Department of Administrative Services
Purchasing and Contracts Division

# CONFIRMATION FORM
**for**
**RECEIPT OF BID NO. 603593-15**

If you are interested in this invitation, immediately upon receipt please fax this confirmation form to the fax number provided at the bottom of this page.

***Failure to do so means you are not interested in the project and do not want any associated addenda mailed to you.***

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**SUPPLIER ACKNOWLEDGES RECEIVING THE FOLLOWING BID DOCUMENT:**

PROJECT NO. BID NO. 603593-15 BID PAGES: 258

DESCRIPTION: ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM

## SUPPLIER MUST COMPLETE THE FOLLOWING INFORMATION:

Company Name:_____

Company Address:_____

City / State / Zip:_____

Name / Title:_____

Area Code/Phone Number:_____

Area Code/Fax Number:_____

Email Address:_____

Please indicate the method you used to obtain this Bid Document:

_____ Internet _____Plan Room

**FAX THIS CONFIRMATION FORM TO: (702) 386-4914**
**TYPE or PRINT CLEARLY**

# CLARK COUNTY, NEVADA

## INVITATION TO BID

### BID NO. 603593-15
### ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM

The bid package is available as follows:

- Internet – Visit the Clark County Purchasing and Contracts Division website at http://www.ClarkCountyNV.gov/Purchasing. Click on "Current Opportunities" and locate Document No. 603593 in the list of current solicitations.
- Mail – Please fax a request to (702) 386-4914 specifying project number and description. Be sure to include company address, phone and fax numbers.
- Pick up - Clark County Government Center, 500 South Grand Central Parkway, Purchasing and Contracts Division, Fourth Floor, Las Vegas, NV 89106.

A Pre-bid Conference will be held on **JULY 15, 2015** at **9:00 a.m.**, at the Clark County Government Center, 500 South Grand Central Parkway, Purchasing and Contracts Division, Fourth Floor, Las Vegas, Nevada 89106. If your firm is unfamiliar with the County Bid Submittal procedures and would like to obtain training on the submittal process for this Bid, please contact Chetan Champaneri, Purchasing Analyst, at (702) 455-2729 no later than **TUESDAY, JULY 14, 2015,** and a training session will be provided immediately following the pre-bid conference referenced above.

Site Walk Throughs have been scheduled as follows:

Site Walk Through 1 is scheduled for July 15, 2015 at 11:00 a.m.:

Group 3 – Spring Mountain Youth Camp Residential (main entrance), 520 N. 30th Street, Las Vegas, Nevada 89101

Group 4 – DJJS Detention Center, Building F, Detention Administration (main entrance), 651 Pecos Road, Las Vegas, Nevada 89101

Site Walk Through 2 is scheduled for July 16, 2015 at 9:00 a.m.:

Group 2 - Spring Mountain Youth Camp (SMYC), Building 3, SMYC Administration (main entrance), 2400 Angel Peak Place, Mount Charleston, Nevada 89124

Bids will be accepted at the Clark County Government Center address specified above, on or before **AUGUST 3, 2015** at **3:00:00 p.m.** based on the time clock at the Clark County Purchasing and Contracts front desk.

Specifications and drawings will be available on June 29, **2015**, at the above address. Specifications and drawings will be available on Compact Disc (CD) **only**. **The CD will be provided at no charge.** If the CD is to be mailed, there is a non-refundable charge of $**5.00**. **All checks are to be made payable to the Clark County Treasurer.** Hearing impaired customers may obtain information by calling TT/TDD: Relay Nevada toll free (800) 326-6868

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PLEASE PUBLISH THE INFORMATION PROVIDED ABOVE THE LINE.

PUBLISHED:
Las Vegas Review-Journal
JULY 10, 2015

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# I – INSTRUCTION TO BIDDERS

## BID NO. 603593-15
## ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM

1. INTENT OF INVITATION

In accordance with the terms and conditions provided in this bid document, it is the intent of this formal Invitation to Bid to receive bids from qualified Bidders for the items specified in this document. Include background and future project info

2. DEFINITIONS

A. **Addendum:** A written document issued by COUNTY, via the Purchasing and Contracts Division, prior to the submission of bids which modifies or clarifies the Bidding Documents by additions, deletions, clarifications, or corrections.

B. **BCC:** The Clark County Board of County Commissioners.

C. **Bid (Bidder):** An offer, in response to a solicitation by COUNTY, to supply goods or services at a specific price and within a specified time period.

D. **Bid (COUNTY):** A competitive solicitation by COUNTY to procure goods or services in accordance with Nevada Revised Statutes (NRS) 332.

E. **Bid Form:** Standard printed form given to Bidders that must be completed and submitted back to COUNTY with the required information for evaluation of the bid, in correct format and sequence. Bid pages are identified herein as "Bid Form" and contain a black line in the right margin.

F. **Bid Submittal:** Bid Form pages, Bid Security (if required), and all required attachments.

G. **Bidder(s):** A supplier who submits a bid to COUNTY.

H. **Bidding Documents:** May include but are not limited to, the Invitation to Bid, Instructions to Bidders, General Conditions, Special Conditions, Technical Specifications, Contract Requirements and Forms, Bid Forms/Attachments, Exhibits, Specifications/Special Provisions and Drawings, and any Addenda issued prior to the date designated for receipt of bids, as applicable.

I. **CONTRACT:** Contract documents include the Bidding Documents, SUCCESSFUL BIDDER'S Bid Form, all Addenda, SUCCESSFUL BIDDER'S bonds and insurance and Notice of Award letter.

J. **COUNTY or Owner:** The term used throughout these documents to mean County of Clark, Nevada.

K. **F.O.B. Destination:** Designates the seller will pay shipping cost and remain responsible for the goods until the buyer takes possession.

L. **Governing Body:** Used throughout these documents to mean the Clark County Board of Commissioners.

M. **Lot:** A group of items similar in nature and bought individually, all items in a lot must be bid on to be a responsible bidder considered for award.

N. **Nevada Revised Statutes (NRS):** The current codified laws of the State of Nevada. Nevada law consists of the Constitution of Nevada (the state constitution) and Nevada Revised Statutes. The Nevada Supreme Court interprets the law and constitution of Nevada.

O. **No Substitute:** Means there is only one brand name product that is acceptable to perform the function required by the using department.

P. **Purchasing Manager:** The Clark County Purchasing Manager or their designee responsible for the Purchasing and Contracts Division.

Q. **Purchase Order:** The formal authorization by COUNTY for seller to provide goods or services to COUNTY. The formal CONTRACT takes precedence over any conflicting terms and conditions contained in the purchase order.

R. **Repair:** Corrective actions required to ensure proper operation of existing equipment, up to and including replacing of said equipment.

S. **Rural:** Clark County has towns outside of the urban valley which include, but are not limited to: Laughlin, Moapa Valley, Sandy Valley, and Indian Springs.

T. **Service Call:** To include all services contained herein. Service shall also include after hours call outs as required by COUNTY.

U. **SUCCESSFUL BIDDER or Contractor:** Bidder who is the lowest responsive, responsible or best Bidder, to whom the Governing Body or the authorized representative has authorized the award of the CONTRACT.

V. **Urban:** This includes the contiguous urban Las Vegas Valley.

W. **Additive Alternate Bid Item**: An amount stated in the Bid to be added to the amount of the Base Bid if the corresponding change in the work, as described in the Bid Documents, is accepted by Owner. Additive Alternate Items may be exercised by the Owner with the award of the project, in sequential order only subject to the availability of funds. Bidder must quote all items to be responsive and considered for award

X. **Consulting Architect/Engineer**: A licensed and registered professional contracted by the Owner to design the project's special provisions and drawings.

3. DESIGNATED CONTACTS

For questions pertaining to this Invitation to Bid, please call Chetan Champaneri, Purchasing Analyst II, telephone number (702) 455-2729, by email chetanc@clarkcountynv.gov or the Purchasing and Contracts Front Desk at (702) 455-2897. After award, the designated contact will be Chuck James, Manager, Real Property Management, telephone number (702) 455-4616. **The deadline to submit questions is 5:00 p.m. on July 27, 2015.**

4. CONTACT WITH COUNTY DURING BIDDING PROCESS

Communication between a Bidder and a member of the BCC, or between a Bidder and a non-designated COUNTY contact, regarding this bid is prohibited from the time the bid is advertised until the bid is recommended for award of a contract. Questions pertaining to this Invitation to Bid shall be addressed to the designated contact(s) specified above. Failure of a Bidder, or any of its representatives, to comply with this paragraph may result in its bid being rejected.

5. PREBID CONFERENCE

A Pre-bid walk through is being held for this bid. The intent of the pre-bid conference is to review the bid document including the Special Conditions and Technical Specifications, which are unique to each facility, and to answer any questions that the Bidders may have. The pre-bid conference will be held at Clark County Government Center, 500 South Grand Central Parkway, Purchasing and Contracts Division, Fourth Floor, , Las Vegas, Nevada 89106 on July 15, 2015 at 9:00 a.m. The Site walk through 1 and 2 will be held at following dates and times:

Site Walk Through 1: Scheduled for July 15, 2015 at 11:00 a.m.:

First Location: Group 3 – Spring Mountain Youth Camp Residential (main entrance), 520 N. 30th Street, Las Vegas, Nevada 89101

Second Location: Group 4 – DJJS Detention Center, Building F, Detention Administration (main entrance), 651 Pecos Road, Las Vegas, Nevada 89101

Site Walk Through 2: Scheduled for July 16, 2015 at 9:00 a.m.:

Group 2 - Spring Mountain Youth Camp (SMYC), Building 3, SMYC Administration (main entrance), 2400 Angel Peak Place, Mount Charleston, Nevada 89124

6. ADDENDA AND INTERPRETATIONS

A. If it becomes necessary to revise any part of this bid, a written Addendum will be issued by COUNTY. COUNTY shall not be bound by any oral representations, clarifications, or changes made in the written requirements or specifications by COUNTYS' employees, unless such clarification or change is provided by COUNTY in written addendum form from the Purchasing and Contracts Division.

B. Bidder(s) shall take no advantage of any apparent error or omission in the Bidding Documents. In the event Bidder(s) discover such an error or omission, they shall immediately notify COUNTY. COUNTY will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the Bidding Documents through the issuance of an Addendum.

C. Addenda shall be available via mail, certified mail, fax, online or pick up by all prospective Bidders.

D. Prior to submission of the bid, Bidder shall ascertain that it has received all Addenda issued. Bidder shall acknowledge receipt of each Addendum by completing the acknowledgement space provided on the Bid Form. Failure to acknowledge receipt of all addenda and use the correct bid form as required may result in rejection of bid.

7. DOCUMENT REVIEW

Bidders may visit the Purchasing and Contracts Division, during normal business hours, to review any current bid documents. This information is available for review provided the contents of the document have not been deemed confidential or proprietary as defined in the “Public Records” clause in the General Conditions section of this bid. Bids submitted in response to this invitation to bid may be reviewed after the formal bid opening has been completed. To review bid documents, an appointment must be made in advance to ensure that full consideration will be provided. Please call telephone number (702) 455-2897 and request the Purchasing Front Desk to schedule your appointment.

8. PREPARATION OF FORMS

All bids must be submitted on the Bid Form provided in this document. **All figures must be written in ink or typed.** Figures written in pencil or containing erasures are not acceptable and may be rejected. However, mistakes may be crossed out and corrections may be inserted adjacent thereto and initialed in ink by the person signing the bid form.

In the event there are unit price bid items provided in the Bid Form, and the total indicated for a unit price bid item does not equal the product of the unit price and quantity, the unit price shall govern and the total will be corrected accordingly. Mathematical errors in the Bid shall be corrected by COUNTY. If there is no cost for a unit price, the Bidder **MUST** enter "0" or write the words "NO COST."

9. BID DOCUMENTS NECESSARY FOR SUBMITTAL

Bid Form, all required attachments, and the bid security (if required) shall be included in the envelope containing the bid. These documents, together, comprise a bid. Omission of, or failure to complete, any portion of the required documents at the time of bid opening may be cause to reject the entire bid.

10. SUBCONTRACTOR INFORMATION

Bidders should submit with their bids a list of the Minority-Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), Physically-Challenged Business Enterprise (PBE), Small Business Enterprise (SBE) Veteran Business Enterprise (VET), Disabled Veteran Business Enterprise (DVET), and Emerging Small Business Enterprise (ESB) subcontractors for CONTRACT utilizing **Attachment 1.** The information provided in **Attachment 1** by Bidder is for COUNTY’S information only.

If there are any questions regarding **Attachment 1,** please contact Adleen Stidhum at telephone number (702) 455-7155.

11. DESCRIPTIVE LITERATURE

Bidder may be requested to provide the latest printed specifications and advertising literature on the product(s) offered on its Bid Form.

12. PRODUCTS

**New Product:**

SUCCESSFUL BIDDER shall guarantee that the product provided to COUNTY shall be new, and of the latest and most improved model of current production, and shall be of first quality as to workmanship and materials used in said units.

A new product is defined as a product that is made up completely of unused, genuine, original parts. The product shall not have been operated for any purpose other than routine operational testing. A demonstrator product does not meet this definition and is not acceptable.

13. BRAND NAMES "OR EQUAL"

Whenever, in this Invitation to Bid, any particular materials, process, or equipment are indicated or specified by patent, proprietary or brand name, or by name of manufacturer, such wording will be deemed to be used for the purpose of facilitating description of the material, process, or equipment desired and will be deemed to be followed by the words, "or equal." Proof satisfactory to COUNTY must be provided by SUCCESSFUL BIDDER to show that the alternative product is, in fact, equal to the product required in the specifications.

14. SUBSTITUTIONS

Specifications are intended to show kind and quality required, and are not intended to be restrictive. **Additional bids that are equal to, or exceed the requirements stated in this document are invited.** Bidders desiring to submit more than one bid for items other than those specified shall observe the following procedure:

A. Submit with the bid complete manufacturer's brochures of the actual items being offered, including pictures and dimensional drawings.

B. Proof, satisfactory to COUNTY, must be provided by Bidder to show that the product is equal to, or exceeds the bid specifications in design and performance.

C. Equivalent items may be subject to performance testing.

15. TEST MODELS

COUNTY may request, at no cost to COUNTY, that the apparent low Bidder provide a test model of the product offered. The performance, characteristics and components of the model submitted for inspection and testing shall be considered a representative model of the product proposed and intended for delivery. Any product tested and found not meeting the minimum requirements of these specifications will not be considered for award of this bid.

16. ORDER QUANTITIES AND UNIT PRICING

Unit pricing for the items listed in this bid shall be reflective of the unit of measure of "each." This bid expressly prohibits "minimum order quantity" practices. All invoices shall reflect the pricing for the exact quantities received.

17. BALANCE OF LINE DISCOUNT DEFINED

The Balance of Line Discount shall be used to establish prices for future unidentified requirements and to set pricing for items that may either be replaced with newer models or developed during the term of CONTRACT. Where indicated in the bid documents, Bidder shall include the percentage discount from the manufacturer's published price list(s). All percentage discounts shall be F.O.B. destination, all installation and integration costs as required within Section III, Item No.14 – Installation, and shall include all other charges that may be imposed in fulfilling the terms of CONTRACT. The percentage discount shall remain firm for the duration of CONTRACT, but said price list(s) is subject to fluctuation in accordance with changes, as issued by the manufacturer. All price list(s) utilized under the Balance of Line Discount must be current at the time of utilization. If more than one column of pricing is published, Bidder shall indicate to which column the discount shall be applied. The Balance of Line Discount must be equal in value to the discount that is provided for all identified items. In the event that there are discrepancies in part numbers and descriptions or new requirements emerge, COUNTY may use the discount to either clarify said discrepancies or utilize it for determining the basis of award.

18. DISCOUNT TERMS OF PAYMENT

Terms of payment, as listed on the Bid Form, shall be defined as the amount of discount offered by Bidder to COUNTY if payment is made within a specified time frame.

Examples:

Terms of Payment: 2%, Net thirty (30) Calendar Days.

A 2% payment discount will be deducted from the purchase price if the invoice is paid within thirty (30) calendar days of receipt of invoice or delivery of an acceptable product or service, whichever is later.

Terms of Payment: 0%, Net thirty (30) Calendar Days.

No payment discount is offered and payment is due within thirty (30) calendar days of receipt of invoice or delivery of an acceptable product or service, whichever is later.

**No prompt payment discount will be considered by COUNTY in the bid evaluation process unless the discount period offered by Bidder is thirty (30) calendar days or more.**

19. ADDITIONAL BIDS

Bidders may submit more than one bid as long as all such bids comply with, or exceed, the bid terms, conditions and specifications.

20. DEVIATIONS TO TERMS AND CONDITIONS OR SPECIFICATIONS

Any additional agreements, terms, conditions, or exceptions to the bid requirements or specifications that are submitted with Bidder's Bid Form may be considered substantial deviations from the bid requirements and be cause for rejection.

21. DURATION OF OFFER

All offers (bids) submitted in association with this Invitation to Bid shall be considered firm offers for a period of ninety (90) calendar days after the date of bid opening in order to allow COUNTY to evaluate and consider award, unless the offer is further extended in writing and agreed upon by both parties.

22. BIDDER'S REPRESENTATION

**Each Bidder by submitting their Bid represents that:**

A. Bidder has read and understands the Bidding Documents and asserts that its bid is made in accordance therewith and shall be considered a firm offer for a period of ninety (90) calendar days following the opening of bids. The Bidder's offer may expire at the end of the ninety (90) calendar day period.

B. Bidder has visited the project site and is familiar with the local conditions under which the work is to be performed.

C. **Prior to submission of the bid, Bidder shall ascertain that it has received all Addenda issued; Bidder shall acknowledge receipt of each Addendum by completing the acknowledgment space provided on the Bid Form. Failure to acknowledge receipt of all addenda and use the correct bid form as required may result in rejection of bid.**

23. SUBMISSION OF BIDS

**All bids must be submitted in a sealed envelope plainly marked with the name and address of Bidder and the bid number and title.** Bidders are requested to submit one (1) original and one (1) copy of the Bid Form and one (1) copy of all requested attachments unless otherwise specified. No responsibility will attach to COUNTY, or any official or employee thereof, for the pre-opening of, post opening of, or the failure to open a bid not properly addressed and identified. Bids are time-stamped upon receipt. Bids time-stamped after 3:00:00 p.m. based on the time clock at the Clark County Purchasing and Contracts front desk will be recorded as late, remain unopened and be formally rejected. **FAXED OR ELECTRONICALLY SUBMITTED BIDS ARE NOT ALLOWED AND WILL NOT BE CONSIDERED.**

The following are detailed delivery/mailing instructions for bids:

| HAND DELIVERY | U.S. MAIL DELIVERY | EXPRESS DELIVERY |
|---|---|---|
| Clark County Government Center | Clark County Government Center | Clark County Government Center |
| Purchasing and Contracts Division, 4th Floor | Attn: Purchasing and Contracts, 4th Floor | Attn: Purchasing and Contracts, 4th Floor |
| 500 South Grand Central Parkway | 500 South Grand Central Parkway | 500 South Grand Central Parkway |
| Las Vegas, Nevada 89106 | P.O. Box 551217 | Las Vegas, Nevada 89106 |
| | Las Vegas, Nevada 89155-1217 | |

**Regardless of the method used for delivery, Bidder shall be wholly responsible for the timely delivery of its bid. Overnight Mail must use the EXPRESS DELIVERY instructions.**

**Any bids submitted via a third party courier must be sealed in a separate envelope from courier's packaging to allow for proper recording of receipt.**

**Bidders and other interested parties are invited to attend the bid opening.**

24. COST TO PREPARE AND SUBMIT RESPONSE

All costs incurred in the preparation and submission of responses to this Invitation to Bid shall be the responsibility of the Bidder.

25. WITHDRAWAL OF BID

A. Before Bid Opening

Bidders may request withdrawal of a posted, sealed bid prior to the scheduled bid opening time, provided the request for withdrawal is submitted to the Purchasing Analyst in writing, or a bid release form has been properly completed and submitted to the Purchasing and Contracts Division reception desk. Withdrawn bids must be re-submitted and time-stamped in accordance with this bid document in order to be accepted.

B. After the Bid Opening

All responsive and responsible bids received are considered firm offers for a period of ninety (90) calendar days. Bidder's offer will expire after ninety (90) calendar days unless the offer is further extended in writing by Bidder and agreed upon by both parties. If Bidder intended for award requests that its bid be withdrawn, that Bidder may be deemed non-responsible if responding to future invitations to bid or may be required to forfeit its bid bond (if applicable).

26. LOWEST RESPONSIVE AND RESPONSIBLE BIDDER

All bids will be awarded to the lowest responsive and responsible Bidder. The determination of the lowest responsive and responsible Bidder may be judged on all or some of the following factors: price, conformity to specifications, facilities and equipment, availability of repair parts, experience, terms of payment, qualifications, past performance, performance or delivery dates, quality and utility of services, supplies, materials or equipment offered and the adaptability of those services, supplies, materials or equipment to the required purpose of CONTRACT, and other objective and accountable factors which are reasonable. COUNTY has the option to accept additional promotional specials, discounts or trade-in allowances offered by SUCCESSFUL BIDDER during the term of CONTRACT but these offers will not be part of the determination for award of this bid unless otherwise specified.

In accordance with NRS 332.065.3, COUNTY may re-award CONTRACT if SUCCESSFUL BIDDER is found to be in breach of contract. Re-awarding the CONTRACT by COUNTY is not a waiver of any liability of the initial Bidder awarded CONTRACT.

27. REJECTION OF BID

COUNTY reserves the right to reject any and all bids received by reason of this request. COUNTY reserves the right to waive any minor informality or irregularity.

28. DISQUALIFICATION OF BIDDERS

Bidders may be disqualified and their bids may be rejected for any of, but not limited to, the following causes:

A. Failure to use the specified Bid Form furnished by COUNTY.

B. Lack of signature by an authorized representative.

C. Failure to properly complete the Bid Form.

D. Evidence of collusion among Bidders.

E. Unauthorized alteration to content of the Bid Form.

F. Failure to acknowledge all addenda issued.

29. TIE-BIDS

A tie-bid is defined as an instance where bids are received from two (2) or more Bidders who are the low Bidders, and their offers are identical. Bids must be identical in all evaluation areas; e.g., price, quality, delivery, terms, and ability to supply, etc. If any of these areas are not identical, it is not considered a tie-bid, and COUNTY can justify awarding to Bidder with the lowest responsive and responsible bid.

The procedure for tie-bids is to hold a public drawing and award the bid to the winner of the draw in accordance with the Method of Award clause in the Instruction to Bidders. When a drawing is necessary, Bidder(s) involved will be contacted with the time and place of the drawing. Attendance is not mandatory for the drawing. An impartial witness will be present at the drawing.

30. NOTIFICATION OF INTENT TO AWARD

COUNTY will issue to all Bidders a formal letter of “Notification of Intent to Award.” This notice will confirm COUNTY’S determination of the lowest responsive and responsible Bidder.

31. PROTESTS

A. Any Bidder who submits a bid and is allegedly aggrieved in connection with this solicitation or award of CONTRACT may protest. The letter of protest must, at a minimum, contain a written statement setting forth with specificity the reasons the person filing the notice believes that the applicable provisions of the law were violated and be accompanied by required bond. The protest must be submitted in writing to the Purchasing Analyst, within five (5) business days after COUNTY issued a “Notification of Intent to Award” letter. If a written protest is received within the time frame specified and is not resolved by mutual agreement, the Purchasing Analyst will issue a decision in writing to the protestor. Within three (3) business days of receipt of the decision, a protestor MUST submit to the Purchasing Manager its written notice of intent to appeal the decision to the BCC. The Purchasing Manager or their designee will notify the protestor of the date they may appear to present their appeal to the BCC. Protestor MUST submit to the Purchasing Manager fifteen (15) copies of any documents protestor intends to present to the BCC and all documents MUST be submitted ten (10) calendar days prior to the BCC meeting. The decision of the BCC will be final. The BCC is not required to consider protests unless this procedure is followed.

B. Bidder filing the protest shall be required, to post a bond with a good and solvent surety authorized to do business in this state, or submit other security, defined as a cashiers check, money order or certified check, to COUNTY who shall hold the bond or other security until a determination is made on the protest. A bond posted or other security submitted with the protest must be in an amount equal to the lesser of:

(1) 25% of the total value of the bid submitted by Bidder filing the notice of protest; or
(2) $250,000

C. The notice of protest filed in accordance with the provisions of this section operates as a stay of action in relation to the awarding of CONTRACT until the BCC makes a determination on the protest.

D. A Bidder who submits an unsuccessful bid may not seek any type of judicial intervention until the BCC has made a determination on the protest and awards CONTRACT.

E. Neither the BCC nor its authorized representative is liable for any costs, expenses, attorney’s fees, loss of income or other damages sustained by a Bidder who submits a bid, whether or not the person files the protest pursuant to this section.

F. If the protest is upheld by the BCC, the bond posted or other security submitted with the notice of protest must be returned to Bidder who posted the bond or submitted the security. If the protest is rejected by the BCC, COUNTY may make a claim against the bond or other security in an equal amount to the expenses incurred by COUNTY because of the unsuccessful protest. Any money remaining after the claim has been satisfied must be returned to the person who posted the bond or submitted the security.

32. METHOD OF AWARD

Award will be made to the lowest responsive and responsible Bidder on a grand total basis, plus the funding availability of Additive Alternate(s) for each respective group one, two, three, etc. exercised in sequential order for each respective group and COUNTY reserves the right to reduce the item quantities within Group 1, Group 2, Group 3, and/or Group 4 to comply with the funding available for each respective group whichever is in the best interest of the COUNTY , contingent upon the submission of all requested documents within the timelines specified, unless an extension is approved by COUNTY. Bidders must bid on all items to be considered responsive.

33. ADDITIVE ALTERNATE ITEM(S)

This document contains an Additive Alternate item(s) that is/are shown in the specifications and drawings under the appropriate sections, but is/are not to be included in the Total Base Bid amount for each respective Group. The item(s) is/are identified by a number designation and description. It is the responsibility of each Bidder to determine to its own satisfaction the limits and extent of the work for the item and quote a unit price and/or lump sum on the Bid Form pages. The(se) item(s) may be exercised by the Owner in sequential order depending on funding availability for each respective Group identified on the Bid Form.

34. LETTER OF AWARD

Award of this bid will be by “Letter of Award” issued by the Purchasing and Contracts Division. CONTRACT shall include this Bid Document, any associated Addendums, and the Bid Form as signed by SUCCESSFUL BIDDER.

35. INITIAL TERM

The initial term of CONTRACT shall be from date of award through July 31, 2016.

36. CONTRACT RENEWAL

COUNTY reserves the option to renew CONTRACT for an additional four (4), one-year period(s) from its expiration date.

37. CONTRACT EXTENSION

COUNTY reserves the option to temporarily extend CONTRACT for up to thirty (30) calendar days from its expiration date for any reason. The current contract pricing shall remain in effect through the contract extension period.

38. INSURANCE

SUCCESSFUL BIDDER shall carry Commercial General Liability and Automobile Liability Insurance, in the amount of no less than $1,000,000 per occurrence, $2,000,000 aggregate during the term of CONTRACT.

SUCCESSFUL BIDDER shall obtain and maintain for the duration of CONTRACT, a work certificate or a certificate issued by an insurer qualified to underwrite workers’ compensation insurance in the State of Nevada, in accordance with Nevada Revised Statutes Chapters 616A-616D, inclusive, unless SUCCESSFUL BIDDER is a Sole Proprietor and shall be required to submit an affidavit **Attachment 3** indicating that it has not elected to be included in the terms, conditions and provisions of Chapters 616A-616D, inclusive, and is otherwise in compliance with those terms, conditions and provisions.

SUCCESSFUL BIDDER shall include the cost of the insurance coverage in its bid price(s). SUCCESSFUL BIDDER shall provide COUNTY with proof of insurance as specified within ten (10) business days after COUNTY request.

SUCCESSFUL BIDDER shall obtain and maintain the insurance coverage required in **Attachment 2,** incorporated herein by this reference. SUCCESSFUL BIDDER shall comply with the terms and conditions set forth in **Attachment 2.** All Bidders shall include the cost of the insurance coverage in their bid price(s).

39. FAILURE TO MAINTAIN COVERAGE

If SUCCESSFUL BIDDER fails to maintain any of the insurance coverage required herein, COUNTY may withhold payment, order SUCCESSFUL BIDDER to stop the work, declare SUCCESSFUL BIDDER in breach, suspend or terminate CONTRACT, assess liquidated damages as defined herein, or may purchase replacement insurance or pay premiums due on existing policies. COUNTY may collect any replacement insurance costs or premium payments made from SUCCESSFUL BIDDER or deduct the amount paid from any sums due SUCCESSFUL BIDDER under CONTRACT.

40. OPERATIONAL SYSTEMS

SUCCESSFUL BIDDER shall furnish a completely operational system whether or not all items necessary to make the system operational are specified.

41. ADDITIONAL BUILDINGS OR FACILITIES

Additional buildings or facilities may be added to CONTRACT by COUNTY. This shall include newly acquired or constructed building / facilities, after the manufacturer's warranty or new construction warranty has expired.

42. ADDITIONAL REQUIREMENTS

Although particular COUNTY departments may be identified in the solicitation, unless otherwise documented in CONTRACT, other COUNTY departments may utilize the resulting CONTRACT upon approval by COUNTY Purchasing and Contracts Division. Each COUNTY Department or Division will issue a separate identifying Purchase Order.

43. COOPERATION BY SUCCESSFUL BIDDER(S)

The nature of the services referenced in this Bid represents a relationship between multiple trades. SUCCESSFUL BIDDER(s) awarded each lot shall cooperate with all parties to CONTRACT to the extent that they are involved in the performance of others. (i.e. access to HVAC system in elevator car) COUNTY authorizes the sharing of this document between the parties to CONTRACT in order to assist in facilitating cooperative performance. This cooperative performance shall be deemed as an extension of the performance of each SUCCESSFUL BIDDER and therefore failure to participate may result in COUNTY invoking liquidated damages as defined herein for reimbursement of costs charged to COUNTY by injured party.

SUCCESSFUL BIDDER may be required to cooperate or coordinate with other trades performing services on COUNTY'S property. This cooperation or coordination shall be deemed as part of SUCCESSFUL BIDDER'S performance under CONTRACT.

44. PRICE ADJUSTMENT REQUESTS

Commencing on the date of award, prices shall not be subject to change during the initial one (1) year term, thereafter, there may be price adjustments. All price adjustment requests, including suitable proof, shall be submitted, at least thirty (30) calendar days in advance of SUCCESSFUL BIDDER'S expectation of price increase commencement, to the Clark County, Nevada, Administrative Services Department, Purchasing Manager, 500 South Grand Central Parkway, Las Vegas, Nevada 89155. Price increases shall not be retroactive. A price adjustment can only occur if SUCCESSFUL BIDDER has been notified in writing of COUNTY'S approval of the new Price(s). Only one (1) written price adjustment request(s) will be accepted from SUCCESSFUL BIDDER per contract renewal period. The reference months/period and indexes to be used to determine price adjustments will be the most recent published index between 14-16 months prior (using the final index) and 2-4 months prior (using the first-published index) to the anniversary date of the Contract, using the price index specified below.

Producer Price Index (PPI), Series ID: PCU33431-33431- Audio and Video Equipment Mfg. will be used as the index for the price adjustments. The price adjustment per year may be the lesser of the percent of PPI change or three (3) percent for an increase or decrease.

- Suitable Proof:

Print-out of PPI index and calculated increase and Letter from Manufacturer/ Distributor.

- Price Decrease

COUNTY shall receive the benefit of a price decrease to any line item at any time during the initial term and for any subsequent term(s) if the decrease exceeds three (3) percent of CONTRACT price. If, at the point of exercising the price adjustment provision, market media indicators show that the prices have decreased, and that SUCCESSFUL BIDDER has not passed the decrease on to COUNTY, COUNTY reserves the right to place SUCCESSFUL BIDDER in default, terminate CONTRACT, and such actions will reflect adversely against SUCCESSFUL BIDDER in determining the responsibility and non-responsibility of SUCCESSFUL BIDDER in future opportunities.

- Multiple Line Items

When multiple line items exist, the price adjustment must be justified on a line-by-line basis, not on the grand total.

45. BID FORM UNIT PRICE(S)

SUCCESSFUL BIDDER shall perform services or furnish and install products described within this Bid document at the unit price submitted on Section IV – Bid Form page, per the "unit price" column, where applicable. The COUNTY will not accept any bid that requires a minimum requirement on individual purchases.

46. STATE OF NEVADA LEGAL HOLIDAYS

SUCCESSFUL BIDDER is advised that below there are ten (10) firm legal holidays and eleven (11) when December 31st falls on Friday.

Martin Luther King's Birthday
Presidents' Day
Memorial Day
Independence Day
Labor Day
Nevada Admission Day
Veteran's Day
Thanksgiving Day and the Friday After
Christmas Day
New Year's Day

SUCCESSFUL BIDDER is required to verify dates with COUNTY'S representative prior to the commencement of work.

# II -GENERAL CONDITIONS

## BID NO. 603593-15
## ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM

1. ASSIGNMENT OF CONTRACTUAL RIGHTS

SUCCESSFUL BIDDER will not assign, transfer, convey or otherwise dispose of CONTRACT or its right, title, or interest in, or to the same, or any part thereof, without previous written consent of COUNTY and any sureties.

2. AUDITS

The performance of CONTRACT by SUCCESSFUL BIDDER is subject to review by COUNTY to insure CONTRACT compliance. SUCCESSFUL BIDDER agrees to provide COUNTY any and all information requested that relates to the performance of CONTRACT. All requests for information will be in writing to SUCCESSFUL BIDDER. Time is of the essence during the audit process. Failure to provide the information requested within the timeline provided in the written information request may be considered a material breach of contract and be cause for suspension or termination of CONTRACT.

3. AUTHORITY

COUNTY is bound only by COUNTY agents acting within the actual scope of their authority. COUNTY is not bound by actions of one who has apparent authority to act for COUNTY. The acts of COUNTY agents which exceed their contracting authority do not bind COUNTY.

4. BIDS ARE NOT TO CONTAIN CONFIDENTIAL / PROPRIETARY INFORMATION

Bids must contain sufficient information to be evaluated without reference to any confidential or proprietary information. In accordance with NRS 239.010, Bidders shall not include any information in their bid that they would not want to be released to the public. Any bid submitted that is marked “Confidential” or “Proprietary,” or that contains materials so marked, may be returned to Bidder and may not be considered for award.

5. CLARK COUNTY’S PROPERTY

All property owned by COUNTY and furnished to SUCCESSFUL BIDDER for the purpose of performance under this Bid will be identified and marked as COUNTY’S property and adequately insured by SUCCESSFUL BIDDER for COUNTY’S protection. In the event that COUNTY’S property becomes lost or damaged to any extent while in SUCCESSFUL BIDDER’S possession from any cause, including faulty workmanship or negligent acts by SUCCESSFUL BIDDER, its agents or its employees, SUCCESSFUL BIDDER agrees to replace such property or reimburse COUNTY for the value or expense of replacement, whichever is greater, in accordance with COUNTY request.

6. COLLECTION AND PAYMENT OF SALES TAX

In accordance with NRS 372.123, any Bidder that sells tangible personal property to any commercial business in the State of Nevada is required to possess a Nevada Sales Tax Permit and shall collect and pay the taxes as defined in NRS Chapters 372 and 374. Permit information can be obtained by contacting the Nevada State Department of Taxation at (702) 486-2300.

7. COLLUSION AND ADVANCE DISCLOSURES

Pursuant to NRS 332.820 evidence of agreement or collusion among Bidders and prospective Bidders acting to illegally restrain freedom of competition by agreement to bid a fixed price, or otherwise, shall render the bids of such Bidders void.

Advance disclosures of any information to any particular Bidder which gives that particular Bidder any advantage over any other interested Bidders, in advance of the bid opening, whether in response to advertising or an informal request for bids, made or permitted by a member of the governing body or an employee or representative thereof, shall operate to void all bids received in response to that particular request for bids.

8. CONSUMPTION ESTIMATES

The quantities appearing in the Bid Form are approximate only and are prepared for the solicitation of bids. Payment to SUCCESSFUL BIDDER will be made only for the actual quantities of items furnished in accordance with the bid and it is understood that the scheduled quantities of items to be furnished may be increased, decreased or omitted without, in any way, invalidating bid prices.

9. CONTRACT AMENDMENTS

Notwithstanding any provision herein to the contrary, and pursuant to NRS 104.2306, and recognizing the constraints inherent in public bidding, COUNTY reserves the right to request modification at any time to the scope, frequency, estimated quantities or the timing of SUCCESSFUL BIDDER'S obligations under CONTRACT, in whatever manner COUNTY determines, in good faith, to be reasonably necessary and to be in the best interests of the public. Both parties agree that, should any modifications to CONTRACT be made during CONTRACT term, a written amendment detailing those elements shall be executed by SUCCESSFUL BIDDER and the BCC or their authorized representative.

10. DISCLOSURE OF OWNERSHIP / PRINCIPALS

Any Bidder recommended for award of CONTRACT by the Board of County Commissioners is required to provide the information on the attached "Disclosure of Ownership/Principals" form. The form shall be submitted to COUNTY within twenty-four (24) hours after request. Failure to fill out the subject form by Bidders shall be cause for rejection of the bid.

11. DRUG-FREE WORKPLACE

SUCCESSFUL BIDDER agrees to comply with all applicable state and federal laws regarding a drug-free workplace. SUCCESSFUL BIDDER shall make a good faith effort to ensure that all of its employees, while working on COUNTY property, will not purchase, use, be under the influence of, or possess illegal drugs or alcohol or abuse prescription drugs in any way.

12. EMPLOYMENT OF UNAUTHORIZED ALIENS

In accordance with the Immigration Reform and Control Act of 1986, SUCCESSFUL BIDDER agrees that it will not employ unauthorized aliens in the performance of CONTRACT.

13. FEDERAL, STATE, LOCAL LAWS

All Bidders shall comply with all Federal, State and local laws relative to conducting business in Clark County. The laws of the State of Nevada will govern as to the interpretation, validity, and effect of this bid, its award, and any contract entered into.

14. FISCAL FUNDING OUT

COUNTY reasonably believes that funds can be obtained sufficiently to make all payments during the term of CONTRACT. If COUNTY does not allocate funds to continue the purchase of the product or service, in accordance with NRS 354.626, CONTRACT shall be terminated when appropriated funds expire.

15. FORCE MAJEURE

SUCCESSFUL BIDDER shall be excused from performance hereunder during the time and to the extent that it is prevented from obtaining, delivering, or performing, by acts of God, fire, war, loss or shortage of transportation facilities, lockout or commandeering of raw materials, products, plants or facilities by the government. SUCCESSFUL BIDDER shall provide COUNTY satisfactory evidence that nonperformance is due to cause other than fault or negligence on its part.

16. GOVERNING LAW/VENUE OF ACTION

CONTRACT shall be construed and enforced in accordance with the laws of the State of Nevada. Any action at law or other judicial proceeding for the enforcement of any provision shall be instituted in the County of Clark, State of Nevada.

17. GOVERNING ORDER OF BIDDING AND CONTRACT DOCUMENTS

The bidding and CONTRACT documents include various divisions, sections, and conditions which are essential parts for the work to be provided by SUCCESSFUL BIDDER. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for complete work. In case of discrepancy, the following precedence will govern:

A. Amendment

B. General Conditions

C. Addenda

D. Instructions to Bidders

E. Federal Requirements (If Applicable)

F. Special Conditions

G. Technical Specifications

18. INDEMNITY

SUCCESSFUL BIDDER agrees, by entering into CONTRACT, regardless of the coverage provided by any insurance policy, to pay all costs necessary to indemnify, defend, and hold COUNTY harmless from any and all claims, demands, actions, attorney's fees, costs, and expenses based upon or arising out of any acts, errors, omissions, fault or negligence of SUCCESSFUL BIDDER or its principals, employees, subcontractors or other agents while performing services under CONTRACT. SUCCESSFUL BIDDER shall indemnify, defend, and hold harmless COUNTY for any attorney's fees or other costs of defense, even if the allegations of the claim are groundless, false or fraudulent.

19. INVOICING

Invoicing for bid items are to be sent to the location as identified in the purchase order(s). Invoices are to be sent within thirty (30) calendar days of the delivery of the product or completion of the work. Payment of invoices will be made within thirty (30) calendar days, unless otherwise specified, after receipt of an accurate invoice that has been reviewed and approved by the applicable department's authorized representative. In accordance with NRS 244.250 COUNTY shall not provide payment on any invoice SUCCESSFUL BIDDER submits after six (6) months from the date SUCCESSFUL BIDDER provides goods, performs services, or provides deliverables or milestones.

All invoices should include the following information:

A. Company Name

B. Complete Address (including street, city, state, and zip code)

C. Telephone Number

D. Contact Person

E. Itemized description of products delivered (including quantities) or services rendered (including dates)

F. Clark County Purchase Order Number

G. Company's Tax Identification Number

H. Bid Number

I. Itemized pricing and total amount due (excluding Sales and Use Tax)

J. Percentage Discounts/ Payment Terms (if offered)

K. Company's Invoice Number

L. Clark County Work Order Number(s)

SUCCESSFUL BIDDER is responsible to insure that all invoices submitted for payment are in strict accordance with the price(s) offered on the Bid Form. If overcharges are found, COUNTY may declare SUCCESSFUL BIDDER in breach of contract, terminate CONTRACT, and designate SUCCESSFUL BIDDER as non-responsible if responding to future invitations to bid.

20. INVOICE AUDITS

SUCCESSFUL BIDDER shall provide to COUNTY, within ten (10) business days of COUNTY'S request, a report to validate that the price(s) charged are in accordance with the price(s) offered on SUCCESSFUL BIDDER'S Bid Form. The format of the report will depend on the pricing structure provided on the Bid Form. The report shall be subject to review and approval by COUNTY'S using department(s) and Internal Audit Department. Discrepancies found in the report will require SUCCESSFUL BIDDER to update the report no later than five (5) business days after notification by COUNTY. In the event that SUCCESSFUL BIDDER undercharged COUNTY, COUNTY shall reimburse SUCCESSFUL BIDDER within ten (10) business days. In the event that SUCCESSFUL BIDDER overcharged COUNTY, SUCCESSFUL BIDDER shall reimburse COUNTY within ten (10) business days. If overcharges are found, COUNTY may declare SUCCESSFUL BIDDER in breach of contract, terminate CONTRACT, and designate SUCCESSFUL BIDDER as non-responsible if responding to future invitations to bid.

21. NON-DISCRIMINATION

The BCC is committed to promoting full and equal business opportunity for all persons doing business in Clark County. SUCCESSFUL BIDDER acknowledges that COUNTY has an obligation to ensure that public funds are not used to subsidize private discrimination. SUCCESSFUL BIDDER recognizes that if they or their subcontractors are found guilty by an appropriate authority of refusing to hire or do business with an individual or company due to reasons of race, color, religion, sex, sexual orientation, gender identity or expression, age, disability, national origin, or any other protected status, COUNTY may declare SUCCESSFUL BIDDER in breach of contract, terminate CONTRACT, and designate SUCCESSFUL BIDDER as non-responsible.

22. NON-ENDORSEMENT

As a result of the selection of SUCCESSFUL BIDDER to supply goods or services, COUNTY is neither endorsing nor suggesting that SUCCESSFUL BIDDER'S service is the best or only solution. SUCCESSFUL BIDDER agrees to make no reference to COUNTY in any literature, promotional material, brochures, sales presentations, or the like, without the express written consent of COUNTY.

23. OUT OF STATE SUPPLIERS

Out of state suppliers shall accept collect calls or provide a toll free telephone number for the placement of orders.

24. PARTIAL PAYMENTS

Partial payment requests will be accepted only at the sole discretion of COUNTY.

25. PATENT INDEMNITY

A. SUCCESSFUL BIDDER hereby indemnifies and shall defend and hold harmless COUNTY, its officers, employees, agents, its officers, and employees, respectively, from and against all claims, losses, costs, damages, and expenses, including attorney's fees, incurred by COUNTY, respectively, as a result of or in connection with any claims or actions based upon infringement or alleged infringement of any patent and arising out of the use of the equipment or materials furnished under CONTRACT by SUCCESSFUL BIDDER, or out of the processes or actions employed by, or on behalf of SUCCESSFUL BIDDER in connection with the performance of CONTRACT. SUCCESSFUL BIDDER shall, at its sole expense, promptly defend against any such claim or action unless directed otherwise by COUNTY; provided that COUNTY or its construction manager shall have notified SUCCESSFUL BIDDER upon becoming aware of such claims or actions, and provided further that SUCCESSFUL BIDDER'S aforementioned obligations shall not apply to equipment, materials, or processes furnished or specified by COUNTY.

B. SUCCESSFUL BIDDER shall have the right, in order to avoid such claims or actions, to substitute at its expense non infringing equipment, materials, or processes, or to modify such infringing equipment, materials and processes so they become non infringing, or obtain the necessary licenses to use the infringing equipment, material or processes, provided that such substituted and modified equipment, materials and processes shall meet all the requirements and be subject to all the provisions of CONTRACT.

26. PUBLIC RECORDS

COUNTY is a public agency as defined by state law, and as such, is subject to the Nevada Public Records Law (Chapter 239 of the Nevada Revised Statutes). Under the law, all of COUNTY'S records are public records (unless otherwise declared by law to be confidential) and are subject to inspection and copying by any person. All bid documents are available for review following the bid opening.

27. PURCHASE ORDERS

The Purchasing and Contracts Division will issue a purchase order(s) which will authorize SUCCESSFUL BIDDER to deliver and invoice for the product(s) or service(s) offered.

28. RIGHT OF INSPECTION AND REJECTION

All goods and services purchased under this bid will be subject to inspections, tests and approval/acceptance by COUNTY. It is acknowledged that many of the goods contained in closed packages may not be inspected until such time as they are used, and that the inspections and rejection rights will continue until those packages are opened and inspected, notwithstanding prior payment. If specifications or warranties are not met, material and equipment will be returned at SUCCESSFUL BIDDER'S expense. Nonconforming goods may be returned to SUCCESSFUL BIDDER freight collect at which time risk of loss will pass to SUCCESSFUL BIDDER upon COUNTY'S delivery to common carrier or retrieved by SUCCESSFUL BIDDER at which time risk of loss will pass to SUCCESSFUL BIDDER at time of retrieval.

29. SEVERABILITY

If any terms or provisions of CONTRACT shall be found to be illegal or unenforceable, then such term or provision shall be deemed stricken and the remaining portions of CONTRACT shall remain in full force and effect.

30. SUBCONTRACTS

Services specified in CONTRACT shall not be subcontracted by SUCCESSFUL BIDDER, without the written approval of COUNTY. Approval by COUNTY of SUCCESSFUL BIDDER'S request to subcontract or acceptance of or payment for subcontracted work by COUNTY shall not in any way relieve SUCCESSFUL BIDDER of responsibility for the professional and technical accuracy and adequacy of the services performed. SUCCESSFUL BIDDER shall be and remain liable for all damages to COUNTY caused by negligent performance or non-performance of services performed under CONTRACT by SUCCESSFUL BIDDER'S subcontractor.

31. SUBCONTRACTOR / INDEPENDENT CONTRACTOR

SUCCESSFUL BIDDER represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized and financed to perform such work. SUCCESSFUL BIDDER shall act as an independent SUCCESSFUL BIDDER and not as the agent of COUNTY in performing CONTRACT. SUCCESSFUL BIDDER shall maintain complete control over its employees and all of its Subcontractors. Nothing contained in CONTRACT or any subcontract awarded by SUCCESSFUL BIDDER shall create any contractual relationship between any such Subcontractor and COUNTY. SUCCESSFUL BIDDER shall perform all work in accordance with its own methods subject to compliance with CONTRACT.

32. SUSPENSION BY THE COUNTY FOR CONVENIENCE

A. COUNTY may, without cause, order SUCCESSFUL BIDDER in writing to suspend, delay or interrupt the work in whole or in part for such period of time as COUNTY may determine.

B. In the event COUNTY suspends performance of SUCCESSFUL BIDDER for an aggregate period in excess of sixty (60) calendar days, SUCCESSFUL BIDDER shall be entitled to an equitable adjustment of the compensation payable to SUCCESSFUL BIDDER under this Bid to reimburse SUCCESSFUL BIDDER for additional costs occasioned as a result of such suspension of performance by COUNTY. Equitable adjustment shall be based on appropriated funds and approval by COUNTY.

C. No equitable adjustment will be made if performance is, was or would have been so suspended, delayed or interrupted by another cause for which SUCCESSFUL BIDDER is responsible.

33. TAXES

COUNTY is a political subdivision of the State of Nevada and under the provisions of Nevada Revised Statute (NRS) 372.325 is exempt from the payment of Sales and Use Tax (Employee Identification Number 88-6000028). A copy of the tax exempt letter is available upon request. The bid price(s) must be net, exclusive of these taxes.

34. TERMINATION FOR CAUSE

If SUCCESSFUL BIDDER fails to perform in accordance with the agreed terms, conditions, or warranties applicable to CONTRACT, COUNTY may **immediately** terminate all or part of CONTRACT upon written notice of intent to terminate without any liability by COUNTY to SUCCESSFUL BIDDER. In the event of termination for cause, COUNTY may cancel any delivery or service and purchase the product or service elsewhere on such terms or in such manner as COUNTY may deem appropriate and SUCCESSFUL BIDDER shall be liable to COUNTY for any excess cost or other expenses incurred by COUNTY.

35. TERMINATION FOR CONVENIENCE

COUNTY reserves the right to terminate CONTRACT in whole or part at any time whenever COUNTY shall determine that such a termination is in the best interest of COUNTY without penalty or recourse upon thirty (30) calendar days written notice of intent to terminate. In the event that COUNTY elects to terminate CONTRACT, the termination request will be submitted to the BCC or the Clark County Administrative Services Department for approval.

36. TITLE AND RISK OF LOSS

The title and risk of loss of material or service shall not pass to COUNTY until material is delivered to the specific location, quantities are verified, and the material is inspected for damage or service is completed as specified.

37. USE BY OTHER GOVERNMENT ENTITIES

Nevada Revised Statutes 332.195 allows local governments to join or use the contracts of other local governments or the State of Nevada, with the authorization of contracting Supplier.

38. WARRANTY

In addition to the Warranty requirements elsewhere, SUCCESSFUL BIDDER warrants that the goods and services covered under this bid will conform to applicable specifications, instructions, drawings, data and samples, will be merchantable and of good material and workmanship, free from defects and will be fit and sufficient for the purposes intended. SUCCESSFUL BIDDER shall guarantee all workmanship, materials, and equipment they have furnished for a period of three (3) year after the final acceptance of the equipment or materials or for the length of the current manufacturer's warranty, whichever is longer. If during the guarantee period, any defect or faulty materials are found, it shall immediately, upon notification by COUNTY, proceed at its own expense to replace and repair same, together with any damage to all finishes, fixtures, equipment, and furnishings that may be damaged as a result of this defective equipment or workmanship. Acceptance or receipt of payment for goods or services shall not constitute a waiver of any warranty.

# III - SPECIAL CONDITIONS

## BID NO. 603593-15
## ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM

1. DOCUMENTATION SUBMITTAL REQUIRED BY APPARENT LOW BIDDER

Apparent low Bidder shall furnish the following information and documents within twenty-four (24) hours of COUNTY'S request:

A. SUCCESSFUL BIDDER shall designate a Project Manager to provide contract management and oversight. Provide name, phone number and e-mail address of Project Manager.

B. SUCCESSFUL BIDDER shall provide documentation that they are an authorized dealer/installer of the VMS proposed by SUCCESSFUL BIDDER and Honeywell products. If SUCCESSFUL BIDDER cannot comply with the Honeywell requirements, than SUCCESSFUL BIDDER will comply within 6 months of award, failure to comply may result in termination of the this Contract.

C. SUCCESSFUL BIDDER shall provide all product printed specifications, advertising literature, and cut sheets on the product(s) offered on its Bid Form. SUCCESSFUL BIDDER shall provide any additional information requested by COUNTY, within twenty-four (24) hour of receipt of request to validate the items being offered meet the requirements specified herein.

D. SUCCESSFUL BIDDER shall provide written verification that they meet the requirements of Item No. 2, General Requirements, subsection A, B, C, D, E, F, G. and H, Failure to provide the said documentation may result in the Bidder being deemed as non-responsive and therefore their bid being rejected.

2. GENERAL REQUIREMENTS

A. In addition to the requirements herein, SUCCESSFUL BIDDER shall adhere to the requirements identified within the following Exhibits, incorporated herein by this reference, which are attached hereto for the projected identified herein and all additional respective projects hereafter which are integrated into the VMS and County's legacy system as its pertains to Honeywell where applicable

i. Exhibit B: VMS and Surveillance Integrator Assurance;

ii. Exhibit C: Division 26, 27, and 28 Video Surveillance System Requirements;

iii. Exhibit D; Division 1 Requirements;

iv. Exhibit E: Drawings; Spring Mountain Youth Camp Surveillance System Installation;

v. Exhibit F: Drawings; Spring Mountain Youth Camp Residential Facility Security Surveillance System Installation; and

vi. Exhibit G: Drawings; DJJS Campus: Security Surveillance System Upgrades

B. SUCCESSFUL BIDDER shall be a firm with at least five (5) years' experience in installation, maintenance, and training services related to VMS of similar magnitude and quality as specified herein, and shall provide documentation if required by COUNTY. Prior work by employees while working for another firm shall not be considered as acceptable for the 5 year qualification. If requested by COUNTY, this documentation must identify, specifically, similar said projects and of those projects noted, the SUCCESFUL BIDDER must provide current contact names and telephone numbers, as well as a job description with a clear delineation between labor and equipment costs, as well as duration of project. The descriptions supplied must clearly indicate the firm submitting the bid response has actively been involved in these projects and that the firm has actively been involved for at least five years in projects of this magnitude. COUNTY, at its sole discretion, will determine is the SUCCESSFUL BIDDER complies with this requirement.

C. SUCCESSFUL BIDDER shall provide the documentation as required within Division 280500 (1.7)(F) which pertains to the SUCCESFULL BIDDER'S Key Project Personnel.

D. SUCCESSFUL BIDDER shall provide suitable proof that the VMS proposed for this effort meets the following requirements: (1) Manufacturer's product shall have been in satisfactory operation, on three installations of similar size and type as this project, for approximately five (5) years; and (2) COUNTY reserves the right to require the Contractor to submit a list of installations where the products have been in operation in addition to the three in paragraph a, above.

E. SUCCESSFUL BIDDER shall provide the most current level of the manufacturer certification as required to install and maintain the VMS and cameras being installed.

F. All personnel engaged in the installation of this Section shall have at least three (3) years direct experience with devices, equipment, and system installations of the type and scope specified herein.

G. Successful Bidder shall maintain on staff, personnel certified by the manufacturers of the equipment specified. Successful Bidder shall provide evidence of certification(s) owned.

H. SUCCESSFUL BIDDER shall provide all labor, material, cables, hardware, and equipment for the satisfactory completion to furnish and the installation of the new Video Management System (VMS), security cameras, NVR, equipment, and all incidentals, to provide in accordance with the specification herein and attached hereto, for the completion and the fully operational turnkey VMS collectively as a whole for each of the following locations and all additional locations integrated into the VMS as-needed by COUNTY: Group 1: VMS System (IT Operation location); Group 2: Spring Mountain Youth Camp; Group 3: Spring Mountain Youth Camp Residential; and Group 4: DJJS Detention Campus.

I. SUCCESSFUL BIDDER shall be required to provide all required training on the AV system as required herein.

J. SUCCESSFUL BIDDER shall be flexible and agree to cooperate with the COUNTY'S schedule at all times.

K. Installation of VMS by SUCCESSFUL BIDDER shall be in accordance with all local and state regulations, ordinances, rules, codes, standards and lawful orders of public authorities bearing on performance of the Work.

1. If SUCCESSFUL BIDDER fails to meet the requirement of Item number 1 (J), above, shall make all necessary corrections to meet said regulations, codes, and standards at no cost to COUNTY. SUCCESSFUL BIDDER shall complete all applicable corrections within 3 business days from notification from COUNTY.

3. <u>COMPLETION SCHEDULE FOR GROUP 1, GROUP 2, GROUP 3, AND GROUP 4</u>

A. Time is of the essence and failure to meet the specified time to complete the work to be performed shall constitute breach of the Contract and may result in termination of the Contract.

The SUCCESSFUL BIDDER upon becoming the awarded SUCCESSFUL BIDDER, shall commence the work to be performed on the date set by the COUNTY's departmental representative in the written Notice to Proceed, continuing the work in accordance with the approved schedule and shall complete the entire work in accordance with the following schedule, which may be subject to change, from the date specified in the Notice to Proceed:

1. Group 1; VMS System (IT Operations location): four (4) business days;
2. Group 2: Spring Mountain Youth Camp: twenty-one (21) weeks;
3. Group 3: Spring Mountain Youth Camp Residential : seven (7) weeks; and
4. Group 3: DJJS Detention Campus: seventeen (17) weeks.

4. <u>TECHNICAL SPECIFICATIONS</u>

A. The "Work" of this Bid, specifically Group 1, Group 2, Group 3, and Group 4 are to be performed by the SUCCESSFUL BIDDER is located at;

(i) (Group 1) IT Operations, delivery address to be provided to SUCCESSFUL BIDDER;
(ii) (Group 2) Spring Mountain Youth Camp, 2400 Angel Peak Place, Mount Charleston, NV 89124;
(iii)(Group 3) Spring Mountain Youth Camp Residential, 520 N. 30th St., Las Vegas, NV 89101; and
(iv) (Group 4) DJJS Detention Center, 651 Pecos Road, Las Vegas, NV 89101.

The "work" is described herein and but not limited to in Exhibit B- VMS and Surveillance Integrator Assurance Specifications, Exhibit C – Section 282300 Video Surveillance (CCTV) Specifications, and Exhibit D – Division 1 Requirements Exhibit E – Spring Mountain Youth Camp Surveillance System Installation, Exhibit F – Spring Mountain youth camp Residential Facility Security Surveillance System Installation, Exhibit G – DJJS Campus Security Surveillance System Upgrades, attached hereto and incorporated into this Bid by this reference.

B. Installation shall be performed during the scheduled dates identified within the written Notice to Proceed, which may be subject to change and shall in no way invalidate the bid pricing of the SUCCESSFUL BIDDER, during the days and hours assigned for the locations specified in the above paragraph which are Sunday through Saturday during the hours of 7:00 a.m. through 6:00 p.m.

1. AV System Inspection by COUNTY and Consultant will take place during normal business days and hours for COUNTY which is 7:00 a.m. through 5:00 p.m. PST. Any work performed outside of the normal jobsite hours that is not required or requested by COUNTY, shall be performed without additional expense to COUNTY.

C. For all other "Work" not described within Paragraph A of this section, the "Work" is to be performed by the SUCCESSFUL BIDDER at various COUNTY buildings located in Southern Nevada.. The "work" is described herein and which includes, but is not limited to, Exhibit B – VMS and Surveillance Integrator Assurance Specifications, Exhibit C – Section 282300 Video Surveillance (CCTV) Specifications, and Exhibit D – Division 1 Requirements.

5. EXHIBIT H – BID FORM SUPPLEMENT

SUCCESSFUL BIDDER shall complete Exhibit H – Bid Form Supplement appropriately by submitting the information correctly. SUCCESSFUL BIDDER shall identify the manufacturer name and manufacturers item number for each Bid Form item number contained on the Exhibit. For Group 5 – VMS System Hardware on an as Needed Basis, the SUCCESSFUL BIDDER shall submit two options from two different manufacturers for each Bid Item Number contained within this Group which meet or exceed the specifications identified for each respective item.

6. PERMITS AND FEES

The Contractor shall determine and secure and pay for all fees and permits which may include, but not be limited to the following: building permit; plan check fee; dust control permit; sanitation/sewer; storm water pollution, water; tortoise; and other permits, connection and governmental fees; licenses; and all special inspections necessary for proper execution and completion of the work, unless otherwise specified. Contractors shall direct questions to the designated contacts specified in the Instructions to Bidders.

7. ENGLISH SPEAKING REPRESENTATIVE

COUNTY requires SUCCESSFUL BIDDER have one person capable of clear communication in the English language on site at all times during the hours that service is required. Failure to meet this requirement shall constitute a breach of contract and may result in the termination of CONTRACT.

8. SERVICE WORKERS' BACKGROUND INVESTIGATION

Within ten (10) calendar days of award, SUCCESSFUL BIDDER shall provide COUNTY'S representative with a list of the names of all personnel who will be working at COUNTY'S facilities, including all of SUCCESSFUL BIDDER'S owners and officers.

SUCCESSFUL BIDDER'S employees working at COUNTY'S buildings or facilities must be able to pass a SCOPE and NCIC background check to perform work, as appropriate.

All record checks shall be available immediately upon request by COUNTY'S representative. Requests shall be dated no more than sixty (60) calendar days prior to request. COUNTY reserves the right to deny SUCCESSFUL BIDDER'S employee access to COUNTY'S site because of an unsatisfactory result on the SCOPE or NCIC background check of that employee. COUNTY further reserves the right to reject the low Bidder if Bidder's owner's or officer's record check is unacceptable.

After the Records Check has been given to COUNTY'S representative for review and has been approved by COUNTY, SUCCESSFUL BIDDER shall be responsible for supplying all personnel accessing COUNTY'S facilities, with a Clark County Supplier Identification Badge, which shall be worn in a visible place on the person at all times when on COUNTY'S property. Some facilities may require SUCCESSFUL BIDDER'S employees to swipe their badges for access. SUCCESSFUL BIDDER shall be responsible for obtaining new Record Checks and Clark County Supplier Identification Badge(s) for any new employee that will be assigned to accessing COUNTY'S facilities. The same protocol for approval applies. SUCCESSFUL BIDDER'S employees no longer assigned to perform services shall surrender their identification badge for immediate return to COUNTY for deactivation. SUCCESSFUL BIDDER shall be responsible for all fees associated with obtaining the badges and record checks. Clark County Supplier Identification badges and access cards remain the property of Clark County. Each is separately issued to an individual and cannot be shared or transferred. Misuse of identification and access cards may be cause for termination of CONTRACT.

Clark County Supplier Identification Badge is valid for only one (1) year from date of issue. SUCCESSFUL BIDDER'S employees shall contact designated representative to coordinate SCOPE and NCIC background checks and for Supplier Badge issuance annually. SUCCESSFUL BIDDER'S employees will not be allowed entry into COUNTY'S facilities with an expired Supplier Identification Badge.

Failure to follow this procedure may result in termination of CONTRACT.

9. SERVICE PROVIDER REQUIREMENTS

A. SUCCESSFUL BIDDER'S employees performing under CONTRACT shall be qualified and fully certified to maintain equipment properly and to manufacturer's standards and specification, using all reasonable care, and acceptable workman-like practices;

B. SUCCESSFUL BIDDER'S employees assigned to perform under CONTRACT must have at least three (3) years of experience. Replacement employees must also meet the three (3) years of experience qualification unless SUCCESSFUL BIDDER receives a waiver in writing from COUNTY to approve an employee with less than three (3) years of experience;

C. SUCCESSFUL BIDDER is required to maintain all required licensing and certifications to provide services at all of COUNTY'S facilities contained herein.

10. LOCAL FACILITY

A. Service Station

SUCCESSFUL BIDDER shall maintain a local service station. The station shall be capable of servicing, repairing and installing component parts, troubleshooting, repairing and maintaining COUNTY'S equipment, to be verified by COUNTY'S representative. Non-compliance with this Section may result in termination of CONTRACT.

11. SERVICE AND INSPECTION INSTRUCTIONS

The product may be inspected at time of delivery, by an authorized representative of COUNTY, for workmanship, appearance, proper functioning of all equipment and systems, and conformance to all other requirements of this specification. In the event deficiencies are detected, the product will be rejected to make the necessary repairs, adjustments or replacements. Payment or the commencement of a discount period (if applicable) will not be made until the corrective action is made the product is re-inspected and accepted. If the product is accepted at delivery and later rejected because of deficiencies, it shall be the dealer's responsibility to pick up the product, make the necessary corrections and redeliver the product for re-inspection and acceptance at no additional cost to COUNTY.

12. MAXIMUM DELIVERY TIME

Maximum delivery time is 30 calendar day(s). Failure to offer a delivery time within the maximum number of days specified may be considered a substantial deviation and be cause for rejection. Time is of the essence and failure to meet the delivery time specified shall constitute a breach of contract and may result in termination of CONTRACT.

13. F.O.B. DESTINATION - FREIGHT PRE-PAID

SUCCESSFUL BIDDER shall pay all freight charges. SUCCESSFUL BIDDER shall file all claims and bears all responsibility for the products from the point of origin to COUNTY'S destination. All prices shall be F.O.B. the delivery points as required. All prices shall include delivery, as well as any necessary unloading.

14. PARTIAL SHIPMENTS

Partial shipments will not be permitted, unless approved by an authorized COUNTY representative.

