temperature	-40° C to 65° C (-40° F to 149° F)			
	Humidity	20% to 80% relative humidity (non-condensing)			
	Operating Vibration	0.26 GRMS			
	Storage Vibration	2.20 GRMS			
	Operating Shock	Shock pulse of 40G for up to 2 ms			
	Storage Shock	Shock pulse of 105G for up to 2 ms			
	Operating Altitude	-15.2 m to 3048 m (-50 ft to 10,000 ft)			
Storage Altitude	-15.2 m to 10,668 m (-50 ft to 35,000 ft)				
SUPPLIED ACCESSORIES		USB Keyboard			
		USB Mouse			
		Power cord			
		2 DVI to HDMI adapters			
		1 DisplayPort to DVI adapter			
CERTIFICATIONS	Certifications/Directives	UL	cUL	CE	RCM
		CCC	EAC	VCCI	KC
		BSMI	NRCS	RoHS	SVHC
ORDERING INFORMATION	HD-RMWS3-2MN	Avigilon Control Center Professional high performance remote monitoring workstation for up to 2 monitors*			
		* Monitor sold separately			

PPU - Perpetual Power Unit

Securing Remote Infrastructure

The **Perpetual Power Unit (PPU)** provides the hardware and software components necessary for the rapid, secure, and reliable deployment of cameras and sensors in remote environments. The PPU is changing the way remote deployments are implemented. With a single cost effective platform that provides power for cameras, sensor processing, secure communications, and long battery backup, deployment of a remote site is simplified and the stability and reliability of operation is greatly improved. The PPU provides the resources necessary to implement sites consisting of a mix of equipment from many manufacturers. It has been the center point for years in installations around the world, protecting critical assets.

Four models of the PPU are available: PPU1, PPU2, PPU2 Solar, and PPU3 Solar. These models cover a wide range of challenging site environments. Whether the site has constant power, timed AC power, or no power at all, the PPU provides the solution. Likewise, to meet any communications demands, the PPUs offer capabilities for Ethernet, fiber, cellular, wireless, custom, and/or end user provided communications.

For larger networks, we offer the PPU Enterprise Server. This is an absolute key part of running a successful large network. As the number of sites grows past approximately ten, network management becomes exponentially more difficult. Without a tool to monitor and proactively manage the sites, performance will suffer. The PPU Enterprise Server monitors each site via an encrypted connection and immediately notifies appropriate personnel when any potential problems occur. All the current data for all the sites is always at your fingertips—from highly technical data like voltage levels to mission critical functions like security alerts.

Common Applications: Pipelines, Waste Water Facilities, Railroads, Power Grids, Airports, Military Bases, Fence Lines, Schools, Industrial Plants, and similar infrastructure.



PPU1

The PPU1 is the smallest PPU of the suite. Its small enclosure is large enough to fit an optional POE switch as well as communications gear such as a hardened cellular router. The PPU1 has a single 12V 104Ah battery for long backup and timed power, and supplies 12VDC, 24VDC, and 48VDC to any devices requiring DC power.

Power Specifications

- PPU1 Input: 120/240/277VAC
- PPU1 Output: 12/24/48VDC
- PoE+ 4x 802.3af/at 30 watts per port

Power Solutions

- Constant: Line conditioning
- Intermittent: Light poles - 24/7 operation
- Unreliable: 15 to 30 hours battery backup

Secure Communications

- Topology agnostic
- Ethernet, Fiber optic MM/SM, LTE, Wireless

Hardened 4G/LTE Router

- Software defined multi-carrier radio
- Verizon, AT&T, and Sprint (Certified)
- PPU resets equipment to restore connection
- PPU provides on demand firewall control

Hardened Ethernet Switch

- 6 Port Gigabit Ethernet Switch
- 4 PoE+ Gigabit Ethernet Ports 802.3af/at
- 1 SFP Slot - SM/MM Fiber optic interface
- Redundant power input

Site Installation Advantages

- Reduces integration time and costs
- Field proven technology enhances long term reliability
- Provides secure communication alternatives
- Hardened solution: -20C - +50C

