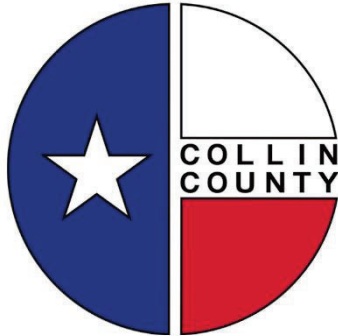


COLLIN COUNTY



COLLIN CO ADF ELECTRONIC SECURITY SYSTEM UPGRADE



MD ENGINEERING

MD Engineering, LLP Texas

Registered Engineering Firm F-7489

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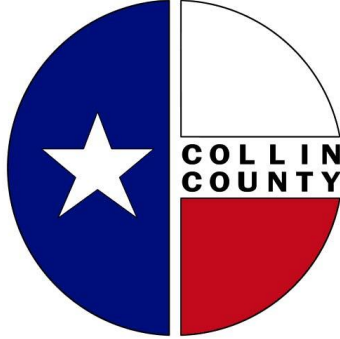
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Collin County, TX

INVITATION FOR BID

2025-340

CONSTRUCTION, ELECTRONIC SECURITY SYSTEM UPGRADE PLC

RELEASE DATE: December 16, 2025

RESPONSE DEADLINE: January 22, 2026, 2:00 pm

Please refer to the project timeline in this document for all important deadlines.

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001116 Advertisement for Bids

1 SCOPE OF WORK

SCOPE OF WORK INCLUDES all materials, labor, equipment and services to produce or be incorporated in such construction.

The Contract is to replace the existing electronic security system with a new one. All existing electronic security head-end equipment (door control, intercom and paging, touch screen control stations) will be replaced while existing security filed devices, and their associated wiring will remain for use. All electronic security system programming and software integration between door control, intercom and paging system, video management system and any other systems listed in the construction documents shall be done by CML Security (per Collin County Commissioners Court Order). The county will contract separately with CML Security for the programming and integration scope of work. The bidder(s) shall not include the cost of this work in their bid amount.

Payment for the contract work shall be made pursuant to the terms of the Contract Documents.

2 TIMELINE

Advertisement/Release Project Date:	December 16, 2025
Pre-Bid Meeting Time Slot 1 (Mandatory):	January 5, 2026, 10:30am Collin County Justice Center, 4300 Community Ave., McKinney, TX 75071 (meet in Sheriff Office Training Room)
Pre-Bid Meeting Time Slot 2 (Mandatory):	January 7, 2026, 1:30pm Collin County Justice Center, 4300 Community Ave., McKinney, TX 75071 (meet in Sheriff Office Training Room)
Question and Substitution Request Submission Deadline:	January 12, 2026, 5:00pm
Bid Opening:	January 22, 2026, 2:00pm

3 PROBABLE CONSTRUCTION COST

The opinion of probable construction cost for this contract is Three million, three hundred thousand dollars (\$3,300,000.00)

4 BID INFORMATION

Collin County uses OpenGov Procurement for the notification and dissemination of all solicitations for commodities and services. The receipt of solicitations through any other company may result in your receipt of incomplete specifications and/or addenda which could ultimately render your bid non-compliant. Collin County accepts no responsibility for the receipt and/or notification of solicitations through any other company.

COLLIN COUNTY APPRECIATES your time and effort in preparing a bid.

Collin County prefers to receive all bids electronically through <https://procurement.opengov.com/portal/collincountytx>, however the County will accept hard copy bids. Hard copy paper bid must be in a separate sealed envelope, manually signed in ink by a person having the authority to bind the firm in a contract and marked clearly on the outside as outlined above. Please note that all bids must be received at the designated location by the deadline shown. Bids received after deadline shall be considered void and unacceptable. Collin County is not responsible for lateness of mail, carrier, etc. and time/date stamp clock in the Collin County Purchasing Department shall be the official time of receipt. All bid forms provided in this Invitation for Bid must be completed prior to submission. Failure to complete the forms shall render your bid null and void. We would appreciate you indicating on your "NO BID" response any requirements of this bid request which may have influenced your decision to "NO BID".

BIDS WILL BE publicly opened in the Office of the Purchasing Agent, 2300 Bloomdale Rd, Suite 3160, McKinney, TX 75071, at the date and time indicated above.

No oral, telegraphic, telephonic or facsimile bids will be considered. **Bids submitted via email, CD-ROM, or Flash Drive will not be accepted.** Bids may be submitted in electronic format via OpenGov located at <https://procurement.opengov.com/portal/collincountytx>

5 PRE-BID INFORMATION

A MANDATORY PRE-BID MEETING & SITE-WALK will be held by Collin County at Collin County Justice Center, 4300 Community Ave., McKinney, TX 75071 (meet in Sheriff Office Training Room), on **Monday, January 5, 2026 at 10:30 am and Wednesday, January 7, 2026 at 1:30 pm** in order for bidders to ask questions regarding the proposed work. All Bidders desiring to bid the work must attend ONE of the two meetings, but does not have to attend both (same sites will be viewed at both meetings). It is the bidder's responsibility to review the site and documents to gain a full understanding of the requirements of the bid.

6 BID SECURITY

BID SECURITY: All Bidders must submit, prior to the bid opening time, a Certified Check, Cashier's Check or acceptable Bid Bond payable without recourse to Collin County in the amount of not less than five percent (5%) of the total bid plus alternates as submitted.

1. Bid Bond, certified check or Cashier's Check may be mailed or hand delivered to the Office of the Collin County Purchasing Agent, Collin County Administration Building, 2300 Bloomdale Road, Ste 3160, McKinney, TX 75071 and shall be delivered in an envelope, marked plainly on the outside with the Bid Name and Number.

2. Bidders submitting a bid via OpenGov shall upload a Bid Bond at <https://procurement.opengov.com/portal/collincountytx>

Regardless of delivery method, all Bid Bonds shall be received prior to the bid opening time to be considered. **Failure to submit a copy of bid security prior to bid opening shall be cause for rejection of bid.**

The original Bid Bond shall be received in the Collin County Purchasing Department **no later than** close of business on the third working day after the bid opening. **Late receipt of or failure to submit original Bid Bond shall be cause for rejection of bid.**

7 BONDS

Contractor must furnish a performance bond, payment bond and two (2) year maintenance bond within ten (10) consecutive calendar days following award of contract. The bonds shall be issued by a corporate surety in accordance with all Texas Law, including but not limited to, Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code, for public works projects.

002113 Instructions to Bidders

1.01 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

1.02 DEFINITIONS

1. All definitions set forth in the General Conditions of the Contract for Construction or in other Contract Documents are applicable to these Bidding Documents.
2. Bidding Documents include the Advertisement or Invitation for Bids, Instructions to Bidders, the bid form, other sample bidding and contract forms and the proposed Contract Documents including any Addenda issued prior to receipt of bids.
3. Addenda are written or graphic instruments issued prior to the opening of the Bidding Documents, which modify or interpret the Bidding Documents, including Drawings and Specifications, by additions, deletions, clarifications or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
4. MD Engineering/LATTA TECHNICAL SERVICES INC. will be hereafter referred to in the Project Manual as “Engineer” and all correspondence shall be addressed to: Michael Smith, P.E., LEED AP/Igor Abadzic, MD Engineering/LATTA TECHNICAL SERVICES INC., 1255 West 15th Street, Suite 300 Plano, TX 75075.
5. “Rickeye Harris” will be hereinafter referred to in this Project Manual as “Project Manager”.
6. “Collin County” will be hereafter referred to in this Project Manual as “Owner”.
7. A Bid is a complete and properly signed submittal to do the Work for designated portion thereof for the sums stipulated therein, submitted in accordance with the Bidding Documents.
8. The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added or from which work may be deleted for sums stated in Alternate Bids.
9. An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid in the corresponding change in the Work, as described in the Bidding Documents or in the proposed Contract Documents.
10. A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials or service as described in the Bidding Documents or in the proposed Contract Documents.
11. A Bidder is a person or entity who submits a Bid.

12. A Sub-Bidder is a person or entity who submits a bid to a Bidder for materials or labor for a portion of the work.
13. A Contractor is a person or entity who is determined to be the lowest responsible and responsive bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award.
14. The Bid Requirements and Other General Conditions, as provided under the Division of the North Central Texas Council of Governments Standard Specifications for Public Works Construction will be applicable to this project, unless noted otherwise in the Contract Documents

1.03 EXAMINATION OF DOCUMENTS AND SITE

1. Each bidder, by making his/her Bid, represents that he/she has read and understands the Bidding Documents.
2. Each Bidder, by making his/her Bid, represents that he/she has visited the site, performed investigations and verifications as he/she deems necessary, and familiarized himself/herself with the local conditions under which the Work is to be performed and will be responsible for any and all errors in his/her bid resulting from his/her failure to do so.
3. The location and elevations of the various utilities and pipe work included within the scope of the work are offered as a general guide only, without guarantee as to accuracy. The Contractor shall verify and investigate to his/her own satisfaction the location and elevation of all utilities, pipe work, and the like and shall adequately inform himself/herself of their relation to the work before submitting a bid.
4. Before submitting a bid each bidder will, at bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information (surface, subsurface, and underground facilities) at or contiguous to the site, or otherwise which may affect cost, progress, performance or furnishing of the work and which bidder deems necessary to determine its bid for performing and furnishing the work in accordance with the time, price and other terms and conditions of the Contract Documents. Bidder will rely solely on its own site investigation and assumes the risk of any site conditions not discovered that may result in additional costs and all errors in the bid.
5. On request in advance, Owner will provide each bidder access to the site to conduct explorations and tests as each bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
6. The lands upon which the work is to be performed, right-of way and easement for access thereto and other lands designated for use by Contractor in performing the work are identified in the Contract.
7. Each bidder by making his/her bid represents that his/her bid is based upon the materials, systems, and equipment required by the Bidding Documents without exception.

1.04 BIDDING DOCUMENTS

1. Complete sets of Bidding Documents shall be used in preparing bids; neither County, nor Engineer assume any responsibility for errors or misinterpretations resulting from use of incomplete sets of Bidding Documents.
2. County or the Engineer, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

1.05 BIDDING PROCEDURES

1. All bids shall be prepared on the forms provided by the Engineer and submitted in accordance with the Instruction to Bidders. The Engineer or owner will furnish bidders with bid forms which will provide for the following bid items. Bidders shall provide all requested information. Prices bid/proposed shall only be considered if they are provided in the appropriate space(s) on the Collin County bid form(s). For consideration of any exception including any additions or deductions to the bid/proposal prices offered please see "Exceptions" in Section 004513 Vendor Submissions. Extraneous numbers, prices, comments, etc. or bidder/offeror generated documents appearing elsewhere on the bid or as an additional attachment shall be deemed to have no effect on the prices offered in the designated locations.
 - i. A single contract price for each bid item as detailed and described in these specifications.
 - ii. Acknowledgment of Addenda.
 - iii. Number of consecutive calendar days to complete project.
 - iv. Alternate bids.
 - v. Unit prices.
2. A bid (electronic or hard copy) is invalid if it has not been deposited at the designed location prior to the time and date for receipt of bids indicated in the Advertisement or Invitation For Bid, or prior to any extension thereof issued to the bidders. Bids received in County Purchasing Department after submission deadline shall be returned unopened and will be considered void and unacceptable. Owner is not responsible for lateness of mail, carrier, etc. and time/date stamp clock in County Purchasing Department shall be the official time of receipt.
3. Unless otherwise provided in any supplement to these Instructions to Bidders, no bidder shall modify, withdraw or cancel his/her bid or any part thereof for ninety (90) consecutive calendar days after the time designated for the receipt of bids in the Advertisement or Invitation For Bid.
4. Bids shall not contain any recapitulation of the Work to be done.

5. The Bidder shall make no additional stipulations on the Bid Form nor limit or qualify his/her bid in any other manner. Bids so qualified will be subject to disqualification.
6. Collin County is by statute exempt from the State Sales Tax and Federal Excise Tax; therefore, the prices submitted shall not include taxes.

1.06 DISCREPANCIES AND AMBIGUITIES

Any interpretations, corrections and/or changes to an Invitation for Bid and related Specifications or extensions to the opening/receipt date will be made by addenda to the respective document by the Collin County Purchasing Department. Questions and/or clarification requests must be submitted no later than the date specified in the solicitation. Those received at a later date may not be addressed prior to the public opening. Sole authority to authorize addenda shall be vested in Collin County Purchasing Agent as entrusted by the Collin County Commissioners Court. Addenda may be transmitted electronically via Collin County OpenGov, by facsimile, E-mail transmission or mailed via the US Postal Service.

1. Addenda will be transmitted to all that are known to have received a copy of the IFB and related Specifications. However, it shall be the sole responsibility of the Bidder to verify issuance/non-issuance of addenda and to check all avenues of document availability (i.e. OpenGov Procurement at <https://procurement.opengov.com/portal/collincountytx>, telephoning Purchasing Department directly, etc.) prior to opening/receipt date and time to insure Bidder's receipt of any addenda issued. Bidder shall acknowledge receipt of all addenda.

1.07 SUBSTITUTIONS

1. Each bidder represents that his/her bid is based upon the materials and equipment described in the Bidding Documents.
2. No substitution will be considered unless written request has been submitted to the Engineer for approval by the date specified in the solicitation. Submit substitution request forms to rding@co.collin.tx.us.
3. If the Engineer and Owner approves a proposed substitution, such approval will be set forth in an Addendum.

1.08 QUALIFICATION OF BIDDERS

1. Within seven (7) consecutive calendar days following bid opening, the apparent low bidder shall submit with a properly executed Contractor's Qualification Statement as evidence to establish bidder's financial responsibility, experience and possession of such equipment as may be needed to prosecute the work in an expeditious, safe and satisfactory manner. Submission of a bid is confirmation that Bidder accepts this requirement and is willing to provide the requested information unconditionally

and understands the County may not, by law, sign an NDA to obtain this information. This Statement shall include:

- i. List of current projects.
 - ii. List of projects completed within the past five years.
 - iii. Experience of key individuals of the organization.
 - iv. Trade and Bank references.
 - v. Recent financial statements to confirm that the bidder has suitable financial status to meet obligations incidental to performing the work. Audited financial statements are not required; unaudited financial statements will be accepted. If bidder's firm does, however, have audited statements, please include a copy with your bid.
 - a. Financial Statements to include a complete Balance Sheet and Income Statement
 - b. Must provide statements for two consecutive fiscal years, preferably the two most recent available
 - c. Both statements must reflect the same reporting periods, i.e. January to December or October to September. Partial years will not accepted
 - vi. A statement of cost for each major item of Work included in the Bid.
 - vii. A designation of the Work to be performed by the Bidder with his/her own forces.
 - viii. A list of names of the Subcontractors or other persons or organizations (including those who are to furnish materials or equipment fabricated to a special design) proposed for each portion of the Work. The Bidder will be required to establish to the satisfaction of the Engineer and Owner the reliability and responsibility of the proposed Subcontractors. Prior to the award of the Contract, the Engineer will notify the Bidder in writing if either the County or the Engineer, after due investigation, has reasonable and substantial objection to any person or organization on such lists. If Owner or Engineer has a reasonable and substantial objection to any person or organization on such list, and refuses in writing to accept such person or organization, the Bidder may, at his/her option, withdraw his/her Bid without forfeiture of Bid Security or provide an acceptable substitute. Subcontractors and other persons and organizations proposed by the Bidder and accepted by Owner and Engineer must be used on the Work for which they were proposed and accepted, and shall not be changed except with the written approval of Owner and the Engineer.
2. Bidders may be disqualified and their bids not considered for any of the following specific reasons:
- i. Reason for believing collusion exists among bidders.
 - ii. The bidder being interested in any litigation against Owner.

- iii. The bidder being in arrears on any existing contract or having defaulted on a previous contract.
 - iv. Lack of competency as revealed by the financial statement, experience and equipment, questionnaires, or qualification statement.
 - v. Uncompleted work which in the judgment of Owner will prevent or hinder the prompt completion of additional work if awarded.
3. Minimum Standards For Responsible Prospective Bidders: A prospective Bidder must meet the following minimum requirements. Collin County may request representation and other information sufficient to determine Bidder's ability to meet these minimum standards listed below.
- i. Have adequate financial resources, or the ability to obtain such resources as required;
 - ii. be able to comply with the required or proposed delivery/ completion schedule;
 - iii. have a satisfactory record of performance;
 - iv. have a satisfactory record of integrity and ethics; and
 - v. be otherwise qualified and eligible to receive an award.
4. In determining to whom to award the contract, the Owner may consider;
- i. the purchase price;
 - ii. the reputation of the bidder/contractor/vendor and of the bidder/contractor/vendor's goods or services;
 - iii. the quality of the bidder/contractor/vendor's goods or services;
 - iv. the extent to which the goods or services meet the Owner's needs;
 - v. the bidder/contractor/vendor's past relationship with the Owner;
 - vi. the total long-term cost to the Owner to acquire the bidder/contractor/vendor's goods or services; and
 - vii. any other relevant factors specifically listed in the Instruction to Bidders.

1.09 PREPARATION OF BID

1. Bidder shall submit his/her bid on the forms furnished by the Engineer. All blank spaces in forms shall be correctly filled in and the bidder shall state the prices, written in words and in figures. Where there is discrepancy between the price written in words and the price written in figures, the price written in words shall govern. If bid is submitted by an individual, his/her name must be signed by him/her or his/her duly authorized agency. If the bid is submitted by a firm, association or partnership, the name and address of each member must be given, and the bid must be signed by an official or duly

authorized agent. Powers of attorney authorizing agents or others to sign bids must be properly certified and must be in writing and submitted with the bid.

2. Bidder shall bear any/all costs associated with its preparation of any bid, proposal or submittal.
3. Public Information Act: Collin County is governed by the Texas Public Information Act, Chapter 552 of the Texas Government Code. All information submitted by prospective bidders during the bidding process is subject to release under the Act.
4. The Bidder shall comply with Commissioners Court Order No. 2004-167-03-11, County Logo Policy.

1.10 BID SECURITY

1. Each bid must be accompanied by Bid Security (in accordance with instructions set forth in section 001116-Advertisement For Bids) made payable to Owner in an amount of five percent (5%) of the bidder's maximum bid price and in the form of a Cashier's Check or a Bid Bond, duly executed by bidder as principal and having as surety thereon, a corporate surety authorized and admitted to do business in the State of Texas and licensed to issue such bond, as a guarantee that the bidder will enter into a Contract and execute required Performance, Payment, and two (2) year Maintenance Bonds within ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract.
2. The Bid Security of the contractor will be retained until such bidder has executed the Contract Agreement and furnished the required Contract Security, whereupon, the Bid Security will be returned. If the contractor fails to execute and deliver the Agreement and furnish the required Contract Security within ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, Owner may annul the award of contract and the Bid Security of that bidder will be forfeited. The Bid Security of the other bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh (7th) consecutive calendar day after the effective date of the Agreement or the ninety-fifth (95th) consecutive calendar day after the bid opening, whereupon, the Bid Security furnished by such bidders will be returned. Bid Security with bids which are not competitive will be returned within seven (7) consecutive calendar days after the contract award.
3. Should the bidder to whom the Contract is awarded refuse or neglect to execute and file the contract and bonds within ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, Owner may annul award of Contract and the Bid Security filed with the bid shall become the property of Owner, not as a penalty, but as liquidated damages. Owner reserves the right to award canceled Contract to next responsible, lowest and best bidder as it deems to be in the best interest of the County.
4. Owner will have the right to retain the bid security of all bidders until either:

- i. the Contract has been executed and the bonds have been furnished, or
- ii. the specified time has elapsed so that bids may be withdrawn, or
- iii. all bids have been rejected.

1.11 PERFORMANCE BOND, LABOR & MATERIAL PAYMENT BOND, MAINTENANCE BOND

1. The Contractor shall post with Owner, not later than ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, a Performance Bond in the amount of one hundred percent (100%) of the total contract price in such form as is satisfactory to Owner, in compliance with Chapter 2253 of the Texas Government Code and all other applicable Texas Law, and on the form specified in the Contract Documents. This bond shall be executed by a corporate surety company duly authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. The Contractor shall notify its corporate surety of any Contract changes.
2. The Contractor shall post with Owner, not later than ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, a Payment Bond in the amount of one hundred percent (100%) of the total contract price in such form as is satisfactory to Owner, in compliance with Chapter 2253 of the Texas Government Code and all other applicable Texas Law, and on the form specified in the Contract Documents. This bond shall be executed by a corporate surety company duly authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. The Contractor shall notify its corporate surety of any Contract changes.
3. The Contractor shall post with Owner, not later than ten (10) consecutive calendar days of Collin County Commissioners Court award of Contract, a two (2) year Maintenance Bond in the amount of ten percent (10%) of the total contract price in such form as is satisfactory to Owner, in compliance with Chapter 2253 of the Texas Government Code and all other applicable Texas Law, and on the form specified in the Contract Documents. This bond shall be executed by a corporate surety company duly authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. The Contractor shall notify its corporate surety of any Contract changes.
4. The Contractor must demonstrate to Owner that it can secure the required performance and payment bonds, issued by a corporate surety company authorized and admitted to do business in the State of Texas and licensed to issue such a bond in the State of Texas. Contractor must also demonstrate that the bond is not in excess of ten percent (10%) of the corporate surety company's capital and surplus. To the extent the amount of the bond exceeds ten percent (10%) of the corporate surety company's capital and surplus, such bond will not be accepted unless bidder provides written certification that the corporate surety company has reinsured the portion of the risk that exceeds ten percent (10%) of the corporate surety company's capital and surplus with one or more insurers who

are duly authorized, accredited or trusted to do business in the State of Texas. The amount reinsured by any reinsurer must not exceed ten percent (10%) of the reinsurer's capital and surplus.

5. The Contractor must file with the performance bond and payment bond, all documents and information necessary to establish that the agent signing the bond is authorized to write the bond in the amount requested, and if applicable, that reinsurance requirements, have been met, including limits and ratings or other evidence of company solvency.
6. If the corporate surety company on any bond furnished by Contractor to Owner is declared bankrupt or becomes insolvent or such corporate surety company's right to do business in the State of Texas is revoked, the Contractor shall within five (5) consecutive calendar days thereafter substitute another bond and corporate surety company, both of which shall be acceptable to Owner.

1.12 FILING BID

1. All Bids, proposals, or submittals submitted in hard copy paper form shall be submitted in a sealed envelope, plainly marked on the outside with the Invitation for Bid (IFB) number and name. A hard copy paper form bid, proposal, or submittal shall be manually signed in ink by a person having the authority to bind the firm in a contract. Submittals, bids or proposals shall be mailed or hand delivered to the Collin County Purchasing Department.
2. No oral, telegraphic or telephonic submittals will be accepted. Bids, proposals, or submittals may be submitted in electronic format via Collin County OpenGov at <https://procurement.opengov.com/portal/collincountytx>.
3. All Bids, submittals or proposals submitted electronically via OpenGov Procurement at <https://procurement.opengov.com/portal/collincountytx> shall remain locked until official date and time of opening as stated in the Special Terms and Conditions of the IFB.
4. For hard copy paper form bids, proposals, or submittals, any alterations made prior to opening date and time must be initialed by the signer of the bid, proposal, or submittal, guaranteeing authenticity. Bids, proposals, or submittals cannot be altered or amended after submission deadline.
5. No bid, proposal, or submittal will be considered unless it is filed with the Owner Purchasing Department within the time limit for receiving bids as stated in the Advertisement for Bids or IFB. Each hard copy paper bid shall be in a sealed envelope plainly marked with the word "BID", and the name and bid number of the project as designated in the Advertisement for Bids or IFB.

1.13 MODIFICATION AND WITHDRAWAL OF BID

1. No bid, proposal, or submittal may be withdrawn or modified after the bid opening except where the award of the contract has been delayed beyond ninety (90) consecutive calendar days after date of bid

opening or as per Texas Local Government Code, Title 8, Chapter 262, Subchapter C., Section 262.0305. Modifications after Award.

1.14 IRREGULAR BID

1. It is understood that Collin County, Texas reserves the right to accept or reject any and/or all Bids, proposals, or submittals for any or all products and/or services covered in an Invitation For Bid (IFB) and to waive informalities or defects in submittals or to accept such submittals as it shall deem to be in the best interest of Collin County.

1.15 REJECTION OF BID

1. The bidder acknowledges the right of Owner to reject any or all bids and to waive any informality or irregularity in any bid received. In addition, the bidder recognizes the right of Owner to reject a bid if the bidder failed to furnish any required Bid Security, or to submit the data required by the Bidding Documents, or if the bid is in any way incomplete or irregular.