15. INSTALLATION

A. In addition to the Installation requirements specified in Exhibit B, Item No. 2.3 and Section 28 23 00, SUCCESSFUL BIDDER shall be responsible for all installation and integration in accordance with the requirements herein, including but not limited to, the installation of the VMS, Security Camera and mounts, Network Video Recorders (NVR), and incidental equipment and products, including the removal of all residual packing or shipping materials. If requested, an authorized factory representative for SUCCESSFUL BIDDER shall be present during installation, at no charge to COUNTY.

i. If COUNTY awards any Additive Alternates in Group 2: Spring Mountain Youth Camp and Group 4: DJJS Detention Campus, SUCCESSFUL BIDDER shall be responsible for the Installation, integration into the VMS, and all of work required within the Bid for each respective additive alternate shall include all labor, installation, integration and any other incidental work and equipment as required within the Bid documents including Exhibit B, Item No. 2.3 and Section 28 23 00

ii. Group 5; VMS System Hardware As Needed: All items listed within this Group shall include all installation requirements within Exhibit B, Item No. 2.3, Section 28 23 00, and herein which include all labor, installation, integration into the VMS, and all other incidental and all work and equipment as required in accordance with the Bid. Each respective camera and mount(s) shall include the foregoing based on an installation equal to or below 12 ft. from the floor surface. The additional costs associated with installing cameras that are above 14 Ft from the finished floor or adjacent grade, the SUCCESSFUL BIDDER will assess the Daily Rate for Rental Equipment to Install (and maintain) IP and non- IP Cameras, above 14 Ft. per Bid Form Item No.138. The foregoing shall be based on installation performed during COUNTY normal hours of operation in accordance with Item No.18 – General Working Hours/Overtime.

1. For installation services requested by COUNTY to be performed outside of the general working hours, SUCCESSFUL BIDDER will be compensated in accordance with the Item No. 138 – Overtime Projects. SUCCESSFUL BIDDER will increase the total cost of the equipment purchase by the percentage amount indicated in Item No. 138, the difference between the two amounts will represent the additional compensation paid to SUCCESSFUL BIDDER by COUNTY for services provided outside of the COUNTY'S normal business hours identified herein.

a. Example: (1) If the total equipment cost for Project A was $10,000 (which includes any of the line items identified in Group 5 and Group 6 of the Bid Form); (2) BIDDER'S percentage amount for overtime projects: 30%. Based on the foregoing, below would be the calculation required: $10,000 x 30% = $3,000. Rental equipment does it fall under this scenario?

16. ENGINEERING SERVICES
Should the product fail to operate properly upon start-up, SUCCESSFUL BIDDER shall provide the services of a field engineer, as needed. This service shall be furnished at no additional cost to COUNTY.

17. FAILURE TO DELIVER
In the event that SUCCESSFUL BIDDER fails to deliver the product or service in accordance with the terms and conditions of CONTRACT, COUNTY shall have the option to either terminate CONTRACT or temporarily procure the product or service from another supplier. If the product or service is procured from another supplier, SUCCESSFUL BIDDER shall pay to COUNTY any difference between the bid price and the price paid to the other supplier.

18. DAMAGED OR DEFECTIVE PRODUCTS
SUCCESSFUL BIDDER shall replace, at no cost to COUNTY, damaged or defective products within the response times indicated within Item No. 32 – Normal Response Time and Item No. 33 – Emergency Service Repairs. If the SUCCESSFUL bidder is unable to replace the damaged or defective products within the said time periods, due to the item not being readily available through the SUCCESFUL BIDDER'S Inventory or available locally through the proper distribution channels, SUCCESSFUL BIDDER will have 48 hours to furnish and install the said product(s). This shall include freight and any and all other associated costs. Failure to do so will cause such products to be procured from another supplier. If the product is procured from another supplier, SUCCESSFUL BIDDER shall pay COUNTY any difference between the bid price and the price paid to the other supplier.

19. GENERAL WORKING HOURS/OVERTIME

Unless specified otherwise, the normal hours of access for new installation and non-emergency repair services are 7:00 AM to 5:00 PM PST, Monday through Friday, except COUNTY legal holidays, as specified in this document. At COUNTY'S discretion, seasonal adjustments in the hours of the normal business day may be made.

Any work performed outside of the normal jobsite hours that is not required or requested by COUNTY, shall be performed without additional expense to COUNTY.

SUCCESSFUL BIDDER shall pay for the overtime of all COUNTY'S agents and employees who, as a result of the SUCCESSFUL BIDDER'S operation, are required to perform inspection, surveying or testing beyond the normal hours, as specified above, and during legal holidays of COUNTY, as specified above.

Should SUCCESSFUL BIDDER elect to work on a holiday, and needs the County to inspect, SUCCESSFUL BIDDER shall prearrange inspection by written request at least forty-eight (48) hours in advance.

SUCCESSFUL BIDDER shall not be required to pay for the overtime of COUNTY'S agents and employees if such hours are required by the work of CONTRACT.

20. LABOR AND MATERIALS

All labor rate line items in the Bid form are for the purposes of securing labor rates for services no longer covered under the warranty period by which SUCCESSFUL BIDDER shall supply quotes for any services defined herein. All Invoices for Diagnostic call out and preventative maintenance services shall be for actual time only. No minimum billing times for labor or travel time shall be allowed.

All invoices reflecting labor for call out services or repairs shall be prorated to the nearest fifteen (15) minute increment.

All labor rates shall be reflective of services rendered in the contiguous Las Vegas Valley area. For services required outside of the Las Vegas Valley area, billing shall be reflective of actual time billed at the hourly rates contained herein plus mileage.

Materials costs which are associated with providing the services as required herein which are not covered within in the Bid as identified in Section III, Item No. 14 – Installation and Section I, Item No.17 – Balance of Line Discount Defined, then the said materials are to be billed at cost plus not to exceed 20 percent. Invoices shall reflect breakout of the service, equipment, and SUCCESSFUL BIDDER'S cost for materials plus allowable percentage mark up. SUCCESSFUL BIDDER shall submit a copy of its suppliers invoice, COUNTY will verify the accuracy of materials costs being invoiced, when submitting for payment to COUNTY.

Mileage under CONTRACT shall be defined and set at the current U.S. GSA's CONUS rates for non-government owned vehicles at the time of travel. Current U.S. GSA CONUS rates breakdowns can be accessed on the following website: http://www.gsa.gov/Portal/gsa/ep/home.do?tabId=0.

Ex. (current CONUS rate) $0.55 x 50 miles = $27.50

21. LABOR REQUIREMENTS

SUCCESSFUL BIDDER and all subcontractors shall be bound by and comply with all federal, state and local laws with regard to minimum wages, overtime work, hiring and discrimination. All work necessary to be performed after regular working hours on Sundays or legal holidays, shall be performed without additional expense to COUNTY.

22. REMOVAL OF EMPLOYEE

COUNTY reserves the right to request removal of any SUCCESSFUL BIDDER'S employee upon submitting proper justification, should such action be considered necessary to the best interests of COUNTY.

23. FURNISHING SUPERVISION OF EMPLOYEES

SUCCESSFUL BIDDER shall furnish, at SUCCESSFUL BIDDER'S expense, the supervision required to insure the necessary management of his personnel, and the functions involved in the specifications.

24. SUPPLIER'S STOCK

SUCCESSFUL BIDDER shall agree to maintain access to sufficient stock of any item awarded in this bid. The lead time(s) for such stock shall not exceed the maximum delivery time period(s) as specified in this bid.

25. SAFETY REQUIREMENTS

The safety of SUCCESSFUL BIDDER'S employees or representatives and others in or around the area of repairs or maintenance is the responsibility of SUCCESSFUL BIDDER. SUCCESSFUL BIDDER, its employees and its representatives shall comply with the current 29 CFR 1910 OSHA General Industry Regulations. COUNTY will accept no responsibility or liability as a result of improper installation or workmanship. The immediate area, as well as equipment being maintained, will be clean and clear of safety hazards. Any hazard noticed by servicing personnel shall be immediately reported verbally, followed by a written statement to COUNTY'S representative. If barricades are needed to insure safety, the SUCCESSFUL BIDDER shall provide them at no cost to COUNTY.

26. RESPONSIBILITY FOR WORK SECURITY

A. SUCCESSFUL BIDDER shall at all times conduct all operations under CONTRACT in a manner to avoid the risk of loss, theft, or damage by vandalism, sabotage or other means to any property. SUCCESSFUL BIDDER shall promptly take all reasonable precautions, which are necessary and adequate against any conditions, which involve a risk of loss, theft or damage to its property, COUNTY'S property, and the work site. SUCCESSFUL BIDDER shall continuously inspect all its work, materials, and equipment facilities to discover and determine any such conditions and shall be solely responsible for discovery, determination and correction of any such conditions.

B. SUCCESSFUL BIDDER shall comply with all applicable laws and regulations. SUCCESSFUL BIDDER shall cooperate with COUNTY on all security matters and shall promptly comply with any project security requirements established by COUNTY. Such compliance with these security requirements shall not relieve SUCCESSFUL BIDDER of its responsibility for maintaining proper security for the above-noted items, nor shall it be construed as limiting in any manner SUCCESSFUL BIDDER'S obligation to undertake reasonable action as required to establish and maintain secure conditions at the site.

C. SUCCESSFUL BIDDER shall prepare and maintain accurate reports of incidents of loss, theft or vandalism and shall furnish these reports to COUNTY in a timely manner.

27. PROHIBITED ACTIVITIES WHILE ON COUNTY'S PROPERTIES

The activities prohibited by SUCCESSFUL BIDDER'S employees during performance of services include but are not limited to the following: using COUNTY'S property and equipment (coffee pots, microwaves, radios, televisions, VCR's, refrigerators, calculators, computers, printers, fax machines, copy machines, etc.); eating COUNTY'S employees' food from the break rooms or elsewhere; placing personal or business, long distance and directory assistance phone calls, being under the influence of or use of alcohol or drugs while on COUNTY'S property is prohibited.

28. INGRESS AND EGRESS OF FACILITIES

SUCCESSFUL BIDDER'S employees must notify COUNTY'S representative before entering and exiting any of COUNTY'S facilities to perform all services. SUCCESSFUL BIDDER will be provided with a list of COUNTY'S representatives for each of COUNTY'S facilities.

29. KEYS / ACCESS CARDS

SUCCESSFUL BIDDER shall have full responsibility for protection of all keys / access cards furnished to SUCCESSFUL BIDDER or SUCCESSFUL BIDDER'S employees. SUCCESSFUL BIDDER shall also be responsible for ensuring that COUNTY'S facilities are properly secured upon completion of performance of service, if such action is directed by COUNTY'S representative. SUCCESSFUL BIDDER shall be required to sign COUNTY'S form before the key(s) / access card (s) are issued and upon completion of CONTRACT or at COUNTY'S request shall surrender key(s)/ access card(s) and obtain documentation of compliance. Should SUCCESSFUL BIDDER fail to surrender all keys / access cards upon completion or termination of CONTRACT, SUCCESSFUL BIDDER shall be responsible for all costs associated with replacing these items.

30. DAMAGE TO COUNTY PROPERTY

SUCCESSFUL BIDDER shall perform all work in such manner that does not damage COUNTY property. In the event damage occurs to COUNTY property or adjacent property by reason of services performed under CONTRACT, SUCCESSFUL BIDDER shall replace or repair the same at no cost to COUNTY. If damage caused by SUCCESSFUL BIDDER has to be repaired or replaced by COUNTY, the cost of such work shall be deducted from monies due SUCCESSFUL BIDDER.

31. PERFORMANCE REQUIREMENTS

A. COUNTY considers SUCCESSFUL BIDDER to be an expert in the local, state and federal laws, regulations and codes applicable to the services described herein. When, in the opinion of SUCCESSFUL BIDDER, COUNTY is not in compliance with applicable laws, regulations, or codes, SUCCESSFUL BIDDER shall immediately notify COUNTY and make recommendations to bring the buildings, facilities or equipment up to standard. Furthermore the laws, regulations, and codes are to be recognized as a minimum allowable standard of such; and

B. All services performed, parts or material installed and equipment used in the performance of services under CONTRACT shall be subject to inspection and testing by COUNTY to insure compliance with CONTRACT and industry standard. SUCCESSFUL BIDDER shall not charge processing fees for any warranty related work.

Any services performed that are deemed by COUNTY not in conformity with the specifications of CONTRACT or industry standard shall require SUCCESSFUL BIDDER to perform services again within three (3) business days at no additional cost to COUNTY. Consistent sub-standard performance or quality of work may result in the termination of CONTRACT. Consistent sub-standard performance or lack of adherence to safety standards shall result in the permanent removal of SUCCESSFUL BIDDER'S employees from performing work on COUNTY'S property.

C. WORK ORDERS

For applicable departments, SUCCESSFUL BIDDER shall be issued work orders by COUNTY'S Facilities Help Desk. The work order in conjunction with a valid purchase order shall serve as CONTRACTOR'S authorization to perform services. Preventative Maintenance work orders shall be issued for the performance of services in accordance with the Service Specifications contained herein as well as the Preventative Maintenance Work Plan developed by SUCCESSFUL BIDDER.

In the event additional services or repairs outside of those listed in the Service Specifications are required, SUCCESSFUL BIDDER shall provide COUNTY'S authorized representative with a quote for the services in accordance with the labor rates and material costs structure contained herein. Upon approval, COUNTY'S authorized representative will have a separate corrective work order issued authorizing the additional service(s) or repair(s) to be performed. After completion of ALL services, SUCCESSFUL BIDDER shall submit a copy of the completed work order(s) as back up to their invoice. The completed work order(s) shall consist of the notes indicating service(s) / repair(s) performed, the actual amount of time (hours/minutes) required to complete the service(s) / repair(s), date, name of technician, and any other pertinent information. All notes on work order form shall be comprehensive and legible. If work order contains illegible notes, a delay in the processing of invoices for payment may occur. All work orders shall be submitted to COUNTY within forty-eight (48) hours of completing services or repairs.

32. PERFORMANCE STANDARDS

If any services performed are deemed not in conformity with the specifications and requirements of this CONTRACT, COUNTY shall have the right to require SUCCESSFUL BIDDER to perform the services again in conformity with said specifications and requirements at no additional cost to COUNTY.

33. DIAGNOSTIC CALL-OUT SERVICES

A. When requested and or required, SUCCESSFUL BIDDER shall provide diagnostic/troubleshooting services which shall include, but not limited to the following services identified herein and in Section 28 23 00, where applicable: Shall utilize problem solving methods and systematic procedures in accordance with manufacturer's specifications and best practices to determine the source of the problem(s), malfunction(s) or symptom(s) with the VMS and all system hardware (including County's existing legacy system) so that it can be solved and in turn restore the system (VMS and all system hardware) to its fully operational state. Any equipment, hardware, or the like that needs to be replaced as a result of the diagnostic check which is no longer under warranty, the pricing and installation of the said items will be in accordance with the Bid Form prices, include the balance of line discount method, which includes the cost of installation, integration, and other pertinent requirements as identified within Section III, Item No.14 – Installation. Furthermore, the replacement of the said equipment will be required to be replaced within the time periods noted in this paragraph.

B. The services requirements provided herein shall be provided at no charge if the VMS or the system hardware, and/or the system hardware at fault are under Warranty as identified within this Contract.

C. SUCCESSFUL BIDDER or SUCCESSFUL BIDDER'S proposed VMS shall have a twenty–four hours per day, seven (7) days per week Technical Support via a dedicated toll free telephone number.

D. SUCCESSFUL BIDDER shall have twenty-four (24) hours per day, seven (7) days per week answering service, 365 days a year. SUCCESSFUL BIDDER'S representative shall contact COUNTY'S designated representative within 15 minutes to acknowledge receipt of emergency call back.

E. SUCCESSFUL BIDDER shall be required to maintain sufficient inventory of spare parts to service COUNTY accordingly in accordance with Division 28 23 00 (3.09)(C). Critical devices shall be maintained in SUCCESSFUL BIDDER'S local facility.

F. Any equipment, hardware, or the like that requires replacement as identified herein will be completed within 24 hours of arriving on site for Normal and Emergency Response Time Requirements

G. Successful bidder will provide service ticket that identifies arrival/departure times, names of technicians, hours worked and a thorough description of work performed, and any additional information requested by COUNTY.

H. SUCCESSFUL BIDDER shall maintain the necessary inventory of parts and materials required to meet the performance timeframes of CONTRACT. All invoices for diagnostic services shall have a breakout for labor associated with the said services and all equipment costs (which includes all installation and integration costs) separately. COUNTY recognizes the vast variation of parts required to maintain numerous buildings and facilities for COUNTY. If a service call requires overnight shipping to meet the performance timeframes of CONTRACT, SUCCESSFUL BIDDER shall obtain approval, in the form of an e-mail or fax, from COUNTY'S designated representative in order for shipping to be reimbursed. The invoice shall breakout, labor costs associated with diagnostic services, parts (which includes the cost of installation per Section III, item No.14) shipping in this case. COUNTY will only pay shipping for the items pertinent to the referenced service call.

I. Liquidated Damages - In case of failure on the part of the SUCCESSFUL BIDDER to deliver the product or service within the time specified within this section, or with such additional time as may be granted by the formal action of COUNTY, SUCCESSFUL BIDDER shall pay to COUNTY, as liquidated damages, $100 per occurrence for not meet in the performance requirements in this section. This sum shall be considered as reimbursement, in part, to COUNTY for the loss of the use of the items agreed to in this document. The liquidated damages shall be deducted from the next invoice from SUCCESSFUL BIDDER or billed to SUCCESSFUL BIDDER directly. This shall not preclude the recovery of any other damages which can be reasonably estimated.

J. Normal Response Time For Diagnostic call-out Service Requirements:

I. Las Vegas Valley Area: Normal Response time for diagnostic call-out services to be on site, for call-out or call-back services in the Las Vegas Valley area shall complete diagnostic services and any applicable repairs within 24 hours from the time COUNTY'S designated representative calls the 24-hour service number. If requested at time of call out or call back, SUCCESSFUL BIDDER'S representative shall provide an estimated time of arrival to COUNTY'S designated representative.

II. Rural Areas: The response time for rural areas for diagnostic call-out services to be on site, for call-out or call-back services shall be 48 hours to be on site to complete the repair from the time designated representative calls the 24-hour service number. If requested at time of call out or call back, SUCCESSFUL BIDDER'S representative shall provide an estimated time of arrival to COUNTY'S designated representative.

III. COUNTY will provide SUCCESSFUL BIDDER with a list of designated COUNTY'S employees authorized to request after hour services.

IV. SUCCESSFUL BIDDER shall ensure that should service call or repair not be completed in a timely manner, SUCCESSFUL BIDDER shall secure the building or facility until such a time as repair / services can be completed. At all times, SUCCESSFUL BIDDER shall notify COUNTY'S representative prior to leaving COUNTY'S premises of actions taken.

K. Emergency Response Times for Diagnostic call-out Service Requirements

I. Emergency Response time for Diagnostic call-out services shall be available on a twenty-four (24) hour basis. SUCCESSFUL BIDDER shall maintain the staff required to respond to multiple call-outs, if required.

II. An emergency request shall be defined as a system or portion of a system failure that affects building safety, security, and operation of critical components. Failure of a single component (i.e., smoke detector, intercom station, camera, or monitor) is not considered an emergency maintenance request.

V. SUCCESSFUL BIDDER shall be on-site to complete diagnostic service requirements and applicable repairs within four (4) hours after being notified by COUNTY that a building or facility, within the Las Vegas Valley and six (6) hours for locations rural areas. If the SUCCESSFU BIDDER cannot be on-site within the said time, SUCCESSFUL BIDDER shall notify COUNTY in writing to include estimated time of completion. In these instances, COUNTY reserves the right to procure services from another Supplier. Any additional costs incurred by COUNTY above and beyond SUCCESSFUL BIDDER'S price will be credited to COUNTY on SUCCESSFUL BIDDER'S next invoice.

III. SUCCESSFUL BIDDER shall ensure that should service call or repair not be completed in a timely manner, SUCCESSFUL BIDDER shall secure the building or facility until such a time as repair / services can be completed. At all times, SUCCESSFUL BIDDER shall notify COUNTY'S representative prior to leaving COUNTY'S premises of actions taken.

34. BUILDING SECURITY

SUCCESSFUL BIDDER shall be responsible for securing all buildings, offices, and facilities at the time of their service. Failure to comply shall make SUCCESSFUL BIDDER responsible for all losses of COUNTY property.

35. ENFORCEMENT OF "LOCK-DOOR" POLICY

All locked doors are to remain locked at all times. SUCCESSFUL BIDDER'S employees are not allowed to open any doors for anyone.

36. CORRECT USE OF ALARM SYSTEM

At the time the alarm codes are furnished to SUCCESSFUL BIDDER, COUNTY will give instructions to SUCCESSFUL BIDDER as to the proper use and procedures of the alarm system. After that time, SUCCESSFUL BIDDER shall be responsible for the proper utilization of the alarm system during the time they are performing any after hours services. In the event the alarm is activated through the negligence of SUCCESSFUL BIDDER, any charges billed to COUNTY for the false alarm shall be charged back to SUCCESSFUL BIDDER in the form of a credit against their monthly invoice.

37. PROTECTION OF KEYS AND ALARM CODES

One set of keys will be provided to SUCCESSFUL BIDDER by COUNTY. SUCCESSFUL BIDDER shall be fully responsible for the protection of keys and alarm codes. If services at the site are performed after hours, SUCCESSFUL BIDDER shall be responsible for properly locking the building and to properly set the alarm system.

COUNTY must be notified immediately upon the termination for any reason of an employee performing work under CONTRACT. Should the set of keys allotted to SUCCESSFUL BIDDER become lost or stolen, or otherwise compromised, SUCCESSFUL BIDDER shall notify COUNTY immediately. COUNTY reserves the right to have the corresponding locks re-keyed and the alarm codes changed at SUCCESSFUL BIDDER'S expense.

38. GENERAL TRAINING

COUNTY may periodically require SUCCESSFUL BIDDER to provide training. Training shall be provided to COUNTY'S personnel by a qualified factory representative or SUCCESSFUL BIDDER'S personnel. The training shall consist of proper operation techniques, including care and maintenance of the product. The training shall take place at a location designated by COUNTY'S representative.

39. INVOICING REQUIREMENT

This Bid may represent the requirements from numerous COUNTY departments. Each using department will issue individual Purchase Orders dictating contact information and any additional invoicing requirements. All Purchase Orders sent to SUCCESSFUL BIDDER will identify the department or division for which supplies and services are required and list the location where associated invoices shall be sent.

SUCCESSFUL BIDDER shall comply with the invoice requirements contained in the General Conditions of this bid. SUCCESSFUL BIDDER shall be aware that per NRS 244.250, COUNTY is precluded from payment of invoices submitted beyond six (6) months from the date SUCCESSFUL BIDDER performs the services.

40. INVENTORY LIST

An inventory list of VMS System Hardware shall be provided to COUNTY within 10 calendar days of COUNTY's request in an excel electronic file. At a minimum, the reports shall contain the following information and any other information requested by COUNTY. SUCCESSFUL BIDDER shall update the inventory list accordingly as changes, replacements, integration of new equipment and locations, etc., has been made to the System.

A. Department Location (address)

I. List of all System Hardware

1. System Hardware installed location (i.e., building #, floor #, room #, location description)
2. Manufacturer Name;
3. Manufacturer Item Number;
4. Item Description
5. Serial Number
6. Warranty Start and End Date

41. INSPECTION OF EQUIPMENT USED

All equipment used to perform the required services, shall be subject to inspection and test prior to and during the performance of CONTRACT by COUNTY to ensure the use of equipment that meets the "standards of the industry," both in safety and suitability as generally recognized and in conformity to established practice in the area of the specific services being performed. Use of unsatisfactory equipment will be considered unsatisfactory performance.

42. THIRD PARTY INSPECTIONS

Where COUNTY may be limited in access or experience to perform inspections and tests necessary to ascertain that the requirements of CONTRACT are being fulfilled, COUNTY reserves the right to contract with a third party recognized by industry standards as qualified to perform maintenance audits. SUCCESSFUL BIDDER shall receive a copy of the official findings of all maintenance audits from COUNTY within thirty (30) calendar days of COUNTY'S receipt of documents or prior to COUNTY'S demand for corrective action.

Should the maintenance audit determine that performance by SUCCESSFUL BIDDER has been below the industry standard or not in compliance with the terms and conditions of CONTRACT, COUNTY reserves the right to seek reimbursement of the third party inspection costs from SUCCESSFUL BIDDER. Failure of SUCCESSFUL BIDDER to reimburse COUNTY within thirty (30) calendar days of COUNTY'S demand for reimbursement may result in COUNTY invoking liquidated damages and/or termination of CONTRACT.

43. DISPUTES

Any dispute relating to CONTRACT after award shall be resolved through good faith efforts upon the part of SUCCESSFUL BIDDER and COUNTY. At all times, SUCCESSFUL BIDDER shall carry on the work and maintain his progress schedule in accordance with the requirements of CONTRACT and the determination of COUNTY, pending resolution of any dispute.

44. LIQUIDATED DAMAGES

In case of failure on the part of the SUCCESSFUL BIDDER to deliver the product or service within the time specified for each respective project, or with such additional time as may be granted by the formal action of COUNTY, SUCCESSFUL BIDDER shall pay to COUNTY, as liquidated damages, $500 per calendar day. This sum shall be considered as reimbursement, in part, to COUNTY for the loss of the use of the items agreed to in this document. The liquidated damages shall be deducted from the next invoice from SUCCESSFUL BIDDER or billed to SUCCESSFUL BIDDER directly. This shall not preclude the recovery of any other damages which can be reasonably estimated.

45. SUBMITTAL OF USAGE REPORTS

If requested by COUNTY, SUCCESSFUL BIDDER shall submit an annual usage report ten (10) calendar days after the end of the specified period. The report shall list all items purchased by COUNTY for the period, including all specified and non-specified bid items. The report shall be submitted in duplicate to the designated contacts as identified in this document. The report shall list the manufacturer's part number, description, and quantity purchased for the period.

46. REPLACEMENT PARTS

All major component replacement parts shall be readily available from suppliers within three (3) calendar days.

47. CONTRACT PERFORMANCE CUSTOMER SURVEY

Periodically during the life of CONTRACT, COUNTY will administer a Contract Performance Customer Survey Questionnaire to be completed by both end using departments and SUCCESSFUL BIDDER. This survey serves as a vehicle for COUNTY to identify successes or challenges encountered in the contract management process. Participation in this process shall be considered as part of SUCCESSFUL BIDDER'S performance.

48. AIR POLLUTION

SUCCESSFUL BIDDER shall so perform its work as not to discharge into the atmosphere from any source whatever smoke, dust, or other air contaminants in violation of the laws, rules and regulations of all federal, state and local air and water pollution requirements including, but not limited to: Nevada Revised Statute 445: Air Quality Regulation; registering with the Clark County Health Department, Air Pollution Board any equipment requiring operating permits by said Board; and adhering to all Clark County Air Pollution Board Regulations.

49. STORAGE OF MATERIALS

SUCCESSFUL BIDDER is responsible for storage of any materials. COUNTY is not responsible for loss or damage to materials, tools, appliances, or work arising from acts of theft, vandalism, malicious mischief or other causes.

50. CLEANING UP

SUCCESSFUL BIDDER shall, at all times, keep the work area in a neat, clean, and safe condition. Upon completion of any portion of the work, SUCCESSFUL BIDDER shall promptly remove all of its equipment, temporary structures and surplus materials not to be used at or near the same location during later stages of work. Upon completion of the work and before payment is made, SUCCESSFUL BIDDER shall, at its expense, satisfactorily dispose of all plant, rubbish, unused materials, and other equipment and materials belonging to it or used in the performance of the work, and SUCCESSFUL BIDDER shall leave the premises and work site in a neat, clean and safe condition. In the event of SUCCESSFUL BIDDER'S failure to comply with the foregoing, COUNTY may accomplish the same at SUCCESSFUL BIDDER'S expense.

# CLARK COUNTY, NEVADA

## IV - BID FORM

**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

_____
Name of Firm

This bid is submitted in response to COUNTY'S Invitation to Bid and is in accordance with all conditions and specifications in this document. The prices reflected on this bid form shall include all labor, materials, equipment, overhead, profit, and insurance necessary to cover the finished work called for. The COUNTY will compensate SUCCESSFUL BIDDER at the rates identified under the "Unit Price" column of the SUCCESSFUL BIDDER's Bid Form. The "weighted total" column is being utilized for evaluation purposes only by COUNTY to assist in determining the lowest responsive and responsive bidder.

| GROUP 1: VMS SYSTEM | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity | x | Unit Price | = | Extended Total |
| 1 | VMS System (Division 28 23 00 Section 2.19) | 1 Lot | x | $ | = | $ |
| 2 | Installation of COUNTY Switch at Location and additional locations as needed (Owner provided and Owner Installed) | 1 Lot | x | N/A | = | N/A |
| 3 | Installation of COUNTY Server at IT Operations Location (Owner provided and Owner Installed) | 1 Lot | x | N/A | = | N/A |
| 4 | Installation of Cat 6 jumpers for COUNTY Server & Switches(Owner provided and Owner Installed) | 1 Lot | x | N/A | = | N/A |
| 5 | Installation of fiber jumpers for COUNTY Server & Switches(Owner provided and Owner Installed) | 1 Lot | x | N/A | = | N/A |
| 6 | Bringing the VMS System online, configure, and to provide a fully functional system with the ability to utilize all functions available through the Video Management System, a turnkey system. | 1 Lot | x | $ | = | $ |
| 7 | VMS Integration Cost for each satellite location added to VMS System, as needed. | 6 ea | x | $ | = | $ |
| 8 | VMS Licensing Fee Per IP Camera (0-5000 cameras) | 362 ea | x | $ | = | $ |
| 9 | Additional client workstation licensing fee, (First fifteen to be included at no charge per site) | 10 ea | x | $ | | |
| **VMS SYSTEM ANNUAL MAINTENANCE (PASS THROUGH/DIRECT FEE FROM VMS PROVIDER)** | | | | | | |
| 10 | VMS System Annual Maintenance Fee (Annual Fee) | 5 ea | x | $ | = | $ |
| | | | | **Subtotal Group 1 ( Line Item Numbers 1 - 10)** | | $ |

**BIDDERS MUST BID ON ALL ITEMS IN GROUP NO. 1. TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GROUP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE.**

| GROUP 2: SPRING MOUNTAIN YOUTH CAMP | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity (Each) | x | Unit Price | = | Extended Total |
| 11 | 360 - WP - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16) | 9 | x | $ | = | $ |
| 12 | 360 - WP - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | = | $ |
| 13 | 360 - ID - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | 11 | x | $ | = | $ |
| 14 | 360 - ID - 3 Megapixel -Ceiling IP Camera (Division 28 23 00 Section 2.10) | 7 | x | $ | = | $ |
| 15 | 180 - WP - 5 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.16) | 11 | x | $ | = | $ |
| 16 | 180 - WP - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16) | 2 | x | $ | = | $ |
| 17 | 180 - ID - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.10) | 6 | x | $ | = | $ |
| 18 | Fixed - WP - 3 Megapixel - Corner Grade IP Camera (Division 28 23 00 Section 2.08) | 1 | x | $ | = | $ |
| 19 | Fixed - WP - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.08) | 6 | x | $ | = | $ |
| 20 | Fixed - WP - 29 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.18) | 2 | x | $ | = | $ |
| 21 | Fixed - IR - 1.3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.05) | 3 | x | $ | = | $ |
| 22 | Fixed - ID - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.04) | 1 | x | $ | = | $ |
| 23 | Fixed - IR - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.05) | 42 | x | $ | = | $ |
| 24 | Fixed - IR - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.07) | 1 | x | $ | = | $ |
| 25 | Fixed - WP/IR - 1.3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.06) | 1 | x | $ | = | $ |
| 26 | Fixed - IR - 3 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.07) | 2 | x | $ | = | $ |
| 27 | High Grade NVR (Division 28 23 00 Section 2.20) | 6 | x | $ | = | $ |
| 28 | Training Services as required per Section 28 23 00 3.11 Training | 1 Lot | x | $ | = | $ |
| 29 | Uninterrupted Power Supply (UPS) (Division 28 23 00 Section 2.01B) | 1 | x | $ | = | $ |
| 30 | Installation of entire system including NVR, final termination, and all other necessary equipment, parts, incidentals, etc. to provide a fully functional system with the ability to utilize all functions available through the Video Management System, a turnkey system | 1 Lot | x | $ | = | $ |
| **Subtotal Group 2 ( Line Item Numbers 11 -30)** | | | | | | $ |

| GROUP 2: SPRING MOUNTAIN YOUTH CAMP ADDITIVE ALTERNATES | | | | | | |
|---|---|---|---|---|---|---|
| COUNTY MAY EXERCISE THE FOLLOWING ITEMS IN SEQUENTIAL ORDER ONLY SUBJECT TO THE AVAILABILITY OF FUNDS FOR THIS GROUP ONLY. THE ADDITIVE ALTERNATE PRICES QUOTED SHALL REMAIN FIRM FOR THE PERIOD OF 90 CALENDAR DAYS, AS DETAILED IN THE INSTRUCTIONS TO BIDDERS | | | | | | |
| 31 | Additive Alternate #1: Fixed - WP/IR - 8.3 Megapixel 4K - Corner IP Camera (Division 28 23 00 Section 2.17and Section III(14)). | 4 | x | $ | = | $ |
| 32 | Additive Alternate #1: 180 - WP/IR - 5 Megapixel - Pole IP Camera (Division 28 23 00 Section 2.16 and Section III(14)) | 2 | x | $ | = | $ |
| 33 | Additive Alternate #2: 180 - WP/IR - 5 Megapixel - Pole IP Camera (Division 28 23 00 Section 2.16 and Section III(14)) | 4 | x | $ | = | $ |
| 34 | Additive Alternate #2: 180 - WP/IR - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16 and Section III(14)) | 1 | x | $ | = | $ |

**BIDDERS MUST BID ON ALL ITEMS IN GROUP NO. 2. TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GROUP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE.**

| GROUP 3: SPRING MOUNTAIN YOUTH CAMP RESIDENTIAL | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity (Each) | x | Unit Price | = | Extended Total |
| 35 | 360 - ID - 5 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | = | $ |
| 36 | 360 - WP - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | 2 | x | $ | = | $ |
| 37 | 180 - WP - 5 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.16) | 3 | x | $ | = | $ |
| 38 | Fixed - IR - 1.3 Megapixel Ceiling IP Camera (Division 28 23 00 Section 2.05) | 13 | x | $ | = | $ |
| 39 | Fixed - IR - 1.3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.05) | 1 | x | $ | = | $ |
| 40 | Fixed - WP - 3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.08) | 1 | x | $ | = | $ |
| 41 | Fixed - WP - 1.3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.06) | 1 | x | $ | = | $ |
| 42 | Fixed - ID - 1.3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.04) | 1 | x | $ | = | $ |
| 43 | High Grade NVR (Division 28 23 00 Section 2.20) | 2 | x | $ | = | $ |
| 44 | Uninterrupted Power Supply (UPS) (Division 28 23 00 Section 2.01B) | 1 | x | $ | = | $ |
| 45 | Training Services as required per Section 28 23 00 3.11 Training | 1 Lot | x | $ | = | $ |
| 46 | Installation of Entire System including, NVR, final termination, and all other necessary equipment, parts, etc. to provide a fully functional system with the ability to utilize all functions available through the Video Management System, a turnkey system | 1 Lot | x | $ | = | $ |
| | | | | | **Subtotal Group 3 ( Line Item Numbers 35 - 46)** | $ |

**BIDDERS MUST BID ON ALL ITEMS IN GROUP NO.3. TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GROUP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE.**

| GROUP 4: DJJS DETENTION CAMPUS | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity (Each) | x | Unit Price | = | Extended Total |
| 47 | 360 - WP - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | 2 | x | $ | = | $ |
| 48 | 360 - ID - 5 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | = | $ |
| 49 | 360 - ID - 3 Megapixel -Ceiling IP Camera (Division 28 23 00 Section 2.10) | 5 | x | $ | = | $ |
| 50 | 180 - WP - 5 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.16) | 2 | x | $ | = | $ |
| 51 | 180 - WP - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | = | $ |
| 52 | 180 - ID - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.10) | 6 | x | $ | = | $ |
| 53 | Fixed - WP - 3 Megapixel - Corner Grade IP Camera (Division 28 23 00 Section 2.08) | 3 | x | $ | = | $ |
| 54 | Fixed - WP - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.08) | 9 | x | $ | = | $ |
| 55 | Fixed - ID - 1.3 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.04) | 1 | x | $ | = | $ |
| 56 | Fixed - IR - 1.3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.05) | 14 | x | $ | = | $ |
| 57 | Fixed - ID - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.04) | 2 | x | $ | = | $ |
| 58 | Fixed - IR - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.05) | 4 | x | $ | = | $ |
| 59 | Fixed - IR - 2 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.12) | 32 | x | $ | = | $ |
| 60 | Fixed - IR - 2 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.12) | 14 | x | $ | = | $ |
| 61 | Fixed - WP/IR - 3 Megapixel - Pendant IP Camera (Division 28 23 00 Section2.13) | 14 | x | $ | = | $ |
| 62 | Fixed - WP/IR - 8.3 Megapixel 4K - Wall IP Camera (Division 28 23 00 Section 2.17) | 5 | x | $ | = | $ |
| 63 | High Grade NVR (Division 28 23 00 Section 2.20) | 7 | x | $ | = | $ |
| 64 | Uninterrupted Power Supply (UPS) (Division 28 23 00 Section 2.01B) | 1 | x | $ | = | $ |
| 65 | Training Services as required per Section 28 23 00 3.11 | 1 Lot | x | $ | = | $ |
| 66 | Installation of Entire System including NVR, final termination, and all other necessary equipment, parts, etc. to provide a fully functional system with the ability to utilize all functions available through the Video Management System, a turnkey system | 1 Lot | x | $ | = | $ |
| | | | | | **Subtotal Group 4 ( Line Item Numbers 47 - 66)** | $ |

| GROUP 4: DJJS DETENTION CAMPUS ADDITIVE ALTERNATES | | | | | | |
|---|---|---|---|---|---|---|
| COUNTY MAY EXERCISE THE FOLLOWING ITEMS IN SEQUENTIAL ORDER ONLY SUBJECT TO THE AVAILABILITY OF FUNDS FOR THIS GROUP ONLY. THE ADDITIVE ALTERNATE PRICES QUOTED SHALL REMAIN FIRM FOR THE PERIOD OF 90 CALENDAR DAYS, AS DETAILED IN THE INSTRUCTIONS TO BIDDERS. | | | | | | |
| 67 | Additive Alternate # 1: (10) Classroom Fixed-IR-2 Megapixel-Ceiling IP Camera (Division 28 23 00 Section 2.12 and Section III(14)) | 10 | x | $ | = | $ |
| 68 | Additive Alternate # 2: (7) Administration Fixed-IR-2 Megapixel-Ceiling IP Camera(Division 28 23 00 Section 2.12 and Section III(14)) | 6 | x | $ | = | $ |
| 69 | Additive Alternate # 2: (1) Administration 360-ID-3 Megapixel-Ceiling IP Camera(Division 28 23 00 Section 2.10 and Section III(14)) | 1 | x | $ | = | $ |

**BIDDERS MUST BID ON ALL ITEMS IN GROUP NO.4 TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GROUP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE.**

| GROUP 5: VMS EQUIPMENT AS NEEDED (FUIRNISHED AND INSTALLED PRICE PER III, ITEM NO.14 - INSTLLATION) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity (Each) | x | Unit Price | x | % Weight or as noted | = | Weighted Total |
| 70 | 360 - 5 Megapixel - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | x | 1.1 | = | $ |
| 71 | 360 - camera - Outdoor Corner mount | 1 | x | $ | x | NA | = | $ |
| 72 | 360 - camera - Outdoor Pendant mount | 1 | x | $ | x | NA | = | $ |
| 73 | 360 - camera - Outdoor Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 74 | 360 - 5 Megapixel - Indoor IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | x | 1.1 | = | $ |
| 75 | 360 - camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 76 | 360 - camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 77 | 360 - camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 78 | 360 - 3 Megapixel - Indoor IP Camera (Division 28 23 00 Section 2.10) | 1 | x | $ | x | 1.05 | = | $ |
| 79 | 360 - camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 80 | 360 - camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 81 | 360 - camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 82 | 180 - 5 Megapixel - Outdoor weatherproof Wall IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | x | 1.05 | = | $ |
| 83 | 180 - 5 Megapixel - Indoor Wall IP Camera (Division 28 23 00 Section 2.16) | 1 | x | $ | x | 1.05 | = | $ |
| 84 | 180 - 3 Megapixel - Indoor Wall IP Camera (Division 28 23 00 Section 2.10) | 1 | x | $ | x | 1.1 | = | $ |
| 85 | Fixed - IR - 1.3 Megapixel - IP Camera (Division 28 23 00 Section 2.05) | 1 | x | $ | x | 1.15 | = | $ |
| 86 | 1.3 Mp camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 87 | 1.3 Mp camera - Pendant mount | 1 | x | $ | x | NA | = | $ |

| GROUP 5: VMS EQUIPMENT AS NEEDED (FUIRNISHED AND INSTALLED PRICE PER III, ITEM NO.14 - INSTLLATION) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity (Each) | x | Unit Price | x | % Weight or as noted | = | Weighted Total |
| 88 | 1.3 Mp camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 89 | 1.3 Mp camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 90 | Fixed - 1.3 Megapixel -WP/IR Wall IP Camera (Division 28 23 00 Section 2.06) | 1 | x | $ | x | 1.05 | = | $ |
| 91 | Fixed - 3 Megapixel - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.08) | 1 | x | $ | x | 1.15 | = | $ |
| 92 | 3 Mp camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 93 | 3 Mp camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 94 | 3 Mp camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 95 | 3 Mp camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 96 | Fixed - 3 Megapixel - Indoor IR IP Camera (Division 28 23 00 Section 2.07) | 1 | x | $ | x | 1.1 | = | $ |
| 97 | 3 Mp camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 98 | 3 Mp camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 99 | 3 Mp camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 100 | 3 Mp camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 101 | Fixed -29 Megapixel - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.18) | 1 | x | $ | x | 1.05 | = | $ |
| 102 | 29 Mp camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 103 | 29 Mp camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 104 | 29 Mp camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 105 | 29 Mp camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 106 | Fixed -4K - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.17) | 1 | x | $ | x | 1.05 | = | $ |
| 107 | 4K camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 108 | 4K camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 109 | 4K camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 110 | 4K camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 111 | PTZ- 1.3 Megapixel Weatherproof HD 28X Network PTZ Dome camera(Division 28 23 00 Section 2.09) | 1 | x | $ | x | 1.05 | = | $ |
| 112 | PTZ camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 113 | PTZ camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 114 | PTZ camera - Corner mount | 1 | x | $ | x | NA | = | $ |

| GROUP 5: VMS EQUIPMENT AS NEEDED (FUIRNISHED AND INSTALLED PRICE PER III, ITEM NO.14 - INSTLLATION) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Item No. | Item Description | Quantity (Each) | x | Unit Price | x | % Weight or as noted | = | Weighted Total |
| 115 | PTZ camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 116 | PTZ- 1.3 Megapixel Indoor HD 28X Network PTZ Dome camera(Division 28 23 00 Section 2.09) | 1 | x | $ | x | 1.05 | = | $ |
| 117 | PTZ camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 118 | PTZ camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 119 | PTZ- 2 Megapixel Weatherproof HD 32X Network PTZ camera(Division 28 23 00 Section 2.14) | 1 | x | $ | x | 1.15 | = | $ |
| 120 | PTZ camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 121 | PTZ camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 122 | PTZ camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 123 | PTZ camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 124 | PTZ- 2 Megapixel Indoor HD 32X Network PTZ camera (Division 28 23 00 Section 2.14) | 1 | x | $ | x | 1.1 | = | $ |
| 125 | PTZ camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 126 | PTZ camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 127 | PTZ- 1.3 Megapixel Weatherproof HD 43X Network PTZ camera(Division 28 23 00 Section 2.15) | 1 | x | $ | x | 1.5 | = | $ |
| 128 | PTZ camera - Ceiling mount | 1 | x | $ | x | NA | = | $ |
| 129 | PTZ camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 130 | PTZ camera - Corner mount | 1 | x | $ | x | NA | = | $ |
| 131 | PTZ camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 132 | PTZ- 1.3 Megapixel Indoor HD 43X Network PTZ camera(Division 28 23 00 Section 2.15) | 1 | x | $ | x | 1.15 | = | $ |
| 133 | PTZ camera - Pendant mount | 1 | x | $ | x | NA | = | $ |
| 134 | PTZ camera - Wall Arm mount | 1 | x | $ | x | NA | = | $ |
| 135 | High terabyte Grade NVR (20 to 48 terabyte) (Division 28 23 00 Section 2.20) | 1 | x | $ | x | 1.25 | = | $ |
| 136 | Medium terabyte Grade NVR (8 to 20 terabyte) (Division 28 23 00 Section 2.20) | 1 | x | $ | x | 1.6 | = | $ |
| 137 | Low Grade NVR (1 to 8 terabyte) (Division 28 23 00 Section 2.20) | 1 | x | $ | x | 1.15 | = | $ |
| | | | | | | | **GROUP 5 Subtotal (Item Nos. 70-137)** | $ |

**BIDDERS MUST BID ON ALL ITEMS IN LOT NO. 5. TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GROUP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE**

| GROUP 6: SERVICE REQUIREMENTS AS NEEDED | | | | | | | |
|---|---|---|---|---|---|---|---|
| Item No. | Item Description | Unit of Measure | Estimated Quantity ( for evaluation purposes) | x | Unit Price | = | Extended Total |
| 138 | Daily Rate for Rental Equipment to Install (and maintain) IP and non- IP Cameras, above 14 Ft. | Per Day | 10 | x | $ | = | $ |
| 139 | Call Out Diagnostic Services: Straight Time Hourly Rate, Monday through Friday, 7AM through 5PM (the VMS, all system hardware, and County's existing legacy systems) | HR Rate | 30 | x | $ | = | $ |
| 140 | Call Out Diagnostic All other times and County Legal Holidays (the VMS, all system hardware, and County's existing legacy systems) | HR Rate | 15 | x | $ | = | $ |
| 141 | Preventative Maintenance Service (type 1 & 2) as requested by COUNTY (28 23 00, 3.09, B & C) (the VMS, all system hardware, and County's existing legacy systems) | HR Rate | 20 | x | $ | = | $ |
| 142 | Refresher and Ongoing Training Services per Section 28 23 00 3.11 (the VMS, all system hardware, and County's existing legacy systems) | HR Rate | 5 | x | $ | = | $ |
| Item No. | Item Description | Dollar Value Assigned for Evaluation Purposes | | x | % Surcharge Amount | = | Extended Total |
| 143 | Overtime Projects: Percentage increase/surcharge for "work/projects" per Special Conditions, Item No. 14 – Installation.(input percentage amount in the space provided) (for all services including labor/integration associated with the VMS, all system hardware, and County's existing legacy systems as identified within III(14)) | $30,000 | | + | ____ % | = | $ |
| | | | | | | **GROUP 6 Subtotal (Item Nos.138-143)** | $ |

**BIDDERS MUST BID ON ALL ITEMS IN LOT NO.6. TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GROUP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE.**

| GROUP 7: BALANCE OF LINE DISCOUNT | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Item Description | Dollar Value Assigned for Evaluation Purposes | - | % Discount Off List Price | = | Extended Total |
| 144 | Balance of Line Discount Pricing For Avigilon IP Cameras and incidental equipment | $5,000 | - | _____ % | = | $ |
| 145 | Balance of Line Discount Pricing For Sony IP Cameras and incidental equipment Offered By Bidder | $5,000 | - | _____ % | = | $ |

| GROUP 7: BALANCE OF LINE DISCOUNT | | | | | | |
|---|---|---|---|---|---|---|
| Item No. | Item Description | Dollar Value Assigned for Evaluation Purposes | - | % Discount Off List Price | = | Extended Total |
| 146 | Balance of Line Discount Pricing For Samsung IP Cameras and incidental equipment | $5,000 | - | _____ % | = | $ |
| 147 | Balance of Line Discount Pricing For Dell NVR and incidental equipment | $5,000 | - | _____ % | = | $ |
| 148 | Balance of Line Discount Pricing For Sysco NVR and incidental equipment | $5,000 | - | _____ % | = | $ |
| 149 | Balance of Line Discount Pricing For Honeywell CCTV products(County's legacy system), equipment, DVRs and incidental equipment | $5,000 | - | _____ % | = | $ |
| | | | | | GROUP 7 Subtotal (Item Nos.144-149) | $ |

**BIDDERS MUST BID ON ALL ITEMS IN LOT NO.7. TO BE CONSIDERED RESPONSIVE. ANY BID SUBMITTAL RECEIVED THAT HAS NOT BID ON ALL ITEMS IN THE GRUOP WILL BE READ INTO THE RECORD AS INCOMPLETE AND AS NON-RESPONSIVE.**

| | |
|---|---|
| GRAND TOTAL (Group 1 + Group 2 + Group 3 + Group 4 + Group 5 + Group 6 + Group 7)<br>( Do not include the costs associated with any additive alternates) | $ |

**DELIVERY REQUIREMENTS:**

_____ calendar days (Maximum 30 calendar days)

**PERFORMANCE AND SPECIFICATION REQUIREMENTS:**

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Section III, Item No.3 – Completion Schedule for Group 1 through 4.

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Section III, Item No. 4 – Technical Specifications

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Section III, Item No. 14 – Installation

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Section III, Item No. 32 – Diagnostic Services

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Exhibit B - VMS and Surveillance integration Assurance Specifications.

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Exhibit x – Section 280500 Electrical Systems General Requirements

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Exhibit x – Schedule 28 23 00 – Video Surveillance (CCTV) System

_____ Yes _____ No SUCCESSFUL BIDDER shall comply with Exhibit D – Schedule 28 23 00 – Video Surveillance (CCTV) System

**DISCOUNT TERMS OF PAYMENT:**

_____%, _____ calendar days.

BIDDER'S LOCAL FACILITY
(If Bidder has multiple local facilities, please attach to bid submittal a list of this information for each facility)

_____
CONTACT MANAGER OR ACCOUNT REPRESENTATIVE NAME

_____
ADDRESS, CITY, STATE, ZIP

_____
PHONE NUMBER

_____
FAX NUMBER

_____
EMAIL ADDRESS

# ATTACHMENTS TO BID FORM

**FAILURE TO SUBMIT REQUIRED ATTACHMENTS AS LISTED BELOW MAY RESULT IN REJECTION OF BID.**

1. **Attachment 1,** Subcontractor Information, is attached.
2. Attachment A, VMS Specifications, is attached
3. Attachment H, Bid Form Supplement, is attached
4. Disclosure of Ownership/Principals Form, is attached
5. Copy of the Successful Bidder's surety bond

Bidder is responsible to ascertain the number of Addenda issued and hereby acknowledges receipt of the following Addendum: **FAILURE TO ACKNOWLEDGE ALL ADDENDA ISSUED AND USE THE CORRECT BID FORM AS REQUIRED, MAY RESULT IN REJECTION OF BID.**

| | | | | | |
|---|---|---|---|---|---|
| Addendum No. | _____ | Addendum No. | _____ | Addendum No. | _____ |
| Addendum No. | _____ | Addendum No. | _____ | Addendum No. | _____ |
| Addendum No. | _____ | Addendum No. | _____ | Addendum No. | _____ |

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

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

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

| | |
|---|---|
| SIGNATURE OF AUTHORIZED REPRESENTATIVE | LEGAL NAME OF FIRM |
| NAME AND TITLE OF AUTHORIZED REPRESENTATIVE (PRINT OR TYPE) | ADDRESS OF FIRM |
| PHONE NUMBER OF AUTHORIZED REPRESENTATIVE | CITY, STATE ZIP |
| FAX NUMBER OF AUTHORIZED REPRESENTATIVE | |
| EMAIL ADDRESS | DATE |

**BUSINESS LICENSE INFORMATION:**

| | | | |
|---|---|---|---|
| **CURRENT STATE** | **LICENSE NO.** | **ISSUE DATE:** | **EXPIRATION DATE:** |
| **CURRENT COUNTY:** | **LICENSE NO.** | **ISSUE DATE:** | **EXPIRATION DATE:** |
| **CURRENT CITY:** | **LICENSE NO.** | **ISSUE DATE:** | **EXPIRATION DATE:** |

NEVADA CONTRACTOR'S LICENSE NUMBER: _____

DOLLAR LIMIT : _____

# FOR INFORMATIONAL PURPOSES ONLY:

The above referenced firm is a ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB as defined below.

## *STATE OF NEVADA BUSINESSES*

### MINORITY OWNED BUSINESS ENTERPRISE (MBE):

An independent and continuing Nevada business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more minority persons of Black American, Hispanic American, Asian-Pacific American or Native American ethnicity.

### WOMEN OWNED BUSINESS ENTERPRISE (WBE):

An independent and continuing Nevada business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more women.

### PHYSICALLY-CHALLENGED BUSINESS ENTERPRISE (PBE):

An independent and continuing Nevada business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more disabled individuals pursuant to the federal Americans with Disabilities Act.

### SMALL BUSINESS ENTERPRISE (SBE):

An independent and continuing Nevada business for profit which performs a commercially useful function, is not owned and controlled by individuals designated as minority, women, or physically-challenged, and where gross annual sales does not exceed $2,000,000.

### VETERAN OWNED BUSINESS ENTERPRISE (VET):

An independent and continuing Nevada business for profit which performs a commercially useful function and is at least 51 percent owned and controlled by one or more U.S. Veterans.

### DISABLED VETERAN OWNED BUSINESS ENTERPRISE (DVET):

A Nevada business at least 51 percent owned/controlled by a disabled veteran.

### EMERGING SMALL BUSINESS (ESB):

Certified by the Nevada Governor's Office of Economic Development effective January, 2014. Approved into Nevada law during the 77th Legislative session as a result of AB294.

**EXHIBIT A - VMS SPECIFICATIONS**

**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

This Exhibit shall be completed by the Video Management System manufacturer (VMS Mfg.), which may or may not be the Bidder. All sections of this Exhibit shall be completed by the VMS Mfg. VMS Mfg. shall agree that all of the information provided herein is true, accurate, and complete.

By selecting "No" for Item Numbers 1, 2, 5, 6, or 7 or "Yes" for Item Numbers 3 or 4, may result in the VMS Mfg. being deemed as non-responsive and therefore intern may result in the Bidder's bid being deemed as non-responsive and their bid will be rejected.

VMS Mfg. Name: _____
Primary Contact Person: _____
Telephone: _____
Fax: _____
Email: _____

1. VMS Mfg. shall confirm that the Bidder _____ (insert name here), is an authorized distributor and installer for all products and services provided by the VMS Mfg. Furthermore, the Bidder has the highest installation certification available through the VMS Mfg., which is _____ (insert certification name here)

2. VMS Mfg. shall confirm that the VMS System being proposed by the Bidder for the above referenced Bid meets or exceeds the specifications of the VMS System as required within Exhibit C, Division 28 23 00, Item No. 2.19 – Video Management System General.
   YES: _____ NO: _____

3. VMS Mfg. shall confirm that, if applicable, VMS Mfg's Software License Agreement shall not contain an Indemnity Clause and the like, which requires the COUNTY to indemnify/defend/hold harmless the VMS Mfg.
   Indemnity Clause: YES: _____ NO: _____

4. VMS Mfg. shall confirm that, if applicable, VMS Mfg's Software License Agreement shall not contain a Limitation of Liability Clause and the like, which requires the COUNTY to agree to limit the VMS Mfg. liability for any dollar amount.
   Limitation of Liability Clause: YES: _____ NO: _____

5. VMS Mfg. shall confirm that, if applicable, VMS Mfg's Software License Agreement shall ensure that the Governing Law Clause shall be in accordance with the laws of the State of Nevada.
   YES: _____ NO: _____

6. VMS Mfg. shall agree to incorporate the following language into the VMS Mfg.'s Software License Agreement, if applicable:
   VMS Mfg. agrees, by entering into CONTRACT, regardless of the coverage provided by any insurance policy, to pay all costs necessary to indemnify, defend, and hold COUNTY harmless from any and all claims, demands, actions, attorney's fees, costs, and expenses based upon or arising out of any acts, errors, omissions, fault or negligence of VMS Mfg. or its principals, employees, subcontractors or other agents while performing services under CONTRACT. VMS Mfg. shall indemnify, defend, and hold harmless COUNTY for any attorney's fees or other costs of defense, even if the allegations of the claim are groundless, false or fraudulent.
   YES: _____ NO: _____

7. VMS Mfg. shall be required to cooperate with COUNTY regarding any additional terms and conditions which may be required to be removed or added form the VMS Mfg. software License Agreement.
   YES: _____ NO: _____

8. VMS Mfg. shall confirm that Section V: Bid Form, Item No. 10 – VMS Annual Maintenance Fee, which is a direct pass through fee from VMS Mfg. to COUNTY, that if COUNTY exercise its option to renew the contract, in accordance with the specification thereunder, and decides to further continue to contract with VMS Mfg., via a New Contract, VMS Mfg. shall guarantee that the Annual Maintenance fee for the New Contract shall not be greater than three percent (3%), if applicable, of the annual amount identified on the Bidder's Bid Form. Furthermore, every year thereafter, the Annual Maintenance Fee shall not exceed 3% of the prior year or CPI, whichever is less. All price adjustment requests from VMS Mfg., including suitable proof, shall be submitted to COUNTY for review and approval.

YES: _____ NO: _____

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

| | |
|---|---|
| SIGNATURE OF AUTHORIZED REPRESENTATIVE | LEGAL NAME OF FIRM |
| NAME AND TITLE OF AUTHORIZED REPRESENTATIVE (PRINT OR TYPE) | ADDRESS OF FIRM |
| PHONE NUMBER OF AUTHORIZED REPRESENTATIVE | CITY, STATE ZIP |
| FAX NUMBER OF AUTHORIZED REPRESENTATIVE | |
| EMAIL ADDRESS | DATE |

**EXHIBIT B**
**VMS AND SURVEILLANCE INTEGRATOR ASSURANCE SPECIFICATIONS**

**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

## PART I - VMS INTEGRATOR ASSURANCE

1.1 GENERAL SPECIFICATIONS

A. The (VMS) Video Management System software shall be an Open – Platform and fully compatible with the County existing Cisco-based network infrastructure. The VMS software shall be new from the manufacturer and consist of the latest firmware upgrade and qualify for warranty and maintenance services. IT server-based solution purpose-built for the management of unlimited amounts of digital video and other surveillance data. The VMS shall NOT require proprietary hardware.

B. The VMS shall be available in turn-key NVR/Server platforms utilizing enterprise-grade server and current workstations pre-loaded with VMS software and tested to manufacturer specifications.

C. The VMS software shall be fully compliant with virtual server environments. The VMS software shall function with the County's current computer workstations.

D. The VMS shall be capable of unlimited client workstations and the unlimited number of monitors.

E. The VMS software shall be capable of viewing live, recording, and reviewing from a minimum of 5,000 IP cameras.

F. The VMS shall provide simultaneous viewing of both live and recorded video through a web browser interface exclusively. The VMS solution shall handle recording, archiving, retrieving, playback and live distribution of video.

G. The VMS shall have the capability of optional intelligent analytic applications for the automated detection, tracking and classification of potentially suspicious actions or events captured in live video must be available.

H. The VMS shall have the capability to integrate with third-party Video analytics support I/O functions and systems

I. The VMS shall support all leading IP camera manufacturers for end–user choice and design flexibility, including but not limited to IP Cameras by Avigilon, AXIS, GeoVision, IQinVision, Mobotix, Panasonic, Samsung, Sony, and other ONVIF compliant devices.

J. The VMS shall support recording and management of video sources including but not limited to IP cameras 1 through 29 megapixel and 4K.

K. The VMS software shall support High Definition Stream Management by reducing the required client bandwidth and processing it by only transmitting what is necessary to view the video stream at full quality.

L. The VMS software shall be capable of de-warping functions, and allow preset functions within the de-warp image.

M. The VMS software shall support all-IP camera environments as well as encoders, analog cameras, cabling and other security and IT infrastructure where appropriate.

N. The VMS shall offer a full featured web-client software applications intended for but not limited to:
1. Live video monitoring
2. Reviewing archive video
3. Client Administration Management
4. Administration Tools
5. System diagnostics, status and statistics
6. Recorded and Exporting video watermarking
7. Firmware management
8. Instantaneous retrieval of archived video
9. Evidence exportation with Drivers

O. The VMS software Administration management shall include but not limited to: Viewing live images, viewing

recorded images, exporting images, setting up cameras/ NVR/Servers, generating and modifying groups and users.

P. The VMS shall automatically discover video sources that are connected to the same network. VMS shall detect video lost and alert the system site administrator.

Q. The VMS shall support multiple video compression algorithms simultaneously (including H.264/MPEG-4, MPEG-4, and JPEG).

R. Camera software license management must allow license transfers without interaction from vendor.

S. Users shall be allowed to stream video clips or images to their PCs for management or to a USB- connected media storage device (e.g., CD Burner, DVD Burner or USB memory stick) for export from the system. All data shall be completely appropriate for use in evidentiary situations, and shall include a tamper-proof authentication seal for evidence security and continuity purposes. Third parties such as law enforcement officials and others shall be able to playback and access all evidence using any of the PC industry's standard media player software applications.

T. The VMS shall be capable of integrating with other special application systems such as Mass Notification and Access Control Systems.

U. The VMS manufacturer shall license the software on a per video channel basis and recording server connection, in such a way that there are no license fees associated with client applications, site installation, recording servers, user accounts, basic add-on features or other license fees. The licensing program characteristics are:

1. The VMS shall have an enterprise base license that allows access to all basic features and functionality without any additional licenses except camera licenses.
2. Edge device license shall not be tied to a hardware address (MAC Address).
3. The VMS Server software shall not be tied to the server hardware.
4. Camera licenses may be moved between recording servers.
5. All camera licenses are moveable without requiring manufacturer action of any type.
6. All basic VMS client software shall be included in the base VMS software cost. Modules include System Configuration Web-Tool, Web-Client, Optional Thick-Client, and Recording Server Software.
7. The web-client applications can be used on an unlimited number of times and may be running simultaneously without any additional licenses.
8. Each recording server shall be capable of supporting a minimum of 128 edge device connection licenses.

1.2 LICENSING

A. The VMS manufacturer shall license the software on a per video channel basis and recording server connection, in such a way that there are no license fees associated with client applications, site installation, recording servers, user accounts, basic add-on features or other license fees. The licensing program characteristics are:

B. The VMS shall have an enterprise base license that allows access to all features and functionality identified in section 1.1 General Specifications above without any additional licenses or fees.

C. Edge device license shall not be tied to a hardware address (MAC Address).

D. The VMS Server software shall not be tied to the server hardware.

E. Camera licenses may be moved between recording servers.

F. All camera licenses are moveable without requiring manufacturer action of any type.

G. All basic VMS client software shall be included in the base VMS software cost. Modules include System Configuration Web-Tool, Web-Client, Optional Thick-Client, and Recording Server Software.

H. The web-client applications can be used on an unlimited number of times and may be running simultaneously without any additional licenses.

I. Each recording server shall be capable of supporting a minimum of 128 edge device connection licenses.

J. Each enterprise server shall be capable of supporting a minimum of 10,000 recording servers/recorders

licenses and/or a minimum of 128,000 edge device connection licenses.

**PART II - SURVEILLANCE INTEGRATOR ASSURANCE**

## 1.1 QUALITY ASSURANCE

A. All camera locations to be coordinated with the electrical contractor.

B. The Surveillance Integrator shall be responsible for providing, installing, integration and the operation of the CCTV System.

C. The Surveillance Integrator shall provide the most current level of the manufacturer certification as required to install and maintain the VMS and cameras being installed. The Contractor must be in good standing with VMS and camera manufacturer with a minimum of 5 year experience in installation, training, and maintenance.

D. The security system shall be installed and tested to ensure all components are fully compatible as a system and can be integrated with all associated security subsystems, whether the security system is stand-alone or a part of a complete Information Technology (IT) computer network.

E. The Surveillance Integrator or security sub-contractor shall be a licensed security Contractor as required within the state or jurisdiction of where the installation work is being conducted.

## 1.2 WARRANTY/AGREEMENTS/LICENSES

A. Provide as a minimum a 36 month (3 years) parts and labor warranty on all CCTV components and systems installed.

B. Provide operator workstation licenses for this project, contractor shall verify the number of work stations with owner prior to bid. This operator workstation licenses shall be used as identified by the Owner and the licenses shall include five years of renewal at no cost to the Owner and shall be turned over to the Owner prior to Substantial Completion. Provide license costs for these licenses for the 60 month (5 Years) period as noted above. Owner will be provided all OS licenses and the CCIT will be performing all upgrades.

## 1.3 INSTALLATION

A. System installation shall be in accordance with NECA 303, manufacturer and related documents and references, for each type of security subsystem designed, engineered and installed.

B. Components shall be configured with appropriate “service points” to pinpoint system trouble in less than 30 minutes.

C. The Surveillance Integrator shall coordinate the final camera locations with Owner site representative prior and during installation.

D. The Surveillance Integrator shall install all system components including furnished equipment, and appurtenances in accordance with the manufacturer's instructions and shall furnish all necessary connectors, terminators, interconnections, services, and adjustments required for a complete and operable system.

E. Integration with these security subsystems shall be achieved by computer programming or the direct hardwiring of the systems.

F. For programming purposes refer to the manufacturers requirements for correct system operations. Ensure computers being utilized for system integration meet or exceed the minimum system requirements outlined on the systems software packages.