Cameras and Sensors

- Supports most IP cameras
- Combines camera and physical sensor input for high quality alerts
- Automatic PTZ preset on event
- Automatic camera snapshot on event
- ONVIF camera detection

Notifications

- Loss of site power
- Operational state of cameras and devices
- Communications status
- Security events
- System events

PPU1 Enterprise Server

- Used with large networks
- Centralized real-time network monitoring
- Automatic email notifications for security and system alerts supporting up to 100 users
- Browser based - no special software required

PPU1 Physical Specifications

- Case Dimensions: 16" x 16" x 10"
- NEMA 3R vented aluminum enclosure
- Two ½" and ¾" NPT conduit knockouts
- Single 104Ah deep cycle battery
- Weight ~90 lbs

AXIS Q6055-S PTZ Network Camera

Outdoor-ready, stainless steel PTZ with HDTV 1080p and Zipstream

AXIS Q6055-S is a pressurized, marine-grade stainless steel PTZ camera with HDTV 1080p and 32x optical zoom. Fast and precise pan/tilt for wide area coverage and detailed surveillance at great distances. The high light sensitivity and day/night functionality ensure high image quality even in low-light conditions, while Axis Zipstream technology reduces bandwidth and storage requirements. The stainless steel casing gives high resistance to corrosion, cleaning chemicals and high-pressure steam. The casing can be filled with nitrogen to prevent internal condensation and create a non-flammable environment. The media converter switch enables daisy chain installation using standard network or fiber optic cables.

- > [Marine-grade stainless steel casing for pressurized nitrogen](#)
- > [HDTV 1080p and 32x optical zoom](#)
- > [SFP slots for fiber, RJ45 connections](#)
- > [I/O for alarm in/out](#)
- > [Axis Zipstream](#)