1.16 METHOD OF AWARD

1. In evaluating bids, Owner will consider whether or not the bids comply with the prescribed requirements, base prices, any alternates, unit pricing, completion time, bidder's qualifications, bidder's proposed subcontractors, suppliers, etc., and other data as may be requested in the Bid Documents.
2. Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any bid and to establish the responsibility, qualifications and financial ability of bidder, proposed subcontractors, suppliers and other persons and organizations to perform and furnish the Work in accordance with the Bidding Documents to Owner's satisfaction within the prescribed time.
3. If the contract is to be awarded, it will be awarded to the lowest and best responsible bidder whose evaluation, by Owner, indicates to be in the best interests of the project. If no alternates are selected by Owner, the Owner may award the contract to a responsible bidder who submits the lowest and best bid.
4. Evaluation of Alternatives: Any and/or all or none of the alternates may be considered in evaluation. Owner may award Contract on base bid plus any and/or all or none of the alternates.
5. Owner anticipates award within ninety (90) consecutive calendar days after bid opening.
6. The bid, when properly accepted by the County, shall constitute a Contract equally binding between the contractor and Owner. No different or additional terms will become part of this Contract with the exception of a written Change Order, signed by both parties.

7. No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders to the contract will be made in writing by Collin County Purchasing Agent.

1.17 EXECUTION OF CONTRACT

1. The person or persons, partnership, company, firm, association or corporation to whom a contract is awarded shall within ten (10) consecutive calendar days after such award, sign the necessary contract agreements and submit the required bonds entering into the required Contract with Owner. No contract shall be binding on Owner until it has been executed by Owner or his/her duly authorized representative, and delivered to the Contractor.

1.18 FAILURE TO EXECUTE CONTRACT

1. The failure of the Bidder to execute the required bonds or to sign the required Contract within ten (10) consecutive calendar days after the Contract is awarded, shall be considered by Owner as abandonment of his/her Bid, and Owner may annul the award, at the Owner's sole discretion.

1.19 PURCHASE ORDER

1. A purchase order(s) shall be generated by Owner to the contractor. The purchase order number **must** appear on all itemized invoices. Collin County will not be responsible for any orders placed or delivered without a valid purchase order number.

1.20 NOTICE TO PROCEED

1. Upon the execution and delivery of Bonds, Executed Contract by Contractor, progress schedule, proof of insurance, and all other documents required prior to commencing work herein, Owner will issue a written Notice to Proceed to the Contractor requesting that he/she proceed with construction, and the Contractor shall commence work within ten (10) consecutive calendar days after the date of Notice to Proceed.

1.21 PAYMENT PROCEDURES

1. Contractor shall submit Applications for Payment in accordance with the Contract, and payments shall be made in accordance with the Contract Documents.
2. Final Payment: Upon final completion and acceptance of the work, Owner shall pay the remainder of the contract price as recommended by Engineer, in accordance with Texas Government Code, Title 10, Subtitle F., Chapter 2251. Contractor(s) is required to pay subcontractors within ten (10) days after the contractor has received payment from the County.

3. The Contractor understands, acknowledges and agrees that if the Contractor subcontracts with a third party for services and/or material, the primary Contractor (awardee) accepts responsibility for full and prompt payment to the third party. Any dispute between the primary Contractor and the third party, including any payment dispute, will be promptly remedied by the Contractor. Failure to promptly render a remedy or to make prompt payment to the third party (subcontractor) may result in the withholding of funds from the primary Contractor by Collin County for any payments owed to the third party.

1.22 AFFIDAVIT OF BILLS PAID

1. Prior to final acceptance of this project by Owner, the Contractor shall execute an affidavit that all bills for labor, materials, and incidentals incurred in the project construction have been paid in full, and that there are no claims pending.

1.23 EXEMPTION FROM STATE OF TEXAS AND LOCAL SALES TAX ON MATERIALS

1. Owner qualifies for exemption from State and Local Sales Tax pursuant to the provisions of Chapter 151, Section 151.309 of the Texas Limited Sales, Excise and Use Tax Act. The Contractor performing this Contract may purchase all materials, supplies, equipment consumed in the performance of this Contract by issuing to his/her suppliers an exemption certificate in lieu of the tax.

1.24 CONFLICT OF INTEREST

1. No public official shall have interest, direct or indirect, in this contract, in accordance with Texas Local Government Code Title 5, Subtitle C, Chapter 171.

1.25 ETHICS

The bidder/contractor shall comply with Commissioners Court Order No. 96-680-10-28, Establishment of Guidelines & Restrictions Regarding the Acceptance of Gifts by County Officials & County employees.

1.26 BID COMPLIANCE

1. Bid must comply with all federal, state, county and local laws concerning this type of project and the fulfillment of all ADA (Americans With Disabilities Act) requirements.
2. Design, strength, quality of materials and workmanship must conform to the highest standards of manufacturing and engineering practice.
3. All products must be new and unused, unless otherwise specified, in first-class condition and of current manufacture.

1.27 DRUG FREE

1. All bidders shall provide any and all notices as may be required under the Drug-Free Work Place Act of 1988, 41 U.S.C. 701, and Collin County Commissioners Court Order No. 90-455-06-11, to its employees and all sub-contractors to insure that Owner maintains a drug-free work place. The use, possession or being under the influence of drugs and/or alcohol while working on this bid project or while on County property is prohibited and may result in removal of an individual from the project and/or immediate termination of contract. The County reserves the right to review drug testing records of any personnel involved in this bid project. The County may require, at contractor's expense, drug testing of contractor's personnel if no drug testing records exists or if such test results are older than six (6) months.
2. Substances and cut-off levels are as follows:

SUBSTANCE	MAXIMUM LEVEL
Amphetamines	1000 NG/ML
Barbiturates	300 NG/ML
Benzodiazepines	300 NG/ML
Cocaine Metabolite	300 NG/ML
Opiates	300 NG/ML
Phencyclidine (PCP)	25 NG/ML
THC (Marijuana) Metabolite	100 NG/ML
Methadone, Urinary	300 NG/ML
Methaquaone, Urine	300 NG/ML
Propoxyphene	300 NG/ML

1.28 INDEMNIFICATION

1. To the fullest extent permitted by law, the CONTRACTOR and his sureties shall indemnify, defend and hold harmless the OWNER and all of its, past, present and future, officers, agents and employees from all suits, cause of action, claims, liabilities, losses, fines, penalties, liens, demands, obligations, actions,

proceedings, of any kind, character, name and description brought or arising, on account of any injuries or damages received or sustained by any person, destruction or damage to any property on account of, in whole or part, the operations of the CONTRACTOR, his agents, employees or subcontractors; or on account of any negligent act or fault of the CONTRACTOR, his agents, employees or subcontractors in the execution of said Contract; failing to comply with any law, ordinance, regulation, rule or order of any governmental or regulatory body including those dealing with health, safety, welfare or the environment; on account of the failure of the CONTRACTOR to provide the necessary barricades, warning lights or signs; and shall be required to pay any judgment, with cost, which may be obtained against the OWNER growing out of such injury or damage. In no event shall OWNER be liable to CONTRACTOR for indirect or consequential damages or loss of income or profit irrespective of the cause, fault or reason for same. CONTRACTOR'S duty to indemnify herein shall not be limited by any limitation on the type or amount of damages payable by or for CONTRACTOR or any Subcontractor under workman's compensation acts, disability benefit acts or any other employee benefit acts.

In addition, the CONTRACTOR likewise covenants and agrees to, and does hereby, indemnify and hold harmless the OWNER from and against any and all injuries, loss or damages to property of the OWNER during the performance of any of the terms and conditions of this Contract, arising out of or in connection with or resulting from, in whole or in part, any and all alleged acts or omissions of officers, agents, servants, employees, contractors, subcontractors, licenses or invitees of the CONTRACTOR.

The rights and responsibilities provided in this indemnification provision shall survive the termination or completion of this Contract.

1.29 CONSTRUCTION SCHEDULE

1. The time for completion is set forth herein and will be included in the Contract. All work shall be completed within the consecutive calendar day count shown in the Contractor's bid. The calendar day count shall commence ten (10) consecutive calendar days after the date of the Notice to Proceed.
2. Prior to the issuance of the Notice to Proceed by Owner, the Contractor shall submit a detailed progress and schedule chart to Owner for review. This chart will be used to assure completion of the job within the number of consecutive calendar days stated in bid documents.

1.30 DELAYS AND EXTENSIONS OF TIME

1. If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Engineer, or of an employee of either, or of a separate contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, or by delay authorized by the Owner pending mediation and arbitration, or by other causes which the Engineer determines may

justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Engineer may determine.

2. If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that the weather conditions had an adverse effect on the scheduled construction.
3. Contractor's sole remedy for any delays in the project, which are not the fault of the Contractor, shall be an equitable extension of time to perform the work, required by the Contract. In no event shall the Contractor be entitled to make a claim for delay, impact or acceleration damages against the Owner.

1.31 DAMAGES

Should the contractor fail to complete the project within the specified completion schedule the sum of One thousand dollars (\$1,000.00) per calendar day will be deducted from the moneys due the contractor for the work. This sum shall not be considered as a penalty, but rather as reasonable liquidated damages, since it would be impracticable or extremely difficult to fix the actual damages. An extension of time may be allowed for delays beyond the control of the contractor at the discretion of Owner.

1.32 TERMINATION

This contract shall remain in effect until any of the following occurs:

1. completion of project;
2. acceptance of work ordered; or
3. termination by either party pursuant to the terms of the Contract with a thirty (30) days written notice prior to cancellation that must state therein the reasons for such cancellation.
4. breach of the contract by the Contractor for failure
 - i. to meet completion schedules, or
 - ii. otherwise perform in accordance with these specifications.

Breach of contract or default authorizes the County to purchase elsewhere and charge the full increase in cost and handling to the defaulting Contractor.

1.33 PATENTS - COPYRIGHTS

1. The contractor agrees to protect Owner from any claims involving infringements of patents and/or copyrights. In no event shall Owner be liable to a contractor for any/all suits arising on the grounds of patent(s) or copyright(s) infringement.

1.34 VENUE; GOVERNING LAW

1. This contract will be governed by the laws of the State of Texas. Should any portion of this contract be in conflict with the laws of the State of Texas, the State laws shall invalidate only that portion. The remaining portion of the contract shall remain in effect. This contract is performable in Collin County, Texas.

1.35 ASSIGNMENT

1. The contractor shall not sell, assign, transfer or convey this contract, in whole or in part, without the prior written approval from Collin County Commissioners Court.

1.36 SILENCE OF SPECIFICATION

1. The apparent silence of any part of the specification as to any detail or to the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of the specification shall be made on the basis of this statement.

1.37 PROVISION CONCERNING ESCALATOR CLAUSES

1. Bid(s) containing any condition which provides for changes in the stated bid prices due to increase or decrease in the costs of materials, labor, or other items required for this project, will be rejected and returned to the bidder without being considered.

1.38 ESTIMATES OF QUANTITIES

1. The quantities listed in the Bid Form will be considered as approximate and will be used for the comparison of bids. Payments will be made to the Contractor only for the actual quantities of work performed or materials furnished in accordance with the contract. The quantity of work to be done and the materials may be increased or decreased as provided for in the Contract Documents.

1.39 TREE PROTECTION OUTSIDE LIMITS OF WORK

1. The Contractor will be required to obtain written authorization from Owner for the removal of any tree three inches (3") in diameter or greater for any area outside the limits of the street right-of-way or slope easement. It is the intent of Owner to preserve as much as possible the natural condition of the floodplains.

1.40 EXCAVATION/TRENCH SAFETY

1. TRENCH SAFETY

- i. The CONTRACTOR shall be responsible for complying with state laws and federal regulations relating to trench safety, including those which may be enacted during the performance under this contract. The CONTRACTOR shall be responsible for selecting an appropriate method of providing trench safety after due consideration of the job conditions, location of utilities, pavement conditions and other relevant factors. Slope-back methods which may result in unnecessary displacement of utilities and/or destruction of pavement may not be used without permission from the OWNER. The CONTRACTOR shall be responsible for providing to the OWNER an acceptable trench safety plan signed and sealed by a Professional Engineer qualified to do such work and registered in Texas. Devices used to provide trench safety such as trench shields and shoring systems will be likewise certified by professional Engineers registered in the State of Texas or by a professional Engineer registered in the state of manufacture of the shield.

2. PAYMENT FOR TRENCH SAFETY

- i. Payment for trench safety shall be by the lineal feet of trench exceeding a depth of five (5) ft. Excavation for slope-back methods shall be subsidiary to the trench safety pay item including replacement and recompaction. Excess excavation for other trench safety methods is also subsidiary to the trench safety pay item. Costs relating to the preparation of the trench safety plan including geotechnical investigation, testing and report preparation fees are all subsidiary to the pay item for trench safety. Should trench safety measures be required during contract performance where no pay item has been provided, then the CONTRACTOR shall immediately notify the OWNER and, if directed to do so, provide trench safety under the provisions of the contract. Should the OWNER fail to authorize the work, then the CONTRACTOR shall proceed under the provisions of the Contract. Trench safety requirements are mandatory and may not be waived.

3. PAYMENT FOR SPECIAL SHORING

- i. Payment for special shoring, if any, shall be based on the square feet of shoring used.

4. The Contractor must be made aware that on construction projects in which trench excavation will exceed a depth of five feet (5'), the uniform set of general conditions must require that the bid documents and the contract include detailed plans and specifications for adequate safety systems that meet Occupational Safety and Health Administration standards that will be in effect during the period of construction of the project. The Contractor shall provide a separate pay item for trench excavation safety in accordance with the Texas Health & Safety Code Chapter 756. The Contractor shall verify that these plans and specifications include a pay item for these same trench excavation safety systems, in accordance with Texas Government Code, Title 10, Section 2166.303, Uniform Trench Safety Conditions. The contractor shall insure that drainage from adjacent properties is not blocked by his/her excavations. Measurement and payment for excavation/trench safety systems will not be made directly, but considered subsidiary to the work.

5. The Contractor shall be responsible for obtaining and paying for all surveys and testing, including geotechnical surveys and testing, necessary to insure it can comply with all laws regarding adequate trench excavation safety.

1.41 CONSTRUCTION STAKING

1. Engineer will provide the Contractor with primary horizontal and vertical control to consist of one construction baseline and two benchmarks.
2. The Contractor shall take all necessary precautions to preserve any and/or all markings and staking. Payment for costs of restaking shall be the responsibility of the Contractor.

1.42 PERMITS

1. Contractor shall be responsible for obtaining all necessary permits.

1.43 MATERIALS TESTING

1. Owner will be responsible for all materials testing.

1.44 STORM WATER PROTECTION

1. The Contractor shall perform, track, participate, implement, and comply with storm water pollution prevention minimum control measures, protocols, and best management practices (BMP) and ensure that water quality standards are not violated in accordance with all regulations and policies as they apply to the Texas Pollutant Discharge Elimination System general permits. Applicable permits include:
 - 1) Texas Construction General Permit (TXR150000).
2. Contractors will obtain permit coverage for construction activities disturbing over one acre of land (total acreage is cumulative across all portions of the project). BMPs include, but are not limited to:
 - i. Preparing and implementing a site-specific Storm Water Pollution Prevention Plan (SWPPP) as outlined in the permit and prior to any soil disturbance.
 - ii. Installing and managing erosion and sediment control.
 - iii. Make available, upon request, permit associated documentation.
 - iv. Practicing spill prevention and good housekeeping.
 - v. Meeting the requirements of the MS4 permit.
3. In addition to the requirements of the Construction General permit (TXR150000), the MS4 permits lists prohibited discharges which will be enforced at the County construction sites whether the operator is the County or a contractor. The following discharges are prohibited:

- i. Wastewater from washout of concrete and wastewater from water well drilling operations, unless managed by an appropriate control;
- ii. Wastewater from washout and cleanout of stucco, paint, from release oils, and other construction materials;
- iii. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
- iv. Soaps or solvents used in vehicle and equipment washing; and,
- v. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed by appropriate BMPs.

1.45 WAGE SCALE

1. In accordance with Texas Government Code, Title 10, Section 2258, Prevailing Wage Rates, the general prevailing wage rate has been determined for this locality for the craft or type of workman needed to execute work of a similar character of the project listed herein. The Contractor shall pay the prevailing wage rate in this locality to all his/her employees and subcontractors performing work on this project, and in no event shall the Contractor pay less than the rate shown in the following schedule.
2. Wage Determination: <https://sam.gov/wage-determination/TX20250239/3>
3. Except for work on legal holidays, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) the number of hours worked per day, except for overtime hours, times (b) the above respective rate per hour.
4. For legal holidays, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on the legal holiday.
5. For overtime work, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) Under the provisions of Texas Government Code, Title 10, Section 2258, Prevailing Wage Rates, the contractor or subcontractor of the contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, sixty dollars (\$60.00) for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the contract.
6. If the construction project involves the expenditure of Federal funds in excess of \$2,000, the minimum wages to be paid various classes of laborers and mechanics will be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on the project of a character similar to the contract work.

1.46 CONTRACT ADMINISTRATOR

1. Collin County Purchasing Department shall serve as Contract Administrator or shall supervise agents designated by Collin County.

1.47 WARRANTIES

1. All warranties shall be stated as required in the Uniform Commercial Code.

1.48 UNIFORM COMMERCIAL CODE

1. The Contractor and Collin County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.

1.49 ADVERTISEMENT OF CONTRACT

1. Contractor shall not fraudulently advertise, publish or otherwise make reference to the existence of a contract between Collin County and Contractor for purposes of solicitation. As exception, Contractor may refer to Collin County as an evaluating reference for purposes of establishing a contract with other entities.

1.50 DIAGNOSTIC TOOLS

1. Contractor shall provide Collin County with diagnostic access tools at no additional cost to Collin County, for all Electrical and Mechanical systems, components, etc., procured through this contract.

1.51 CRIMINAL HISTORY BACKGROUND CHECK

1. If required, ALL individuals may be subject to a criminal history background check performed by Collin County prior to access being granted to Collin County facilities. Upon request, Vendor/Contractor/Provider shall provide list of individuals to Collin County Purchasing Department within five (5) working days.

1.52 IMMIGRATION AND REFORM ACT OF 1986

1. Vendors/Contractors/Providers must be in compliance with the Immigration and Reform Act of 1986 and all employees specific to this solicitation must be legally eligible to work in the United States of America.

1.53 CERTIFICATION OF ELIGIBILITY

1. This provision applies if the anticipated Contract exceeds \$100,000.00 and as it relates to the expenditure of federal grant funds. By submitting a bid or proposal in response to this solicitation, the Bidder/Quoter/Offeror certifies that at the time of submission, he/she is not on the Federal Government's list of suspended, ineligible, or debarred contractors. In the event of placement on the list between the time of bid/proposal submission and time of award, the Bidder/Quoter/Offeror will

notify the Collin County Purchasing Agent. Failure to do so may result in terminating this contract for default.

1.54 NOTICE TO CONTRACTORS (IF APPLICABLE)

1. The Collin County Detention Facility houses persons who have been charged with and/or convicted of serious criminal offenses. When entering the Detention Facility, you could:
 - i. hear obscene or graphic language;
 - ii. view partially clothed male inmates;
 - iii. be subjected to verbal abuse or taunting;
 - iv. risk physical altercations or physical contact, which could be minimal or possibly serious;
 - v. be exposed to communicable or infectious diseases;
 - vi. be temporarily detained or prevented from immediately leaving the Detention Facility in the case of an emergency or “lockdown; and
 - vii. subjected to a search of your person or property.

While the Collin County Sheriff’s Office takes every reasonable precaution to protect the safety of visitors to the Detention Facility, because of the inherently dangerous nature of a Detention Facility and the type of the persons incarcerated therein, please be advised that the possibility of such situations exist and you should carefully consider such risks when entering the Detention Facility. By entering the Collin County Detention Facility, you acknowledge that you are aware of such potential risks and willingly and knowingly choose to enter the Collin County Detention Facility.

1.55 E-Verify

1. Contractors doing business with OWNER agree to comply with Federal Executive Order 13465 E-Verify. It is OWNER’s intention and duty to comply and support the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification and non-discrimination. According to the INA, contractors/employers may hire only persons who may legally work in the United States. Subsequently, contractors and subcontractors doing business with OWNER must confirm their enrollment in the E-Verify system which verifies employment eligibility through completion and checking of I-9 forms. OWNER reserves the right to audit contractors’ process to verify enrollment compliance.

1.56 INSURANCE REQUIREMENTS

1. CONTRACTOR’S INSURANCE

- i. Everything that follows under insurance requirements is applicable to all subcontractors. Contractor will have discretion to determine coverage limits for its subcontractors for the required insurances.
- ii. Before commencing work, the CONTRACTOR shall be required to furnish the Collin County Purchasing Agent with certified copies of all insurance certificate(s) required by Texas Law, and the coverages required herein, indicating the coverage is to remain in force throughout the term of this Contract. CONTRACTOR shall also be required to furnish the Collin County Purchasing Agent with certified copies of subcontractor's insurance certificates required by the Texas Department of Insurance, Division of Workers' Compensation, section 406.096(b), and coverages required herein in section 4.2. Without limiting any of the other obligations or liabilities of the CONTRACTOR, during the term of the Contract the CONTRACTOR and each subcontractor at their own expense shall purchase and maintain the herein stipulated minimum insurance with companies duly approved to do business in the State of Texas and satisfactory to the OWNER. Certificates required of each policy for the CONTRACTOR and each subcontractor shall be delivered to the OWNER before any work is started, along with a written statement from the issuing company stating that said policy shall not be canceled, nonrenewed or materially changed without 30 days advance written notice being given to the OWNER.
- iii. In addition to any coverage required by Texas Law, the CONTRACTOR shall provide the following coverages at not less than the specified amounts:
 - a. Workers Compensation insurance required by Texas Law at statutory limits, including employer's liability coverage of not less than \$1,000,000. In addition to these, the CONTRACTOR must comply with all the requirements of the Texas Department of Insurance, Division of Workers' Compensation; section 406.096(b); (Note: If you have questions concerning these requirements, you are instructed to contact the DWC.)
 - i. By signing this contract or providing or causing to be provided a certificate of coverage, the CONTRACTOR is representing to the OWNER that all employees of the CONTRACTOR and its subcontractors who will provide services on the Project will be covered by workers compensation coverage for the duration of the Project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the CONTRACTOR to administrative penalties, criminal penalties, civil penalties, or other civil actions.
 - ii. The CONTRACTOR'S failure to comply with any of these provisions is a breach of Contract by the Contractor which entitles the OWNER to declare the Contract void if the CONTRACTOR

does not remedy the breach within ten (10) days after receipt of notice of breach from the OWNER.