G. A complete CCTV System shall be comprised of, but not limited to, the following components:
   1. Cameras
   2. Lenses
   3. Video Display Equipment
   4. Camera Housings and Mounts
   5. Controlling Equipment
   6. Recording Devices

H. The Surveillance Integrator shall visit the site and verify that site conditions are in agreement/compliance with the design package. The Surveillance Integrator shall report all changes to the site or conditions that will affect performance of the system to the Contracting Officer in the form of a report. The Surveillance Integrator shall not take any corrective action without written permission received from the Contracting Officer.

I. The Surveillance Integrator shall coordinate with Electrical Contractor on camera equipment locations and mounting capability and requirements.

J. Enclosure Penetrations: All enclosure penetrations shall be from the bottom of the enclosure unless the system design requires penetrations from other directions. Penetrations of interior enclosures involving transitions of conduit from interior to exterior, and all penetrations on exterior enclosures shall be sealed with rubber silicone sealant to preclude the entry of water. The conduit riser shall terminate in a hot-dipped galvanized metal cable terminator. The terminator shall be filled with an approved sealant as recommended by the cable manufacturer and in such a manner that the cable is not damaged.

K. Cold Galvanizing: All field welds and brazing on factory galvanized boxes, enclosures, and conduits shall be coated with a cold galvanized paint to match existing conditions containing at least 95 percent zinc by weight.

L. Interconnection of Console Video Equipment: The Surveillance Integrator shall connect signal paths between video equipment as specified by the OEM. Cables shall be as short as practicable for each signal path without causing strain at the connectors. Rack mounted equipment on slide mounts shall have cables of sufficient length to allow full extension of the slide rails from the rack.

M. Cameras:
1. Install the cameras with the focal length lens as indicated for each zone.
2. Connect power and signal lines to the camera.
3. Set cameras with fixed iris lenses to the f-stop to give full video level.
4. Aim camera to give field of view as needed to cover the alarm zone.
5. Aim fixed mounted cameras installed outdoors facing the rising or setting sun sufficiently below the horizon to preclude the camera looking directly at the sun.
6. Focus the lens to give a sharp picture (to include checking for day and night focus and image quality) over the entire field of view; and synchronize all cameras so the picture does not roll on the monitor when cameras are selected. Dome cameras shall have all preset positions defined and installed. Final view shall be coordinated between the Surveillance Integrator and the Owner representative.

N. Monitors:
7. Install the monitors as shown and specified in design and construction documents.
8. Connect all signal inputs and outputs as shown/specified.
9. Terminate video input signals as required.
10. Connect the monitor to AC power.

O. Video Recording Equipment:
11. Install the video recording equipment as shown in the design and construction documents, and as specified by the OEM.
12. Connect video signal inputs and outputs as shown/specified.
13. Connect alarm signal inputs and outputs as shown/specified.
14. Connect video recording equipment to AC power.

P. Video Signal Equipment:
15. Install the video signal equipment as noted construction documents, and as specified by the OEM.
16. Connect video or signal inputs and outputs as shown/specified.
17. Terminate video inputs as required.
18. Connect alarm signal inputs and outputs as required.
19. Connect control signal inputs and outputs as required
20. Connect electrically powered equipment to AC power.

Q. Camera Housings, Mounts, and Poles:
21. Install the camera housings and mounts as specified by the manufacturer, provide mounting hardware sized appropriately to secure each camera, housing and mount with maximum wind and ice loading encountered at the site.
22. Provide a foundation for each camera pole as specified.
23. Provide a ground rod for each camera pole and connect the camera pole to the ground rod.
24. Connect signal lines and AC power to the housing interfaces.
25. Connect pole wiring harness to camera.

R. System Start-Up

26. The Surveillance Integrator shall not apply power to the CCTV System until the following items have been completed:
    a. CCTV System equipment items and have been set up in accordance with manufacturer's instructions.
    b. A visual inspection of the CCTV System has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
    c. System wiring has been tested and verified as correctly connected as indicated.
    d. All system grounding and transient protection systems have been verified as installed and connected as indicated.
    e. Power supplies to be connected to the CCTV System have been verified as the correct voltage, phasing, and frequency as indicated.
27. Satisfaction of the above requirements shall not relieve the Surveillance Integrator of responsibility for incorrect installation, defective equipment items, or collateral damage as a result of any Contractor work efforts.

## 1.4 SUPPLEMENTAL SURVEILLANCE INTEGRATOR QUALITY CONTROL

S. The Surveillance Integrator shall provide the services of technical representatives who are familiar with all components and installation procedures of the installed CCTV System; and are approved by the Contracting Officer.

T. The Surveillance Integrator will be present on the job site during the preparatory and initial phases of quality control to provide technical assistance.

U. The Surveillance Integrator shall also be available on an as needed basis to provide assistance with follow-up phases of quality control.

V. The Surveillance Integrator shall participate in the testing and validation of the system and shall provide certification that the system installed is fully operational as all construction document requirements have been fulfilled.

## 1.5 TESTING AND TRAINING, COMMISSIONING AND MAINTENANCE

W. All testing and training shall be performed by a factory-authorized representative and this training shall be videotaped and shall accommodate no less than 8 attendees and all training shall be on-site. The time, date and location of this training shall be identified by the Owner.

X. All training shall include demonstrations of the key elements and components of the CCTV system, including **video recording** and all related features.

Y. The Surveillance Integrator shall submit, for review and approval a listing of all demonstration and training that is to take place. This listing shall include subject matter and time frames for each of the recommended subjects. This training shall be compliant with the General Requirements.

Z. The Surveillance Integrator shall comply with all Division 28 specification as identify in the Base Contract.

# EXHIBIT C

# SECTION 26 05 33

# RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

**The services to be provided within Section 260533 will be performed by others under separate contract for Group 2 – Spring Mountain Youth Camp, Group 3Spring Mountain Youth Camp Residential, and Group 4 – DJJS Detention Campus. The information contained in this section has been provided for reference only.**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

A. Retain abbreviations that remain after this Section has been edited.

B. EMT: Electrical metallic tubing.

C. EPDM: Ethylene-propylene-diene terpolymer rubber.

D. FMC: Flexible metal conduit.

E. IMC: Intermediate metal conduit.

F. LFMC: Liquidtight flexible metal conduit.

G. NBR: Acrylonitrile-butadiene rubber.

H. RNC: Rigid nonmetallic conduit.

1.4 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, hinged-cover enclosures, and cabinets.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with

NFPA 70. PART 2

PRODUCTS

2.1 METAL CONDUIT AND TUBING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allied Electrical Group; a Div. of Tyco International, Ltd.

    a. Allied Tube & Conduit
    b. AFC Cable Systems, Inc.

2. Alflex / Southwire Co.
3. Anamet Electrical, Inc.
4. Conduit Pipe Products Co.
5. Electri-Flex Co.
6. Kaf-Tech; a Div. of Tyco International, Ltd.
7. KorKap; Rob Roy Industries
8. O-Z/Gedney; an EGS Electrical Group Brand
9. Perma-Cote; Rob Roy Industries
10. Plasti-Bond; Rob Roy Industries
11. RACO, a Hubbell Company
12. Republic Conduit
13. Western Tube & Conduit Corp.
14. Wheatland Tube Company

B. Rigid Steel Conduit: ANSI C80.1.

C. IMC: ANSI C80.6.

D. PVC-Coated Steel Conduit and PVC-coated rigid steel conduit: NEMA RN 1, Coating Thickness: 0.040 inch (1 mm), minimum.

E. EMT: ANSI C80.3.

F. FMC: Nema RV 3, Zinc-coated steel.

G. LFMC: Nema RV 3, Flexible steel conduit with PVC jacket.

H. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.

1. Fittings for EMT: Steel, set-screw or compression type.
2. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.
3. Rigid steel conduit and IMC fitting shall be threaded to match raceway material.

I. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.

2.2 NONMETALLIC CONDUIT AND TUBING

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Allied Electrical Group; a Div. of Tyco International, Ltd.
2. Alflex / Southwire Co.`
3. ARNCO / A-D Technologies

4. CANTEX Inc.
5. Carlon Electrical Products; a Thomas & Betts Corp. Brand
6. CertainTeed Corp.; Pipe & Plastics Group
7. Electri-Flex Co.
8. PW Eagle Inc.; Electrical Products Division
9. RACO, a Hubbell Company
10. Southern Pipe, Inc.
11. IPEX

2.3 METAL WIREWAYS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Cooper B-Line, Inc.
2. Hoffman.
3. Square D; Schneider Electric.

C. Description: Sheet metal sized and shaped as indicated, NEMA 250, type as required by environment.

D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold- down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

E. Wireway Covers: Screw-cover type.

F. Finish: Manufacturer's standard enamel finish.

2.4 BOXES, ENCLOSURES, AND CABINETS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Adalet; a Scott Fetzer Co.
2. Appleton Electric; an EGS Electrical Group Brand.
3. Cooper Crouse-Hinds; a Div. of Cooper Industries Inc.
4. Easter-Owens
5. Erikson Electrical Equipment Company
6. Hoffman
7. Hubbell Incorporated

   a. Bell
   b. Killark
   c. RACO

8. Milbank Manufacturing
9. O-Z/Gedney; an EGS Electrical Group Brand
   a. Thomas & Betts CorporationBowers
   b. Carlon
   c. Steel City
   d. Red Dot

10. Spring City Electrical Manufacturing Co.
11. Wiremold/Legrand; Walker Products

B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.

C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.

E. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.

F. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

G. Cabinets:

1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.

PART 3 EXECUTION

## 3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:

1. Exposed Conduit: Rigid steel conduit, IMC.
2. Concealed Conduit, Aboveground: Rigid steel conduit, IMC, EMT.
3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.

B. Comply with the following indoor applications, unless otherwise indicated:

1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed, Not Subject to Severe Physical Damage: EMT.
3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit. Includes raceways in the following locations:

   a. Loading dock.
   b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
   c. Mechanical rooms.

4. Parking areas and parking garages. Concealed in Ceilings and Interior Walls and Partitions: EMT.
5. Connection to Vibrating Equipment: FMC, except use LFMC in damp or wet locations.
6. Damp or Wet Locations: Rigid steel conduit.
7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.

C. Minimum Raceway Size: ¾ inch trade size except as otherwise noted.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.
2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with that material. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer.

## 3.2 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot- water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

E. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed. Conduit shall have no more than 180° cumulative bend between pull points.

F. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

G. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
2. Change from RNC, Type EPC-40-PVC to PVC coated, rigid steel conduit for elbow and riser for transitions from below grade or slab to above grade/slab above the floor.

H. Arrange raceways to cross building expansion joints at right angles with expansion fittings.

I. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.

J. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

K. Install pull wires in empty raceways. Use THHN 12 AWG. Leave at least 12 inches (300 mm) of slack at each end of pull wire.

L. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

M. Flexible Conduit Connections: Use 36” (915mm) of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.

1. Use LFMC in damp or wet locations subject to severe physical damage.

N. Boxes shall be 4” square minimum with suitable ring for the surface or device.

## 3.3 INSTALLATION OF UNDERGROUND CONDUIT

A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit.
2. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum

supporting strength. After placing controlled backfill to within 12 inches (300 mm) of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.

3. Retain one of two subparagraphs below to specify type of stub-ups for direct-buried conduits in Project.
4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances.

    a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches (75 mm) of concrete.
    b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches (1500 mm) from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.

## 3.4 FIRESTOPPING

A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

## 3.5 PROTECTION

A. Provide final protection and maintain conditions that ensure coatings, finishes, and cabinets are without damage or deterioration at time of Substantial Completion.

1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
2. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533

# SECTION 271100

# CABINETS, ENCLOSURES AND RACKS

**The services to be provided within Section 271100 will be performed by others under separate contract for Group 2 – Spring Mountain Youth Camp, Group 3Spring Mountain Youth Camp Residential, and Group 4 – DJJS Detention Campus. The information contained in this section has been provided for reference only.**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specifications, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Free-standing Equipment Cabinets, Enclosures or Racks.
2. Wall-mounted Equipment Cabinets or Enclosures.
3. Wall-mounted Equipment Racks.

B. Related Sections:

| | | |
|---|---|---|
| 1. | 260533 | Boxes & Raceways for Electrical Systems |
| 2. | 271500 | Communications Horizontal Cabling |
| 3. | 280500 | General Requirements |
| 4. | 280528 | Raceways and Boxes |
| 5. | 281500 | Electronic Components |
| 6. | 282300 | Video Surveillance (CCTV) System |

1.3 REFERENCES

A. ANSI/EIA RS-310-C Rack mounting standards.

B. NEMA 250 Enclosures for Electrical Equipment 1000 V Max.

C. NFPA 70 National Electrical Code - application, and installation of electrical cabinets and enclosures.

D. UL 50 Cabinets and Boxes.

1.4 SUBMITTALS

A. Prior to commencement of the work, contractor shall supply the owner with the most recent model information and cost associated with the model.

B. Conform to the requirements of section 280500, General Requirements.

C. Product Data: Submit manufacturer's technical data for all items to be used including specifications, installation instructions and general recommendations.

1.5 SITE CONDITIONS

A. Cabinets shown on the Drawings are in approximate locations, actual location within the same room may depend on site conditions and Facility approval.

PART 2 PRODUCTS

2.1 GENERAL

A. Types: Provide NEMA type 12 cabinets and enclosures.

B. Materials: Provide cabinets and enclosures as follows:

1. Provide electrical cabinets and enclosures which are UL listed and labeled, and constructed in conformance with UL 50 "Cabinets and Boxes."
2. In normally dry interior locations, provide sheet steel with corrosion resistant fasteners.
3. Outdoors and in damp interior locations, provide galvanized sheet steel with stainless steel fasteners.
4. At constantly wet locations or corrosive atmospheres, provide stainless sheet steel with stainless steel fasteners

C. Rail Mounts: Full enclosure length rack angles shall be installed and have ANSI/EIA RS-310-C mounting standards with 10-32 tapped mounting holes in each enclosure

D. Shelf: Provide a shelf or other suitable mounting plate for all non rack mountable equipment

E. Painting: In addition to galvanizing or priming coat, all inside and outside surfaces of trim and doors shall be given a factory finish coat of paint.

F. Grounding:

1. Provide cabinets and enclosures with provision for cabinet grounding without penetrating exterior wall of the enclosure.

2.2 SLIDE OUT RACKS

A. Provide slide out 19” racks to provide rear access to wiring and components. Custom build unistrut support to accommodate slide out rack. Provide the following or approved equal from other manufacturers.

1. Middle Atlantic Products……..SRS Series

B. Provide key-locking latches for doors.

2.3 FREE-STANDING EQUIPMENT CABINETS, ENCLOSURES OR RACKS

A. Provide free standing enclosures/racks. Racks in Security Electronics Room need not be fully enclosed or lockable. Provide the following or approved equal from other manufacturers:

1. Chatsworth……Racks and Cabinets 2. Hoffman……..…….Proline Series

3. Middle Atlantic…….Racks and Cabinets

B. Modular free standing equipment racks, overall size shall be 78x23x23 inches.

C. Provide modular enclosure components including, but not limited to, the following:

1. Solid lockable front and rear solid doors, all keyed alike.
2. Solid sides on all enclosure sides not directly joined to another enclosure.
3. Rack joining kits.
4. Cover and fan.
5. Filtered air inlet.
6. Keyboard slide tray for each keyboard.
7. Base for each enclosure with wire management provisions.

2.4 WALL-MOUNTED EQUIPMENT CABINETS OR ENCLOSURES

A. Provide wall-mounted cabinets/enclosures from the following or approved equal from other manufacturers:

1. Hoffman…….Concept Wall-Mount Series
2. Middle Atlantic……..Wall-Mount Series
3. Chatsworth……..……..Wall-Mount Series

B. Provide removable doors.

C. Provide removable internal mounting panel for component installation.

D. Provide handle operated, key-locking latches for doors.

E. Provide multiple doors where required. Individual door width shall be no greater than 24 inches.

2.5 WALL-MOUNTED EQUIPMENT RACKS

A. Provide wall-mounted, double-hinged racks Racks in Security Electronics Room need not be fully enclosed or lockable. Provide the following or approved equal from other manufacturers:

1. Hoffman…….Industrial E-DH Series
2. Middle Atlantic……..Industrial Series
3. Chatsworth…..……..Industrial Series

B. Provide key-locking latches for doors.

PART 3 EXECUTION

3.1 INSTALLATION

A. Mounting: Mount cabinets at a uniform height, nominally 6’6” to the top of the enclosure above finished floor, except as otherwise noted or physically not practical. Mount cabinets with fronts straight and plumb.

B. Bracing: Brace or anchor all free-standing/wall-mounted cabinets using Uni-strut or other approved method to building structure.

C. Flush Cabinets: Set flush cabinets in finished spaces flush with adjacent walls. Mount cabinets with fronts straight and plumb.

D. Painting: Touch up all welds, scrapes and other mars in the enclosure finish with a rust inhibiting paint.

E. Front Access: Locate with minimum of 36 inches clear space in front of each cabinet or rack.

F. Other Access: Provide minimum 36 inches clear space to each side of enclosure which requires access for inspection or service.

END OF SECTION 271100

# SECTION 271500

# COMMUNICATIONS HORIZONTAL CABLING

**The services to be provided within Section 271500 will be performed by others under separate contract for Group 2 – Spring Mountain Youth Camp, Group 3Spring Mountain Youth Camp Residential, and Group 4 – DJJS Detention Campus. The information contained in this section has been provided for reference only.**

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

A. Drawings and Division 26, 27 and 28 specification and requirements, the general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

A. Section Includes:

1. Pathways.
2. UTP cabling.
3. Coaxial cable.
4. Cable connecting hardware, patch panels, and cross-connects.
5. Telecommunications outlet/connectors.
6. Cabling system identification products.
7. Cable management system.

B. Related Sections:

1. All Division 26, 27 and 28 Specification Sections

### 1.3 DEFINITIONS

A. Basket Cable Tray: A fabricated structure consisting of wire mesh bottom and side rails.

B. BICSI: Building Industry Consulting Service International.

C. Channel Cable Tray: A fabricated structure consisting of a one-piece, ventilated-bottom or sol- id-bottom channel.

D. Consolidation Point: A location for interconnection between horizontal cables extending from building pathways and horizontal cables extending into furniture pathways.

E. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.

F. EMI: Electromagnetic interference.

G. IDC: Insulation displacement connector.

H. Ladder Cable Tray: A fabricated structure consisting of two longitudinal side rails connected by individual transverse members (rungs).

I. LAN: Local area network.

J. Outlet/Connectors: A connecting device in the work area on which horizontal cable or outlet cable terminates.

K. RCDD: Registered Communications Distribution Designer.

L. Solid-Bottom or Nonventilated Cable Tray: A fabricated structure consisting of longitudinal side rails and a bottom without ventilation openings.

M. Trough or Ventilated Cable Tray: A fabricated structure consisting of longitudinal side rails and a bottom having openings for the passage of air.

N. UTP: Unshielded twisted pair.

## 1.4 HORIZONTAL CABLING DESCRIPTION

A. Horizontal cable and its connecting hardware provide the means of transporting signals be- tween the telecommunications outlet/connector and the horizontal cross-connect located in the communications equipment room. This cabling and its connecting hardware are called "permanent link," a term that is used in the testing protocols.

1. ANSI TIA-568-B.1 requires that a minimum of two telecommunications outlet/connectors be installed for each work area.
2. Horizontal cabling shall contain no more than one transition point or consolidation point between the horizontal cross-connect and the telecommunications outlet/connector.
3. Bridged taps and splices shall not be installed in the horizontal cabling.
4. Splitters shall not be installed as part of the optical fiber cabling.

B. A work area is approximately 100 sq. ft., and includes the components that extend from the telecommunications outlet/connectors to the station equipment.

C. The maximum allowable horizontal cable length is 295 feet; this maximum allowable length does not include an allowance for the length of 16 feet to the workstation equipment. The maximum allowable length does not include an allowance for the length of 16 feet in the horizontal cross-connect.

## 1.5 PERFORMANCE REQUIREMENTS

A. General Performance: Horizontal cabling system shall comply with transmission standards in ANSI TIA-568-B.1, when tested according to test procedures of this standard.

1.6 SUBMITTALS

A. Product Data: For each type of product indicated.

1. For all horizontal cable, include the following installation data for each type used:

a. Nominal OD.
b. Minimum bending radius.
c. Maximum pulling tension.
d. Insulation rating.
e. Rated performance level.
f. TIA standards met.
g. Color coding

B. Shop Drawings:

1. System Labeling Schedules: Electronic copy of labeling schedules, in software and for- mat selected by Owner.
2. System Labeling Schedules: Electronic copy of labeling schedules that are part of the cabling and asset identification system of the software.
3. Cabling administration drawings and printouts.
4. Wiring diagrams to show typical wiring schematics, including the following:

a. Cross-connects.
b. Patch panels.
c. Patch cords.

5. Cross-connects and patch panels. Detail mounting assemblies, and show elevations and physical relationship between the installed components.
6. Cable tray layout, showing cable tray route to scale, with relationship between the tray and adjacent structural, electrical, and mechanical elements. Include the following:

a. Vertical and horizontal offsets and transitions.
b. Clearances for access above and to side of cable trays.
c. Vertical elevation of cable trays above the floor or bottom of ceiling structure.
d. Load calculations to show dead and live loads as not exceeding manufacturer's rating for tray and its support elements.

C. Samples: For workstation outlets, jacks, jack assemblies, in specified finish, one for each size and outlet configuration and faceplates for color selection and evaluation of technical features.

D. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.

E. Source quality-control reports.

F. Field quality-control reports.

G. Maintenance Data: For splices and connectors to include in maintenance manuals.

H. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On magnetic media or compact disk, complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.

1. Layout Responsibility: Preparation of Shop Drawings and Cabling Administration Drawings by an RCDD.
2. Installation Supervision: Installation shall be under the direct supervision of Registered Technician, who shall be present at all times when Work of this Section is performed at Project site.
3. Testing Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

B. Testing Agency Qualifications: An NRTL.

1. Testing Agency's Field Supervisor: Currently certified by BICSI as an RCDD to supervise on-site testing.

C. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 50 or less.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Telecommunications Pathways and Spaces: Comply with ANSI TIA-569-A.

F. Grounding: Comply with ANSI-J-STD-607-A.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Test cables upon receipt at Project site.

1. Test optical fiber cables to determine the continuity of the strand end to end. Use optical fiber flashlight or optical loss test set.
2. Test optical fiber cables while on reels. Use an optical time domain reflectometer to verify the cable length and locate cable defects, splices, and connector; including the loss value of each. Retain test data and include the record in maintenance data.
3. Test each pair of UTP cable for open and short circuits.

1.9 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install cables and connecting materials until wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1.10 COORDINATION

A. Coordinate layout and installation of telecommunications pathways and cabling with Owner's telecommunications and LAN equipment and service suppliers.

B. Coordinate telecommunications outlet/connector locations with location of power receptacles at each work area.

1.11 EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Device Plates: Six of each type, of each color utilized.
2. UTP Outlet modules: 24 of each type, of each color utilized.

PART 2 - PRODUCTS

2.1 PATHWAYS

A. General Requirements: Comply with ANSI/TIA-569-A.

B. Cable Support: NRTL labeled for support of Category 6 cabling, designed to prevent degradation of cable performance and pinch points that could damage cable.

1. Support brackets with cable tie slots for fastening cable ties to brackets.
2. Straps and other devices.

C. Cable Trays:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Cable Management Solutions, Inc.
b. Cablofil Inc.
c. Cooper B-Line, Inc.
d. Cope - Tyco/Allied Tube & Conduit.
e. GS Metals Corp.

2. Cable Tray Materials: Metal, suitable for indoors, and protected against corrosion by either electroplated zinc galvanizing, complying with ASTM B 633, Type 1, not less than 0.000472 inch thick, or hot-dip galvanizing, complying with ASTM A 123/A 123M, Grade 0.55, not less than 0.002165 inch thick.

a. Solid-Bottom Cable Trays: One-piece construction, nominally 12 inches wide. Provide with solid covers.

D. Conduit and Boxes: Comply with requirements in Division 26 Section "Raceways and Boxes." Flexible metal conduit shall not be used.

1. Outlet boxes shall be no smaller than 4 inches wide, 4 inches high, and 2-1/2 inches deep with single gang plaster ring for work area outlet faceplate mounting.
2. Minimum conduit size from cable tray to work area outlet boxes is 1”.

## 2.2 UTP CABLE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Belden CDT Inc.; Electronics Division.
2. Berk-Tek; a Nexans company.
3. CommScope, Inc.
4. Draka USA.
5. Genesis Cable Products; Honeywell International, Inc.
6. KRONE Incorporated.
7. Mohawk; a division of Belden CDT.
8. Nordex/CDT; a subsidiary of Cable Design Technologies.
9. Superior Essex Inc.
10. SYSTIMAX Solutions; a CommScope, Inc. brand.
11. 3M.
12. Tyco Electronics/AMP Netconnect; Tyco International Ltd.

B. Description: 100-ohm, 4-pair UTP, covered with a blue thermoplastic jacket.

1. Comply with ICEA S-90-661 for mechanical properties.
2. Comply with ANSI/TIA-568-B.1 for performance specifications.
3. Comply with ANSI/TIA-568-B.2, Category 6.
4. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444 and NFPA 70 for the following types:

    a. Communications, General Purpose: Type CM or CMG.
    b. Communications, Plenum Rated: Type CMP, complying with NFPA 262.
    c. Communications, Riser Rated: Type CMR, complying with UL 1666.
    d. Communications, Limited Purpose: Type CMX.
    e. Multipurpose: Type MP or MPG.
    f. Multipurpose, Plenum Rated: Type MPP, complying with NFPA 262.
    g. Multipurpose, Riser Rated: Type MPR, complying with UL 1666.

## 2.3 UTP CABLE HARDWARE

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. American Technology Systems Industries, Inc.
2. Dynacom Corporation.
3. Hubbell Premise Wiring.
4. KRONE Incorporated.
5. Leviton Voice & Data Division.

6. Molex Premise Networks; a division of Molex, Inc.
7. Nordex/CDT; a subsidiary of Cable Design Technologies.
8. Panduit Corp.
9. Siemon Co. (The).
10. Tyco Electronics/AMP Netconnect; Tyco International Ltd.

B. General Requirements for Cable Connecting Hardware: Comply with ANSI/TIA-568-B.2, IDC type, with modules designed for punch-down caps or tools. Cables shall be terminated with connecting hardware of same category or higher.

C. Connecting Blocks: 110-style IDC for Category 6. Provide blocks for the number of cables terminated on the block, plus 25 percent spare. Integral with connector bodies, including plugs and jacks where indicated.

D. Cross-Connect: Modular array of connecting blocks arranged to terminate building cables and permit interconnection between cables.

1. Number of Terminals per Field: One for each conductor in assigned cables.

E. Patch Panel: Modular panels housing multiple-numbered jack units with IDC-type connectors at each jack for permanent termination of pair groups of installed cables.

1. Number of Jacks per Field: One for each four-pair UTP cable indicated.

F. Jacks and Jack Assemblies: Modular, color-coded, eight-position modular receptacle units with integral IDC-type terminals.

G. Patch Cords: Factory-made, four-pair cables in minimum 48-inch lengths; terminated with eight-position modular plug at each end.

1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure Category 6 performance. Patch cords shall have latch guards to protect against snagging.
2. Patch cords shall have color-coded boots for circuit identification.

2.4 TELECOMMUNICATIONS OUTLET/CONNECTORS

A. Jacks: 100-ohm, balanced, twisted-pair connector; four-pair, eight-position modular. Comply with ANSI/TIA-568-B.1.

B. Workstation Outlets: Four-port-connector assemblies mounted in single faceplate.

1. For use with snap-in jacks accommodating any combination of UTP, optical fiber, and coaxial work area cords.

   a. Flush mounting jacks, positioning the cord at a 45-degree angle.
2. Legend: Factory labeled by silk-screening or engraving for stainless steel faceplates.
3. Legend: Machine printed, in the field, using adhesive-tape label.
4. Legend: Snap-in, clear-label covers and machine-printed paper inserts.

2.5 GROUNDING

A. Comply with ANSI-J-STD-607-A.

2.6 IDENTIFICATION PRODUCTS

A. Comply with ANSI TIA-606-A and UL 969 for labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

2.7 CABLE MANAGEMENT SYSTEM

A. Manufacturers: Subject to compliance with requirements, provide products by one of the fol- lowing available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Description: Computer-based cable management system, with integrated database and graphic capabilities.

C. Document physical characteristics by recording the network, ANSI/TIA details, and connections between equipment and cable.

D. Information shall be presented in database view, schematic plans, or technical drawings.

1. Microsoft Visio Professional or AutoCAD drawing software shall be used as drawing and schematic plans software.

E. System shall interface with the following testing and recording devices:

1. Direct upload tests from circuit testing instrument into the personal computer.
2. Direct download circuit labeling into labeling printer.

2.8 SOURCE QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate cables.

B. Factory test UTP and optical fiber cables on reels according to ANSI TIA-568-B.1.

C. Factory test UTP cables according to ANSI TIA-568-B.2.

D. Factory-sweep test coaxial cables at frequencies from 5 MHz to 1 GHz. Sweep test shall test the frequency response or attenuation over frequency, of a cable by generating a voltage whose frequency is varied through the specified frequency range and graphing the results.

E. Cable will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

EXECUTION

2.9 WIRING METHODS

A. Wiring Method: Install cables in raceways and enclosed solid cable trays except within con- soles, cabinets, desks, and counters. Conceal raceway and cables except in unfinished spaces.

1. Install all cable in enclosed solid cable trays, with covers for trunk cabling routing, and from cable tray to work area outlet box in metallic conduit.
2. Comply with requirements for raceways and boxes specified in Division 260533 Section "Raceways and Boxes."

B. Wiring within Enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

2.10 INSTALLATION OF PATHWAYS

A. Cable Trays: Comply with NEMA VE 2 and ANSI TIA-569-A-7.

B. Comply with requirements for demarcation point, pathways, cabinets, and racks specified in Section 271500 "Communications Equipment Room Fittings." Drawings indicate general arrangement of pathways and fittings.

C. Comply with ANSI TIA-569-A for pull-box sizing and length of conduit and number of bends between pull points.

D. Comply with requirements in Division 26 Section "Raceways and Boxes" for installation of conduits and wireways.

E. Install manufactured conduit sweeps and long-radius elbows whenever possible.

F. Pathway Installation in Communications Equipment Rooms:

1. Position conduit ends adjacent to a corner on backboard where a single piece of plywood is installed, or in the corner of room where multiple sheets of plywood are installed around perimeter walls of room.
2. Install cable trays to route cables if conduits cannot be located in these positions.
3. Secure conduits to wall and/or cabinet/rack enclosure when entering room from over- head.
4. Extend conduits 3 inches above finished floor.
5. Install metal conduits with grounding bushings and connect with grounding conductor to grounding system.

2.11 INSTALLATION OF CABLES

A. Comply with NECA 1.

B. General Requirements for Cabling:

1. Comply with ANSI TIA-568-B.1.
2. Comply with BICSI ITSIM, Ch. 6, "Cable Termination Practices."
3. Install 110-style IDC termination hardware unless otherwise indicated.
4. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
5. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches and not more than 6 inches from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
6. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
7. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
8. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
10. In the communications equipment room, install a 10-foot-long service loop on each end of cable.

C. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." Monitor cable pull tensions.

D. UTP Cable Installation:

1. Comply with ANSI TIA-568-B.2.

E. Do not untwist UTP cables more than 1/2 inch from the point of termination to maintain cable geometry.

F. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.

G. Outdoor Coaxial Cable Installation:

1. Install outdoor connections in enclosures complying with NEMA 250, Type 4X. Install corrosion-resistant connectors with properly designed O-rings to keep out moisture.
2. Attach antenna lead-in cable to support structure at intervals not exceeding 36 inches.

H. Group connecting hardware for cables into separate logical fields.

I. Separation from EMI Sources:

1. Comply with BICSI TDMM and ANSI TIA-569-A for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:

a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches.

3. Separation between communications cables in grounded metallic raceways and un- shielded power lines or electrical equipment shall be as follows:

   a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
   b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
   c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.

4. Separation between communications cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:

   a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
   b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
   c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.

5. Separation between Communications Cables and Electrical Motors and Transformers: A minimum of 48 inches.
6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 18 inches.

## 2.12 FIRESTOPPING

A. Comply with requirements in Division 7 Section "Through-Penetration Firestop Systems."

B. Comply with ANSI/TIA-569-A, Annex A, "Firestopping."

C. Comply with BICSI TDMM, "Firestopping Systems" Article.

## 2.13 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with ANSI TIA-606-A. Comply with requirements for identification specified in Division 26 Section "Electrical Identification."

   1. Administration Class: 3.
   2. Color-code cross-connect fields. Apply colors to voice and data service backboards, connections, covers, and labels.

B. Using cable management system software specified in Part 2, develop Cabling Administration Drawings for system identification, testing, and management. Use unique, alphanumeric designation for each cable and label cable, jacks, connectors, and terminals to which it connects with same designation. At completion, cable and asset management software shall reflect as- built conditions.

C. Label colors for equipment identification shall comply with ANSI TIA-606-A for Class 3 level of administration, including optional identification requirements of this standard.

D. Cable Schedule: Post in prominent location in each equipment room and wiring closet. List in- coming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.

E. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, back- bone pathways and cables, entrance pathways and cables, terminal hardware and positions, horizontal cables, work areas and workstation terminal positions, grounding buses and path- ways, and equipment grounding conductors. Follow convention of ANSI/TIA-606-A. Furnish electronic record of all drawings, in software and format selected by Owner.

F. Cable and Wire Identification:

1. Label each cable within 4 inches of each termination and tap, where it is accessible in a cabinet or junction or outlet box, and elsewhere as indicated.
2. Each wire connected to building-mounted devices is not required to be numbered at device if color of wire is consistent with associated wire connected and numbered within panel or cabinet.
3. Exposed Cables and Cables in Cable Trays and Wire Troughs: Label each cable at intervals not exceeding 15 feet.
4. Label each terminal strip and screw terminal in each cabinet, rack, or panel.

   a. Individually number wiring conductors connected to terminal strips, and identify each cable or wiring group being extended from a panel or cabinet to a building- mounted device shall be identified with name and number of particular device as shown.
   b. Label each unit and field within distribution racks and frames.
5. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Label each connector and each discrete unit of cable-terminating and connecting hardware. Where similar jacks and plugs are used for both voice and data communication cabling, use a different color for jacks and plugs of each service.
6. Uniquely identify and label work area cables extending from the MUTOA to the work area. These cables may not exceed the length stated on the MUTOA label.

G. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in ANSI/TIA-606-A.

1. Cables use flexible vinyl or polyester that flex as cables are bent.

2.14 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

B. Perform tests and inspections.

C. Tests and Inspections:

1. Visually inspect UTP and optical fiber cable jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with ANSI TIA-568-B.1.
2. Visually confirm Category 6 marking of outlets, cover plates, outlet/connectors, and patch panels.
3. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

    a. Test instruments shall meet or exceed applicable requirements in ANSI TIA-568-B.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

4. UTP Performance Tests:

    a. Test for each outlet and MUTOA. Perform the following tests according to ANSI TIA-568-B.1 and ANSI TIA-568-B.2:
    Wire map.

    Length (physical vs. electrical, and length requirements). Insertion loss.

    Near-end crosstalk (NEXT) loss.

    Power sum near-end crosstalk (PSNEXT) loss.
    Equal-level far-end crosstalk (ELFEXT).

    Power sum equal-level far-end crosstalk (PSELFEXT). Return loss.

    Propagation delay. Delay skew.

5. Final Verification Tests: Perform verification tests for UTP systems after the complete communications cabling and workstation outlet/connectors are installed.

    a. Voice Tests: These tests assume that dial tone service has been installed. Connect to the network interface device at the demarcation point. Go off-hook and listen and receive a dial tone. If a test number is available, make and receive a local, long distance, and digital subscription line telephone call.
    b. Data Tests: These tests assume the Information Technology Staff has a network installed and is available to assist with testing. Connect to the network interface device at the demarcation point. Log onto the network to ensure proper connection to the network.

D. Document data for each measurement. Data for submittals shall be printed in a summary re- port that is formatted similar to Table 10.1 in BICSI TDMM, or transferred from the instrument to the computer, saved as text files, and printed and submitted.

E. End-to-end cabling will be considered defective if it does not pass tests and inspections.

F. Prepare test and inspection reports.

2.15 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel in cable-plant management operations, including changing signal pathways for different work- stations, rerouting signals in failed cables, and keeping records of cabling assignments and re- visions when extending wiring to establish new workstation outlets. Include training in cabling administration software.

END OF SECTION 271500

# SECTION 280500

# ELECTRONIC SYSTEMS GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specifications, apply to this Section.

1.2 SUMMARY

A. Part 1 Includes:

1. Related Documents
2. Summary and related sections
3. References
4. Definitions
5. System Description and General Responsibilities
6. Coordination
7. Quality Assurance
8. Submittals
9. Delivery, Storage, and Handling
10. Site Conditions
11. Sequencing and Scheduling
12. Warranty
13. Extra Materials

B. Part 2 Includes:

1. Product Options and Substitutions
2. Materials and Equipment
3. Equipment Modification
4. Fabrication
5. Source Quality Control
6. Firestopping/Sealant Materials

C. Part 3 Includes:

1. Examination
2. Installation
3. Field Quality Control
4. Cleaning
5. Training

D. Related Sections:

1. 260533 Raceways & Boxes for Electrical Systems
2. 271100 Cabinets, Enclosures and Racks
3. 271500 Communications Horizontal Cabling

4. 282300 Video Surveillance (CCTV) System

1.3 REFERENCES

A. Codes compliance - Comply with the established project edition of the following codes as applicable:

1. Nevada Electrical Code (NFPA 70) NEC
2. National Fire Alarm Codes (NFPA 72) NFAC
3. Nevada Building Code NBC
4. All State, County and City codes and ordinances

B. Standards Compliance - Comply with the following standards as applicable:

| | | |
|---|---|---|
| 1. | American National Standards Institute | ANSI |
| 2. | American Society for Testing and Materials | ASTM |
| 3. | Electrical Testing Laboratories | ETL |
| 4. | Factory Mutual | FM |
| 5. | Federal Aviation Agency | FAA |
| 6. | Federal Communications Commission | FCC |
| 7. | Institute of Elect. and Electronics Engineers | IEEE |
| 8. | National Electrical Contractors Association | NECA |
| 9. | National Electrical Manufacturers Association | NEMA |
| 10. | National Fire Protection Association | NFPA |
| 11. | Occupational Safety Health Act | OSHA |
| 12. | Underwriter's Laboratories | UL |

1.4 DEFINITIONS

A. By Others or By Other Trades: By persons or parties other than the Division 28 Contractor. In this context the words “by others or by other trades” shall not be interpreted to mean “not in contract (NIC)”.

B. Certified: Equipment has been tested and found by a nationally recognized testing laboratory to meet nationally recognized standards and found to be safe for use in a specified manner; production is periodically inspected by a nationally recognized testing laboratory; and it bears a label, tag, or other record of certification.

C. Concealed: Not visible or readily accessible such as, embedded in masonry or other construction installed behind wall furring with double partitions or above hung ceilings, in crawl spaces, in shafts.

D. Conveniently Accessible: Capable of being serviced without climbing or crawling under or over obstacles, and with adequate working clearance both front and back.

E. Damage: Visible or invisible abuse that negatively affects performance or appearance and creates defective materials or workmanship.

F. Defective Materials or Workmanship: Operational failures, performance below minimum requirements, evidence that the system will not be reasonably maintainable, errors in documentation, abnormal operations, unsafe conditions, or similar unsatisfactory performance.

G. Contractor: Company holding the contract or agreement with the Owner or its representative. The Contractor may, when permitted, sub-contract Work described in this Section to which the term contractor may apply.

H. Exposed: Not concealed.

I. Failure: Any deviation from intended system operation and performance, as determined by the Contract Documents and subsequent submittals and the Owner's Representative.

J. Furnish: Purchase and deliver to the Project site complete with every necessary appurtenance, support, and accessory required for operation.

K. Install: Unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the Project.

L. Labeled: Equipment embodies a valid label, symbol, or other identifying maker of a nationally recognized testing laboratory such as Underwriters' Laboratories, Inc., the laboratory makes periodic inspections of the production of such equipment, and the labeling indicates compliance with nationally recognized standards or tests to determine safe use in a specified manner.

M. Listed: Equipment is mentioned in a list which is published by a nationally recognized laboratory which makes periodic inspection of the production of such equipment or states that such equipment meets nationally recognized standards or has been tested and found safe for use in a specified manner.

N. Nationally Recognized Testing Laboratory: A testing laboratory which is approved, in accordance with OSHA regulations, by the Secretary of Labor.

O. Provide: Furnish and install, completely ready for use, including all accessories required for operation.

P. Contractor shall install and complete all work with the best aesthetical value as possible. Coordinate with owner if aesthetic value will be compromised

1.5 SYSTEM DESCRIPTION AND GENERAL RESPONSIBILITIES

A. The Contractor is responsible for the Work of the following Sections, as governed by the general requirements of this Section:

| | | |
|---|---|---|
| 1. | 271100 | Cabinets, Enclosures and Racks |
| 2. | 271500 | Communications Horizontal Cabling |
| 3. | 280500 | Electronic Systems General Requirements |
| 4. | 260533 | Raceways and Boxes |
| 5. | 282300 | Video Surveillance (CCTV) System |

B. Combined Prescriptive and Performance Design Requirements

1. Divisions 26, 27 and 28 includes a combination of prescriptive and performance specifications. Compliance with the performance specifications, as well as coordination and integration of the prescription requirements, will require substantial design work on the part of the Contractor.

2. The performance requirements are intended to establish overall system performance requirements, satisfy the operational requirements, and establish the inter-coordination requirements for the Division 28 systems.
3. The prescriptive requirements establish the minimum quality, characteristics, and types of components, equipment, and materials to be used to achieve the stated system performance requirements. The Contractor is advised, however, that prescriptive specifications have not been provided to satisfy all of the specified performance requirements.
4. The Contractor shall carefully consider all of the requirements for each of the Division 28 systems when preparing its bid. Any questions regarding the intent of these requirements, the scope of the systems or their coordination requirements must be submitted in writing prior to bidding in accordance with the Instructions to Bidders. The Contractor shall have no claim for either extra compensation or extra time on the grounds that it did not understand the scope or the requirements of the Division 28 work, and/or the coordination requirements of the Division 28 work with the work of the other Divisions.
5. Compliance with the project requirements will be progressively monitored and adjusted through the submittal process, Shop Test, Performance Test and Continuous Operational Test.

C. Drawing Interpretation

1. The Drawings are diagrammatic and indicate the general arrangement of systems and equipment unless indicated otherwise by dimensions or detail drawings. The Drawings utilize riser, block, installation and schematic diagrams and symbols to outline the Work to be provided. These drawings do not have any dimensional significance nor do they delineate every item required for the intended Work. No interpretation shall be made from the limitations of symbols and diagrams that any elements necessary for complete Work are excluded.
2. The Work shall be provided in accordance with the intent expressed on the Drawings and Specifications, and in conformance with the actual building architectural and structural conditions. When in conflict, field conditions take precedence over the Contract Documents.
3. The meaning of abbreviations shall be the same whether in lower case letters or without periods.
4. The use of words in the singular shall not be considered as singular where other indications denote that more than one item is referred to.
5. Details that appear on the Contract Documents which are specific with regard to the dimensioning and positioning of the Work, are intended only for the purpose of establishing general feasibility. They do not replace engineering or field coordination by the contractor for the Work.

D. Provide all parts and equipment for a complete and operational system for the Work of Divisions 26, 27 and 28 as described herein and shown on the drawings.

E. Furnish, install, terminate, test, dress, and identify all wire and cable required to make systems fully operational, including all wire, fiber, proximity devices, request to exit devices, and cabling not shown on the Drawings, but necessary for fully operational systems.

F. Recognize that the Work entails a considerable amount of custom integration between individual systems, as well as the design and implementation of many system and component interfaces. Take full responsibility for the complete design, installation, and performance of the total integrated system, including integration between systems and various interfaces, in order to achieve the specified operational features and system performance requirements.

G. Recognize that the Work entails a considerable amount of custom-written and custom-tailored software, both high-level language applications and hardware-specific drivers. Take full responsibility for the performance of the total software suite, including the software embedded in manufactured equipment, in order to achieve the specified operational features and system performance requirements.

H. When applicable, extensive interface to the existing on-line facility security and life safety systems is required as part of this Work. All connections to the existing systems shall be thoroughly detailed in submittals and approved prior to commencing of any work.

I. If it is necessary to temporarily remove or disconnect any part of the existing systems or equipment for the purposes of interfacing and connecting new equipment, the Contractor shall reinstall and make fully operational all equipment and devices removed or disconnected. Any and all system cutovers and interruptions must be pre-approved and carefully coordinated with Owner and Facility.

J. Fully test the systems, demonstrate their satisfactory operation, and train maintenance and operating personnel, as specified in this Section and the Sections governed by this Section.

1.6 COORDINATION

A. Coordinate with the Owner and all other trades as required to ensure that the entire Work of this Project will be carried out in an orderly, complete, and coordinated fashion.

B. Coordinate all device installations with the Phase 1/Phase 2 Contractor(s) to assure all conflicts and issues are addressed.

C. Coordinate the installation all security devices with the existing lighting and ventilation in all equipment rooms and control stations to avoid any possible interference and to enhance system function.

D. Coordinate with the Work of all applicable Divisions and Drawings for the required electrical and mechanical control interfaces to the work of this section.

E. Coordinate with the Owner all electrical work including, but not limited to, the required number, size, type and exact locations of all system line voltage circuits, electrical junction boxes and power receptacles. Circuits used to supply energy to any device or equipment associated with the Security Electronic and Life Safety Systems shall be derived from an emergency-generator-supplied source where available.

F. If applicable, provide coordination drawings of security device plate mounting templates and internal frame conduits to the hollow metal frame manufacturer/supplier to facilitate frame preparation for electronic devices. Rework all frames for which device mounting has not been coordinated at Contractor's expenses.

G. If applicable, obtain product data and wiring schematic information from the Division 8 Contractors/manufacturers for all approved locking and door monitoring hardware. Coordinate with the Contractors to properly wire, terminate and test all electrically controlled and monitored door/gate hardware.

1.7 QUALITY ASSURANCE

A. Divisions 26, 27 and 28 requires contractors with similar work experience and specific licenses and certifications to perform the work of this section. Specific requirements are identified in the related sections. Contractors must be certified or licensed at the time of bid where Manufacture certification or licensure is required. Required licenses and certifications shall be submitted within 3 days of being selected as the apparent low bidder.

B. The Division 26, 27 and 28 contractor shall have had experience in the design and installation of similar systems of similar project sizes and similar integration as this project to be considered qualified.

C. The Contractor shall be responsible for all costs incurred including costs incurred by the Owner and its representatives for failure to provide the experience and key personnel as specified.

1. Deductive change orders may be issued as a result of the failure to properly engineer the work prior to construction or improperly installed work that results in costs incurred to the Owner. Examples of incurred costs are rejection of submittals for failure to follow specifications or failure to properly engineer the work; re-inspection of rejected work.

D. The Divisions 26, 27 and 28 contractor shall maintain a local service center with qualified service technicians for the duration of the Warranty.

E. The Divisions 26, 27 and 28 Contractor shall have a Southern Nevada Contractors License C-10 and/or C-7 for the respective work.

F. Key Project Personnel must have work experience with projects of similar size and complexity. Systems experience shall be demonstrated for the Key Project Personnel. Résumés of prospective key personal shall be submitted when requested by Owner.

1. Project Manager Qualifications

a. Bachelors of Science Degree from ABET accredited college in Construction Management or related engineering field or,
b. Five years experience with projects of similar size and complexity.

2. Project Engineer Qualifications

a. Licensed Professional Electrical Engineer or,
b. Bachelors of Science Degree from ABET accredited college in Electronics Engineering field and two years experience with systems to be provided, or

c. Technical Trade School Degree, Associate of Science Degree, or Bachelors Degree and a minimum of six years of demonstrated experience with the systems to be provided.

3. The approved Project Manager shall represent the Contractor at all times in all project matters and shall be responsible for the administrative work including but not limited to, the following:

   a. Representation at all project meetings.
   b. Progress schedule and progress reporting.
   c. Payment schedule of values and pay requests.
   d. Representation and management of all employees and sub-contractors.
   e. Conduction of on-site performance and acceptance testing.

4. The approved Project Engineer shall be qualified and shall be responsible for technical work including but not limited to, the following:

   a. Preparation and signature of all engineering, shop drawings, and product data submittals.
   b. System fabrication, field installation work, and testing.

5. Consider all qualification and experience materials submitted as binding. Obtain the Owner's approval in writing prior to any deviations from the minimum requirements in organization, personnel, work plan, quality control plan, procurement plan or other declaration within the qualification submittal. Key project personnel substituted prior to or during the Work must meet the specification requirements and obtain the Owner's approval.

G. Regulatory Requirements and Standards:

1. References to the Nevada Electrical Code (NEC) and National Fire Alarm Code (NFAC) are a minimum installation requirement standard. Drawings and Specifications shall govern in those instances where requirements are greater than those specified in the CEC and NFAC.
2. Obtain and pay for all permits and inspections required by all legal authorities and agencies having jurisdiction for the Work. The certificates of all such permits and inspections shall be delivered to the Owner.

1.8 SUBMITTALS

A. Submit under provisions of General Conditions, Submittals.

B. Contractor is advised that approval or acceptance of product data or shop drawing submittals does not release the contractor from providing all necessary documentation per submittal requirements, nor does it obviate contractor from additional design and coordination throughout the project.

C. CPM Schedule

1. Submit a Critical Path Method Schedule within 30 days of the Notice to Proceed.
2. At a minimum show tasks by area such as by building, by floor or other appropriate designations.
3. Include tasks that are not part of the work of this section but that may affect this section such as work by other trades or contractors or Owner review time.
4. Include tasks that are not part of the work of this section but that may affect this section such as work by other trades or contractors or Owner review time.

D. Submittal Matrix

1. Prepare and submit a matrix of submittals by type vs. section of all submittals to be made by the Division 28 contractor within 30 days of the Notice to Proceed.
2. Utilize the list of required submittals listed at the end of this section as a starting point. Add columns for expected delivery dates and each specification section. If a listed submittal is not required for a specific section, indicate such with an “N/A” or other means in the column and row cross point.

E. Schedule of Values

1. Submit a Schedule of Values (SOV) based on the CPM schedule and Submittal Matrix that reflect the value of the systems and installation of work for this Division.

F. Product Data:

1. Product data is required for all materials and equipment. Include complete bill of materials for each section with the product data submittal.
2. Cross-reference submitted items to the Specifications using their related sections and paragraph numbers.
3. Submit complete product data for the all system components in a single, bound submittal of one or more volumes. Provide a table of contents and labeled divider tabs for each section. Partial submittals for individual sections will be returned without review.
4. Include descriptive literature, catalog cuts, illustrations, schematics, technical data sheets, and test data necessary for the Owner’s Representative to ascertain that proposed equipment and materials comply with specification requirements. Include manufacturer’s name, model, and catalog or part numbers. Catalog cuts shall be legible and shall clearly identify equipment being submitted.
5. Include required calculations, I/O points lists, system zone schedules, and other tabular data as necessary to clarify system sizing and configuration. Do not, however, consider such submittals as a substitute for complete shop drawings.
6. Disclosure of Product Deviations: Specifically identify and tabulate any and all deviations from the contract documents including all system functions and features. Reference the corresponding specification sections and paragraph/article numbers. All variances and deviations will be reviewed for acceptance or rejection. It will be the Contractor’s sole responsibilities to comply with all other contract requirements not revealed in the disclosure of product deviations.

G. Shop Drawings:

1. Shop drawings are required for all systems and component assemblies.
2. AutoCAD “.dwg” files of the Contract Drawings may be made available upon request. These files may be used as a first step in the preparation of shop drawings. Do not consider the drawing plots from such files as a substitute for the shop drawings that are to be prepared by the contractor.
3. Shop drawings will not be accepted or considered unless they are submitted as a complete package for each specification section. Partial submittals covering less than a whole system or with incomplete interfaces to other systems will be rejected.
4. Standard manufacturer’s drawings may not be used as shop drawings unless specifically modified for use on this project.
5. Each drawing requires a unique drawing number and revision level. Revisions shall per be dated and referenced per submittal number. Delta numbers and clouds on the drawings shall be used in all instances where changes have been made to the pervious submittal.

6. At a minimum, include the following shop drawings:

   a. Floor Plans: Scaled drawings showing equipment and all device locations in plan view. Include wire and cable types and quantities, raceway sizing and routing. Routing information shall indicate where rated assemblies are penetrated. Separate into as many plan series as needed to prevent overlapping information. These drawings shall be fully coordinated with other trades prior to submittal. Show relationships to adjacent surrounding structures.
   b. Equipment and Control Room Plans and Elevations: Scaled, dimensioned drawings showing security equipment layouts in security equipment rooms, electrical/security closets, and control rooms. Include electrical J-boxes and receptacles, power, conduit sizing and routing, metal gutters, wiring ducts, cable trays, and supports. Indicate all other non-security cabinets, enclosures, and equipment within the room.
   c. Cabinet, Enclosure, and Rack Elevations: Scaled, dimensioned drawings for each system equipment cabinet, enclosure, and rack showing component and equipment mounting, wire and cable routing and separation, connector and terminal block locations and labeling, and all necessary fabrication details.
   d. System Block Diagrams: Single line block diagrams showing the general relationship between system components and the interconnection between systems. Use these drawings as a reference for the Single line diagrams and point-to-point diagrams by cross-referencing the shop drawing number of those diagrams on these drawings.
   e. Single Line Diagrams: Interconnection diagrams for the riser and trunk wiring between equipment cabinets, enclosures racks and major components. Use the same equipment designations as the floor plans and block diagrams.
   f. Point-to-Point Diagrams: Drawings which show the wiring of each component or device of each individual system. Include details of power supply, grounding, shielding, shield grounding, surge protection, fusing, connector pin-outs, terminal assignments, and similar wiring and connection details. Use the same component and device designations as the floor plans and other shop drawings.
   g. Schematic Diagrams: Drawings which show the component wiring of a system to include but not limited to door position switches, request to exit devices, resistors, diodes, transistors, relays, etc. Required for all custom systems and modified commercial products.
   h. Device Installation Diagrams: Details which show the installation and wiring termination of each field device in each individual system. Include settings for dipswitches, jumpers, addresses, port assignments, etc. of all devices.
   i. All other shop drawings necessary to install, fabricate, locate, identify, test, service, and repair the systems provided.

7. Shop drawings approved by the Owner are Representative OR by the Consultant Engineer is not a release from Contract requirements as defined by the Drawings, Specifications, and governing codes and regulations.

H. Samples:

1. Field Samples:

   a. Wires and Cables: Submit a one (1) foot sample length of each wire and cable type to be used with the cable identification clearly shown.
   b. Submit all required samples along with the product data submittal for review and approval prior to installation.

c. If all wire samples cannot be submitted at the same time, submit samples with a complete list of all cables to be used noting samples which have been submitted. Update the list with each subsequent sample submittal.

2. Devices/Equipment:

a. Provide licenses for all devices, request to exit, proximity, access control, reader interface modules, workstations. Assure all installed devices are licensed properly to assure a compatible and operable system.

b. Submit sample assemblies of each of the following devices or equipment along with the product data submittal for review and approval by the Owner's Representative:

1) Substituted products if requested by Owner.

2) Custom component, board, equipment or assembly.

3) Tone generator (each type)

4) Demonstrate each type of proposed tone generator to the Owner's Representative. Distinctive tones shall be used for each application or function and shall remain consistent though out the project.

5) Duress Station

3. Disposition: Submitted samples become property of the Owner and will not be returned.

4. Approval of any custom or modified assemblies shall be required. Submit technical information with samples.

I. Test Procedures:

1. Initial Performance Testing: Submit test procedures, forms, and checklists for point-by-point testing. Include a listing for each individual system, each control station and control panel, each equipment room, and each major system component. At a minimum, forms shall include columns for operational/non-operational status, remarks, workmanship, and date corrected. Submit a sample format for approval by the Owner's Representative a minimum of 20 days prior to testing.

2. Performance Testing: Submit test forms which are identical to or similar to the accepted Initial Performance Testing forms. Obtain approval from the Owner's Representative for any changes in test procedure or forms.

3. Continuous Operational/Functional Testing: Submit a detailed test procedure for the continuous functional testing described generally in this Section. Submit for approval by the Owner's Representative a minimum of 15 days prior to testing.

J. Test Results:

1. Initial Performance Testing: Submit completed test results for point-by-point testing to the Owner's Representative five days prior to schedule Performance Testing.

2. Performance Testing: Submit completed test results prior to or with the request to begin the Continuous Operational Test.

3. Continuous Operational Test: Submit completed test results prior to or with the request for Substantial Completion.

K. Record (As-Built) Documents:

1. Provide and submit As Built drawings noting the actual configuration of installed devices, security equipment, data room layouts to the entity with jurisdiction prior to the scheduling of any inspections. These drawings shall be wet sealed prior to submission and shall document the changes from the Bid Drawings.

2. Maintain a current record set of as-built drawings on the job and as construction and installation progress; show the actual installed location of all items, material, and equipment.
3. Accurately record actual routing of all conduits including sizes and types.
4. The as-built drawings shall be available to the Owner's Representative for review and will be required for evaluation of progress payments.
5. Submit as-built shop drawings created from the approved shop drawings and updated from the site as-built drawing set and any other drawings required depicting the as-built conditions of the installed work.

L. Operational Manuals:

1. Submit the (3) identical manuals, which shall contain the Theory of Operation, start up, shut down and emergency procedures, and the manufacturer's operating instructions.
2. Subdivide the manual by section with tab dividers. Provide a table of contents which identifies each section and the contents therein.
3. Submit an electronic copy.

M. Maintenance Manuals:

1. Submit a complete (3) sets of maintenance documents as described in this Section. For documents of sizes greater than 11 x 17 inches, prints and electronic copy shall be furnished.
2. Manuals shall include the following as a minimum requirement:

   a. Technical system description.
   b. System schematics.
   c. Detailed wiring diagrams to identify cabling, termination, and routing.
   d. Panel assembly drawings to identify location of components, terminal strips, and equipment as required to correlate with system drawings.
   e. Descriptions and drawings as required to maintain equipment from the board to the component level.
   f. Description of software and user programmable functions. Procedures for user programmable functions shall be included.
   g. A complete printout of each unique system program.

3. For systems where the program resides on electronic media or other similar storage medium, furnish a copy of the media, or similar medium, to the Owner's Representative. Provide all required system licenses as well as (2) additional licenses prior to Substantial Completion.
4. Where multiple systems are combined into a single integrated system, documentation shall include a description of the integrated system and the details of the interfaces between systems.
5. Provide a list of current telephone numbers and addresses of all material vendors and equipment manufacturers who have supplied components in this Project. Include separate service telephone list and purchasing telephone list cross-referencing with each component.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect all materials and equipment from damage during storage at the site and throughout the construction period. Protect equipment and materials during shipment and storage against physical damage, dirt, dust, moisture, cold, rain, and any foreign substances that may damage the equipment.

B. Prevent damage from rain, dirt, sun and ground water by storing the equipment on elevated supports and covering them on all sides with securely fastened protective rigid or flexible waterproof coverings.

C. Protect conduit by storing it on elevated supports and capping the ends with suitable closure material to prevent dirt accumulation.

D. Protect all fabricated and/or installed materials and equipment against dust, dirt, moisture, physical damage, metal debris, and any foreign substances that may damage the equipment.

E. Protect painted surfaces with removable heavy Kraft paper, sheet vinyl or equal, installed at the factory and removed prior to final inspection.

F. Replace equipment determined by the Owner's Representative to be damaged. Repaint and finish damaged paint on equipment and materials with the same quality of paint and workmanship used by manufacturer so that repaired areas are not obvious.

1.10 SITE CONDITIONS

A. Site Investigation

1. Prior to submitting a bid, the Contractor shall perform a site survey of all related existing systems and submit any potential problems of the design documents that may increase the installation cost of the project.
2. Survey all locations to assure that the existing equipment on site, e.g. switch port, network switches, etc are sufficient to support the new and reinstalled CCTV cameras and ACAM equipment. These switches and equipment are located in all data room locations. IN addition, this survey shall verify that where work is to be performed and verify existing conditions prior to shop drawing submittals.

B. Existing Systems and Legacy Systems

1. It is the sole responsibility of the Contractor to ensure that all equipment supplied under this Specification is an extension of the existing safety-security systems, is 100% compatible with the existing systems and wiring installed in the facility The Contractor shall investigate and verify the capability of existing equipment, e.g. switch ports, network switches, etc. can support the identified equipment on the contract drawings. The Contractor shall promptly identify any issues with existing equipment and be responsible for the notifying the Owner and for inclusion of this equipment in his bid documents. The Contractor shall install, configure, and program the systems described in this Specification to ensure that the new and existing systems operate as one seamless entity.
2. Extensive interface to the existing facility security and communication systems is required as part of this Work. All connections to the existing systems shall be thoroughly detailed in submittals and approved prior to commencing any work.
3. If it is necessary to temporarily remove or disconnect any part of the existing systems or equipment for the purposes of interfacing and connecting new equipment, the Contractor shall reinstall and make fully operational all equipment and devices removed or disconnected. Any and all system cutovers and interruptions must be pre-approved and carefully coordinated with Owner and Facility.

C. Match Existing Conditions

1. Repair, patch, clean and paint existing surfaces that are damaged, disturbed or left in an unfinished or mismatching condition as a result of the work of this contract, to match the adjacent area.

D. Existing Equipment Disposition

1. Remove, refurbish, and re-install devices, equipment and materials specifically noted on the Drawings. During removal and storage, protect devices from damage.
2. Remove, package, and turnover all devices, equipment, and materials specifically noted on the Drawings to be removed and turnover to the Owner. During removal and storage, protect devices from damage.
3. Remove and dispose materials that are not to be reinstalled or turned over to the Owner.
4. Contractor shall abide by all facility rules.

E. Security Requirements

1. Special security requirements will be provided by the facility. See Division 1.
2. Special requirements may include limited access to the work area by area or time; background checks of on-site personnel, restrictions of equipment and tools to include tool counts.

1.11 SEQUENCING AND SCHEDULING

A. General Requirements:

1. Do not begin the project without the Owner's acceptance of proposed key project personnel for the Division 28 Work.
2. Prepare, review, and coordinate with the Owner's Representative an approved construction (CPM) work schedule. Schedule work in areas and at times that will not interfere with scheduled activities as defined by the Owner's Representative.
3. Do not procure any equipment without accepted product data submittals. Do not perform any field installation without accepted shop drawings. Do not begin any extensive software development or programming without accepted system, operational narratives, the required Owner's coordination, and user's requirements.
4. Pre-assemble control electronics, control panels, racks, and cabinets off-site as most practical.
5. Install system control equipment, control panels, cabinets, racks, and consoles only after major construction in the area in which they are to be installed has been completed and areas have been cleaned, painted, and sealed.
6. After systems installation and prior to point-by-point performance testing, thoroughly pre-test all devices and device wiring for proper performance. Then, thoroughly pre-test each system function in each state or condition under every operating mode.

B. Coordinate all work in the existing facility with the Phase 1/Phase 2 contractor(s) and the facility contact person.

1.12 WARRANTY

A. The Contractor is to provide a warranty for 3 years from the Date of Substantial Completion of the work provided under this contract (including, but not limited to, software, hardware, and peripheral equipment) as a system, including interfaces to work by others for 3-years from the date of Acceptance of the Work. Specific Division 28 sections may require longer warranty periods. Divisions of work among various suppliers, vendors, installers, subcontractors, and other parties will not be recognized or accepted.

B. Guarantee to repair and replace defective materials or workmanship during the warranty period including labor and materials.

C. An emergency maintenance (Warranty) request shall be defined as a system or portion of a system failure that affects building safety, security, and operation of critical components. Failure of a single component (i.e., smoke detector, intercom station, camera, or monitor) is not considered an emergency maintenance request.

D. Respond within the hours to an emergency maintenance request as stated in Division 28. Provide a twenty-four hour telephone contact number (24 hours per day, 365 days per year). Service response time is defined as the period between the placing of a service request and the arrival of a qualified technician capable servicing the problem on-site.

E. Maintain a sufficient parts inventory at the project during the warranty period to meet the guaranteed system repair times.

F. Repair and make operational any defective materials or workmanship resulting from an emergency maintenance request within an 6 hour period (8 hour period for rural locations) from the time of the initial arrival of service personnel at the site. Correct non-emergency defective materials or workmanship within 24 hours (48 hours for rural locations) of receiving notice of the defect.

G. Where the equipment manufacturer's warranty covers a longer time period than that required by these Specifications, the manufacturer's warranty shall govern.

1.13 EXTRA MATERIALS

A. Prior to Acceptance of the Work, deliver to the Owner all spare parts and extra materials required in each Section. All spare parts and extra materials shall be brand new in their original shipping boxes or packages and shall have 3 year material warranty remaining at the time of delivery. Extra materials shall be available to the Contractor to use as immediate replacements during the warranty period. All extra materials used for the warranty requirements shall be replaced by the Contractor..