AXIS Q6055-S PTZ Network Camera

Models	AXIS Q6055-S 60 Hz AXIS Q6055-S 50 Hz	Storage: disruption, recording System: system ready Time: recurrence, use schedule Input signal: manual trigger, virtual input, digital input
Camera		
Image sensor	1/2.8" progressive scan CMOS	
Lens	4.44–142.6 mm, F1.6–4.41 Horizontal field of view: 62.8°–2.23° Vertical field of view: 36.8°–1.3° Autofocus, auto-iris	Event actions Day/night mode, overlay text, video recording to edge storage, pre- and post-alarm video buffering, send SNMP trap PTZ: PTZ preset, start/stop guard tour File upload via FTP, SFTP, HTTP, HTTPS network share and email Notification via email, HTTP, HTTPS and TCP External output activation
Day and night	Automatically removable infrared-cut filter	
Minimum illumination	Color: 0.3 lux at 30 IRE F1.6 B/W: 0.03 lux at 30 IRE F1.6 Color: 0.5 lux at 50 IRE F1.6 B/W: 0.04 lux at 50 IRE F1.6	Data streaming Event data
Shutter time	1/33000 s to 1/3 s with 50 Hz 1/33000 s to 1/4 s with 60 Hz	Built-in installation aids Pixel counter
Pan/Tilt/Zoom	Pan: 360° endless, 0.05° - 450°/s Tilt: 220°, 0.05°-450°/s 32x optical zoom and 12x digital zoom, total 384x zoom E-flip, 256 preset positions, Tour recording, Guard tour, Control queue, On-screen directional indicator, Set new pan 0°, Adjustable zoom speed	General
Video		
Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles Motion JPEG	Casing IP6K9K-, IP66-, IP67-, NEMA 4X-, NEMA 6P and IK10-rated ^b Stainless steel casing (V4A, SAE 316L/UNS S31603/EN 1.4432), nylon clear dome
Resolution	HDTV 1080p 1920x1080 to 320x180 HDTV 720p 1280x720 to 320x180	Memory 512 MB RAM, 256 MB Flash
Frame rate	Up to 50/60 fps (50/60 Hz) in HDTV 720p Up to 25/30 fps (50/60 Hz) in HDTV 1080p	Power Camera consumption: min 65 W Min required power supply: 24 V DC, 3.2 A (75 W) Recommended power supply: AXIS T8008 PS24
Video streaming	Multiple, individually configurable streams in H.264 and Motion JPEG Axis Zipstream technology Controllable frame rate and bandwidth VBR/MBR H.264	Connectors IP66-rated multiconnector for DC power, RJ45 10BASE-T/100BASE-TX and I/O, including 7 m (23 ft) cable
Image settings	Manual shutter time, compression, color, brightness, sharpness, white balance, exposure control, exposure zones, fine tuning of behavior at low light, rotation: 0°, 180°, text and image overlay, 32 individual 3D privacy masks, image freeze on PTZ, automatic defog, backlight compensation Wide Dynamic Range (WDR): Up to 120 dB depending on scene, highlight compensation	Storage Support for SD/SDHC/SDXC card Support for SD card encryption Support for recording to network-attached storage (NAS) For SD card and NAS recommendations see www.axis.com
Network		
Security	Password protection, IP address filtering, HTTPS ^a encryption, IEEE 802.1X ^a network access control, Digest authentication, User access log, Centralized Certificate Management, Brute force delay protection	Operating conditions -30 °C to 50 °C (-67 °F to 122 °F) Maximum temperature (intermittent): 60 °C (140 °F) Humidity 10–100% RH (condensing)
Supported protocols	IPv4, IPv6 USGv6, HTTP, HTTPS ^a , SSL/TLS ^a , QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP TM , SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, SFTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, NTCIP, LLDP	Storage conditions -40 °C to 65 °C (-40 °F to 149 °F)
System integration		
Application Programming Interface	Open API for software integration, including VAPIX [®] and AXIS Camera Application Platform; specifications at www.axis.com AXIS Video Hosting System (AVHS) with One-Click Connection ONVIF [®] Profile S and ONVIF [®] Profile G, specification at onvif.org	Approvals EMC EN 55032 Class A, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 55024, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, RCM AS/NZS CISPR 32 Class A, KCC KN32 Class A, KN35 Safety IEC/EN/UL 60950-1 IEC/EN/UL 60950-22 Environment EN 50121-4, IEC 62236-4, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, NEMA 250 Type 4X IEC/EN 60529 IP66, IP67, IP6K9K, NEMA 250 Type 6P, MIL-STD 810G 509.5 Network NIST SP500-267
Analytics	Included AXIS Video Motion Detection, Autotracking, Active Gatekeeper, AXIS Fence Guard, AXIS Motion Guard Basic Analytics (not to be compared with third-party analytics): object removed, enter/exit detector, fence detector, object counter Highlight compensation Supported Support for AXIS Camera Application Platform enabling installation of third-party applications, see www.axis.com/acap	Weight 6.0 kg (13 lb)
Event triggers	Detectors: live stream accessed, video motion detection, shock detection Object removed, enter/exit detector, fence detector, object counter Hardware: fan, network, temperature PTZ: autotracking, error, moving, ready, preset reached	Dimensions Ø224 x 256 mm (Ø8 13/16 x 10 1/16 in)
		Included accessories AXIS T8607 Media Converter Switch, 7 m (23 ft) IP66-rated multicable Installation Guide, Windows decoder 1-user license
		Optional accessories AXIS T8008 PS24, AXIS T94A02D Pendant Kit, AXIS T91K61 Wall Mount, AXIS Q60-S Smoked Dome AXIS T91 Mounting Accessories, AXIS T8415 Wireless Installation Tool, AXIS T90 Illuminators, AXIS T8310 Video Surveillance Control Board, multi-user decoder license pack
		Video management software AXIS Companion, AXIS Camera Station, Video management software from Axis' Application Development Partners available on www.axis.com/vms
		Languages English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese
		Warranty Axis 3-year warranty and AXIS Extended Warranty option, see www.axis.com/warranty

- a. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org), and cryptographic software written by Eric Young (ey@cryptsoft.com).
b. Except valves on top.