- b. Broad form commercial general liability insurance, including independent contractor's liability, completed operations and contractual liability, written on an occurrence form, covering, but not limited to, the liability assumed under the indemnification provisions of this contract, fully insuring CONTRACTOR'S and its subcontractors liability for injury to or death of OWNER'S employees and third parties, extended to include personal injury liability coverage with damage to property, with minimum limits as set forth below:
 - i. General Aggregate \$2,000,000
 - ii. Products — Components/Operations Aggregate \$2,000,000
 - iii. Personal and Advertising Injury \$ 1,000,000
 - iv. Each Occurrence \$ 2,000,000
 - v. Contractor's Pollution Liability \$1,000,000/\$3,000,000 (Occurrence Form)
 - vi. The policy shall include coverage extended to apply to completed operations, asbestos hazards (if this project involves work with asbestos) and XCU (explosion, collapse and underground) hazards. The completed operations coverage must be maintained for a minimum of one year after final completion and acceptance of the work, with evidence of same filed with OWNER.
- c. Comprehensive automobile and truck liability insurance, covering owned, hired and non-owned vehicles, with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence; or separate limits of \$1,000,000 for bodily injury (per person), \$1,000,000 for bodily injury (per accident) and \$1,000,000 for property damage. Such insurance shall include coverage for loading and unloading hazards.
- d. OWNER'S PROTECTIVE LIABILITY INSURANCE
 - i. CONTRACTOR shall obtain, pay for and maintain at all times during the prosecution of the work under this contract an OWNER'S protective liability insurance policy naming the OWNER as insured for property damage and bodily injury, which may arise in the prosecution of the Work or CONTRACTOR'S operations under this Contract. Coverage shall be on an "occurrence" basis, and the policy shall be issued by the same insurance company that carries the CONTRACTOR'S liability insurance with a combined bodily injury and property damage minimum limit of \$1,000,000 per occurrence and \$2,000,000 aggregate. Owner's Protective Liability Insurance required by Contractor only is acceptable.
- e. "UMBRELLA" LIABILITY INSURANCE

- i. CONTRACTOR shall obtain, pay for and maintain umbrella liability insurance (over Workers Comp, Auto, and General Liability) during the contract term, insuring CONTRACTOR for an amount of not less than \$2,000,000 per occurrence/\$2,000,000 aggregate limit combined limit for bodily injury and property damage that follows from and applies in excess of the primary liability coverages required hereinabove. The policy shall provide “drop down” coverage where underlying primary insurance coverage limits are insufficient or exhausted. OWNER shall be named as an additional insured. Contractor can adjust to lower limits on umbrella liability insurance for its subcontractors.
- f. RAILROAD PROTECTIVE INSURANCE
 - i. When required in the Special Provisions, CONTRACTOR shall obtain, maintain and present evidence of railroad protective insurance (RPI). The policy shall be in the name of the railroad company having jurisdiction over the right-of-way involved. The minimum limit of coverage shall meet the specifications provided by the railroad company. The OWNER shall specify the amount of RPI necessary.
 - g. BUILDER’S RISK
 - i. CONTRACTOR shall obtain, pay for, and maintain builders risk insurance during the contract term, insuring CONTRACTOR for an amount of not less than the total contract amount.
- iv. POLICY ENDORSEMENTS AND SPECIAL CONDITIONS
 - a. Each insurance policy to be furnished by CONTRACTOR shall include the following conditions by endorsement to the policy:
 - i. each policy shall name the OWNER as an additional insured as to all applicable coverage
 - ii. each policy shall require that 30 days prior to the cancellation, nonrenewal or any material change in coverage, a notice thereof shall be given to OWNER by certified mail;
 - iii. the term “OWNER” shall include all past, present or future, authorities, boards, bureaus, commissions, divisions, departments and offices of the OWNER and individual members, elected official, officers, employees and agents thereof in their official capacities and/or while acting on behalf of the OWNER;
 - iv. the policy phrase “other insurance” shall not apply to the OWNER where the OWNER is an additional insured on the policy;
 - v. all provisions of the contract concerning liability, duty and standard of care together with the indemnification provision, shall be underwritten by contractual liability coverage sufficient to include such obligations within applicable policies;

- vi. each policy shall contain a waiver of subrogation in favor of OWNER, and its, past, present and future, officials, employees, and volunteers; and
 - vii. each certificate of insurance shall reference the Project and Contract number, contain all the endorsement required herein, and require a notice to the OWNER of cancellation.
- b. Insurance furnished by the CONTRACTOR shall be in accordance with the following requirements:
- i. any policy submitted shall not be subject to limitations, conditions or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by the CONTRACTOR. The OWNER'S decision thereon shall be final;
 - ii. all policies are to be written through companies duly licensed to transact that class of insurance in the State of Texas with a financial ratings of A+ VII or better as assigned by BEST Rating Company or equivalent; and
 - iii. Surplus lines insurance carriers will be acceptable when surplus lines companies meet all financial requirements and be licensed in their home state. Collin County will take an extra step if a bid comes in to include coverage from a surplus lines carrier to verify if that company is approved by TDI to do business in the state of Texas. Please verify with TDI at the phone number list in below link if your or your proposed surplus lines company is approved before you submit your bid.
<https://www.tdi.texas.gov/pubs/consumer/cb015.html>; and (d) All liability policies required herein shall be written with an "occurrence" basis coverage trigger.
- c. CONTRACTOR agrees to the following:
- i. CONTRACTOR hereby waives subrogation rights for loss or damage to the extent same are covered by insurance. Insurers shall have no right of recovery or subrogation against the OWNER, it being the intention that the insurance policies shall protect all parties to the Contract and be primary coverage for all losses covered by the policies;
 - ii. Companies issuing the insurance policies and CONTRACTOR shall have no recourse against the OWNER for payment of any premiums or assessments for any deductibles, as all such premiums and deductibles are the sole responsibility and risk of the CONTRACTOR;
 - iii. Approval, disapproval or failure to act by the OWNER regarding any insurance supplied by the CONTRACTOR (or any subcontractors) shall not relieve the CONTRACTOR of full responsibility or liability for damages and accidents as set forth in the Contract Documents. Neither shall the bankruptcy, insolvency or denial of liability by the insurance company exonerate the CONTRACTOR from liability; and

- iv. No special payments shall be made for any insurance that the CONTRACTOR and subcontractors are required to carry; all are included in the Contract Price and the Contract unit prices. Any of such insurance policies required under this section may be written in combination with any of the others, where legally permitted, but none of the specified limits may be lowered thereby.

1.57 BUSINESS WITH A FOREIGN ENTITY

1. Vendors/Contractors/Providers must be in compliance with the provisions of Section 2252.152 and Section 2252.153 of the Texas Government Code which states, in part, contracts with companies engaged in business with Iran, Sudan, or Foreign Terrorist Organizations are prohibited. A governmental entity may not enter into a contract with a company that is listed on the Comptroller of the State of Texas website identified under Section 806.051, Section 807.051 or Section 2253.253 which do business with Iran, Sudan or any Foreign Terrorist Organization. This Act is effective September 1, 2017.

1.58 FORCE MAJEURE

1. No party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such failure or delay is caused by or results from acts beyond the affected party's reasonable control, including, without limitation: acts of God; flood, fire or explosion; war, invasion, riot or other civil unrest; actions, embargoes or blockades in effect on or after the date of this Agreement; or national or regional emergency (each of the foregoing, a "Force Majeure Event"). A party whose performance is affected by a Force Majeure Event shall give notice to the other party, stating the period of time the occurrence is expected to continue and shall use diligent efforts to end the failure or delay and minimize the effects of such Force Majeure Event.

004113 Pricing Table

Line Items

Line Item	Description	Quantity	Unit of Measure	Unit Cost	Total
1	Contract Grand Total (Total labor and material cost to complete the whole project per spec sections)	1	lump sum		
2	Common Work for Electronic Security (Total labor and material cost per Section 28 0510)	1	lump sum		
3	Cabinets and Enclosures (Total labor and material cost per Section 28 0555)	1	lump sum		
4	Electronic Control System (Total labor and material cost per Section 28 4619)	1	lump sum		
5	Touch Screen Control and Management System (Total labor and material cost per Section 28 4623)	1	lump sum		
6	Digital Intercom and Paging System (Total labor and material cost per Section 28 5123)	1	lump sum		
TOTAL					

004513 Vendor Submissions

1. OpenGov Notice*

Collin County exclusively uses OpenGov Procurement for the notification and dissemination of all solicitations. The receipt of solicitations through any other means may result in your receipt of incomplete specifications and/or addendums which could ultimately render your bid/proposal non-compliant. Collin County accepts no responsibility for the receipt and/or notification of solicitations through any other means. Please initial.

*Response required

2. Contact Information*

List the contact name, email address and phone number of the main person(s) Collin County should contact in reference to this solicitation. Contact(s) shall be duly authorized by the company, corporation, firm, partnership or individual to respond to any questions, clarification, and or offers in response to this solicitation.

*Response required

3. Exceptions*

If you take any exceptions to the specifications, bid lines, sample contracts, other attachments, or any other part of this solicitation as written, you must submit the exception/s as a Question via the public portal before the Question Cutoff Date for County consideration. The County will review and publish a response via OpenGov. If you would like to offer any substitutions, please review the Instruction to Bidders Document 002113, Section 1.07 and submit by separate attachment. Please initial.

*Response required

4. Calendar Days Bid*

Please state the consecutive calendar days bid from notice to proceed through completion of project.

*Response required

5. Insurance Acknowledgement*

I understand that the insurance requirements of this solicitation are required and are included in the submitted pricing. The Contractor shall furnish certificates of insurance for both the Contractor and any subcontractor to the Purchasing department if awarded all or a portion of the resulting contract. Please initial.

*Response required

6. Bid Bond Acknowledgement*

I understand that accompanying this bid, is a certified check, cashier's check or Bid Bond in the amount of five percent (5%) of the total amount bid. Bidders submitting a bid via OpenGov Procurement shall upload a Bid Bond at <https://procurement.opengov.com/portal/collincountytx>. Regardless of delivery method, all Bid Bonds shall be received prior to the bid opening time to be considered.

I understand that the **original** Bid Bond shall be received in the Collin County Purchasing Department no later than close of business on the third working day after the bid opening. **Late receipt of original Bid Bond shall be cause for rejection of bid.** Please initial.

*Response required

7. Bid Bond

Part 1 (Scanned and Upload)

Cashier's check, certified check, or bid bond payable to the order of the Collin County, TX, of not less **five percent (5%)** of the bid in said amount, payable to the Collin County, TX and signed by the bidder as well as a corporate surety, shall accompany the bid

Please scan and upload a copy of your bid bond/cashier's check.

or

Part 2 (Mail or Hand Deliver)

Bidder must also MAIL or hand deliver bid guarantee with a postmarked date no later than 2:00 pm on Thursday, January 22, 2026 addressed to:

**Collin County Purchasing
2300 Bloomdale Road, Ste. 3160
McKinney, TX 75071**

Please have the following listed clearly on the outside of the envelope:

1. Bidder Name,
2. Bid Bond" for Construction, Electronic Security System Upgrade PLC
3. Contract Number 2025-340
4. Date/time of the bid opening
5. "DO NOT OPEN WITH REGULAR MAIL"

*****The Bid shall include the bid bond both uploaded into OpenGov Procurement and hard copy original mailed or hand delivered to the purchasing office no later than the close of business on the third working day after the bid opening, otherwise the bid will be deemed non-responsive.*****

8. Bonding Requirement Acknowledgement*

I understand that the bonding requirements of this solicitation are required and are included in the submitted pricing. A bond certificate (payment, performance, and/or maintenance) as stated in the specification document shall be submitted to the Purchasing department if I am awarded all or a portion of the resulting contract. Please initial.

*Response required

9. Technology Security Breach Acknowledgement*

When VENDOR experiences a data breach or unauthorized access to the Collin County Data, VENDOR will immediately notify the End-User Department Director, the Chief Information Officer (CIO), and the Purchasing Agent. Within two weeks of such breach, a detailed notification is required and shall include the nature of the breach, the data comprised, the involving parties, mitigation efforts, and corrective actions to be taken by VENDOR. Unless Collin County or any of their affiliates is directly responsible for such breach, VENDOR shall be solely responsible for all expenses related to any data breach or unauthorized access to the Collin County data and shall be by liable for all damages, fines, to include litigation cost. Except as set forth above, Collin County shall not be responsible for any expense associated with data breaches or unauthorized access while the Collin County Data is residing in VENDOR cloud services.

Yes

No

*Response required

10. Subcontractors*

State the business name of all subcontractors and the type of work they will be performing under this contract. If you are fully qualified to self-perform the entire contract, please respond with "Not Applicable-Self Perform".

*Response required

11. Reference No. 1*

List a company or governmental agency, other than Collin County, where these same/like products/services, as stated herein, have been provided. Texas references are preferred. Include the following: Company/Entity, Contact, Address, City/State/Zip, Phone, and E-Mail. It is the responsibility of the Bidder/Proposer to ensure submitted references will be responsive to the County's requests. The County reserves the right to contact references other than those listed, and to consider any information acquired from all references during the evaluation process.

*Response required

12. Reference No. 2*

List a company or governmental agency, other than Collin County, where these same/like products/services, as stated herein, have been provided. Texas references are preferred. Include the following: Company/Entity, Contact, Address, City/State/Zip, Phone, and E-Mail. It is the responsibility of the Bidder/Proposer to ensure submitted references will be responsive to the County's requests. The County reserves the right to contact references other than those listed, and to consider any information acquired from all references during the evaluation process.

*Response required

13. Reference No. 3*

List a company or governmental agency, other than Collin County, where these same/like products/services, as stated herein, have been provided. Texas references are preferred. Include the following: Company/Entity, Contact, Address, City/State/Zip, Phone, and E-Mail. It is the responsibility of the Bidder/Proposer to ensure submitted references will be responsive to the County's requests. The County reserves the right to contact references other than those listed, and to consider any information acquired from all references during the evaluation process.

*Response required

14. Proposed Construction Schedule*

Bidder is required to submit a Proposed Construction Schedule with his/her bid

*Response required

15. Preferential Treatment*

The County of Collin, as a governmental agency of the State of Texas, may not award a contract to a nonresident bidder unless the nonresident's bid is lower than the lowest bid submitted by a responsible Texas resident bidder by the same amount that a Texas resident bidder would be required to underbid a nonresident bidder to obtain a comparable contract in the state in which the nonresident's principal place of business is located or a state in which the nonresident is a resident manufacturer. (Texas Government Code, Title 10, Subtitle F., Chapter 2252, Subchapter A.).

1. Is your principal place of business in the State of Texas?
2. If your principal place of business is not in Texas, in which State is your principal place of business?
3. If your principal place of business is not in Texas, does your state favor resident bidders (bidders in your state) by some dollar increment or percentage?
4. If your state favors resident bidders, state by what dollar amount or percentage.

*Response required

16. Debarment Certification*

I certify that neither my company nor an owner or principal of my company has been debarred, suspended or otherwise made ineligible for participation in Federal Assistance programs under Executive Order 12549, "Debarment and Suspension," as described in the Federal Register and Rules and Regulations. Please initial.

*Response required

17. Immigration and Reform Act*

I declare and affirm that my company is in compliance with the Immigration and Reform Act of 1986 and all employees are legally eligible to work in the United States of America. I further understand and acknowledge

that any non-compliance with the Immigration and Reform Act of 1986 at any time during the term of this contract will render the contract voidable by Collin County. Please initial.

*Response required

18. W-9*

Please upload your W-9 here.

*Response required

19. Information Regarding Conflicts of Interest*

During the 79th Legislative Session, House Bill 914 was signed into law effective September 1, 2015, which added Chapter 176 to the Texas Local Government Code. Recent changes have been made to Chapter 176 pursuant to HB23, which passed the

84th Legislative Session. Chapter 176 mandates the public disclosure of certain information concerning persons doing business or seeking to do business with Collin County, including family, business, and financial relationships such persons may have with Collin County officers or employees involved in the planning, recommending, selecting and contracting of a vendor for this procurement.

For a copy of Form CIQ and CIS: <https://www.ethics.state.tx.us/forms/conflict/>

The vendor acknowledges by doing business or seeking to do business with Collin County that they have been notified of the requirements under Chapter 176 of the Texas Local Government Code and that they are solely responsible for complying with the terms and conditions therein. Furthermore, any individual or business entity seeking to do business with Collin County who does not comply with this practice may risk award consideration of any County contract.

For a listing of current Collin County Officers: <https://www.collincountytx.gov/Contact/county-officials>

At the time of this solicitation being released, the following are known to be involved in the planning, recommending, selecting, and/or contracting for the attached procurement:

Department:

Sandeep Kathuria – Director of Construction and Planning

Rickee Harris - Building Projects Coordinator of Construction and Planning

John Zoski - Facilities Tech Coordinator of Facilities

Advisors:

Michael Smith, P.E., LEED AP

MD Engineering

1225 W 15th Street

Suite 300

Plano, TX 75075

Purchasing:

Michelle Charnoski, NIGP-CPP, CPPB – Purchasing Agent

Marci Chrismon, CPPB – Assistant Purchasing Agent

Ruyue Ding – Senior Buyer

Commissioners Court:

Chris Hill – County Judge

Susan Fletcher – Commissioner Precinct No. 1

Cheryl Williams – Commissioner Precinct No. 2

Darrell Hale – Commissioner Precinct No. 3

Duncan Webb – Commissioner Precinct No. 4

Please complete and upload.

*Response required

20. Confirmation of Conflict of Interest*

I have read the conflict of interest information above and will file the CIQ form if a conflict exists.

Please confirm

*Response required

21. Disclosure of Certain Relationships*

Chapter 176 of the Texas Local Government Code requires that any vendor considering doing business with a local government entity disclose the vendor's affiliation or business relationship that might cause a conflict of interest with a local government entity. Subchapter 6 of the code requires a vendor to file a conflict of interest questionnaire (CIQ) if a conflict exists. By law this questionnaire must be filed with the records administrator of Collin County no later than the 7th business day after the date the vendor becomes aware of an event that requires the statement to be filed. A vendor commits an offense if the vendor knowingly violates the code. An offense under this section is a misdemeanor. By submitting a response to this request, the vendor represents that it is in compliance with the requirements of Chapter 176 of the Texas Local Government Code. Please send completed forms to the Collin County County Clerk's Office located at 2300 Bloomdale Rd., Suite 2104, McKinney, TX 75071. Please initial.

*Response required

22. Anti-Collusion Statement*

Bidder certifies that its Bid/Proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a Bid/Proposal for the same materials, services, supplies, or equipment and is in all respects fair and without collusion or fraud. No premiums, rebates or gratuities permitted; either with, prior to, or after any delivery of material or provision of services. Any such violation may result in Agreement cancellation, return of materials or discontinuation of services and the possible removal from bidders list. Please initial.

*Response required

23. Disclosure of Interested Parties*

Section 2252.908 of the Texas Government Code requires a business entity entering into certain contracts with a governmental entity to file with the governmental entity a disclosure of interested parties at the time the business entity submits the signed contract to the governmental entity. Section 2252.908 requires the disclosure form (Form 1295) to be signed by the authorized agent of the contracting business entity, acknowledging that the disclosure is made under oath and under penalty of perjury. Section 2252.908 applies only to a contract that requires an action or vote by the governing body of the governmental entity before the contract may be signed or has a value of at least \$1 million. Section 2252.908 provides definitions of certain terms occurring in the section. Section 2252.908 applies only to a contract entered into on or after January 1, 2016. Please initial.

*Response required

24. Notification Survey*

In order to better serve our offerors, the Collin County Purchasing Department is conducting the following survey. We appreciate your time and effort expended to submit your bid. Should you have any questions or require more information please call (972) 548-4165. How did you receive notice of this request?

- OpenGov Notification
- Plano Star Courier
- Plan Room
- Collin County Website
- Other

*Response required

25. Critical Infrastructure Affirmation*

Pursuant to section 2275.0102 of the Texas Government Code, Respondent certifies that neither it nor its parent company, nor any affiliate of Respondent or its parent company, is: (1) majority owned or controlled by citizens or governmental entities of China, Iran, North Korea, Russia, or any other country designated by the Governor under Government Code Section 2275.0103, or (2) headquartered in any of those countries. Please initial.

*Response required

26. Energy Company Boycotts*

Pursuant to Section 2276.002 of the Texas Government Code, should the contract have a value of \$100,000 or more and the company employs 10 or more full-time employees, Respondent represents and warrants that: (1) it does not, and will not for the duration of the contract, boycott energy companies, and (2) will not boycott energy companies during the term of the contract. If circumstances relevant to this provision change during the course of the contract, Respondent shall promptly notify Agency. Please initial.

*Response required

27. Firearm Entities and Trade Associations Discrimination*

Pursuant to section 2274.002 of the Texas Government Code, should the contract have a value of \$100,000 or more and the company employs 10 or more full-time employees, Respondent verifies that: (1) it does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association and (2) will not discriminate during the term of the contract against a firearm entity or firearm trade association. If circumstances relevant to this provision change during the course of the contract, Respondent shall promptly notify Agency. Please initial.

*Response required

28. Construction Acknowledgement*

Bidder, declares that the only person or parties interested in this bid are those principals named herein, that his/her bid is made without collusion with any other person, firm or corporation, that he/she has carefully examined the Contract Documents including the Advertisement for Bids, Instruction to Bidders, Construction Agreement, Specifications and the Drawings, therein referred to and has carefully examined the locations, conditions and classes of materials for the proposed work, and agrees that he/she will provide all the necessary labor, machinery, tools, equipment, apparatus and other items incidental to construction and will do all the work and furnish all the materials called for in the Contract Documents in the manner prescribed therein. Bidder hereby declares that he/she has visited the site of the Work and has carefully examined the Contract Documents pertaining to the Work covered by the above Bid, and he/she further agrees to commence work within ten (10) consecutive calendar days after date of written Notice to Proceed and to substantially complete the work on which he/she has bid within the number of days specified subject to such extensions of time allowed by Specifications. Bidder certifies that the bid prices contained in this bid have been carefully checked and are submitted as correct and final. The prices have been shown in words and figures for each item listed in this bid and it is understood that in the event of a discrepancy, the words shall govern. Please initial.

*Response required

004313 BID BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

SIGNED, SEALED and DATED this _____ day of _____ 202_____.

WHEREAS, the Principal is herewith submitting its proposal for _____.

The condition of the above obligations are such that if the aforesaid Principal shall be awarded the Contract, the said Principal will, within the time required, enter into a Contract and give Bonds, if required, for the faithful performance of the Contract and the prompt payment for labor and materials in the prosecution thereof, then this obligation shall be null and void; otherwise the Principal and Surety will pay unto the OWNER the full penal sum hereof, as liquidated damages, it being difficult and impractical to determine accurately the actual amount of damages occurring to OWNER by reason of Principal's failure to execute said Contract and Bonds.

PROVIDED FURTHER, that if any legal action be filed on this Bond, venue shall lie in _____ County, Texas.

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

WITNESS

PRINCIPAL

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

SURETY

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

WITNESS

NOTE: CERTIFIED COPY OF POWER-OF-ATTORNEY SHOULD BE ATTACHED HERETO.

SECTION 004325 - PRODUCT SUBSTITUTION REQUEST FORM

Bidder: _____

Project No: _____

Project: _____

Section: _____

Article/ Paragraph: _____

Proposed Substitution: _____

Manufacturer: _____ Address: _____

Telephone: _____ Proposed Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its installation.

The undersigned warrants and represents:

- 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.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by substitution.

Submitted By: _____

Signed: _____

Firm: _____

Address: _____

Phone: _____

REVIEW & ACTION (Initial)

_____ Substitution approved - Make submittals in accordance with Project Manual requirements.

_____ Substitution approved as noted - Make submittals in accordance with Project Manual requirements.

_____ Substitution rejected - Use specified materials.

_____ Substitution Request received too late - Use specified materials.

Signature: _____

Date: _____

Supporting Data Attached: ___ Drawings ___ Product Data ___ Samples ___ Tests ___ Reports ___ Other

END OF REQUEST FORM

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

FORM CIQ

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

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

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

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

OFFICE USE ONLY

Date Received

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

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

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

Name of Officer

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

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

Yes No

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

Yes No

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

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

7

Signature of vendor doing business with the governmental entity

Date

CONFLICT OF INTEREST QUESTIONNAIRE

For vendor doing business with local governmental entity

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

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

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

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

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

(2) the vendor:

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

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

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

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

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

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

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

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

(1) the date that the vendor:

- (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or
- (B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

- (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);
- (B) that the vendor has given one or more gifts described by Subsection (a); or
- (C) of a family relationship with a local government officer.

Request for Taxpayer Identification Number and Certification

Go to www.irs.gov/FormW9 for instructions and the latest information.

**Give form to the
requester. Do not
send to the IRS.**

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See Specific Instructions on page 3.	1	Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)	
	2	Business name/disregarded entity name, if different from above.	
	3a	Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes. <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C corporation <input type="checkbox"/> S corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) _____ Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) _____	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3): Exempt payee code (if any) _____ Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) _____ <i>(Applies to accounts maintained outside the United States.)</i>
	3b	If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions <input type="checkbox"/>	
	5	Address (number, street, and apt. or suite no.). See instructions.	Requester's name and address (optional)
	6	City, state, and ZIP code	
	7	List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Social security number									
				-					
or									
Employer identification number									

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	Signature of U.S. person	Date
------------------	--------------------------	------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they

must obtain your correct taxpayer identification number (TIN), which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid).
- Form 1099-DIV (dividends, including those from stocks or mutual funds).
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds).
- Form 1099-NEC (nonemployee compensation).
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers).
- Form 1099-S (proceeds from real estate transactions).
- Form 1099-K (merchant card and third-party network transactions).
- Form 1098 (home mortgage interest), 1098-E (student loan interest), and 1098-T (tuition).
- Form 1099-C (canceled debt).
- Form 1099-A (acquisition or abandonment of secured property).

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

Caution: If you don't return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See *What is backup withholding*, later.

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued);
2. Certify that you are not subject to backup withholding; or
3. Claim exemption from backup withholding if you are a U.S. exempt payee; and
4. Certify to your non-foreign status for purposes of withholding under chapter 3 or 4 of the Code (if applicable); and
5. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting is correct. See *What Is FATCA Reporting*, later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding. Payments made to foreign persons, including certain distributions, allocations of income, or transfers of sales proceeds, may be subject to withholding under chapter 3 or chapter 4 of the Code (sections 1441-1474). Under those rules, if a Form W-9 or other certification of non-foreign status has not been received, a withholding agent, transferee, or partnership (payor) generally applies presumption rules that may require the payor to withhold applicable tax from the recipient, owner, transferor, or partner (payee). See Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*.

The following persons must provide Form W-9 to the payor for purposes of establishing its non-foreign status.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the disregarded entity.
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the grantor trust.
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust and not the beneficiaries of the trust.