B. Special Tools:

1. Provide three of each type of security screw bits used.
2. Provide minimum of one of any specialty tools used.

C. Spare Parts:

1. Provide 25 of each type and size of security screw used.

1.14 SOFTWARE SERVICE AGREEMENT

A. Provide 5 years of Software Service Agreement to support the software updates, firmware updates and any licensing renewal fees required during this five year time frame. These costs shall include all labor, software and shall be all inclusive for all new equipment installed at the facility and this agreement shall be executed on the date of Substantial Completion and be turned over to the Owner prior to this date.

B. Provide up to 15 client licenses for this project and each and every respective project hereafter. This operator workstation licenses shall be used as identified by the Owner and the licenses shall include years of renewal at no cost to the Owner and shall be turned over to the Owner prior to Substantial Completion.

C. Technical Support: Beginning with Substantial Completion, provide software support for 5 years. This agreement shall include all software upgrades, all technical support and shall be all inclusive.

D. Upgrade Service: Update software to latest version at Project completion and provide continuous upgrades as these upgrades are identified and made available. Install and program software upgrades that become available within 5 years from date of Substantial Completion. These Upgrade shall include new or revised licenses for use of software and all labor, equipment, testing, parts and any/all other related costs.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Comply with the General and Supplementary Conditions and Division 1 Specifications.

B. The products named in this section and the sections governed by this section establish minimum qualities that substitutions must meet to be considered acceptable. The specified products have also been used in preparing the drawings and specifications, and therefore establish the basis for equipment sizing, wire and cable design, power consumption, and other design parameters.

C. Substitution requests, if permitted, will be considered only if submitted in strict accordance with the followings:

1. Cross-reference submitted items to the Specifications using their related Section and paragraph number.
2. Submit complete product data, descriptive literature, catalog cuts, illustrations, schematics, technical data sheets, and test data necessary for the Owner's Representative to ascertain that proposed equipment and materials comply with specification requirements. Include manufacturer's name, model, and catalog or part numbers. Catalog cuts shall be legible and shall clearly identify equipment being submitted.
3. Disclosure of Product Deviations: Specifically identify and tabulate any and all deviations from the contract documents including all system functions and features. Reference the corresponding specification sections and paragraph/article numbers. All variances and deviations will be reviewed for acceptance or rejection. It will be the Contractor's sole

responsibilities to comply with all other contract requirements not revealed in the disclosure of product deviations.

D. The Contractor shall take full responsibility for all design, coordination, and cost associated with substitutions including, but not limited to:

1. Its integration into the total system including physical mounting space, electrical interconnection, signal wiring, power, quality, electromagnetic interference, communication protocols, and similar design considerations.
2. Any additional materials, equipment, components, accessories, items required for equivalent system operation and performance.
3. Any necessary changes to branch power circuits, circuit protective devices, and the Work of other trades.
4. Any modifications to wire, cable, and raceway design.

2.2 MATERIALS AND EQUIPMENT

A. All equipment and materials required for installation under these Specifications shall be new and without blemish or defect.

B. Materials and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacturing of such items, for which replacement parts are available. Specifications are prepared long in advance of project construction; the contractor is to use the newest model of the specified products available at bid time.

C. All material and equipment shall be listed, labeled, or certified by Underwriters' Laboratories, Inc., where such standards have been established. Equipment and material which are not covered by UL Standard will be accepted provided equipment and material is listed, labeled, certified or otherwise determined to meet safety requirements of a nationally recognized testing laboratory. Equipment of a class which no nationally recognized testing laboratory accepts, certifies, lists, labels, or determines to be safe will be considered, if inspected or tested in accordance with national industrial standards such as NEMA or ANSI.

D. All parts of a system shall be the product of one manufacturer. When more than one unit of the same class of equipment or material is required, such units shall be the products of a single manufacturer. Constituent parts which are similar shall be the product of a single manufacturer.

E. All components of an assembled unit need not be products of the same manufacturer; however, all components must be acceptable to the Owner's Representative. Components shall be compatible with each other and with the total assembly for the intended service.

2.3 EQUIPMENT MODIFICATIONS:

A. When standard manufactured equipment is modified from its original condition or factory options have been exercised identify the changes as noted below.

1. Clearly identify the modifications on the shop drawings.
2. Clearly identify each piece of modified equipment with a label, which states, "This unit has been modified..." and identify the modification or reference. Locate the label so that a service technician or factory service personal will be able to determine the equipment in use is non- standard and that modifications are required for service, testing and replacement.
3. Identify and describe the modifications on the Record Documents.

B. Equipment modification labels are not required for jumper or switch settings.

2.4 FABRICATION

A. Fabricate enclosures to easily accommodate interconnecting cables entering from above or below through the use of auxiliary gutters, cable trays, and conduits. Protect all metal cabinet edges where conductors cross and conduit ends with protective covering or bushing.

B. Group wires and cables by types, boards and modules, and maintain National Electrical Code clearances throughout the installation, including Class 1, Class 2, communications, and branch circuit power separations. Maintain sufficient and proper separation between microphone-level audio, line-level audio, high-level audio and video cables.

C. Uniformly organize equipment and cable routing throughout all enclosures, racks, and cabinets. Provide wiring ducts, wireways, wire posts, D rings, wire saddles to route and secure factory and field wiring. Provide routing for all wiring from point of entry to point of termination to maintain required separation, access to all components, and general organization to the wiring. Neatly dress, route and secure wiring.

D. Mechanically fasten cabinet raceways and cable clamps to enclosure rear panels, rack members, console members, or to other system components. The use of adhesive fasteners (without mechanical fastener) is not permitted. Furnish and install cable support posts where necessary to properly support cables.

E. No splices are permitted in cabinet raceways. Exception: Splice to cable shield when within two inches of cable termination is permitted.

F. Furnish and install metal grounding type outlet strips in each equipment cabinet, enclosure, and rack. Leave a minimum of two unused receptacles at each location for future expansion. Neatly shorten and dress power cords from individual equipment to the outlet strips.

G. Provide protection from accidental contact of all terminals or exposed conductors over 25 volts within enclosures that contain Class 2 wiring. Use non-conductive barriers, heat shrink or other acceptable methods. Tape of any kind is not permitted.

H. Provide an isolated ground bus within each equipment cabinet, enclosure, and rack for single point termination of audio and data shields and grounds.

2.5 SOURCE QUALITY CONTROL

A. Shop Inspections:

1. Have trained, qualified, quality assurance inspector regularly inspect shop assemblies. Inspect for quality of workmanship, neatness, part and wiring identification, conformance to codes and standards, and compliance with system Specifications and shop drawings.
2. The Owner's Representative shall have the right at all times to inspect or otherwise evaluate the Work performed or being performed and shall have access to the premises in which the Work is being performed.
3. The Owner's Representative may verify the inspections or re-inspect any item. The Owner reserves the right to reject materials and workmanship found unacceptable during inspections.

B. Shop Test and Demonstration

1. Shop Test and Demonstration shall be a major milestone that shall commence only after all shop assembly, system integration, and software development and programming is complete. Owner's approval of the integrated shop test shall be obtained before any system components are shipped to the site for installation.
2. Each input and output point, operational sequence, control panel, and PLC network will be tested. Provide sample field devices, approved mock up devices and jumpers to simulate actual field operation conditions. In addition, simulated system failure, response time, reset and boot up time, and other tests will be conducted as directed by the Owner.
3. Sample field devices including, but not limited to are, intercom stations, paging speakers, microphones, cameras, CCTV monitors, locks, and door position monitoring devices.
4. Notify the Owner a minimum of 5 working days prior to demonstration so that the Owner may witness the demonstration.
5. Conduct the demonstration in strict accordance with the test procedure accepted by the Owner. Demonstrate full compliance with the required operating modes and sequences of operation under all operating modes. Record demonstration/ test results on a report which shall include a list of all personnel witnessing the demonstration, test methods used, and a record of each specific test made.
6. If demonstration results are not in compliance with requirements, make necessary hardware and software changes, corrections, repairs, or adjustments at no additional cost to the Owner. If corrections cannot be made during the scheduled Shop Test and another shop test is required, the Contractor shall pay for all transportation, lodging and expenses of the Owner's representatives' (maximum seven people) attending the additional tests. This process shall continue until the systems are acceptable to the Owner.

## PART 3 EXECUTION

### 3.1 EXAMINATION

A. Carefully inspect the installed Work by other trades and verify that all such Work is complete to the point where installation of the Work of this division may properly commence.

B. In the event of discrepancy, immediately notify the Owner's Representative. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.

C. Install all equipment in accordance with all pertinent codes and regulations, the accepted design, and the referenced standards.

3.2 INSTALLATION

A. Equipment Identification:

1. Install a nameplate on each individual equipment rack, enclosure, boxes, cabinet, and significant equipment item.
2. Use identifiers and abbreviations defined in the Drawings whenever possible. Use plan designation for labeling, unless indicated otherwise.
3. Nameplates shall be laminated black phonemic resin with a white core and engraved lettering, a minimum of 1/4" high. Use fasteners to install nameplates. Do not fasten with adhesives.
4. Engrave using upper case letters of uniform height; centered on device, cover plate, or enclosure; with all characters made clearly and distinctly.
5. All equipment shall have the manufacturer's name, address, and model number and rating on a name plate securely affixed in a conspicuous place. All equipment shall bear labels attesting to Underwriters Laboratories approval where subject to Underwriters Laboratories label service.
6. Identify all field terminals and relays with device identification. Lettering shall be 3/16" high minimum.

B. Equipment Installation:

1. Install all equipment in accordance with the manufacturer's recommendations, and accepted shop drawings. Provide all required licenses for equipment and devices.
2. Install all equipment in compliance with CEC requirements, NECA's "Standard of Installation", and recognized industry practices.
3. If requested, submit structural and seismic mounting load calculations demonstrating adequate support and bracing for seismic zone 4.
4. Do not attach electrical materials to roof decking, removable or knockout panels, or temporary walls and partitions unless indicated otherwise. Use hangers and other supports to support the equipment and materials, intended for this purpose.
5. Locate equipment as close as practical to the locations shown on the Drawings.
6. Maintain minimum 3-foot working clearances on each side of equipment or equipment racks where access is required to inspect service or adjust.
7. Check equipment against available mounting space indicated on the drawings. Coordinate location of equipment with existing devices to minimize interference. Bring all conflicts or clearance problems to the attention of the Owner's Representative during the preparation of shop drawings.
8. Where the Owner's Representative determines that equipment installation is not conveniently accessible for operation and maintenance, remove and reinstall equipment in a conveniently accessible manner at no extra cost.

3.3 FIELD QUALITY CONTROL

A. Performance Testing:

1. Refer to Division 28 for Performance Testing.

3.4 TRAINING

A. Programming Training:

1. Refer to Division 28 for Programming Training.

END OF SECTION 280500

# SECTION 28 23 00

# VIDEO SURVEILLANCE (CCTV) SYSTEM

## PART 1 GENERAL

### 1.1 DESCRIPTION

A. Provide and install a complete IP Video Surveillance System, which is identified as the Closed Circuit Television System hereinafter referred to as the CCTV System as specified in this section.

### 1.2 SCOPE OF WORK

A. The Scope of Work for this section includes the design, coordination, supply, installation, integration, testing, commissioning, training, documentation and maintenance of a complete full IP based video surveillance system as required and specified in this section.

B. The scope shall also include labor, materials, coordination, programming, scheduling and the sequence of installation of the works in all circumstances where this is stipulated in this Specification or proves necessary in practice.

C. The Scope of Work shall not only include the major items of plant and equipment shown or specified but also include all necessary incidental sundry components together with the labor for installing such components for the complete execution of the Works and for the proper operation of the installations, whether or not these sundry components are stated in detail in this Specification.

D. The design and selection of system, materials, equipment and installation works shall duly consider aspects of safety, reliability, serviceability, maintainability, flexibility, environment, operation simplicity, energy efficiency and expandability. In addition, the relevant international standards, codes, guidelines and other documents issued by local and statutory authorities shall be followed.

E. The Contractor shall provide adequate resources and efforts in accordance to Part 3 of this section.

F. The Contractor shall provide a 3-year warranty for the System and all components unless otherwise specified.

### 1.3 RESPONSIBILITY

A. The Contractor shall be responsible for the design and installation of the System such that it fully complies with the design criteria and requirements as stipulated in this section.

B. The Contractor shall take lead responsibility to ensure the seamless integration of the various hardware items and software applications to form a complete System and their proper functioning even though the Contractor or his suppliers may not be the Original Equipment Manufacturer (OEM) for all the items supplied or the supplier for all the items utilized.

C. All technical information shown on the Drawings and included in this Specification indicates only the design intent of the system and the minimum performance requirements. The quantities, capacities and sizing contained within these documents should not be assumed to be the exact extent of the Works. The Contractor shall be responsible for fully developing the design and providing a complete system fit for the intended purpose and in accordance with the intent of this Specification.

D. The Contractor shall prepare and submit to the Owner for approval all submittals as stipulated in Section 3.02 of this section. The Owner or his representative will review the submittals and provide comments to the Contractor to ensure the system design can fully comply with and meet the performance specifications as specified. Approval shall not construed relieving the Contractor for compliance with the requirements stipulated in this Contract.

E. The Contractor shall be responsible for confirming and correlating dimensions on site which fits for construction.

1.4 COORDINATION

A. The Contractor shall coordinate with other contractors and trades who will be carrying out other work on the Site, prior to the commencement of actual installations, so as to ensure that the work of all trades will be coordinated.

B. No claims shall be entertained for expenses arising from non-compliance with this Clause.

C. Coordination of work shall include but not limited to the following duties:

1. All documents and drawings from the Owner and his representative to be provided under the Contract and to ensure the compatible integration of all the work. Such coordination shall include recommending to the Owner's Representative for approval, design solutions to eliminate any conflict between elements of the work, and to provide adequate space between elements of the work for subsequent maintenance of the various installations in accordance with good practice. All checking, coordination and, where necessary, proposals to overcome conflicts in accordance with the above shall be executed well in advance of the Program for carrying out the Work.
2. Coordination of work upon receipt of instruction from the Owner's Representative throughout the period of the contract.
3. Coordination of government submissions, testing and inspection of the Works in a timely manner to comply with the construction program and building occupation requirements.
4. Submission of Materials, Equipment & Shop Drawings in accordance to Section 3.02 of this section.

1.5 RELATED WORK

A. For general requirements, Section 01 00 00, GENERAL REQUIREMENTS

B. For Electrical Raceways, Section 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

C. For Equipment racks, Section 27 11 00, CABINETS,ENCLOSURES AND RACKS

D. For communications cabling, Section 27 15 00, COMMUNICATION HORIZONTAL CABLING

E. For cabling and containment, Section 28 05 00, ELECTRONIC SYSTEMS GENERAL REQUIREMENTS

1.6 ABBREVIATIONS

| Term | Description |
|---|---|
| **AGC** | Automatic Gain Control |
| **ANSI** | American National Standards Institute |
| **API** | Application Programming Interface |
| **ATM** | Automated Teller Machine |
| **ATW** | Auto Tracking White Balance |
| **BMS** | Building Management System |
| **BOH** | Back of House |
| **CCP** | Camera Consolidation Panel |
| **CCTV** | Closed Circuit Television |
| **CSD** | Combined Services Drawing |
| **dB** | Decibel |
| **DLP** | Defects Liability Period |
| **DNI** | Data Network Infrastructure |
| **EAC** | Electronic Access Control |
| **FAT** | Factory Acceptance Test |
| **FIFO** | First In First Out |
| **FOH** | Front of House |
| **FoV** | Field of View |
| **fps** | Frame per second |
| **F/UTP** | Foiled Unshielded Twisted Pair |
| **Gbps** | Gigabit per second |
| **GB** | Gigabyte |
| **GTG** | Grey-to-Grey |
| **GUI** | Graphical User Interface |
| **HD** | High Definition |
| **IBC** | International Building Code |
| **IEEE** | Institute of Electrical and Electronics Engineers |
| **IP** | Internet Protocol |
| **ISO** | International Organization for Standardization |
| **LCD** | Liquid Crystal Display |
| **LED** | Light Emitting Diode |
| **Mbps** | Megabit per second |
| **MB** | Megabyte |
| **MEP** | Mechanical, Electrical and Plumbing |

| | |
|---|---|
| **MP** | Megapixel |
| **NAS** | Network Attached Storage |
| **NIC** | Network Interface Controller |
| **NTP** | Network Time Protocol |
| **NVR** | Network Video Recorder |
| **OEM** | Original Equipment Manufacturer |
| **ONVIF** | Open Network Video Interface Forum |
| **PC** | Personal Computer |
| **PDF** | Portable Document Format |
| **PDU** | Power Distribution Unit |
| **PSU** | Power Supply Unit |
| **PoE** | Power over Ethernet |
| **POS** | Point of Sale |
| **PTZ** | Pan / Tilt / Zoom |
| **RAID** | Redundant Array of Inexpensive Disks |
| **RCP** | Reflected Ceiling Plan |
| **RFID** | Radio Frequency Identification |
| **RU** | Rack Unit |
| **SAC** | Security and Access Control |
| **SAN** | Storage Area Network |
| **SAT** | Site Acceptance Test |
| **SCS** | Structured Cabling Systems |
| **SDHC** | Secure Digital High Capacity |
| **SDXC** | Secure Digital extended Capacity |
| **SLA** | Service Level Agreement |
| **SMR** | Surveillance Monitoring Room |
| **TB** | Terabyte |
| **TIA** | Telecommunications Industry Association |
| **UPS** | Uninterruptible Power Supply |
| **UTP** | Unshielded Twisted Pair |
| **VCA** | Video Content Analysis |
| **VLAN** | Virtual Local Area Network |
| **VMS** | Video Management System |
| **WDR** | Wide Dynamic Range |
| **WLAN** | Wireless Local Area Network |

1.7 STANDARD OF COMPLIANCE

| Term | Standard of Compliance |
|---|---|
| CAT6 | ANSI/TIA-568-C.2 |
| EIA 19” | ANSI/tIA-310-E:1996 |
| Ethernet | IEEE Std 802.3 |
| H.264 | ISO/IEC 14496-10 |
| HD 720p | SMPTE-296M |
| HD 1080p | SMPTE-274M, ITU-R BT.709-5 |
| IK10 | BS EN 62262:2002 |
| IP66 | BS EN 60529:1992+A2:2013 |
| OS2 | ANSI/TIA-568-C.3 |
| PAL | ITU-R BT.1700 |
| POE | IEEE Std 802.3af |
| POE+ | IEEE Std 802.3at |

1.8 APPLICABLE PUBLICATIONS

A. The publications listed below (including amendments, addenda, revisions, supplement, and errata) form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. American National Standards Institute (ANSI)/Electronic Industries Alliance (EIA):
330 Electrical Performance Standards for CCTV Cameras 375A
Electrical Performance Standards for CCTV Monitors

C. Institute of Electrical and Electronics Engineers (IEEE):
C62.41 IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits

802.3af Power over Ethernet Standard

D. Institute of Electrical and Electronics Engineers (IEEE):
C62.41 IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits

802.3af Power over Ethernet Standard

E. National Electrical Contractors Association (NECA):
303-2005 Installing Closed Circuit Television (CCTV) Systems

F. National Fire Protection Association (NFPA): 70-
05 Article 780-National Electrical Code

G. Federal Information Processing Standard (FIPS):
140-2 Security Requirements for Cryptographic Modules

H. Underwriters Laboratories, Inc. (UL):
983-06 Standard for Surveillance Camera Units

3044-01 Standard for Surveillance Closed Circuit Television Equipment

I. BICSI Electronic Safety and Security Design Reference Manual – Most Current Edition PART 2

PRODUCTS

2.1 GENERAL

A. All equipment associated within the CCTV System shall be UL 3004 compliant and rated for continuous operation. Environmental conditions (i.e. temperature, humidity, wind, and seismic activity) shall be taken under consideration at each facility and site location prior to installation of the equipment.

B. All equipment shall operate on a 120 volts alternating current (VAC); 60 Hz AC power system unless documented otherwise in subsequent sections listed within this specification. All equipment shall have a back-up source of power that will provide a minimum of (4) hours of run time in the event of a loss of primary power to the facility.

C. The system shall be designed, installed, and programmed in a manner that will allow for ease of operation, programming, servicing, maintenance, testing, and upgrading of the system.

D. All CCTV System components located in designated “HAZARDOUS ENVIRONMENT” areas where fire or explosion could occur due to the presence of natural gases or vapors, flammable liquids, combustible residue, or ignitable fibers or debris, shall be rated Class II, Division I, Group F, and installed in accordance with NFPA 70, Chapter 5.

E. All equipment and materials for the system will be compatible to ensure correct operation.

2.2 MANUFACTURERS

BASE BID MANUFACTURERS:

Subject to owner’s final approval of bid responses submitted by contractor, the following manufacturer’s products will be considered in bid responses; and as compliant to these technical specifications. In order to assure achievement of maximum system performance, individual components must be performance-certified to match interfacing and interactive components. Products must not be mixed and matched between different vendors. Vendor solutions must be implemented as single vendor end-to-end engineered systems to assure compatibility.

Substitution of system components with other Manufacturers shall follow substitution procedures in Section 01 35 16.

A. Camera

1. Arecont Vision
2. Avigilon
3. Axis
4. Bosch
5. Dallmeier
6. D-Vtel
7. Honeywell
8. IndigoVision
9. Pelco
10. Samsung
11. Sony
12. Synectics
13. Or approved equal

B. Video Management System

1. Avigilon
2. Dallmeier
3. Genetec
4. Verint
5. IndigoVision
6. Milestone
7. Pelco
8. Samsung
9. Onssi

10. D-Vtel
11. Cisco
12. Exac9
13. Synectics
14. Or approval equal

C. Network Video Recorder

1. Avigilon
2. Dallmeier
3. Genetec
4. Honeywell
5. IndigoVision
6. Ionmis
7. Milestone
8. Pelco
9. Synectics
10. Or approved equal

D. Surveillance Network Infrastructure

1. Provided and installed by owner

E. Display Monitors (when requested by Owner)

1. Pelco
2. Samsung
3. Or approved equal

F. Equipment Racks, Cabinets and Consoles (when requested by Owner)

1. CPI Chatsworth
2. Middle Atlantic Products
3. Rittal
4. Winsted
5. Or approved equal

## 2.3 CAMERAS GENERAL REQUIREMENT

A. All the cameras specified in this section shall be IP cameras.

B. The camera shall be fully compliant with ONVIF Profile S and listed as Profile Products.

C. The camera shall be fully interoperable with the headend equipment, including but not limited to, the Video Management System (VMS), Network Video Recorder (NVR), Archive Storage and the Application Servers.

D. The camera shall be fully interoperable with the Owner's Workstation and Keyboard, and supports functionalities as stipulated in this section.

E. All the cameras, unless specified otherwise, shall support edge recording. In case of connectivity failure between the camera and the NVR, the camera shall be able to record the video footage on the edge memory, and backfill the video footage to the NVR automatically immediately upon the connectivity resumes.

F. The minimum requirement for the edge storage described above as follows:

| **Description** | **Requirement** |
|---|---|
| Card Format | SDHC / SDXC |
| Form Factor | Full size / Micro |
| Speed Class Rating | Class 6 or above |
| Capacity | 32GB |

G. The camera shall provide easy access to the edge storage described above without disconnecting the camera.

H. The camera shall be compatible with IEEE 802.1X protocol for authentication and secure communication.

I. The Contractor shall submit sample of all cameras to the Owner or his representative for approval in accordance to Part 3.

J. Notwithstanding the finish of the camera enclosure specified in this section, the Owner may instruct the Contractor to provide specific finish and decorations to the camera enclosure and associated mounting accessories to match with the overall interior or exterior design of the Site.

## 2.4 FIXED INDOOR CEILING MOUNTED CAMERA (720P)

A. The Fixed Indoor Ceiling Mounted Cameras are mini dome-shaped camera to be installed in areas to capture the overview of the area.

B. The camera shall produce high definition video quality at HD 720p to enable the operators to clearly determine the overview of the scene being captured.

C. The cameras shall offer multi streams with up to 1.3 megapixels (MP) resolution (1280 x 720) in progressive scan format (720p).

D. The frame rate produces from the camera shall equal or greater than 25fps at H.264 compression format. The network transmission rate at video quality of 720p with 25fps shall not exceed 4 Mbps. The video will be streamed throughout the County Network Infrastructure.

E. The camera profile shall define the subset of bit stream features in an H.264 stream, including color reproduction and video compression with selected compatible profile with the recording device so that a stream can be decoded and viewed.

F. The camera shall be equipped with built-in vari-focal lenses. The space inside the dome housing or bubble shall be adequate for changeable lenses. The cameras design, installation and placement have to meet the overall design perspective of ceiling decoration or stage of ceiling design.

G. The camera shall be in ceiling type with trim ring and bubble that require protection from harsh environment such as humidity, dust and from vandalism or tempering.

H. The camera enclosure shall provide the degree of protection in conformance to IP66 and IK10.

I. The camera shall conform as a minimum to the following specifications:

| Item | Description | Requirement |
|---|---|---|
| 1. | Image Sensor | 1/3” Exmor CMOS |
| 2. | Resolution | 1280 x 720 pixels |
| 3. | Scanning | Progressive |
| 4. | Frame Rate | 25fps |
| 5. | Minimum Illumination | 0.5 lux |
| 6. | Compression | H.264 |
| 7. | Streaming | Unicast / Multicast |
| 8. | Lens | Varifocal: 3-9mm |
| 9. | Aperture | F1.2 |
| 10. | Focus | Automatic |
| 11. | Iris Control | Automatic |
| 12. | Shutter | 1/10000s |
| 13. | Signal to Noise Ratio | >50dB (AGC OFF) |
| 14. | White Balance | Auto/Indoor/Outdoor/ATW/Manual |
| 15. | Wide Dynamic Range | Multi-exposure |
| 16. | Audio | Not required |
| 17. | Power Supply | POE |

2.5 1.3 MEGAPIXEL HD NETWORK IR DOME CAMERA

A. The camera shall be of a dome type suitable for internal installation. The camera shall be ivory in appearance.

B. The network camera shall feature up to 1.3 Mega Pixel resolution in a 4:3 format. 16:9 format HD 720p shall also be available.

C. The camera should be capable of capturing and transmitting an image size of 1280 x 1024 at 60 images per second

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/ 3” PS Exmor 1.37 CMOS (IMX238) |
| 2. | Total Pixels | 1,312(H) x 1,069(V) |
| 3. | Effective Pixels | 1,305(H) x 1,049(V) |
| 4. | Scanning System | Progressive |
| 5. | Min. Illumination Color | 0.05 Lux (1/30sec F1.2, 50IRE), 0.005Lux (1/30sec, F1.2, 30IRE) |
| 6. | S/N Ratio | 50dB |
| 7. | Video Output | CVBS: 1.0 Vp-p / 75Ω composite, 704x480(N), 704x576(P), for installation DIP connector type |
| 8. | Lens Type | DC Auto Iris, P-Iris |
| 9. | Mount Type | Board-in type |
| 10. | Focal Length (Zoom Ratio) | 3~ 8.5mm (2.8X) Motorized Varifocal |
| 11. | Max. Aperture Ratio | F1.2 |
| 12. | Angular Field of View | H: 93.4° (Wide) ~ 33.1° (Tele)<br>V: 73.8° (Wide) ~ 26.5° (Tele) |
| 13. | Min. Object Distance | 0.5M (1.64ft) |
| 14. | Focus Control | Simple Focus (Motorized V/F) / Manual Remote control via network |
| 15. | Pan Range | '0 ° ~ +354 ° |
| 16. | Tilt Range | '0 ° ~ +67 ° |
| 17. | Rotate Range | '0 ° ~ +355 ° |
| 18. | IR LED/Viewable Length | 12ea / 30m (98.43ft) |
| 19. | Camera Title | Off / On (Displayed up to 40 characters) |
| 20. | Day & Night | Auto (ICR) / Color / B/W / External / Schedule Off, |
| 21. | Backlight Compensation | BLC, WDR |
| 22. | Wide Dynamic Range | 130dB |
| 23. | Defog | Off / Auto / Manual |
| 24. | Motion Detection | Off / On (4 zones with 4-sided polygon) |
| 25. | Privacy Masking | Off / On (32 zones with 4-sided polygon) |
| 26. | Gain Control | Off / Low / Middle / High |
| 27. | White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| 28. | Electronic Shutter Speed | Minimum / Maximum / Anti flicker |
| 29. | Flip / Mirror | Off, On |
| 30. | Intelligent Video Analytics | Tampering, Virtual Line, Enter/Exit, Appear / Disappear, |
| 31. | Alarm I/O | Input 1ea / Output 1ea |
| 32. | Ethernet | RJ-45 (10/100Base-T) |
| 33. | Video Compression Format | H.264 (MPEG-4 part 10/AVC), MJPEG |

| | | |
|---|---|---|
| 34. | Resolution | 1280x1024 /1280x720 / 1024x768 / 800x600 / 640x480 320x240 |
| 35. | Max. Framerate H.264 | Compression level, Target bit rate level control |
| 36. | Max. Framerate Motion MJPEG | Quality level control |
| 37. | Bitrate Control Method H.264 | CBR or VBR |
| 38. | Bitrate Control Method MJPEG | VBR |
| 39. | Streaming Capability | Multiple Streaming (Up to 10 Profiles) |
| 40. | Audio | Not Required |
| 41. | IP | IPv4, IPv6 |
| 42. | Streaming Method | Unicast, Multicast |
| 43. | Application Programming Interface | Onvif Profile S, SUNAPI (HTTP API), SVNP 1.2 |
| 44. | Web Viewer Supported OS | Windows XP / VISTA / 7 / 8, MAC OS X 10.7 |
| 45. | Electrical Voltage | DC12V, AC24V, PoE (IEEE802.3af) |
| 46. | Operating Temperature | 40°F ~ 131°F |
| 47. | Ingress Protection | IP66 |
| 48. | Vandal Resistance | IK10 |
| 49. | Warranty | 3 years, parts and labor. |

2.6 FIXED OUTDOOR CEILING MOUNTED CAMERA (720P)

A. The Fixed Outdoor Ceiling Mounted Cameras are dome-shaped camera to be installed in - areas to capture the overview of the area.

B. The camera shall produce high definition video quality at HD 720p to enable the operators to clearly determine the overview of the scene being captured.

C. The cameras shall offer multi streams with up to 1.3 megapixels (MP) resolution (1280 x 720) in progressive scan format (720p).

D. The frame rate produces from the camera shall equal or greater than 25fps at H.264 compression format. The network transmission rate at video quality of 720p with 25fps shall not exceed 4 Mbps. The video will be streamed throughout the County Network Infrastructure.

E. The camera profile shall define the subset of bit stream features in an H.264 stream, including color reproduction and video compression with selected compatible profile with the recording device so that a stream can be decoded and viewed.

F. The cameras shall built-in with vari-focal lenses. The space inside the dome housing or bubble allow of changeable lenses. The IP cameras design, installation and placement have to meet the overall design perspective of ceiling decoration or stage of ceiling design.

G. The camera enclosure shall be available in both in ceiling and pendant type, with associated mounting brackets for ceiling, wall or pole mount applications.

H. The camera enclosure shall be in smoke bubble, white trim ring and white finish.

I. The camera enclosure shall provide the degree of protection in conformance to IP66 and IK10.

J. The camera shall conform as a minimum to the following specifications:

| Item | Description | Requirement |
|---|---|---|
| 1. | Image Sensor | 1/3” Exmor CMOS |
| 2. | Resolution | 1280 x 720 pixels |
| 3. | Scanning | Progressive |
| 4. | Frame Rate | 25fps |
| 5. | Minimum Illumination | 0.5 lux |
| 6. | Compression | H.264 |
| 7. | Streaming | Unicast / Multicast |
| 8. | Lens | Varifocal: 3-9mm |
| 9. | Aperture | F1.2 |
| 10. | Focus | Automatic |
| 11. | Iris Control | Automatic |
| 12. | Shutter | 1/10000s |
| 13. | Signal to Noise Ratio | >50dB (AGC OFF) |
| 14. | White Balance | Auto/Indoor/Outdoor/ATW/Manual |
| 15. | Wide Dynamic Range | Multi-exposure |
| 16. | Audio | Not required |
| 17. | Power Supply | POE |

2.7 3 MEGAPIXEL FULL HD VANDAL-RESISTANT IR NETWORK DOME CAMERA

A. This network dome camera shall provide resolution support of at least 3M (2048x1536) with 16:9 full HD (1080p) resolution.

B. Built-in IR LED (15ea), viewable length of 25m

C. The camera shall have 3 ~ 8.5mm motorized varifocal (2.8x) lens.

D. The camera shall support simultaneous transmission of dual codec (H.264 and MJPEG), with smart codec (ROI encoding).

E. The camera shall support WDR in 2M mode.

F. This camera shall have an IP66 vandal-resistant, waterproof body.

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/2.8” 3M PS CMOS |
| 2. | Total Pixels (horizontal x vertical) | 2,144 x 1,588 |
| 3. | Effective Pixels(horizontal x vertical) | 2,096 x 1,561 |
| 4. | Scanning System | Progressive |
| 5. | Min. Illumination Color | 0.1Lux (F1.2, 50IRE), 0.017 Lux (Sens-up, 60x) |
| 6. | S/N Ratio | 50dB |
| 7. | Video Output | CVBS: 1.0 Vp-p, 75 ohms |
| 8. | Video Output NTSC | 704x480, for installation |
| 9. | Video Output PAL | 704x576, for installation |
| 10. | Focal Length (Zoom Ratio) | 3~ 8.5mm (2.8x) motorized Varifocal |

| | | |
|---|---|---|
| 11. | Mount Type | Board-in type |
| 12. | Focal Length (Zoom Ratio) | 3~ 8.5mm (2.8X) Motorized Varifocal |
| 13. | Aperture ratio, max. | F1.2 |
| 14. | Angular Field of View | H: 100°(Wide) ~ 35.3°(Tele)<br>V: 74.6° (Wide) ~ 26° (Tele) |
| 15. | Min. Object Distance | 0.5M (1.64ft) |
| 16. | Focus Control | Remote control via network (Manual, One-shot AF) |
| 17. | Drive Type | DC auto iris |
| 18. | Mount Type | Board-in |
| 19. | Pan Range | '0 ° ~ 355 ° |
| 20. | Tilt Range | '0 ° ~ 90 ° |
| 21. | Rotate Range | '0 ° ~ 355 ° |
| 22. | Camera Title | Off / On (Displayed up to 15 characters) |
| 23. | Day & Night | Auto (ICR) / Color / B/W / External B/W |
| 24. | Backlight Compensation | BLC, HLC, WDR, Off |
| 25. | Wide Dynamic Range | 52dB (2M mode only) |
| 26. | Motion Detection | Off / On (4 zones with 4-programmable zones) |
| 27. | Privacy Masking | Off / On (1 each, 4 point polygonal + 16 each rectangular zones) |
| 28. | Gain Control | Off / Low / Middle / High |
| 29. | White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| 30. | Electronic Shutter Speed | Auto, A.FLK, Manual (1/30~30,000sec) |
| 31. | Flip / Mirror | Off, On |
| 32. | Alarm I/O | Input 1ea / Output 1each (relay) |
| 33. | Ethernet | RJ-45 (10/100Base-T) |
| 34. | Video Compression Resolution 3M H.264 | 20fps max, all resolutions |
| 35. | Video Compression Resolution 3M MJPEG | 800 x 600 ~ 320 x 180, 20fps<br>1280 024 ~1600 x 1200, 15fps<br>1920 x 1080 ~ 2048 x 1536, 10fps |
| 36. | Video Compression Resolution 2M H.264 | 30fps max, all resolutions but 15fps if WDR is on |
| 37. | Video Compression Resolution 2M MJPEG | 800 x 600 ~ 320 x 180, 30fps<br>1280 x 1024 ~1920 x 10800, 15fps |
| 38. | Max. Framerate 3 M Mode | 20fps |
| 39. | Max. Framerate 3 M Mode | 30fps max. 15fps if WDR is on |
| 40. | Smart Codec | Area based method, Face detection method |
| 41. | Video Quality Adjustment H.264 | Compression level, Target bitrate level control |
| 42. | Video Quality Adjustment MJPEG | Quality level control |
| 43. | Bitrate Control Method H.264,MPEG-4 | CBR or VBR |
| 44. | Bitrate Control Method MJPEG | VBR |

| | | |
|---|---|---|
| 45. | Streaming Capability | Multiple Streaming (Up to 6 Profiles) |
| 46. | Audio | Not Required |
| 47. | IP | IPv4, IPv6 |
| 48. | Streaming Method | Unicast, Multicast |
| 49. | Max. User Access | 10 users at Unicast mode |
| 50. | Memory Slot | SD/SDHC |
| 51. | ONVIF Conformance | Yes |
| 52. | Web Viewer Supported OS | Windows XP / VISTA / 7 / 8, MAC OS |
| 53. | Electrical Input Voltage | 24V AC, 12V DC, PoE (IEEE802.3af) |
| 54. | Operating Temperature | -40°C ~ +50°C (-40°F ~ +122°F) |
| 55. | Ingress Protection | IP66 (Waterproof) |
| 56. | Certifications | UL Listed<br>CE mark<br>FCC mark |
| 57. | Warranty | 3 years, parts and labor. |

2.8 3 MEGAPIXEL VANDAL RESISTANT NETWORK DOME CAMERA

A. The camera shall be of a dome type suitable for external installation. The camera shall be ivory in appearance.

B. The network camera shall feature up to 3 Mega Pixel resolution in a 16:9 format. 4:3 format shall also be available in smaller resolutions.

C. The camera should be capable of capturing and transmitting an image size of 1920 x 1080 at 60 images per second

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/ 2.8” PS Exmor 3.2M CMOS |
| 2. | Total Pixels | 2,065(H) x 1,565(V) |
| 3. | Effective Pixels | 2,065(H) x 1,553(V) |
| 4. | Scanning System | Progressive |
| 5. | Minimum Illumination Color | 0.1 Lux (F1.2, 50IRE),<br>0.06Lux (F1.2, 30IRE) |
| 6. | S / N Ratio | 50dB |
| 7. | Video Output | CVBS : 1.0 Vp-p / 75Ω composite, 704x480(N), 704x576(P), for installation DIP connector type |
| 8. | Lens Focal Length (Zoom Ratio) | Simple Focus / DC Auto Iris, P-Iris |
| 9. | Max Aperture Ratio | F1.2 |
| 10. | Angular Field of View | H : 100.12°(Wide) ~ 35.38°(Tele) / V: 73.76° (Wide) ~ 26.58° (Tele) |
| 11. | Min. Object Distance | 0.5m (1.64ft)\ |
| 12. | Lens Type | Simple Focus / DC Auto Iris, P-Iris |
| 13. | Mount Type | Board-in type |
| 14. | Focus Control | Simple focus (Motorized V/F) / Manual, Remote control via network (Manual, Simple focus) |

| | | |
|---|---|---|
| 15. | Pan /Tilt / Rotate Range | 0° ~ 354° / 0° ~ 67° / 0° ~ 355° |
| 16. | Operation IR LED | 12ea |
| 17. | Viewable Length | 25m(82.02ft) |
| 18. | Camera Title | Off / On (Displayed up to 45 characters) |
| 19. | Day & Night | Auto (ICR) / Color / B/W / External / Schedule |
| 20. | Backlight Compensation | Off, BLC, WDR |
| 21. | Wide Dynamic Range | 120dB |
| 22. | Digital Noise Reduction | SSNRIII (2D + 3D noise filter) (Off / On) |
| 23. | Motion Detection | Off / On (4ea 4 Points Polygonal zones) |
| 24. | Privacy Masking | Off / On (32ea Rectangular zones) |
| 25. | Gain Control | Off / Low / Middle / High |
| 26. | White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| 27. | Electronic Shutter Speed | Minimum / Maximum / Anti flicker (1 ~ 1/12,000sec) |
| 28. | Flip / Mirror | Off, On |
| 29. | Intelligent Video Analytics | Tampering, Virtual Line, Enter/Exit, Appear / Disappear, Audio Detection, Face Detection with metadata |
| 30. | Alarm I/O | Input 1ea / Output 1ea |
| 31. | Defog | Auto/Manual/Off |
| 32. | Digital Image Stabilization | Off / On |
| 33. | Ethernet | RJ-45 (10/100Base-T) |
| 34. | Video Compression Format | H.264(MPEG-4 part 10/AVC), MJPEG |
| 35. | Resolution | 2048 x 1536 / 1920x1080 / 1600x1200 / 1280x1024/ 1280x960 / 1280x720 / 1024x768 / 800x600 / 800x450/ 640x480 / 640x360 / 320x240 / 320x180 |
| 36. | Max. Frame rate H.264 | Max 30fps@2048x1536, Max 60fps at all resolutions |
| 37. | Max. Frame rate Motion JPEG | Max. 10fps@2048 x 1536Max. 15fps@1920 x 1080, 1600 200, 1280 x 1024, 1280 x 960, 1280 x 720, 1024 x 768Max. 30fps@800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180 |
| 38. | Smart Codec | Manual mode (Area-based : 5ea), Face detection mode |
| 39. | Video Quality Adjustment H.264 | Compression level, Target bit rate level control |
| 40. | Video Quality Adjustment MJPEG | Quality level control |
| 41. | Bitrate Control Method H.264 | CBR or VBR |
| 42. | Bitrate Control Method MJPEG | VBR |
| 43. | Streaming Capability | Multiple Streaming (Up to 10 Profiles) |
| 44. | Audio | Not Required |
| 45. | IP | IPv4, IPv6 |
| 46. | Streaming Method | Unicast, Multicast |
| 47. | Max. User Access | 15 users at Unicast mode |
| 48. | Edge Storage | Micro SD/SDHC/SDXC Motion images recorded in the |

| | | |
|---|---|---|
| | | SDXC/SDHC/SD memory Card can be download. |
| 49. | Application Programming interface | ONVIF profile S, SUNAPI (HTTP API) v2.0, SVNP 1.2 |
| 50. | Web Viewer Supported OS | Windows XP / VISTA / 7 / 8, MAC OS X 10.7 |
| 51. | Voltage | AC24V, DC12V, PoE(IEEE802.3af,Class3) |
| 52. | Operating Temperature / Humidity | Less than 90% RH |
| 53. | Vandal Resistance | IP66, IK10 |
| 54. | Certifications | UL Listed, CE mark<br>FCC mark |
| 55. | Warranty | 3 years, parts and labor. |

2.9 30X PTZ CAMERA

A. The 28X PTZ Cameras are pan/tilt/zoom high speed dome cameras with 30 times optical zoom to be installed in outdoor areas.

B. The camera shall produce high definition video quality at Full HD 1080p to enable the operators to look at specific view to determine the details of the scene being captured.

C. The camera shall offer dual streams with up to 1.3 megapixels (MP) resolution (1920 x 1080) in progressive scan format (1080p).

D. The frame rate produces from the camera shall equal or greater than 25fps at H.264 compression format. The network transmission rate at video quality of 1080p with 25 fps shall not exceed 6 Mbps. The video will be streamed throughout the County Network Infrastructure.

E. The camera profile shall define the subset of bit stream features in an H.264 stream, including color reproduction and video compression with selected compatible profile with the recording device so that a stream can be decoded and viewed.

F. The camera enclosure shall be available in both in ceiling and pendant type, with associated mounting brackets for ceiling, wall, corner or pole mount applications.

G. The camera enclosure shall be in smoke bubble, white trim ring and white finish.

H. The camera enclosure shall provide the degree of protection in conformance to IP66 and IK10.

I. The camera shall conform as a minimum to the following specifications:

| Item | Description | Requirement |
|---|---|---|
| 1. | Image Sensor | 1/2.8” Exmor CMOS |
| 2. | Resolution | 1920 x 1080 pixels |
| 3. | Scanning | Progressive |
| 4. | Frame Rate | 25fps |
| 5. | Minimum Illumination | 0.5 lux |
| 6. | Compression | H.264 |
| 7. | Streaming | Unicast / Multicast |
| 8. | Lens | 4.3-129mm |
| 9. | Optical Zoom | 30x |

| | | |
|---|---|---|
| 10. | Aperture | F1.6 |
| 11. | Pan | $360^0$ continuous |
| 12. | Tilt | $-10^0$ - $90^0$ |
| 13. | Manual speed | $0.5^0$-$90^0$ per second |
| 14. | Preset | 99 |
| 15. | Preset speed | $5^0$-$400^0$ per second |
| 16. | Focus | Automatic with Manual Override |
| 17. | Iris Control | Automatic with Manual Override |
| 18. | Shutter | 1/10000s |
| 19. | Signal to Noise Ratio | >50dB (AGC OFF) |
| 20. | White Balance | Auto/Indoor/Outdoor/ATW/Manual |
| 21. | Wide Dynamic Range | Multi-exposure |
| 22. | Audio | Not required |
| 23. | Power Supply | POE+ / 24VAC |

2.10 3 MEGAPIXEL NETWORK 360° FISHEYE CAMERA

A. The camera shall be of a dome type suitable for internal installation.

B. The cameras shall feature a 1.05mm lens, providing a 180 degree horizontal and 170 degree vertical field of view.

C. The network camera shall feature up to 3 Mega Pixel resolution in a 4:3 format at 20fps.

D. The camera shall feature a built in microphone.

E. The camera shall feature Wide Dynamic Range with a gain of 120dB. The WDR function shall feature an adaptive motion system to eliminate motion blur.

F. The camera shall feature a high performance 2D & 3D noise reduction that automatically adapts the type of technology used according to movement in the field of view. 2D noise reduction compares adjacent pixels while 3D technology compares the same pixel in the previous and subsequent images, giving a higher level of detail. When the camera detects movement in a region of the image it will apply 2D noise reduction to that area and 3D noise reduction to the remainder of the image.

G. The camera shall feature an automatic back light compensation technology that detects and enhances dark areas in the field of view and increases the gain in those areas.

H. The camera shall feature built in license free video analytics functions including audio detection and camera tamper (scene change).

I. The camera shall feature advanced motion detection with definable detection areas and minimum / maximum object size definition.

J. The camera shall feature 32 privacy zone mask areas.

K. The camera shall feature a backlight compensation technology that can be used to manually select an area of high brightness in the field of view and adjust the gain in that area.

L. The network camera shall provide video transmission in an open format with H.264 or MJPEG compression.

M. The camera shall support ONVIF profile S for operation with 3rd party systems.

N. The camera shall be capable of simultaneously transmitting multiple video streams of different resolution, compression, frame-rate and compression settings.

O. The network camera should be configurable through a built in web server that can be accessed via standard browsers including Internet Explorer, Firefox, Chrome & Safari.

P. The camera shall feature a line level audio input with an alarm function.

Q. The camera shall feature a line level audio input and output capable of duplex operation.

R. The cameras shall support micro SD, SDHC & SDXC flash memory card for recording video footage on event, network loss or continuously.

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/2.8” 3M PS CMOS |
| 2. | Total Pixels (horizontal x vertical) | 3megapixel |
| 3. | Scanning System | Progressive |
| 4. | Minimum Illumination | 0.5 lux |
| 5. | Focus control | Fixed iris |
| 6. | Lens | 3mm Fixed |
| 7. | Mount Type | Board In |
| 8. | Focal length | 1.05mm |
| 9. | Max. Aperture ratio | F2.8 |
| 10. | Angular Field of View | H:180° / V : 170° / D : 180° |
| 11. | Min Object Distance | 0.3m |
| 12. | Lens Type | Fixed focal |
| 13. | Mount Type | Board-in type |
| 14. | Lens Angle Adjustment | Rotation : 0° ~ 355° |
| 15. | Camera Title | On, Off (displays up to 45 characters) |
| 16. | Day and Night | Auto (Electrical), Color, B/W |
| 17. | Backlight Compensation | BLC,Off |
| 18. | Wide Dynamic Range | 120dB |
| 19. | Motion Detection | On, Off (4ea 4points polygonal zones) |
| 20. | Privacy Masking | On, Off (32 zones with 4 points of polygonal) |
| 21. | Gain Control | Off, Low, Medium, High, |
| 22. | White Balance | ATW AWC, Manual, Indoor, Outdoor |
| 23. | Electronic Shutter Speed | Min, Max, Flicker off, 50Hz, 60Hz, (1s~1/12,000s) |
| 24. | Intelligent Video Analytics | Scene change, 20 FPS |
| 25. | Alarm I/O | input 1ea / Output 1ea |
| 26. | Ethernet | RJ-45 (10/100Base-T) |
| 27. | Video Compression | H.264,MJPEG |
| 28. | Max Frame rate | 3M 20fps |
| 29. | Dewarping Client | Smart Viewer |

| | | |
|---|---|---|
| 30. | Viewing Composition | Camera : 360° fisheye / Client : single panorama, Double panorama, Quad, User selectable region, Single rectable, 1 original, 3 rectangle,1 panorama + 2 rectangle |
| 31. | Digital PTZ | Digital PTZ |
| 32. | Video Quality Adjustment H.264 | Compression level, Target bitrate level control |
| 33. | Video Quality Adjustment MJPEG | Quality level control |
| 34. | Bitrate control Method H.264, MPEG- 4 | VBR or CBR |
| 35. | Bitrate control Method MJPEG | VBR |
| 36. | Streaming Capability | Multiple, up to 6 profiles |
| 37. | Security | HTTPS (SSL) login authentication, Digest login authentication, IP Address filtering, User access log,<br>802.1x authentication |
| 38. | Streaming Method | Unicast, Multicast |
| 39. | Memory Slot | SD/SDHC/SDZC memory slot |
| 40. | ONVIF Conformance | Yes |
| 41. | Input Voltage | PoE (IEEE802.3af) |
| 42. | Operating Temperature | -10°C ~ +55°C (-34°F ~ +140°F) |
| 43. | Operating Humidity | ~ 90% RH |
| 44. | Certifications | UL listed B<br>CE mark<br>C FCC mark |
| 45. | Warranty | 3 years |

2.11 $180^0$ PANORAMIC CAMERA

A. The 180° Panoramic Cameras are multi-imager dome-shaped cameras to be installed in areas to capture the overview of the area.

B. The camera shall provide a minimum of $180^0$ Field of View.

C. The camera shall contain four (4) numbers of image sensor, with each sensor producing high definition quality at 3 megapixels (MP) resolution (2048 x 1536) in progressive scan format (3MP), providing a total resolution of 12MP.

D. The camera shall offer eight (8) non-identical streams with each stream up to 3 megapixels (MP) resolution.

E. The frame rate produces from the camera at 12MP resolution shall equal or greater than 5fps at H.264 compression format. The network transmission rate of the camera shall not exceed 10 Mbps. The video will be streamed throughout the County Network Infrastructure.

F. The camera profile shall define the subset of bit stream features in an H.264 stream, including color reproduction and video compression with selected compatible profile with the recording device so that a stream can be decoded and viewed.

G. The camera enclosure shall be available in both in wall and parapet type, with associated mounting brackets for in-ceiling, surface, wall, corner or pole mount applications.

H. The camera enclosure shall be in smoke bubble, white trim ring and white finish.

I. The camera enclosure shall provide the degree of protection in conformance to IP66 and IK10.

J. The camera shall conform as a minimum to the following specifications:

| Item | Description | Requirement |
|---|---|---|
| 1. | Image Sensor | 4 x 1/3.2” CMOS |
| 2. | Resolution | 8192 x 1536 pixels |
| 3. | Scanning | Progressive |
| 4. | Frame Rate | 5fps@8192x1536<br>17fps@2048x1536 |
| 5. | Minimum Illumination | 0.5 lux |
| 6. | Compression | H.264 |
| 7. | Streaming | Unicast / Multicast |
| 8. | Lens | 5.4mm |
| 9. | Aperture | F2.0 |
| 10. | Focus | Automatic |
| 11. | Iris Control | Automatic |
| 12. | Shutter | 1/10000s |
| 13. | Signal to Noise Ratio | >50dB (AGC OFF) |
| 14. | White Balance | Auto/Indoor/Outdoor/ATW/Manual |
| 15. | Wide Dynamic Range | Multi-exposure |
| 16. | Audio | Not Required |
| 17. | Power Supply | POE |

2.12 2 MEGAPIXEL HD VANDAL-RESISTANT NETWORK IR DOME CAMERA

A. The camera shall be of a dome type suitable for external installation.

B. The camera shall be vandal resistant with an IK10 impact rating.

C. The camera shall feature an Adaptive Infrared illumination system with 12 LEDs giving a viewable distance of 15m (49.21ft) in complete darkness.

D. The network camera shall feature up to 2 Mega Pixel Full HD (1080p) resolution in a 16:9 format. 4:3 format shall also be available in smaller resolutions.

E. The camera should be capable of capturing and transmitting an image size of 1920 x 1080 at 60 images per second.

F. The camera shall be capable of simultaneously streaming two 1080p video streams, each at 30 images per second.

G. The camera shall feature a day / night mode that incorporates an infrared cut filter removal mechanism for true color reproduction and the best possible low light performance.

H. The cameras shall feature the Simple Focus automatic motorized focus adjustment. This should be activated by a button on the camera and remotely through the network interface. This can also be activated when the camera changes from day to night mode.

I. The camera shall feature a 3 - 8.5mm motorized varifocal lens with a maximum aperture of 1.2Lux.

J. The camera shall feature Wide Dynamic Range with a gain of 120dB. This feature will work at 30 images per second at 1920 x 1080 resolution. The WDR function shall feature an adaptive motion system to eliminate motion blur.

K. The camera shall feature a high performance 2D & 3D noise reduction that automatically adapts the type of technology used according to movement in the field of view. 2D noise reduction compares adjacent pixels while 3D technology compares the same pixel in the previous and subsequent images, giving a higher level of detail. When the camera detects movement in a region of the image it will apply 2D noise reduction to that area and 3D noise reduction to the remainder of the image.

L. The camera shall feature an automatic back light compensation technology that detects and enhances dark areas in the field of view and increases the gain in those areas.

M. The camera shall feature built in license free video analytics functions including line crossing, appear/disappear, audio detection, camera tamper (scene change) and enter/exit a predefined zone.

N. The camera shall feature advanced motion detection with definable detection areas, minimum / maximum object size definition and a learning algorithm that ignores false alarms such as trees and waves on water.

O. The camera shall support Multi Cropping technology to allow video profiles to be set up with a reduced area of the overall field of view of the camera.

P. The camera shall feature a face detection technology that can be used to create an event whenever there is a face or multiple faces in the image. The technology should be able to detect 32 faces simultaneously.

Q. The camera shall feature 32 privacy zone mask areas.

R. The camera shall feature a smart codec that can use a higher quality compression for regions of interest in the image, thereby prioritizing the encoding of the most important areas of the field of view.

S. The camera shall feature a Digital Image Stabilization function.

T. The camera shall feature a backlight compensation technology that can be used to manually select an area of high brightness in the field of view and adjust the gain in that area.

U. The network camera shall provide video transmission in an open format with H.264 or MJPEG compression.

V. The camera shall support ONVIF profile S for operation with 3rd party systems.

W. The camera shall be capable of simultaneously transmitting multiple video streams of different resolution, compression, frame-rate and compression settings.

X. The network camera should be configurable through a built in web server that can be accessed via standard browsers including Internet Explorer, Firefox, and Chrome & Safari.

Y. The camera shall feature a line level audio input with an alarm function.

Z. The camera shall feature a line level audio input and output capable of duplex operation.

AA. The cameras shall support micro SD, SDHC & SDXC flash memory card for recording video footage on event, network loss or continuously.

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/ 2.8” 2M PS Exmor 2.38M CMOS |
| 2. | Total Pixels | 1,952(H) x 1,116(V) |
| 3. | Effective Pixels | 1,944(H) x 1,224(V), 2.38M pixels |
| 4. | Scanning System | Progressive |
| 5. | Minimum Illumination Color | 0.3Lux (1/30sec, F1.6, 50IRE), |
| 6. | Minimum Illumination B/W | 0.03Lux (1/30sec, F1.6, 50IRE) |
| 7. | S / N Ratio | 50dB |
| 8. | Video Output | CVBS:1.0 Vp-p, 704x480(N), |
| 9. | Lens Type | DC Auto Iris |
| 10. | Mount Type | Board In type |
| 11. | Focal Length (Zoom Ratio) | 4.44 ~ 142.6mm (32x) |
| 12. | Max. Aperture ratio | F1.6(Wide) / F4.4(Tele) |
| 13. | Angular Field of View | 4.44 ~ 142.6mm (32x)<br>H : 62.8˚(Wide) ~ 2.23˚(Tele) / V: 36.8˚ (Wide) ~ 1.26˚ (Tele) |
| 14. | Min Object Distance | Wide : 1.4m (4.59ft), Tele : 1.9m (6.23ft) |
| 15. | Focus Control | Auto / Manual / One push |
| 16. | Camera Title | On, Off (displays up to 45 characters) |
| 17. | Day & Night | Auto (ICR), Color, B/W |
| 18. | Backlight Compensation | BLC, HLC, Off, WDR |
| 19. | Wide Dynamic Range | 120dB |
| 20. | Defog | Off / On (4ea 4 Points Polygonal zones) |
| 21. | Motion Detection | Off / On (32ea Rectangular zones) |
| 22. | Privacy Masking | Off, Auto (2x ~ 60x) |
| 23. | Gain Control | Off / Low / Middle / High / Manual |
| 24. | White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| 25. | Electronic Shutter Speed | Minimum/Maximum/Anti flicker |
| 26. | Digital Zoom | 16x |
| 27. | Flip/Mirror | Off, On |
| 28. | Intelligent Video Analytics Face | Tampering, Virtual line, Enter/ Exit, Appear/ Disappear, detections |
| 29. | Remote control Interface | RS-485 |

| | | |
|---|---|---|
| 30. | Flip / Mirror | Off, On |
| 31. | Intelligent Video Analytics, Face Detection | Tampering, Virtual Line, Enter/Exit, Appear / Disappear, |
| 32. | Alarm I/O | Input 4ea / Output 2ea (relay). |
| 33. | Ethernet | RJ-45 (10/100Base-T) |
| 34. | Resolution | 1920 x 1080p(Full HD), 1280 x 1024, 1280 x 960, 1280 x 720P (HD), 1024 x 768, 800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180 |
| 35. | Max Frame rate H.264 | H.264: Max. 60fps at all resolutions<br>MJPEG: 1920 x 1080, 1280 x 1024, 1280 x 960, 1280 x 720, And 1024 x 768: Max. 15fps 800 x 600, 800 x 450, 640 x 480, 640 x 360, 320 x 240, 320 x 180: Max. 30fps |
| 36. | Video Quality Adjustment H.264 | Compression level, Target bit rate level control |
| 37. | Video Quality Adjustment MJPEG | Quality level control |
| 38. | Bitrate control Method H.264, | VBR or CBR |
| 39. | Bitrate control Method MJPEG | VBR |
| 40. | Streaming Capability | Multiple, up to 10 profiles |
| 41. | Audio | Not Required |
| 42. | IP | IPv4, IPv6 |
| 43. | Streaming Method | Unicast, Multicast |
| 44. | Max. User Access | 15 users at Unicast |
| 45. | Memory Slot | SD/SDHC/SDXC (SNP-6320 : micro SD type, SNP-6320H : SD type) |
| 46. | Application Programming Interface | ONVIF profile S |
| 47. | Web Viewer Supported OS | Windows XP / VISTA / 7 / 8 or higher, MAC OS X 10.7 |
| 48. | Input Voltage / Current | 24V AC, PoE+ (IEEE802.3af class3) |
| 49. | Operating Temperature / Humidity | Less than 90% |
| 50. | Ingress Protection | IP66 |
| 51. | Vandal Resistance | IK9 |
| 52. | Certifications | CE Mark<br>FCC Mark<br>UL Listed |
| 53. | Warranty | 3 years |

2.13 3 MEGAPIXEL FULL HD VANDAL-RESISTANT IR NETWORK DONE CAMERA

A. This network dome camera shall provide resolution support of at least 3M (2048x1536) with 16:9 full HD (1080p) resolution.

B. Built-in IR LED (15ea), viewable length of 25m

C. The camera shall have 3 ~ 8.5mm motorized varifocal (2.8x) lens.

D. The camera shall support simultaneous transmission of dual codec (H.264 and MJPEG), with smart codec (ROI encoding).

E. The camera shall support WDR in 2M mode.

F. This camera shall have an IP66 vandal-resistant, waterproof body. Item

| | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/2.8” 3M PS CMOS |
| 2. | Total Pixels (horizontal x vertical) | 2,144 x 1,588 |
| 3. | Effective Pixels(horizontal x vertical) | 2,096 x 1,561 |
| 4. | Scanning System | Progressive |
| 5. | Min. Illumination Color | 0.1Lux (F1.2, 50IRE), 0.017 Lux (Sens-up, 60x) |
| 6. | S/N Ratio | 50dB |
| 7. | Video Output | CVBS: 1.0 Vp-p, 75 ohms |
| 8. | Video Output NTSC | 704x480, for installation |
| 9. | Video Output PAL | 704x576, for installation |
| 10. | Focal Length (Zoom Ratio) | 3~ 8.5mm (2.8x) motorized Varifocal |
| 11. | Mount Type | Board-in type |
| 12. | Focal Length (Zoom Ratio) | 3~ 8.5mm (2.8X) Motorized Varifocal |
| 13. | Aperture ratio, max. | F1.2 |
| 14. | Angular Field of View | H: 100°(Wide) ~ 35.3°(Tele) V: 74.6° (Wide) ~ 26° (Tele) |
| 15. | Min. Object Distance | 0.5M (1.64ft) |
| 16. | Focus Control | Remote control via network (Manual, One-shot AF) |
| 17. | Drive Type | DC auto iris |
| 18. | Mount Type | Board-in |
| 19. | Pan Range | '0 ° ~ 355 ° |
| 20. | Tilt Range | '0 ° ~ 90 ° |
| 21. | Rotate Range | '0 ° ~ 355 ° |
| 22. | Camera Title | Off / On (Displayed up to 15 characters) |
| 23. | Day & Night | Auto (ICR) / Color / B/W / External B/W |
| 24. | Backlight Compensation | BLC, HLC, WDR, Off |
| 25. | Wide Dynamic Range | 52dB (2M mode only) |
| 26. | Motion Detection | Off / On (4 zones with 4-programmable zones) |
| 27. | Privacy Masking | Off / On (1 each, 4 point polygonal + 16 each rectangular zones) |
| 28. | Gain Control | Off / Low / Middle / High |
| 29. | White Balance | ATW / AWC / Manual / Indoor / Outdoor |
| 30. | Electronic Shutter Speed | Auto, A.FLK, Manual (1/30~30,000sec) |
| 31. | Flip / Mirror | Off, On |
| 32. | Alarm I/O | Input 1ea / Output 1each (relay) |
| 33. | Ethernet | RJ-45 (10/100Base-T) |
| 34. | Video Compression Resolution 3M H.264 | 20fps max, all resolutions |

| | | | |
|---|---|---|---|
| 35. | Video Compression Resolution MJPEG | 3M | 800 x 600 ~ 320 x 180, 20fps<br>1280 024 ~1600 x 1200, 15fps<br>1920 x 1080 ~ 2048 x 1536, 10fps |
| 36. | Video Compression Resolution H.264 | 2M | 30fps max, all resolutions but 15fps if WDR is on |
| 37. | Video Compression Resolution MJPEG | 2M | 800 x 600 ~ 320 x 180, 30fps<br>1280 x 1024 ~1920 x 10800, 15fps |
| 38. | Max. Framerate 3 M Mode | | 20fps |
| 39. | Max. Framerate 3 M Mode | | 30fps max. 15fps if WDR is on |
| 40. | Smart Codec | | Area based method, Face detection method |
| 41. | Video Quality Adjustment H.264 | | Compression level, Target bitrate level control |
| 42. | Video Quality Adjustment MJPEG | | Quality level control |
| 43. | Bitrate Control Method H.264,MPEG-4 | | CBR or VBR |
| 44. | Bitrate Control Method MJPEG | | VBR |
| 45. | Streaming Capability | | Multiple Streaming (Up to 6 Profiles) |
| 46. | Audio | | Not Required |
| 47. | IP | | IPv4, IPv6 |
| 48. | Streaming Method | | Unicast, Multicast |
| 49. | Max. User Access | | 10 users at Unicast mode |
| 50. | Memory Slot | | SD/SDHC |
| 51. | ONVIF Conformance | | Yes |
| 52. | Web Viewer Supported OS | | Windows XP / VISTA / 7 / 8, MAC OS |
| 53. | Electrical Input Voltage | | 24V AC, 12V DC, PoE (IEEE802.3af) |
| 54. | Operating Temperature | | -40°C ~ +50°C (-40°F ~ +122°F) |
| 55. | Ingress Protection | | IP66 (Waterproof) |
| 56. | Certifications | | UL Listed<br>CE mark<br>FCC mark |
| 57. | Warranty | | 3 years, parts and labor. |

2.14 2 MEGAPIXEL FULL HD 32X NETWORK PTZ DONE CAMERA

A. These cameras shall support multi-streaming technologies, transferring real-time high resolution images at 60 fps with video compression in H.264 and MJPEG codec.

B. The camera shall provide 4.44~142.6mm (32x) optical zoom with 16x digital zoom. It shall support PoE plus, SD memory, and bi-directional audio.