AXIS T8607 Media Converter Switch

General	
Casing	Metal Color: White NCS S 1002-B
Power	24 V DC, max 4 W (power supply not included)
Connectors	2x RJ45 connectors (10/100 Mbps) (Use shielded cables (STP) CAT5 or higher.) 2x SFP connectors (100/1000 Mbps) for SFP fiber optic modules or SFP to copper modules 1x power 2x configurable alarm input/output ports Camera multicable
Display and indicators	Power LED indicator Camera network LED indicator Network LED indicator (4x)
Compliance	RoHS, REACH, WEEE, CE, EN 50022, IEC 60715, AS 2756
Mounting	DIN Rail mount
Environment	Indoor/Cabinet
Operating conditions	-40 °C to 75 °C (-40 °F to 167 °F) Humidity 10-85% RH (non-condensing)
Storage conditions	-40 °C to 75 °C (-40 °F to 167 °F) Humidity 10-85% RH (non-condensing)
Approvals	EMC EN 55022 Class A, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 55024, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, RCM AS/NZS CISPR 22, KCC KN22 Class A, KN24 Safety IEC/EN 60950-1
Dimensions	150 x 100 x 30 mm (5 15/16 x 3 15/16 x 1 3/16 in)
Weight	284 g (0.63 lb)
Included accessories	Bracket Mount DIN Clip
Warranty	Axis 3-year warranty, see www.axis.com/warranty

Environmental responsibility:

www.axis.com/environmental-responsibility

AXIS Q3517-SLVE

Stainless steel for solid performance in 5MP

AXIS Q3517-SLVE Network Camera is a fixed dome camera in marine-grade stainless steel casing (SUS 316L). With its resistance to corrosion, salt water, chemicals and detergents, the camera is ideal for harsh installations. Thanks to its top-quality image sensor, Forensic WDR, Lightfinder technology, and OptimizedIR illumination, the camera provides unparalleled video quality in any light conditions. Electronic image stabilization is instrumental for smooth and steady video when subject to vibrations. The camera offers redundancy between Power over Ethernet and DC power. Video analytics, supervised inputs and digital outputs further support the surveillance task.

- > [Marine-grade stainless steel casing](#)
- > [EIS and IK10+ impact resistance](#)
- > [5 MP resolution at 30 fps](#)
- > [Forensic WDR, Lightfinder, and OptimizedIR](#)
- > [Axis Zipstream technology](#)