See Pub. 515 for more information on providing a Form W-9 or a certification of non-foreign status to avoid withholding.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person (under Regulations section 1.1441-1(b)(2)(iv) or other applicable section for chapter 3 or 4 purposes), do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515). If you are a qualified foreign pension fund under Regulations section 1.897(l)-1(d), or a partnership that is wholly owned by qualified foreign pension funds, that is treated as a non-foreign person for purposes of section 1445 withholding, do not use Form W-9. Instead, use Form W-8EXP (or other certification of non-foreign status).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a saving clause. Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if their stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first Protocol) and is relying on this exception to claim an exemption from tax on their scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include, but are not limited to, interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third-party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester;
2. You do not certify your TIN when required (see the instructions for Part II for details);
3. The IRS tells the requester that you furnished an incorrect TIN;
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only); or
5. You do not certify to the requester that you are not subject to backup withholding, as described in item 4 under "*By signing the filled-out form*" above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code*, later, and the separate Instructions for the Requester of Form W-9 for more information.

See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier.

What Is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all U.S. account holders that are specified U.S. persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code*, later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you are no longer tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account, for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of \$50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a \$500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

• **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note for ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040 you filed with your application.

• **Sole proprietor.** Enter your individual name as shown on your Form 1040 on line 1. Enter your business, trade, or "doing business as" (DBA) name on line 2.

• **Partnership, C corporation, S corporation, or LLC, other than a disregarded entity.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

• **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. Enter any business, trade, or DBA name on line 2.

• **Disregarded entity.** In general, a business entity that has a single owner, including an LLC, and is not a corporation, is disregarded as an entity separate from its owner (a disregarded entity). See Regulations section 301.7701-2(c)(2). A disregarded entity should check the appropriate box for the tax classification of its owner. Enter the owner's name on line 1. The name of the owner entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For

example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2. If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, enter it on line 2.

Line 3a

Check the appropriate box on line 3a for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3a.

IF the entity/individual on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation.
• Individual or • Sole proprietorship	Individual/sole proprietor.
• LLC classified as a partnership for U.S. federal tax purposes or • LLC that has filed Form 8832 or 2553 electing to be taxed as a corporation	Limited liability company and enter the appropriate tax classification: P = Partnership, C = C corporation, or S = S corporation.
• Partnership	Partnership.
• Trust/estate	Trust/estate.

Line 3b

Check this box if you are a partnership (including an LLC classified as a partnership for U.S. federal tax purposes), trust, or estate that has any foreign partners, owners, or beneficiaries, and you are providing this form to a partnership, trust, or estate, in which you have an ownership interest. You must check the box on line 3b if you receive a Form W-8 (or documentary evidence) from any partner, owner, or beneficiary establishing foreign status or if you receive a Form W-9 from any partner, owner, or beneficiary that has checked the box on line 3b.

Note: A partnership that provides a Form W-9 and checks box 3b may be required to complete Schedules K-2 and K-3 (Form 1065). For more information, see the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

If you are required to complete line 3b but fail to do so, you may not receive the information necessary to file a correct information return with the IRS or furnish a correct payee statement to your partners or beneficiaries. See, for example, sections 6698, 6722, and 6724 for penalties that may apply.

Line 4 Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third-party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space on line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2).

- 2—The United States or any of its agencies or instrumentalities.
- 3—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities.
- 5—A corporation.
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or territory.
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission.
- 8—A real estate investment trust.
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940.
- 10—A common trust fund operated by a bank under section 584(a).
- 11—A financial institution as defined under section 581.
- 12—A middleman known in the investment community as a nominee or custodian.
- 13—A trust exempt from tax under section 664 or described in section 4947.

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
• Interest and dividend payments	All exempt payees except for 7.
• Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
• Barter exchange transactions and patronage dividends	Exempt payees 1 through 4.
• Payments over \$600 required to be reported and direct sales over \$5,000 ¹	Generally, exempt payees 1 through 5. ²
• Payments made in settlement of payment card or third-party network transactions	Exempt payees 1 through 4.

¹ See Form 1099-MISC, Miscellaneous Information, and its instructions.

² However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) entered on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37).

B—The United States or any of its agencies or instrumentalities.

C—A state, the District of Columbia, a U.S. commonwealth or territory, or any of their political subdivisions or instrumentalities.

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i).

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i).

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state.

G—A real estate investment trust.

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940.

I—A common trust fund as defined in section 584(a).

J—A bank as defined in section 581.

K—A broker.

L—A trust exempt from tax under section 664 or described in section 4947(a)(1).

M—A tax-exempt trust under a section 403(b) plan or section 457(g) plan.

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, enter "NEW" at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have, and are not eligible to get, an SSN, your TIN is your IRS ITIN. Enter it in the entry space for the Social security number. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester*, later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at www.SSA.gov. You may also get this form by calling 800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at www.irs.gov/EIN. Go to www.irs.gov/Forms to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to www.irs.gov/OrderForms to place an order and have Form W-7 and/or Form SS-4 mailed to you within 15 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and enter "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, you will generally have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon. See also *Establishing U.S. status for purposes of chapter 3 and chapter 4 withholding*, earlier, for when you may instead be subject to withholding under chapter 3 or 4 of the Code.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code*, earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third-party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABL accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account ¹
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor ²
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee ¹
b. So-called trust account that is not a legal or valid trust under state law	The actual owner ¹
6. Sole proprietorship or disregarded entity owned by an individual	The owner ³
7. Grantor trust filing under Optional Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))**	The grantor*

For this type of account:	Give name and EIN of:
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity ⁴
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing Form 1041 or under the Optional Filing Method 2, requiring Form 1099 (see Regulations section 1.671-4(b)(2)(i)(B))**	The trust

¹ List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

² Circle the minor's name and furnish the minor's SSN.

³ You must show your individual name on line 1, and enter your business or DBA name, if any, on line 2. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

⁴ List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.)

* **Note:** The grantor must also provide a Form W-9 to the trustee of the trust.

** For more information on optional filing methods for grantor trusts, see the Instructions for Form 1041.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information, such as your name, SSN, or other identifying information, without your permission to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax return preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity, or a questionable credit report, contact the IRS Identity Theft Hotline at 800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 877-777-4778 or TTY/TDD 800-829-4059.

Protect yourself from suspicious emails or phishing schemes.

Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to phishing@irs.gov. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 800-366-4484. You can forward suspicious emails to the Federal Trade Commission at spam@uce.gov or report them at www.ftc.gov/complaint. You can contact the FTC at www.ftc.gov/idtheft or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see www.IdentityTheft.gov and Pub. 5027.

Go to www.irs.gov/IdentityTheft to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and territories for use in administering their laws. The information may also be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payors must generally withhold a percentage of taxable interest, dividends, and certain other payments to a payee who does not give a TIN to the payor. Certain penalties may also apply for providing false or fraudulent information.

CONSTRUCTION AGREEMENT

THIS CONSTRUCTION AGREEMENT is made and entered into by and between _____, a _____ corporation (hereinafter referred to as “Contractor”), and COLLIN COUNTY, TEXAS, a political subdivision of the State of Texas (hereinafter referred to as “County” or “OWNER”), to be effective from and after the date hereinafter provided.

For and in consideration of the covenants and agreements contained herein, and for the mutual benefits to be obtained hereby, the parties hereto agree as follows:

CONTRACT SUM

The County shall pay the Contractor in current funds for the performance of the work, subject to additions and deductions by Change orders as provided in the Contract Documents. The contract sum shall be the amount of _____ (\$ _____).

EFFECTIVE DATE

This Construction Agreement, having been previously approved by the Commissioners Court of Collin County, Texas, shall be effective upon the date of delivery and execution by Contractor, provided the County executes the same within five (5) consecutive calendar days after said delivery and execution by Contractor.

I. CONTRACT GENERAL PROVISIONS

1.1 DEFINITIONS

Words which have well-known technical or construction industry meanings shall have their commonly understood meanings in the Contract Documents, unless a different meaning is stated in the Contract Documents. The following words and expressions, or pronouns used in their place, shall wherever they appear in this contract be construed as follows, unless a different meaning is clear from the context:

Addendum, Bulletin or Letter of Clarification: Any additional contract provisions, or change, revisions or clarification of the Contract Documents issued in writing by the OWNER, to prospective bidders prior to the receipt of bids.

Contract or Contract Documents: The written agreement covering the performance of the work. The Contract and Contract Documents include this written Construction Agreement between OWNER and CONTRACTOR, Advertisement for Bids, Instructions to Bidders, Requests for Proposal, all Addenda, the Specifications, including the general and supplemental special and technical conditions, Drawings, provisions, plans or working drawings — and any supplemental changes or agreements pertaining to the Work or materials therefor; and bonds and any additional documents incorporated by reference in the above.

CONTRACTOR: The person, persons, partnership, firm, corporation, association or organization, or any combination thereof, entering into the contract for the execution of the work, acting directly or through a duly authorized representative.

Other CONTRACTORS: Any contractor, other than the CONTRACTOR or his subcontractors, who has a direct contact with the OWNER for work on or adjacent to the site of the work.

Contract Work or Work: Everything expressly or impliedly required to be furnished and done by the CONTRACTOR by the Contract Documents.

Engineer: The term “Engineer” means the Engineer or his duly authorized representative. The Engineer shall be understood to be the Engineer of the OWNER, and nothing contained in the Contract Documents shall create any contractual or agency relationship between the Engineer and the CONTRACTOR.

Extra Work: Work other than that which is expressly or impliedly required by the Contract Documents at the time of the execution of the contract.

Change Order: A written order to the CONTRACTOR authorizing and directing an addition, deletion or revision in the work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or the Contract time.

Contract Price: The total amount of money payable to the CONTRACTOR under the terms and conditions of the Contract Documents. When used in such context, it may also mean the unit price of an item of work under the Contract terms.

OWNER’S Representative: The Engineer or other duly authorized assistant, agent, engineer, inspector or superintendent acting within the scope of their particular duties.

Drawings or Contract Drawings: Those drawings that are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, including but not limited to, the plans, elevations, sections, details, schedules, diagrams, any bulletin, or any detailed drawing furnished by the OWNER, pertaining or supplemental thereto.

Specifications: Those portions of the Contract Documents that specify the requirements for materials, equipment, systems, standards and workmanship for performance of the Work, and related services.

Inspector: Any representative of the OWNER designated to inspect the work.

Materialman or Supplier: Any subcontractor contracting with the CONTRACTOR, or any of his subcontractors, to fabricate or deliver or who actually fabricates or delivers materials, supplies or equipment to be consumed or incorporated into the Work.

Notice: Written notice effective the date of the postmark thereon, or if hand delivered, effective the date of hand delivery.

OWNER: COLLIN COUNTY, TEXAS, a political subdivision of the State of Texas. The term OWNER means the OWNER or its authorized representative.

Payment Bond: A bond in the amount of the Contract executed by a corporate surety in accordance with all Texas Law, including but not limited to, Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code, for public works projects as security furnished by the CONTRACTOR and his sureties solely for the protection of payment bond beneficiaries supplying labor and materials in the prosecution of the Contract Work.

Performance Bond: A bond in the amount of the Contract executed by a corporate surety in accordance with all Texas Law, including but not limited to, Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code, for public works projects as security furnished by the CONTRACTOR and his sureties solely for the protection of the Owner, conditioned on the faithful performance of the Contract Work in accordance with the plans, specification, and Contract Documents.

Maintenance Bond: A bond executed by a corporate surety for 10% of the Contract Price that complies with all Texas Laws, including but not limited to, Chapter 3503 of the Texas Insurance Code, guaranteeing the prompt, full and faithful performance of the general guaranty and warranty contained in the Contract Documents, and Texas Law.

Project: The total construction of the work described in the Contract Documents performed by the Contractor, Other Contractor or the Owner in whole or part.

Proposal: The written statement or statements duly submitted to the OWNER by the person, persons, partnership, company, firm, association or corporation proposing to do the Work contemplated, including the approved form on which the formal bids for the Work are to be proposed.

Plan, or Plans: The plans are the drawings or reproductions therefrom made by the Owner or Owner's Representative and approved by the Owner showing the dimensions, location, design and position of the various elements of the Project and Work, including plans, elevations, sections, details, schedules, diagrams, working drawings, preliminary drawings, and such supplemental drawings as the Owner may issue to clarify other drawings or for the purpose of showing changes in the Contract Work authorized by the Owner, or for showing details not shown therein.

Special Provisions or Conditions: The special clauses of the Contract, or Contract Documents, setting forth conditions or requirements peculiar to the specific Project involved, supplementing the standard or general specifications and taking precedence over any conditions or requirements of the standard or general specifications with which they are in conflict.

Specifications or Contract Specifications: All of the general, special and technical conditions or provisions, and all addendum or supplements thereto consisting of written requirements for materials, equipment, systems, standards and performance of the work.

Site: The area upon or in which the CONTRACTOR'S operations are carried on, and such other areas adjacent thereto as may be designated as such by the OWNER.

Subcontractors: Any persons, firm or corporation, other than employees of the CONTRACTOR, who or which contracts with the CONTRACTOR to furnish, or who actually furnishes, labor and/or materials and equipment at or about the site.

Sureties: The corporate bodies which are bound by such bonds as are required with and for the CONTRACTOR. The sureties engaged to be responsible for the entire and satisfactory fulfillment of the Contract and for any and all requirements as set out in the specifications, Contract or plans.

The Work: All work including the furnishing of all labor, materials, tools, equipment, required submittals and incidentals to be performed by the CONTRACTOR under the terms of the Contract.

Directed, Required, Approved and Words of Like Import: Whenever they apply to the Work or its performance, the words "directed," "required," "permitted," "ordered," "designated," "established," "prescribed" and words of like import used in the Contract, specifications or upon the drawings shall imply the direction, requirement, permission, order, designation or prescription of the OWNER; and "approved," "acceptable," "satisfactory" and words of like import shall mean approved by, acceptable to or satisfactory to the OWNER.

Equal: Materials, articles or methods which are of equal or higher quality than those specified or shown on the drawings and as further defined in the "or equal" clause. Substitution of Materials shall be determined by the Engineer at his or her discretion, and approved by the Owner.

Working Time, Completion Time or Contract Time: The time set forth in the Contract for the performance and completion of the Work contracted for. The time may be expressed as calendar days, working days or a specific date.

Calendar Day or Days: Any successive days of the week or month, no days being excepted.

Working Day: A working day is defined as a calendar day not including Saturdays, Sundays or those legal holidays as specified in the list prepared by the OWNER for contract purposes. Nothing in this definition shall be construed as prohibiting the CONTRACTOR from working on Saturdays if he so desires, however permission of the OWNER shall be necessary if the CONTRACTOR chooses to work on Saturday. Work on Sundays shall not be permitted without the written permission of the OWNER. If Saturday or Sunday work is permitted, working time shall be charged on the same basis as week days. Where the working time is expressed as calendar days or a specific date, the concept of working days shall no longer be relevant to the contract.

CONTRACT DOCUMENTS

- 1.2 The parties agree that the Contract Documents shall consist of the following documents in addition to any other documents referenced or incorporated herein:
- A. This written Construction Agreement, including any changes or modifications;
 - B. All addenda including the following listed and numbered addenda:
Addendum No. 1 dated _____ Received _____
Addendum No. 2 dated _____ Received _____
 - C. Advertisement for Bids, Instructions to Bidder, the Invitation to Bid and Bid Form;
 - D. The Special/Supplemental Conditions;
 - E. The Specifications and the Project Drawings (if any);
 - F. The Construction Details shown on plans;
 - G. The Standard Specifications and Standard Drawings from the Public Works Construction Standards-North Central Texas Council of Governments, 2023 17th edition and all subsequent addendums;
 - H. The Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, as adopted by the Texas Department of Transportation on November 1, 2014, hereinafter referred to as the "Texas Standard Specifications";
 - I. The Performance Bond in the sum of ONE HUNDRED PERCENT (100%) of the total Contract Price;
 - J. The Payment Bond in the sum of ONE HUNDRED PERCENT (100%) of the total Contract Price; and,
 - K. The Two-Year Maintenance Bond in the sum of TEN PERCENT (10%) of the total Contract Price.

1.2.1 PRIORITY OF THE CONTRACT DOCUMENTS

These Contract Documents (A through K above) form the Construction Agreement and are a part of this Construction Agreement as if fully set forth herein. In the event of an inconsistency in any of the provisions of the Contract Documents, the inconsistency shall be resolved by giving precedence to the Contract Documents in the order in which they are listed above.

1.2.2 THE CONTRACT

The Contract Documents form the Contract. The Contract represents the entire integrated agreement between the OWNER and the CONTRACTOR and supersedes all prior negotiations, and representations by either party.

1.3 CORRELATION AND INTENT OF DOCUMENTS

The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. The intent of the documents, unless otherwise specifically provided, is to produce complete and finished work, which the CONTRACTOR undertakes to do in full compliance with the Contract Documents. It is not intended to mention every item of work in the specifications which can be

adequately shown on the drawings nor to show on the drawings all items of work described or required by the specifications. All materials or labor for work shown on the drawings or reasonably inferable therefrom as being necessary to produce a finished job shall be provided by the CONTRACTOR whether or not same is expressly covered in the specifications. No verbal conversation, understanding or agreement with any officer or employee or agent of the OWNER, either before or after the execution of the Contract, shall affect or modify any of the terms, conditions or obligations contained in the Contract Documents.

1.3.1 CONTRACT DRAWINGS AND SPECIFICATIONS

The OWNER shall furnish the CONTRACTOR one copy of the Contract Drawings and any supplemental drawings and specifications reasonably necessary for the proper execution of the work. At least one copy of all drawings and specifications shall be accessible at all times to the OWNER at the job site.

1.3.2 SUPPLEMENTAL DRAWINGS AND SPECIFICATIONS

In order to carry out the intent of the Contract Documents and to assist the CONTRACTOR in performing its work, the OWNER, after the execution of the Contract, may, by supplemental drawings, specifications or otherwise, furnish additional information or instructions as may be necessary for construction purposes.

All such supplemental drawings, specifications or instructions are intended to be consistent with the Contract Documents and reasonably inferable therefrom. Therefore, no extra costs shall be allowed by the OWNER on a claim that particular supplemental drawings, specifications or instructions differ from the requirements of the Contract Documents, incurring extra costs, unless the CONTRACTOR has first brought the matter, in writing, to the OWNER'S attention for adjustment before proceeding with the work covered by such.

If the OWNER decides that there is no departure from the requirements of the Contract Documents, the CONTRACTOR shall then proceed with the work as shown, specified or directed. If the OWNER shall decide that Extra Work is involved, he shall so modify the supplemental drawings, specifications or instructions to eliminate the Extra Work, or cause a written Change Order to be issued in accordance with the Contract Documents.

1.3.3 ERRORS AND CORRECTIONS IN DRAWINGS AND SPECIFICATIONS

The CONTRACTOR shall not take advantage of any apparent errors, omissions or discrepancies in the drawings or specifications; and the Engineer shall be permitted to make such corrections or interpretations as may be necessary for the fulfillment of the intent of the Contract

Documents. In case of any errors, omissions or discrepancies in the drawings or specifications, the CONTRACTOR shall promptly submit the matter to the OWNER or OWNER'S Representative in writing who, in turn, shall promptly make a determination and issue the necessary instructions in writing. Any adjustment by the CONTRACTOR without this determination and instructions shall be at the CONTRACTOR'S own risk and expense. The Work is to be made complete as intended by the Contract Documents.

1.3.4 EXISTING STRUCTURES

The plans show the general locations of some known surface and subsurface structures. The locations of many gas mains, water mains, conduits, sewers, other utilities, etc., however, are unknown, and the OWNER assumes no responsibility for failure to show any or all of these structures on the plans or to show them in their exact locations. It is mutually agreed that such failure shall not be considered sufficient basis for claims for additional compensation for Extra Work or for increasing the pay quantities in any manner whatsoever. The CONTRACTOR shall be solely responsible for locating all gas mains, water mains, conduits, sewers, other utilities etc., so as to perform the Work without damaging the same.

II. THE WORK

2.1 SCOPE OF WORK

Contractor shall provide all labor, supervision, materials, and equipment necessary to perform all work required by the Contract Documents in connection with **(Bid #, Bid Title)**

2.2 CHANGE OR MODIFICATION OF CONTRACT

2.2.1 ALTERATION OF PLANS AND SPECIFICATIONS

The OWNER reserves the right to make such changes in the plans and specifications and in the character of the work as may be necessary or desirable to insure completion in the most satisfactory manner, provided such changes do not materially alter the original plans and specifications or change the general nature of the Work as a whole. Such changes shall not be considered as waiving or invalidating any condition or provision of the Contract or bonds. Such changes shall be issued by the Engineer.

2.2.2 INCREASED OR DECREASED QUANTITIES OF WORK

The OWNER reserves the right and may from time to time, by written order, and without notice to any surety, make changes in the quantity or time of performance of the Work, as may be considered necessary or desirable and such changes shall not be considered as waiving or invalidating any conditions or provisions of the Contract or bonds. The CONTRACTOR shall perform all the Contract Work in strict compliance with the Contract Documents, and shall not make any changes to the Work without prior

written authorization from the OWNER, in the form of a written Change Order. If such changes increase or decrease either the cost or the time necessary for the performance of the Work, then the parties will mutually agree upon an equitable adjustment to the price or time to perform the Work pursuant to the terms of the Contract.

2.2.3 EXTRA WORK/CHANGE ORDERS

When any work is necessary to the proper completion of the Project and for which no prices are provided for in the Bid or Proposal and Contract, the CONTRACTOR shall do such work, but only when and as ordered in writing by the OWNER. The OWNER may order changes in the Work without invalidating Contract. Payment for Extra Work shall be made as provided herein. Contractor agrees that overhead and profit for Extra Work shall not exceed 10% of the total cost of the Extra Work. The Contractor shall not be entitled to any additional funds for any work or Extra Work performed on the Project, unless a Change Order is issued and signed by the Owner. The CONTRACTOR shall perform the work as altered, whether increased or decreased, and no allowances shall be made for anticipated profits. Nothing in this section shall give rise to any claims for any delay or acceleration damages, and the CONTRACTORS sole remedy for any delays in the Project shall remain an equitable extension of time as provided for in the Contract Documents. CONTRACTOR acknowledges and agrees to waive all rights or claims for compensation for any additional or other work not specifically authorized by the OWNER.

2.3 DISPUTED WORK AND CLAIMS FOR ADDITIONAL COMPENSATION

If the CONTRACTOR is of the opinion that (a) the work necessary or required to accomplish the result intended by this Contract, or (b) any work ordered to be done as Contract Work by the OWNER is Extra Work and not Contract Work, or (c) any determination or order of the OWNER violates the terms and provisions of this Contract, the CONTRACTOR shall promptly, either before proceeding with such work or complying with such order or determination, notify the OWNER in writing of his contentions with respect thereto and request a final determination thereof.

Such determination of the OWNER shall be given in writing to the CONTRACTOR. If the OWNER determines that the work in question is Extra Work and not Contract Work, or that the order complained of requires performance by the CONTRACTOR beyond that required by the Contract or violates the terms and provisions of the Contract, thereupon the OWNER shall cause either (a) the issuance of a written Change Order covering the Extra Work as provided herein, or (b) the determination or order complained of to be rescinded or so modified so as to not require performance beyond that required by the terms and provisions of the Contract.

If the OWNER determines that the work in question is Contract Work and not Extra Work, or that the determination or order complained of does not require performance by the CONTRACTOR beyond that required by the Contract or

violate the terms and provisions of the Contract, he shall direct the CONTRACTOR to proceed, and the CONTRACTOR must promptly comply. In order to reserve his right to claim compensation for such work resulting from such compliance, however, the CONTRACTOR must, within 20 calendar days after receiving the OWNER'S determination and direction, notify the OWNER in writing that the work is being performed, or that the determination and direction is being complied with, under protest.

If the CONTRACTOR fails to so appeal to the OWNER for a determination or, having so appealed, should the CONTRACTOR thus fail to notify the OWNER in writing of his protest, the CONTRACTOR shall be deemed to have waived any claim for extra compensation or damages therefore. No oral appeals or oral protests, no matter to whom made, shall be deemed even substantial compliance with the provisions of this item.

In addition to the foregoing requirements, the CONTRACTOR shall, upon notice from the OWNER, produce for examination for a minimum period of three (3) years following final payment or termination of contract and audit at the CONTRACTOR'S office, by the representatives of the OWNER, all his books and records showing all of his acts and transactions in connection with contractual performance as well as relating to or arising by reason of the matter in dispute. At such examination a duly authorized representative of the CONTRACTOR may be present.

Unless the aforesaid requirements and conditions are complied with by the CONTRACTOR, the OWNER shall be released from all claims arising under, relating to or by reason of disputed work or Extra Work. It is further stipulated and agreed that no conduct on the part of the OWNER or any agent or employee of the OWNER shall ever be construed as a waiver of the requirements of this section, when such requirements constitute an absolute condition precedent to any approval of any claim for extra compensation, notwithstanding any other provisions of the Contract Documents; and in any action against the OWNER to recover any sum in excess of the contract amount, the CONTRACTOR must allege and prove strict compliance with the provisions of this section. The CONTRACTOR ASSUMES THE RISK OF NONPAYMENT, for failing to comply with any of the requirements of this section.