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/2.8” 3M PS CMOS |
| 2. | Total Pixels (horizontal x vertical) | 1,952,(H) x 1,236(V) |
| 3. | Effective Pixels(horizontal x vertical) | 2,096 x 1,561 |
| 4. | Scanning System | Progressive |
| 5. | Min. Illumination Color | 0.1Lux (F1.2, 50IRE), 0.017 Lux (Sens-up, 60x) |
| 6. | S/N Ratio | 50dB |
| 7. | Video Output | CVBS: 1.0 Vp-p, 75 ohms |

| | | | |
|---|---|---|---|
| 8. | Video Output NTSC | | 704x480, for installation |
| 9. | Video Output PAL | | 704x576, for installation |
| 10. | Focal Length (Zoom Ratio) | | 3~ 8.5mm (2.8x) motorized Varifocal |
| 11. | Mount Type | | Board-in type |
| 12. | Focal Length (Zoom Ratio) | | 3~ 8.5mm (2.8X) Motorized Varifocal |
| 13. | Aperture ratio, max. | | F1.2 |
| 14. | Angular Field of View | | H: 100°(Wide) ~ 35.3°(Tele)<br>V: 74.6° (Wide) ~ 26° (Tele) |
| 15. | Min. Object Distance | | 0.5M (1.64ft) |
| 16. | Focus Control | | Remote control via network (Manual, One-shot AF) |
| 17. | Drive Type | | DC auto iris |
| 18. | Mount Type | | Board-in |
| 19. | Pan Range | | '0 ° ~ 355 ° |
| 20. | Tilt Range | | '0 ° ~ 90 ° |
| 21. | Rotate Range | | '0 ° ~ 355 ° |
| 22. | Camera Title | | Off / On (Displayed up to 15 characters) |
| 23. | Day & Night | | Auto (ICR) / Color / B/W / External B/W |
| 24. | Backlight Compensation | | BLC, HLC, WDR, Off |
| 25. | Wide Dynamic Range | | 52dB (2M mode only) |
| 26. | Motion Detection | | Off / On (4 zones with 4-programmable zones) |
| 27. | Privacy Masking | | Off / On (1 each, 4 point polygonal + 16 each rectangular zones) |
| 28. | Gain Control | | Off / Low / Middle / High |
| 29. | White Balance | | ATW / AWC / Manual / Indoor / Outdoor |
| 30. | Electronic Shutter Speed | | Auto, A.FLK, Manual (1/30~30,000sec) |
| 31. | Flip / Mirror | | Off, On |
| 32. | Alarm I/O | | Input 1ea / Output 1each (relay) |
| 33. | Ethernet | | RJ-45 (10/100Base-T) |
| 34. | Video Compression Resolution H.264 | 3M | 20fps max, all resolutions |
| 35. | Video Compression Resolution MJPEG | 3M | 800 x 600 ~ 320 x 180, 20fps<br>1280 024 ~1600 x 1200, 15fps<br>1920 x 1080 ~ 2048 x 1536, 10fps |
| 36. | Video Compression Resolution H.264 | 2M | 30fps max, all resolutions but 15fps if WDR is on |
| 37. | Video Compression Resolution MJPEG | 2M | 800 x 600 ~ 320 x 180, 30fps<br>1280 x 1024 ~1920 x 10800, 15fps |
| 38. | Max. Framerate 3 M Mode | | 20fps |
| 39. | Max. Framerate 3 M Mode | | 30fps max. 15fps if WDR is on |
| 40. | Smart Codec | | Area based method, Face detection method |
| 41. | Video Quality Adjustment H.264 | | Compression level, Target bitrate level control |

| | | |
|---|---|---|
| 42. | Video Quality Adjustment MJPEG | Quality level control |
| 43. | Bitrate Control Method H.264,MPEG-4 | CBR or VBR |
| 44. | Bitrate Control Method MJPEG | VBR |
| 45. | Streaming Capability | Multiple Streaming (Up to 6 Profiles) |
| 46. | Audio | Not Required |
| 47. | IP | IPv4, IPv6 |
| 48. | Streaming Method | Unicast, Multicast |
| 49. | Max. User Access | 10 users at Unicast mode |
| 50. | Memory Slot | SD/SDHC |
| 51. | ONVIF Conformance | Yes |
| 52. | Web Viewer Supported OS | Windows XP / VISTA / 7 / 8, MAC OS |
| 53. | Electrical Input Voltage | 24V AC, 12V DC, PoE (IEEE802.3af) |
| 54. | Operating Temperature | -40°C ~ +50°C (-40°F ~ +122°F) |
| 55. | Ingress Protection | IP66 (Waterproof) |
| 56. | Certifications | UL Listed<br>CE mark<br>FCC mark |
| 57. | Warranty | 3 years, parts and labor. |

2.15 1.3 MEGAPIXEL HD 43X NETWORK PTZ DOME CAMERA

A. These cameras shall support multi-streaming technologies, transferring real-time high resolution images at 60 fps with video compression in H.264 and MJPEG codec.

B. The camera shall provide 3.5~150.5mm (43x) optical zoom with 16x digital zoom. It shall support PoE plus, SD memory, and bi-directional audio.

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/4” 1.3M CMOS |
| 2. | Total Pixels (horizontal x vertical) | 1,392,(H) x 1,076(V) 1.49M pixels |
| 3. | Effective Pixels (horizontal x vertical) | 1,368(H) x 1,049(V), 1.43M pixels |
| 4. | Scanning | Progressive |
| 5. | Minimum Illumination Color | 0.5Lux (F1.4, 50IRE), 0.3Lux (F1.4, 30IRE), |
| 6. | Minimum Illumination B/W | 0.01Lux (F1.4, 50IRE), 0.006Lux (F1.4,30IRE) |
| 7. | S / N ratio | 50dB |
| 8. | Video Output | CVBS:1.0 Vp-p |
| 9. | Focal Length (Zoom Ratio) | 3.5 ~ 150.5mm (Optical 43x) |
| 10. | Angular Field of View | H: 53.92˚(Wide) ~ 1.396˚(Tele) /<br>V: 44.08˚ (Wide) ~ 1.12˚ (Tele) Max. Aperture Ratio F1.4(Wide) / F4.9(Tele) |
| 11. | Max. Aperture Ratio | F1.4(Wide) / F4.9(Tele) |
| 12. | Min. Object Distance | Wide : 1.4m (4.59ft), Tele : 1.9m (6.23ft) |
| 13. | Focus control | Auto / Manual / One push |
| 14. | Lens Type | DC auto iris |
| 15. | Mount Type | Board-in type |
| 16. | Camera Title | On, Off (displays up to 45 characters) |
| 17. | Day and Night | Auto (ICR), Color, B/W |

| | | |
|---|---|---|
| 18. | Backlight Compensation | BLC, HLC, Off, WDR |
| 19. | Wide Dynamic Range | 120dB |
| 20. | Digital Image Stabilization | Off , On |
| 21. | Defog | Off, Auto, Manual |
| 22. | Motion Detection | On, Off (4ea rectangle zone) |
| 23. | Privacy Masking | On, Off (32 zones of rectangle zone) |
| 24. | Gain Control | Off, Low, Middle, High |
| 25. | White Balance | ATW / AWC / Manual / Indoor / Outdoor / Mercury / Sodium |
| 26. | Electronic Shutter Speed | Minimum / Maximum / Anti flicker (2 ~ 1/12,000sec |
| 27. | Digital Zoom | 16x |
| 28. | Flip/Mirror | Off, On |
| 29. | Intelligent Video Analytics | Tampering, Virtual line, Enter / Exit, Appear / Disappear, Audio detection, Face detection |
| 30. | Alarm I/O | Input 4ea / Output 2ea(relay). |
| 31. | Remote control Interface | RS-485 |
| 32. | RS-485 Protocol | Samsung-T/E, Pelco-P/D, Panasonic, Honeywell, AD, Vicon, Bosch, |
| 33. | Ethernet | RJ-45 (10/100Base-T) |
| 34. | Resolution | 1280 x 1024, 1280 x 720, 1024 x 768, 800 x 600, 640 x 480, 320 x 240 |
| 35. | Max Frame rate | H.264: Max. 60fps at all resolutions MJPEG: 1280 x 1024, 280 x 720, 1024 x 768:Max. 15fps<br>800 x 600, 640 x 480, 320 x 240: Max. 30fps |
| 36. | Video Quality Adjustment H264 | Compression level, Target bit rate level control |
| 37. | Video Quality Adjustment MJPEG | Quality level control |
| 38. | Bitrate Control Method H.264 | VBR or CBR |
| 39. | Bitrate Control Method MJPEG | VBR |
| 40. | Streaming | Multiple, up to 10 profiles |
| 41. | Audio | Not Required |
| 42. | IP | IPv4, IPv6 |
| 43. | Streaming Method | Unicast, Multicast |
| 44. | Max. User Access | 15 users at Unicast |
| 45. | Memory Slot | SD/SDHC/SDXC (SNP-6320 : micro SD type, SNP-6320H : SD type) - Motion Images recorded in the SD/SDHC/SDXC memory card can be downloaded. NAS (Network Attached Storage) |
| 46. | Application Programming Interface | ONVIF profile S, SUNAPI 2.0, SVNP 1.2 |
| 47. | Web Viewer Supported OS | Windows XP / VISTA / 7 / 8 or higher, MAC OS X 10.7 |
| 48. | Input Voltage / Current | 24V AC+-10%, PoE+ (IEEE802.3af class3) |
| 49. | Operating Temperature / Humidity | Less than 90% RH |
| 50. | Ingress Protection | IP66 |
| 51. | Vandal Resistance | IK10 |

| | | |
|---|---|---|
| 52. | Certifications | UL Listed<br>CE mark<br>FCC mark |
| 53. | Warranty | 3 years |

2.16 5MEGAPIXEL NETWORK 360° FISHEYE CAMERA

A. The camera shall be of a dome type suitable for internal installation. The camera shall be ivory in appearance.

B. The cameras shall feature a 1.14mm lens, providing a 187 degree horizontal and vertical field of view.

C. The network camera shall feature up to 5 Mega Pixel resolution at 20fps.

| Item | Description | Requirement |
|---|---|---|
| 1. | Imaging Device | 1/1.8” 6M PS CMOS(IMX178) |
| 2. | Total Pixels (horizontal x vertical) | 6megapixel / 5.2M (2560 x 2048) |
| 3. | Scanning System | Progressive |
| 4. | Min. Illumination | Color : 0.9Lux (1/30sec, F2.5, 50IRE),<br>0.015Lux (2sec, F2.5, 30IRE) |
| 5. | Video Out | CVBS : 1.0 Vpp / 75Ω composite |
| 6. | Focal length | 1.14mm fixed |
| 7. | Max. Aperture ratio | F2.5 |
| 8. | Angular Field of View | H:187° / V : 187° / D : 187° |
| 9. | Min Object Distance | 0.3m ~ Infinity / Manual |
| 10. | Focus control | Manual |
| 11. | Lens Type | Fixed focal |
| 12. | Mount Type | Board type (M12) |
| 13. | Camera Title | On, Off (displays up to 15 characters) |
| 14. | Day and Night | True D&N |
| 15. | Backlight Compensation | BLC |
| 16. | F. Motion Detection | On, Off (4ea 4 points polygonal zones) |
| 17. | Privacy Masking | On, Off (32ea zones with 4 points of polygonal) |
| 18. | Gain Control | Off, Low, Medium, High, |
| 19. | White Balance | ATW AWC, Manual, Indoor, Outdoor, Mercury |
| 20. | Electronic Shutter Speed | 2s~1/12,000s |
| 21. | Digital Zoom | 16x, Digital PTZ(Preset, Group) |
| 22. | Flip / Mirror | On, Off |
| 23. | Intelligent Video Analytics | Tampering, Virtual line, Enter / Exit / Disappear, Audio detection |
| 24. | Alarm I/O | input 1ea / Output 1ea |
| 25. | Ethernet | RJ-45 (10/100Base-T) : M12 connector type |
| 26. | Video Compression | H.264(MPEG-4 part 10/AVC) |

| | | |
|---|---|---|
| 27. | Resolution - Fishyeye(Original) | <5.3M original> 2560 x 2048, 1920 x 1080, 1600 x 1200, 1280 x 1024, 1280 x 960, 1280 x 7201024 x 768, 800 x 600, 720 x 480, 640 x 480, 320 x 240 |
| 28. | Resolution - Single rectangle | 800 x 600, 640 x 480, 320 x 240 |
| 29. | Resolution – Quad view | 1600 x 1200, 1280 x 960, 1024 x 768, 800 x 600, 640 x 480, 320 x 240 |
| 30. | Resolution – Double panorama | 2048 x 1536, 1600 x 1200, 1280 x 960, 1024 x 768, 800 x 600, 640 x 480, 320 x 240 |
| 31. | Resolution – Single panorama | 2048 x 768, 1600 x 600, 1280 x 480, 1024 x 384, 800 x 300, 640 x 240, 320 x 120 |
| 32. | Max Frame rate(Raw) | <MJPEG> |
| 33. | Source view | 2560 x 2048, 1920 x 1080, 1600 x 1200, 1280 x 1024,1280 x 960, 1280 x 720, 1024 x 768 : 15fps / 800 x 600, 720 x 480, 640 x 480, 320 x 240 : 20fps |
| 34. | Single panorama view | 800 x 600 : 15fps / 800 x 600 : 20fps |
| 35. | Double panorama view | 800 x 600 : 15fps / 800 x 600 : 20fps |
| 36. | Quad view | 800 x 600 : 15fps / 800 x 600 : 20fps, |
| 37. | Single rectangle view | All : 20fps@Ground / Ceiling mode 800 x 600 : 15fps@Wall mode / 800 x 600 : 20fps@Wall mode 360 view, |
| 38. | Viewing Composition - Camera Side | Single panorama, Double panorama, Single panorama + 3 rectangle, 360 view + 3 rectangle, Quad view, Single rectangle, Single panorama + 2 rectangle,360 view + 8 rectangle 360 |
| 39. | Viewing Composition - CMS side | view, Single panorama, Double panorama, Quad view, Single rectangle, 360 + 3 rectangle, Single panorama + 2 rectangle |
| 40. | Video Quality Adjustment H.264 | Compression level, Target bitrate level control |
| 41. | Video Quality Adjustment MJPEG | Quality level control |
| 42. | Bitrate Control Method H.264 | VBR or CBR |
| 43. | Bitrate Control Method MJPEG | VBR |
| 44. | Streaming Capability | Multiple streaming (Up to 3 profiles) *Multiple streaming (Up to 5 profiles), regardless of codec type |
| 45. | Audio | Not Required |
| 46. | IP | IPv4, IPv6 |
| 47. | Streaming Method | Unicast, Multicast |
| 48. | Max. User Access | 15 users at Unicast |
| 49. | Edge Storage | micro SD/SDHC/SDZC memory slot' |

| | | |
|---|---|---|
| | | Motion images recorded in the SDX/SDHC/SD memory card can be downloaded |
| 50. | Application Programming Interface | ONVIF profile S |
| 51. | Web Viewer - Supported OS | Windows XP, Windows Vista, Windows 7, 8, MAC OS X 10.7 |
| 52. | Input Voltage / Current | 12V DC ±10%, PoE (IEEE802.3af class3) |
| 53. | Power Consumption | Max 10.2W(PoE, Class3), Max 7.8W(12V DC) |
| 54. | Operating Temperature | +14°F ~ +131°F |
| 55. | Operating Humidity | Less than 90% RH |
| 56. | Ingress Protection | IP66 |
| 57. | Vandal Resistance | IK10 |
| 58. | Certifications | UL listed<br>CE mark<br>FCC mark |
| 59. | Warranty | 3 years |

2.17 8.3 MEGAPIXEL 4K ULTRA HD HIGH –RESOLUTION DIGITAL CAMERA BOTH DOME & BOX

A. Ultra High Definition 4K/8.3 megapixel (3840 x 2160) quad-stream H.264, WDR, IP66/NEMA 4-rated day/night dome & bullet digital video camera with integrated 3.5mm to 8mm (CM- 6208-11-I) or 9mm to 22mm (CM-6208-21-I) motorized auto-focusing, vari-focal P-iris lens, within a IK10 vandal-resistant housing for wall mounting.

B. The digital video camera shall support H.264 compression on four (4) simultaneous video streams (Ultra HD 2160p, Full HD1080p, HD 720p and D1) through a digital network.

C. Resolution and bandwidth shall be scalable.

D. The camera shall incorporate a fully digital Ultra HD (8.3 megapixel) CMOS imaging system with IR illumination and day/night IR cut filter for infrared sensitivity.

E. The camera shall utilize scene adaptive algorithms to provide a high image quality with low bandwidth and storage requirements

F. The camera shall accommodate alarm inputs and provide a relay output.

G. The camera shall provide a microSDXC card slot with support for up to 128GB (Class 10) devices.

H. The camera may be powered by AC/DC or 802.3af Class 0 Power over Ethernet (PoE).

I. The camera shall be IEEE-compliant utilizing the multicast networking protocol such that a single camera may be transmitted to multiple viewers/archivers on the network simultaneously, further reducing bandwidth and providing greater flexibility in network monitoring/recording configurations.

| Item | Description | Requirement |
|---|---|---|
| 1. | Image Sensor | 1/1.7" Progressive Scan BSI (Backside Illuminated) CMOS<br>Day/Night with IR sensitivity on all models |
| 2. | Sensor Resolution | 12 megapixels (4072 x 3076) |
| 3. | Scanning Mode | Progressive |
| 4. | Sensitivity | Color (Day) Mode: 0.3 Lux @ F1.4 |
| 5. | Lens Type for CB-6208-11-I | UHD quality, auto-focusing, motorized vari-focal 3.5~8mm F1.4 P-Iris lens<br>Horizontal viewing angle: 50~116 degrees |
| 6. | Lens Type for CB-6208-21-I | UHD quality, auto-focusing, motorized vari-focal 9~22mm F1.4 P-Iris lens<br>Horizontal viewing angle: 18~45 degrees |
| 7. | Digital Slow Shutter Speed (DSS) | 1.0 to 1/10,000 sec. with up to 32x sensitivity boost in color or night mode. |
| 8. | IR Illuminator | Six high-power/high-efficiency SMD devices with wide-angle illumination |
| 9. | White Balance | Auto/indoor/outdoor/manual (On/Off) |
| 10. | Automatic Electronic Shutter (AES) | 1.0 to 1/10,000 sec. (Auto) |
| 11. | Digital 3D Noise Reduction | On/Off (6 levels) |
| 12. | Iris Control | P-Iris |
| 13. | Day/Night Mode | SmartIR/Auto/On/Off. SmartIR eliminates erroneous switching back to day mode when used with high levels of IR lighting |
| 14. | Wide Dynamic Range (Digital WDR) | On/Off (3 levels) |
| 15. | Tamper Detection | (On/Off) |
| 16. | Privacy Zone | On/Off (5 zones) |
| 17. | Video Motion Detection | Up to 4 independent zones |
| 18. | Mechanical IR Cut Filter | Yes |
| 19. | IR Sensitivity | Yes (680nm to 1100nm) |
| 20. | Signal to Noise Ratio (SNR) | $\geq$50dB |
| 21. | Compression | H.264 Main/High Profile: (MPEG-4 Part 10), quad-streaming |
| 22. | Performance | 30 FPS @ 4K Ultra HD (3840 x 2160)<br>Quad-stream: 4K @ 15 FPS + HD1080 @ 15 FPS + HD720 @ 15 FPS + D1 @ 15 FPS simultaneously |
| 23. | Resolution Range | 10 user selectable resolutions from QVGA to 4K UHD |
| 24. | Bandwidth | Configurable between 64Kbps to 20,480Kbps, Rate Control: CBR/VBR |
| 25. | Video Motion Detection (VMD) | Intelligent multi-zone VMD, Up to four independent zones |
| 26. | Audio | Not required |
| 27. | Alarms | Input: One (1) dry contact, Output: One (1) relay contact, 300V DC/AC @ 130mA maximum |

| | | |
|---|---|---|
| 28. | Network | Ethernet: 10/100/1000 Base-T auto-sensing, half/full-duplex (RJ45),<br>Operating Systems: Windows XP, 7, 8, and 8.1 |
| 29. | Power | Input Voltage:<br>12VDC (+10%)<br>24VAC (+10%)<br>802.3af Power over Ethernet (PoE) Class 0,<br>Power Consumption:<br>6 Watts indoor or 13 Watts outdoors with heater |
| 30. | Connections | Network: RJ45<br>Power:<br>12VDC or 24VAC (terminal block connector)<br>PoE: Through the RJ45 connector,<br>Alarm In/Alarm Out:<br>Through terminal block connector |
| 31. | Environmental | Operating Temperature:<br>Unified Indoor/Outdoor Model: -40°F to 122°F (-40°C to 50°C),<br>Humidity: Up to 95% (non-condensing),<br>Ratings: IP66, NEMA 4, 1K10 vandal-resistant enclosure |
| 32. | Certification | UL listed<br>CE mark<br>FCC |
| 33. | Warranty | 4 year limited |

2.18 29 MEGAPIXEL COLOR HD CAMERA

A. 29 megapixel progressive scan CCD sensor

B. 2 images per second at full resolution

C. 64 db true dynamic range

D. 0.1 lux minimum illumination

E. 35 mm diagonal image sensor

F. Automatic exposure control and iris control

G. Software focus control

| Item | Description | Requirement |
|---|---|---|
| 1. | Image Sensor | 35 mm progressive scan interline transfer CCD |
| 2. | Active Pixels | 6576 (H) x 4384 (V) |

| | | |
|---|---|---|
| 3. | Imaging Area | 36.1 mm (H) x 24.0 mm (V); 1.422” (H) x 0.946” (V) |
| 4. | Minimum Illumination | 0.1 lux (at F1.4) |
| 5. | Dynamic Range | 64 dB |
| 6. | Lens Mount | EF (SLR-style bayonet) |
| 7. | Image Compression Method | JPEG2000 |
| 8. | Image Rate | 2 (at full resolution) |
| 9. | Network | 100BASE-TX |
| 10. | Security | SSL |
| 11. | Power Source | VDC: 12-24 V<br>VAC: 24 V<br>PoE: IEEE802.3af Class 3 compliant |
| 12. | Power Consumption | 13 W |
| 13. | Operating Temperature | 14°F ~ +131°F |
| 14. | Operating Humidity | Less than 90% RH |
| 15. | Ingress Protection | IP66 |
| 16. | Vandal Resistance | IK10 |
| 17. | Certification | UL listed<br>CE mark<br>FCC mark |
| 18. | Warranty | 3 years |

2.19 VIDEO MANAGEMENT SYSTEM GENERAL

A. General

1. The Video Management System (VMS) shall be a centrally managed, scalable client/server based architecture that allows full virtual matrix switching and control.
2. The VMS shall be fully compliant with ONVIF Profile S and listed as Profile Products.
3. The VMS shall be fully interoperable with all system components specified in this Technical Specification, including but not limited to, Network Video Recorder (NVR), Archive Storage, Application Servers, Owner’s Workstation and Keyboard.
4. The VMS shall be fully interoperable with the all the camera types specified, and support features including but not limited to:
   a. Video streaming
   b. Audio streaming
   c. PTZ and auxiliary control
   d. Edge recording and backfilling
   e. Video analytics

B. User Management

1. The VMS shall support Active Directory for user authentication.
2. The VMS shall support unlimited number of multi-level users.
3. The VMS shall allow the system administrator to add, edit & delete users with rights. It shall be possible to view ability / rights of each user or the cameras which can be viewed & controlled as per the permission assigned by the administrator.
4. The VMS shall allow the administrator to set permission of individual users for live viewing, access to video footage and control of PTZ cameras.

5. The users should be on a hierarchical basis as assigned by the administrator. The higher priority person can take control of cameras, which are already being controlled by a lower priority user.
6. The System shall provide User Activity Log (audit trail) with user ID, time stamp, action performed, etc.
7. The System shall provide Audit Logs enables extensive logging of all user system accesses, configuration changes and operator actions.

C. Graphic User Interface (GUI)

1. The VMS shall provide Graphic User Interface (GUI) with user customized layouts and pre-defined GUI.
2. The login name shall appear on the main screen along with the name of the user currently logged in.
3. The Menu appears on the main screen shall enable the user to access features including, but not limited to, Camera Tree, Workspace, File, Views, Icon, Search, Map, Enlarge View, Volume, Alarm, Motion, Function Key, Tools, System Monitoring Tools, Setup and Help.
4. The Camera Tree shall list all the cameras connected to the System and able to rearrange by group, camera name, area, camera number, location, type of camera.
5. The camera icon on the Camera Tree shall display the description and status of the camera, i.e. active/failed.
6. The GUI shall provide Quick Search and Enhanced Search Tabs to enable the user to do quick search of bookmarked footage, clips, event, exported footage, etc.
7. The GUI shall provide Quick Search Time Bar for quick search of footage by date and time.
8. The GUI shall provide snapshot button to allow the user capture image of the live or recorded video, and save the image to a file at designated location.
9. The GUI shall provide Menu Tool Bar to enable the user to access system settings such as Sync Playback, Export, System Log, Script, Adjust Volume, Change Password, etc.
10. The GUI shall automatically display thumbnail views of nearby cameras or pre-defined surrounding cameras.
11. The GUI shall provide Minimize, Maximize and Close Button to enable user to minimize, maximize and close the application window, respectively.
12. Camera title could be toggled on and off during live viewing or video playback.
13. The GUI shall provide quick select keys for pre-defined split screens / workspace layout such as full screen, 2x2, 3x3, 4x4, 1x5, 2x8, etc.

D. Live Viewing

1. The VMS shall allow user to predefine workspace for live viewing of individual cameras or groups of cameras.
2. The VMS shall be capable to display seventeen (17) high definition videos simultaneously on two (2) monitors.
3. The VMS shall allow digital zoom for the user to zoom in details in live video.
4. The VMS shall provide quick search function by entering the title and camera number.

E. Video Playback

1. The VMS shall provide short cut keys for playback navigation including Play, Pause, Play Reverse, Play Forward, Frame Reverse and Frame Forward.

2. The VMS shall provide advanced video navigation including fast/slow playback, jump to date, time, single step and video motion search.
3. The VMS shall provide Date and Time Search for playback.
4. The VMS shall provide Quick export button for exporting the video during playback.
5. The VMS shall provide instant camera placement in playback view to allow users to instantly replace cameras in a view, where a new camera can be placed in a particular view and position with a simple drag-and drop operation.
6. The VMS shall allow digit zoom for the user to zoom in details in the recorded video.
7. The VMS shall provide file/footage sequencer or incident manager for saving the exported videos in a predefined sequence.
8. The VMS shall allow the user to resume the playback after selecting a different camera.
9. The VMS shall provide playback speed from ¼, ½, 1x, 2x, 4x, 16x, 64x to 120x.

F. Export and Print

1. The exported video shall be encrypted and password protected.
2. The exported video shall be secured with a digital signature.
3. The VMS shall allow the user to add comments to the exported video.
4. The VMS shall allow the user to synchronize all exported videos.
5. The VMS shall allow the user to export unlimited number of cameras in multiple formats to multiple destinations.
6. The VMS shall provide an Export List to enable the user to see the list of exported videos and exporting status. The VMS shall also allow the user to edit, delete and rename the footage files.
7. The VMS shall allow the user to print incident reports including image, surveillance details and user comments.
8. The VMS shall provide Quick Exporting key to allow the user to export the video in various formats. Dedicated Video Player shall be included for playing the Exporting footage.

G. Video Player

1. A Video Player application shall be included and associated with the exported video automatically, with instant one-click playback for easy viewing of the exported video.
2. The Video Player shall indicate the exported video is secured with digital signature.
3. The Video Player shall enable the user to verify the exported video has not been modified or tampered.
4. The Video Player shall enable the user to digitally zoom in the exported footage to view details.

H. Mapping

1. The VMS shall provide Map View and accepts maps in AutoCAD formats.
2. The VMS shall allow the user to display the Map View on any connected monitor.
3. The VMS shall allow the user to edit the maps subject to user profile.
4. The map shall provide graphical visualization of the system status through color coding.
5. The VMS shall provide instant camera preview when the mouse roll over the camera icon shown on the map and show the camera video when clicked.
6. The map shall depict the Field of View of the cameras shown.
7. The map shall provide easy drag-and-drop and point-and-click definition of cameras, alarm, servers, PTZ preset position, etc.

8. The map shall provide real time status monitoring of all system components.
9. The map shall provide different levels of status indications such as alarms, warnings, errors, etc.
10. The VMS shall allow indication and acknowledgement of active alarms via the map.

I. Alarm and Event Management

1. The VMS shall provide system monitoring functions to enable the administrator to monitor the live and historic performance of the System such as individual system component, storage, network usage, server, camera performance, etc.
2. The VMS shall provide system logs including Alarm Log, Audit Log and Monitoring Log of individual system component.
3. The VMS shall allow the system logs to be retrieved, printed and displayed using sort and filtering.
4. The VMS shall provide the system logs to be exported in Microsoft Word (.docx), Excel (.xlsx) and PDF format.
5. The VMS shall provide alarm filtering to allow the user to focus on most critical alarms.
6. The VMS shall provide alarm description and workflow instruction to allow the user to make corresponding actions.

J. Hardware Requirements

1. The VMS Server shall be high quality enterprise class rack mounted servers incorporating current generation design and components.
2. The VMS Server shall be designed to eliminate single point of failure of various components, including but not limited to:
   a. Dual network port with individual NIC
   b. Redundant power supply unit
   c. Redundant fans
   d. RAID 6 or better data protection technology
3. Notwithstanding the minimum hardware requirements specified above, the Contractor shall be responsible to ensure the proposed hardware fulfils all the system functionalities and performance requirement stipulated in this section, and shall include any additional hardware that considered necessary in order to meet the requirements.

2.20 NETWORK VIDEO RECORDER

A. The Contractor shall provide highly reliable IP based Network Video Recorders (NVR) serving as primary storage of the System.

B. The NVR shall be designed on the purpose to record video feeds from the cameras at High Definition (HD) resolution and full frame rate at 15fps for 90 days.

C. The NVR shall be fully interoperable and compatible with the VMS. All operations and configuration changes from the VMS shall be applied instantly to the NVR with recording in parallel.

D. The System shall be capable to allocate and record video from individual video channel to different NVRs.

E. The NVR shall be operated on a Windows Embedded or Linux operating system.

F. The NVR shall insert digital signature to the recorded video to ensure the integrity of the video stored.

G. The NVR shall be capable to handle multiple channel recording of videos at HD 720p or HD 1080p at 25fps full frame rate using H.264 compression technology.

H. Each NVR shall be equipped with two (2) teamed Gigabit network port supporting load balancing and fault tolerance.

I. The NVR shall be capable to provide storage for each camera at various configurations, including but not limited to, resolution, frame rate, compression ratio and retention period.

J. The NVR shall provide video storage at a minimum duration of ninety (90) days for each camera.

K. The NVR shall be capable to expand the storage capacity to (120) days for each camera.

L. The NVR shall use First-in-first-out (FIFO) topology on recording.

M. The System should provide a minimum “N+1” redundancy level for every twenty (20) numbers of NVR, i.e. N=20.

N. A dedicated hot standby failover NVR shall be assigned to every NVR. In case the primary failover NVR is unavailable the System shall assign a secondary NVR to conduct the failover.

O. The failover mechanism shall be fully automatic without user intervention required.

P. The NVR shall support edge recording and backfilling. In case of connectivity failure between the camera and the NVR, the camera shall be able to record the video footage on the edge memory, and backfill the video footage to the NVR automatically immediately upon the connectivity resumes.

Q. The NVR shall be designed to eliminate single point of failure of various components, including but not limited to:

1. Dual network port with individual NIC
2. Redundant power supply units
3. Redundant fans
4. RAID 6 or better data protection technology
5. Camera Backfilling capability

R. The NVR shall be equipped with enterprise grade hard disk drive with minimum requirements as follows:

**ATTACHMENT 2**

| **Description** | **Requirement** |
|---|---|
| Capacity | 4 TB |
| Form Factor | 3.5” |
| Interface | SATA 6Gbps |
| Rotational Speed | 7200 rpm |
| Cache | 64MB |

| | |
|---|---|
| MTBF | 1,000,000 hours |
| Manufacturer's Warranty | 5 years |

S. Notwithstanding the minimum hardware requirements specified above, the Contractor shall be responsible to ensure the proposed hardware fulfils all the system functionalities and performance requirement stipulated in this Specification, and propose any additional hardware that considered necessary in order to meet the requirements.

2.21 WIRES AND CABLES GENERAL

A. The Contractor shall provide all necessary cables and accessories required for a completed video surveillance system unless specified otherwise.

B. All cables supplied by the Contractor shall meet or exceed the manufacturer recommendation for power and signal performance.

C. The surge suppression device shall not attenuate or reduce the video or sync signal under normal conditions. Fuses and relays shall not be used as a means of surge protection.

2.22 ACCESSORIES

A. The Contractor shall provide all necessary accessories required for a complete cabling system, including but not limited to, connectors, patch panels, labels, patch cords, etc.

PART 3 EXECUTION

B. GENERAL

i. The Contractor shall provide the project management services necessary for the successful completion of the Works in the term program, cost and quality control. This shall include administrative management, technical and design Management, and interface management.

ii. All project management services shall be provided by persons, suitably qualified to offer such services, with relevant project experience.

C. SUBMITTALS

i. Submit below items in conjunction with Master Specification Sections 01 33 00, Shop Drawings, Product Data, and Samples.

ii. Provide certificates of compliance with Section [3.3], Quality Assurance.

iii. Provide a pre-installation and as-built design package in both electronic format and on paper, minimum size 30 x 42 inches; drawing submittals shall be per the established project schedule.

iv. Pre-installation design and as-built packages shall include, but not be limited to:

1. Index Sheet that shall:
   a. Define each page of the design package to include facility name, building name, floor, and sheet number.
   b. Provide a list of all security abbreviations and symbols.
   c. Reference all general notes that are utilized within the design package.

2. Specification and scope of work pages for all security systems that are applicable to the design package that shall:
   a. Outline all general and job specific work required within the design package.

b. Provide a device identification table outlining device Identification (ID) and use for all security systems equipment utilized in the design package.

3. Drawing sheets that will be plotted on the individual floor plans or site plans shall:
   a. Include a title block as defined above.
   b. Define the drawings scale in standard measurements.
   c. Provide device identification and location.
   d. Address all signal and power conduit runs and sizes that are associated with the design of the electronic security system and other security elements (e.g., barriers, etc.).
   e. Identify all pull box and conduit locations, sizes, and fill capacities.
   f. Address all general and drawing specific notes for a particular drawing sheet.

4. A riser drawing for each applicable security subsystem shall:
   a. Indicate the sequence of operation.
   b. Relationship of integrated components on one diagram.
   c. Include the number, size, identification, and maximum lengths of interconnecting wires.
   d. Wire/cable types shall be defined by a wire and cable schedule. The schedule shall utilize a lettering system that will correspond to the wire/cable it represents (example: A = 18 AWG/1 Pair Twisted, Unshielded). This schedule shall also provide the manufacturer's name and part number for the wire/cable being installed.
5. A system drawing for each applicable security system shall:
   a. Identify how all equipment within the system, from main panel to device, shall be laid out and connected.
   b. Provide full detail of all system components wiring from point-to-point.
   c. Identify wire types utilized for connection, interconnection with associate security subsystems.
   d. Show device locations that correspond to the floor plans.
   e. All general and drawing specific notes shall be included with the system drawings.
6. A schedule for all of the applicable security subsystems shall be included. All schedules shall provide the following information:
   a. Device ID.
   b. Device Location (e.g. site, building, floor, room number, location, and description).
   c. Mounting type (e.g. flush, wall, surface, etc.).
   d. Power supply or circuit breaker and power panel number.
   e. In addition, for the CCTV Systems, provide the camera ID, camera type (e.g. fixed or pan/tilt/zoom (P/T/Z), lens type (e.g. for fixed cameras only) and housing model number.
7. Detail and elevation drawings for all devices that define how they were installed and mounted.

v. Provide manufacturer security system product cut-sheets. Submit for approval at least thirty (30) days prior to commencement of formal testing, a Security System Operational Test Plan. Include procedures for operational testing of each component and security subsystem, to include performance of an integrated system test.

vi. Submit manufacture's certification of Underwriters Laboratories, Inc. (UL) listing as specified. Provide all maintenance and operating manuals per the General Requirements, Section 01 00 00, GENERAL REQUIREMENTS.

D. QUALITY ASSURANCE

i. The Contractor shall be responsible for providing, installing, and the operation of the CCTV System as shown. The Contractor shall also provide certification as required.

ii. The security system shall be installed and tested to ensure all components are fully compatible as a system and can be integrated with all associated security subsystems, whether the security system is stand-alone or a part of a complete Information Technology (IT) computer network.

iii. The Contractor or security sub-contractor shall be a licensed security Contractor as required within the state or jurisdiction of where the installation work is being conducted.

iv. Manufacturers Qualifications: The manufacturer shall regularly and presently produce, as one of the manufacturer's principal products, the equipment and material specified for this project, and shall have manufactured the item for at least three years.

v. Product Qualification:

1. Manufacturer's product shall have been in satisfactory operation, on three installations of similar size and type as this project, for approximately five (5) years.

2. Owner reserves the right to require the Contractor to submit a list of installations where the products have been in operation in addition to the three noted in Item No. 1 above.

E. INSTALLATION

i. System installation shall be in accordance with NECA 303, manufacturer and related documents and references, for each type of security subsystem designed, engineered and installed.

ii. Components shall be configured with appropriate “service points” to pinpoint system trouble in less than 30 minutes.

iii. The Contractor shall install all system components not including Owner furnished equipment, and appurtenances in accordance with the manufacturer's instructions, documentation, and shall furnish all necessary connectors, terminators, interconnections, services, and adjustments required for a complete and operable system.

iv. The CCTV System shall be designed, engineered, installed, and tested to ensure all components are fully compatible as a system and can be integrated with all associated security subsystems, whether the system is a standalone or a complete network.

v. For programming purposes refer to the manufacturers requirements for correct system operations. Ensure computers being utilized for system integration meet or exceed the minimum system requirements outlined on the systems software packages.

vi. A complete CCTV System shall be comprised of, but not limited to, the following components:

1. Cameras
2. Lenses
3. Video Display Equipment
4. Camera Housings and Mounts
5. Controlling Equipment
6. Recording Devices
7. Wiring and Cables

vii. The Contractor shall visit the site and verify that site conditions are in agreement/compliance with the design package. The Contractor shall report all changes to the site or conditions that will affect performance of the system to the Owner or his representative in the form of a report. The Contractor shall not take any corrective action without written permission received from the Owner or his representative.

viii. Existing Equipment

1. The Contractor shall remove existing cameras and mounting equipment and return to Owner.

ix. Cameras:

1. Install the cameras with the focal length lens as indicated for each zone.
2. Connect power and signal lines to the camera.
3. Set cameras with fixed iris lenses to the f-stop to give full video level.
4. Aim camera to give field of view as needed to cover the alarm zone.
5. Aim fixed mounted cameras installed outdoors facing the rising or setting sun sufficiently below the horizon to preclude the camera looking directly at the sun.
6. Focus the lens to give a sharp picture (to include checking for day and night focus and image quality) over the entire field of view; and synchronize all cameras so the picture does not roll on the monitor when cameras are selected. Dome cameras shall have all preset positions defined and installed.

x. Camera Housings, Mounts, and Poles:

1. Install the camera housings and mounts as specified by the manufacturer and as shown, provide mounting hardware sized appropriately to secure each camera, housing and mount with maximum wind and ice loading encountered at the site.
2. Provide a foundation for each camera pole as specified and shown.
3. Provide a ground rod for each camera pole and connect the camera pole to the ground rod as specified in Division 26 of the Master Specification and the Electrical Manual 730.
4. Provide electrical and signal transmission cabling to the mount location via a hardened carrier system from the Access Control System and Database Management to the device.
5. Connect signal lines and AC power to the housing interfaces.
6. Connect pole wiring harness to camera.

xi. System Commissioning

1. The Contractor shall not apply power to the CCTV System until the following items have been completed:

   a. CCTV System equipment items and have been set up in accordance with manufacturer's instructions.
   b. A visual inspection of the CCTV System has been conducted to ensure that defective equipment items have not been installed and that there are no loose connections.
   c. System wiring has been tested and verified as correctly connected as indicated.
   d. All system grounding and transient protection systems have been verified as installed and connected as indicated.
   e. Power supplies to be connected to the CCTV System have been verified as the correct voltage, phasing, and frequency as indicated.
2. Satisfaction of the above requirements shall not relieve the Contractor of responsibility for incorrect installation, defective equipment items, or collateral damage as a result of Contractor work efforts.

xii. Supplemental Contractor Quality Control

1. The Contractor shall provide the services of technical representatives who are familiar with all components and installation procedures of the installed CCTV System; and are approved by the Owner or his representative.
2. The Contractor will be present on the job site during the preparatory and initial phases of quality control to provide technical assistance.
3. The Contractor shall also be available on an as needed basis to provide assistance with follow-up phases of quality control.
4. The Contractor shall participate in the testing and validation of the system and shall provide certification that the system installed is fully operational as all construction document requirements have been fulfilled.

F. TESTING AND TRAINING

i. General

1. The Contractor shall be responsible for all installation and commissioning tests and for the provision of sufficient competent personnel, equipment and test instruments necessary for the testing and commissioning of the installation to the satisfaction of the Owner.
2. The testing of systems under the various sections of this Technical Specification may be required to be carried out in parts, or as a whole.
3. The Contractor shall demonstrate to the satisfaction of the Owner that the whole installation or any portion thereof, which has been set to work, complies with the requirements of this Technical Specification. All tests shall be carried out in a manner complying with all relevant local statutory and safety regulations.
4. The Owner shall have power to inspect all work in progress and upon completion or substantial completion, and to require the Contractor to carry out tests in his presence or in the presence of his authorized representative in order to prove that all work carried out, and all material, apparatus and equipment installed are wholly satisfactory and fully meet the requirements of this Technical Specification. All costs and charges associated with or

arising from such inspections and tests, including costs incurred by the Contractor in carrying out the prescribed tests and in attending upon the Owner's Representative whilst tests and inspections are in progress, but excluding the Owner's Representative costs and expenses, shall be included in the Contract price and shall be borne in full by the Contractor.

5. Upon completion of the installation, or any substantial section thereof, the installation or that section and all of the associated equipment shall be subjected to the tests specified in the relevant codes and standards as may be required by this Technical Specification. When no relevant standard exists or the specified code and standards fails to specify tests, tests shall be carried out to the requirements of the Owner's Representative.
6. No materials, apparatus, equipment, or installation shall be covered or otherwise permanently concealed from view until the Owner's Representative has had the opportunity to inspect it, and either has formally waived his right to inspect it or has given written authorization for covering to proceed.
7. Except for those items that are painted prior to dispatch to site, no work shall be painted until it has been inspected by the Owner's Representative and/or painting has been authorized.
8. No inspection or testing by the Owner or his representative nor the witnessing of satisfactory tests shall in any way relieve the Contractor of any of his obligations under this Contract, nor shall it in any way limit the right of the Owner or his authorized representative to reject such items if they subsequently prove to be defective or unsatisfactory or unsuitable for their intended purpose.
9. No apparatus, equipment, plant, or installations will be recognized as complete and ready for taking over until after all of the specified inspections and tests have been satisfactorily carried out.
10. The Owner's Representative shall have power to direct the Contractor to submit samples of material or specimen components to an independent testing organization for analysis, test, or evaluation. The costs of any such examination shall be met by the Contractor.
11. The Owner's Representative shall have the right to reject any material, apparatus or equipment which, as the result of inspections and/or tests, may be found to be defective or unsatisfactory in any respect, or not in accordance with the requirements of this Technical Specification, and to require the Contractor to repair, adjust, modify, or replace the defective item. In the case of items requiring works testing this shall be done before dispatch to site. If the defective item is adjudged by the Owner's Representative to be unsuitable for repair, adjustment or modification, then it shall be replaced by a completely new item at the expense of the Contractor.
12. All expenses incurred by the Owner or his representative in connection with inspections or tests resulting in the rejection of the item(s) offered for inspection or test will be charged to the Contractor.
13. The Contractor shall include in its Bid all labor, special instruments, materials, tools, plant and equipment required to carry out all the testing and commissioning of the systems.
14. The Contractor shall be responsible for any damage caused to other works due to failure of his Works under test.
15. It shall be the responsibility of the Contractor to ensure that adequate time is available for inspection and/or testing by the Owner or his representative, including the giving of due notice as required by this Technical Specification.
16. The Owner's Representative shall have the right to waive, at his sole discretion, the requirements in relation to inspection of materials, apparatus equipment and installationsand the witnessing of tests thereon. The exercise of this right by the Owner's Representative shall not in any way relieve the Contractor of his obligations to carry out the prescribed tests and to submit test certificates.
17. Documentation verification, both interconnects and functionality shall be part of the test. Where documentation is not in accordance with the installed system interconnect and operating procedures, the system shall not be considered accepted until the system and documentation correlate.

ii. Testing and Commissioning Plan

1. The Contractor shall submit a corresponding Testing Plan to the Owner's Representative for approval not less than thirty (30) days, or otherwise specified in the corresponding section, prior commencement of the test.
2. The Test Plan shall provide conformity in accordance to this Technical Specification. Satisfactory completion of all the test procedures contained in the Test Plan is deemed necessary as a condition of system acceptance.

3. All tests shall be carefully pre-planned and scheduled. The Testing Plan shall clearly indicate the schedule of testing and commissioning activities of the system and individual components to be carried out.
4. The Testing Plan shall include testing and commissioning procedures which indicates the scope, objectives, strategy, sequencing and step by step procedures of all testing and commissioning works.
5. The Testing Plan shall include design data and acceptance criteria.
6. The Testing Plan shall include check list and test forms for signoff by the Owner or his representative.

iii. Test Equipment

1. All instruments and appliances necessary to complete the performance tests specified shall be supplied by the Contractor. All instruments and equipment shall remain the property of the Contractor unless otherwise specified in this Contract.
2. The Contractor shall supply, check, recalibrate whenever necessary, maintain and install or fix all necessary instruments and equipment for conducting tests on the systems and equipment installation under this Contract.
3. All instruments and equipment used for test purposes shall be adequate for the purpose and shall satisfy the purposes and accuracies required by this Technical Specification.
4. The Contractor shall submit to the Owner’s Representative a list of the instruments and equipment, which he proposes to use in the testing and commissioning of the services. This shall be complete with manufacturer's name, model number, serial number and last calibration date.
5. The Contractor shall provide calibration certificates for all equipment used for testing and commissioning.

iv. Personnel

1. The Contractor shall employ trained and experienced commissioning technicians to carry out all testing and commissioning activities. The curriculum vitae of the proposed key personnel shall be submitted to the Owner’s Representative for approval.
2. Testing of headend equipment, including but not limited to Video Management System, System Servers, Application Servers, Network Video Recorders, etc. shall be carried outby the Manufacturer's personnel, or trained personnel certified by the Manufacturer with witness by the Manufacturer and approval from the Owner’s Representative.
3. The Contractor's commissioning technician shall ensure that all commissioning work carried out by the Manufacturers is carried out to his satisfaction and in such a way that it does not prevent his proceeding with the overall commissioning of the Works.

v. Site Acceptance Test (SAT)

1. The Contractor shall undertake a Site Acceptance Test (SAT) upon completion of equipment installation, to verify the System and all interfaces have been successfully implemented and meets all the requirement specified in this contract.
2. The SAT shall be conducted in the normal operational environment to the maximum extent possible. The tests shall represent operation in the normal mode in which the System will operate. If interfaces are incomplete, the Contractor shall provide simulation of those interfaces so that the System may be tested as a complete and stand-alone entity. The Contractor shall perform all equipment repair and/or adjustment that may be required during the SAT.
3. All the tests shall be carried out in the presence of the Owner or his representative. Tests carried out in the absence of the Owner or his representative will not be regarded as valid for the purpose of the Contract, unless the Owner’s Representative shall have previously signified his inability to attend, and shall have authorized the Contractor to proceed with the testing process in his absence.
4. The SAT shall include Functional Tests to verify the System and all individual components operate as stipulated in this Technical Specification.
5. The SAT shall include Stress Tests to test the System to its full capacity.
6. Cameras shall be fully adjusted and tested to provide optimal video pictures and signals. All camera adjustments and settings available shall be utilized and adjusted. All camera adjustments and settings shall be recorded in individual camera test reports for review and acceptance.

7. Any deficiencies identified during the SAT shall be corrected and re-tested. The Contractor shall investigate the cause of deviation and provide corrective action for the deficiencies.
8. The Contractor shall submit a SAT Report with fourteen (14) days upon the completion of the SAT for review and acceptance from the Owner and his representative.
9. The System shall be operated for a period of fourteen (14) days in a manner as near as practicable to its intended use. During that period the System shall achieve an overall availability of 99.95%.
10. Should the System fail to meet that goal, the test shall be stopped. Such corrective action as approved by the Owner's Representative shall be undertaken, and the whole of the test shall be repeated.
11. The above procedures shall be repeated should the System again fail to meet the target availability figure.
12. Rectification of any faults in works provided by the Owner shall be undertaken by others at no cost to this Contract. Any site attendance required by the Contractor as a result of the rectification works will be subject to reimbursement as an extra to the contract.

vi. System Commissioning and Handover

1. Upon completion of the SAT and accepted by the Owner's Representative, the Contractor shall notify and arrange system commissioning and handover to the Owner.
2. The System commissioning and handover shall be carried out by the Manufacturer's personnel, or trained personnel certified by the Manufacturer with witness by the Manufacturer and approval from the Owner's Representative.
3. The following procedures shall be adopted prior to handing over of the System:

   a. All preliminary testing, checking and adjusting of the System shall be carried out before forwarding notification that the System is considered to be ready for handover.
   b. The final database and applications software shall be loaded and shall be free from temporary patches and test data.
   c. After inspection and completion of Commissioning Tests and when the Owner and his authorized representative are satisfied and agree that the System is ready for handing over to the Owner the system shall be formally placed into service and installation manuals together with post contract drawings and documentation as specified shall be provided.

4. Practical Completion will be certified only after the System has been inspected, tested and approved, all As-built documentation delivered and approved, training provided and all other of the above requirements fulfilled.

vii. Availability Test move to final completion

1. After successful completion of Commissioning, the System shall be operated for a period of ninety (90) days in a manner as near as practicable to its intended use. During that period the systems shall achieve an overall availability of 99.95%.
2. Should the System fail to meet that goal, the test shall be stopped. Such corrective action as approved by the Owner's Representative shall be undertaken, and the whole of the test shall be repeated.
3. The above procedures shall be repeated should the System again fail to meet the target availability figure
4. Rectification of any faults in works provided by the Owner shall be undertaken by others at no cost to this Contract. Any site attendance required by the Contractor as a result of the rectification works will be subject to reimbursement as an extra to the contract.

G. SUBSTANTIAL COMPLETION

i. Substantial Completion is the stage in the progress of the Work, or a designated portion thereof, when construction is sufficiently complete in accordance with the contract Document, so that the Owner can occupy and/or utilize the Work (or portion (thereof) for its intended use. The Work will not be considered substantially complete if any of the following conditions exist:

1. Incomplete or defective work remains (including work identified in the final punch list) which, in the opinion of the Owner, would prevent or interfere with occupancy and/or full use of the facility.
2. The Project's mechanical systems have not been tested, balanced, and accepted as being fully complete (including commissioning when applicable).
3. The Project's electrical and life safety systems have not been tested and accepted as being fully complete (including commissioning when applicable).
4. A certificate of Occupancy has not been issued by the Building Official (either a Temporary/Conditional or a Final/Unconditional Certificate of Occupancy).
5. Final clean-up is not complete.

ii. The following procedure shall be used in stablishing Substantial Completion of the Work, unless otherwise agreed to in writing:

1. When the Contractor determines that the Work, or a portion thereof, which the Owner agrees to accept separately, is substantially complete, the Contractor shall submit written notice thereof to the Owner and the Architect and Engineer, and shall include a punch list of all items which remain to be completed or corrected. Failure to include any items on the list does not alter the Contractor's responsibility to complete all work in accordance with the Contact Documents.
2. Inspections for Substantial Completion may be requested by the Contractor only after the status of completion has been reviewed and assessed by the Owner, Architect, and the Engineer. Upon such review the Owner, and/or the Architect, and Engineer will issue a list of any observed deficiencies that affect the issuance of a Certificate of Substantial Completion.
3. If the Owner, the Architect, and Engineer on the basis of an on-site inspection, agree that the Work is substantially complete, the Architect and Engineer may provide the Contractor with a list of additional corrective items which shall be added to the Contractor's and the State Inspector's punch lists.
4. If the Owner, the Architect, and Engineer on the basis of an on-site inspection, determine that the Work is not substantially complete, the Architect and Engineer will notify the Contractor in writing, and will provide a list of observed deficiencies. The Contractor shall remedy the deficiencies and submit another written request for Substantial Completion.
5. When the Owner and the Architect, and Engineer determine that the Work is substantially complete, the Owner will prepare a Certificate of Substantial Completion, which shall establish the date of Substantial completion, state the timeframe in which Contractor shall complete the punch list items that are attached to the Certificate of Substantial Completion.
6. The Certificate of Substantial Completion, when signed by the Owner and the Contractor, shall serve to document the contractor's acceptance of the responsibilities assigned to him in such Certificate.

iii. No payment, nor any use or occupancy of the Project, or any portion thereof, by the Owner, shall constitute acceptance of any work that is not completed in accordance with the Contract Documents, nor shall it relieve the Contractor of full responsibility for correcting defective work or materials found at any time prior to completion of the entire Project or during the warranty period.

H. FINAL COMPLETION

i. When the Contractor considers the Work fully completed, he shall submit written notice to the Owner and the Architect confirming all of the following:

1. The Work has been fully completed in accordance with the contract Documents and is ready for final inspection.
2. All punch list items have been corrected or completed.
3. All equipment and systems have been tested, adjusted, and balanced and are fully operational.
4. All training required by the Contract Documents has been provided.
5. All operation and maintenance manuals and as-built drawings have been submitted to the Architect in accordance with the Contract Documents and have been accepted as being complete.

ii. The Architect, Engineer, and Owner will perform a final inspection of the Work. If the Work is found to be incomplete or defective, the Contractor will be notified in writing and provided with a list of observed deficiencies. The Owner may withhold such payment as deemed appropriate to ensure the correction of the deficiencies. Should the Contractor fail to promptly correct the deficiencies noted in the final punch list, the Owner may, upon 7 day written notice to the Contractor, hire another contractor to correct such deficiencies, notify the Contractor's Surety, and/or otherwise complete or correct the listed deficiencies, at the Contractor's expense.

iii. When the Work and all requirements of the Contract Documents are fully and satisfactorily completed, the Owner will pay to the Contractor a final payment consisting of the remaining unpaid balance of the Contract shall constitute a full and final release and waiver of all Contractor claims and rights of claim against the Owner relating or pertaining to the Work.

I. WARRANTY REQUIREMENTS

i. The Contractor and his Surety shall unconditionally guarantee all workmanship and materials incorporated in the Work to be and remain free of defects for a period of 3 years from the date of the Certificate of Substantial Completion, or for such longer periods as stipulated in the Contract Documents.

ii. When the Work or a portion thereof, is accepted as being substantially complete, the warranty period will commence on the date of the Certificate of Substantial completion for the completed portion of the Work.

iii. The Contractor shall perform all service and maintenance on any equipment that is operated prior to the date of the Certificate of Substantial Completion. Such service and maintenance shall be performed in accordance with the equipment manufacturer's written instructions, and as required to maintain the equipment warranty.

iv. Within the-three-year warranty period, and for such longer periods as specified in the Contract Documents, the Contractor and/or his Surety shall promptly remedy any defects in the Work, and pay for any damage to other wok resulting therefrom. The Owner or the Using Agency shall promptly notify the Contractor in writing of any observed defects. The Contractor shall ensure that the corrective work in commenced within 7 days of such notice and is completed in an expeditious and timely manner.

v. The obligations of the Contractor herein shall be in addition to and not in limitation of any obligation imposed by law.

vi. Prior to the first and third o one year warranty period (approximately 11 months after the date of the Certificate of Substantial Completion, on a date scheduled by the Owner of the first and third year period) the Contractor and all requested Subcontractors shall attend a warranty inspection. The Contractor shall take immediate action to remedy, at no cost to the Owner, all warranty items identified during the warranty inspection.

J. MAINTENANCE

i. General

1. In addition to the requirements contained within the Bid, Contractor shall provide the following maintenance requirements within the 3 year parts and labor warranty period as identified in this paragraph A. General. The Contractor shall include in the submission a comprehensive 3 year Maintenance Proposal with requirements stipulated in this Section.
2. The Maintenance-shall include all necessary costs, turnaround time, equipment collection/dispatch method, liability, etc. for maintaining the equipment designed and supplied by the Contractor.
3. All system maintenance during the warranty period and under any maintenance agreements shall be performed by qualified service personnel stationed full-time in Las Vegas, Nevada and at no additional cost to the Owner other than those charges stipulated to maintain the warranty.
4. The Service Team shall provide all testing equipment and tools necessary for the operation.

5. During the continuance of the maintenance, the Owner shall be entitled to participate in the maintenance services conducted by the Service Team for the purpose of assessing and obtaining on-the-job training so as to facilitate the Owner in the taking up of subsequent in-house maintenance of the System and the Owner shall be entitled to assess the system / equipment by running diagnostics, analyzing system performance, application development, testing jigs and the like for familiarization purposes.
6. Any replacement parts provided by the Contractor shall become the property of the Owner.

ii. Preventive Maintenance, Type 1

When requested by Owner, Contractor shall provide the following preventative maintenance services as required within this section, unless otherwise specified by Owner's authorized representative. Contractor will be compensated for these services in accordance with the hourly rate for Preventative Maintenance Services as identified on the Bid Form, and Contractor will determine these costs based on the presumption that all cameras have been installed 14ft and below. The additional costs associated with maintaining cameras that are above 14 Ft from the finished floor or adjacent grade, the Contract will assess the said costs in accordance with the fixed fee per camera per Bid Form, Item No.138 – Daily Rate for Rental Equipment to Install (and maintain) IP and non- IP Cameras, above 14 Ft. For example, Contractor can service 6 cameras and the VMS System and System Hardware within a 1 hour period. Two (2) out of the 6 cameras are 14 Ft. above the finished floor. Therefore Contractor will determine the costs for servicing the cameras and the System as follows, the rates noted are for illustration purposes only:

$100.00 (Bid Form Item No.141, Preventative Maint. Service hourly rate)
$100.00 (Daily Rate for Rental Equip. to install/Maintain cameras, above 14 Ft.)
Total: $200.00

Contractor shall provide a quote/proposal for each location requesting these services; quote/proposal shall reiterate the requirements herein and identifying the number of hours to be allocated for these services, the hourly rate, and identify equipment rental costs associated with servicing cameras 14 Ft. and above as noted in the example.

a. Polling, testing and remote diagnostics for each component of the System for alarm reports, and necessary rectification of fault on both the hardware and software.
b. Routine inspection of each equipment and the environmental working conditions, routine cleaning of the cabinets, etc.
c. Cleaning, adjusting, and any other services requests associated with the cameras as requested by County.
d. Collection and evaluation of error table / fault printouts which contain the results of self-testing of each major sub-system such that preventive actions can be taken at an early stage to avoid major breakdown. Routine tests as recommended by the manufacturer to verify the satisfactory operation of the System, the network management, the power supply, the telephone instruments and
e. Checks on the operation of the alarms of the system.

2. The Service Team shall base on the findings from the preventive maintenance to draw the attention of the Owner to take any preventive measure at an early stage in order to avoid major faults to happen.

iii. Preventative Maintenance, Type 2 (on an as needed basis)

Contractor shall provide one or multiple services as identified within paragraph B - Preventive Maintenance, Type 1, above, as requested by Owner on an as needed basis. These services shall be provided within 3 calendar days (Las Vegas Valley area) and 4 calendar days (rural areas) of Owner's request.

A. Spare Parts

1. The Contractor shall include in its Bid a Spare Part List listing spare parts as specified within this section, and any additional items that the Contractor considered necessary to maintain the continuous operation of the System.

2. The pricing for the spare parts list shall be in accordance with the Bid Form rates, including the balance of line discount (if applicable) and Section III, Item No.19 – Labor and Materials.
3. The Contractor shall clearly specify the types, quantities and unit rates of spare parts required for the operation of the System. The Contractor shall recommend the stock levels required for the types and quantities of spare parts required and advise the lead time for the delivery of these items.

## 3.2 DOCUMENTATION

A. Test Reports

1. The Contractor shall submit Test Report with fourteen (14) days, or otherwise specified in the corresponding section, upon the completion of the corresponding test for review and acceptance from the Owner and his representative.
2. The Test Report shall contain, at a minimum:

    a. Complete copy of test procedures and test data sheets with annotations showing dates, times, initials, and any other annotations entered during execution of the test.
    b. A listing and discussion of all discrepancies between expected and actual results and of all failures encountered during the test and their resolution.
    c. Commentary on test results.
    d. Signatures of persons who performed and witnessed the test.

B. Operations Maintenance Manual

1. The Contractor shall provide five (5) copies of Operations and Maintenance (O&M) Manuals prior to Practical Completion.
2. The Manuals shall include a full description of the System and the functioning of the various components involved and instructions to cover every action necessary for the efficient operation and maintenance of the System.
3. The Manuals shall be written specifically for this Contract and contain only information directly relevant to this Contract. General brochures and descriptive literature not totally applicable to this Contract shall not be included.
4. A draft of the proposed Manuals shall be submitted to the Owner's Representative for assessment not less than eight (8) weeks prior to the date of practical completion. A further draft copy of each manual shall be submitted for approval prior to final printing. After approval, the completed Manuals shall be compiled and supplied not later than the practical completion date of the Works.
5. The Manuals shall be of ISO A4 size, with stiff plastic covers. The binding shall be of loose-leaf type with all pages machine punched and shall permit pages to lie flat and enable easy insertion and removal of pages. A minimum of three (3) rings shall be used. Good quality, durable printing paper shall be used for text, printed on one side only.
6. Drawings, illustrations, diagrams and photographs shall appear sheets of a height not exceeding the major dimension of other pages.
7. Drawings shall be folded type, with no part of the drawing obscured by preceding pages. Drawings shall be folded in their length to fit covers. Photo-reducing may be necessary to comply with these requirements.
8. Each section shall be started on a new page, separated from other sections by a stiff indented divider.
9. Each paragraph shall be numbered or otherwise identified, for quick and easy reference.
10. The contents of the Manuals shall be in the following format:-

    a. Section 1 – Scope and Index: A statement of the scope and content of the Manual together with an index of all subdivisions of each Section including lists of drawings, equipment and similar for quick reference.
    b. Section 2 – System Description: A general description of each section describing functions and locations of the various items of equipment in relation to the property.
    c. Section 3 – Operation: Full operating instructions to enable different users to perform correct operation of the System. This shall include operating procedures for each system

component with all necessary information such as commands, configuration, etc.

d. Section 4 – Maintenance: Full instructions regarding routine maintenance, daily, weekly and monthly. These shall include recommended setting up and maintenance procedure, and do's and don'ts for all system components. Troubleshooting procedures shall be also included in this section.

e. Section 5 – Manufacturer's Data: Schedules and lists of manufacturer's and/or suppliers of equipment components, including source or procurement information for spares. Also a comprehensive set of manufacturer's literature covering technical details and installation, adjustment, maintenance and repair information on equipment installed. A list shall be made for ease of reference of all literature provided.

f. Section 6 – Installation Drawings: All "As-Built" drawings.

g. Section 7 – Equipment Schedule: The System shall be fully documented on an equipment schedule which shall detail all device types and locations, equipment connection details.

C. As – Built Drawings

1. The Contractor shall submit two (2) hardcopies of As-built Drawings prior to Practical Completion for each respective project, which will not be granted until such drawings are received, are up to date and accurately reflect all field change to the installation and which are a true and accurate representation of the actual installation.

2. The As-built drawings shall include, as a minimum, the following:

   a. Schematic Diagrams
   b. Equipment Schedule
   c. Final equipment layouts
   d. Equipment elevation plans
   e. Equipment installation detail drawings
   f. Wiring diagrams

3. The Contractor shall also provide five (5) softcopies in both AutoCAD and PDF format

3.3 TRAINING

A. Contractor shall provide the following training services for each location identified within the Bid and each additional location added to the VMS as identified within this section.

B. Course Outline

1. The Contractor shall provide comprehensive trainings to the Owner as stipulated in this Section.
2. The training course shall be sufficient to ensure that operators and technical personnel are fully familiar with all aspects of the operation and maintenance of the system and have developed sufficient proficiency to perform their duties efficiently.
3. Training shall consist of seminars involving practical and "classroom" based activities, including a full presentation of the Operation and Maintenance Manuals.
4. The Contractor is responsible to provide all training resources including course outlines, training materials, instruction notes, all necessary test equipment and incidental materials necessary to conduct the training and any other item or activity required to properly train the Owner.
5. The trainings shall be conducted by instructors certified by the Manufacturer.
6. Training Plan
7. The Contractor shall submit a Training Plan to the Owner for approval not less than thirty (30) days prior commencement of first training session.
8. The Training Plan shall include syllabus of each training course.
9. The Training Plan shall include curriculum vital to training instructors.

C. Operator Training

1. The Contractor shall provide a minimum of three (3) sessions of Operator Training. The training shall be available for multiple timeslots with the same training content.

2. Each training session shall be intended for at least ten (10) attendants. Each attendant in a class shall be given hands-on practice on the installed systems workstations and equipment.
3. Particular attention shall be paid to general operational techniques and control functions, including programming functions, alarm response, menu functions and basic fault finding techniques.