AXIS Q3517-SLVE

Camera	
Image sensor	Progressive scan RGB CMOS 1/1.8"
Lens	Varifocal, 4.3-8.6 mm, F1.5 Horizontal field of view: 96° – 50° Vertical field of view: 53° – 29° Remote focus and zoom, P-Iris control, IR-corrected
Day and night	Automatically removable infrared-cut filter
Minimum illumination	5MP 25/30 fps with WDR and Lightfinder: Color: 0.12 lux at 50 IRE, F1.5; B/W: 0.02 lux at 50 IRE, F1.5, 0 lux with IR illumination on 4MP 50/60 fps: Color: 0.24 lux at 50 IRE, F1.5, B/W; 0.04 lux at 50 IRE, F1.5, 0 lux with IR illumination on
Shutter time	1/71 500 s to 2 s
Camera angle adjustment	Pan: 360° Tilt: ±80° Rotation: ±175°
Video	
Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles Motion JPEG
Resolution	3072x1728 to 160x120
Frame rate	5MP with WDR: 25/30 fps with power line frequency 50/60 Hz 4MP without WDR: 50/60 fps with power line frequency 50/60 Hz
Video streaming	Multiple, individually configurable streams in H.264 and Motion JPEG Axis Zipstream technology in H.264 Controllable frame rate and bandwidth VBR/MBR H.264
Multi-view streaming	8 individually cropped-out view areas
Pan/Tilt/Zoom	Digital PTZ, Optical zoom, Preset positions
Image settings	Scene profiles, compression, color, brightness, sharpness, contrast, local contrast, white balance, exposure control (including automatic gain control), defogging, exposure zones, fine tuning of behavior at different light levels, Forensic WDR: Up to 120 dB depending on scene, electronic image stabilization, barrel distortion correction, dynamic text and image overlay, privacy masks, mirroring of images, straighten image, rotation: 0°, 90°, 180°, 270°, auto, including corridor format
Audio	
Audio streaming	Full-duplex
Audio compression	24-bit LPCM 48 kHz, AAC LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8kHz, Opus 8/16/48 kHz Configurable bitrate
Audio input/output	Input for external microphone or line-level device Line output
Network	
Security	Password protection, IP address filtering, IEEE 802.1X network access control ^a , HTTPS ^a encryption, digest authentication, user access log, centralized certificate management, brute force delay protection
Supported protocols	IPv4, IPv6 USGv6, HTTP, HTTPS, SSL/TLS ^a , QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP TM , SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SFTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, LLDP
System integration	
Application Programming Interface	Open API for software integration, including VAPIX [®] and AXIS Camera Application Platform; specifications at axis.com AXIS Video Hosting System (AVHS) with One-Click Connection ONVIF Profile S and ONVIF Profile G, specification at onvif.org
Analytics	Included AXIS Video Motion Detection, AXIS Motion Guard, AXIS Fence Guard, AXIS Loitering Guard, active tampering alarm, audio detection Supported AXIS Perimeter Defender, AXIS Digital Autotracking

	Support for AXIS Camera Application Platform enabling installation of third-party applications, see axis.com/acap
Event triggers	Analytics, supervised external inputs, virtual inputs through API, edge storage events, shock detection
Event actions	Record video: SD card and network share Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email Pre- and post-alarm video or image buffering for recording or upload Notification: email, HTTP, HTTPS, TCP and SNMP trap Overlay text, external output activation, play audio clip, zoom preset
Data streaming	Event data
Built-in installation aids	Remote zoom, remote focus, pixel counter, leveling assistant, autorotation, straighten image
General	
Casing	IP6K9K, IP66-, IP67-, IP69-, and NEMA 4X-rated, IK10+ (50 joules) impact-resistant, stainless steel casing with polycarbonate hard-coated dome and dehumidifying membranes Coated, electropolished SUS 316L stainless steel Encapsulated electronics, captive stainless steel screws For repainting instructions of casing and impact on warranty, contact your Axis partner.
Mounting	Mounting bracket with holes for junction boxes (double-gang, single-gang, 4" square, and 4" octagon) and for ceiling and wall mounting ¾" (M25) conduit side entry
Sustainability	PVC-free
Memory	1 GB RAM, 512 MB Flash
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3, typical 6.5 W, max 12.9 W 8–28 V DC, typical 6.9 W, max 14.5 W Power redundancy
Connectors	RJ45 10BASE-T/100BASE-TX PoE, terminal block for two configurable supervised inputs / digital outputs (12 V DC output, max load 50 mA), 3.5 mm mic/line in, 3.5 mm line out, terminal block for DC input
IR illumination	OptimizedIR with power-efficient, long-life 850 nm IR LEDs Range 40 m (130 ft) or more, depending on the scene
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption Support for recording to network-attached storage (NAS) For SD card and NAS recommendations see axis.com
Operating conditions	-50 °C to 55 °C (-58 °F to 131 °F) Maximum temperature (intermittent): 60 °C (140 °F) Start-up: -40 °C to 60 °C (-40 °F to 140 °F) Humidity 10–100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F)
Approvals	EMC EN 55032 Class A, EN 50121-4, IEC 62236-4, EN 55024, IEC/EN 61000-6-1, IEC/EN 61000-6-2, FCC Part 15, Subpart B, Class A, ICES-003 Class A, VCCI Class A, RCM AS/NZS CISPR 22 Class A, KCC KN32 Class A, KN35 Safety IEC/EN/UL 62368-1, IEC/EN/UL 60950-22, IEC/EN 62471 Environment IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78 EN 61000-3-2, EN 61000-3-3, IEC/EN 60529 IP66/67/69 NEMA 250 Type 4X, IEC/EN 62262 IK10+ (50J), ISO 20653 IP6K9K Network NIST SP500-267
Dimensions	Height: 125 mm ø 195 mm
Weight	2.0 kg (4.4 lb)