III. CONTRACTORS RESPONSIBILITIES

3.1 CONTRACTOR'S REPRESENTATIONS, WARRANTIES AND ASSURANCES.

In consideration of, and to induce the award of this contract to him, the CONTRACTOR represents and warrants: (a) That he is financially solvent, and sufficiently experienced and competent to perform the work; (b) That the facts stated in the proposal and the information given by him pursuant to the bidding documents are true and correct in all respects; (c) That he has read, understood and complied with all the requirements set forth in the bidding documents; (d) That he

is familiar with and understands all laws and regulations applicable to the work; and (e) unless otherwise specifically provided for in the Contract Documents, the CONTRACTOR shall do all the Work and shall furnish all the tools, equipment, machinery, materials, labor and appliances, except as herein otherwise specified, necessary or proper for performing and completing the work required by this Contract, in the manner and within the time herein prescribed.

By executing the contract, the CONTRACTOR represents that he has visited the site of Work, has fully familiarized himself with the local and on-site conditions under which the work is to be performed and has correlated his observation with the requirements of the Contract Documents. In addition, the CONTRACTOR represents that he has satisfied himself as to subsurface conditions at the site of the Work. Information, data and representations contained in the Contract Documents pertaining to the conditions at the site, including subsurface conditions, are for information only and are not warranted or represented in any manner to accurately show the conditions at the site of the Work. The CONTRACTOR agrees that he shall make no claims for damages, additional compensation or extension of time against the OWNER because of encountering actual conditions in the course of the Work which vary or differ from conditions or information contained in the Contract Documents. All risks of differing subsurface conditions shall be borne solely by the CONTRACTOR.

The CONTRACTOR shall carefully study and compare the Contract Documents and shall at once report to the OWNER any error, inconsistency or omission he may discover. The CONTRACTOR shall perform no portion of the Work at any time without Contract Documents or, where required, approved shop drawings, product data or samples for such portion of the work.

3.1.1 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Shop drawings are drawings, diagrams, schedules and other data specially prepared for the work by the CONTRACTOR or any subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

B. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the CONTRACTOR to illustrate a material, product or system for some portion of the work.

C. Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the work shall be judged.

D. the CONTRACTOR shall provide, review, approve and submit to the Engineer with reasonable promptness and in such sequence as to cause no delay in the Work or in the work of the OWNER or any separate contractor, all shop drawings, product data and samples required by the Contract Documents. The Work will be performed in accordance with submittals

approved by the Engineer. The CONTRACTOR shall not be relieved responsibility for deviations from the requirements of the Contract Documents by errors or omissions by the OWNER or Engineer in approving Shop Drawings, Product Data, samples or any other submittals.

E. By approving and submitting shop drawings, product data and samples, the CONTRACTOR represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or shall do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

F. As the Engineer's review is only for general conformance with the requirements of the Contract Documents, the CONTRACTOR shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Engineer's approval of shop drawings, product data or samples unless the CONTRACTOR has specifically informed the Engineer in writing of such deviation at the time of submission and the Engineer have given written approval to the specific deviation. The CONTRACTOR shall not be relieved from responsibility for errors or omissions in the shop drawings, product data or samples by the Engineer's approval thereof. The CONTRACTOR shall direct specific attention, in writing or on resubmitted shop drawings, product data or samples, to revisions other than those requested by the Engineer on previous submittals.

G. the CONTRACTOR shall be responsible for delays caused by rejection of the submittal of inadequate or incorrect shop drawings, product data or samples. The CONTRACTOR shall be responsible for seeing that any "approved" copies of shop drawings bearing the approval of the Engineer are allowed on the job site. The CONTRACTOR shall be responsible for providing all copies of approved shop drawings necessary for the construction operations.

H. the CONTRACTOR shall keep adequate records of submittal and approvals so that an accurate up-to-date record file is maintained at the job site at all times.

I. No portion of the work requiring submission of a shop drawing, product data or sample shall be commenced until the submittal has been approved by the Engineer. All such portions of the work shall be in accordance with approved submittals.

3.1.2 SURETY BONDS

With the execution and delivery of the contract, the CONTRACTOR shall furnish and file with the OWNER in the amounts herein required, the surety bonds specified hereunder. Without exception, the OWNER'S bond forms, attached hereto as Section 00610 and 00611 must be used, and exclusive

venue for any lawsuit in connection with such bonds shall be specified as the county in which the OWNER'S principal office is located. Such surety bonds shall be in accordance with Texas Law, including but not limited to, the provisions of Chapter 2253 of the Texas Government Code and Chapter 3503 of the Texas Insurance Code. These bonds shall automatically be increased by the amount of any change order or supplemental agreement which increases the contract price with or without notice to the surety, but in no event shall a change which reduces the contract amount reduce the penal amount of such bonds.

A. Performance Bond. A good and sufficient bond in an amount not less than 100 percent (100%) of the total amount of the Contract Price guaranteeing the full and faithful execution of the Work and performance of the Contract in accordance with the plans, specifications and Contract Documents, including any extensions thereof, for the protection of the OWNER. This bond shall provide for the repair and/or replacement of all defects due to faulty materials and workmanship that appear within a period of one year from the date of completion and acceptance of the improvement by the OWNER or such lesser or greater period as may be designated in the Contract Documents.

B. Payment Bond. A good and sufficient bond in an amount not less than 100 percent (100%) of the total amount of the Contract Price guaranteeing the full and proper protection of all payment bond beneficiaries and claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant.

C. Maintenance Bond. A good and sufficient bond in an amount not less than ten percent (10%) of the total amount of the Contract Price guaranteeing the project against defects.

D. Sureties. No sureties shall be accepted by the OWNER who are now in default or delinquent on any bonds or who are interested in any litigation against the OWNER. All bonds shall be made on forms furnished by the OWNER and shall be executed by not less than one corporate surety authorized to do business in the State of Texas and acceptable to the OWNER. The sureties shall be listed in the most current Federal Register Treasury List. Each bond shall be executed by the CONTRACTOR and surety. Each surety shall designate an agent resident in the OWNER'S jurisdictional area acceptable to the OWNER to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship. The OWNER reserves the right to reject any and all sureties.

E. Additional or Substitute Bonds. If at any time the OWNER is or becomes dissatisfied with any surety, then upon the performance or payment bond, the CONTRACTOR shall, within five days after notice from the OWNER to do so, substitute an acceptable bond (or bonds), or provide an additional

bond, in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such bonds shall be paid by the CONTRACTOR without recourse to the OWNER. No further payments under the contract shall be deemed due or payable until the substitute or additional bonds shall have been furnished and accepted by the OWNER.

3.1.3 PERMITS AND FEES

The CONTRACTOR shall secure and pay for all building permits and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are normally and legally required for the construction of similar projects in the State of Texas. The CONTRACTOR will give all notices required by laws, ordinances, rules, regulations and lawful orders of authorized public authorities required for the proper and legal performance of the Work.

3.14 CONTRACT DOCUMENTS AT SITE

The CONTRACTOR shall keep and maintain at the Project site one record copy of the Contract Documents, including but not limited to, the Drawings, Specifications, addenda, Change Orders, submittals, Product Data, Samples and other modifications, in good order and marked to show the current construction of the Project. These documents shall be available to the OWNER or Engineer to review at any time and shall be submitted to the OWNER upon completion of the Project, along with a complete set of as built drawings.

3.2 CONTRACTOR'S RESPONSIBILITIES

3.2.1 PERFORMANCE OF THE WORK

In addition to those matters elsewhere expressly made the responsibility of the CONTRACTOR, the CONTRACTOR shall have the full and direct responsibility for the performance and completion of the Work under this Contract and for any act or neglect of the CONTRACTOR, his agents, employees or subcontractors. He shall bear all losses, if any, resulting on account of the amount and character of the Work, or because the conditions under which the work must be done are different from what were estimated or anticipated by him, or because of weather, floods, elements or other causes.

3.2.2 MEANS AND METHODS OF CONSTRUCTION

Unless otherwise expressly provided in the contract drawings, specifications or bulletins, the means and methods of construction shall be such as the CONTRACTOR may choose; subject, however, to the

OWNER'S right to prohibit means and methods proposed by the CONTRACTOR which in the OWNER'S judgment:

- A. shall constitute a hazard to the Work, or to persons or property, or shall violate express requirements of applicable laws or ordinances; or
- B. shall cause unnecessary or unreasonable inconvenience to the public; or
- C. shall not produce finished work in accordance with the requirements of the Contract Documents; or
- D. shall not assure the Work to be completed within the time allowed by the contract.

The OWNER'S approval of the CONTRACTOR'S means or methods of construction, or the OWNER'S failure to exercise his right to prohibit such means or methods, shall not relieve the CONTRACTOR of his responsibility for the Work or of his obligation to accomplish the result intended by the Contract Documents; nor shall the exercise or non-exercise of such rights to prohibit create a cause of action for damages or provide a basis for any claim by the CONTRACTOR against the OWNER. The CONTRACTOR shall be solely responsible for, the construction means and methods, techniques, sequences, procedures, and for the safety precautions and programs in connection with the Work or the Project.

If the Contract Documents specify any means, methods, techniques, sequences or procedures, the CONTRACTOR shall evaluate said specifications and determine that they are safe for the proper prosecution of the Work. The CONTRACTOR shall be solely responsible for the job site safety of such means, methods, techniques, sequences or procedures. If the CONTRACTOR determines the specified means, methods, techniques, sequences or procedures may not be safe, the CONTRACTOR shall immediately notify the OWNER and Engineer and shall not proceed without further instructions.

3.2.3 CONSTRUCTION SCHEDULE

The CONTRACTOR, immediately after being awarded the contract, shall prepare and submit for the OWNER, and Engineer's information an estimated progress schedule for the work. The progress schedule shall be related to the entire Project to the extent required by the Contract Documents and shall provide for expeditious and reasonable execution of the work, not to exceed the time limits for completion provided in the Contract Documents. The progress schedule shall be updated as the Work proceeds or the schedule changes and immediately upon request by the OWNER. The CONTRACTOR shall also prepare a schedule of submittals that allows for a reasonable time for the OWNER or Engineer to review the submittals so as not to delay the Project.

3.2.4 TIME OF PERFORMANCE OF THE WORK

The CONTRACTOR shall begin the work to be performed under this Contract not later than 10 days from the date specified in the purchase or work order and shall conduct the work in such a manner and with sufficient equipment, material and labor as is necessary to insure its completion within the working time. It is the intent of this specification to provide a continuous construction operation without delay except as occasioned by unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, and it shall be the CONTRACTOR's responsibility to execute the work in the most expeditious manner.

Work shall be done only during the regular and commonly accepted and prescribed working hours. No work shall be done on nights, Sundays or regular holidays unless permission is given by the OWNER

Time is of the Essence for the performance of the Work by the CONTRACTOR. CONTRACTOR agrees that the time allotted for the performance of the Work is reasonable.

3.2.5 PERFORMANCE OF EXTRA OR DISPUTED WORK

While the CONTRACTOR or his subcontractor is performing Extra Work in accordance with the OWNER'S written order, the cost of which is to be determined on a time and material basis, or is performing disputed work or complying with a determination or order under protest, the CONTRACTOR shall, on the Monday following the performance of the work, furnish the OWNER'S representative at the site with three copies of verified statements showing:

- A. the name, address and telephone number of each workman employed on such Extra Work or engaged in complying with such determination or order, the character of Extra Work each is doing and the wages paid to him, including the rate and amount of payroll taxes, contributions for insurance, and federal social security; and
- B. the nature, cost and quantity of any materials, plant equipment or construction equipment furnished or used in connection with the performance of such Extra Work or in complying with such determination or order, and from whom purchased or rented, along with copies of invoices for such materials, plant equipment or construction equipment.

The CONTRACTOR and his subcontractors, when required by the OWNER, must also produce for inspection for a minimum period of three (3) years following final payment or termination of contract, produce for examination and audit by designated OWNER representatives, any and all of his books, vouchers, records, daily job diaries and reports, canceled

checks, etc. showing the nature and quantity of labor, materials and equipment actually used in the performance of the Extra Work; the amounts expended therefore; and the costs incurred for insurance premiums and other items of expense directly chargeable to such Extra Work. The CONTRACTOR must permit the OWNER'S representatives to make extracts therefrom or copies thereof as may be desired.

Failure of the CONTRACTOR to comply strictly with the requirements of this section shall constitute a waiver of any claim for extra compensation on account of the performance of such Extra Work.

3.3 QUALITY OF WORK

3.3.1 INSPECTION AND TESTS

The CONTRACTOR shall furnish the OWNER with every reasonable accommodation and opportunity to ascertain whether or not the work performed is in accordance with the requirements and intent of the plans and specifications. Any work done or materials used without suitable inspection by the OWNER may be ordered removed and replaced at the CONTRACTOR'S expense. The CONTRACTOR shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the OWNER in his administration of the contract, or by inspections, tests or approvals required or performed by persons other than the CONTRACTOR.

Unless otherwise provided, the CONTRACTOR shall make arrangements for all tests, inspections and approvals with an independent testing laboratory or entity required by the Contract Documents or by laws, ordinances, rules, regulations or orders of public authorities having jurisdiction over the Work or items to be tested, inspected or approved. If additional testing or inspection is required they shall be performed at the CONTRACTOR'S expense.

3.3.2 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

All work which has been rejected or condemned shall be repaired, or if it cannot be repaired satisfactorily, it shall be removed and replaced at the CONTRACTOR'S expense. Defective materials shall be immediately removed from the site of the work. Work done without line and grade having been given, work done beyond the lines or not in conformity with the grades shown on the plans or as given, save as herein provided, work done without written authority and prior agreement in writing as to process, shall be done at the CONTRACTOR'S risk and shall be considered unauthorized and at the option of the OWNER may be ordered removed at the CONTRACTOR'S expense.

Upon failure of the CONTRACTOR to repair satisfactorily or to remove and replace, if so directed, rejected, unauthorized or condemned work or materials immediately after receiving notice from the OWNER, the OWNER shall, after giving written notice to the CONTRACTOR, have the authority to cause defective work to be remedied or removed and replaced, or to cause unauthorized work to be removed and to deduct the cost thereof from any monies due or to become due the CONTRACTOR. Alternatively, the OWNER may, at its option, declare the CONTRACTOR in default.

3.3.3 WORKING AREA; COORDINATION WITH OTHER CONTRACTORS; FINAL CLEANUP

The CONTRACTOR shall confine his equipment, storage of materials and construction operations to the area shown on the contract drawings or stated in the specifications, prescribed by ordinance, laws, or permits or as may be directed by the OWNER, and shall not unreasonably encumber the site or public right-of-way with his construction equipment, plant or materials.

Such area shall not be deemed for the exclusive use of the CONTRACTOR. Other contractors of the OWNER may enter upon and use such portions of the area and for such items as determined by the OWNER are necessary for all purposes required by their contracts. The CONTRACTOR shall give to such other contractors all reasonable facilities and assistance to the end that the work on this and other contracts shall not be unduly or unreasonably delayed. Any additional areas desired by the CONTRACTOR for his use shall be provided by him at his own cost and expense.

The CONTRACTOR is responsible for cutting, fitting or patching any parts of the Work where such work is necessary to make the Work complete, for parts to fit together, or for any damage to the Work prior to Final Acceptance.

The CONTRACTOR shall keep the Project and the surrounding area clean and free from the accumulation of waste materials or trash. Upon completion of the work and before final acceptance and final payment shall be made, the CONTRACTOR shall completely clean and remove from the site of the work surplus and discarded materials, temporary structures and debris of every kind. He shall leave the site of the work in a neat and orderly condition equal to that which originally existed, or as called for in the Contract Documents. Surplus and waste materials removed from the site of the work shall be disposed of at locations satisfactory to the OWNER, and at the CONTRACTOR'S sole cost.

3.4 LEGAL RESPONSIBILITIES

3.4.1. PATENTS AND COPYRIGHTS

The CONTRACTOR shall pay all royalties and license fees and shall provide, by suitable legal agreement with the patentee or owner, for the use of any design, device, material or process covered by letters, patent or any copyright. The CONTRACTOR shall indemnify, defend, hold and save the OWNER and its officers, employees and agents harmless from all liability and claims for infringement of any patent or copyright.

In the event that any claims, suit or action at law or in equity of any kind whatsoever is brought against the OWNER, or its officers, employees or agents involving any such patents, copyrights or license rights, then the OWNER shall have the right to and may retain from any money due or to become due to the CONTRACTOR such sum deemed necessary by the OWNER for its protection until such claim or suit shall have been settled and satisfactory evidence to that effect shall have been furnished the OWNER.

3.4.2 INDEMNIFICATION

To the fullest extent permitted by law, the CONTRACTOR and his sureties shall indemnify, defend and hold harmless the OWNER and all of its, past, present and future, officers, agents and employees from all suits, cause of action, claims, liabilities, losses, fines, penalties, liens, demands, obligations, actions, proceedings, of any kind, character, name and description brought or arising, on account of any injuries or damages received or sustained by any person, destruction or damage to any property on account of, in whole or part, the operations of the CONTRACTOR, his agents, employees or subcontractors; or on account of any negligent act or fault of the CONTRACTOR, his agents, employees or subcontractors in the execution of said Contract; failing to comply with any law, ordinance, regulation, rule or order of any governmental or regulatory body including those dealing with health, safety, welfare or the environment; on account of the failure of the CONTRACTOR to provide the necessary barricades, warning lights or signs; and shall be required to pay any judgment, with cost, which may be obtained against the OWNER growing out of such injury or damage. In no event shall OWNER be liable to CONTRACTOR for indirect or consequential damages or loss of income or profit irrespective of the cause, fault or reason for same. CONTRACTOR'S duty to indemnify herein shall not be limited by any limitation on the type or amount of damages payable by or for CONTRACTOR or any Subcontractor under workman's compensation acts, disability benefit acts or any other employee benefit acts.

In addition, the CONTRACTOR likewise covenants and agrees to, and does hereby, indemnify and hold harmless the OWNER from and against any and all injuries, loss or damages to property of the OWNER during the performance of any of the terms and conditions of this Contract, arising out of or in connection with or resulting from, in whole or in part, any and all

alleged acts or omissions of officers, agents, servants, employees, contractors, subcontractors, licenses or invitees of the CONTRACTOR.

The rights and responsibilities provided in this indemnification provision shall survive the termination or completion of this Contract.

3.5 SUPERVISION AND CONSTRUCTION PROCEDURES

3.5.1. SUPERVISION BY CONTRACTOR

The status of the CONTRACTOR is that of an independent CONTRACTOR under Texas law and the work under this Contract shall be under the direct charge and superintendence of the CONTRACTOR. Except where the CONTRACTOR is an individual and gives his personal superintendence to the work, the CONTRACTOR shall provide a competent superintendent or general foreman on the work site at all times during progress with full authority to act for the CONTRACTOR. The CONTRACTOR shall also provide an adequate staff for the coordination and expediting of the Work.

The superintendent and staff shall be satisfactory to the OWNER. The superintendent or general foreman shall not be changed during this Contract except with the written consent of the OWNER or unless the superintendent or general foreman proves unsatisfactory to the CONTRACTOR and ceases to be in his employ.

If the superintendent should be or become unsatisfactory to the OWNER, he shall be replaced by the CONTRACTOR upon written direction of the OWNER, and in such event, the CONTRACTOR shall not be entitled to file a claim for any additional working time or money from the OWNER.

3.5.2 EMPLOYEES

The CONTRACTOR shall employ only competent, efficient workmen and shall not use on the work any unfit person or one not skilled in the work assigned to him and shall at all times maintain good order among its employees. Whenever the OWNER shall inform the CONTRACTOR in writing that, in his opinion, any employee is unfit, unskilled, disobedient, or is disrupting the orderly progress of the work, such employee shall be removed from the work and shall not again be employed on it. Under urgent circumstances, the OWNER may orally require immediate removal of an employee for cause, to be followed by written confirmation.

The CONTRACTOR shall supervise and direct all the work, using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences, procedures and safety procedures and for coordinating all portions of the Work under the Contract. The

CONTRACTOR shall be responsible to the OWNER for the acts and omissions of his employees, subcontractors and their agents, employees and subcontractors performing any of the work under a contract with the CONTRACTOR.

3.5.3 LABOR AND MATERIALS

Unless otherwise provided in the Contract Documents, the CONTRACTOR shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation and other facilities and services necessary for the proper execution and completion of the work, whether temporary or permanent and whether or not incorporated or to be incorporated into the work.

The CONTRACTOR shall at all times enforce strict discipline and good order among his employees and shall not employ on the work site any unfit person or anyone not skilled in the task assigned to him.

The rate of progress shall be such that the whole work shall be performed and the premises cleaned up in accordance with the Contract within the working time established in the Contract, unless an extension of time is made in the manner hereinafter specified.

3.5.4 WAGE SCALE

In accordance with The Texas Government Code, Title 10, Chapter 2258, Prevailing Wage Rates, the general prevailing wage rate has been determined for this locality for the craft or type of workman needed to execute work of a similar character of the project listed herein. The Contractor shall pay the prevailing wage rate in this locality to all his/her employees and subcontractors performing work on this project, and in no event shall the Contractor pay less than the rate shown in the following schedule.

Most Current Wage Scale from before close of bidding downloaded from SAM.Gov to be inserted here

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END OF GENERAL DECISION

Except for work on legal holidays, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) the number of hours worked per day, except for overtime hours, times (b) the above respective rate per hour.

For legal holidays, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on the legal holiday.

For overtime work, the “General Prevailing Rate of Per Diem Wage” for the various crafts or type of workers or mechanics is the product of (a) one and one-half times the above respective rate per hour, times (b) the number of hours worked on overtime.

Under the provisions of Texas Government Code, Title 10, Chapter 2258, Prevailing Wage Rates, the contractor or subcontractor of the contractor shall forfeit as a penalty to the entity on whose behalf the contract is made or awarded, sixty dollars (\$60.00) for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the contract.

If the construction project involves the expenditure of Federal funds in excess of \$2,000, the minimum wages to be paid various classes of laborers and mechanics will be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on the project of a character similar to the Contract Work.

- 3.5.5 Contractors doing business with OWNER agree to comply with Federal Executive Order 13465 E-Verify. It is OWNER’S intention and duty to comply and support the Immigration and Nationality Act (INA) which includes provisions addressing employment eligibility, employment verification and non-discrimination. According to the INA, contractors/employers may hire only persons who may legally work in the United States. Subsequently, contractors and subcontractors doing business with OWNER must confirm their enrollment in the E-Verify system which verifies employment eligibility through completion and checking of I-9 forms. OWNER reserves the right to audit contractors process to verify enrollment compliance.

3.5.6 COMPLIANCE WITH LAWS

The CONTRACTOR shall fully comply with all local, state and federal laws, including all codes, ordinances and regulations applicable to this Contract and the Work to be done thereunder, which exist or which may be enacted later by governmental bodies having jurisdiction or authority for such enactment.

All work required under this Contract is intended to comply with all requirements of law, regulation, permit or license. If the CONTRACTOR finds that there is a variance, he shall immediately report this to the OWNER for resolution.

3.5.6.1 EQUAL EMPLOYMENT OPPORTUNITY

The CONTRACTOR shall comply with all local, state and federal employment and discrimination laws and shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin or any other class protected by law.

3.5.7 RAILWAY CROSSINGS

Where the Work encroaches upon any right-of-way of any railway, the OWNER shall secure the necessary easement for the work. Where railway tracks are to be crossed, the CONTRACTOR shall observe all the regulations and instructions of the railway company as to methods of doing the work or precautions for safety of property and the public. All negotiations with the railway company, except for right-of-way, shall be made by the CONTRACTOR. The railway company shall be notified by the CONTRACTOR not less than five days prior to commencing the work. The CONTRACTOR shall not be paid separate compensation for such railway crossing but shall receive only the compensation as set out in the proposal.

3.5.8 OTHER CONTRACTORS; OBLIGATION TO COOPERATE

The OWNER reserves the right to perform construction on the Project with its own forces or may award other contracts for additional work on this Project, and the CONTRACTOR shall fully cooperate with such other contractors and shall coordinate and fit his work to be done hereunder to such additional work as may be contracted by the OWNER. The CONTRACTOR shall not commit or permit any act which shall interfere with the performance of work by any other contractor.

Upon receiving written notice from the CONTRACTOR that the OWNER or another contractor is failing to coordinate his work with the Work under this Contract as directed by the OWNER, the OWNER shall promptly investigate the charge and take such necessary action as the situation may require. However, the OWNER shall not be liable to the CONTRACTOR for damages suffered by the CONTRACTOR due to the fault or negligence of another contractor or through failure of another contractor to carry out the directions of the OWNER. Should any interference occur between contractors, the Engineer may furnish the CONTRACTOR with written instructions designating priority of effort, whereupon the CONTRACTOR shall immediately comply with such direction. In such event, the CONTRACTOR shall be entitled to an extension of working time only for unavoidable delays verified by the Engineer; however, no increase in the Contract Price shall be due the CONTRACTOR.