D. Technician Training

1. The Contractor shall provide a three (3) sessions of Technician Training. Each training session shall be intended for at least five (5) attendants.
2. The course shall be intended for technical staffs, who would be expected to have a more detailed knowledge of the system operation, troubleshooting skillset and maintenance procedure, such that symptom of system failure, error message, parts information and maintenance guidelines.
3. The course shall include special training for skill transfer to the Owner.
4. The attendants shall be certified by the Manufacturer upon completion of the course to the satisfaction to the instructor.

E. Refresher and Ongoing Training Services

1. The Contractor shall provide additional refresh training services, when requested by Owner, to provide information of latest system updates, courses aimed at recall and reinforcement of previously acquired knowledge and skills, and ongoing training services to cover any other areas related to the System in which training services are requested.

2. The cost associated with refresher training will be in accordance with the Bid Form Pricing for Refresher and Ongoing Training Services.

3.4 WARRANTY AND SUPPORT

A. The Contractor shall provide a 3-year warranty for the System and all components, including all parts and labor, unless otherwise specified.

B. The Contractor shall be responsible for the overall system warranty.

C. The Contractor shall provide Manufacturer's Warranty for all major system components, including but not limited to:

1. Video Management System

2. Network Video Recorder
3. Workstation
4. Keyboard
5. Camera
6. Power Supply Unit
7. Display Monitor

D. All Manufacturer's Warranties shall be three (3) years unless otherwise specified.

END OF SECTION 282300

**EXHIBIT D – DIVISION 1 REQUIREMENTS**

Real Property Management

# DESIGN & CONSTRUCTION DIVISION

***SPECIFICATIONS PREPARED FOR:***

# Annual Requirements Contract
# for
# Video Surveillance (CCTV) System

## Bid No. 603593-15

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# SECTION 01 11 00

# SUMMARY OF WORK

## PART 1 GENERAL

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K. Streamlined Specifications.

### 1.02 CONTRACT DESCRIPTION

A. The "Project" of which the "Work" of the Contract is a part titled Annual Requirements Contract for Video Management System and is located at various locations throughout Clark County, Nevada. The "Work" is described in the Project Drawings and Divisions 1 through 48 of the Project Manual.

B. The Work consists of all material and labor that is necessary to furnish and install a complete functional surveillance system at various locations. All rough in locations, heights, etc. shall be coordinated with the electrical contractor.

C. Construction includes setting up an equipment rack, installing cameras, and commissioning of the surveillance system using materials noted on Drawings and specified herein.

D. Work hours: The General Contractor will perform construction activities during the following times: Sunday through Saturday starting from 7:00 am to 6:30 pm. All dates and times will be outlined in the project schedule as required per Section 01 32 16. The Contractor will notify the Owner's Representative when changes to the submitted working days/hours are deemed necessary. The Owner has the ability to change the work hours for future projects.

### 1.03 WORK BY CONTRACTOR

A. Review Contract Documents and Field Conditions:

1. Carefully study and compare the Contract Documents with each other and with information furnished by Owner and immediately report to Owner's Representative errors, inconsistencies, or omissions discovered. If Contractor performs any construction activity knowing it involves a recognized error, inconsistency, or omission in the Contract Documents without such notice to Owner's Representative, Contractor shall assume

appropriate responsibility for such performance and shall bear an appropriate amount of the attributable costs of correction.

2. Take field measurements, verify field conditions, and carefully compare field measurements and conditions and other information known to Contractor with the Contract Documents before commencing activities. Report errors, inconsistencies, or omissions discovered to Owner's Representative at once. In the event of a discrepancy, do not scale from drawings and refer to Section 01 26 13 – Requests for Interpretation (RFI).
3. Perform the Work in accordance with Contract Documents.

B. Supervision:

1. Submit name of the individual authorized to receive documents and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.
2. Furnish in writing within five (5) calendar days after award of the Contract, written phone numbers or instructions on how to contact key personnel. Key personnel shall be:
   a. Superintendent.
   b. Project Manager.
   c. Owner or Partner of the construction company under Contract.
3. Contractor shall have on-site supervision whenever work is being performed. Superintendent shall be present at the project site for a minimum of 8 hours each day that construction work is progressing, or that is a normal business day until punch list items have been corrected.
   a. Superintendent shall also be present at the project site during work performed at other than the above times.
   b. Arrange to have Superintendent, or an Owner approved alternate with the daily knowledge or the work, authority and capacity to make decisions or receive instructions and react accordingly, available by cellular phone on a 24-hour a day, 7-day a week basis throughout this Contract.
4. At the Owner's sole discretion, the Owner will request and require, in writing, the replacement of a Superintendent and/or Project Manager.
5. Superintendent shall not be replaced at Contractor's request, except in case of an emergency as approved by Owner or upon mutual agreement by Owner and Contractor. Any subsequent substitution, if approved, will require full time presence on-site of Contractor's Project Manager in addition to Superintendent.
6. If Contractor does not respond to a call within one hour, and a situation exists requiring Contractor's action; Owner may take appropriate action at Contractor's expense. Contractor, by failing to respond to the call, shall waive any rights to claims caused by Owner's action in accordance with the Contract Documents and industry standards.

C. Performance of the Work:

1. Perform work as may be necessary to complete the Contract in accordance with Contract Documents and industry standards.
2. Supervise and direct the Work, using Contractor's best skills and attention according to the latest industry standards..
3. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the Contract.
4. Contractor shall be responsible to Owner for acts and omissions of Contractor's employees, Subcontractors, and their agents and employees, and other persons performing portions of the Work under a contract.
5. Contractor shall not be relieved of obligations to perform the Work in accordance with the Contact Documents either by activities or duties of Owner in Owner's administration of the Contract, or by tests, inspections, or approvals required or performed by persons other than Contractor.
6. In the event damages occur due to non-responsiveness, Contractor shall bear the cost for corrective actions.

D. Materials, Labor, and Equipment:
   1. Furnish and pay for transportation, material, equipment, tools, labor, and incidentals necessary to complete the Work in the best possible and most expeditious manner according to latest industry standards.
   2. Provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated in the Work.

E. Labor: Enforce strict discipline and good order among Contractor's employees and other persons carrying out the Contract. Contractor shall not permit employment of persons not skilled in tasks assigned to them.

F. Contractor's Responsibilities:
   1. Review Shop Drawings, Product Data, and Samples; before and after Owner’s Representative review.
   2. Receive and unload Products at site.
   3. Inspect for completeness or damage, jointly with Owner.
   4. Handle, store, install, and finish Products.
   5. Repair or replace items damaged after receipt.
   6. Other responsibilities in accordance with the Contract Documents.

1.04 WORK BY OWNER

A. Owner reserves the right to perform construction or operations related to the Project with Owner's own forces and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If Contractor claims that delay or additional cost is involved because of such action by Owner, Contractor shall make such claim as provided elsewhere in the Contract Documents under Section 012600 Contract Modifications Procedures.

B. When separate contracts are awarded by the Owner for different portions of the project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean Contractor who executes each separate Owner-Contractor Agreement.

C. Owner will provide for coordination of the activities of Owner's own forces and of each separate Owner-awarded contractor with the Work of Contractor, who shall cooperate with them.
   1. Contractor shall participate with other separate contractors and Owner in reviewing their construction schedules when directed to do so.
   2. Contractor shall make any revisions to the construction schedule and Contract Sum deemed necessary after a joint review and mutual agreement.
   3. The construction schedules shall then constitute the schedules to be used by Contractor, separate contractors, and Owner until subsequently revised.

D. Unless otherwise provided in the Contract Documents, when Owner performs construction or operations related to the Project with Owner's own forces, Owner will be deemed to be subject to the same obligations and to have the same rights which apply to Contractor under the Conditions of the Contract, including, without excluding other, those stated herein and elsewhere in the Contract Documents.

E. Items noted “Owner-Supplied Products” will be supplied by Owner and installed by Contractor. These items include but are not limited to:
   1. Not used.

F. Items noted NIC (Not in Contract) will be supplied and installed by Owner during construction or at a future time. These items include but are not limited to:
   1. Switch.
   2. Server.
   3. Cat 6 jumpers for Server & switches.

G. Contractor shall remove and Owner will take possession of the items including but not limited to the following:
   1. If none listed, Contractor shall dispose of all removed items in a legal manner, in accordance with Federal, State and Local laws.

1.05 WORK BY OTHER CONTRACTORS

A. Owner has awarded separate contract(s) for supply and installation of the following work:
   1. Work consists of the electrical contractor shall provide a complete raceway and box system to support the campus security installation as indicated on the drawings. Raceways and boxes shall be furnished and installed in accordance with the project specification, applicable codes and project requirements. In addition to empty raceway system the electrical contractor shall provide all category cable to the surveillance device to the category patch panel located in the IDF’s as shown on drawings. The category cables shall meet the Division 27 specification on installing, termination and provide test results as required in the Division 27. Each surveillance device shall be provided and installed and commissioned by the surveillance integrator (Division 28) contractor. All rough in locations, heights, etc. shall be coordinated with the surveillance integrator (Division 28) contractor.

1.06 OWNER-SUPPLIED PRODUCTS

A. Owner's Responsibilities:
   1. Arrange for and deliver Owner reviewed Shop Drawings, Product Data, and Samples as required to Contractor.
   2. Arrange and pay for Product delivery to site.
   3. On delivery, inspect Products jointly with Contractor.
   4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
   5. Arrange for manufacturers' warranties, inspections, and service.
   6. Provide access to specified items for inspection by Contractor.
   7. Inspect specified items jointly with Contractor and record status and condition of each item.
   8. Cooperate with Contractor on scheduling time and method of removal of Owner- supplied products from existing location for reinstallation in the Work of the Project.

B. Contractor's Responsibilities:
   1. Inspect specified items jointly with Owner and record status and condition of each item.
   2. Coordinate with Owner on schedule and method of removal of Owner-supplied products from their existing location.
   3. Remove, transport, and reinstall specified Owner-supplied Products in locations shown on Drawings or as directed by Owner.

C. Information or services under Owner's control shall be furnished by Owner with reasonable promptness to avoid delay in orderly progress of the Work.

D. The above delineated responsibilities are in addition to other duties and responsibilities of Owner and Contractor.

1.07 CONTRACTOR USE OF SITE AND PREMISES

A. Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

B. Contractor shall be responsible for protecting the areas adjacent to the project site and shall restore or repair these areas to an equivalent or better condition when damaged by construction activity. See Section 01 31 13 Project Coordination; Part 1.02, D 4.

C. Limit use of site and/or premises to allow:
   1. Owner occupancy.
   2. Work by others, work by Owner, and work by public utility companies.
   3. Use of site and premises by the public.

D. Maintain emergency exits from existing buildings during construction.

E. Construction operations shall be limited to areas defined by Contract Documents. Proposed operations outside Contract Document limits must be submitted to Owner for approval and Contractor shall be responsible for time, cost, and documentation associated with additional permits and approvals that may be required.

F. Utility Outages and Shutdown: Provide seven (7) calendar days or five (5) work days' notice of scheduled shutdowns and immediate notification of unscheduled utility interruptions to the site or any portion of the site.

1.08 OWNER USE OF SITE AND PREMISES

A. Owner intends to occupy the existing buildings on the premises and will conduct public business during the entire period of construction. Schedule the Work to accommodate this requirement.

B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations. Schedule the Work to accommodate this requirement.

C. Owner's Access to the Site: Provide Owner access to the Work in preparation and progress wherever located.

1.09 FUTURE WORK

A. Not Used.

1.10 WORK SEQUENCE

A. Construct Work in phases to accommodate Owner's occupancy requirements during the construction period, coordinate construction schedule and operations with Owner.

B. Not used.

## 1.11 OWNER OCCUPANCY

A. Owner may occupy or use any complete or partially completed portion of the Work at any stage when such portion is designated by separate letter agreement with Contractor, provided such occupancy or use is consented to by the insurer as required herein and authorized by public authorities having jurisdiction over the Work.
   1. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work, and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents.
   2. When Contractor considers a portion substantially complete, prepare and submit a list of incomplete work (Punch List) to Owner as specified.
   3. Consent of Contractor to partial occupancy or use shall not be unreasonably withheld.
   4. The stage of the progress of the Work shall be determined by written agreement between Owner and Contractor or, if no agreement is reached, by decision of Owner.

B. Immediately prior to such partial occupancy or use, Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

C. Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

## 1.12 STREAMLINED SPECIFICATIONS

A. These specifications are written in streamlined or declarative style, using incomplete sentences. This imperative language is directed to Contractor unless specifically noted otherwise.

B. Omissions of such words and phrases as "The Contractor shall," "in conformity therewith," "shall be," "as shown on the Drawings," "a," "an," "the," and "all" are intentional in streamlined sections.
   1. Omitted words shall be supplied by inference in the same manner as when a note appears on the Drawings.
   2. Omission of such words shall not relieve the Contractor from providing the items and work described herein or indicated on the Drawings.
   3. Words "shall be" are included by inference where a colon (:) is used within sentences or phrases.

# PART 2 PRODUCTS

Not Used.

# PART 3 EXECUTION

Not Used.

END OF SECTION

# SECTION 01 25 00

# SUBSTITUTION PROCEDURES

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Selection of products.

B. Limitations on substitutions.

C. Requests for substitution.

D. Contractor representation.

E. Submittal procedures.

### 1.02 SELECTION OF PRODUCTS

A. Base bid on products, materials, or systems specified in Contract Documents to establish standard of quality required and to provide uniform basis for evaluating bids.

B. Products Specified by Naming More than One Manufacturer: Any listed manufacturer of that section may be used in bid.

C. When product or manufacturer's names are not specifically specified, provide products, materials, or systems in accordance with performance requirements and install such products in accordance with material manufacturer's recommendations.

D. "Or Equivalent": Where phrases “or equal,” "or equivalent," “or approved equal,” or "or approved equivalent" occur in Contract Documents, do not assume that products, materials, or system will be approved as equivalent (even if approved for use on previous projects) until item has been specifically so approved for this Work by Owner’s Representative with written concurrence by Owner.

### 1.03 LIMITATIONS ON SUBSTITUTIONS

A. Comply with policy and procedure specified in the General Conditions for Substitutions (Or Equal).

B. Substitutions will be considered only when listed on form provided at end of this Section (Substitution Request form).

C. Only proposed substitutions of Successful Bidder will be reviewed, providing adherence to following procedures:
   1. They have been listed on Substitution Request form as specified in "B" above.
   2. Substitution Request form for each product has been completely executed with substantiating data attached and signed by authorized representative of Contractor.
   3. Requests must be delivered electronically to Owner’s representative office within ten (10) calendar days from date of Notice of Award. Late submittals will not be reviewed.
   4. Substitutions will only be considered when proving a benefit to the Owner.
   5. Contractor shall be responsible for changes to the Contract Documents and coordination with other trades if substitution is accepted.

D. Subsequent requests will be considered in case of product unavailability.
   1. Submit letter to this effect written by manufacturer accompanied by completed Substitution Request form.
   2. If, in opinion of Owner's Representative, any product specified:
      a. Cannot be delivered during progress of Work.
      b. Will no longer be available during progress of Work, or
      c. If quality of material currently available no longer meets Specifications, Owner's Representative will specify substitute with Owner's concurrence.
   3. Material cost differential (credit or extra) between specified material and "substitute" will be reflected in Change Order to Contractor only in the event that specified product is not available or substitution has been requested by Owner.
   4. Contractor may submit request for subsequent substitutions no later than 30 days after Notice to Proceed is issued.
   5. Allow Owner or Owner's Representative to audit product substitutions for unit cost, Contractor mark-up, and freight allowances. Significant departures from established mark-up shall be subject to review and approval.

E. Substitutions will not be considered when indicated on Shop Drawings or product data submittals, when requested directly by subcontractor or supplier, or when acceptance will require substantial revision of Contract Documents.

F. Do not order or install substitute products without written acceptance by Owner's Representative and Owner.

G. Only one request for substitution for each specified product will be considered. When substitution is not accepted, provide specified product.

H. Approval or rejection of request for substitution will be based on Owner's representative opinion, with concurrence by Owner, as to adaptability, durability, quality, aesthetics, and Contract Amount change, when compared to specified or noted items.

1.04 REQUESTS FOR SUBSTITUTIONS

A. Identify product by Specification section and Article numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and suppliers as appropriate.

B. Attach product data as specified in Section 01 33 00.

C. List similar projects using product, dates of installation, and names of architects/engineers and owners.

D. Give itemized comparison of proposed substitution with specified product, listing variations.

E. Give quality and performance comparison between proposed substitution and specified product.

F. Give cost data comparing proposed substitution with specified product, and amount of net change to Contract Amount.

G. List availability of maintenance services and replacement materials.

H. State effect of substitution on construction schedule and changes required in other Work or products.

1.05 CONTRACTOR REPRESENTATION

A. Request for substitution constitutes representation that Contractor has investigated proposed product and has determined that it is equivalent to or superior in all respects to specified product. In addition:
   1. Provide same warranty for substitution as for specified product.
   2. Coordinate installation of accepted substitute, making such changes as may be required for Work to be complete in all respects.
   3. Certify that cost data presented is complete and includes all related costs under this Contract.
   4. Waive claims for additional costs related to substitution that may later become apparent.

1.06 SUBMITTAL PROCEDURES

A. Submit four (4) copies of request for substitution.

B. After receipt of substitution request, Owner's Representative will notify Contractor, in writing, of status of requested substitutions within ten (10) days.

C. For accepted products, submit Shop Drawings, product data, and samples under provisions of Section 01 33 00.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

Advancement of Construction Technology

# SUBSTITUTION REQUEST
**(After the Bidding Phase)**

Project: _____ Substitution Request Number: _____

_____ From: _____

To: _____ Date: _____

_____ Owner's representative Project Number: _____

Re: _____ Contract for: _____

Specification Title: _____ Description: _____

Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____ Phone: _____

Trade Name: _____ Model No.: _____

Installer: _____ Address: _____ Phone: _____

History: ____ New product ___ 2-5 years old ___ 5-10 years old __ More than 10 years old

Differences between proposed substitution and specified product: _____

_____

_____

☐ Point-by-point comparative data attached - REQUIRED BY OWNER'S REPRESENTATIVE

Reason for not providing specified item: _____

_____

Similar Installation:

Project: _____ Owner's Representative: _____

Address: _____ Owner: _____

_____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

_____

Savings to Owner for accepting substitution: _____ ($_____).

Proposed substitution changes Contract Time: ___ No ___ Yes [Add] [Deduct] _____ days.

Supporting Data Attached: __ Drawings __ Product Data __ Samples __ Tests __ Reports

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# SUBSTITUTION REQUEST
**(Continued)**

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to design, including Owner's representative design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: _____

Signed by: _____

Firm: _____

Address: _____

_____

_____

Telephone: _____

Attachments: _____

_____

_____

_____

OWNER'S REPRESENTATIVE and OWNER'S REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 33 00.

☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 33 00.

☐ Substitution rejected - Use specified materials.

☐ Substitution Request received too late - Use specified materials.

Signed by: Date:

Additional Comments: ___ Contractor ___ Subcontractor ___ Supplier ___ Manufacturer ___ Owner's Representative ____

_____

_____

_____

_____

_____

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Signed by: _____ Date: _____

Owner's Representative

NOTE: No substitutions without Owner's written approval shall be approved by the Owner's Representative.

# SECTION 01 26 00

# CONTRACT MODIFICATION PROCEDURES

## PART 1 GENERAL

### 1.1 SUMMARY

A. Changes in the Work may be accomplished after execution of the Contract for construction, and without invalidating the Contract for construction, by Supplemental Instruction, by Change Order, or by Construction Change Directive, subject to the limitations stated in this Section 01 26 00 and elsewhere in the Contract Documents.

B. Section Includes:
1. Definitions.
2. Modifications.
3. Supplemental Instructions.
4. Requests for Proposals/Change Orders.
5. Construction Change Directive (Time and Material Change Order).
6. Supplemental Instructions Procedures.
7. Change Order Procedures.
8. Documentation of Change in Contract Amount and Contract Time.
9. Construction Change Directive (Time and Material Change Orders).
10. Correlation of Contractor Submittals.

### 1.2 DEFINITIONS

A. A Modification is:
1. A Supplemental Instruction;
2. A Change Order;
3. A Construction Change Directive;
4. Or a written amendment to the Contract signed by Owner, Owner's Representative, and Contractor.

B. A Supplemental Instruction is an order for a minor change in the Work issued by Owner's Representative involving no changes in the Contract Amount or Contract Time.

C. A Change Order is a written instrument prepared by Owner's Representative and signed by Owner, Contractor and Owner's Representative, stating their agreement upon a change in the Work which results in a change in the Contract Time and/or Contract Amount.

D. A Construction Change Directive is a written order prepared by Owner's Representative and signed by Owner and Owner's Representative, directing a change in the Work. Construction Change Directive allows the Work to proceed when Owner and Contractor do not agree upon a change to the Contract Sum or Contract Time required by a Change Order. Construction Change Directive requires agreement by Owner and Owner's Representative and may or may not be agreed to by Contractor.

### 1.3 MODIFICATIONS

A. Changes in the Work shall be performed under applicable provisions of the Contract Documents, and Contractor shall proceed promptly, unless otherwise provided in the

Supplemental Instruction, Construction Change Directive, or Change Order.

B. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are so changed in a proposed Change Order that application of such unit prices to quantities or work proposed will cause substantial inequity to Owner or Contractor, the applicable unit prices shall be equitably adjusted.

C. Pending final determination of cost to Owner as per Construction Change Directive, amounts not in dispute may be included in Applications for Payment.

D. The amount of credit to be allowed by Contractor to Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by Owner.

1.4 SUPPLEMENTAL INSTRUCTIONS

A. Owner's Representative has the authority to order minor changes in the Work not involving adjustment in Contract Sum or extension of Contract Time and not inconsistent with intent of Contract Documents.

B. Such minor changes shall be effected by written order and shall be binding on Owner and Contractor with Owner concurrence.

C. Contractor shall carry out such written orders promptly.

1.5 REQUESTS FOR PROPOSALS/CHANGE ORDERS

A. Owner's Representative may issue a Request for Proposal (RFP) which includes a detailed description of a proposed change in the Work, with or without supplementary or revised Drawings and Specifications.
   1. Within seven (7) calendar days of receipt of RFP, Contractor shall submit to Owner's Representative a statement describing the effects on Contract Amount and Contract Time with full documentation.
   2. Contractor shall include a statement describing the effect on Work by separate or other contractors.

B. Contractor may propose a change by submitting a request for change to Owner's Representative, which includes:
   1. Description of proposed change and its full effect on the Work.
   2. Statement describing the reason for the change.
   3. Description of the effect on the Contract Amount and Contract Time with full documentation.
   4. Statement describing the effect on Work by separate or other contractors.
   5. Contractor's requests for change shall be submitted within twenty (20) days of the documented occurrence. All requests made after twenty (20) days from documented occurrence will not be considered.

C. Change Orders: When Owner's Representative and Contractor agree with adjustments in Contract Amount and Contract Time, or otherwise reach agreement upon adjustments, such agreement shall be effective immediately and shall be recorded in the Change Order prepared by Owner's Representative and executed by all parties.

1.6 CONSTRUCTION CHANGE DIRECTIVE (TIME AND MATERIAL CHANGE ORDER)

A. Owner's Representative may, by Construction Change Directive and without invalidating the Contract, order changes in the Work within the general scope of the

Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

B. In the absence of total agreement on the terms of a Change Order, Owner's Representative may issue a Construction Change Directive instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The document will describe the changes in the Work, and will designate a method of determining any change in Contract Amount or Contract Time.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.1 SUPPLEMENTAL INSTRUCTIONS PROCEDURES

A. Owner's Representative will issue a Supplemental Instruction to Contractor describing minor changes in the Work not involving adjustment in Contact Sum or extension of Contract Time and not inconsistent with the intent of the Contract Documents.

B. Contractor shall carry out such written orders promptly.

### 3.2 CHANGE ORDER PROCEDURES

A. Contractor shall submit proposals and/or billings for materials and/or labor for all additional work:
   1. In conformance with provisions, rates, and requirements set forth in the Prevailing Wage Rates outlined in the Construction Contract.
   2. With charges limited to those set forth below in this Article.

B. Materials:
   1. Cost of products or materials to Contractor or Subcontractor, less any applicable trade discounts, shall be subject to mark-up for overhead and profit as follows:
      a. Where Contractor supplies products or materials to Owner directly, Contractor will be allowed to add a maximum of 10 percent overhead and profit in his billing to Owner,
      b. Where Subcontractor supplies products or materials to Owner, through Contractor, Contractor will be allowed to add a maximum of 10 percent overhead and profit for Subcontractor, and above that, 5 percent overhead and profit for himself in his billing to Owner.
   2. Owner reserves the right to request copies of any or all invoices or contracts, including those from originating suppliers, subcontractors, or manufacturers

C. Applicable taxes: No overhead and profit will be allowed.

D. Labor:
   1. Where Contractor supplies labor to Owner directly, Contractor will be allowed to add a maximum of 15 percent overhead and profit in his billing to Owner.
   2. Where Subcontractor supplies labor to Owner, through Contractor, Contractor will be allowed to add a maximum of 15 percent overhead and profit for Subcontractor; and above that, a maximum of 10 percent overhead and profit in his billing to Owner.
   3. Labor costs shall be in compliance with the Prevailing Wage Rates as provided herein.
   4. Owner reserves the right to request copies of any or all invoices, time sheets, and

so forth relevant to labor charged (see Documentation Article below).

E. Overhead and Profit:
   1. Overhead and profit at the rates outlined above includes costs of bonds and insurance, supervision, estimating, administrative and clerical personnel at the base office and/or field office, use of power tools and equipment, incidental job burdens, and general office expenses.
   2. No additional overhead and profit will be allowed for omitting work.
   3. When both additions and credits covering related work or substitutions are involved in any one change, the allowance for overhead and profit shall be figured on the basis of the net increase, if any, with respect to that change.

F. Payroll Burden:
   1. When the General Contractor and/or Subcontractor provides labor to the Owner, all calculations for overhead and burden shall be calculated as follows:
      a. Workman's Compensation will be calculated at a not to exceed rate of 15 percent of the published prevailing wage rates provided by the State of Nevada Labor Commissioner for Clark County. The applicable wage rates shall be the rates in effect for each trade at the time this contract was awarded.
      b. Labor payroll burdens and taxes including, but not limited to, Federal and State Unemployment costs, Social Security Taxes (FICA), Builders Risk Insurance costs, Public Liability cost, shall be calculated by the Contractor at a rate not to exceed 15 percent of the published prevailing wage rates provided by the State of Nevada Labor Commissioner for Clark County. The applicable rates shall be the rates in effect for each trade at the time this contract was awarded.

G. Execution of Change Orders: A Change Order will be fully executed by Owner when The document is signed by Contractor, Owner's Representative, and Owner prior to performance of the work.

3.3 DOCUMENTATION OF CHANGE IN CONTRACT AMOUNT AND CONTRACT TIME

A. Maintain detailed records on a time and material basis for all work done.

B. Document each quotation and provide full information required for evaluation of proposed changes to substantiate costs of changes in the Work.
   1. The Contractor shall be required to utilize Owner provided worksheets and forms when directed by the Owner's Representative.

C. Provide additional data to support computations:
   1. Quantities of products, labor, and equipment.
   2. Taxes.
   3. Overhead and profit.
   4. Justification for any change in Contract Time.
   5. Credit for deletions from Contract similarly documented.

D. Support each claim for additional costs and for work done on a time and material force account basis with additional information:
   1. Origin and date of claim.
   2. Dates and time work was performed and by whom. Superintendent and/or Owner's Representative shall be notified when work commences and when it is complete. Superintendent and/or Owner's Representative shall sign the work log.
   3. Time records and wage rates paid.
   4. Invoices and receipts for products, equipment, and subcontractors similarly documented.

E. Contractor shall keep and present, in such form as Owner may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs shall be limited to the following:
   1. Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' or workmen's compensation insurance.
   2. Costs of materials, supplies, and equipment, including costs of transportation, whether incorporated or consumed.
   3. Rental costs of machinery and equipment exclusive of hand tools, whether rented from Contractor or others.

3.4 CONSTRUCTION CHANGE DIRECTIVES (TIME AND MATERIAL CHANGE)

A. If a Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
   1. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.
   2. Unit prices stated in the Contract Documents or subsequently agreed upon.
   3. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee.
   4. As provided in Paragraphs D and E of Article 3.03.

B. Upon receipt of a Construction Change Directive, Contractor shall promptly proceed with the change in the Work involved and advise Owner of Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in Contract Sum or Contract Time.

C. A Construction Change Directive signed by Contractor indicates the agreement of Contractor therewith, including adjustment in Contract Sum and Contract Time or the method determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

D. If Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by Owner on the basis of reasonable expenditures and savings of those performing the Work attributable to the change.

3.5 CORRELATION OF CONTRACTOR SUBMITTALS

A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Amount.

B. Promptly revise progress schedules to reflect any change in Contract Time. Revise sub-schedules to adjust time for other items of work affected by the change and resubmit.

C. Promptly enter changes in Project Record Documents.

END OF SECTION

# SECTION 01 26 13

# REQUESTS FOR INFORMATION/INTERPRETATION (RFI)

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Administrative and procedural requirements for handling and processing Requests for Information/Interpretation (RFI).

B. RFI form is attached at the end of this section.

C. Do not use RFI form during bidding. Direct questions during bidding phase as indicated in Contract Documents.

### 1.02 DEFINITIONS

A. RFI: Formal process used during construction phase to facilitate communication between Contractor and Owner's Representative or Owner's Authorized Representative with regard to requests for additional information and clarification of intent of Contract Documents (Drawings and Specifications).

B. Requests for Information: Request made by Contractor concerning items not indicated on drawings or contained in Project Manual that is required to properly perform the work.

C. Requests for Interpretation: Request made by Contractor in accordance with Owner's Representative's third party obligations to the contract for construction.

### 1.03 PROCEDURES

A. When conditions require clarification of Contract Documents, comply with following:
   1. Subcontractors, manufacturers, and suppliers shall submit request for additional information and clarification to Contractor.
   2. Contractor shall contact Owner's Representative with requests for interpretation or additional information using the attached form. Owner's Representative will **not** accept requests for interpretation or information submitted directly from subcontractors, manufacturers, or suppliers.
   3. Owner's Representative will provide response to Contractor.
   4. Generate RFI by one source per project and number accordingly.
   5. Submit one request for information or clarification per form.
   6. All written communications regarding RFI's shall be copied to Owner's Authorized Representative at time of issuance.
   7. Improper RFI's:
      a. RFI's that are not properly prepared.
      b. Improper RFI's will be processed by the Architect at the Architect's standard hourly rate and Architect will charge the Owner, and such costs will be deducted from monies still due the Contractor. The Contractor will be notified by the Architect prior to the processing of improper RFI's.

8. Frivolous RFI's:
   a. RFI's that request information that is clearly shown on the Contract Documents.
   b. Frivolous RFI's may be returned unanswered or may be processed by the Architect at the Architect's standard hourly rate and Architect will charge the Owner, and such costs will be deducted from monies still due the Contractor. The Contractor will be notified by the Architect prior to the processing of frivolous RFI's.

B. Owner’s Representative will review RFI from Contractor with reasonable promptness and Contractor will be notified in writing of decisions made.

C. Owner’s representative written response to RFI shall not authorize changes in Contract Sum or Contract Schedule.

D. Contractor shall maintain a log of RFIs sent to and responses from Owner’s Representative.

E. Contractor shall make every reasonable effort to answer questions pertaining to Construction Documents before submitting an RFI.

1.04 RFI FORM

A. RFIs shall be submitted on the form provided in this Section, or a form similar to this form. Owner’s Representative will not respond unless a proper form is used and submitted.

B. If submittal form or format does not provide space needed for complete information, additional sheets may be attached.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

**CLARK COUNTY**

**Real Property Management**

# REQUEST FOR INFORMATION/INTERPRETATION

Project: _____ R.F.I. Number: _____

_____ From: _____

To: _____ Date: _____

_____ Project Number: _____

Re: _____ Contract for: _____

Specification Section: Paragraph: Drawing Reference: Detail:

Request:

Signed by:

Response:

☐ Attachments

Response From: To: Date Rec'd: Date Ret'd:

Signed by:

Copies: ☐ Owner ☐ Consultants ☐ _____ ☐_____ ☐_____ ☐ _____ ☐ File

Advancement of Construction Technology

Based on CSI Form 13.2A

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601 Madison Street, Alexandria, VA 22314-1791

# SECTION 01 31 13

# PROJECT COORDINATION

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Provide complete project coordination throughout the duration of the Contract, including the following:
   1. Coordination of various Work elements.
   2. Contacts.
   3. Construction Mobilization.
   4. Schedules.
   5. Submittals.
   6. Construction Documents.
   7. Coordination Drawings.
   8. Closeout Procedures.

### 1.02 COORDINATION

A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate space requirements and installation of mechanical and electrical Work which are indicated diagrammatically on Drawings.
   1. Follow routing shown for pipes, ducts, and conduit as closely as practicable; place runs parallel with line of building and in concert with accepted industry standards.
   2. Utilize spaces efficiently to maximize accessibility for other installation, for maintenance, and for repairs.

D. Coordinate, in cooperation with Owner, work by Owner's own forces and/or that of other contractors as outlined in Section 01 11 00.
   1. Provide Owner, Owner's own forces, and separate contractor(s) reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities and connect and coordinate construction and operations with theirs as required by the Contract Documents.
   2. If any part of Contractor's Work depends for proper execution or results upon the work of Owner or any separate contractor, Contractor shall, prior to proceeding with the Work, promptly report to Owner's Coordinator any apparent discrepancies or defects in such other work that render it unsuitable for such proper execution and results. Failure of Contractor to so report shall constitute an acceptance of Owner's or separate contractor's work as fit and proper to receive the Work, except as to defects which may subsequently become apparent in such work by others.
   3. Costs caused by delays or by improperly timed activities or defective construction shall be borne by the party responsible therefor.
   4. Promptly remedy damage wrongfully caused by Contractor to completed or partially completed construction or to property of Owner or separate contractors as provided in Section 01 45 00.
   5. Claims and other disputes and matters in question between Contractor and a separate contractor shall be subject to the provisions of Construction Contracts.

E. In finished areas, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and cleanup of Work of separate sections in preparation for Substantial Completion.

G. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.03 CONTACTS

A. Owner's Authorized Representative/Coordinator:
Clark County Department of Real Property Management
Design and Construction Division
500 S. Grand Central Pkwy, 4th Floor
Las Vegas, Nevada 89155-1733
Name: **Fernando Martinez** Phone: **702-455-5844** Fax: **702-455-5817**
E-mail: Fernando.martinez@clarkcountynv.gov

B. All questions regarding Contract Documents shall be in written form and sent via e-mail or facsimile to Clark County Department of Real Property Management – Design and Construction Division - **Attention: Fernando Martinez.**

C. CONSTRUCTION MOBILIZATION

D. Cooperate with Owner in allocation of mobilization areas of site, for field offices and sheds, and for job site access, traffic, and parking facilities.

E. During construction, coordinate use of site and facilities through Owner.

F. Comply with Owner's Representative procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

G. Comply with instructions of Owner for use of temporary utilities and construction facilities.

H. Coordinate field engineering and layout work under instructions of the Owner's Representative.

1.04 SCHEDULES

A. Submit preliminary progress schedule in accordance with Section 01 32 16. Coordinate with Project Construction Schedule.

B. After review, revise and resubmit schedule to comply with revised Project Schedule.

C. During progress of Work, revise and resubmit Project Schedule with each Application for Payment.

1.05 SUBMITTALS

A. Submit preliminary shop drawings, product data, and samples in accordance with Section 01 33 00 for review and compliance with Contract Documents, for field dimensions and clearances, for relation to available space, and for relation to work of separate contracts. Revise and resubmit as required.

B. Submit applications for payment forms for review and for transmittal to Owner's Representative.

C. Submit Requests for Interpretation of Contract Documents (RFI) and obtain instructions through the Owner's Representative.

D. Process request for substitutions and change orders through the Owner's Representative.

E. Deliver closeout submittals and preliminary inspection reports for review to the Owner's Representative.

F. Copy Owner's Authorized Representative on all correspondence.

1.06 CONTRACT DOCUMENTS ON-SITE

A. Owner will furnish one (1) CD of Drawings and Project Manuals. Contractor may purchase additional sets.

B. The following documents shall be retained on-site and maintained in an orderly and secure manner throughout construction:
   1. Building Permit
   2. Contract Documents
   3. As-built Drawings
   4. Requests for Information
   5. Change Orders
   6. Submittals
   7. Inspection reports

1.07 COORDINATION DRAWINGS

A. Contractor shall prepare and submit coordination drawings as required to achieve coordination required by 1.02 Coordination. Contractor shall be responsible for obtaining information as required from Owner's Representative for preparation of the Contractor's coordination drawings.

B. Review drawings prepared by others prior to submission to Owner's Representative.

1.08 CLOSEOUT PROCEDURES

A. Notify Owner's Representative when Work is considered ready for Substantial Completion. Accompany Owner and Owner's Representative on preliminary inspection to determine items to be listed for completion or correction in Contractor's written notification of Substantial Completion.

B. Comply with Owner's Representative instructions to correct items of Work listed in executed Certificate of Substantial Completion. Coordinate with Owner for access to Owner-occupied areas.

C. Notify Owner's Representative when Work is considered finally complete. Accompany Owner and Owner's Representative on preliminary final inspection.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

# SECTION 01 31 19

# PROJECT MEETINGS

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Pre-construction Conference.

B. Progress Meetings.

C. Pre-installation Meetings.

D. Coordination Meetings.

E. Closeout Meetings.

F. Other Meetings.

### 1.02 PRE-CONSTRUCTION CONFERENCE

A. Purpose of Conference: Following Owner's issuance to Contractor of the Notice of Award and following Owner's receipt, review, and acceptance of Contractor's post award submittals, a Pre-construction Conference will be called for the purpose of reviewing the Contract Documents in detail, to set expectations of performance of all parties, and to set the date of the Notice to Proceed.

B. Comply with requirements in the Special Conditions for Pre-construction Conference.

### 1.03 PROGRESS MEETINGS

A. Purpose: To review project progress, update schedule, clarify questions concerning Work underway, and plan for the future. Review ongoing progress of red-lined markups of record drawings.

B. Frequency: Weekly for the duration of the Work, at a time mutually agreed upon by Owner, Owner’s Representative, and Contractor.

C. Location: Job site office.

D. Attendees: Team members consisting of:
   1. Owner.
   2. Owner’s Representative.
   3. Owner’s Representative Consultants as applicable for work in progress or under discussion.
   4. Contractor's Project Manager.
   5. Contractor's Superintendent.
   6. Other parties appropriate to the Work in progress or under discussion.

E. General Format:
   1. During the Progress Schedule Update portion of the meeting, Contractor shall provide to each team member a copy of Contractor's current Progress Schedule.
   2. During the Status of Shop Drawings, Product Data, and Samples portion of the meeting, Contractor shall provide to each team member a copy of Contractor's current Submittals Log, Request For Interpretation Log, and Request For Proposal Log.

F. Daily Manpower Reports:
   1. Provide daily manpower reports of all subcontractors to be turned in at each weekly progress meeting.

2. Use the form provided at the end of this section.

G. Minutes:
1. Meeting minutes will be written by Owner or Owner's Designated Representative and distributed to Team Members within five (5) calendar days following the meeting.

1.04 PRE-INSTALLATION MEETINGS

A. Pre-installation Conference will be held prior to start of work in certain specification sections (i.e., roofing) and as requested by Owner.

B. Purpose:
1. To review all construction and quality control procedures for the Work for which the conference is required.
2. To coordinate and sequence the Work with the Work of all related sections.

C. Time: Not less than ten (10) days prior to the start of the Work or the preparatory work.

D. Attendees: As listed above for the Progress Meetings.

1.05 COORDINATION MEETINGS

A. Purpose: To coordinate the efforts of Contractor and others performing work on the Project. For example: Owner's additional contractors.

B. Attendees: As listed above for the Progress Meetings plus the new party with work to perform.

1.06 CLOSEOUT MEETINGS

A. Purpose: To review completeness of closeout documents including, but not limited to; red-lined markups of record drawings.

B. Time / Frequency: Beginning thirty (30) days prior to Substantial Completion. Meetings to be held weekly in conjunction with Progress meetings, or at a time mutually agreed upon by Owner, Owner’s Representative, and Contractor.

C. Location: Job site office.

D. Attendees: Team members consisting of:
1. Owner.
2. Owner’s Representative.
3. Owner’s Representative Consultants as applicable for closeout documents in progress or under discussion.
4. Contractor's Project Manager.
5. Contractor's Superintendent.
6. Other parties appropriate to the closeout documents in progress or under discussion.

E. General format: During the review of closeout documents the requirements for the following shall be discussed and verified.
1. Closeout Procedures as specified in Section 01 77 00.
2. Operation and Maintenance Data as specified in Section 01 78 23.
3. Project Record Documents as specified in Section 01 78 39.

F. Minutes:
1. Meeting minutes will be written by Owner or Owner's Designated Representative and distributed to Team Members.

1.07 OTHER MEETINGS

A. Owner or Owner's Designated Representative will coordinate and conduct such additional special purpose meetings as may be required to realize timely problem resolution.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

CLARK COUNTY DEPARTMENT OF REAL PROPERTY MANAGEMENT

## DESIGN & CONSTRUCTION DIVISION

# DAILY MANPOWER & ACTIVITY REPORT

**General Contractor** _____ **Date** _____

**Subcontractor** _____

**Name of Project** _____ **Page** _____

| Specification or Description | Specification Number |
|---|---|
| **A.** | |
| **B.** | |
| **C.** | |
| **D.** | |
| **E.** | |

| | Employee Names | Hours | Classification | Pay Rate |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |

**Brief Description of the Day(s) Activities**

_____

_____

_____

_____

_____

X_____
Construction Project Manager/General Superintendent Signature

# SECTION 01 32 16

# PROGRESS SCHEDULES

## PART 1 GENERAL

### 1.01 SUBMITTAL SCHEDULE

A. Prepare and keep current a schedule for the submittal of shop drawings, product data, and samples, including Owner-furnished products.

B. Coordinate Submittal Schedule with Contractor's Construction Schedule.
   1. Allow Owner's Representative and Owner reasonable time to review submittals.
   2. Indicate decision dates for selection of finishes.

### 1.02 CONSTRUCTION SCHEDULE

A. Contractor shall be responsible for planning, scheduling, and reporting the progress of Work to ensure timely completion of the Contract.

B. Contractor shall employ a Certified Microsoft Project/Primavera Scheduler to prepare and maintain the construction schedule throughout the duration of the project. Contractor's Scheduler shall be approved by Owner.

C. Prepare and submit for Owner/Owner Representative's information and review, a Baseline Construction Schedule (bar chart and CPM) for the Work at the Pre-Construction Meeting. Baseline Construction Schedule shall be submitted in PDF, and Microsoft Project/Primavera file on flash drive and cd. Construction Schedule shall:
   1. Not exceed time limits currently under the Contract Documents.
   2. Be related to the entire Project to the extent required by the Contract Documents.
   3. Provide for expeditious and practicable execution of the Work.

D. Contractor's Schedule shall be cost-loaded to reflect the bid amount. Perform work according to the approved schedule.

### 1.03 WEEKLY AND MONTHLY PROGRESS REPORT

A. Update the Construction Schedule monthly (with critical path clearly shown) and submit along with monthly request for payment in hard copy and electronic (PDF and Microsoft/Primavera) copies on flash drive and cd.

B. Contractor shall provide weekly schedule updates with two-week look ahead of activities.

C. Contractor's two-week look ahead shall be directly electronically linked to the overall progress schedule.

### 1.04 CASH FLOW PLAN

A. Prepare and submit in duplicate to Owner and Owner's Representative at the Pre-Construction Conference, a Cash Flow Plan for the entire performance period of the Contract.

### 1.05 OWNER SUGGESTED CERTIFED PRIMAVERA TRAINERS/PROJECT MANAGERS

A. Atkins North America, Inc.: (702) 263-7275

B. CJM Innovations: (702) 655-9842

C. Encore Group of Professionals, LLC: (800) 991-7029 or (702) 354-1315

D. HDR Engineering, Inc.: (702) 938-6000

E. Hill International, Inc.: (702) 515-7490

F. O'Conner Construction Management Co.: (702) 896-6926

PART 2 PRODUCTS

2.01 CONSTRUCTION SCHEDULE

A. Prepare a Construction Schedule for the Contract and submit to Owner at the Pre-Construction Conference.

B. Construction Schedule shall be:
1. A Precedence Diagram, showing, as a minimum, the Schedule of Values in the Contract as "Summary Activities."
2. Cost loaded at the Schedule of Values level to provide a comparison of progress to the Payment Application.
3. Detailed sufficiently for tracking quantity of Work performed and the quantity of Work remaining. Schedule shall detail compliance with Contract Documents, compliance with completion dates, and all milestones as reviewed and accepted by Owner.

C. Monthly reports shall include, as a minimum:
1. Actual Start Date.
2. Percent Complete.
3. Remaining Duration.
4. Actual Finish Date.
5. Earned-Value as compared to the Baseline Cost (Contract Schedule of Values).

D. Monthly Reports shall include a tabular status and a Gantt view providing a comparison of the current schedule with the target schedule.

**OPTIONAL ARTICLE 2.01 FOR PROJECTS LESS THAN $1,500,000 IN VALUE:**

2.01 CONSTRUCTION SCHEDULE

A. Bar Chart: Prepare and submit a computer generated horizontal bar chart with separate line for each section of Work, identifying first work day of each week.

B. Sequence of listings:
1. Show complete sequence of construction by specification section and subdivided as required by activity.
2. Coordinate contents with Schedule of Values.
3. Identify each item with the applicable specification section number.

C. Illustrate:
1. Order and interdependence of activities and sequence of work.
2. How the start of a given activity depends on completion of preceding activities.
3. How completion of the activity may restrain start of subsequent activities.
4. Complete sequence of construction by activity, identifying work of separate stages.

2.02 DETAIL NETWORK SCHEDULE

A. In addition to the Construction Schedule, provide a Detail Network Schedule on all projects over $1.5 million; or as required by Owner on projects under $1.5 million. Contractor's schedule, submitted and accepted by Owner, shall reflect a total completion time allowed by the Contract under General Conditions article titled Time: Completion of Project.

B. Detail Network Schedule shall include:
1. Complete Critical Path schedule to cover Contractor's anticipated time schedule.

2. Detailed Precedence Diagram acceptable to Owner.

C. Accepted Precedence Diagram shall be used as a baseline to evaluate progress; criteria for acceptance shall include the following features for the Precedence Diagram:
1. Time-scaled in calendar days.
2. Plot all activities on their anticipated early start and finish dates.
3. Show activities in sufficient detail to allow monitoring.
4. Size hardcopy to fold to a standard 8.5-inch by 11-inch.
5. Show the order and interdependence of activities and the sequence of work as reflected in the Schedule Report specified below.
6. Prominently distinguish critical activities on all reports by using color or symbols.
7. Include, in addition to all construction activities, such tasks as:
   a. Mobilization and demobilization.
   b. Submittal and approval of samples of materials and shop drawings.
   c. Procurement of significant or long-lead time materials and equipment.
   d. Fabrication of special items.
   e. Installation and testing.
   f. Permits.
   g. Interfacing with utilities.
   h. Interfacing with other projects.

D. Activities shall be sufficiently detailed so that a reviewer can follow the sequence. For example, the activities shall show forming, reinforcing, and placement of concrete on the calendar days they are scheduled to be performed.

E. Precedence Diagram shall show for each activity the preceding and following event numbers or activity numbers, the activity description, the total float, if any, and the anticipated duration of the activity in working days.

F. Organize and describe activities to conform to the Contract bid items as closely as possible. Activity descriptions shall be unique and specific with respect to the type of work and location.

G. Each Activity representing the Schedule of Values shall be loaded with the bid cost as “Budgeted Cost." Manpower (by Craft or Subcontractor) or material quantities shall be loaded at activities at least one level below the Schedule of Values Activity.

H. Accompany Precedence Diagram by a Schedule Report of the network with a tabulation of the following data for each activity:
1. Activity Number.
2. Activity Description
3. Activity Duration
4. Earliest start date
5. Earliest finish date
6. Latest start date
7. Latest finish date
8. Total float times
9. Responsibility for activity – e.g., Contractor, subcontractor, supplier, and so forth.
10. A balanced resource loading for each activity listing personnel, equipment, and anticipated revenue.

## 2.03 DETAIL NETWORK SCHEDULE - MONTHLY REPORTS

A. Monthly Report shall:
1. Show the activities or portions of activities completed during the one month reporting period and the portion completed on the Project to date, showing actual start and finish dates plus all future activities.
2. Include the percent complete and remaining duration at the Activity level.
3. State the actual quantity-to-date of materials or manpower expended and the amount or percentage of revenue actually earned compared to the baseline as of the report date.
4. Include a summary of all activities sequenced by a total float from least to greatest float and ordered by early start.

5. Include a detailed predecessor/successor analysis showing the predecessors, successors, logic ties, and constraints for each activity scheduled. These activities shall be sorted by event numbers or activity numbers in ascending order.

B. Monthly Report shall be accompanied by a narrative description of job progress, problem area, current and anticipated delaying factors and their expected effect, and any corrective actions proposed or taken.
   1. Narrative description shall also clearly identify any departures from earlier schedules including, but not limited to, changes in logical sequence or logical times, constraints, changes in activity durations and changes, additions, or deletions in event numbers, activity numbers, and activity descriptions.
   2. Include the reasons for each departure in the narrative description; corrective action to return to the original schedule shall be approved by Owner.
   3. Additions and deletions of activities or milestone events shall be approved by Owner.

C. Extra Work or additional work scope shall be shown on an updated schedule.

D. The Cash Flow Plan shall be the Contractor's best estimate of monthly billings.

PART 3 EXECUTION

3.01 SUBMITTALS LOG

A. Include/ incorporate as specified in Section 01 33 00

B. The required schedules and reports shall be submitted to the Owner as follows:
   1. Construction Schedule – Two (2) originals and electronic (PDF) copies.
   2. Detail Network Schedule/Diagram – Two (2) originals and electronic (PDF) copies.
   3. Revision to Detail Network Diagram – Two (2) originals and electronic (PDF) copies.
   4. Monthly Report - Original plus two (2) copies of the narrative and electronic (PDF) copies.
   5. Cash Flow Plan – Two (2) originals and electronic (PDF) copies may be requested by Owner

3.02 CONSTRUCTION SCHEDULE

A. Following submittal of a Construction Schedule, Owner will advise Contractor of the acceptability of the Construction Schedule.

B. If the Contract requires only a Construction Schedule, Contractor shall monitor the actual progress of the Contract against the schedule.

3.03 DETAIL NETWORK SCHEDULE AND MONTHLY REPORT

A. Submit the Detail Network Schedule for the Owner’s acceptance within seven (7) calendar days after the Construction Schedule in Part 2 is accepted.

B. Submit a Monthly Report of actual construction progress with the monthly pay request by updating the Schedule Report to reflect complete and in progress activities on the Project. Negative float shall be explained in detail. If the detailed Precedence Diagram requires revision, either wholly or in part, Owner shall so direct Contractor and Contractor shall submit such revision within ten (10) calendar days.

C. Provide one electronic backup of the Precedence Diagram with each Monthly Report. The automated system software used by Owner will be Primavera. If Contractor uses software other than Primavera, Contractor shall furnish an unopened licensed disc package of the software to the Owner for use during the duration of the project. The software shall be IBM PC compatible and shall calculate “Earned-Value” compared to the Baseline Budget as opposed to Current Estimated Budget.

D. Update Cash Flow Plan and submit monthly to incorporate actual expenditures to date with the Application for Payment.

E. Provide a revised Cash Flow Plan for each executed Change Order.

3.04 SCHEDULE PROGRESS AND PAYMENT VALIDATION

A. No measurement or direct payment will be made for Contractor's costs relating to preparation and submission of schedules and reports and revisions thereto, the cost being considered as included in the prices paid for Contract items.

B. Failure of Contractor to comply with the monthly updated schedule requirements specified herein will be grounds for Owner to withhold an additional ten (10%) percent of the monthly progress payments, in addition to the normal retention, until Contractor is in compliance. Upon compliance, additional money withheld will be paid to Contractor in the next scheduled monthly payment.

C. Activities denoting the completion of System or Equipment installations will be considered complete only after verified receipt of Operation & Maintenance Manuals, Certifications, Manufacturer's Documents, and completed Owner provided Inventory Forms.
   1. Failure to provide the required documentation will result in the withholding of retention of ten (10%) percent of that month's Payment Request until documentation is provided.
   2. Upon compliance, retained monies will be paid with the next payment.

D. Acceptance of Contractor's schedules by Owner is not to be construed as relieving Contractor of the obligation to complete the Work within the Contract time; or as granting, rejecting, or in any other way acting upon Contractor's requests for adjustments to the date for completing Contract Work, or claims for additional compensation. Such requests shall be processed in strict compliance with other relevant provisions of the Contract.

E. Contractor shall participate in a review and evaluation of the proposed Construction Schedule, Detailed Network Schedule, and Monthly Updated Schedule by Owner. Revisions necessary as a result of the review shall be submitted to Owner within ten (10) calendar days after the review. The accepted Detail Network Schedule shall then be used by Contractor for planning, organizing, executing, and directing the Work and for reporting progress of Work accomplished.

F. Contractor shall provide a schedule of anticipated adverse weather delays based on National Oceanic and Atmospheric Administration (NOAA) / National Weather Service or similar data for the Project location, which will constitute the baseline for the total Contract time adverse weather delay evaluations.
   1. Contractor's progress schedule shall assume to anticipate this degree of adverse weather delays in all weather dependent activities.
   2. Monthly Report shall record actual weather delay days and correct the forecasted schedule for anticipated delay days not used.

G. Provide written notification to Owner of the occurrence of adverse weather delay days and resultant impact to normally scheduled Work, within ten (10) calendar days of each occurrence, when such weather prevents Work on critical activities for fifty (50%) percent or more of Contractor's scheduled workday.
   1. A time extension may be granted when the number of actual adverse weather days calculated from the Notice to Proceed (NTP) date to the date Contractor asserts the request exceeds the total normally anticipated adverse weather delays.
   2. Request for "Time Extension" will be governed by the Contract.
   3. If Contractor wishes to assert additional claim(s) for time adjustment at a later date(s), each succeeding claim shall address the time period from NTP date to the date of the request.
   4. No compensation will be made for monetary damages due to adverse weather delay(s).
   5. Supporting data from Daily Reports and Equipment Utilization Reports shall accompany requests for additional time due to weather delays.

END OF SECTION

# SECTION 01 33 00

# SUBMITTAL PROCEDURES

## PART 1 GENERAL

### 1.01 SUMMARY

A. Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents.

B. Purpose of submittal items is to demonstrate for those portions of the Work for which submittals are required, the way Contractor proposes to conform to information given and design concept expressed in Contract Documents.

C. Section Includes:
1. Proposed Products List.
2. Submittal Schedule.
3. Shop Drawings.
4. Product Data.
5. Samples.
6. Manufacturer Installation Instructions.
7. Manufacturer Certificates.
8. Contractor's Actions.
9. Owner Representative’s Action.

### 1.02 DEFINITIONS

A. Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by Contractor, subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

B. Product Data are illustrations, standard schedules, performance charts, instruction brochures, diagrams, and other information furnished by Contractor to illustrate materials or equipment for some portion of the Work.

C. Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged.

### 1.03 PROPOSED PRODUCTS LIST

A. Within seven (7) days after Pre-construction Conference, provide to Owner Representative (with a copy to Owner) a list of the major Products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For Products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

### 1.04 SUBMITTAL SCHEDULE

A. Within seven (7) days after Pre-Construction Conference, prepare and submit to the Owner Representative a list for the submittal of Shop Drawings, Samples, and Product Data, including Owner-furnished Products. This list shall include:
1. Expected time for delivery to the Owner Representative of each submittal.
2. Time allowed for the Owner Representative’s review.
3. Dates reviewed submittals will be required from the Owner Representative.

B. Keep current this list for the submittal of Shop Drawings, Product Data, and Samples, including Owner-furnished products.
   1. List of Submittal of Shop Drawings shall be reviewed at Project Meetings.
   2. Coordinate this list with the Contractor's construction schedule.
   3. Allow the Owner Representative reasonable time (up to 15 calendar days) to review submittals in accordance with paragraph 3.02D of this section.
   4. Indicate decision dates for selection of finishes.

C. Conform to the most recent schedule.

1.05 SHOP DRAWINGS

A. Submit Shop Drawings in an electronic (PDF) format which will be retained by Owner Representative until Project closeout. Provide full-size hard copy printouts when requested by Owner Representative or Owner for large format drawings.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.06 PRODUCT DATA

A. Submit Product Data which Contractor requires in an electronic (PDF) format, which will be retained by Owner Representative until Project closeout. Provide full-color printed brochures or catalogs when requested by Owner Representative or Owner for large format drawings.

B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.

C. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

D. After review, distribute in accordance with the Submittal Schedule Article above and for Record Documents purposes described in Section 01 78 39.

1.07 SAMPLES

A. Submit Samples to illustrate functional and aesthetic characteristics of the Product with integral parts and attachment devices. Coordinate Sample submittals for interfacing Work.

B. Submit Samples of finishes from the full range of manufacturers' standard colors, or in custom colors selected, textures, and patterns for Owner Representative's selection,

C. Include identification on each Sample with full Project Information.

D. Submit the number of Samples specified in individual specification sections, but not less than two (2) which will be retained by Owner Representative.

E. Reviewed Samples which may be used in the Work are indicated in individual specifications sections.

1.08 MANUFACTURER INSTALLATION INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing to Owner Representative in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.09 MANUFACTURER CERTIFICATES

A. When specified in individual specification sections, submit certification by Manufacturer to Owner Representative, in quantities specified for Product data.

B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Owner Representative.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONTRACTOR'S ACTIONS

A. Perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been reviewed by Owner Representative. Such Work shall be in accordance with approved submittals.

B. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.

C. Review, approve, and submit to Owner Representative Shop Drawings, Product Data, Samples, and similar submittals required by Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or of separate contractors.
   1. Transmit each submittal with the form acceptable to Owner Representative.
   2. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
   3. Identify project, Contractor, Subcontractor, or Supplier, pertinent drawing and detail number and specification section number as appropriate.
   4. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimension, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
   5. Schedule submittals to expedite the Project and deliver to Owner Representative at the location designated by Owner Representative. Coordinate submission of related items.
   6. For each submittal for review, allow fifteen (15) calendar days excluding delivery time to and from Contractor. Longer review times may be required for complex submittals involving major components or systems.
   7. Clearly identify any variations from Contact Documents and product or system limitations.
   8. Provide space for Contractor and Owner Representative’s review stamps.
   9. Revise and resubmit. Identify all changes made since previous submission.

D. By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals, Contractor represents that Contractor has determined and verified materials, field measurements, and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

E. Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by Owner Representative’s review of Shop Drawings, Product Data, Samples, or similar submittals unless Contractor has specifically informed Owner Representative in writing of such deviation at the time of submittal and Owner Representative has given written approval to the specific deviation. Contractor shall not be relieved of responsibility for errors or omission

in Shop Drawings, Product Data, Samples, or similar submittals by Owner Representative's approval thereof.

F. Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by Owner Representative on previous submittals.

G. Informational submittals upon which Owner Representative is not expected to take responsive action may be so identified in Contract Documents.

H. When professional certification of performance criteria of materials, systems, or equipment is required by Contract Documents, Owner Representative shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

3.02 OWNER REPRESENTATIVE'S ACTION

A. Owner Representative will review or take other appropriate action upon Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.
   1. Owner Representative's review of Contractor's submittals shall not relieve Contractor of the obligations under other requirements of Contract Documents.
   2. Owner Representative's review of a specific item shall not indicate approval of an assembly of which the item is a component.

B. Owner Representative's review shall not constitute approval of safety precautions or unless otherwise specifically stated by Owner Representative, of any construction means, methods, techniques, sequences, or procedures.

C. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of Contractor as required by Contract Documents.

D. Owner Representative's action will be taken with such reasonable promptness and in conformance with approved submittal log as to cause no delay in the Work or in the activities of Owner, Contractor, or separate contractors, while allowing sufficient time to permit adequate review.

END OF SECTION

# SECTION 01 35 16

# ALTERATION PROJECT PROCEDURES

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Products for patching and extending Work.

B. Examination and Preparation.

C. Installation.

D. Transitions and Adjustments.

E. Repair of damaged surfaces.

F. Finishes and Cleaning.

## PART 2 PRODUCTS

### 2.01 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials: As specified in Product sections. Match existing Products and Work for patching and extending Work.

B. Type and Quality of Existing Products: Determine by inspecting and testing Products where necessary, referring to existing Work as a standard.

## PART 3 EXECUTION

### 3.01 EXAMINATION

A. Verify that demolition is complete and areas are ready for installation of new Work.

B. Beginning of restoration Work means acceptance of existing conditions.

### 3.02 PREPARATION

A. Cut, move, or remove items as necessary for access to alteration Work. Comply with requirements of Section 01 73 29 – Cutting and Patching. Replace and restore at completion.

B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

C. Remove debris and abandoned items from area and from concealed spaces.

D. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.

E. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

### 3.03 INSTALLATION

A. Coordinate work of alterations to expedite completion sequentially and to accommodate Owner occupancy.

B. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to original or specified condition.

C. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material with a neat transition to adjacent finishes.

D. Recover and refinish exposed mechanical and electrical work exposed accidentally during the work.

E. Install Products as specified in individual sections.

3.04 TRANSITIONS

A. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

B. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Owner Representative and Owner.

3.05 ADJUSTMENTS

A. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls and ceilings to a smooth plane without breaks, steps, or bulkheads.

B. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition for Owner Representative's review.

C. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.

3.06 REPAIR OF DAMAGED SURFACES

A. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections resulting from work being performed.

B. Repair substrate prior to patching finish.

3.07 FINISHES

A. Finish surfaces as specified in individual Product sections.

B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.08 CLEANING

A. In addition to cleaning specified in Section 01 74 00, clean Owner-occupied areas of work immediately adjacent to alteration area and any other Owner-occupied areas affected by alteration work.

END OF SECTION

# SECTION 01 35 53

# SECURITY PROCEDURES

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Submittals

B. Security Program

C. Construction Security Fence

D. Entry Control

E. Tool, Equipment and Material Control

### 1.02 SUBMITTALS

A. Submit a detailed security plan outlining the Contractor’s methods to control unauthorized entry to the Owner’s building, and related construction areas.

B. Not Used

### 1.03 SECURITY PROGRAM

A. At all times, conduct operations under the Contract Documents to avoid unauthorized entry and to avoid the risk of loss, theft, or damage by vandalism, sabotage, or other means to the Work or Owner's operations.

B. At Project mobilization, initiate a security program to protect Work and Owner's operations from unauthorized entry or a risk of loss, theft, or damage to Contractor's property, Owner's property, and the Project Site.

C. Promptly take all reasonable precautions that are necessary and adequate against any conditions that involve unauthorized entry or a risk of loss, theft, or damage to Contractor's property, Owner's property, and the Project Site.

D. Continuously inspect Work, materials, equipment, and facilities to discover and determine any such conditions and be solely responsible for discovery, determination, and correction of any such condition.

E. Cooperate with Owner on all security matters and promptly comply with any Project security requirements established by Owner. Such compliance with these security requirements shall not:
   1. Relieve Contractor of Contractor’s responsibility for maintaining proper security for the above noted items.
   2. Be construed as limiting in any manner Contractor's obligation to undertake reasonable action as required to establish and maintain secure conditions at the Site.

F. Prepare and maintain accurate reports of incidents of loss, theft, or vandalism and furnish these reports to Owner within 24 hours. Date of the report shall not be later than 24 hours after the event or discovery of the event.

PART 2 PRODUCTS

1. Not used.

PART 3 EXECUTION

A. Not used.

SELECT ONE OF THE SECURITY LEVELS FROM THE 3 OPTIONS LISTED BELOW AS APPLICABLE TO THE PROJECT

B. Not Used.

C. Every employee on project site shall be identifiable.

D. All Contractor employees and subcontractor employees are required to submit to the Owner the results of a background investigation. No employee with a felony conviction shall be allowed on the project or the Owner's premises. Personnel with lesser offenses will be considered on a case-by-case basis. The Owner reserves the right to refuse access to any of the Contractor's, Subcontractor's or tiered subcontractor's personnel.

1. Contractor shall pay all cost related to a background investigation, which is to be performed by the Las Vegas Metropolitan Police Department and/or coordinated by the Owner.
2. The Owner reserves the right to perform its only background investigation for each individual assigned to this project at no additional cost to the Contractor. The Contractor must surrender each worker's name, address and social security number upon written request by the Owner.
3. The Owner will provide each worker that successfully completes the background check with a Clark County vendor badge. The ID must be conspicuously worn at all times while on the project site or adjacent properties.
4. Each access badge will be programmed or deprogrammed for electronic card key devices at the Owner's sold discretion.
5. The Contractor's Supervisor or other authorized personnel will be required to escort all authorized employees and/or subcontractors to and from the secured work zone.
6. The Project Superintendent and the Project Manager will receive immediate access to project related card key devices upon issuance of a form Notice to Proceed by the Owner.
7. Contractor shall confine daily operations to areas identified on a reviewed project schedule or as otherwise deemed appropriate by the Owner.
8. The Contractor must report lost or stolen badges to the Owner immediately upon discovery.
9. The Contractor shall be responsible to surrender all issued vendor identification badges prior to submitting an application for payment of retention.