Included accessories	Installation Guide, Windows decoder 1-user license, drill hole template, cable gaskets, I/O and DC connectors, connector guard, stainless steel Resistorx® TR20 screw bit, AXIS T94U02S Mounting Bracket, wall gasket	Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese
Optional accessories	AXIS T91F61 Wall Mount, AXIS T91F67 Pole Mount, AXIS T94U02D Pendant Kit with weathershield, AXIS T94U01D Pendant Kit, AXIS Q3517-SLVE Nylon Dome, AXIS Dome Intrusion Switch B, AXIS Multicable B I/O Audio Power For more accessories, see axis.com	Warranty	Axis 3-year warranty and AXIS Extended Warranty option, see axis.com/warranty
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at axis.com/vms		a. <i>This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).</i>

Environmental responsibility:
www.axis.com/environmental-responsibility

AXIS Q1786-LE

Robust, first-class 4 MP video with 32x optical zoom

AXIS Q1786-LE Network Camera is an all-integrated camera delivering 4 megapixel resolution and 32x optical zoom for easy and flexible installation at any distance as well as detailed video for identification. With a wide temperature range, impact resistance and IP66, IP67 and NEMA 4X ratings, this robust and reliable camera is ready for tough environments. Lightfinder, Forensic WDR and OptimizedIR with 80 m (262 ft) range ensure details in challenging light conditions and darkness. AXIS Q1786-LE offers built-in analytics for proactive surveillance, corridor format and audio in for video with sound. Furthermore, Axis Zipstream saves bandwidth while keeping high video quality.

- > **4 MP / Quad HD 1440p at up to 60 fps**
- > **-40 °C to 60 °C (-40 °F to 140 °F)**
- > **OptimizedIR with 80 m (262 ft) range**
- > **Electronic Image Stabilization**
- > **AXIS Guard Suite included**



AXIS Q1786-LE

Notification: email, HTTP, HTTPS, TCP and SNMP trap

Camera	
Image sensor	1/1.8" progressive scan RGB CMOS
Lens	4.3–137 mm, F1.4–4.0 Horizontal field of view: 60°–2.3° Vertical field of view: 39°–1.3° Autofocus, automatic day/night Thread for 62 mm filters, max filter thickness: 5 mm
Day and night	Automatically removable infrared-cut filter in day mode and infrared-pass filter 720 nm in night mode
Minimum illumination	Color: 0.18 lux at 50 IRE F1.4 B/W: 0.04 lux at 50 IRE F1.4, 0 lux with IR illumination on
Shutter time	1/100000 s to 2 s
Video	
Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles Motion JPEG
Resolution	2560x1440 to 160x120 Maximum pixel density with 32x optical zoom: 25 m (82 ft): 2551 px/m 50 m (164 ft): 1275 px/m 250 m (820 ft): 255 px/m
Frame rate	With WDR: Up to 25/30 fps (50/60 Hz) in all resolutions Without WDR: Up to 50/60 fps (50/60 Hz) in all resolutions
Video streaming	Multiple, individually configurable streams in H.264 and Motion JPEG Axis Zipstream technology in H.264 Controllable frame rate and bandwidth VBR/MBR H.264
Image settings	Saturation, contrast, brightness, sharpness, Forensic WDR: Up to 120 dB depending on scene, defogging, white balance, day/night threshold, exposure mode, exposure zones, compression, mirroring of images, electronic image stabilization, barrel distortion correction, text and image overlay, dynamic text and image overlay, privacy masks Rotation: auto, 0°, 90°, 180°, 270° including Corridor Format Scene profiles: forensic, vivid, traffic overview
Pan/Tilt/Zoom	Digital ptz, 32x optical zoom, preset positions
Audio	
Audio streaming	Audio in, simplex
Audio compression	AAC-LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz, LPCM Configurable bit rate
Network	
Security	Password protection, IP address filtering, HTTPS ^a encryption, IEEE 802.1X ^a network access control, digest authentication, user access log, centralized certificate management Brute force delay protection
Supported protocols	IPv4, IPv6 USGv6, HTTP, HTTPS ^a , SSL/TLS ^a , QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP [®] , SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, LLDP
System integration	
Application Programming Interface	Open API for software integration, including VAPIX [®] and AXIS Camera Application Platform; specifications at axis.com AXIS Video Hosting System (AVHS) with One-Click Connection ONVIF [®] Profile S and ONVIF [®] Profile G, specification at onvif.org
Analytics	Included AXIS Video Motion Detection, AXIS Fence Guard, AXIS Loitering Guard, AXIS Motion Guard, active tampering alarm, gatekeeper Supported AXIS Perimeter Defender, AXIS Cross Line Detection Support for AXIS Camera Application Platform enabling installation of third-party applications, see axis.com/acap
Event triggers	Analytics, edge storage events Supervised external input, virtual inputs through API, shock detection
Event actions	Pre- and post-alarm video buffering File upload: FTP, SFTP, HTTP, HTTPS, network share and email