3.5.9 SUBCONTRACTS

The CONTRACTOR shall not make any subcontract for performing any portion of the Work included in the contract without written notice to the OWNER. This contract having been made pursuant to the bid submitted by the CONTRACTOR and in reliance with the CONTRACTOR'S personal qualifications and responsibility, the OWNER reserves the right to withhold approval of any subcontractor which the OWNER may deem would not be in the OWNER'S best interest.

The CONTRACTOR shall, as soon as practicable after signing the Contract, submit a separate written notice to the OWNER identifying each proposed subcontractor. Upon request of the OWNER, the CONTRACTOR shall promptly furnish additional information tending to establish that any proposed subcontractor has the necessary facilities, skill, integrity, past experience and financial resources to perform the work in accordance with the terms and conditions of this Contract.

If the OWNER determines that any proposed subcontractor is unacceptable, he shall so notify the CONTRACTOR, who may thereupon submit another proposed subcontractor unless the CONTRACTOR decides to do the work himself. Disapproval by the OWNER of any proposed subcontractor shall not provide a basis for any claim by the CONTRACTOR.

If an approved subcontractor fails to properly perform the work undertaken, he shall be removed from the job upon request of the OWNER, following notification to the CONTRACTOR in writing of the request for removal and the reasons therefore.

Each subcontract entered into shall provide that the provisions of this Contract shall apply to such subcontractor and his officers and employees in all respects as if he and they were employees of the CONTRACTOR. The OWNER'S decision not to disapprove of any subcontract shall not relieve the CONTRACTOR of any of his responsibilities, duties and liabilities hereunder. The CONTRACTOR shall be solely responsible for the acts, omissions, negligence or defaults of his subcontractors and of such subcontractor's officers, agents and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the CONTRACTOR to the extent of his subcontract.

The CONTRACTOR agrees to bind each subcontractor and each subcontractor agrees to be bound by the terms of the Contract Documents insofar as applicable to his work. The CONTRACTOR and each subcontractor jointly and severally agree that nothing in the Contract Documents or otherwise shall create or be deemed to create any rights in favor of a subcontractor against the OWNER; nor shall be deemed or construed to impose upon the OWNER any obligation, liability or duty to a subcontractor; or to create any contractual relation whatsoever between a subcontractor and the OWNER.

The provisions contained herein shall likewise apply to any sub-subcontracts.

3.6 PROTECTION OF WORK AND OF PERSONS AND PROPERTY

3.6.1 PROTECTION OF WORK

During performance and up to date of final acceptance, the CONTRACTOR shall be under the absolute obligation to protect the finished work against any damage, loss or injury. In the event of such damage, loss or injury, the CONTRACTOR shall promptly replace or repair such work, whichever the OWNER shall determine to be preferable. The obligation to deliver finished work in strict accordance with the Contract prior to final acceptance shall be absolute and shall not be affected by the OWNER'S approval of or failure to prohibit means and methods of construction used by the CONTRACTOR. All risk of loss or damage to the work shall be borne solely by the CONTRACTOR until final completion and acceptance of all work by the OWNER, as evidenced by the OWNER'S issuance of a certificate of acceptance.

3.6.2 PROTECTION OF PERSONS AND PROPERTY

The CONTRACTOR shall have the responsibility to provide and maintain all warning devices and take all precautionary measures required by law or otherwise to protect persons and property while said persons or property are approaching, leaving or within the work site or any area adjacent to said work site. No separate compensation shall be paid to the CONTRACTOR for the installation or maintenance of any warning devices, barricades, lights, signs or any other precautionary measures required by law or otherwise for the protection of persons or property.

The CONTRACTOR shall assume all duties owed by the OWNER to the general public in connection with the general public's immediate approach to and travel through the work site and the area adjacent to said work site.

Where the work is carried on in or adjacent to any street, alley, sidewalk, public right-of-way or public place, the CONTRACTOR shall at his own cost and expense provide such flagmen and watchmen and furnish, erect and maintain such warning devices, barricades, lights, signs and other precautionary measures for the protection of persons or property as may be prudent or necessary, or as are required by law. The CONTRACTOR'S responsibility for providing and maintaining flagmen, watchmen, warning devices, barricades, signs and lights and other precautionary measures shall not cease until the project shall have been completed and accepted by the OWNER, and shall cease when the certificate of acceptance is issued by the OWNER pursuant to the Contract Documents.

If the OWNER discovers that the CONTRACTOR has failed to comply with the applicable federal and state law (by failing to furnish the necessary flagmen, warning devices, barricades, lights, signs or other precautionary measures for the protection of persons or property), the OWNER may order the CONTRACTOR to take such additional precautionary measures as required by law to be taken to protect persons and property.

In addition, the CONTRACTOR shall be held responsible for all damages to the work and other public or private property due to the failure of warning devices, barricades, signs, lights or other precautionary measures in protecting said property; and whenever evidence is found of such damage, the OWNER may order the damaged portion immediately removed and replaced by and at the cost and expense of the CONTRACTOR.

3.6.3 SAFETY; TRENCH SAFETY; UNDERGROUND UTILITY SAFETY;
PUBLIC CONVENIENCE AND SAFETY;

The CONTRACTOR shall be responsible for complying with state laws and federal regulations relating to safety, trench safety, and underground utility safety, including those which may be enacted during the performance under this Contract. The CONTRACTOR shall comply with the provisions of The Standard Specifications and Standard Drawings from the Public Works Construction Standards-North Central Texas Council of Governments, 2004 edition and all subsequent addendums and the Instructions to Bidders regarding trench safety, public convenience and safety, and sanitary provisions. The CONTRACTOR shall be solely responsible for, the construction means and methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work and the Project.

3.6.4 STORM WATER PROTECTION

The Contractor shall perform, track, participate, implement, and comply with storm water pollution prevention minimum control measures, protocols, and best management practices (BMP) and ensure that water quality standards are not violated in accordance with all regulations and policies as they apply to the Texas Pollutant Discharge Elimination System general permits. Applicable permits include: 1) Texas Construction General Permit (TXR150000).

Contractors will obtain permit coverage for construction activities disturbing over one acre of land (total acreage is cumulative across all portions of the project). BMPs include, but are not limited to:

1. Preparing and implementing a site-specific Storm Water Pollution Prevention Plan (SWPPP) as outlined in the permit and prior to any soil disturbance.
2. Installing and managing erosion and sediment control.
3. Make available, upon request, permit associated documentation.
4. Practicing spill prevention and good housekeeping.
5. Meeting the requirements of the MS4 permit.

In addition to the requirements of the Construction General permit TXR150000, the MS4 permits lists prohibited discharges which will be enforced at the County construction sites whether the operator is the County or a contractor. The following discharges are prohibited:

1. Wastewater from washout of concrete and wastewater from water well drilling operations, unless managed by an appropriate control;
2. Wastewater from washout and cleanout of stucco, paint, from release oils, and other construction materials;
3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;
4. Soaps or solvents used in vehicle and equipment washing; and,
5. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed by appropriate BMPs.

3.7 MATERIALS AND WORKMANSHIP; WARRANTIES AND GUARANTEES
Unless otherwise expressly provided in the contract drawings or specifications, the work shall be performed in accordance with the best modern practice with materials and workmanship of the highest quality and suitable for their purpose. The OWNER shall judge and determine the CONTRACTOR'S compliance with these requirements.

3.7.1 MATERIALS AND EQUIPMENT

The CONTRACTOR shall be free to secure the approved materials, equipment and articles from sources of his own selection. However, if the OWNER finds that the work shall be delayed or adversely affected in any way because a selected source of supply cannot furnish a uniform product in sufficient quantity and at the time required and a suitable source does exist, or the product is not suitable for the Work, the OWNER shall have the right to require the original source of supply changed by the CONTRACTOR. The CONTRACTOR shall have no claim for extra cost or damage because of this requirement.

The CONTRACTOR warrants to the OWNER that all materials and equipment furnished under this contract shall be new unless otherwise specified in the Contract Documents and that same shall be of good quality and workmanship, free from faults and defects and in conformance with the Contract Documents. All materials and equipment not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective and shall be promptly repaired or replaced by the CONTRACTOR at the CONTRACTOR's sole cost upon demand of the OWNER. If required by the OWNER, the CONTRACTOR shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

3.7.1.1 "OR EQUAL" CLAUSE

A. Whenever a material or article required is specified or shown on the plans, by using the name of a proprietary product or of a particular manufacturer or vendor, any material or article which the Engineer determines shall

perform adequately the duties imposed by the general design or which the Engineer deems to be of similar appearance (in cases where appearance is of importance) shall be considered equal and satisfactory, provided the material or article so proposed is of equal substance and function. Authorization for any substitution of materials or articles must be obtained by the CONTRACTOR from the Engineer before proceeding with such substitution.

B. Should an authorized substitution require redesign of a portion of the work or alterations to the plans or specifications in order for the materials or articles which are to be substituted to properly fit or in other ways to be satisfactory, the Engineer shall accomplish such redesigns and alterations. The CONTRACTOR shall bear all reasonable costs associated with redesign and alteration efforts performed by the Engineer.

3.7.2 WORKMANSHIP

The CONTRACTOR shall promptly correct or replace all work rejected by the OWNER as defective or as failing to conform to the Contract Documents whether observed before or after substantial completion and whether or not fabricated, installed or completed. The CONTRACTOR shall bear all costs of correcting such rejected work, including costs incurred for additional services made necessary thereby.

3.8 WARRANTIES

3.8.1 SPECIAL WARRANTY

If within one year after final acceptance of the work by the OWNER, as evidenced by the final certificate of acceptance or within such longer or shorter period of time as may be prescribed by law or by the terms of any other applicable special warranty on designated equipment or portions of work as required by the Contract Documents, any of the work is found to be defective or not in accordance with the Contract Documents, the CONTRACTOR shall correct it promptly after receipt of a written notice from the OWNER to do so. This obligation shall survive termination or completion of the Contract. The OWNER shall give such notice promptly after discovery of the condition.

The CONTRACTOR shall remove from the site all portions of the work which are defective or nonconforming and which have not been corrected unless removal is waived in writing by the OWNER.

3.8.2 SUBCONTRACTORS' AND MANUFACTURERS' WARRANTIES

All subcontractors', manufacturers' and suppliers' warranties and guarantees, express or implied, respecting any part of the work and any materials used therein, shall be obtained and enforced by the CONTRACTOR for the benefit of the OWNER without the necessity of separate transfer or assignment thereof.

3.8.3 CORRECTED WORK WARRANTY

Any work repaired or replaced, pursuant to this section, shall be subject to the provisions of this section to the same extent as work originally performed.

3.8.4 RIGHTS AND REMEDIES

The rights and remedies of the OWNER provided in this section are in addition to, and do not limit, any rights or remedies afforded to the OWNER by law or any other provision of the Contract Documents, or in any way limit the OWNER'S right to recovery of damage due to default under the Contract. No action or inaction by the OWNER shall constitute a waiver of a right or duty afforded it under the Contract.

IV. INSURANCE

4.1 CONTRACTOR'S INSURANCE

****To be copied from Insurance Requirement under Section 002113 of solicitation including any Addenda****

V. OWNERS RIGHTS AND RESPONSIBILITIES

MONTHLY ESTIMATE, PARTIAL PAYMENTS AND FINAL PAYMENTS

- 5.1 Progress and final payments shall be paid to the Contractor based upon the progress of the Project as indicated by the approved Applications for Payment, certificates of acceptance, or Certificates for Payment, that include an approved Schedule of Values that will be submitted by the CONTRACTOR to the OWNER prior to the commencement of the Work and in accordance with the following:

5.2 MONTHLY ESTIMATES

The CONTRACTOR shall deliver to the OWNER an itemized Application for Payment that shall include the work completed, materials stored at the Project site but not incorporated into the work, materials ready to be installed and stored at another agreed location, and the percentage of Work completed, through the 20th day of each month, on an Application for Payment with a schedule of values previously submitted by the Contractor and approved by the Owner. Prior to release of funds in connection with any Application for Payment, the Owner may request, and the Contractor must provide, properly executed statements of full or partial releases of claims acceptable to Owner in form and content, for all persons or entities supplying labor or materials to the Project.

5.2.1 The Application for Payment is a representation by the CONTRACTOR to the OWNER that the construction has progressed to the point indicated, the quality of the Work covered by the application is in accordance with the Contract Documents, and the Contractor is entitled to payment in the amount requested.

5.2.2 INSPECTION AND PARTIAL PAYMENTS

Whenever the CONTRACTOR shall submit an Application for Payment to the OWNER for work performed by the CONTRACTOR, the CONTRACTOR shall notify the Engineer that the improvement is ready for inspection. The Engineer shall then make such inspection, and will have the authority to reject work that does not conform to the Contract Documents. If the work is satisfactory and in accordance with the specifications and Contract Documents, the Engineer shall issue a Certificate for Payment.

5.2.3 Within thirty (30) days of the Owner's receipt of a properly submitted and correct Application for Payment, and the issuance of a Certificate for Payment, the Owner shall make payment to the Contractor, in the amount approved by the Owner less 5% retainage. Such payment shall be adjusted for work that is incomplete or not in accordance with the Contract Documents or that is the subject of a separate contract, or subcontract or supplier claim or lien against the Contractor or the payment bonds for the project.

5.2.4 No partial or final payment or the entire use or occupancy of the Project by the OWNER shall be considered acceptance of work that does not strictly comply with the Contract Documents or release the CONTRACTOR of any of his responsibilities under the Contract.

5.2.5 PAYMENT FOR LABOR AND MATERIAL; NO LIENS

The CONTRACTOR for himself or any of his subcontractors shall pay all indebtedness which may become due to any person, firm or corporation having furnished labor, material or both in the performance of this Contract. It shall be the responsibility of each person, firm or corporation claiming to have furnished labor, materials or both, in connection with this Contract, to protect his or its interest in the manner prescribed by applicable laws of the State of Texas, provided, however, that as this Contract provides for a public works project, no lien of any kind shall ever exist or be placed against the Work or any portion thereof, or any public funds or retainage held by the OWNER; and any subcontractor shall look solely to the CONTRACTOR and the payment bond surety, and not the OWNER, for payment of any outstanding amounts due for labor, materials or any other indebtedness in connection with the Work. However, the OWNER may, at any time prior to

making final payment, require the CONTRACTOR to furnish a Consent of Surety to any payment due the CONTRACTOR for completed work and may, at the discretion of the OWNER or the request of the Surety, make the check jointly payable to the CONTRACTOR and the Surety. The Owner shall have no obligation under this Agreement to pay or to be responsible in any way for payment to any Engineer, another design professional, contractor, subcontractor or supplier performing portions of the Work, pursuant to a contract with the Contractor.

5.2.6 PAYMENT WITHHELD

In addition to express provisions elsewhere contained in the contract, the OWNER may withhold from any payment otherwise due the CONTRACTOR such amount as determined necessary to protect the OWNER'S interest, or, if it so elects, may withhold or retain all or a portion of any progress payment or refund payment on account of:

- A. unsatisfactory progress of the Work not caused by conditions beyond the CONTRACTOR'S control,
- B. defective work not corrected,
- C. CONTRACTOR'S failure to carry out instructions or orders of the OWNER or his representative,
- D. a reasonable doubt that the Contract can be completed for the balance then unpaid,
- E. work or execution thereof not in accordance with the Contract Documents,
- F. claim filed by or against the CONTRACTOR or reasonable evidence indicating probable filing of claims,
- G. failure of the CONTRACTOR to make payments to subcontractor or for material or labor,
- H. damage to another contractor,
- I. unsafe working conditions allowed to persist by the CONTRACTOR,
- J. failure of the CONTRACTOR to provide work schedules as required by the OWNER,
- K. use of subcontractors without the OWNER'S approval or,
- L. failure of the CONTRACTOR to keep current as-built record drawings at the job site or to turn same over in completed form to the OWNER.

When the above grounds are removed, payment shall be made for amounts withheld because of them, and OWNER shall never be liable for interest on any delayed or late payment.

5.2.7 PAYMENT FOR EXTRA WORK

The Extra Work done by the CONTRACTOR as authorized and approved by the Engineer shall be paid for in the manner hereinafter described, and the compensation thus provided shall be accepted by the CONTRACTOR as payment in full for all labor, materials, tools, equipment and incidentals

and all superintendents' and timekeepers' services, all insurance, bond and all other overhead expense incurred in the performance of the Extra Work.

Payment for Extra Work shall be made by one of the following methods:

A. Method "A" — by unit prices agreed on in writing by the OWNER and CONTRACTOR before said Extra Work is commenced, subject to all other conditions of the contract.

B. Method "B" — by lump sum price agreed on in writing by the OWNER and the CONTRACTOR before said Extra Work is commenced, subject to all other conditions of the contract.

5.2.8 SUBSTANTIAL COMPLETION

The Project will be considered substantially complete when the OWNER can utilize the Project for its intended purpose and the Work is in conformance with the Contract Documents.

5.3 APPLICATION FOR FINAL PAYMENT.

Upon full performance of all the Contract Work and the full performance of all the provisions of the Contract, the CONTRACTOR shall submit a final application for payment to the OWNER, the CONTRACTOR shall notify the Engineer that the improvement is ready for inspection. All warranties and guaranties required of the CONTRACTOR by the Contract Documents shall be assembled and delivered by the CONTRACTOR to the OWNER as Part of the final Application for Payment. The Contractor will assign to the Owner all manufacturer's warranties relating to materials and labor used in the work and will perform the Work in such a manner as to preserve all such manufacturer's warranties. The CONTRACTOR will deliver a certificate evidencing that insurance and bonds required by the Contract Documents will remain in full force and effect pursuant to the requirements of the Contract. The final Certificate for Payment will not be issued until all such warranties and guaranties have been received and accepted by the Owner, and a Certificate of Acceptance is issued by the Engineer.

5.3.1 FINAL INSPECTION AND ACCEPTANCE

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, the CONTRACTOR shall notify the OWNER, and Engineer that the improvement is ready for final inspection. The Engineer shall then make such final inspection, and if the work is satisfactory and in accordance with the specifications and Contract Documents, the CONTRACTOR shall be issued a certificate of acceptance.

5.3.2 FINAL PAYMENT

Whenever the improvements provided for by the Contract shall have been completely performed on the part of the CONTRACTOR, as evidenced in the certificate of acceptance, and all required submissions provided to the OWNER, a final estimate showing the value of the work shall be prepared by the Engineer as soon as the necessary measurements and computations can be made. All prior estimates upon which payments have been made are subject or necessary corrections or revisions in the final payment. The amount of this final estimate, less any sums that have been previously paid, or deducted under the provisions of the Contract, shall be paid the CONTRACTOR within 30 days after the final acceptance, provided that the CONTRACTOR has furnished to the OWNER a consent of surety and an affidavit or other satisfactory evidence that all indebtedness connected with the Work and all sums of money due for any labor, materials, apparatus, fixtures or machinery furnished for and used in the performance of the work have been paid or otherwise satisfied, or that the person or persons to whom the same may respectively be due have consented to such final payment.

The acceptance by the CONTRACTOR of the final payment as aforesaid shall operate as and shall be a release to the OWNER from all claims or liabilities under the Contract, including all subcontractor claims, for anything done or furnished or relating to the Work under the Contract or for any act or neglect of said OWNER relating to or connected with the Contract.

All warranties and guarantees shall commence from the date of the certificate of acceptance. No interest shall be due the CONTRACTOR on any partial or final payment or on the retainage.

5.3 MODIFICATIONS TO CONTRACT WORK OR TIME OF PERFORMANCE

5.3.1 OWNER'S RIGHT TO TEMPORARILY SUSPEND WORK

5.3.2 REASONS FOR SUSPENSION

The OWNER shall have the right by written order to temporarily suspend the work, in whole or in part, whenever, in the judgment of the OWNER, such temporary suspension is required:

- A. in the interest of the OWNER generally,
- B. due to government or judicial controls or orders which make performance of this contract temporarily impossible or illegal,
- C. to coordinate the work of separate contractors at the job site,
- D. to expedite the completion of a separate contract even though the completion of this particular Contract may be thereby delayed,
- E. because of weather conditions unsuitable for performance of the Work, or

- F. because the CONTRACTOR is proceeding contrary to contract provisions or has failed to correct conditions considered unsafe for workmen.

The written order of the OWNER to the CONTRACTOR shall state the reasons for suspending the work and the anticipated periods for such suspension. Upon receipt of the OWNER'S written order, the CONTRACTOR shall suspend the work covered by the order and shall take such means and precautions as may be necessary to properly protect the finished and partially finished work, the unused materials and uninstalled equipment, including the providing of suitable drainage about the work and erection of temporary structures where necessary. The CONTRACTOR shall not suspend the Work without written direction from the OWNER and shall proceed with the work promptly when notified by the OWNER to resume operations.

5.3.3 NO ADDITIONAL COMPENSATION

No additional compensation shall be paid to the CONTRACTOR for a temporary suspension of the Work by the OWNER or otherwise where same is caused by the fault of the CONTRACTOR. Where such temporary suspension is not due to the fault of the CONTRACTOR, he shall be entitled to:

- A. an equitable extension of working time for the completion of the work, not to exceed the delay caused by such temporary suspension, as determined by the OWNER; and
- B. the actual and necessary costs of properly protecting the finished and partially finished work, unused materials and uninstalled equipment during the period of the ordered suspension as determined by the OWNER as being beyond the Contract requirements, such costs, if any, to be determined pursuant to the terms of the Contract; and
- C. where the CONTRACTOR elects to move equipment from the job site and then return it to the site when the work is ordered resumed, the actual and necessary costs of these moves, in an amount determined by the OWNER pursuant to the terms of the Contract.

5.3.4 USE OF COMPLETED PORTIONS OF WORK

The OWNER may, after written notice to the CONTRACTOR, and without incurring any liability for increased compensation to the CONTRACTOR,

take over and use any completed portion of the Work prior to the final completion and acceptance of the entire work included in the Contract, and notwithstanding that the time allowed for final completion has not expired. The OWNER and CONTRACTOR agree that occupancy of portions of the Work by the OWNER shall not in any way evidence the substantial completion of the entire work or signify the OWNER's acceptance of the Work.

The CONTRACTOR shall not object to, nor interfere in any way with, such occupancy or use after receipt of the OWNER'S written notice. Immediately prior to such occupancy and use, the OWNER shall inspect such portion of the Work to be taken over and shall furnish the CONTRACTOR a written statement of the work, if any, still to be done on such part. The CONTRACTOR shall promptly thereafter complete such unfinished work to permit occupancy and use on the date specified in the OWNER'S written order, unless the OWNER shall permit specific items of work to be finished after the occupancy and use by the OWNER.

In the event the CONTRACTOR is unreasonably delayed by the OWNER exercising its rights under this section, the CONTRACTOR may submit a request for an extension of time; CONTRACTOR'S sole remedy for an unreasonable delay shall be an extension of time and shall not be entitled to any additional compensation.

5.4 COMMENCEMENT; TIME OF COMPLETION; DELAYS; EXTENSION OF TIME; LIQUIDATED DAMAGES

5.4.1 COMMENCEMENT; TIME OF COMPLETION

Contractor shall commence work within ten (10) consecutive calendar days after receiving from County a notice to proceed. Contractor agrees and covenants that the number of consecutive calendar days allowed to complete all work following a notice to proceed shall be as follows:

5.4.2. LIQUIDATED DAMAGES FOR FAILURE TO COMPLETE ON TIME

Time is of the essence in the progress and completion of this Contract. For each calendar day that any Work shall remain uncompleted after the time specified in the proposal and the Contract, or the increased time granted by the OWNER, or as equitably increased by additional work or materials ordered after the Contract is signed, the sum per day given in the following schedule, unless otherwise specified in the special provisions, shall be deducted from the monies due the CONTRACTOR:

_____ (\$ _____)

The sum of money thus deducted for such delay, failure or noncompletion is not to be considered as a penalty, but shall be deemed, taken and treated as reasonable liquidated damages, per calendar day that the CONTRACTOR shall be in default after the time stipulated in the Contract for completing the Work. The said amounts are fixed and agreed upon by and between OWNER and CONTRACTOR because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER in such event would sustain; and said amounts are agreed to be the amount of damages which the OWNER would sustain and which shall be retained from the monies due, or that may become due, the CONTRACTOR under this Contract; and if said monies be insufficient to cover the amount owing, then the CONTRACTOR or his surety shall pay any additional amounts due.

5.4.3 EXTENTIONS OF TIME

The CONTRACTOR shall be entitled to an extension of working time under this Contract only when claim for such extension is submitted to the OWNER in writing by the CONTRACTOR within seven days from and after the time when any alleged cause of delay shall occur, and then only when such time is approved by the OWNER. In adjusting the Contract working time for the completion of the Project, unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including, acts of God or the public enemy, acts of the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or delays of subcontractors due to such causes beyond their control shall be taken into consideration.