INCLUDE THE FOLLOWING REQUIREMENTS FOR CORRECTIONAL AND COURT PROJECTS AS APPLICABLE.

3.02 TOOL, EQUIPMENT AND MATERIAL CONTROL

A. Only tools, equipment and materials necessary to each day's activity shall be brought on to the project site during each scheduled shift.

1. The Contractor shall coordinate vehicular access and egress within the security perimeter fences of the Owner's Property/Building with the designated Owner/End User Representative.
2. Equipment and vehicles used to load, off load, or perform work shall exit the secured perimeter area upon completion of the task and/or shift.

B. Contractor's Superintendent shall maintain a daily inventory sheet of each item that enters the project site (i.e. equipment, hand tools, power tools, accessories and parts, supplies, materials, etc.)

C. Owner may require the Contractor to remove all tools, equipment, and uninstalled materials from the site upon completion of each work day.

D. Contractor shall not leave any unused materials, materials off cuts, construction debris, or trash in any part of the Owner's Project/Building. The Contractor shall perform a thorough inspection and clean-up of the entire construction zone, and access route prior to departing the site at the end of each shift.

E. Contractor shall designate one person whose responsibility shall be to perform a thorough inspection of the work areas for items that need to be policed from the site.

END OF SECTION

# SECTION 01 42 16

# DEFINITIONS

PART 1 GENERAL

1.01 DEFINITIONS

A. Terms used in the Specifications shall have the meanings indicated in the following list:

1. **Aggregate Mix Testing:** Gradation testing shall be conducted by the approved testing firm. Two samples shall be taken from stockpile of material for approval before placement of aggregate begins. The testing firm shall also determine the maximum density per ASTM D1557. During placement of aggregate, one sample per day shall be taken for gradations.
2. **As Directed**: As directed, in writing, by Owner.
3. **Backbone**: Cabling and/or pathways used to interconnect equipment rooms.
4. **Calendar Day:** Any day of the week, month or year, and does not exclude weekend days (Saturday and/or Sunday) or holidays.
5. **Category 3**: Cabling and components which comply with all the applicable mechanical and electrical specifications for Category 3 cabling and connecting hardware as defined in ANSI/TIA/EIA568A *Commercial Building Telecommunications Cabling Standard* and TIA/EIA TSB67 *Field Testing of Unshielded Twisted Pair Cabling Systems*, as applicable.
6. **Category 6**: Cabling and components which comply with all the applicable mechanical and electrical specifications for Category 6 cabling and connecting hardware as defined in ANSI/TIA/EIA 568A *Commercial Building Telecommunications Cabling Standard* and TIA/EIA TSB67 *Field Testing of Unshielded Twisted Pair Cabling Systems*, as applicable.
7. **Change Order:** A written instrument prepared by Owner and signed by Owner, Contractor and Owner representative, stating their agreement upon a change in the Work which results in a change in the Contract Time and/or Contract Amount.
8. **Channel:** End-to-end cabling from the desk top equipment to the equipment port in the equipment room, including all cabling, cross connects, patched, connectors, termination hardware and patch cables.
9. **Committee:** "Committee" shall mean the Design Review Committee made up of End User and Real Property Management Project Representative.
10. **Concealed:** Embedded in masonry or other construction, installed behind walls, furrings or within double partitions or installed within hung ceilings or under raised floors.
11. **Conduit or Cable Tray or Ladder Rack or Ladder Rack:** The inclusion of all fittings, couplings, brushing, hangers, supports, sleeves, grounding hardware, etc.
12. **Construction Change Directive:** A written order prepared by Owner representative and signed by Owner and Architect, directing a change in the Work. Construction Change Directive allows the Work to proceed when Owner and Contractor do not agree upon a change to the Contract Sum or Contract Time required by a Change Order. Construction Change Directive requires agreement by Owner and Owner representative and may or may not be agreed to by Contractor.
13. **Design Criteria:** "Design Criteria" shall mean "Design Guidelines for Clark County Owned Facilities" as established and as amended from time to time.
14. **Drip and Emitter Irrigation:** Defined as being the same process and procedure. The terms may be used interchangeably.
15. **Enhanced Performance:** Cabling, termination hardware, basic links, and channels for which electrical characteristics are specified or otherwise defined to exceed the requirements for such characteristics defined in ANSI/TIA/EIA 568A *Commercial Building Telecommunications Cabling Standard* and TIA/EIA TSB67 *Field Testing of Unshielded Twisted Pair Cabling Systems*, as applicable.
16. **Equipment Rooms:** Service Entrance Rooms, Telecommunications Closets, Data Closets, Telephone Closets, Server Rooms, IDF Closets, Computer Rooms, etc.
17. **Exposed:** Not installed underground or CONCEALED as defined above.
18. **Extended Frequency:** Cabling, termination hardware, basic links, and channels for which electrical characteristics are specified or otherwise defined for frequency ranges beyond those defined in ANSI/TIA/EIA 568A *Commercial Building Telecommunications Cabling*

*Standard* and TIA/EIA TSB67 *Field Testing of Unshielded Twisted Pair Cabling Systems*, as applicable.

19. **Final Completion:** The stage in the progress of the Work of the Project, when all Work items and/or Facility elements included in the project is/are totally, complete, such that the OWNER can occupy or utilize the Work for its intended use, including all "Punch List" and corrective work required of the Construction Contractor and receipt and acceptance of all required documents. The date of approval of Final Completion will establish the official Final Approval Date of the Project; and initiate the authorization for **Final Payment** to the Contractor.
20. **Front Yard:** "Front Yard" shall mean the area between the building setback and property line which parallels any street.
21. **Floor Area:** "Floor Area" shall be gross floor area inclusive of all occupiable levels.
22. **High Fiber Count Cable:** Cabling which contains four (4) individual optical fibers under a common outer jacket.
23. **High Pair Count Cable:** Cabling which contains five (5) or more individual pairs of conductors under a common outer jacket.
24. **In-Place Dry Density:** Wherever the term "in-place dry density" is used, it shall mean the dry density as determined by (a) the ASTM D1556 methods for determining the density of soil by the sand cone method, or by (b) the ASTM D2922 method for determining the density of soil-in-place by the nuclear method and D3017 method for determining moisture content of soil-in-place by nuclear methods.
25. **Install:** To move from property line, set in place, join, unite, fasten, link, attach, set up, or otherwise connect together before testing and turning over to Owner or provider of equipment supplied under another division. Installations shall be complete and ready for regular operation.
26. **Latent Defect:** A latent defect is one which has been concealed in the works and may not become apparent for many years.
27. **Link or Basic Link**: End-to-end cabling from the work area outlet to the initial termination hardware in the equipment
28. **Owner:** "Owner" shall mean the County.
29. **Owner's Authorized (or Designated) Representative:** A member of the OWNER'S staff or Contract Employee of the OWNER who has been given specified limited authority to represent the OWNER during the course of the Project.
30. **Mixing Dampers:** Includes Outside Air, Return Air, and Exhaust Air Dampers within an AH.
31. **Modification:** A Supplemental Instruction; A Change Order; A Construction Change Directive; or a written amendment to the Contract signed by Owner, Owner representative, and Contractor.
32. **Net Parcel Area:** "Net Parcel Area" shall mean the area of a Parcel as measured to the property line or right-of-way limits of any public or private street, railroad, or highway.
33. **Notice of Final Completion:** Notice provided to the Contractor by the Owner upon Final Completion of the work.
34. **Optimum Moisture:** Wherever the term "optimum moisture" is used, it refers to that moisture content determined to be the optimum for compaction by the ASTM D1557 compaction test method.
35. **Pathways:** Conduits, cable trays, ladder racks, cable ladders, in-ceiling, under floor, riser or backbone cable routes, etc.
36. **Product Data:** Illustrations, standard schedules, performance charts, instruction brochures, diagrams, and other information furnished by Contractor to illustrate materials or equipment for some portion of the Work.
37. **Provide or Furnish:** To supply, purchase, transport, place, erect, connect, test and turn over to Owner, complete and ready for regular operation, the particular work referred to.
38. **Punch List:** Report prepared by Contractor, inclusive of all disciplines, to be supplemented by the Owner and A/E, compiling all deficiencies and repairs of the Project to be made and/or corrected by the Contractor prior to the final completion, acceptance of the construction of the Project and final payment.
39. **Rear Yard:** "Rear Yard" shall mean the area between the building setback and property line which is opposite of the Front Yard. When two Front Yards occur on a corner Parcel, the Rear Yard shall be opposite of the longest Front Yard.

40. **Relative Compaction:** Wherever the term "relative compaction" is used, it refers to the required in-place dry density of soil expressed as a percentage of the maximum dry density of the same soil type as determined by the ASTM D1557 compaction test method.
41. **Relative Density:** Wherever the term "relative density" is used, it refers to the required in-place density of a granular soil expressed as the ratio of (1) difference between the void ratio of cohesion less soil in the loosest state and any given void ratio of (2) the difference between its void ratios in the loosest and densest states.
42. **Request for Information (RFI):** Formal process used during construction phase to facilitate communication between Contractor and Owner representative or Owner's Representative with regard to requests for additional information and clarification of intent of Contract Documents (Drawings and Specifications).
43. **Samples:** Physical examples which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged
44. **Service Areas:** "Service Areas" shall mean areas and yards used for loading facilities, vehicle and trailer storage, storage of materials, products, or waste products and trash on developed Parcels. (Also known as outdoor storage.)
45. **Shop Drawings:** Drawings, diagrams, schedules, and other data specially prepared fir the Work by Contractor, subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work
46. **Side Yard:** "Side Yard" shall mean the area between the building setback and property line which is generally perpendicular to the Front Yard. When two Front Yards occur on a corner Parcel, the Side Yard shall be generally perpendicular to the longest Front Yard.
47. **Substantial Completion:** The stage in the progress of the Work of the Project, when all Work items and/or Facility elements included in the project, or designated portion thereof, is/are sufficiently complete in accordance with the Contract Documents and such that the OWNER can occupy or utilize the Work for its intended use, and that any remaining activity of the Construction Contractor shall not interfere with such use. The date of approval of Substantial Completion will establish the official Substantial Completion Date, and initiate the preparation of the Project Punch List, for final and corrective work to be accomplished by the Contractor.
48. **Supplemental Instruction:** An order for a minor change in the Work issued by Owner representative involving no changes in the Contract Amount or Contract Time.
49. **Supply:** To purchase, procure, acquire, and deliver complete with related accessories.
50. **System Workstation/Printer:** The computer and printer utilized to access the system. This will be on-site if an on-site computer/printer is specified; otherwise it describes the head-end equipment located at the EMS department.
51. **Telecommunications Cabling System:** Includes all cables, connectors, termination hardware, supports, cable trays, ladder racks, equipment cabinets and cable termination frames described herein and in the associated specifications sections.
52. **Termination Hardware:** Jacks, plugs, connectors, couplers, patch panels and punch down blocks for copper or optical fiber cabling.
53. **Wiring or Cabling:** The inclusion of all conductors, connectors, connections, terminations and termination hardware and all other items necessary and/or required in connection with such work.
54. **Work Area:** The area defined in the Contract Documents by the limits of construction.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

# SECTION 01 42 19

# REFERENCE STANDARDS

## PART 1 GENERAL

### 1.01 REQUIREMENTS IN GENERAL

A. Comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work.

B. It is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if Contractor observes that portions of the Contract Documents are at variance therewith, Contractor shall promptly notify Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

C. If Contractor performs Work knowing it to be contrary to laws, statues, ordinances, building codes, and rules and regulations without such notice to Architect/Engineer and Owner, Contractor shall assume full responsibility for such Work and shall bear the attributable costs.

D. Permits and Fees: Comply with requirements specified in the General Conditions.

E. Taxes: Comply with requirements specified in the General Conditions.

F. Business Regulations:
   1. Comply with all federal, state, and local laws relative to conducting business in Clark County including, but not limited to, licensing, labor, and health laws, and including NRS 338.010 through 338.180, as amended, if applicable.
   2. The laws of the State of Nevada will govern as to the interpretation, validity, and effect of this bid, its award, and any contract entered into.

### 1.02 QUALITY ASSURANCE

A. For products or workmanship specified by association, trades, or federal standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Contract Documents unless a date is specified in a technical section.

C. Should specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

### 1.03 SCHEDULE OF REFERENCES

A. The following are definitions of abbreviations that occur, or may occur, elsewhere in these general requirements and technical requirements. Inclusion here of a reference to an industry standards group is for the purpose of the definition of the abbreviation. Inclusion in the work of this construction contract industry's standards group is referenced elsewhere in these general requirements and/or technical requirements.

| | |
|---|---|
| AA | Aluminum Association<br>1525 Wilson Boulevard, Suite 600<br>Arlington, VA 22209<br>www.aluminum.org |

| | |
|---|---|
| AABC | Associated Air Balance Council<br>1518 "K" Street N. W.<br>Washington, DC 20005<br>www.aabc.com |
| AAMA | American Architectural Manufacturers Associations<br>1827 Walden Office Square, Suite 550<br>Schaumburg, IL 60173<br>www.aamanet.org |
| AASHTO | American Association of State Highway and Transportation Officials<br>444 North Capitol Street N. W., Suite 249<br>Washington, DC 20001<br>www.transportation.org |
| ACI | American Concrete Institute<br>38800 Country Club Drive<br>Farmington Hills, MI 48331<br>www.concrete.org |
| ACGIH | American Conference of Governmental Industries Hygienists<br>6500 Glenway, Building D-7<br>Cincinnati, OH 45211<br>www.acgih.org |
| ADA | Americans with Disabilities Act of 1990<br>950 Pensylvania Ave., N.W.<br>Civil Rights Division<br>Disability Right Section – HYA<br>Washington, DC 20530<br>www.ada.gov |
| ADC | Air Diffusion Council<br>1901 N. Roselle Road, Suite 800<br>Schaumburg, IL 60195<br>www.flexibleduct.org |
| AF&PA | American Forest & Paper Association<br>1111 19th St., NW Suite 800<br>Washington, DC 20036<br>www.afandpa.org |
| AGC | Associated General Contractors of America<br>2300 Wilson Blvd., Suite 400<br>Arlington, VA 22201<br>www.agc.org |
| AHA | American Hardwood Association<br>1210 West N.W. Highway<br>Palatine, IL 60067<br>www.hardwoodinfo.com |
| AI | Asphalt Institute<br>2696 Research Park Dr.<br>Lexington, KY 40511<br>www.asphaltinstitute.org |

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|---|---|
| AIA | American Institute of Architects<br>1735 New York Avenue N. W.<br>Washington, DC 20006<br>www.aia.org |
| AISC | American Institute of Steel Construction<br>One East Wacker Dr., Suite 700<br>Chicago, IL 60601<br>www.aisc.org |
| AISI | American Iron and Steel Institute<br>1140 Connecticut Ave., NW<br>Washington, DC 20036<br>www.steel.org |
| AITC | American Institute of Timber Construction<br>7012 S. Revere Parkway, Suite 140<br>Centennial, CO 80112<br>www.aitc-glulam.org |
| ALI | Automotive Lift Institute<br>PO Box 85<br>Cortland, NY 13045<br>www.autolift.org |
| AMA | Air Movement and Control Association<br>30 West University Drive<br>Arlington Heights, IL 60004<br>www.amca.org |
| ANSI | American National Standards Institute<br>25 West 43rd Street, 4th Floor<br>New York, NY 10036<br>www.ansi.org |
| APA | American Plywood Association<br>7011 S. 19th St<br>Tacoma, WA 98466<br>www.apawood.org |
| ARI | Air-Conditioning and Refrigeration Institute<br>2111 Wilson Boulevard, Suite 500<br>Arlington, VA 22201<br>www.ari.org |
| ASAE | American Society of Agriculture Engineers<br>2950 Niles Road<br>St. Joseph, MI 49085<br>www.asabe.org |
| ASCE/SEI | American Society of Civil Engineers<br>Structural Engineering Institute<br>1801 Alexander Bell Drive<br>Reston, VA 20191<br>www.asce.org |
| ASHRAE | American Society of Heating, Refrigeration and Air Conditioning Engineers<br>1791 Tullie Circle N. E.<br>Atlanta, GA 30329<br>www.ashrae.org |

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| ASME | American Society of Mechanical Engineers<br>Three Park Avenue<br>New York, NY 10016<br>www.asme.org |
| ASPA | Turfgrass Producers Internationals<br>(formerly American Sod Producers Association)<br>4415 West Harrison Street<br>Hillside, IL 60162<br>www.furfgrasssod.com |
| ASTM | ASTM Internationals (formerly American Society for Testing and Materials)<br>100 Barr Harbor Drive<br>PO Box C700<br>West Conshohocken, PA 19428<br>www.astm.org |
| AWC I | The Association of the Wall and Ceiling Industries International<br>513 West Broad Street, Suite 210<br>Fall Church, VA 22046<br>www.awci.org |
| AWI | Architectural Woodwork Institute<br>46179 Westlake Drive<br>Suite 120<br>Potomac, Falls, VA 20165<br>www.awinet.org |
| AWPA | American Wood-Preservers' Association<br>7735 Old Georgetown Road<br>Bethesda, MD 20014<br>www.awpa.com |
| AWS | American Welding Society<br>550 LeJeune Road N. W.<br>Miami, FL 33135<br>www.aws.org |
| AWWA | American Water Works Association<br>6666 West Quincy Avenue<br>Denver, CO 80235<br>www.awwa.org |
| BIA | Brick Institute of America<br>1850 Centennial Park Drive, Suite 301<br>Reston, VA 22091<br>www.bia.org |
| BHMA | Builders Hardware Manufacturers Association<br>355 Lexington Avenue, 17th Floor<br>New York, NY 10017<br>www.buildershardware.com |
| BICSI | Building Industry Consulting Services International Standards<br>8610 Hidden River Parkway<br>Tampa, FL 33637<br>www.bicsi.org |

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| CDA | Copper Development Association<br>57th Floor, Chrysler Building<br>405 Lexington<br>New York, NY 10174<br>www.copper.org |
| CGSB | Canadian General Standards Board<br>222 Queens Street<br>14th Floor, Suite 1402<br>Ottawa, Ontario, Canada KIA 1G6<br>www.tpsgc-pwgsc.gc.ca. |
| CLFMI | Chain Link Fence Manufacturers Institute<br>10015 Old Columbia Road, Suite B-215<br>Columbia, MD 21046<br>http://www.associationsites.com/main-pub.cfm?usr=clfma |
| CRSI | Concrete Reinforcing Steel Institute<br>933 Plum Grove Road<br>Schaumburg, IL 60195<br>www.crsi.org |
| CSA | Canadian Standards Association<br>5060 Spectrum Way, Suite 100<br>Mississauga, Ontario, L4W 5N6 Canada<br>www.csa.ca |
| CPSC | Consumer Product Safety Commission<br>4330 East West Highway<br>Bethesda, MD 20814<br>www.cpsc.gov |
| CSSB | Cedar Shake and Shingle Bureau<br>PO Box 1178<br>Sumas, WA 98295<br>www.cedarbureau.org |
| DASMA | Door and Access Systems Manufacturers Association International<br>1300 Sumner Avenue<br>Cleveland, OH 44115<br>www.dasma.com |
| DHI | Door and Hardware Institute<br>14150 Newbrook Drive, Suite 200<br>Chantilly, VA 20151<br>www.dhi.org |
| DOL | U.S. Department of Labor<br>c/o Superintendent of Documents<br>U.S. Government Printing Office<br>Washington, DC 20402<br>www.dol.gov |
| DOT | U.S. Department of Transportation<br>c/o Superintendent of Documents<br>U.S. Government Printing Office<br>Washington, DC 20402<br>www.dot.gov |

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| EJCDC | Engineers' Joint Contract Documents Committee<br>American Consulting Engineers Council<br>1015 15th Street N. W., 8th floor<br>Washington, DC 20005<br>www.ejcdc.org |
| EJMA | Expansion Joint Manufacturers Association<br>25 North Broadway<br>Tarrytown, NY 10591<br>www.ejma.org |
| EPA | Environmental Protection Agency<br>1200 Pennsylvania Avenue NW<br>Washington, DC 20004<br>www.epa.gov |
| FEMA | Federal Emergency Management Agency<br>Federal Center Plaza<br>500 C Street S.W.<br>Washington, DC 20472<br>www.fema.gov |
| FCC | Federal Communications Commission<br>445 12th Street, SW<br>Washington, DC 20554<br>www.fec.gov |
| FGMA | Glass Association of North America (GANA)<br>(formerly Flat Glass Marketing Association)<br>White Lakes Professional Building<br>3310 Harrison<br>Topeka, KS 66611<br>www.glasswebsite.com |
| FM | Factory Mutual System<br>21860 Burbank Blvd.<br>Suite 300<br>South Lobby<br>Woodland Hills, CA 91367<br>www.FMGlobal.com |
| FS | Federal Specification General Services Administration<br>Specifications and Consumer Information,<br>Distribution Section (WFSIS)<br>Washington Navy Yard, Bldg. 197<br>Washington, DC 20407<br>www.gsa.gov |
| GA | Gypsum Association<br>6525 Belcrest Road, Suite 480<br>Hyattsville, MD 20782<br>www.gypsum.org |
| HPVA | Hardwood Plywood Veneer Association<br>1825 Michael Faraday Drive<br>Reston, VA 20190<br>www.hpva.org |

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| ICBO | International Conference of Building Officials<br>5360 S. Workman Mill Road<br>Whittier, CA 90601<br>www.icbo.org |
| ICC | International Code Council, Inc.<br>500 New Jersey Ave., NW<br>6th Floor<br>Washington, DC 20001<br>www.iccsafe.org |
| IEEE | Institute of Electrical and Electronics Engineers<br>3 Park Avenue, 17th Floor<br>New York, NY 10016<br>www.ieee.org |
| IFCI | International Fire Code Institute<br>ICC Headquarters<br>500 New Jersey Ave., NW<br>6th Floor<br>Washington, DC 20001<br>www.ifci.org |
| IMIAC | International Masonry Industry All-Weather Council<br>International Masonry Institute<br>815 15th Street N. W.<br>Washington, DC 20005<br>www.imiweb.org |
| IPEMA | International Playground Equipment Manufacturers Association<br>4305 North Sixth Street, Suite A<br>Harrisburg, PA 17110<br>www.ipema.org |
| ISO | International Standards Organization<br>ISO central Secretariat, rue de Varembee, Case postale 56<br>CH-1211 Geneva 20, Switzerland<br>www.iso.org |
| ITA | Intertek Testing Services<br>Americas Intertek<br>Suite 200<br>2200 West Loop South<br>Houston, TX 77027<br>www.intertek-etlsemko.com |
| MBMA | Metal Building Manufacturer's Association<br>1300 Sumner Ave.<br>Cleveland, OH 44115<br>www.mbma.com |
| MFMA | Maple Flooring Manufacturers Association<br>111 Deer Lake Road, Suite 100<br>Deerfield, IL 60016<br>www.maplefloor.org |
| MIL | Military Specification Naval Publications and Forms Center<br>5801 Tabor Avenue<br>Philadelphia, PA 19120<br>www.dtic.mil<br>http://navalforms.daps.dia.mil |

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| ML/SFA | Metal Lath/Steel Framing Association<br>National Association of Architectural Metal Manufacturers<br>800 Roosevelt Rd.<br>Bldg. C, Suite 312<br>Glen Ellyn, IL 60137<br>www.naamm.org |
| NAAMM | National Association of Architectural Metal Manufacturers<br>800 Roosevelt Rd.<br>Bldg. C, Suite 312<br>Glen Ellyn, IL 60137<br>www.naamm.org |
| NADCA | National Air Duct Cleaners Association<br>1518 K. St NW, Suite 503<br>Washington, DC 20005<br>www.nadca.com |
| NAAQS | National Ambient Air Quality Standards<br>Ariel Rio Building<br>1200 Pennsylvania Ave. N.W.<br>Washington, DC 20004<br>www.epa.gov/air/criteria.html |
| NCMA | National Concrete Masonry Association<br>13750 Sunrise Valley Drive<br>Herndon, VA 20171<br>www.ncma.org |
| NEMA | National Electrical Manufacturer's Association<br>1300 North 17th Street, Suite 1752<br>Rosslyn, VA 22209<br>www.nema.org |
| NEC | National Electric Code<br>National Fire Protection Association<br>1 Batterymarch Park<br>Quincy, MA 02269<br>www.nfpa.org/70 |
| NECA | National Electrical Contractors Association<br>3 Bethesda Metro Center, Suite 1100<br>Bethesda, MD 20814<br>www.necanet.org |
| NFPA | National Fire Protection Association<br>1 Batterymarch Park<br>Quincy, MA 02269<br>www.nfpa.org |
| NFPA | National Forest Products Association<br>1619 Massachusetts Avenue N. W.<br>Washington, DC 20036<br>www.afandpa.org |
| NOAA | National Oceanic and Atmospheric Administration<br>1401 Constitution Avenue, NW<br>Room 5128<br>Washington, DC 20230<br>www.noaa.gov |

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| NRCA | National Roofing Contractors Associations<br>10255 W. Higgins Rd., Suite 600,<br>Rosemont, IL 60018-5607<br>(847) 299-9070<br>www.nrca.net |
| NSWMA | National Solid Wastes Management Association<br>4301 Connecticut Avenue, NW<br>Suite 300<br>Washington, DC 20008<br>www.environmentalistseveryday.org |
| NTMA | The National Terrazzo and Mosaic Association, Inc.<br>201 North Maple, Suite 208<br>Purcellville, VA 20132<br>www.ntma.com |
| NWMA | National Woodwork Manufacturers Association<br>205 W. Touhy Avenue<br>Park Ridge, IL 60068<br>www.wdma.com |
| NWWDA | National Wood Window and Door Association<br>1400 E. Touhy Avenue<br>O'Hare, IL 60018<br>www.nwwda.org |
| PCA | Portland Cement Association<br>5420 Old Orchard Road<br>Skokie, IL 60077<br>www.cement.org |
| PCI | Pre-stressed Concrete Institute<br>209 W. Jackson Blvd.<br>Chicago, IL 60606<br>www.pci.org |
| PIMA | Polyisocyanurate Insulation Manufacturers Association<br>7315 Wisconsin Avenue, Suite 400E<br>Bethesda, MD 20814<br>www.pima.org |
| PS | Product Standard<br>US Department of Commerce<br>1401 Constitution Ave., N.W.<br>Washington, DC 20203<br>www.commerce.gov |
| PTI | Post-Tensioning Institute<br>38800 Country Club Drive<br>Farmington Hills, MI 48331<br>www.post-tensioning.org |
| RCSHSB | Red Cedar Shingle and Handsplit Shake Bureau<br>515 116th Avenue<br>Bellevue, WA 98004<br>www.cedarbureau.org |

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| RIS | Redwood Inspection Service<br>818 Grayson Road, Suite 201<br>Pleasant Hill, CA 94523<br>www.redwoodinspection.com |
| RMI | Rack Manufacturers Institute<br>8720 Red Oak Boulevard, Suite 201<br>Charlotte, NC 28217<br>www.mhia.org |
| SDI | Steel Deck Institute<br>P. O. Box 25<br>Fox River grove, IL 60021<br>www.sdi.org |
| SDI | Steel Door Institute<br>30200 Detroit Avenue<br>Westlake, OH 44145<br>www.steeldoor.org |
| SIGMA | Insulating Glass Manufacturer's Alliance (IGMA)<br>(formerly Sealed Insulating Glass Manufacturers Association)<br>401 N. Michigan Avenue, Suite 2400<br>Chicago, IL 60611<br>www.igmaonline.org |
| SJI | Steel Joist Institute<br>1173B London Links Drive<br>Forest, VA 24551<br>www.steeljoist.org |
| SMACNA | Sheet Metal and Air Conditioning Contractors' National Association<br>4201 Lafayette Center Drive<br>Chantilly, VA 20151<br>www.smacna.org |
| SPRI | Single-Ply Roofing Institute<br>411 Waverly Oaks Road, Suite 331B<br>Waltham, MA 02452<br>www.spri.org |
| SSPC | Society for Protective Coatings<br>(formerly Steel Structures Painting Council)<br>40 24th Street, 6th Floor<br>Pittsburgh, PA 15222<br>www.sspc.org |
| TCNA<br>or TCA | Tile Council of North America, Inc.<br>100 Clemson Research Blvd.<br>Anderson, SC 29625<br>www.tileusa.com |
| TIA/EIA | Electronic Industries Association/Telecommunications Industries Association<br>2500 Wilson Boulevard<br>Arlington, VA 22201<br>www.eia.org |

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| TDMM | Telecommunications Distribution Methods Manual<br>BICSA<br>8610 Hideen River Parkway<br>Tampa, FL 33637<br>https://www.bicsi.org/book_details.aspx?Book=TDMM-CM-12.0-v5&d=0 |
| TMS | The Masonry Society<br>3970 Broadway, Unit 201-D<br>Boulder, CO 80304<br>www.masonrysociety.org |
| TPI | Truss Plate Institute<br>218 N. Lee Street, Suite 312<br>Alexandria, VA 22314<br>www.tpinst.org |
| UBC | Uniform Building Code<br>International Code Council<br>500 New Jersey Ave., N.W.<br>6th Floor<br>Washington, DC 20001<br>www.iccsafe.org |
| UFC | Uniform Fire Code<br>National Fire Protection Association<br>1 Batterymarch Park<br>Quincy, MA 02269<br>www.nfpa.org |
| UL | Underwriters' Laboratories, Inc.<br>333 Pfingston Road<br>Northbrook, IL 60062<br>www.ul.com |
| USC | United States Code<br>c/o Superintendent of Documents<br>U.S. Government Printing Office<br>Washington, DC 20402<br>www.gpoaccess.gove/uscode/index.html |
| WCLIB | West Coast Lumber Inspection Bureau<br>6980 S. W. Varns Road, Box 23145<br>Tigard, OR 97223<br>www.wclib.org |
| WDMA | Window and Door Manufacturer Association<br>1400 East Touhy Avenue #470<br>Des Plaines, IL 60018<br>www.nwwda.org |
| WHI | Warnock Hersey Incorporated<br>Suite 200<br>2200 West Loop South<br>Houston, TX 77027<br>www.intertek-etlsemko.com |
| WIC | Woodwork Institute of California<br>PO Box 980247<br>West Sacramento, CA 95798<br>www.wicnet.org |

WRI Wire Reinforcement Institute, Inc.
942 Main Street, Suite 300
Hartford, CT 06103
www.wirereinforcementinstitute.org

WWPA Western Wood Products Association
522 SW Fifth Avenue, Suite 500
Portland, OR 97204
www.wwpa.org

Arboriculture, The Care of Trees, Shrubs, and Vines, 1983, Richard W. Harris, Prentice-Hall, Pruning Standards.

Applicable Electric Utility - Electric Service Requirements

American Standard for Nursery Stock; Latest edition by American National Standards Institute, Inc. (Z60.1) ISBN 1-890148-06-7

Applicable Telephone Utility - Outside Plant Engineering/Contract Work/Underground Construction Requirements.

Building Distribution Standards/Guidelines

Carcinogen List of the National Toxicology Program

Clark County Applicable Cable Television Utility - Service requirements (Cox or other).

Clark County Cable Administration Standards – Obtain latest edition from CCRPM.

Clark County Department of Air Quality Management Air Pollution Control Regulations

Clark County Labeling Standards for IT Cabling - Obtain latest edition from CCRPM.

Clark County Uniform Standard Specifications for Public Works Construction, Off-Site Improvements

Hortus Third, 1976; Cornell University- plant nomenclature.

Industrial Workplace Standard (OSHA 29 CFR 1926)

International Agency for Research on Cancer list of Chemical Carcinogens

Nevada Work Zone Traffic Control for Public Works' Construction, Off-site Improvements, Clark County Area, Nevada

Southern Nevada Health District
www.southernnevadahealthdistrict.org

Southern Nevada Water Authority (snwa.com) for drought tolerant landscape design reference.

Recommended Tree Specifications, Arizona Nursery Association Grower's Committee, latest edition, Arizona Nursery Association.

Reproductive Toxin List of the Catalog of Teratogenic Agents

Uniform Standard Specifications for Public Works' Construction, Off-Site Improvements, Clark County Area, Nevada

Uniform Traffic Devices Manual, 1988

1.04 STATUTORY REQUIREMENTS FOR CONSTRUCTION CONTRACTS AND SUBCONTRACTS

A. Each Contractor or subcontractor shall comply with laws and all applicable standards, orders, or regulations issued pursuant thereto; including but not limited to the following:

1. The Copeland "Anti-Kickback" Act, as amended (18 USC 874) as supplemented in Department of Labor regulations (41 CFR Chapter 60).
2. Nondiscrimination, Title VI of the Civil Rights Act of 1964 (PL 88-352), as amended, (42 USC 2000d) and the requirements imposed by the regulations of the Department of Commerce (15 CFR Part 8) issued pursuant to that title.
3. The Flood Disaster Protection Act of 1973 (PL 93-234), as amended.
4. Architectural Barriers Act (PL 90-480), 42 USC 4151, as amended.
5. Rehabilitation Act of 1973, 29 USC 794, Executive Order 11914.
6. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (PL 91-646, as amended) 15 CRF Part 916.
7. The National Environmental Policy Act of 1979 (PL 90-1890); the National Historic Preservation Act of 1966 (80 Stat 915, 16 USC 470); and Executive Order No. 11593 of May 31, 1971.
8. Equal Employment Opportunity, Executive Order 11246, as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Chapter 60).
9. Certification of Non-segregated Facilities as Required by the May 9, 1967, Order (32 FR 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor.
10. The Clean Air Act, as amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.
11. The Power Plant and Industrial Fuel Use Act of 1978 (92 Stat. 3318. PL 95-620) relating to the conservation of petroleum and natural gas.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

# SECTION 01 45 00

# QUALITY CONTROL

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. References

B. Design Data and Calculations

C. Test Reports and Certifications

D. Manufacturer's Installation Instructions

E. Quality Control - Control of Installation.

F. Mockups

G. Labeling

H. Examination

I. Preparation

J. Uncovering of Work.

K. Correction of Work.

L. Nonconforming Work.

M. Owner's Right to Stop the Work.

N. Owner's Right to Carry Out the Work.

O. Tolerances.

P. Inspection and Testing Laboratory Services.

Q. Manufacturers' Field Services and Reports.

R. Safety Precautions and Programs.

S. City of Las Vegas Special Inspector or Third Party Special Inspector.

T. Clark County Special Inspector or Third Party Inspector.

### 1.02 REFERENCES

A. For products or workmanship specified by association, trades, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Unless otherwise specified, reference to such standards or codes is solely for implementation of the technical portions of such standards and codes.

C. Wherever references are made in the Contract Documents to standards or codes in accordance with which work is to be performed or tested, the edition or revision of the standards or codes current on the date for receiving bids shall apply, unless otherwise expressly set forth.

D. The contractual relationship, duties, and responsibilities of the parties in Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.03 DESIGN DATA AND CALCULATIONS

A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide design data and calculations.

B. Accuracy of design data and calculations are the responsibility of the Contractor.

C. When so specified, prepare design data and calculations under the direction of a professional engineer licensed in the state in which the Project is located. Affix Engineer's seal to submittals.

1.04 TEST REPORTS AND CERTIFICATIONS

A. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide test reports and manufacturer's certifications

B. Indicate that material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Submittal may be recent or previous test results on material or Product, but must be acceptable to the Owner representative.

1.05 MANUFACTURER'S INSTALLATION INSTRUCTIONS

A. When Contract Documents require that Products be installed in accordance with manufacturer's instructions:
   1. Submit manufacturer's most recent printed instructions for delivery, storage, assembly, installation, start-up, adjusting and finishing as applicable.
      a. Submit with Product Data in accordance with requirements of Section 01 33 00.
      b. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
      c. Identify conflicts between manufacturer's instructions and requirements of Contract Documents.
   2. Perform installation of Products to comply with requirements of manufacturer's instructions.
   3. If installation cannot be performed in accordance with manufacturer's instructions, notify Owner representative and await instructions.

1.06 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce Work of specified quality.

B. Comply with manufacturers' instructions including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Owner representative before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality.

F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.07 MOCKUPS

A. Definition:
   1. Mockups are field samples constructed, applied or assembled at the project site for review by the Owner and Owner representative that illustrate materials, equipment or workmanship.
   2. Approved mockups establish the standard of quality by which the Work will be judged.

B. Construct, apply or assemble specified items, with related attachment and anchorage devices, flashings, seals and finishes.

C. Perform work in accordance with applicable specification sections, using the same workman who will provide the actual work.

D. Erect at project site at location acceptable to Owner representative and Owner. Protect from damage.

E. Removal:
   1. Mockups may remain as part of the Work only when so designated in individual specification sections.
   2. Do not remove mockups until removal is approved by Owner representative or upon Final Completion.
   3. Where mockup is not permitted to remain as part of the Work, clear area after removal of mockup has been approved by Owner representative.

PART 2 PRODUCTS

2.01 LABELING

A. Attach label at manufacturing facility from agency approved by AHJ for products, assemblies and systems required to be labeled by applicable code. Labels required by AHJ shall not be installed in the field.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label.
   1. Model number.
   2. Serial number.
   3. Performance characteristics.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specifications sections.

D. Verify utility services are available, or correct characteristics, and in correct locations.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufactured required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

3.03 UNCOVERING OF WORK

A. If a portion of the Work is covered contrary to Owner's representative or Owner's request or to requirements specifically expressed in the Contract Documents, this Work shall, if required in writing by Owner representative, be uncovered for Owner's representative observation and be replaced at Contractor's expense without change in the Contract Time or additional cost to the Owner.

B. If a portion of the Work has been covered which Owner representative has not specifically requested to observe prior to its being covered, Owner representative may request to see such Work and it shall be uncovered by Contractor.
   1. If such Work is in accordance with Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be charged to Owner.
   2. If such Work is not in accordance with Contract Documents, Contractor shall pay such costs unless the condition was caused by Owner or a separate contractor in which event Owner will be responsible for payment of such costs.

3.04 CORRECTION OF WORK

A. Promptly correct Work rejected by Owner representative or Owner or failing to conform to Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear cost of correcting such rejected Work, including additional testing and inspections and compensation for Owner's representative services and expenses made necessary thereby.

B. If within one year after the commencement of warranties or by terms of an applicable special warranty required by Contract Documents, any of the Work is found to be not in accordance with Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner representative or Owner to do so unless Owner representative or Owner has previously given Contractor a written acceptance of such condition.
   1. This period of one year shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.
   2. This obligation shall survive acceptance of the Work under the Contract and the actual performance of the Work.
   3. Owner representative or Owner shall give notice promptly after discovery of the condition.
   4. This period of one year shall not limit the Owner's rights with respect to latent defects, gross mistakes, or fraud.

C. Remove from the site, portions of the Work which are not in accordance with Contract Documents and are neither corrected by Contractor nor accepted by Owner representative or Owner.

D. If Contractor fails to correct nonconforming Work within a reasonable time, Owner may correct it.
   1. If Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from Owner, Owner may remove it and store the salvageable materials or equipment at Contractor's expense.
   2. If Contractor does not pay costs of such removal and storage within ten (10) days after written notice, Owner may, upon ten (10) additional days' written notice, sell such materials and equipment at auction or at private sale and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by Contractor, including compensation for Owner's services and expenses made necessary thereby.
   3. If such proceeds of sale do not cover costs that Contractor should have borne, the Contract Sum shall be reduced by the deficiency.
   4. If payments then or thereafter due Contractor are not sufficient to cover such amount, Contractor shall pay the difference to Owner.

E. Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of Owner or separate contractors caused by Contractor's correction or removal of Work which is not in accordance with Contract Documents.

3.05 NONCONFORMING WORK

A. If Owner representative or Owner prefers to accept Work that is not in accordance with Contract Documents, Owner representative or Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

B. Owner representative will have authority to reject Work that does not conform to Contract Documents.
   1. Whenever Owner representative considers it necessary or advisable for implementation of the intent of Contract Documents, Owner representative will have authority to require additional inspection or testing of the Work, whether or not such Work is fabricated, installed, or completed.
   2. However, neither this authority of Owner representative nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of Owner representative to Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

C. Owner representative will provide Contractor with the nature of nonconformance of work through form provided at end of this Section (Non-Conforming Work Notice). Contractor shall provide proposed correction on this same form.

3.06 OWNER'S RIGHT TO STOP THE WORK

A. If Contractor fails to correct Work which is not in accordance with Contract Documents or persistently fails to carry out Work in accordance with Contract Documents, Owner, by written order signed personally or by an agent specifically so empowered by Owner in writing, may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated.

B. Right of Owner to stop the Work shall not give rise to a duty on the part of Owner to exercise this right for the benefit of Contractor or any other person or entity.

3.07 OWNER'S RIGHT TO CARRY OUT THE WORK

A. If Contractor defaults or neglects to carry out the Work in accordance with Contract Documents and fails within a seven (7) day period after receipt of written notice from Owner to commence and continue correction of such default or neglect with diligence and promptness, Owner may after such seven (7) day period give Contractor a second written notice to correct such deficiencies within a second seven (7) day period.

B. If Contractor within such second seven (7) day period after the receipt of such second notice fails to commence and continue to correct any deficiencies, Owner may, without prejudice to other remedies Owner may have, correct such deficiencies.
   1. In such case an appropriate Change Order shall be issued deducting from payments, then or thereafter, services and expense made necessary by such default, neglect or failure.
   2. If payments then or thereafter due Contractor are not sufficient to cover such amounts, Contractor shall pay the difference to Owner.

3.08 TOLERANCES

A. Monitor tolerance control of installed products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Owner representative before proceeding.

C. Adjust products to appropriate dimensions; position before securing Products in place.

## 3.09 INSPECTION AND TESTING LABORATORY SERVICES

A. Owner will, as needed or required, appoint, employ, and pay for specified services of an independent firm to perform inspecting and testing as specified herein and in accordance with the requirements specified in Section 01 45 29 – Testing Laboratory Services.

B. The independent firm will perform inspections, tests, and other services specified in individual specification sections and as required by Owner representative or AHJ.

C. Inspecting, testing, and source quality control may occur on or off the project site. Perform off-site inspecting or testing as required by Owner representative or AHJ.

D. Reports will be submitted by the independent firm to Owner representative, Owner, and Contractor indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

E. Contractor shall cooperate with independent firm. Furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
   1. Notify Owner representative, Owner and independent firm forty-eight (48) hours prior to expected time of operations requiring services.
   2. Make arrangements with independent firms and pay for additional samples and tests required for Contractor's use.

F. Testing or inspecting does not relieve Contractor of responsibility to perform Work to Contract requirements.

G. Retesting required because of non-conformance to specified requirements shall be paid by Contractor.

## 3.10 MANUFACTURER’S FIELD SERVICES AND REPORTS

A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, and start-up of equipment as applicable and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

C. Notify Owner and Owner representative seven (7) days prior to the arrival of all manufacturers’ field service representatives and provide name of individual and firm they represent.

## 3.11 SAFETY PRECAUTIONS AND PROGRAMS

A. Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

B. Take reasonable precautions for safety of, and provide reasonable protection to prevent damage, injury, or loss to:
   1. Employees on the Work and other persons who may be affected thereby.
   2. The Work and materials and equipment to be incorporated therein, whether in storage on- or off-site, under care, custody, or control of Contractor or Contractor's Subcontractors or Sub-subcontractors.
   3. Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

C. Give notices and comply with applicable laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury, or loss.

D. Erect and maintain, as required by existing conditions and performance of Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying Owners and users of adjacent sites and utilities.

E. When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, exercise utmost care and carry on such activities under supervision of properly qualified personnel.

F. Promptly remedy damage and loss (other than damage or loss insured under property insurance required by Contract Documents) to property caused in whole or in part by Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which Contractor is responsible, except damage or loss attributable to acts or omissions of Owner, Owner representative, or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of Contractor.

G. Designate a responsible member of Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be Contractor's Superintendent unless otherwise designated by Contractor in writing to Owner representative and Owner.

H. Do not load or permit any part of the construction or site to be loaded so as to endanger its safety.

I. Emergencies: In an emergency affecting safety of persons or property, Contractor shall act, at Contractor's discretion, to prevent threatened damage, injury or loss.

3.12 CITY OF LAS VEGAS SPECIAL INSPECTOR OR THIRD PARTY SPECIAL INSPECTOR

A. City of Las Vegas requires special inspections of portions of the Work as specified in the current Building Code, including but not limited to:
   1. Foundation work.
   2. Structural concrete and steel work.
   3. Masonry work.
   4. Fireproofing application.
   5. Soils and grading.

B. Special inspection by City of Las Vegas will consist of a Special Inspector assigned by City of Las Vegas. This inspector shall be on-site when any work under the special inspection provisions of the City is undertaken.

C. This inspector shall be employed by the Owner from an approved City of Las Vegas Building Department List. Contractor shall establish the construction sequence, schedule, and duration of the work requiring special inspections by the City.

D. Provide temporary facilities for the City Inspector as specified in Section 01 51 00, during those times when the inspector is on-site on a full-time or permanent basis.

E. Owner will include in agreement with the City, a requirement that copies of all inspection reports provided by the Special Inspector be provided to Owner representative, Contractor, and Owner.

F. At project completion and prior to final payment to Contractor, the Third Party Inspector or materials testing laboratory shall provide a QAA (Quality Assurance Associate) report that has been reviewed and approved by the City of Las Vegas Building Department. This approved report shall be given to Owner and Owner representative.

## 3.13 CLARK COUNTY SPECIAL INSPECTOR OR THIRD PARTY INSPECTOR

A. Clark County requires special inspections of portions of the Work as specified in the current Building Code, including but not limited to:
   1. Foundation work.
   2. Structural concrete and steel work.
   3. Masonry work.
   4. Fireproofing application.
   5. Soils and grading.

B. Special inspection will consist of a Special Inspector approved by Clark County. This inspector shall be on-site when any work under the special inspection provisions of the County is undertaken.

C. Costs of this inspector shall be paid by Owner. Contractor shall establish the construction sequence, schedule, and duration of the work requiring special inspections by the County and coordinate his requirements with the Special Inspector. Abide by all requirements of the County for these special inspections.

D. Owner will include an agreement with the County. It is a requirement that copies of all inspection reports provided by the Special Inspector be provided to Owner representative, Contractor, and Owner.

E. At project completion and prior to final payment to Contractor, the Third Party Inspector or materials testing laboratory shall provide a QAA (Quality Assurance Associate) report that has been reviewed and approved by the Clark County Building Department. This approved report shall be given to Owner and Owner representative.

END OF SECTION

Advancement of Construction Technology

# NONCONFORMING WORK NOTICE

Project: _____ Report Number: _____

_____ From: _____

To: _____ Date Observed: _____ Date Reported: _____

_____ Owner's representative Project Number: _____

Re: _____ Contract for: _____

Specification Section: _____ Paragraph: _____ Drawing Reference: _____ Detail: _____

Nature of Nonconformance:

Signed by: Date: Date Response Needed:

Proposed Correction (Response):

Amount of Time for Correction:

☐ Attachments

Response From: To: Date Received: Date Ret'd::

Signed by: Date:

Copies: ☐ Owner ☐ Owner representative ☐ Consultants ☐ _____ ☐ _____: ☐ File

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July 1994
CSI Form 9.8A

# SECTION 01 52 13

# FIELD OFFICES AND SHEDS

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Use of existing facilities.

B. Contractor's field office and facilities.

C. Storage areas and sheds.

D. Construction of temporary facilities.

E. Installation, maintenance, and removal.

### 1.02 USE OF EXISTING FACILITIES

A. Unless Owner provides written authorization, existing facilities shall not be used for field offices or for storage.

## PART 2 PRODUCTS

### 2.01 CONTRACTOR'S FIELD OFFICE AND FACILITIES – Not Used.

A. Provide office space and facilities to meet Contractor's and Owner's needs and to provide space for project meetings.
   1. Contractor's office space shall have plan tables, racks and files for Contract Documents, submittals, and project record documents.
   2. Provide a separate office with windows to be used by Owner. [NOT NECESSARY ON ALL PROJECTS, VERIFY WITH OWNER.]

B. Office Furnishings: The furniture will be delivered and placed as directed by the County.

C. Owner Desk: Flat top, double pedestal, with one box and one file drawer in each pedestal, 60-inches by 30-inches. Total quantity will be one (1).

D. Owner Chairs: One (1) office-type chairs, adjustable heights, on rollers, with armrests.

E. Conference Table and Chairs: One (1) table (3-feet by 8-feet minimum), scratch and stain resistant and 15 meeting-type chairs.

F. Owner and Contractor Drawing Tables: Two (2) plywood or standard drawing tables, 3-feet by 6-feet, with all required appurtenances and 2 extended height stools suitable for use at the drawing tables.

G. Printer: One(1) - All in one color inkjet printer capable of printing, scanning and coping Ledger, Legal and Letter sizes. Standard interfaces shall include Hi-Speed USB 2.0, Wireless (802.11b/g/n), Ethernet. Minimum requirements include: 35 page automatic document feeder, printing 20 color copies per minute at 6000 x 1200 dpi resolution, scan resolution 2400 x 2400 dpi, flat bed document glass size Ledger (11" x 17") with standalone copy features, minimum of 250 sheet input capacity cassettes and 2 additional complete set of ink cartridges. Brother MFC-J6710DW or equal. Printers to be retained by the County. All warranties, maintenance, servicing and sufficient appropriate ink/toner cartridges and paper for the duration of the Work.

H. Internet Connections: Provide Internet connection in each of the four offices in the field trailer. The connection shall be at least 5.0 Mbps of download speed or greater. Provide office with a wireless network 802.11 n with minimum of 8 concurrent users in addition to the network requirements. Wireless network shall allow additional portable computers to gain internet access within the office.

I. File Cabinets, Storage, Bookcases:
   1. Two (2) Lateral Files: HON 600 Series, or equal, 42-inch wide, four-drawer.
   2. Two (2) steel vertical, hanging mobile plan stands, with approximately 12-hanging clamps. Provide all required clamps, of sufficient length to hold the Contract Drawings.
   3. Storage: Two (2) industrial grade steel cabinets, locking handles, 36-inches wide by 18-inches deep by 72-inches high.
   4. Bookcases: Three (3) HON metal bookcases, or equal, 34-1/2-inches wide by 12-5/8-inches deep by 71-inches high, color to be selected by the Engineer.

J. Telephone/Computer: As specified in Section 01 51 00.

K. Furnishings in Meeting Area: Conference table and chairs to seat at least ten (10) people.

L. Other Furnishings:
   1. Contractor's option for Contractor's area.
   2. Provide two (2) desks (each 2-foot by 4-foot minimum), two (2) file cabinets, and two (2) stools in Owner's area. [NOT NECESSARY ON ALL PROJECTS, VERIFY WITH OWNER.]

M. Equipment: Six (6) adjustable band protective helmets for visitors, one 10-inch outdoor weather thermometer, rain gauge, and wind gauge.

N. Heating, Cooling, and Ventilation: Automatic equipment to maintain 70 degrees F heating and 76 degrees F cooling.

O. Provide minimum basic first aid kit.

P. Quality drinking water dispenser from commercial purveyor.

2.02 STORAGE AREAS AND SHEDS

A. Size based on storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products.

B. Heating and ventilation as needed to maintain Products in accordance with Contract Documents and manufacturers' recommendations.

C. Provide adequate lighting for maintenance and for inspection of Products.

2.03 CONSTRUCTION OF TEMPORARY FACILITIES

***NOTE THAT CONSTRUCTION TRAILERS AND OTHER SIMILAR TEMPORARY FACILITIES DO NOT NEED TO COMPLY WITH ADA AS FOLLOWS:***

***203.2 Construction Sites. Structures and sites directly associated with the actual processes of construction, including but not limited to, scaffolding, bridging, materials hoists, materials storage, and construction trailers shall not be required to comply with these requirements or to be on an accessible route. Portable toilet units provided for use exclusively by construction personnel on a construction site shall not be required to comply with 213 or to be on an accessible route.***

A. Portable or mobile buildings or buildings constructed with floors raised above ground shall be securely fixed to foundations, with steps and landings at entrance doors.

B. Construction of Temporary Facilities:
   1. Structurally sound, secure, weather tight enclosures for office and storage spaces.
   2. Maintain during progress of Work.
   3. Remove at completion of Work.

C. Exterior Materials: Weather resistant, finished in one color as acceptable to Owner.

D. Lighting for Office: 50 foot-candles at desk top height, exterior lighting at entrance doors.

E. Fire Extinguisher: Appropriate type fire extinguisher at each office and each storage area.

F. Refer to Section 01 51 00 Temporary Utilities.

PART 3 EXECUTION

3.01 INSTALLATION, MAINTENANCE, AND REMOVAL

A. Fill and grade sites for temporary structures to provide drainage away from buildings.

B. Install office spaces ready for occupancy fifteen (15) days after date fixed in Notice to Proceed.

C. Maintain approach walks free of mud and water.

D. At completion of Work, remove buildings, foundations, utility services, and debris. Restore areas.

E. Provide periodic cleaning and maintenance for office and storage areas.

END OF SECTION

# SECTION 01 57 00

# TEMPORARY CONTROLS

## PART 1 GENERAL

### 1.01 SUMMARY

A. Provide and maintain methods, equipment, and temporary construction, as necessary to provide control over environmental conditions at construction site and related areas under Contractor's control.

B. Remove physical evidence of temporary facilities upon completion of Work.

C. Section Includes:
1. Water Control/Dewatering.
2. Dust Control.
3. Noise Control.
4. Pest Control.
5. Pollution Control.
6. Exterior and Interior Enclosures.
7. Indoor Air Quality Control.

### 1.02 REFERENCES

Air Pollution Regulations: Clark County Department of Air Quality *Rules and Regulations* and *Section 94 - Permitting and Dust Control for Construction Activities*, most recent edition. Available online: http://www.clarkcountynv.gov/depts/AirQuality/Pages/RulesCurrentRulesandRegulations.aspx.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.01 WATER CONTROL/DEWATERING

A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment. Protect site from puddling or running water.

B. Plan and execute construction by methods to control surface drainage from cuts, fills, borrow, and waste disposal areas. Minimize amount of bare soil exposed at one time.

C. Take measures necessary to control surface water and prevent damage to Project, site, and adjoining properties.

D. Prevent erosion and sedimentation. Provide water barriers as required to protect site from soil erosion. Provide temporary measures such as berms, dikes, and drains to prevent water flow.

E. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

F. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

G. Water control shall comply with local, State and Federal requirements.

## 3.02 DUST CONTROL

A. Perform construction operations so as not to discharge into the atmosphere from any source whatever smoke, dust, or other air contaminants in violation of the laws, rules, and regulations of all federal, state, and local air and water pollution requirements including but not limited to:
   1. Nevada Revised Statute 445: Air Quality Regulation.
   2. Registering with the Clark County Department of Air Quality, any equipment requiring operating permits by said Department.
   3. Adhering to all Clark County Department of Air Quality Regulations.

B. Provide positive methods and application of dust control materials as necessary to minimize dust from construction operations.

C. For projects located in Clark County, Nevada, provide positive means to prevent airborne dust from dispersing into atmosphere.
   1. Contact the Clark County Department of Air Quality regarding special considerations concerning air quality requirements in Clark County, including the most current dust control regulations and permit procedures.
   2. Comply with rules, regulations, special stipulations, and laws pertaining to air quality.

D. Adhere to the latest edition of the *Clark County Department of Air Quality Rules and Regulations and Section 94 - Permitting and Dust Control for Construction Activities* as published by the Clark County Department of Air Quality.
   1. If a Dust Control Permit is required, obtain an approved Dust Control Permit and, if applicable, an approved Dust Mitigation Plan prior to commencing construction.
   2. The cost of the Dust Control Permit and, if applicable, a Dust Mitigation Plan shall be considered as included in the price paid for other items of Work and no separate payment will be made for dust control measures.
   3. No time extension shall be granted for time lost due to the suspension of the Work for any violation.

E. Specific Control Measures and Best Management Practices are outlined in *Section 94*.
   1. Determine the applicability of any and all Control Measures to ensure compliance with the latest edition of the Air Pollution Control Regulations and *Section 94*.
   2. Conduct the work to control fugitive dust and employ the necessary control measures to maintain disturbed soil 24 hours per day, 7 days per week for the duration of the project, as required by the Air Pollution Control Regulations.

F. Comply with all mitigation requirements for dust control and indemnify the Owner against any and all liability arising out of this responsibility and for any and all Clark County Department of Air Quality-imposed fines that may be assessed for violating the Dust Control Permit or Air Pollution Control Regulations.

G. Obtain Owner's approval of a designated area for storage of materials and equipment during the term of the Contract. Provide effective dust control measures in the designated area during the Contract, including application of Best Available Control Measures (BACM) as necessary to minimize fugitive dust from the site. Measures to be used include one or a combination of the following methods:
   1. Maintain sufficiently damp soil conditions to prevent visible fugitive dust emissions.
   2. Develop and maintain soil surface crust by water application or other appropriate methods.
   3. Cover soil with clean gravel to treat with a dust suppressant.

## 3.03 NOISE CONTROL

A. Provide methods, means, and facilities to minimize noise produced by construction operations including but not limited to radios.

3.04 PEST CONTROL

A. Provide methods, means, and facilities to prevent pests, insects, and rodents from accessing or invading the site and/or damaging the Work.

3.05 POLLUTION CONTROL

A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

3.06 EXTERIOR AND INTERIOR ENCLOSURES

A. Provide temporary weather tight closure of exterior openings, including temporary roofing to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized person. Provide access doors with self-closing hardware and locks.

B. Provide temporary partitions and/or ceilings as indicated and/or required below under Indoor Air Quality Control to:
   1. Separate work areas from Owner-occupied areas.
   2. Prevent penetration of dust and moisture into Owner-occupied areas.
   3. Prevent damage to existing materials and equipment.

3.07 INDOOR AIR QUALITY CONTROL

A. Installation of Temporary Vapor and Particulate Barriers:
   1. Construct a 6-mil (minimum) plastic barrier secured to floor and ceiling in a manner that essentially creates an airtight barrier between construction zone and occupied zone.
   2. Continue barrier into the open return air plenum when such a system is in place. If the area does not use an open return air plenum, then a barrier in the plenum cavity above the drop ceiling is usually not necessary.
   3. Thoroughly investigate all pollutant pathways and temporarily seal with a barrier to prevent pollutant migration.

B. Negative Pressure Differential:
   1. Adjust the existing air system to effectively create a negative pressure differential between the construction zone and the occupied zone.
   2. This could be achieved by shutting down the A/C system servicing the construction area during the entire remodel process.
   3. If A/C in the construction zone cannot be shut down because it is also servicing the occupied zones, implement a means to provide a negative differential by acquiring the expertise of a mechanical subcontractor, at no additional cost to Owner.
   4. Task the subcontractor to modify existing supply and return air values so that the construction zone has a negative pressure differential as compared to the occupied zones.
   5. Pressure differential shall be configured to prevent odors and particles from migrating to occupied portions of the building via various voids in the building system.
   6. Negative pressure may also be achieved by installing and using temporary exhaust fans, installed in the construction zone and vented to the outdoors. This method is the least energy efficient and shall be approved by Owner prior to implementation.
   7. Provide negative pressure differential prior to beginning demolition and construction activity.

C. Chemical Use and Submittal Review:
   1. Carefully select all chemical solvents, adhesives, paints, lacquers, and so forth intended for use during remodel projects.
   2. At no additional cost to Owner, provide for the review of Safety Data Sheets and Product Data information by a qualified environmental consultant or safety professional, acceptable to Owner, trained to recognize chemicals that may off gas long after the project's completion and pose a subsequent health risk to occupants.
   3. Avoid the misuse and subsequent migration of odors associated with chemicals used in construction by carefully selecting environmentally safe chemicals.

D. HVAC System Protection and Cleaning:
   1. Protect HVAC against contamination by drywall dust, demolition dust, paint and texture overspray, and similar sources by implementing effective engineering controls acceptable to Owner.
   2. If construction activities cause contamination of the HVAC system with foreign matter, Contractor shall provide for completely cleaning the entire system by a duct cleaning organization certified by the National Air Duct Cleaners Association (NADCA) and replace controls damaged by the lack of adequate protection.

END OF SECTION

## SECTION 01 71 33

## PROTECTION OF ADJACENT CONSTRUCTION

PART 1 GENERAL

1.01 SUMMARY

A. Protect existing utilities and improvements not designated for removal onsite and offsite, including but not limited to; Owner's electrical distribution system branch circuits, fiber optic communications, cable televisions, sewer, water, natural gas, storm sewer and irrigation.

B. Restore damaged or temporarily relocated utilities and improvements to condition equal to or better than condition prior to such damage or temporary relocation in accordance with Contract Documents.

C. Verify exact locations and depths of utilities shown and make exploratory excavations of utilities that may interfere with Work.
   1. Perform exploratory excavations as soon as practicable after award of Contract and in sufficient time in advance of construction to avoid possible delays to Contractor's Work.
   2. When exploratory excavations show utility location as shown to be in error, notify Owner.
   3. Exploratory excavations shall be performed using non-destructive vacuum excavation methods.

D. Number of exploratory excavations shall be sufficient to determine alignment and grade of existing utilities.

E. Contractor shall be responsible for locating and marking onsite utilities in and around the limits of construction.

1.02 REFERENCES

A. Standard Specifications: *Uniform Standard Specifications for Public Works' Construction, Off-Site Improvements, Clark County Area, Nevada,* most recent edition.
   1. Comply with referenced sections and subsections of Standard Specifications.
   2. Contractual, measurement, and payment provisions of Standard Specifications do not apply.

1.03 SUBMITTALS

A. Contractor shall include all located utilities in their coordination drawings.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 CONSTRUCTION INTERFERENCES

A. Contractor's responsibilities regarding existing utilities and construction interferences shall be in accordance with Subsection 105.06 of the Standard Specifications, with the following additional provisions.

B. Construction interferences include:
   1. Utility or service connections within limits of excavation or over-excavation required for Work under Contract.

2. Utility or service connections located in space required by Work under Contract.
3. Utility or service connections required to be disturbed or removed to permit construction as specified under Contract.
   a. Disturb or remove only with approval of Owner and following notification to owner of interfering utility or service connection and lines.
   b. Promptly reconstruct removed or disturbed utility or service connections in original or other authorized location in condition at least as good as prior to such removal or disturbance, subject to inspection of Owner of same.

C. Contractor's responsibility to remove or replace shall apply even in the event that damage or destruction occurs after backfilling. Notify owner of utility or service connection immediately after damage or destruction occurs or is discovered.

D. During performance of Work, owner of utility affected by Work shall have right to enter when necessary upon any portion of Work for purpose of maintaining service and of making changes in or repairs to said utility.

E. Contractor shall:
   1. Exercise extreme care so as not to damage existing utilities and/or new and existing facilities.
   2. Use equipment of such weights throughout construction operations that existing buried utilities and/or new and existing facilities are not damaged by excessive loadings thereon.
   3. Be responsible for costs of repair and/or replacement of new or existing facilities damaged by construction operations.
   4. Make repairs and include appropriate warranties for that portion of utility deemed damaged.

F. Prior to trenching, contact "CALL BEFORE YOU DIG" 811 or 1-800-227-2600 to determine location of existing utilities. Call between hours of 6 am and 7 pm and at least two (2) days before digging.
   1. Contractor shall coordinate with Owner Representative to obtain an “Owner Provided” onsite utility location inspection.

G. Contractor acknowledges that utility companies may not be members of Dig USA System and, therefore, not automatically contacted by referenced telephone number. See utilities drawings for contact information.
   1. Be aware of utility company facilities not reported by Dig USA System, and bear damages stemming from repair or delay costs or other expenses resulting from unanticipated discovery of underground utilities.
   2. Notify utilities at least two working days in advance of commencement of Work at site to examine construction site and mark location of utilities' respective facilities. Verify that each utility has responsibly responded to notification.

## 3.02 OVERHEAD POWER LINE SAFETY LAW

A. Overhead Power Line Safety Law: The Nevada Legislature enacted NRS 455.200 to 455.250 requiring utilities be notified and give consent before Work is performed near overhead power lines.

B. Call NV Energy at 702-227-2929 prior to working with hand tools or operating equipment near overhead power lines.

C. If necessary, additional conditions may be required by NV Energy before consent to do the Work is given; these could include:
   1. Reasonable limits on the time, place, and manner of the Work.
   2. Placing barriers to prevent contact with the lines.
   3. Temporarily disconnecting the power to the lines.

D. Work to be done by NV Energy as a result of these conditions shall be started within five 5 working days of:
   1. Receiving notice of Work planned near an overhead line, or
   2. Executing an agreement on payment for preventative work needed to meet these conditions.

E. Penalties of up to $1,000 per day could be imposed for violation of this law. Contact Public Safety Department of Nevada Energy at 702-227-2671 with questions regarding this law.

F. Contractor performing the Work in the vicinity of the overhead line carrying high voltage shall pay actual expenses incurred by the public utility in carrying out the preventative measures required.

3.03 PROTECTION OF STREET OR ROADWAY MARKERS

A. Do not destroy, remove, or otherwise disturb existing survey markers or other existing street or roadway markers without proper authorization.

B. Do not start pavement breaking or excavation until survey or other permanent marker points that will be disturbed by construction operations have been properly referenced for easy and accurate restoration.