Data streaming	Event data
Built-in installation aids	Remote zoom, pixel counter, leveling assistant, autorotation
General	
Casing	IP66-, IP67-, and NEMA 4X-rated, IK10 impact-resistant aluminum enclosure with integrated dehumidifying membrane, IK08 impact-resistant glass front window, weathershield with black anti-glare coating Color: White NCS S 1002-B For repainting instructions of casing and impact on warranty, contact your Axis partner.
Sustainability	PVC free, 2% recycled plastic
Memory	1024 MB RAM, 512 MB Flash
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3 Typical 8.6 W, max 12.95 W 20–28 V DC, typical 8.6 W, max 13.8 W 20–24 V AC, typical 12.6 V A, max 20 V A
Connectors	RJ45 10BASE-T/100BASE-TX PoE IDC punchdown connector DC Power connector Terminal block for two configurable supervised inputs / digital outputs (12 V DC output, max. load 50 mA) 3.5 mm mic/line in
IR illumination	Optimized IR with power-efficient, long-life 850 nm IR LED's with adjustable angle of illumination and intensity. Range of reach 30 m (98 ft) in wide field of view and 80 m (262 ft) in full tele view, or more depending on the scene
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption Support for recording to network-attached storage (NAS) For SD card and NAS recommendations see axis.com
Operating conditions	-40 °C to 60 °C (-40 °F to 140 °F) Humidity 10–100% RH (condensing)
Storage conditions	-40 °C to 65 °C (-40 °F to 149 °F)
Approvals	EMC EN 55032 Class A, EN 50121-4, IEC 62236-4, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class A, ICES-003 Class A, VCCI Class A, RCM AS/NZS CISPR 32 Class A, KCC KN32 Class A, KN35, EAC Safety IEC/EN/UL 62368-1, IEC/EN/UL 60950-22 Environment EN 50581, IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66, IP67, IEC/EN 62262 IK10 body, IK08 glass, NEMA 250 Type 4X NetworkNIST SP500-267 Other EN/IEC 62471
Dimensions	Length: 386 mm (15 3/16 in) ø 147 mm (5 13/16 in)
Weight	2.4 kg (5.3 lb)
Included accessories	Installation Guide, Windows decoder 1-user license, connector kit, Resistorx [®] L-key RJ45 patch cable
Optional accessories	AXIS T8604 Media Converter Switch AXIS T91A47 Pole Mount AXIS T94P01B Corner Bracket AXIS Q17 Front Window Kit B (IK10 impact-resistant plastic front window) For more accessories, see axis.com
Video management software	AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available on axis.com/vms
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Traditional Chinese