If the satisfactory execution and completion of the Contract should require work and materials in greater amounts or quantities than those set forth in the Contract, requiring more time for completion than the anticipated time, then the contract working time shall be equitably increased, but not more than in the same proportion as the cost of the additional work bears to the cost of the original work contracted for. No allowances shall be made for delays or suspension of the performance of the Work due to the fault of the CONTRACTOR.

No adjustment to working time shall be made if, concurrently with the equitable cause for delay, there existed a cause for delay due to the fault or negligence of the CONTRACTOR, his agents, employees or subcontractors; and no adjustment shall be made to the Contract Price and the CONTRACTOR shall not be entitled to claim or receive any additional compensation as a result of or arising out of any delay resulting in adjustment to the working time hereunder, including delays caused by the acts or negligence of the OWNER. Notwithstanding any other provision of the Contract Documents, all claims for extension of working time must be

submitted in accordance with the provisions of this Contract, and no act of the OWNER shall be deemed a waiver or entitlement of such extension.

5.5 TERMINATION FOR CONVENIENCE OF THE OWNER

5.5.1 NOTICE OF TERMINATION

The performance of the Work under this Contract may be terminated by the OWNER in whole or from time to time in part, in accordance with this section, whenever the OWNER shall determine that such termination is in the best interest of the OWNER. Any such termination shall be effected by mailing a notice of termination to the CONTRACTOR specifying the extent to which performance of work under the Contract is terminated, and the date upon which such termination becomes effective. Receipt of the notice shall be deemed conclusively presumed and established when the letter is placed in the United States Mail by the OWNER. Further, it shall be deemed conclusively presumed and established that such termination is made with just cause as therein stated; and no proof in any claim, demand or suit shall be required of the OWNER regarding such discretionary action.

5.5.2 CONTRACTOR ACTION

After receipt of a notice of termination, and except as otherwise directed by the OWNER or Engineer, the CONTRACTOR shall:

- A. stop work under the Contract on the date and to the extent specified in the notice of termination;
- B. place no further orders or subcontracts for materials, services or facilities except as may be necessary for completion of such portion the Work under the Contract as is not terminated;
- C. terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the notice of termination;
- D. transfer title to the OWNER and deliver in the manner, at the times, and to the extent, if any, directed by the OWNER or Engineer:
 1. the fabricated or unfabricated parts, work in process, completed work, supplies and other material produced as a part of, or acquired in connection with the performance of, the work terminated by the notice of termination; and
 2. the completed or partially completed plans, drawings, information and other property which, if the Contract had been completed, would have been required to be furnished to the OWNER.
- E. complete performance of such part of the work as shall not have been terminated by the notice of termination; and
- F. take such action as may be necessary, or as the Engineer may direct, for the protection and preservation of the property related to its Contract which is in the possession of the CONTRACTOR and in which the OWNER has or may acquire an interest.

At a time not later than 30 days after the termination date specified in the notice of termination, the CONTRACTOR may submit to the OWNER a list, certified as to the quantity and quality, of any or all items of termination inventory not previously disposed of, exclusive of items the disposition of which has been directed or authorized by the Engineer. Not later than 15 days thereafter, the OWNER shall accept title to such items and remove them or enter into a storage agreement covering the same, provided that the list submitted shall be subject to verification by the Engineer upon removal of the items, or, if the items are stored, within 45 days from the date of submission of the list, and provided that any necessary adjustments to correct the list as submitted shall be made prior to final settlement.

5.5.3 TERMINATION CLAIM

Within 60 days after notice of termination, the CONTRACTOR shall submit his termination claim to the Engineer and the OWNER in the form and with the certification prescribed herein. Unless one or more extensions in writing are granted by the OWNER upon request of the CONTRACTOR, made in writing within such 60-day period or authorized extension thereof, any and all such claims shall be conclusively deemed waived. The termination claim shall (1) list all Contract Work which the CONTRACTOR has completed but for which the CONTRACTOR asserts it has not been paid, including any retainage; (2) list of all fabricated or unfabricated parts, work in process, completed work, supplies and other material produced as a part of, or acquired in connection with the performance of the Contract and the itemized cost for each such fabricated or unfabricated part, work in process, completed work, supplies and other material; (3) list all costs and expenses saved as a result of the termination of the Contract. The termination claim must include a copy of all invoices for fabricated or unfabricated parts, supplies and other material produced as a part of, or acquired in connection with the performance of the Contract for which the CONTRACTOR seeks compensation; all invoices for any subcontractors providing services related to the Contract; and (3) evidence of payment of all material suppliers and subcontractors, together with CONTRACTOR's certification that all such-material suppliers and subcontractors have been fully paid together with executed lien releases from each such material supplier and subcontractor. The termination claim may not include any request for payment of Extra Work for which a Change Order has not been issued or for which the CONTRACTOR has not fully and timely complied with the provisions of section 2.3 of this Contract.

5.5.4 AMOUNTS

The CONTRACTOR and OWNER may agree upon the whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of

the total or partial termination of work pursuant hereto, provided that such agreed amount or amounts shall never exceed the total contract price as reduced by the amount of payments otherwise made and as further reduced by the Contract Price of work not terminated. The contract shall be amended accordingly, and the CONTRACTOR shall be paid the agreed amount. No amount shall be due for lost or anticipated profits. Nothing prescribing the amount to be paid to the CONTRACTOR in the event of failure of the CONTRACTOR and the OWNER to agree upon the whole amount to be paid to the CONTRACTOR by reason of the termination of work pursuant to this section, shall be deemed to limit, restrict or otherwise determine or affect the amount or amounts which may be agreed upon to be paid to the CONTRACTOR pursuant to this paragraph.

5.5.5 FAILURE TO AGREE

In the event of the failure of the CONTRACTOR and the OWNER to agree, as provided herein, upon the whole amount to be paid to the CONTRACTOR by reason of the termination of work pursuant to this section, the OWNER shall determine, on the basis of information available to it, the amount, if any, due to the CONTRACTOR by reason of the termination and shall pay to the CONTRACTOR the amounts determined. No amount shall be due for lost or anticipated profits.

5.5.6 DEDUCTIONS

In arriving at the amount due the CONTRACTOR under this section, there shall be deducted (a) all unliquidated advance or other payments on account theretofore made to the CONTRACTOR, applicable to the terminated portion of this contract; (b) any claim which the OWNER may have against the CONTRACTOR in connection with this Contract; and (c) the agreed price for or the proceeds of sale of any materials, supplies or other things kept by the CONTRACTOR or sold, pursuant to the provisions of this clause, and not otherwise recovered by or credited to the OWNER.

5.5.7 ADJUSTMENT

If the termination hereunder be partial prior to the settlement of the terminated portion of this Contract, the CONTRACTOR may file with the Owner a request in writing for an equitable adjustment of the price or prices specified in the Contract relating to the continued portion of the Contract (the portion not terminated by the notice of termination), and such equitable adjustment as may be agreed upon shall be made in such price or prices; nothing contained herein, however, shall limit the right of the OWNER and the CONTRACTOR to agree upon the amount or amounts to be paid to the CONTRACTOR for the completion of the continued portion of the Contract when said contract does not contain an established contract price for such continued portion.

5.5.8 NO LIMITATION OF RIGHTS

Nothing contained in this section shall limit or alter the rights which the OWNER may have for termination of this Contract under any other provision of this Contract or any other right which OWNER may have for default or breach of contract by CONTRACTOR.

5.6 CONTRACTOR DEFAULT: OWNER'S RIGHT TO SUSPEND WORK AND ANNUL CONTRACT

The Work or any portion of the Work under contract shall be suspended immediately on written order of the OWNER declaring the CONTRACTOR to be in default. A copy of such notice shall be served on the CONTRACTOR'S surety. The contract may be annulled by the OWNER for any good cause or causes, among others of which special reference is made to the following:

- A. failure of the CONTRACTOR to start the work within 10 days from date specified in the written work order issued by the OWNER to begin the work;
- B. evidence that the progress of the work being made by the CONTRACTOR is insufficient to complete the work within the specified working time;
- C. failure of the CONTRACTOR to provide sufficient and proper equipment, materials or construction forces for properly executing the Work;
- D. evidence that the CONTRACTOR has abandoned the Work or discontinuance of the performance of the Work or any part thereof and failure to resume performance within a reasonable time after notice to do so;
- E. evidence that the CONTRACTOR has become insolvent or bankrupt, or otherwise financially unable to carry on the Work;
- F. deliberate failure on the part of the CONTRACTOR to observe any requirements of the specifications or to comply with any orders given by the Engineer as provided for in the specifications;
- G. failure of the CONTRACTOR to promptly make good any defects in materials or workmanship, or any defects of any nature, the correction of which has been directed in writing by the OWNER;
- H. evidence of collusion for the purpose of illegally procuring a contract or perpetrating fraud on the OWNER in the construction of work under contract;
- I. repeated violations of safe working procedures;
- J. the filing by the CONTRACTOR of litigation against the OWNER prior to final completion of the Work. When the Work is suspended for any of the causes itemized above, or for any other cause or causes, the CONTRACTOR shall discontinue the Work or such part thereof as the OWNER shall designate, whereupon the surety may either at its option assume the Contract or that portion thereof which the OWNER has ordered the CONTRACTOR to discontinue and perform the same or, with the written consent of the OWNER, sublet the same, provided, however, that

the surety shall exercise its option within two weeks after the written notice to discontinue the work has been served upon the CONTRACTOR and upon the surety or its authorized agents. The surety in such event shall assume the CONTRACTOR'S place in all respects and shall be paid by the OWNER for all work performed by it in accordance with the terms of the Contract, but in no event shall such payments exceed the contract amount, regardless of the cost to the surety to complete the Work.

In the event that the surety assumes the CONTRACTOR'S place, duties and responsibilities in the Contract, all monies remaining due the CONTRACTOR at the time of his default shall thereupon become due and payable to the surety as the work progresses, subject to all terms of the Contract. In case the surety does not, within the hereinabove specified time, exercise its obligation to assume the Contract or that portion thereof which the OWNER has ordered the CONTRACTOR to discontinue, then the OWNER shall have the power to complete by contract or otherwise, as it may determine, the Work herein described or such part thereof as it may deem necessary; and the CONTRACTOR hereto agrees that the OWNER shall have the right to take possession of or use any or all of the materials, plans, tools, equipment, supplies and property of every kind provided by the CONTRACTOR for the purpose of the Work and to procure other tools, equipment and materials for the completion of the same and to charge to the account of the CONTRACTOR the expense of said contract for labor, materials, tools, equipment and expenses incident thereto. The expense so charged shall be deducted by the OWNER out of such monies as may be due or may at any time thereafter become due the CONTRACTOR under and by virtue of the Contract or any part thereof.

The OWNER shall not be required to obtain the lowest bid for the work of completing the Contract, but the expenses to be deducted shall be the actual cost of such work. In case such expense is less than the sum which would have been payable under the contract if the same had been completed by the CONTRACTOR, then in such case the OWNER may pay the CONTRACTOR the difference in the cost, provided that the CONTRACTOR shall not be entitled to any claim for damages or for loss of anticipated profits.

In case such expense shall exceed the amount which would have been payable under the Contract if the same had been completed by the CONTRACTOR, the CONTRACTOR and his surety shall pay the amount of the excess to the OWNER on notice from the OWNER for excess due including any costs incurred by the OWNER, such as inspection, legal fees and liquidated damages. When any particular part of the Work is being carried out by the OWNER by contract or otherwise under the provisions of this section, the CONTRACTOR shall continue the remainder of the Work in conformity with the terms of the contract and in such manner as not to hinder or interfere with the performance of workmen employed as above provided by the OWNER or surety.

5.7 SUSPENSION BY COURT ORDER AGAINST THE OWNER

The CONTRACTOR shall suspend such part or parts of the Work pursuant to a court order issued against the OWNER and shall not be entitled to additional compensation by virtue of such court order; neither shall the CONTRACTOR be liable to the OWNER in the event the Work is suspended by such court order, unless such suspension is due to the fault or negligence of the CONTRACTOR. A delay of the CONTRACTOR due to a court order against the OWNER, or due to the OWNER'S failure to secure right-of-way at the time required or because of a conflict of a utility with the Work, shall not be cause for additional compensation for damages sustained by the CONTRACTOR, but may be a cause for extension of contract working time only. The CONTRACTOR'S sole remedy for any suspensions of the Work is an equitable extension of time to perform the Work.

5.8 NO WAIVER OF RIGHTS OR ESTOPPEL

The OWNER, or any officer or agent thereof, shall not be precluded at any time, either before or after final completion and acceptance of the Work and final payment therefore from:

A. showing the true and correct amount, classifications, quality and character of the Work done and materials furnished by the CONTRACTOR or any other person under this Contract, or from showing at any time that any determination, return, decision, approval, order, letter, payment or certification is untrue and incorrect or improperly made in any particular, or that the Work or the materials or any parts thereof do not in fact conform to the contract requirements; and (b) demanding the recovery from the CONTRACTOR of any overpayments made to him, or such damages as the OWNER may sustain by reason of the CONTRACTOR'S failure to perform each and every part of this Contract in strict accordance with its terms; or both.

VI. AUTHORITY OF THE ENGINEER

6.1 All work shall be performed in a good and workmanlike manner and to the satisfaction of the Engineer. The Engineer shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rate of progress of the work, sequence of the construction, interpretation of the plans and specifications, acceptable fulfillment of the Contract, compensation, mutual rights between contractors under these specifications and suspension of the Work. He shall determine the amount and quality of work performed and materials furnished, and his decisions and estimates shall be final. His estimate in such event shall be a condition precedent to the right of the CONTRACTOR to receive money due him under the Contract.

6.2 OWNER'S REPRESENTATIVES

Where the Contract Documents indicate that determinations, directions or approvals shall be made by the OWNER or "Owner's representatives," this shall mean the OWNER acting directly, or through duly authorized persons acting within

the limit of authority delegated to them. Any determination, direction or approval of such authorized representatives shall be subject to review by the OWNER. For purposes of administering the schedule or the payment provisions of this Contract the Engineer may act as the Owner's representative for purposes of approving payments, changes, scheduling, or acceptance of the Work, at the OWNER'S discretion.

6.3 INSPECTIONS OF WORK PROGRESS

The Engineer shall visit the site at during construction of the Project as necessary as the Owner's Representative to verify that the Work is being performed in compliance with the Contract Documents and shall be given total access to the Project by the CONTRACTOR. Site visits or inspections by the Engineer shall in no way relieve the CONTRACTOR of any of its responsibilities or duties pursuant to the Contract Documents. The Engineer will neither have control over, nor be responsible for, the construction means and methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work or the Project. The CONTRACTOR shall be solely responsible for, the construction means and methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work or the Project.

6.4 CONSTRUCTION STAKES

Engineer will provide the Contractor with primary horizontal and vertical control to consist of one construction baseline and two benchmarks.

The Contractor shall take all necessary precautions to preserve any and/or all markings and staking. Payment for costs of restaking shall be the responsibility of the Contractor.

6.5 APPROVAL OF SUBMITTALS

The Engineer shall review and approve or take other appropriate action the CONTRACTOR's submittals such as Shop Drawings, Product Data and Samples, for the purpose of checking for conformance with the Contract Documents. The Engineers review of the submittals shall not relieve the CONTRACTOR of any of its obligations to perform the Work in strict compliance with the Contract Documents. The Engineer's review shall not be considered approval of safety precautions, means and methods, techniques, sequences or procedures that are the responsibility of the CONTRACTOR.

VII. CLAIMS OR DISPUTES

7.1 CLAIMS AGAINST OWNER AND ACTION THEREON.

No claim against the OWNER under the Contract or for breach of the Contract or additional compensation for extra or disputed work shall be made or asserted against the OWNER under the Contract or in any court action, unless the CONTRACTOR shall have strictly complied with all requirements relating to the

giving of notice and information with respect to such claim as required by the Contract.

7.2 CLAIM AGAINST OFFICERS, EMPLOYEES OR AGENT OF THE OWNER.

No claim whatsoever shall be made by the CONTRACTOR against any, past, present or future, officer, employee or agent of the OWNER for or on account of, anything done or omitted to be done in connection with this Contract.

VIII. MISCELLANEOUS PROVISIONS

8.1 FINANCIAL INTEREST IN ANY CONTRACT BY OWNER'S OFFICERS, EMPLOYEES OR AGENTS

No officer, employee or agent of the OWNER shall have a financial interest, direct or indirect, in any contract with the OWNER or be financially interested, directly or indirectly, in the sale to the OWNER of any land, materials, supplies or services, except on behalf of the OWNER as an officer or employee. Any willful violation of this article shall constitute malfeasance in office, and any officer or employee guilty thereof shall thereby forfeit his office or position. Any violation of this article with the knowledge, expressed or implied, of the persons, partnership, company, firm, association or corporation contracting with the OWNER shall render the contract involved voidable by the OWNER.

8.2 SERVICE OF NOTICES

The OWNER and the CONTRACTOR shall each designate addresses where all notices, directions or other communication may be delivered or to which they may be mailed.

Notices to the surety or sureties on contract bonds shall be directed or delivered to the home office, or to the agent or agents who executed the bonds on behalf of the surety or sureties, or to their designated agent for delivery of notices.

Actual delivery of any such notice, direction or communication to the aforesaid places or depositing it in a postpaid wrapper addressed thereto in any post office regularly maintained by the United States Postal Service shall be conclusively deemed to be sufficient service thereof upon the above persons as of the date of such delivery or deposit.

The designated addresses may be changed at any time by an instrument in writing executed by the party changing the addresses and delivered to the other party.

Nothing herein contained shall, however, be deemed to preclude or tender inoperative the service of any notice, direction or communication upon the above parties personally or, if the CONTRACTOR be a corporation, upon any officer or director thereof.

8.3 UNLAWFUL PROVISIONS DEEMED STRICKEN

In the event a term, condition, or provision of this Agreement is determined to be void, unenforceable, or unlawful by a court of competent jurisdiction, then that term, condition, or provision shall be deleted and the remainder of the Agreement shall remain in full force and effect.

8.4 ALL LEGAL PROVISIONS INCLUDED

It is the intent and agreement of the parties to this contract that all legal provisions of law required to be inserted herein shall be and are inserted herein. If through mistake or oversight, however, any such provision is not herein inserted, or is not inserted in proper form, then upon application of either party, the contract shall be amended so as to strictly comply with the law and without prejudice to the rights of either party hereunder.

8.5 ASSIGNMENTS

The CONTRACTOR shall not assign, transfer, convey or otherwise dispose of this contract, or his right to execute it, or his right, title or interest in it or any part thereof without the previous written consent of the surety company and the written approval of the OWNER.

The CONTRACTOR shall not assign, either legally or equitably, by power of attorney or otherwise, any of the monies due or to become due under this Contract or its claim thereto without the prior written consent of the surety company and the written approval of the OWNER.

The approval of the OWNER of a particular assignment, transfer or conveyance shall not dispense with such approval to any further or other assignments.

The approval by the OWNER of any assignment, transfer or conveyance shall not operate to release the CONTRACTOR or surety hereunder from any of the Contract and bond obligations, and the CONTRACTOR shall be and remain fully responsible and liable for the defaults, negligent acts and omissions of his assignees, their agents and employees, as if they were his own.

8.6 STATE AND LOCAL SALES AND USE TAXES

The OWNER qualifies for exemption from the state and local sales and use taxes, pursuant to the provisions of Section 151.309 of the Texas Limited Sales, Excise and Use Tax Act. Therefore, the CONTRACTOR shall not pay such taxes which would otherwise be payable in connection with the performance of this Contract.

The CONTRACTOR shall issue an exemption certificate in lieu of the tax on the purchase, rental or lease of:

- A. all materials, supplies, equipment and other tangible personal property incorporated into the real property being improved; and

B. all materials, supplies, equipment and other tangible personal property used or consumed by the CONTRACTOR in performing the Contract with the OWNER. Materials and supplies “used in the performance of a contract” include only those materials actually incorporated into the property being improved and those supplies directly used to incorporate such materials into the property being improved. Overhead supplies and supplies used indirectly or only incidental to the performance of the Contract with the OWNER are not included in the exemption.

Under “reasons said purchaser is claiming this exemption” in the exemption certificate, the CONTRACTOR must name the OWNER and the project for which the equipment, material and supplies are being purchased, leased or rented.

8.7 VENUE AND GOVERNING LAW

The parties agree that the laws of the State of Texas shall govern the interpretation, validity, performance and enforcement of this Construction Agreement, and that the exclusive venue for any legal proceeding involving this Construction Agreement shall be in Collin County, Texas.

8.8 NO WAIVER OF LEGAL RIGHTS

Inspection by the Engineer or OWNER; any order, measurement, quantity or certificate by the Engineer; any order by the OWNER for payment of money; any payment for or acceptance of any work; or any extension of time or any possession taken by the OWNER shall not operate as a waiver of any provisions of the contract or any power therein reserved to the OWNER of any rights or damages therein provided. Any waiver of any breach of contract shall not be held to be a waiver of any other or subsequent breach. The OWNER reserves the right to correct any error that may be discovered in any estimate that may have been paid and to adjust the same to meet the requirements of the Contract Documents. The OWNER reserves the right to recover by process of law sums as may be sufficient to correct any error or make good any deficiency in the Work resulting from such error, dishonesty or collusion by the CONTRACTOR or his agents, discovered in the Work after the final payment has been made.

Neither final acceptance of the Work, nor final payment shall relieve the CONTRACTOR of responsibility for faulty materials or workmanship, and the CONTRACTOR shall promptly remedy any defects due thereto and pay for any damage to other work resulting therefrom. Likewise, neither final acceptance nor final payment, nor partial or entire use or occupancy of the work by the OWNER shall constitute acceptance of work not done in accordance with the Contract Documents or relieve CONTRACTOR of liability with respect to any expressed or implied warranties or responsibility for faulty materials or workmanship, whether same be patently or latently defective.

8.9 OBLIGATION TO PERFORM FUNCTIONS

Any failure or neglect on the part of OWNER or Engineer or inspectors to enforce provisions herein dealing with supervision, control, inspection, testing or acceptance and approval of the work shall never operate to relieve CONTRACTOR from full compliance with the Contract Documents nor render OWNER liable to CONTRACTOR for money damages, extensions of time or increased compensation of any kind.

8.10 SUCCESSORS AND ASSIGNS

Subject to the limitations upon assignment and transfer herein contained, this contract shall be binding upon and inure to the benefit of the parties hereto, their respective successors and assigns.

8.11 HEADINGS

The title and headings contained in the Contract Documents and the subject organization are used only to facilitate reference, and in no way define or limit the scope of intent of any of the provisions of this Contract.

8.12 ENTIRE AGREEMENT; AMENDMENTS; BINDING EFFECT

This Construction Agreement, including the Contract Documents and all the documents incorporated therein represents the entire and integrated agreement between the OWNER, Collin County, and the CONTRACTOR, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Construction Agreement may be amended only by written instrument signed by both, the OWNER, Collin County, and the CONTRACTOR. CONTRACTOR acknowledges that no representations have been made to it, upon which it is relying in entering into this Contract, which are not expressly set forth in the Contract Documents.

8.13 INTERPRETATION

Although this Agreement is drafted by the OWNER, Collin County, should any part be in dispute, the parties agree that this Construction Agreement shall not be construed more favorable for either party. No rule of construction requiring that ambiguities in this Contract shall be construed more favorably for either party shall apply.

8.14 EXPENSES FOR ENFORCEMENT

In the event either Party hereto is required to employ an attorney to enforce the provisions of this Agreement or is required to commence legal proceedings to enforce the provisions hereof, the prevailing Party shall be entitled to recover from the other, reasonable attorney's fees and court costs incurred in connection with such enforcement, including collection.

8.15 FORCE MAJEURE

No party shall be liable or responsible to the other party, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement, when and to the extent such failure or delay is caused by or results from acts beyond the affected party's reasonable control, including, without limitation: acts of God; flood, fire or explosion; war, invasion, riot or other civil unrest; actions, embargoes or blockades in effect on or after the

date of this Agreement; or national or regional emergency (each of the foregoing, a "Force Majeure Event"). A party whose performance is affected by a Force Majeure Event shall give notice to the other party, stating the period of time the occurrence is expected to continue and shall use diligent efforts to end the failure or delay and minimize the effects of such Force Majeure Event.

IN WITNESS WHEREOF, the parties have executed this Construction Agreement upon the year and date indicated beneath their signatures hereto.

CONTRACTOR:

By: _____

Date: _____

ATTEST:

Secretary

COLLIN COUNTY, TEXAS:

By: _____
Michelle Charnoski, NIGP-CPP, CPPB, Purchasing Agent

Date: _____

Collin County Commissioners Court Order No.