C. Survey markers or points disturbed by Contractor without proper authorization shall be accurately restored at Contractor's expense after street or roadway resurfacing has been completed.

3.04 RESTORATION OF PAVEMENT

A. Replace paved areas, including asphaltic concrete berms cut or damaged during construction, with similar materials and of equal thickness to match existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in Contract Documents or in requirements of agency issuing permit.

B. Temporary and permanent pavement shall conform to requirements of owner of affected pavement.

C. Neatly saw cut in straight lines pavements which are subject to partial removal.

D. Comply with Subsection 208.03.21 of the Standard Specifications.

END OF SECTION

# SECTION 01 73 29

# CUTTING AND PATCHING

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Cutting, fitting, and patching required to complete the Work or to make its parts fit together properly.

### 1.02 SUBMITTALS

A. Submit written request in advance of cutting or alteration which is not part of scope which affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate contractor.

B. Include in request:
   1. Identification of Project.
   2. Location and description of affected Work.
   3. Necessity for cutting or alteration.
   4. Description of proposed Work and Products to be used.
      a. Scope of cutting, patching, alterations, or excavation
      b. Trades which will execute work
      c. Products proposed to be used.
      d. Extent of refinishing to be done.
   5. Alternatives to cutting and patching.
   6. Effect on work of Owner or separate contractor.
   7. Cost proposal, when applicable.
   8. Written permission of affected separate contractor.
   9. Date and time Work will be executed.

### 1.03 REQUIREMENTS AND LIMITATIONS

A. Do not damage or endanger a portion of the Work or fully or partially completed construction of Owner or separate contractors by cutting, patching, excavation, or otherwise altering such construction.

B. Do not cut or otherwise alter such construction by Owner or a separate contractor except with written consent of Owner and of such separate contractor.
   1. Such consent will not be unreasonably withheld.
   2. Do not unreasonably withhold from Owner or a separate contractor, Contractor's consent to cutting or otherwise altering the Work.

1.04 PAYMENT FOR COSTS

A. Cost caused by ill-timed or defective Work or Work not conforming to Contract Documents, including costs for additional services of Architect/ Engineer shall be paid by Contractor.

B. Cost of Work done on written instructions of Architect/ Engineer, other than defective or nonconforming Work, will be paid by Owner on approval of written Change Order. Provide written cost proposals prior to proceeding with cutting and patching proposed by Architect/ Engineer.

PART 2 PRODUCTS

2.01 MATERIALS

A. Primary Products: Those required for original installation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

B. After uncovering existing Work, assess conditions affecting performance of Work.

C. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Provide protection from elements for areas that may be exposed by uncovering Work.

B. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project.

C. Maintain excavations free of water.

3.03 CUTTING

A. Execute cutting and fitting including excavation and fill to complete the Work.

B. Uncover Work to install improperly sequenced Work.

C. Remove and replace defective or non-conforming Work.

D. Remove samples of installed Work for testing when requested.

E. Provide openings in the Work for penetration of mechanical and electrical Work.

F. Employ original installer to perform cutting for weather exposed and moisture resistant elements and sight-exposed surfaces.

G. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

## 3.04 PATCHING

A. Execute patching to complement adjacent Work.

B. Fit Products together to integrate with other Work.

C. Execute Work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

D. Employ original installer to perform patching for weather exposed and moisture resistant elements and sight exposed surfaces.

E. Restore Work with new Products in accordance with requirements of Contract Documents.

F. Fit Work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

G. At penetrations of walls, partitions, ceiling, or floor construction completely seal voids with fire-rated material to full thickness of penetrated element.

H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

# SECTION 01 74 00

# CLEANING AND WASTE MANAGEMENT

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Solid Waste Management Plan

B. Owner's right to cleanup.

C. Progress cleaning and waste removal.

D. Final cleaning.

### 1.02 SUBMITTALS

A. Solid Waste Management Plan: Not less than 10 days before the Pre-construction meeting, prepare and submit a Solid Waste Management Plan including, but not limited to, the following:
   1. List of the recycling facilities, reuse facilities, municipal solid waste landfills and other disposal area(s) to be used. Include:
      a. Name, location, and phone number.
      b. Copy of permit or license for each facility.
   2. Identify materials that cannot be recycled or reused. Provide explanation or justification.
   3. Revise and resubmit Plan as required by Owner.
      a. Approval of Contractor’s Plan will not relieve the Contractor of responsibility for compliance with applicable environmental regulations.

### 1.03 OWNER'S RIGHT TO CLEANUP

A. If Contractor fails to clean up as provided in Contract Documents, Owner may do so and the cost thereof shall be charged to Contractor.

B. If a dispute arises among Contractor, separate contractors, and Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish as described in Contract Documents, Owner may clean up and allocate the cost amount to those responsible as Owner determines to be just.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.01 SOLID WASTE MANAGEMENT

A. Develop and implement a waste management program in accordance with ASTM E1609 and as specified herein.

B. Collection: Implement a recycling/reuse program that includes separate collection of waste materials of the following types as appropriate to the project waste and to the available recycling and reuse programs in the project area:
   1. Land clearing debris.
   2. Asphalt.
   3. Concrete and Masonry.

4. Metal.
    a. Ferrous.
    b. Non-ferrous.
5. Wood, nails and staples allowed.
6. Debris.
7. Glass, colored glass allowed.
8. Paper.
    a. Bond.
    b. Newsprint.
    c. Cardboard and paper packaging materials.
9. Plastic.
    a. Type 1: Polyethylene Terephthalate (PET, PETE).
    b. Type 2: High Density Polyethylene (HDPE).
    c. Type 3: Vinyl (Polyvinyl Chloride or PVC).
    d. Type 4: Low Density Polyethylene (LDPE).
    e. Type 5: Polypropylene (PP).
    f. Type 6: Polystyrene (PS).
    g. Type 7: Other. Use of this code indicates that the package in question is made with a resin other than the six listed above, or is made of more than one resin listed above, and used in a multi-layer combination.
10. Gypsum.
11. Non-hazardous paint and paint cans.
12. Flooring.
    a. Carpet.
    b. Resilient Flooring.
13. Insulation.
14. Ceiling Tiles
15. Others as appropriate.

## 3.02 PROGRESS CLEANING AND WASTE REMOVAL

A. At all times, keep the Work area in a neat, clean, orderly, and safe condition.
    1. Keep Work area free from accumulation of waste materials, debris, and/or rubbish caused by operations under the Contract Documents.
    2. Upon completion of any portion of the Work, promptly remove equipment, construction debris, temporary structures, and surplus materials not to be used at or near the same location during later stages of Work.

B. Remove debris and rubbish from pipe chases, plenum, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space. Provide temporary screens or other means of preventing trash and debris from getting into floor and roof drains during the course of construction.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose of off-site.

E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

F. If Contractor fails to comply with the foregoing, the same may be accomplished by Owner at Contractor's expense.

## 3.03 FINAL CLEANING

A. At completion of the Work, remove from and about the Project waste materials, rubbish, tools, construction equipment, machinery, and surplus materials.

B. Upon completion of the Work and before final payment is made:
   1. Satisfactorily dispose of all plant, buildings, rubbish, unused materials, and other equipment and materials belonging to Contractor or used in the performance of the Work.
   2. Leave the premises and Work site in a neat, clean, and safe condition.

C. Execute final cleaning prior to final Project assessment.

D. Clean interior and exterior glass; remove temporary labels, stains, and foreign substances from surfaces exposed to view; polish transparent and glossy surfaces; and vacuum carpeted and soft surfaces.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Replace filters of operating equipment.

G. Clean debris from roofs, gutters, downspouts, and drainage systems.

H. Clean site. Sweep paved areas. Rake clean landscaped surfaces.

I. Remove waste and surplus materials, rubbish, and construction facilities from the site.

J. If Contractor fails to comply with the above, the same may be accomplished by Owner at Contractor's expense.

END OF SECTION

# SECTION 01 76 00

# PROTECTING INSTALLED CONSTRUCTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Protection of the Work.

B. Repair and replacement.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 PROTECTION OF INSTALLED WORK

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Protection: Protect specially finished concrete slabs from damage. Provide planking whenever scaffolding or wheeled equipment may be required to be erected over slabs. Damage to slabs prior to acceptance of the Work will be cause for rejection of slabs and replacement will be required.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Prohibit traffic from landscaped areas.

H. Protection of existing utilities shall be in accordance with Section 01 71 33 – Protection of Adjacent Construction.

I. Provide protection of adjacent and existing construction as is required to ensure that the adjacent or existing construction is not damaged.

J. Elevator cars shall be protected to the fullest extent.

## 3.02 REPAIR AND REPLACEMENT

A. Repairs to Installed Work:
   1. Installed work which has been damaged by subsequent work by other trades shall be repaired at no expense to the Owner, to the satisfaction of the Owner.
   2. The Contractor shall be observant of the work being performed within locations where installed work has been completed and shall immediately report damages to installed work to the Owner and Owner Representative.
   3. When installed work has been damaged, the Contractor shall be responsible for determining the proper repair methods and reviewing these methods with the Owner Representative prior to start of repair work.
   4. Repairs shall be made in a timely fashion, in particular installed work which affects the water-tight, weatherproof integrity of the building.

B. Damage to work that occurs during Owner move-in will be paid for by Owner, but shall be performed by the same subcontractor or supplier that provided the initial installation.

END OF SECTION

# SECTION 01 77 00

# CLOSEOUT PROCEDURES

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Closeout Submittals and Procedures.

B. Substantial Completion.

C. Final Completion.

### 1.02 PRE-SUBSTANTIAL COMPLETION AND CLOSEOUT SUBMITTALS AND PROCEDURES

A. The events for the Closeout of the Contract for Construction include, but are not limited to, the following.

1. Submit to Owner the Operation and Maintenance Manuals as specified in Section 01 78 23 after approval by Owner Representative.
2. Submit to Owner the Maintenance Materials and Tools as specified in Section 01 78 23.
3. Adjust operating products and equipment to ensure smooth and unhindered operation as specified in Section 01 75 00.
4. Removal of temporary protection (fences, barricades, etc.).
5. Certificate of Occupancy, or equivalent showing that all required final permit inspections have been approved by AHJ.
6. Contractor's preparation of Punch List, and notification to Owner Representative and Owner of substantial completion.
7. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Owner Representative's review.
8. Inspection for substantial completion
9. Provide submittals to Owner Representative that are required by governing or other authorities, including completion of the Service Order Form and Equipment Input Form specified in Division 23.
10. Certificate of Substantial Completion
11. Submit Product Warranties, Bonds, and Warranty Matrix as specified in Section 01 78 36.
12. Final Cleaning as specified in Section 01 74 00.
13. Final inspection of completed punch list
14. Submit to Owner Representative Project Record Documents including complete set of approved submittals as specified in Section 01 78 39.
15. Acceptance of Project by Owner.

### 1.03 SUBSTANTIAL COMPLETION

1. The stage in the progress of the Work of the Project, when all Work items and/or Facility elements included in the project, or designated portion thereof, is/are sufficiently complete in accordance with the Contract Documents and such that the OWNER can occupy or utilize the Work for its intended use, and that any remaining activity of the Construction Contractor shall not interfere with such use. The date of approval of Substantial Completion will establish the official Substantial Completion Date, and initiate the preparation of the Project Punch List, for final and corrective work to be accomplished by the Contractor.

A. Substantial Completion is the stage in the progress of Work completion when the Work, or designated portion thereof, meets the following criteria:

1. The Work, or portion in question, is 95 percent complete as determined by Owner Representative and Owner, when measured against the dollar value of the entire Work, or portion in question.
2. The entire Work, or portion in question, can be occupied and used for its intended purpose as determined by Owner Representative with coordination through the Owner.

3. The remaining items of the Work contained in the Punch List for the entire Work, or the portion in question, can be completed within thirty (30) calendar days, as determined by Owner Representative, of the date of Substantial Completion for the Work, or the portion in question.
4. The entire Work, or portion in question, has received a Certificate of Occupancy from the governing authority.
5. Contractor shall submit and complete the following required items in order for the Owner and A/E to issue Substantial Completion:
   a. O&M Manuals
   b. QAA Reports
   c. Notice of Termination (SWPP)
   d. Systems Startup Report and TAB Report
   e. Final Commissioning Report
   f. Product Warranties and Warranty Matrix
   g. Maintenance Materials and Tools
   h. Operations and Maintenance Training
   i. Proof of Paid Temporary Utilities
   j. Certification of Occupancy
   k. Contractor's Punch List
   l. Written notification to Owner and A/E requesting Substantial Completion
   m. Project Record Documents, and As-Builts to A/E
   n. Removal of Temporary Protection
   o. Substantial Completion Inspection
   p. Final Cleaning
   q. Submit Keys and Cores to Owner and install knox box per AHJ
   r. Coordinate transfer of utilities to the Owner

B. Substantial Completion Procedures:
1. Contractor shall prepare and submit to Owner Representative a Punch List which is a comprehensive list of items to be completed or corrected.
   a. Upon receipt of Contractor's Punch List, Owner Representative will make an inspection to determine whether the Work or designated portion thereof is substantially complete.
   b. If Owner Representative's inspection discloses any item not included on the Punch List, Contractor will add it to the Punch List.
   c. Contractor shall proceed promptly to complete and correct items on the Punch List. Failure to include an item on such list does not alter the responsibility of Contractor to complete all Work in accordance with Contract Documents.
2. Whenever any portion of the Work performed by Contractor is in a condition suitable for use, as determined by Owner Representative, Owner Representative may initiate a Certificate of Substantial Completion for that portion and Owner may take possession of or use such portion.
   a. Such use by Owner will in no case be construed as constituting final acceptance and shall neither relieve Contractor of any of Contractor's responsibilities under Contract Documents, nor act as a waiver by Owner of any of the conditions thereof, provided that Contractor shall not be liable for the cost of repairs, rework, or renewals which may be required due to ordinary wear and tear resulting from such use.
   b. However, if such use increases the cost or delays the completion of remaining portions of Work, Contractor shall be entitled to an equitable adjustment.

C. Certificate of Substantial Completion: When the Work or designated portion thereof is substantially complete, as determined by Owner Representative, Owner Representative will prepare a Certificate of Substantial Completion, and submit it to Contractor for written acceptance, which:
1. Shall indicate the date of Substantial Completion.
2. Shall establish responsibilities of Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance.

3. Shall fix the time within which Contractor shall finish all items on the Punch List accompanying the Certificate.

1.04 FINAL COMPLETION

A. Final Completion is the stage in the progress of Work completion when the Work is complete as determined by Owner Representative and meets the full definition of Section 01 42 16, Part 1.01, Definitions, A.19. The date of final acceptance of the Project by Owner Representative shall be the date upon which the Owner issues a Notice of Final Completion. If, after Substantial Completion of the Work, Final Completion thereof is materially delayed through no fault of Contractor or by issuance of Change Orders affecting final completion, Owner will, upon application by Contractor, and without terminating the Contract for Construction, make payment of the balance due for that portion of the Work fully completed and accepted.

B. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in Contract Documents, and if bonds and a written Consent of Surety have been furnished, Contractor shall submit to Owner Representative an Application for Payment for that portion of the Work fully completed and accepted. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

**Close Out Meeting # 01**

**Timeline:** Day 1 – Thirty (30) days until Substantial Completion

**Deliverables Due:**

- 90% Draft (Section 01 78 23)
  - Operation & Maintenance Manuals
  - Product Warranties
  - Warranty Matrix
- Third Party Inspection QAA Reports (Section 01 45 00)

**Close Out Meeting # 02**

**Timeline:** Day 8 – Twenty-two (22) days until Substantial Completion

**Deliverables Due:**

- Notice of Termination for Stormwater Pollution Prevention (Section 01 57 55)

**Close Out Meeting # 03**

**Timeline:** Day 15 – Fifteen (15) days until Substantial Completion

**Deliverables Due:**

- Systems Start-Up Report and TAB Report (Section 01 75 00)
- Final Operations & Maintenance Manuals
- Final Product Warranties
- Final Warranty Matrix

**Close Out Meeting # 04**

**Timeline:** Day 22 – Eight (8) days until Substantial Completion

**Deliverables Due:**

- Maintenance Materials and Tools (Section 01 78 23)
- Proof that temporary utilities have been paid
- Certificate of Occupancy or Equivalent
- Contractor Prepared Punch List
- Notification to Owner & Owner Representative of Substantial Completion
- Project Record Document and As-Builts to Owner Representative
- 95% Commissioning Report

**Close Out Meeting # 05 (On Site)**

**Timeline:** Day 29 – One day until Substantial Completion

**Deliverables Due:**

- Removal of Temporary Protection
- Substantial Completion Inspection
- Final Cleaning (Section 01 74 00)
- Submit Keys and Cores to Owner

**Close Out Meeting # 06**

**Timeline:** Day 30 – Substantial Completion

**Deliverables Due:**

- Utilities transferred to Owner
- Certificate of Substantial Completion and attached Punch-List (within 7-calendar days of Substantial Completion Inspection)

**Before Final Completion Meeting**

- Written Notice Ready for Final Inspection

**Pre-Final Completion Meeting – Day 59**

- Final Inspection of Completed Punch List

**Final Completion Meeting – Day 60**

- Acceptance of Project by Owner (Issue Notice of Final Completion)
- Final Commissioning Report

# SECTION 01 78 23

# OPERATION AND MAINTENANCE DATA

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Submittal procedures.

B. Maintenance Materials, Tools, Spare Parts, and Extra Stock.

C. Format of hardcopy manuals.

D. Format of electronic manuals.

E. Content of manuals (hardcopy and electronic).

F. Materials and Finishes Manuals.

G. Equipment and Systems Manuals.

### 1.02 SUBMITTAL PROCEDURES FOR MANUALS

A. Submit two (2) copies of preliminary draft or proposed formats and outlines of contents before start of Work. Owner Representative will review draft and return one copy with comments.

B. For equipment or component parts of equipment put into service during construction and operated by Owner, submit documents within ten (10) days after acceptance.

C. Submit manual to Owner Representative for review prior to training.

D. Submit one (1) copy of completed volumes and set up training in accordance with Section 01 77 00 after review by Owner Representative. This copy will be reviewed and returned with Owner's comments after demonstrations and training of Owner's personnel. Revise content of all document sets as required prior to final submission.

E. Submit three (3) sets and electronic (PDF) copy of revised final volumes in accordance with Section 01 77 00.

### 1.03 MAINTENANCE MATERIALS, TOOLS, SPARE PARTS, AND EXTRA STOCK

A. Provide products, spare parts, maintenance, and extra materials in quantities specified in individual specification sections.
   1. Provide inventory sheet with extra stock. Include floor plan that identifies the location where specific materials are intended for future use.
   2. Clearly label with project name, material identification, location for intended use and corresponding item number on inventory sheet.

B. Coordinate with Owner for delivery location within Clark County. Owner will obtain receipt of materials prior to final payment.

### 1.04 FORMAT OF HARDCOPY MANUALS

A. Prepare data in the form of an instructional manual.

B. Binders:
   1. Commercial quality, 8-1/2-inch by 11-inch, three D side ring binders with durable plastic covers; 2-inch maximum ring size.
   2. When multiple binders are used, correlate data into related consistent groupings.
   3. Pages shall be punched with 1/2 inch diameter holes (not 3/8 inch).

C. Cover:
   1. Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS.
   2. Identify title of Project.
   3. Identify subject matter of contents.

D. Provide tabbed indexes for each separate product and system, with typed description of product and major component parts of equipment.

E. Provide list of Preventive Maintenance (PM) items at front of binder. Cross-reference PM items list to text, tab, page, and paragraph.

F. Text: Manufacturer's printed data or typewritten data on 20-pound paper.

1.05 FORMAT OF ELECTRONIC MANUAL

A. Prepare data in a consistent format (PDF) throughout to match the format of the hard copy manual.
   1. Video files may be in format other than PDF, as acceptable to the Owner.
   2. Separate information into individual files with filenames that allow for identification or by bookmarks that correspond with tabs in hardcopy manuals. If separate files are used, include a number at the beginning of the file name to put the files in the same order as per the Table of Contents.

B. Media:
   1. Compact discs with crystal case or flash drives are acceptable.
   2. Crystal case shall have cover
      a. Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS.
      b. Identify title of Project.
      c. Identify subject matter of contents.
   3. Flash drive shall have permanent marking with title of Project.
   4. When multiple CD's or flash drives are used, correlate data into related consistent groupings.

C. Provide folders for each separate division, product and system, with short description of product and major component parts of equipment.

D. Provide list of Preventive Maintenance (PM) items as a separate file. Cross-reference PM items list to folder name, file, page, and paragraph.

1.06 CONTENTS OF MANUALS (HARDCOPY AND ELECTRONIC)

A. Arrange content by systems under section numbers and sequence of Table of Contents of the Project Manual.

B. Table of Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, in three parts as follows:

   1. Part 1: Directory, listing names, addresses, and telephone numbers of Owner Representative, Owner Representative's Consultant, Contractor, Subcontractors, and major equipment suppliers.

2. Part 2: Operation and Maintenance Instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
   a. Significant design criteria,e.g.
   b. List of equipment.
   c. Parts list for each component.
   d. Operating instructions.
   e. Maintenance instructions for equipment and systems.
   f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

3. Part 3: Project Documents and Certificates, including the following.
   a. Shop drawings and product data.
   b. Air and water balance reports.
   c. Certificates of Compliance, e.g. DAQ, NDEP, SNHD, SNMHD, SNBI, DOA, SNEI (all authorities having jurisdiction)
   d. Photocopies of warranties and bonds.
   e. Copy of Final pay application
   f. Copy of Consent of Surety
   g. Copy of Permit card with final inspection
   h. Certification of Occupancy or Completion
   i. Photocopy of Warranty Matrix Spread Sheet
   j. Letter of Completion for Offsite Construction.

4. Part 4: Operations and Maintenance Instructions Manual (in PDF format on CD)
   a. Provide one set of CD's in each hardcopy O&M manual.
   b. Text: Electronic media shall be bookmarked and tabbed to replicate hardcopy manuals.

C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

E. For Each Product or System: List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

F. Product Data: Mark each sheet to clearly identify specific products and component parts and data applicable to installation. Delete inapplicable information.

1.07 MATERIALS AND FINISHES MANUAL

A. Building Products, Applied Materials, and Finishes: Include product data with catalog number, size, composition, color, and texture designations. Provide information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional Requirements: As specified in individual Product specification sections.

E. Provide a listing in Table of Contents for design data with tabbed fly sheet and space for insertion of data.

## 1.08 EQUIPMENT AND SYSTEMS MANUALS

A. Each Item of Equipment and Each System: Include description of unit or system and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves with engineering data and tests, and complete nomenclature and model number of replaceable parts. Include all equipment and systems on Warranty Matrix Spread Sheet, in accordance with Section 01 78 36, paragraph 1.02.C.

B. Panelboard Circuit-Directories: Provide electrical service characteristics, controls, and communications by label machine.

C. Include color-coded wiring diagrams as installed.

D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

E. Maintenance Requirements:
   1. Include routine procedures and guide for troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
   2. Provide servicing and lubrication schedule, and list of lubricants required.
   3. Include manufacturer's printed operation and maintenance instructions.
   4. Water treatment chemicals: Include all start up reporting and periodic maintenance requirements.

F. Include sequence of operation by controls manufacturer.

G. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

H. Provide control diagrams by controls manufacturer as installed.

I. Provide Contractor's coordination drawings with color-coded piping diagrams as installed.

J. Provide charts of valve tag numbers with location and function of each valve, keyed to flow and control diagrams.

K. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

L. Include test and balancing reports and final commissioning report.

M. Additional Requirements: As specified in individual Product specification sections.

N. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

# PART 2 PRODUCTS

Not Used.

# PART 3 EXECUTION

Not Used.

END OF SECTION

# SECTION 01 78 39

# PROJECT RECORD DOCUMENTS

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Working copy of Contract Documents and As-Built Drawings

B. Record Documents Requirements and Preparation.

### 1.02 SUBMITTALS

A. Submit Project Record Documents to Owner as specified below.

## PART 2 PRODUCTS

### 2.01 WORKING COPY OF CONTRACT DOCUMENTS AND AS-BUILT DRAWINGS

A. Working copy of Contract Documents (hardcopy and/or electronic copy) is for use by Contractor and Owner. Protect from damage and repair if damaged. Contractor shall post all addendums and prepare a working copy of Contract Documents for field use by Contractor and Owner..

B. Use working copy to record actual conditions and changes during the course of the Work. As the work progresses, the Contractor shall maintain a complete and accurate record of changes or deviations from the Contract Documents and Shop Drawings, indicating the Work as actually installed. Record information in the appropriate locations on working copy of the Drawings, and Shop Drawings and a copy of the Project Manual (Specifications) Information contained in the record documents shall include, but not be limited to:
   1. Modifications made by Addenda, Change Orders, Construction Change Directives and Architect's Supplemental Instructions which shall be transferred to the record documents.
   2. Location of site underground pipes, conduits, ducts, cables and similar work, dimensioned horizontally to permanent points of reference and located vertically by indicating depth of burial in accordance with Section 01 71 23 – Field Engineering.
   3. Location of building plumbing piping, sprinkler piping, control valves, heating and air conditioning equipment, mechanical piping, ductwork, major conduit runs, power, control and alarm wiring, etc., dimensioned horizontally to permanent points of reference. Dimensions shall be accurate within 6 inches. By notation, describe the vertical location of the item such as "below slab," "above ceiling," etc.
   4. Modifications made to accommodate field conditions.
   5. Location and function of mechanical and electrical control devices and shut-off valves.
   6. Revise Drawings and panel schedules to show final circuiting of electrical fixtures and equipment.

C. Working copy set shall be separate from the set Contractor may provide for use by Subcontractors.

D. Store the Working Copy of the Contract Documents separate from documents used for construction.

### 2.02 RECORD DOCUMENTS REQUIREMENTS

A. For the entire course of Contractor's work, maintain on Site one set of the following Record Documents:
   1. Drawings.
   2. Specifications (Bid Requirements, General Requirements, Technical Requirements).
   3. Addenda.

4. Modifications (Supplemental Instructions, Change Orders, Construction Change Directive).
5. Reviewed Shop Drawings, Product Data, and Samples and other submittals.
6. Manufacturers' instructions for assembly, installation, and adjusting.
7. As-Built Drawings

PART 3 EXECUTION

3.01 RECORD DOCUMENTS PREPARATION

A. Store Record Documents separate from documents used for construction.

B. Record information in the Record Documents concurrent with construction progress.

C. Ensure entries are complete and accurate, enabling future reference by Owner.

D. Specifications: Legibly mark and record at each Product section description of actual products installed, including the following:
1. Manufacturer's name and product model number.
2. Product substitutions or alternates used.
3. Changes made by Addenda and modifications.
4. Names of manufacturer’s and products which were not used shall be stricken out.

E. Drawings and Shop Drawings: Legibly mark each item to record actual construction in accordance with requirements specified, including; but not limited to:
1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract Drawings. Show number of all air handling units, VAV boxes, and fan coil units on the Record Drawings.

F. Record Drawings and Specifications:
1. Progress Records: During construction, keep a marked-up, up-to-date working copy of Contract Documents as specified herein showing as-built conditions on the site as an accurate record of all deviations between Work as shown and Work as installed. Working copy will be reviewed/checked at monthly progress meetings.
2. Final Records:
   a. Obtain from Owner Representative a complete set of Contract Documents in electronic format. Seals and signatures of Registrants shall be completely removed and/or permanently obscured.
   b. Upon completion of the project, Contractor shall prepare an marked-up, updated digital PDF record set of drawings, of the complete original bidding documents, at Contractor's expense.
   c. Expenses for procurement and updating of electronic documents shall be at no additional cost to Owner.
   d. Incorporate changes on record set in a neat readable manner acceptable to the Owner. Deletions shall be made clearly indicating the information deleted. Record information in adequate size lettering and notation to be legible at half size reproduction. Contractor shall provide a sample of the method of incorporating changes to the Owner’s Authorized Representative for review and acceptance.
   e. Markups/updates shall be performed by an experienced, competent technician.
   f. Identify documents as “RECORD DRAWINGS.”
3. Record Drawings are required for this project and will be turned over to Owner prior to final payment.
4. Owner requires "RECORD DRAWINGS" in PDF Format on <u>view</u> <u>only</u> CDs or other Owner acceptable electronic format.

G. Documents and Samples at the Site:

1. Maintain at the site for Owner, one progress record copy of Drawings, Specifications, Addenda, Change Orders, and other Modifications in good order and marked currently to record changes and selection made during construction; additionally, maintain approved Shop Drawings, Product Data, Samples, and similar required submittals.
2. These shall be available to Owner and delivered to Owner upon completion of the Work.

END OF SECTION

**EXHIBIT E, F, AND G**
**DRAWINGS**
**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

(In order to obtain copies of the specifications/drawings of the Project, please refer back to the Invitation to Bid page and follow the directions noted within the third paragraph.)

## EXHIBIT H – BID FORM SUPPLEMENT

SUCCESSFUL BIDDER shall identify the manufacturer's name and manufacturer's item number for each Bid Form Item number below in accordance with Section III - Special Conditions, Item No. 5 - Exhibit H - Bid Form Supplement.

| GROUP 1: VMS SYSTEM | | | |
|---|---|---|---|
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 1 | VMS System (Division 28 23 00 Section 2.19) | | |

| GROUP 2: SPRING MOUNTAIN YOUTH CAMP | | | |
|---|---|---|---|
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 11 | 360 - WP - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16) | | |
| 12 | 360 - WP - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | | |
| 13 | 360 - ID - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | | |
| 14 | 360 - ID - 3 Megapixel -Ceiling IP Camera (Division 28 23 00 Section 2.10) | | |
| 15 | 180 - WP - 5 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.16) | | |
| 16 | 180 - WP - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16) | | |
| 17 | 180 - ID - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.10) | | |
| 18 | Fixed - WP - 3 Megapixel - Corner Grade IP Camera (Division 28 23 00 Section 2.08) | | |
| 19 | Fixed - WP - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.08) | | |
| 20 | Fixed - WP - 29 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.18) | | |
| 21 | Fixed - IR - 1.3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.05) | | |
| 22 | Fixed - ID - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.04) | | |
| 23 | Fixed - IR - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.05) | | |
| 24 | Fixed - IR - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.07) | | |
| 25 | Fixed - WP/IR - 1.3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.06) | | |
| 26 | Fixed - IR - 3 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.07) | | |
| 27 | High Grade NVR (Division 28 23 00 Section 2.20) | | |
| 29 | Uninterrupted Power Supply (UPS) (Division 28 23 00 Section 2.01B) | | |

| GROUP 2: SPRING MOUNTAIN YOUTH CAMP ADDITIVE ALTERNATES | | | |
|---|---|---|---|
| COUNTY MAY EXERCISE THE FOLLOWING ITEMS IN SEQUENTIAL ORDER ONLY SUBJECT TO THE AVAILABILITY OF FUNDS FOR THIS GROUP ONLY. THE ADDITIVE ALTERNATE PRICES QUOTED SHALL REMAIN FIRM FOR THE PERIOD OF 90 CALENDAR DAYS, AS DETAILED IN THE INSTRUCTIONS TO BIDDERS | | | |
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 31 | Additive Alternate #1: Fixed - WP/IR - 8.3 Megapixel 4K - Corner IP Camera (Division 28 23 00 Section 2.17and Section III(14)). | | |
| 32 | Additive Alternate #1: 180 - WP/IR - 5 Megapixel - Pole IP Camera (Division 28 23 00 Section 2.16 and Section III(14)) | | |
| 33 | Additive Alternate #2: 180 - WP/IR - 5 Megapixel - Pole IP Camera (Division 28 23 00 Section 2.16 and Section III(14)) | | |
| 34 | Additive Alternate #2: 180 - WP/IR - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16 and Section III(14)) | | |

| GROUP 3: SPRING MOUNTAIN YOUTH CAMP RESIDENTIAL | | | |
|---|---|---|---|
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 35 | 360 - ID - 5 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.16) | | |
| 36 | 360 - WP - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | | |
| 37 | 180 - WP - 5 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.16) | | |
| 38 | Fixed - IR - 1.3 Megapixel Ceiling IP Camera (Division 28 23 00 Section 2.05) | | |
| 39 | Fixed - IR - 1.3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.05) | | |
| 40 | Fixed - WP - 3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.08) | | |
| 41 | Fixed - WP - 1.3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.06) | | |
| 42 | Fixed - ID - 1.3 Megapixel Corner IP Camera (Division 28 23 00 Section 2.04) | | |
| 43 | High Grade NVR (Division 28 23 00 Section 2.20) | | |
| 44 | Uninterrupted Power Supply (UPS) (Division 28 23 00 Section 2.01B) | | |

| GROUP 4: DJJS DETENTION CAMPUS | | | |
|---|---|---|---|
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 47 | 360 - WP - 5 Megapixel - Pendant IP Camera (Division 28 23 00 Section 2.16) | | |
| 48 | 360 - ID - 5 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.16) | | |
| 49 | 360 - ID - 3 Megapixel -Ceiling IP Camera (Division 28 23 00 Section 2.10) | | |
| 50 | 180 - WP - 5 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.16) | | |

| GROUP 4: DJJS DETENTION CAMPUS | | | |
|---|---|---|---|
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 51 | 180 - WP - 5 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.16) | | |
| 52 | 180 - ID - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.10) | | |
| 53 | Fixed - WP - 3 Megapixel - Corner Grade IP Camera (Division 28 23 00 Section 2.08) | | |
| 54 | Fixed - WP - 3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.08) | | |
| 55 | Fixed - ID - 1.3 Megapixel - Corner IP Camera (Division 28 23 00 Section 2.04) | | |
| 56 | Fixed - IR - 1.3 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.05) | | |
| 57 | Fixed - ID - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.04) | | |
| 58 | Fixed - IR - 1.3 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.05) | | |
| 59 | Fixed - IR - 2 Megapixel - Wall IP Camera (Division 28 23 00 Section 2.12) | | |
| 60 | Fixed - IR - 2 Megapixel - Ceiling IP Camera (Division 28 23 00 Section 2.12) | | |
| 61 | Fixed - WP/IR - 3 Megapixel - Pendant IP Camera (Division 28 23 00 Section2.13) | | |
| 62 | Fixed - WP/IR - 8.3 Megapixel 4K - Wall IP Camera (Division 28 23 00 Section 2.17) | | |
| 63 | High Grade NVR (Division 28 23 00 Section 2.20) | | |
| 64 | Uninterrupted Power Supply (UPS) (Division 28 23 00 Section 2.01B) | | |

| GROUP 4: DJJS DETENTION CAMPUS ADDITIVE ALTERNATES | | | |
|---|---|---|---|
| COUNTY MAY EXERCISE THE FOLLOWING ITEMS IN SEQUENTIAL ORDER ONLY SUBJECT TO THE AVAILABILITY OF FUNDS FOR THIS GROUP ONLY. THE ADDITIVE ALTERNATE PRICES QUOTED SHALL REMAIN FIRM FOR THE PERIOD OF 90 CALENDAR DAYS, AS DETAILED IN THE INSTRUCTIONS TO BIDDERS. | | | |
| Bid Form Item No. | Item Description | Manufacturer Name | Manufacturer Item Number |
| 67 | Additive Alternate # 1: (10) Classroom Fixed-IR-2 Megapixel-Ceiling IP Camera (Division 28 23 00 Section 2.12 and Section III(14)) | | |
| 68 | Additive Alternate # 2: (7) Administration Fixed-IR-2 Megapixel-Ceiling IP Camera(Division 28 23 00 Section 2.12 and Section III(14)) | | |
| 69 | Additive Alternate # 2: (1) Administration 360-ID-3 Megapixel-Ceiling IP Camera(Division 28 23 00 Section 2.10 and Section III(14)) | | |

| GROUP 5: VMS SYSTEM HARDWARE AS NEEDED (FUIRNISHED AND INSTALLED PRICE PER III, ITEM NO.14 - INSTLLATION) | | | | | |
|---|---|---|---|---|---|
| Bid Form Item No. | Item Description | Option 1 Manufacturer Name | Option 1 Manufacturer Item Number | Option 2 Manufacturer Name | Option 2 Manufacturer Item Number |
| 70 | 360 - 5 Megapixel - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.16) | | | | |
| 71 | 360 - camera - Outdoor Corner mount | | | | |
| 72 | 360 - camera - Outdoor Pendant mount | | | | |
| 73 | 360 - camera - Outdoor Wall Arm mount | | | | |
| 74 | 360 - 5 Megapixel - Indoor IP Camera (Division 28 23 00 Section 2.16) | | | | |
| 75 | 360 - camera - Ceiling mount | | | | |
| 76 | 360 - camera - Pendant mount | | | | |
| 77 | 360 - camera - Wall Arm mount | | | | |
| 78 | 360 - 3 Megapixel - Indoor IP Camera (Division 28 23 00 Section 2.10) | | | | |
| 79 | 360 - camera - Ceiling mount | | | | |
| 80 | 360 - camera - Pendant mount | | | | |
| 81 | 360 - camera - Wall Arm mount | | | | |
| 82 | 180 - 5 Megapixel - Outdoor weatherproof Wall IP Camera (Division 28 23 00 Section 2.16) | | | | |
| 83 | 180 - 5 Megapixel - Indoor Wall IP Camera (Division 28 23 00 Section 2.16) | | | | |
| 84 | 180 - 3 Megapixel - Indoor Wall IP Camera (Division 28 23 00 Section 2.10) | | | | |
| 85 | Fixed - IR - 1.3 Megapixel - IP Camera (Division 28 23 00 Section 2.05) | | | | |
| 86 | 1.3 Mp camera - Ceiling mount | | | | |
| 87 | 1.3 Mp camera - Pendant mount | | | | |
| 88 | 1.3 Mp camera - Corner mount | | | | |
| 89 | 1.3 Mp camera - Wall Arm mount | | | | |
| 90 | Fixed - 1.3 Megapixel -WP/IR Wall IP Camera (Division 28 23 00 Section 2.06) | | | | |
| 91 | Fixed - 3 Megapixel - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.08) | | | | |
| 92 | 3 Mp camera - Ceiling mount | | | | |
| 93 | 3 Mp camera - Pendant mount | | | | |
| 94 | 3 Mp camera - Corner mount | | | | |
| 95 | 3 Mp camera - Wall Arm mount | | | | |
| 96 | Fixed - 3 Megapixel - Indoor IR IP Camera (Division 28 23 00 Section 2.07) | | | | |
| 97 | 3 Mp camera - Ceiling mount | | | | |
| 98 | 3 Mp camera - Pendant mount | | | | |
| 99 | 3 Mp camera - Corner mount | | | | |
| 100 | 3 Mp camera - Wall Arm mount | | | | |

| GROUP 5: VMS SYSTEM HARDWARE AS NEEDED (FUIRNISHED AND INSTALLED PRICE PER III, ITEM NO.14 - INSTLLATION) | | | | | |
|---|---|---|---|---|---|
| Bid Form Item No. | Item Description | Option 1 Manufacturer Name | Option 1 Manufacturer Item Number | Option 2 Manufacturer Name | Option 2 Manufacturer Item Number |
| 101 | Fixed -29 Megapixel - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.18) | | | | |
| 102 | 29 Mp camera - Ceiling mount | | | | |
| 103 | 29 Mp camera - Pendant mount | | | | |
| 104 | 29 Mp camera - Corner mount | | | | |
| 105 | 29 Mp camera - Wall Arm mount | | | | |
| 106 | Fixed -4K - Outdoor Weatherproof IP Camera (Division 28 23 00 Section 2.17) | | | | |
| 107 | 4K camera - Ceiling mount | | | | |
| 108 | 4K camera - Pendant mount | | | | |
| 109 | 4K camera - Corner mount | | | | |
| 110 | 4K camera - Wall Arm mount | | | | |
| 111 | PTZ- 1.3 Megapixel Weatherproof HD 28X Network PTZ Dome camera(Division 28 23 00 Section 2.09) | | | | |
| 112 | PTZ camera - Ceiling mount | | | | |
| 113 | PTZ camera - Pendant mount | | | | |
| 114 | PTZ camera - Corner mount | | | | |
| 115 | PTZ camera - Wall Arm mount | | | | |
| 116 | PTZ- 1.3 Megapixel Indoor HD 28X Network PTZ Dome camera(Division 28 23 00 Section 2.09) | | | | |
| 117 | PTZ camera - Pendant mount | | | | |
| 118 | PTZ camera - Wall Arm mount | | | | |
| 119 | PTZ- 2 Megapixel Weatherproof HD 32X Network PTZ camera(Division 28 23 00 Section 2.14) | | | | |
| 120 | PTZ camera - Ceiling mount | | | | |
| 121 | PTZ camera - Pendant mount | | | | |
| 122 | PTZ camera - Corner mount | | | | |
| 123 | PTZ camera - Wall Arm mount | | | | |
| 124 | PTZ- 2 Megapixel Indoor HD 32X Network PTZ camera (Division 28 23 00 Section 2.14) | | | | |
| 125 | PTZ camera - Pendant mount | | | | |
| 126 | PTZ camera - Wall Arm mount | | | | |
| 127 | PTZ- 1.3 Megapixel Weatherproof HD 43X Network PTZ camera(Division 28 23 00 Section 2.15) | | | | |
| 128 | PTZ camera - Ceiling mount | | | | |
| 129 | PTZ camera - Pendant mount | | | | |
| 130 | PTZ camera - Corner mount | | | | |
| 131 | PTZ camera - Wall Arm mount | | | | |
| 132 | PTZ- 1.3 Megapixel Indoor HD 43X Network PTZ camera(Division 28 23 00 Section 2.15) | | | | |
| 133 | PTZ camera - Pendant mount | | | | |

| GROUP 5: VMS SYSTEM HARDWARE AS NEEDED (FUIRNISHED AND INSTALLED PRICE PER III, ITEM NO.14 - INSTLLATION) | | | | | |
|---|---|---|---|---|---|
| Bid Form Item No. | Item Description | Option 1 Manufacturer Name | Option 1 Manufacturer Item Number | Option 2 Manufacturer Name | Option 2 Manufacturer Item Number |
| 134 | PTZ camera - Wall Arm mount | | | | |
| 135 | High terabyte Grade NVR (20 to 48 terabyte) (Division 28 23 00 Section 2.20) | | | | |
| 136 | Medium terabyte Grade NVR (8 to 20 terabyte) (Division 28 23 00 Section 2.20) | | | | |
| 137 | Low Grade NVR (1 to 8 terabyte) (Division 28 23 00 Section 2.20) | | | | |

**ATTACHMENT 1**
**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

## SUBCONTRACTOR INFORMATION

It is our intent to utilize the following MBE, WBE, PBE, SBE, VET, DVET and ESB subcontractors in association with CONTRACT:

1. Subcontractor Name: _____

   Contact Person: _____ Telephone Number: _____

   Description of Work: _____

   Estimated Percentage of Total Dollars: _____

   Business Type: ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB

2. Subcontractor Name: _____

   Contact Person: _____ Telephone Number: _____

   Description of Work: _____

   Estimated Percentage of Total Dollars: _____

   Business Type: ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB

3. Subcontractor Name: _____

   Contact Person: _____ Telephone Number: _____

   Description of Work: _____

   Estimated Percentage of Total Dollars: _____

   Business Type: ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB

4. Subcontractor Name: _____

   Contact Person: _____ Telephone Number: _____

   Description of Work: _____

   Estimated Percentage of Total Dollars: _____

   Business Type: ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB

5. Subcontractor Name: _____

   Contact Person: _____ Telephone Number: _____

   Description of Work: _____

   Estimated Percentage of Total Dollars: _____

   Business Type: ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB

6. Subcontractor Name: _____

   Contact Person: _____ Telephone Number: _____

   Description of Work: _____

   Estimated Percentage of Total Dollars: _____

   Business Type: ☐ MBE ☐ WBE ☐ PBE ☐ SBE ☐ VET ☐ DVET ☐ ESB

☐ No MBE, WBE, PBE, SBE, VET, DVET or ESB subcontractors will be used.

**ATTACHMENT 2**
**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

## INSURANCE REQUIREMENTS

**TO ENSURE COMPLIANCE WITH THE BID DOCUMENT, BIDDERS SHOULD FORWARD THE FOLLOWING INSURANCE CLAUSE AND SAMPLE INSURANCE FORM TO THEIR INSURANCE AGENT PRIOR TO BID SUBMITTAL**

1. FORMAT / TIME

SUCCESSFUL BIDDER shall provide COUNTY with Certificates of Insurance, per the sample format (page 3-4), for coverage as listed below, and endorsements affecting coverage required by this bid within **ten (10) business days** after the award by COUNTY. All policy certificates and endorsements shall be signed by a person authorized by that insurer and who is licensed by the State of Nevada in accordance with NRS 680A.300. All required aggregate limits shall be disclosed and amounts entered on the certificate of insurance, and shall be maintained for the duration of CONTRACT and any renewal periods.

2. BEST KEY RATING

COUNTY requires insurance carriers to maintain during CONTRACT term, a Best Key Rating of A.VII or higher, which shall be fully disclosed and entered on the certificate of insurance.

3. COUNTY COVERAGE

COUNTY, its officers and employees must be expressly covered as additional insured's except on Workers' Compensation insurance coverage. SUCCESSFUL BIDDER'S insurance shall be primary as respects to COUNTY, its officers and employees.

4. ENDORSEMENT / CANCELLATION

SUCCESSFUL BIDDER'S commercial general liability and automobile liability insurance policy shall be endorsed to recognize specifically SUCCESSFUL BIDDER'S contractual obligation of additional insured to COUNTY. All policies must note that COUNTY will be given thirty (30) calendar days advance notice by certified mail "return receipt requested" of any policy changes, cancellations, or any erosion of insurance limits. Either a copy of the additional insured endorsement, or a copy of the policy language that gives Clark County automatic additional insured status must be attached to any certificate of insurance.

5. DEDUCTIBLES

All deductibles and self insured retentions shall be fully disclosed in the Certificates of Insurance and may not exceed **$25,000**.

6. AGGREGATE LIMITS

If aggregate limits are imposed on bodily injury and property damage, then the amount of such limits must not be less than **$2,000,000.**

7. COMMERCIAL GENERAL LIABILITY

Subject to paragraph 6 of this attachment, SUCCESSFUL BIDDER shall maintain limits of no less than **$1,000,000** combined single limit per occurrence for bodily injury (including death), personal injury and property damages. Commercial General Liability coverage shall be on a "per occurrence" basis only, not "claims made", and be provided either on a Commercial General Liability or a Broad Form Comprehensive General Liability (including a Broad Form CGL endorsement) insurance form. Policies must contain a primary and non-contributory clause and must contain a waiver of subrogation endorsement.

8. AUTOMOBILE LIABILITY

Subject to paragraph 6 of this attachment, SUCCESSFUL BIDDER shall maintain limits of no less than **$1,000,000** combined single limit per occurrence for bodily injury and property damage, to include, but not be limited to, coverage against all insurance claims for injuries to persons or damages to property which may arise from services rendered by SUCCESSFUL BIDDER and **any auto** used for the performance of services under CONTRACT.

9. WORKERS' COMPENSATION

SUCCESSFUL BIDDER shall obtain and maintain for the duration of CONTRACT, a work certificate or a certificate issued by an insurer qualified to underwrite workers' compensation insurance in the State of Nevada, in accordance with Nevada Revised Statutes Chapters 616A-616D, inclusive, provided, however, a Bidder who is a Sole Proprietor shall be required to submit an affidavit (Attachment 3) indicating that Bidder has elected not to be included in the terms, conditions and provisions of Chapters 616A-616D, inclusive, and is otherwise in compliance with those terms, conditions and provisions.

10. FAILURE TO MAINTAIN COVERAGE

If SUCCESSFUL BIDDER fails to maintain any of the insurance coverage required herein, COUNTY may withhold payment, order SUCCESSFUL BIDDER to stop the work, declare SUCCESSFUL BIDDER in breach, suspend or terminate CONTRACT, assess liquidated damages as defined herein, or may purchase replacement insurance or pay premiums due on existing policies. COUNTY may collect any replacement insurance costs or premium payments made from SUCCESSFUL BIDDER or deduct the amount paid from any sums due SUCCESSFUL BIDDER under CONTRACT.

11. ADDITIONAL INSURANCE

SUCCESSFUL BIDDER is encouraged to purchase any such additional insurance as it deems necessary.

12. DAMAGES

SUCCESSFUL BIDDER is required to remedy all injuries to persons and damage or loss to any property of COUNTY, caused in whole or in part by SUCCESSFUL BIDDER, their subcontractors or anyone employed, directed or supervised by SUCCESSFUL BIDDER.

13. COST

SUCCESSFUL BIDDER shall pay all associated costs for the specified insurance. The cost shall be included in the bid price(s).

14. INSURANCE SUBMITTAL ADDRESS

All Insurance Certificates requested shall be sent to the Clark County Purchasing and Contracts Division, Attention: Insurance Coordinator. See the "Submission of Bids" clause in the Instruction to Bidders section of this bid for the appropriate mailing address.

15. INSURANCE FORM INSTRUCTIONS

The following information must be filled in by SUCCESSFUL BIDDERS' Insurance Company representative:

1. Insurance Broker's name, complete address, contacts name, phone and fax numbers.
2. SUCCESSFUL BIDDER'S name, complete address, phone and fax numbers.
3. Insurance Company's Best Key Rating
4. Commercial General Liability (Per Occurrence)
   - (A) Policy Number
   - (B) Policy Effective Date
   - (C) Policy Expiration Date
   - (D) Each Occurrence ($1,000,000)
   - (E) Damage to Rented Premises ($50,000)
   - (F) Medical Expenses ($5,000)
   - (G) Personal & Advertising Injury ($1,000,000)
   - (H) General Aggregate ($2,000,000)
   - (I) Products - Completed Operations Aggregate ($2,000,000)
5. Automobile Liability (Any Auto)
   - (J) Policy Number
   - (K) Policy Effective Date
   - (L) Policy Expiration Date
   - (M) Combined Single Limit ($1,000,000)
6. Worker's Compensation
7. Description: Bid Number 603593-15 and Annual Requirements Contract for Video Surveillance (CCTV) System (must be identified on the initial insurance form and each renewal form).
8. Certificate Holder

   Clark County, Nevada
   c/o Purchasing and Contracts Division
   Government Center, Fourth Floor
   500 South Grand Central Parkway
   P.O. Box 551217
   Las Vegas, Nevada 89155-1217
9. Appointed Agent Signature to include license number and issuing state.

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: **If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed.** If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | | | |
|---|---|---|---|
| PRODUCER<br>**1.** INSURANCE BROKER'S NAME<br>ADDRESS | CONTACT NAME: | | |
| | PHONE (A/C No. Ext): BROKER'S PHONE NUMBER | FAX (A/C No.) BROKER'S FAX NUMBER | |
| | E-MAIL ADDRESS: BROKER'S EMAIL ADDRESS | | |
| | INSURER(S) AFFORDING COVERAGE | | NAIC # |
| INSURED<br>**2.** SUCCESSFUL BIDDER'S NAME<br>ADDRESS<br>PHONE & FAX NUMBERS | INSURER A: | | **3.** CARRIER'S |
| | INSURER B: | | BEST KEY |
| | INSURER C: | | RATING |
| | INSURER D: | | |
| | INSURER E: | | |
| | INSURER F: | | |

**COVERAGES** **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADD'L INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YY) | POLICY EXP (MM/DD/YY) | LIMITS | | |
|---|---|---|---|---|---|---|---|---|---|
| **4.** | GENERAL LIABILITY | X | | (A) | (B) | (C) | EACH OCCURRENCE | $(D) | 1,000,000 |
| | X COMMERCIAL GENERAL LIABILITY | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $(E) | 50,000 |
| | CLAIMS-MADE X OCCUR. | | | | | | MED EXP (Any one person) | $(F) | 5,000 |
| | | | | | | | PERSONAL & ADV INJURY | $(G) | 1,000,000 |
| | | | | | | | GENERAL AGGREGATE | $(H) | 2,000,000 |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | PRODUCTS – COMP/OP AGG | $(I) | 2,000,000 |
| | POLICY X PROJECT LOC | | | | | | **DEDUCTIBLE MAXIMUM** | **$** | **25,000** |
| **5.** | AUTOMOBILE LIABILITY | X | | (J) | (K) | (L) | COMBINED SINGLE LIMIT (Ea accident) | $(M) | 1,000,000 |
| | X ANY AUTO | | | | | | BODILY INJURY (Per person) | $ | |
| | ALL OWNED AUTOS | | | | | | BODILY INJURY (Per accident) | $ | |
| | SCHEDULED AUTOS | | | | | | PROPERTY DAMAGE (Per accident) | $ | |
| | HIRED AUTOS | | | | | | | $ | |
| | NON-OWNED AUTOS | | | | | | **DEDUCTIBLE MAXIMUM** | **$** | **25,000** |
| **6.** | WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY Y/N | N/A | | | | | WC STATU-TORY LIMITS / OTHER | $ | |
| | ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) | | | | | | E.L. EACH ACCIDENT | $ | |
| | describe under DESCRIPTION OF OPERATIONS below | | | | | | E.L. DISEASE – E.A. EMPLOYEE | $ | |
| | | | | | | | E.L. DISEASE – POLICY LIMIT | $ | |

DESCRIPTION OF OPERATIONS / LOCATIONS I VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

**7.** BID NO. 603593-15; ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM.

| **8.** CERTIFICATE HOLDER | CANCELLATION |
|---|---|
| CLARK COUNTY, NEVADA<br>C/O PURCHASING AND CONTRACTS DIVISION<br>GOVERNMENT CENTER, FOURTH FLOOR<br>500 S. GRAND CENTRAL PARKWAY<br>P.O. BOX 551217<br>LAS VEGAS, NV 89155-1217 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.<br>**9.** AUTHORIZED REPRESENTATIVE |

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ACORD 25 (2010/05)

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SAMPLE

POLICY NUMBER: _____ COMMERCIAL GENERAL AND AUTOMOBILE LIABILITY

BID NUMBER AND PROJECT NAME: _____

**THIS ENDORSEMENT CHANGED THE POLICY. PLEASE READ IT CAREFULLY**

# ADDITIONAL INSURED – DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY AND AUTOMOBILE LIABILITY COVERAGE PART.

## SCHEDULE

**Name of Person or Organization:**

CLARK COUNTY, NEVADA
C/O PURCHASING & CONTRACTS DIVISION
500 S. GRAND CENTRAL PKWY 4TH FL
PO BOX 551217
LAS VEGAS, NEVADA 89155-1217

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule as an insured but only with respect to liability arising out of your operations or premises owned by or rented to you.

CLARK COUNTY, NEVADA, ITS OFFICERS, EMPLOYEES AND VOLUNTEERS ARE INSUREDS WITH RESPECT TO LIABILITY ARISING OUT OF THE ACTIVITIES BY OR ON BEHALF OF THE NAMED INSURED IN CONNECTION WITH THIS PROJECT.

SAMPLE

**ATTACHMENT 3**
**BID NO. 603593-15**
**ANNUAL REQUIREMENTS CONTRACT FOR VIDEO SURVEILLANCE (CCTV) SYSTEM**

## AFFIDAVIT
## (ONLY REQUIRED FOR A SOLE PROPRIETOR)

I, _____, on behalf of my company, _____, being
(Name of Sole Proprietor) (Legal Name of Company)
duly sworn, depose and declare:

7. I am a Sole Proprietor;
8. I will not use the services of any employees in the performance of CONTRACT, identified as Bid No. 603593-15, entitled Annual Requirements Contract for Video Surveillance (CCTV) System;
9. I have elected to not be included in the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive; and
10. I am otherwise in compliance with the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive.

I release Clark County from all liability associated with claims made against me and my company, in the performance of CONTRACT, that relate to compliance with NRS Chapters 616A-616D, inclusive.

Signed this _____ day of _____, _____.

Signature

State of Nevada )
)ss.
County of Clark )

Signed and sworn to (or affirmed) before me on this _____ day of _____, _____ ,

by _____ (name of person making statement).

_____
Notary Signature

STAMP AND SEAL

**INSTRUCTIONS FOR COMPLETING THE**
**DISCLOSURE OF OWNERSHIP/PRINCIPALS FORM**

**Purpose of the Form**

The purpose of the Disclosure of Ownership/Principals Form is to gather ownership information pertaining to the business entity for use by the Board of County Commissioners ("BCC") in determining whether members of the BCC should exclude themselves from voting on agenda items where they have, or may be perceived as having a conflict of interest, and to determine compliance with Nevada Revised Statute 281A.430, contracts in which a public officer or employee has interest is prohibited.

**General Instructions**

Completion and submission of this Form is a condition of approval or renewal of a contract or lease and/or release of monetary funding between the disclosing entity and the appropriate Clark County government entity. Failure to submit the requested information may result in a refusal by the BCC to enter into an agreement/contract and/or release monetary funding to such disclosing entity.

**Detailed Instructions**

All sections of the Disclosure of Ownership form must be completed. If not applicable, write in N/A.

***Business Entity Type*** – Indicate if the entity is an Individual, Partnership, Limited Liability Company, Corporation, Trust, Non-profit Organization, or Other. When selecting 'Other', provide a description of the legal entity.

***Non-Profit Organization (NPO)*** - Any non-profit corporation, group, association, or corporation duly filed and registered as required by state law.

***Business Designation Group*** – Indicate if the entity is a Minority Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), Small Business Enterprise (SBE), Physically-Challenged Business Enterprise (PBE), Veteran Owned Business (VET), Disabled Veteran Owned Business (DVET), or Emerging Small Business (ESB) . This is needed in order to provide utilization statistics to the Legislative Council Bureau, and will be used only for such purpose.

- **Minority Owned Business Enterprise (MBE):** An independent and continuing business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more minority persons of Black American, Hispanic American, Asian-Pacific American or Native American ethnicity.
- **Women Owned Business Enterprise (WBE**): An independent and continuing business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more women.
- **Physically-Challenged Business Enterprise (PBE):** An independent and continuing business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more disabled individuals pursuant to the federal Americans with Disabilities Act.
- **Small Business Enterprise (SBE):** An independent and continuing business for profit which performs a commercially useful function, is not owned and controlled by individuals designated as minority, women, or physically-challenged, and where gross annual sales does not exceed $2,000,000.
- **Veteran Owned Business Enterprise (VET):** An independent and continuing Nevada business for profit which performs a commercially useful function and is at least 51 percent owned and controlled by one or more U.S. Veterans.
- **Disabled Veteran Owned Business Enterprise (DVET):** A Nevada business at least 51 percent owned/controlled by a disabled veteran.
- **Emerging Small Business (ESB):** Certified by the Nevada Governor's Office of Economic Development effective January, 2014. Approved into Nevada law during the 77th Legislative session as a result of AB294.

***Business Name (include d.b.a., if applicable)*** – Enter the legal name of the business entity and enter the "Doing Business As" (d.b.a.) name, if applicable.

***Corporate/Business Address, Business Telephone, Business Fax, and Email*** – Enter the street address, telephone and fax numbers, and email of the named business entity.

***Nevada Local Business Address, Local Business Telephone, Local Business Fax, and Email*** – If business entity is out-of-state, but operates the business from a location in Nevada, enter the Nevada street address, telephone and fax numbers, point of contact and email of the local office. Please note that the local address must be an address from which the business is operating from that location. Please do not include a P.O. Box number, unless required by the U.S. Postal Service, or a business license hanging address.

***Number of Clark County Nevada Residents employed by this firm. (*****Do not leave blank. If none or zero, put the number 0 in the space provided.)**

***List of Owners/Officers*** – Include the full name, title and percentage of ownership of each person who has ownership or financial interest in the business entity. If the business is a publicly-traded corporation or non-profit organization, list all Corporate Officers and Directors only.

***For All Contracts*** – **(Not required for publicly-traded corporations)**

1) Indicate if any individual members, partners, owners or principals involved in the business entity are a Clark County full-time employee(s), or appointed/elected official(s). If yes, the following paragraph applies.

   In accordance with NRS 281A.430.1, a public officer or employee shall not bid on or enter into a contract between a government agency and any private business in which he has a significant financial interest, except as provided for in subsections 2, 3, and 4.

2) Indicate if any individual members, partners, owners or principals involved in the business entity have a second degree of consanguinity or affinity relation to a Clark County full-time employee(s), or appointed/elected official(s) (reference form on Page 2 for definition). If **YES**, complete the Disclosure of Relationship Form. Clark County is comprised of the following government entities: Clark County, Department of Aviation (McCarran Airport), and Clark County Water Reclamation District. Note: The Department of Aviation includes all of the General Aviation Airports (Henderson, North Las Vegas, and Jean). **This will also include Clark County Detention Center.**

A professional service is defined as a business entity that offers business/financial consulting, legal, physician, architect, engineer or other professional services.

***Signature and Print Name*** – Requires signature of an authorized representative and the date signed.

***Disclosure of Relationship Form*** – If any individual members, partners, owners or principals of the business entity is presently a Clark County employee, public officer or official, or has a second degree of consanguinity or affinity relationship to a Clark County employee, public officer or official, this section must be completed in its entirety.

# DISCLOSURE OF OWNERSHIP/PRINCIPALS

**Business Entity Type (Please select one)**

| | | | | | | |
|---|---|---|---|---|---|---|
| ☐ Sole Proprietorship | ☐Partnership | ☐ Limited Liability Company | ☐ Corporation | ☐ Trust | ☐ Non-Profit Organization | ☐ Other |

**Business Designation Group (Please select all that apply)**

| | | | | | | |
|---|---|---|---|---|---|---|
| ☐ MBE | ☐ WBE | ☐ SBE | ☐ PBE | ☐ VET | ☐DVET | ☐ ESB |
| Minority Business Enterprise | Women-Owned Business Enterprise | Small Business Enterprise | Physically Challenged Business Enterprise | Veteran Owned Business | Disabled Veteran Owned Business | Emerging Small Business |

## Number of Clark County Nevada Residents Employed:

| | | |
|---|---|---|
| | | |
| **Corporate/Business Entity Name:** | | |
| **(Include d.b.a., if applicable)** | | |
| **Street Address:** | | **Website:** |
| **City, State and Zip Code:** | | **POC Name:**<br>**Email:** |
| **Telephone No:** | | **Fax No:** |
| **Nevada Local Street Address:**<br>**(If different from above)** | | **Website:** |
| **City, State and Zip Code:** | | **Local Fax No:** |
| **Local Telephone No:** | | **Local POC Name:**<br>**Email:** |

**All entities,** with the exception of publicly-traded and non-profit organizations**,** must list the names of individuals holding more than five percent (5%) ownership or financial interest in the business entity appearing before the Board.

**Publicly-traded entities and non-profit organizations shall list all Corporate Officers and Directors** in lieu of disclosing the names of individuals with ownership or financial interest. The disclosure requirement, as applied to land-use applications, extends to the applicant and the landowner(s).

**Entities** include all business associations organized under or governed by Title 7 of the Nevada Revised Statutes, including but not limited to private corporations, close corporations, foreign corporations, limited liability companies, partnerships, limited partnerships, and professional corporations.

| Full Name | Title | % Owned<br>(Not required for Publicly Traded Corporations/Non-profit organizations) |
|---|---|---|
| | | |
| | | |
| | | |

***This section is not required for publicly-traded corporations. Are you a publicly-traded corporation?*** ☐ Yes ☐ No

1. Are any individual members, partners, owners or principals, involved in the business entity, a Clark County, Department of Aviation, Clark County Detention Center or Clark County Water Reclamation District full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☐ No (If yes, please note that County employee(s), or appointed/elected official(s) may not perform any work on professional service contracts, or other contracts, which are not subject to competitive bid.)

2. Do any individual members, partners, owners or principals have a spouse, registered domestic partner, child, parent, in-law or brother/sister, half-brother/half-sister, grandchild, grandparent, related to a Clark County, Department of Aviation, Clark County Detention Center or Clark County Water Reclamation District full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☐ No (If yes, please complete the Disclosure of Relationship form on Page 2. If no, please print N/A on Page 2.)

I certify under penalty of perjury, that all of the information provided herein is current, complete, and accurate. I also understand that the Board will not take action on land-use approvals, contract approvals, land sales, leases or exchanges without the completed disclosure form.

Signature _____ Print Name _____

Title _____ Date _____



REVISED 7/25/2014

# DISCLOSURE OF RELATIONSHIP

**List any disclosures below:**
**(Mark N/A, if not applicable.)**

| NAME OF BUSINESS OWNER/PRINCIPAL | NAME OF COUNTY* EMPLOYEE/OFFICIAL AND JOB TITLE | RELATIONSHIP TO COUNTY* EMPLOYEE/OFFICIAL | COUNTY* EMPLOYEE'S/OFFICIAL'S DEPARTMENT |
|---|---|---|---|
| | | | |
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| | | | |

* County employee means Clark County, Department of Aviation, Clark County Detention Center or Clark County Water Reclamation District.

"Consanguinity" is a relationship by blood. "Affinity" is a relationship by marriage.

"To the second degree of consanguinity" applies to the candidate's first and second degree of blood relatives as follows:

- Spouse – Registered Domestic Partners – Children – Parents – In-laws (first degree)
- Brothers/Sisters – Half-Brothers/Half-Sisters – Grandchildren – Grandparents – In-laws (second degree)

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***For County Use Only:***

If any Disclosure of Relationship is noted above, please complete the following:

☐ Yes ☐ No Is the County employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the County employee(s) noted above involved in any way with the business in performance of the contract?

Notes/Comments:

_____
Signature

_____
Print Name
Authorized Department Representative