Warranty Axis 3-year warranty and AXIS Extended Warranty option, see axis.com/warranty

Environmental responsibility:
www.axis.com/environmental-responsibility

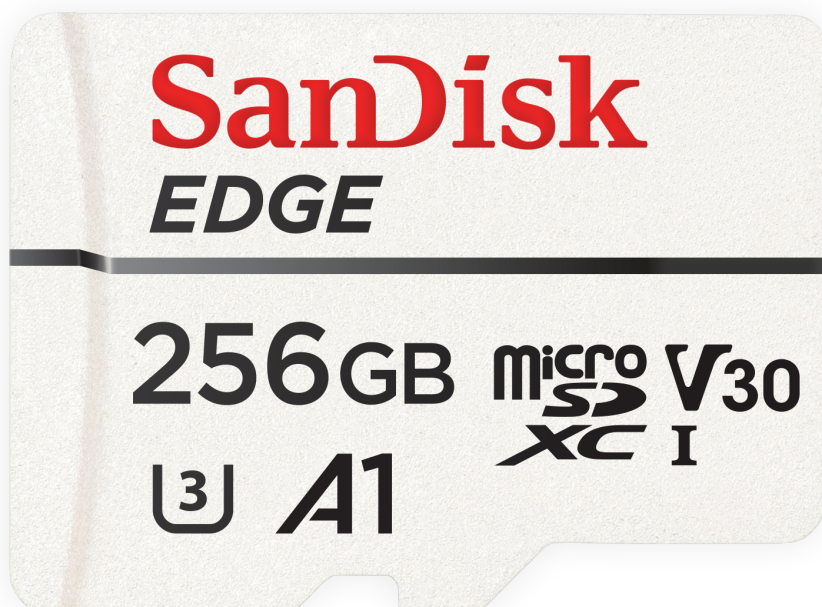
- a. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*

AXIS Surveillance microSDXC™ Card 256GB

Reliable edge storage for video surveillance

AXIS Surveillance microSDXC™ Card 256GB is a high performing edge storage solution optimized for video surveillance. Edge storage, supported in most Axis network video products, enables flexible recording solutions with de-centralized video recording, eliminating the need of a server, DVR or NVR. AXIS Surveillance microSDXC™ Card 256GB optimizes bandwidth usage as video is recorded onboard each camera even when bandwidth is limited or absent. Combined with Axis Zipstream technology, even high quality video can be recorded effectively local on AXIS Surveillance microSDXC™ Card 256GB.

- > [Optimized for surveillance cameras](#)
- > [SD card adapter included](#)
- > [3-year warranty](#)



AXIS Surveillance microSDXC™ Card 256GB

SD card		Storage conditions
Form factor	microSDXC™ with SD™ card adapter ^a	-40 °C to 85 °C (-40 °F to 185 °F)
Packaging	The microSDXC™ card and SD™ card adapter are delivered in a jewel case	Sustainability PVC free
Color	White	Approvals EN 55032 Class B, EN 55024, FCC Part 15 Subpart B Class B, ICES-003 Class B, RCM AS/NZS CISPR 22 Class B, VCCI Class B
Capacity	256 GB ^b	Compatibility All Axis products with SD card support.
Class	Speed Class 10 (C10), V30, U3	Warranty Axis 3-year warranty, see www.axis.com/warranty
Transfer speed read/write	95/90 MB/s	a. <i>SanDisk is a trademark of SanDisk Corporation, registered in the United States and other countries. microSDXC and SD marks and logos are trademarks of SD-3C, LLC.</i>
Card dimensions	microSDXC™ card: 15 mm x 11 mm x 1.0 mm (0.59 in x 0.43 in x 0.04 in) SD™ adapter: 24 mm x 32 mm x 2.1 mm (0.94 in x 1.26 in x 0.08 in)	b. <i>1GB=1,000,000,000 bytes. Actual user storage less.</i>
Operating conditions	-25 °C to 85 °C (-13 °F to 185 °F)	Environmental responsibility: www.axis.com/environmental-responsibility