ATTEST:

Secretary

ACKNOWLEDGMENTS

STATE OF TEXAS §

COUNTY OF _____ §

BEFORE ME, _____ on this day personally appeared _____
_____, of _____, a _____ corporation,
known to me (or proved to me on the oath of) _____ or
through _____ (description of identity card or other document) to be the
person whose name is subscribed to the foregoing instrument and acknowledged to me that
he/she executed the same as the act and deed of the corporation, for the purposes and
consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the ___ day of _____, 20__

Notary Public, State of Texas

Printed Name

My Commission expires on the ___ day of _____, _____.

STATE OF TEXAS §

COUNTY OF COLLIN§

BEFORE ME, _____ on this day personally appeared _____
_____, Purchasing Agent of COLLIN COUNTY, TEXAS, a political subdivision
of the State of Texas, known to me (or proved to me on the oath of) _____
_____ or through _____ (description of identity card or other document) to be
the person whose name is subscribed to the foregoing instrument and acknowledged to me
that he/she executed the same as the act and deed of COLLIN COUNTY, TEXAS, for the
purposes and consideration therein expressed and in the capacity therein stated.

GIVEN under my hand and seal of office this the _____ day of _____
_____, 20__

Notary Public, State of Texas

Printed Name

My Commission expires on the ___ day of _____, _____.

PERFORMANCE BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

That _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) (not less than 100% of the approximate total amount of the Contract as evidenced in the proposal plus 10-percent of the stated penal sum as an additional sum of money representing additional court expenses, attorneys' fees, and liquidated damages arising out of or connected with the below identified Contract) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the _____ day of _____, 20____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of _____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal fully and faithfully executes the work and performance of the Contract in accordance with the plans specifications, and Contract Documents, including any extensions thereof which may be granted with or without notice to Surety, during the original term thereof, and during the life of any guaranty required under the Contract, and according to the true intent and meaning of said Contract and the plans and specifications hereto annexed, if the Principal shall repair and/or replace all defects due to faulty materials or workmanship that appear within a period of one year from the date of final completion and final acceptance of the work by OWNER; and if the Principal shall fully indemnify and save harmless the OWNER from all costs and damages which OWNER may suffer by reason of failure to so perform herein and shall fully reimburse and repay OWNER all outlay and expense which the OWNER may incur in making good any default or deficiency, then this obligation shall be void; otherwise, to remain in full force and effect; and in case said CONTRACTOR shall fail to do so, it is agreed that the OWNER may do said work and supply such materials and charge the same against said CONTRACTOR and Surety on this obligation. Provided further, that if any legal action be filed on this Bond, venue shall lie in _____ Collin County, Texas.

"PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions Texas Government Code, Chapter 2253, as amended, and Chapter 3503 of the Texas Insurance Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the bond shall automatically be increased by the amount of any Change Order or supplemental agreement which increases the Contract price with or without notice to the Surety, but in no event shall a Change Order or Supplemental Agreement which reduces the Contract price decrease the penal sum of the Bond. And further that no change, extension of time, alteration, or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

Surety agrees that the bond provides for the repairs and/or replacement of all defects due to faulty materials and workmanship that appear within a period of one (1) year from the date of completion and acceptance of the improvement by the OWNER.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____ 20_____.

WITNESS

PRINCIPAL

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

SURETY

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

WITNESS

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

Note: Date of Bond must NOT be prior to date of contract.

PAYMENT BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

That _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) (not less than 100% of the approximate total amount of the Contract as evidenced in the proposal) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the _____ day of _____, 20____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of _____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that the bond guarantees the full and proper protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract and for the use of each claimant, and that conversely should the Principal faithfully perform said Contract and in all respects duly and faithfully observe and perform all and singular the covenants, conditions, and agreements in and by said Contract, agreed to by the Principal, and according to the true intent and meaning of said Contract and the claims and specifications hereto annexed, and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modification to Surety being hereby waived, then this obligation shall be void; otherwise, to remain in full force and effect. Provided further, that if any legal action be filed on this Bond, venue shall lie in Collin County, Texas.

"PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions Texas Government Code, Chapter 2253, as amended, and Chapter 3503 of the Texas Insurance Code, as amended, and all liabilities on this bond shall be determined in accordance with the provisions of said articles to the same extent as if they were fully copied at length herein.

Surety, for value received, stipulates and agrees that the bond shall automatically be increased by the amount of any Change Order or supplemental agreement which increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration or addition to the terms of the Contract, or to the work performed thereunder, or the plans, specifications, or drawings accompanying the same, shall in anyway affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____ 20_____.

WITNESS

PRINCIPAL

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

SURETY

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

WITNESS

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

Note: Date of Bond must NOT be prior to date of contract.

MAINTENANCE BOND

STATE OF TEXAS §
COUNTY OF COLLIN §

KNOW ALL MEN BY THESE PRESENTS:

That _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, whose address is _____ of the City of _____ County of _____, and State of _____, (hereinafter referred to as "Principal"), and _____ (hereinafter referred to as "Surety", a corporation organized under the laws of the State of _____ and authorized under the laws of the State of Texas to act as surety on bonds for principals, are held and firmly bound unto _____ (hereinafter referred to as "Owner") and unto all persons, firms and corporations who may furnish materials for or perform labor upon the buildings, structures or improvements referred to in the attached Contract, in the penal sum of _____ Dollars (\$ _____) in lawful money of the United States, for the payment whereof, the said Principal and Surety bind themselves, and their heirs, administrators, executors, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal has entered into a certain written contract with the Owner, dated the _____ day of _____, 201____, to which said Contract is hereby referred to and made a part hereof and as fully and to the same extent as if copied at length herein for the construction of _____.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that the bond guarantees the full and proper maintenance and repair of the work herein contracted to be done and performed for a period of _____ year(s) from the date of acceptance and Principal will do all necessary backfilling that may arise on account of sunken conditions in ditches, or otherwise, and do and perform all necessary work and repair any defective condition growing out of or arising from the improper laying or construction of same, or on account of any breaking of same caused by said CONTRACTOR in construction of same, or on account of any defect arising in any of said work laid or constructed by said CONTRACTOR or on account of improper excavation or backfilling, it being understood that the purpose of this section is to cover all defective conditions arising by reason of defective materials, work or labor performed by said CONTRACTOR, then this obligation shall be void; otherwise, to remain in full force and effect; and in case said CONTRACTOR shall fail to do so, it is agreed that the OWNER may do said work and supply such materials and charge the same against said CONTRACTOR and Surety on this obligation. Provided further, that if any legal action be filed on this Bond, venue shall lie in Collin County, Texas.

"PROVIDED, HOWEVER, that said Surety, for value received, stipulates and agrees the bond shall automatically be increased by the amount of any Change Order or supplemental agreement which increases the Contract price with or without notice to the Surety and that no change, extension of time, alteration or addition to the terms of the Contract, or to the work performed thereunder, or the plans specifications, or drawings accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work to be performed thereunder.

The undersigned and designated agent is hereby designated by Surety herein as the agent resident to whom any requisite notice may be delivered and on whom service of process may be had in matters arising out of such suretyship.

IN WITNESS WHEREOF, the said Principal and Surety have signed and sealed this instrument this _____ day of _____ 201____.

WITNESS

PRINCIPAL

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

WITNESS

SURETY

Printed/Typed Name _____

Title: _____

Company: _____

Address: _____

The Resident Agent of the Surety for delivery of notice and service of process is:
Name: _____
Address: _____
Phone Number: _____

Note: Date of Bond must NOT be prior to date of contract.

SECTION 280510 - COMMON WORK RESULTS FOR ELECTRONIC SECURITY SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. General:

1. Furnish all labor, materials, tools, equipment, and services for all electronic systems work as indicated, in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
 - a. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
3. See Division 01 for General Requirements.

B. Drawings use and interpretation:

1. Drawings are diagrammatic and indicate general arrangement of systems and equipment, except when specifically dimensioned or detailed.
2. Field measurements take precedence over dimensioned drawings.
3. The intention is to show size, capacity, approximate location, direction and general relationship of one work phase to another, but not exact details or arrangement.
4. Field verify locations and arrangement of all existing systems and equipment.
5. Where ambiguity may exist between specifications and drawings, the most stringent shall apply.

C. Installation of all systems and equipment is subject to clarification as indicated in reviewed shop drawings and field coordination drawings.

D. Dimensions indicated anywhere are limiting dimensions.

E. Do not use equipment exceeding dimensions indicated or equipment or arrangements that reduce required clearances or exceed specified maximum dimensions.

F. Description of systems: Furnish and install all materials to provide functioning systems in compliance with performance requirements specified and any modifications resulting from reviewed shop drawings and field coordinated drawings. Electronic security systems work as specified in this section includes:

1. Providing all equipment to provide a functional integrated system indicated in the contract documents.
2. Providing special back boxes for field devices.
3. Providing equipment cabinets and enclosures.
4. Providing wiring for electronic systems.
5. Providing raceway systems for electronic systems.

G. Electronic Security Systems:

- | | |
|--|-----------------|
| 1. Cabinets and Enclosures: | Section 28 0555 |
| 2. Electronic Control System: | Section 28 4619 |
| 3. Touch Screen Control and Management System: | Section 28 4623 |
| 4. Digital Intercom and Paging System: | Section 28 5123 |

H. Description of systems: Furnish and install all materials to provide functioning systems in compliance with performance requirements specified and any modifications resulting from reviewed shop drawings and field coordinated drawings.

- I. Furnished by Electronic Systems Integrator for installation by Division 26:
 - 1. Non standard electrical boxes.

- J. Furnished and installed by Division 26:
 - 1. Complete raceway system from the main head end equipment to the end device, including any necessary standard size back boxes, wire ways and pull boxes. Install pull string in all conduits.
 - 2. All 120 volt AC wiring and connections for power panels and/or terminal strips in electronic panels, cabinets, enclosures or consoles.
 - 3. All 120 volt AC wiring, devices and connections for devices and equipment as indicated on drawings.
 - 4. The Electronic Systems Integrator shall furnish conduit requirements and special back boxes to the Division 26 installer in a timely manner so as not to impede the progress of the work. Conduit sizing shall allow for a maximum conductor fill of 40 percent of conduit cross sectional area.
 - 5. The Electronic Systems Integrator shall be responsible for any additional conduits required (not shown on drawings) or increase in size of conduit to effect the installation of the security system contained herein.

- K. Related work:
 - 1. Division 8
 - a. Commercial Door Hardware: Section 087100
 - 2. Division 11
 - a. Detention Door Hardware:
 - 3. Division 26
 - a. Raceway systems: Section 260533
 - b. Building Wire/Cable: Section 260519

- L. Furnished and installed by Division 28:
 - 1. Data interface using standard industry protocol for data communication (e.g. BACfnet) between electronic security systems and control systems provided by Div 26 contractor such as detention area lighting control and power control etc.
 - 2. Electronic security integrator shall coordinate data interface communication with other trades.

1.2 BASIS OF DESIGN

- A. The electronic security system described within the specifications and drawings shall function as an integrated system including the retrofitted system (old portion of CCADSF) new areas added in Phase 2 and the existing buildings added in the Phase 1 project. Although the system is made up of several sub systems, they shall be integrated in both physical and electronic manner to achieve a single system presentation and functionality to the operator. The control stations shall function as a single control point, appearing to function as a single system.
- B. Electronic security system hardware and software for the Phase 1 and 2 projects was integrated by CML Security.
- C. Location and number of all existing electronic security field devices shown on this drawing are based on as-built drawings. Field verify and confirm the location, quantity and functionality of all existing field devices.
- D. Coordinate phasing of the project with the owner, starting at the existing central (building) control, then one area at a time (start with Cluster 1 or Cluster 3). New head-end servers and core switches shall be located in the existing cluster 4 equipment room to support new areas as they come online. Run and terminate all new fiber optic backbone cabling before commencing other work. Coordinate with the owner all areas to be taken offline prior to demo work.

- E. The new retrofitted electronic security system shall be fully integrated with the existing electronic security system that is currently installed in the Collin County ADF Phase 1 project and the Phase 2 project (currently under construction). All new and existing control stations shall be provided with the same GUI/HMI so that any local control station in the facility can be backed up by associated cluster control and the Central Control Room. The existing system in all areas was programmed and installed by CML Security.
- F. **All electronic security system programming and software integration between door control, intercom and paging system, access control system, video management system and any other systems listed in the construction documents shall be done by CML Security (per Collin County commissioners court order). The county will contract separately with CML Security for the programming and integration scope of work. The bidder(s) shall not include the cost of this work in their bid amount.**
- G. Provide new fiber optic backbone (12 strands of OM4 fiber) in star topology from all security equipment rooms and closets shown on risers to the existing Equipment Room #124. Provide patch panel ports for all strands pulled. Terminate dark spare fibers for future use.
- H. All existing cables/wires from the existing field devices to the existing head-end equipment shall remain for reuse unless noted otherwise. Remove communication cabling within equipment rooms and conduits which are no longer needed for operation.
- I. Replace all existing Allen Bradley PLC(s) with the new Omron NX series PLCs. Replace all existing relay modules and power supplies with new. Remove all non-essential components related to the previous integration which are no longer needed. Provide new ADS and File servers in the existing Cluster 4 security equipment room#1003. The new servers shall be configured to replace existing servers currently installed in the IT room #2015 and will be used to administer and manage the entire electronic security system in the ADF.
- J. Existing remotely controlled and monitored doors (door locks and wiring) shall remain for reuse.
- K. Replace the existing PLC-based intercom system head-end with a new Harding DXL system to create a unified intercom exchange network across all buildings in the campus. All existing intercom stations shall remain for use in the new system.
- L. All existing paging speakers and their associated wiring shall be reused. Configure paging zones to digitally selectable page zone expanders and talkback amplifiers so each control station can page its local area intercom stations and overhead speakers in dayroom area (all intercom stations and dayroom overhead speakers in a single pod area will be one paging zone). Central control shall be able to page all areas, including all page and floor-page. Detention/inmate area speaker zones shall use 2-way talkback features, while corridors and non-inmate areas shall use one-way paging only. Coordinate paging zones with the owner.
- M. The existing card access control system is not in the scope of this project. All existing integrations to remain operational.
- N. Existing video visitation system field devices and head-end equipment are not in the scope of this project.
- O. The control and monitoring and functionality of all existing electronic security devices shall be transferred to the new control system in addition to new features specified. All existing control stations shall be replaced with new touch screen control stations. The functionality of all existing control stations shall be transferred to the new control system components. The contractor shall use the Aveva edge HMI. Coordinate control tasking with the owner.

- P. Communication between electronic security equipment rooms shall be ethernet via new fiber optic backbone.
- Q. The existing video management system (Milestone VMS platform) shall be fully integrated with the new electronic security system to allow display of all cameras on new touch screen control stations and to provide camera call-up functionality.
- R. Test existing systems and devices which are planned to remain and send a report of all deficiencies prior to commencing demo work per area. The contractor may be responsible for repairing or replace devices or cabling if the report does not list deficiencies.
- S. All removed existing equipment, and existing obsolete cabling will be legally disposed of by the contractor and not turned over to the owner unless requested. Turn over the electronic security system computers and components as required by county.
- T. The integrated system is made up of several subsystems that communicate with each other via a fault-tolerant, self-healing network. The network is Ethernet based with primary controlling systems connected to the managed network switches. The network switches will direct all communications to and from all devices connected to the systems.
- U. Control of door locks, detention area duress buttons, lights, receptacles, etc. will be managed via distributed programmable logic controllers (PLC). Programmable logic controllers shall be in each electronic security equipment room. Each PLC shall be connected to the Ethernet network and shall be capable of stand-alone operation in the event of network connection failure. New PLC (s) shall be part of the existing PLC system that is currently under construction for the Phase 1 project.
- V. The intercom switching system will be a digital intercom system with software-based configuration, fault tolerant design, and rugged construction. The system is integrated to control stations via the electronic security network, allowing intercom functions to occur between each control station and their assigned remote intercom stations and speakers. New Harding DXL intercom and paging system shall be part of the existing Harding system that is currently under construction for the Phase 2 project and already in use for the Phase 1 areas.
- W. Touch screen control and management system shall provide the means to control and monitor all security devices in the expansion part of the facility via the electronic control system. Additionally, it shall provide archiving events to a database with the ability to generate reports from that database. The touch screen control system shall be configured to allow control transfer between all stations so that any touch screen station in the expanded part of the facility (Existing ADF, Phase 1 and Phase 2) shall be able to control and monitor entire facility (Existing ADF, Phase 1 and Phase 2 areas). Three (3) touch screen control stations in the Central Control Room (Room#109) and one in the Cluster Control Room (Room# 2011) shall be configured to control and monitor movement and the emergency functions in the entire ADF complex.
- X. Control of devices such as detention area lights, and power receptacles, etc. shall be controlled via electronic security control system using existing relay interface.
- Y. At the end of this project the electronic security integrator shall be responsible for adding all cameras from the entire ADF to the same Milestone platform and the same video network.
- Z. Miscellaneous devices (i.e. motion detectors, call buttons, duress buttons, etc.) shall be configured as inputs to the local PLC with status displayed on the control stations.
- AA. All security systems shall be powered from the emergency power systems with additional backup from the existing uninterruptible power systems for all components other than electrically control door locks, sliding doors, overhead doors, and similar motor or solenoid loads. Existing UPS units will be reused.

1.3 QUALITY ASSURANCE

- A. Perform all work in accord with following codes and standards:
 - 1. Codes Compliance: Comply with the following current adopted codes:
 - a. Federal, state and local codes, regulations and ordinances.
 - b. National Electrical Code (NEC), latest edition
 - c. National Fire Code (NFC)
 - d. Occupational Safety and Health Act (OSHA)
 - e. International Building Code (IBC)
 - f. Factory Mutual System (FM) requirements
 - g. All authorities having jurisdiction.
 - 2. Standards Compliance: Comply with the following standards as applicable:
 - a. Americans with Disabilities Act (ADA)
 - b. American National Standards Institute (ANSI)
 - c. American Society for Testing and Materials (ASTM)
 - d. Electronics Industry Association (EIA)
 - e. Electrical Testing Laboratories (ETL)
 - f. Factory Mutual (FM)
 - g. Institute of Electrical and Electronics Engineers (IEEE)
 - h. Insulated Cable Engineers Association (ICEA)
 - i. National Electrical Contractors Association (NECA)
 - j. National Electrical Manufacturers Association (NEMA)
 - k. National Fire Protection Association (NFPA)
 - l. Underwriter's Laboratories (UL)

- B. Equipment Manufacturer:
 - 1. Regularly engaged in the manufacture of products specified.
 - 2. Manufacturer of products specified for a period of no less than five years with satisfactory performance in similar applications.

- C. System Integrator Personnel: (Project Manager, Project Engineer, On-site Supervising Technician)
 - 1. Regularly engaged in installation of products specified.
 - 2. Installer of products specified for a period of no less than five years with satisfactory performance.

- D. Systems specified in this Division shall be engineered, assembled and installed under the direction of a pre-qualified electronic systems integrator. Electronic systems integrator shall meet the following minimum requirements.
 - 1. Qualifications.
 - a. Successful completion of at least three similar detention facilities which have been in successful operation for at least one year.
 - b. Technical staff experienced and factory trained in systems specified.
 - c. The electronic systems integrator shall be bondable for an amount equal to 100% of his bid.
 - 2. Pre-qualified electronic systems integrators.
 - a. Accurate Controls, Ripon, WI
 - b. Cornerstone Electronics, Madison, Alabama
 - c. CML Security, Broomfield, CO
 - d. Johnson Controls, Alabama
 - e. South West Communication, Decatur, AL
 - f. Securitas Technology, Noblesville, IN
 - 3. Electronic systems integrators must be pre-qualified to bid the project. Integrators not indicated but desiring approval shall submit information supporting compliance with the following minimum requirements.
 - a. Minimum five (5) continuous years in the business of installing electronic security systems in justice/detention and or correctional facilities incorporating systems and equipment including but not limited to intercom/paging, programmable logic controllers, touch screen control, access control, and video management systems.

- b. Successful completion of at least five (5) justice/detention facilities of similar size and complexity that have been in operation for at least one year.
 - 1) Successful completion shall be determined by information from references confirming project was not delayed by the completion of electronic security systems, electronic security systems were fully operational within 90 days of substantial completion and electronic security systems remained fully operational at conclusion of warranty period or two years whichever is greater.
 - 2) Projects of similar size are represented by electronic security integration scope of construction cost value in excess of one and half million dollars (\$1,500,000.00).
 - 3) Projects of similar complexity are represented by integrated systems including but not limited to intercom/paging, programmable logic controllers, touch screen control, operating in a network environment with a minimum five (5) equipment locations (nodes)
- c. References: The Collin County and/or its representative(s) may at their own discretion contact references for projects in addition to those submitted by the applicant.
- d. Definitions:
 - 1) Similar Size: Detention Facility of...
 - a) Similar dollar value of installed electronic security systems
 - b) Similar duration (22 months)
 - c) Similar systems technology
 - 2) Similar Complexity: Detention Facility ...
 - a) Using integration of multiple systems including video, communications, and control.
- E. **All electronic security system programming and software integration between door control, intercom and paging system, access control system, video management system and any other systems listed in the construction documents shall be done by CML Security (per Collin County Commissioners Court Order). The county will contract separately with CML Security for the programming and integration scope of work. The bidder(s) shall not include the cost of this work in their bid amount.**
- F. Termination, testing and start-up of electronic systems shall be done under the direct supervision of the system integrator. Prior to termination at system equipment, all field wiring shall be tested against faults, grounds and other conditions that may impede the proper operation of the system. System integrator shall verify and accept the field wiring prior to termination at system equipment. Beginning of termination constitutes acceptance of conditions as satisfactory.

1.4 SUBMITTALS (SEE SECTION 013300)

- A. Review of shop drawings or schedules by Engineer shall not relieve the Contractor from responsibility for deviations from drawings or specifications, unless there is a formal letter which called attention to such deviations at the time of submission and secured written approval; nor shall it relieve him from responsibility for errors in shop drawings, schedules or coordination of the work with other trades.
- B. Submittals for individual systems and equipment assemblies which consist of more than one item or component shall be made for the system or assembly as a whole. Partial submittals will not be considered. Partial submittals will not be returned except at the request and expense of the contractor.
- C. The contractor shall develop and submit complete submittals and do so in a timely manner. By failing to do so, the System Integrator agrees to be fully responsible for any and all damages which might be occasioned by the contractor's failure to do so.
- D. Where Engineer furnished electronic files of the Contract Documents are used as part of the shop drawings, the Electronic Systems Integrator shall review such files and confirm completeness and accuracy. Submission of such documentation as a part of the shop drawings shall be indication that such review and

confirmation has been performed and completed. Submission and subsequent approval shall not relieve the Electronic Systems Integrator from the requirements of the Contract Documents.

- E. All shop drawings shall be created using AutoCAD v2017 or later. Schedules shall be created in spreadsheet format using Microsoft Excel. Incorporate all revisions upon completion of work. Submit with record drawings in both hard copy and electronic files.
- F. Electronic submittal reviews:
 - 1. PDF submissions of narratives, data sheets, cut sheets and all other documents shall be created in their original size at a high quality resolution.
 - 2. Each PDF submission file shall have a page designated for a review stamp and general comments by the Engineer.
 - 3. Drawings being submitted in PDF form shall have minimum font sizes, preferably .125” but in no case smaller than 0.1”
 - 4. Drawings being submitted in PDF form shall have minimum font sizes 10.
 - 5. Drawings shall be in a high resolution vector format so as to not degrade when an area is enlarged while viewing.
 - 6. The original drawings should be converted to PDF’s at full scale.
 - 7. PDF files should each be created by each general specification number/system and then all files & drawings as a group submitted as one complete submittal.
 - 8. Do not create a single PDF file for the complete submittal.
- G. Resubmittal of items that have been previously accepted or approved will not be reviewed unless specific attention is called to changes in previously approved items. Resubmission that does not specifically call attention to previously accepted or approved submittals shall not be considered as subsequent approval of a change to the initially accepted or approved item.
- H. Submit drawings, data sheets, schedules, and others, in compliance with Article "Submittal Requirements" of this Section to permit adequate time for review by the Engineer, but in not less than 21 calendar days. This 21 day review period is exclusive of time associated with travel, mail, delivery, copy, and handling. Due to the integrated system, most submittals are interrelated and thus are expected in one group.
- I. Provide information required for complete review of each item in one submittal. When individual sections of specifications require more than one item for review, such as shop drawings, product data, samples, and related items, submissions shall include all specified information delivered at one time.
 - 1. Incomplete or partial submittals will not be reviewed by the Engineer.
 - 2. Extra copies of submittals will not be marked or returned, except at the expense of the Contractor.
 - 3. Duplicate copies of incomplete or partial submittals, or extra copies of submittals, will be discarded after 15 calendar days unless Contractor makes arrangement for return, at Contractor’s expense.
 - 4. Submittals not requested specifically may be returned to Contractor without review.
- J. Review of submittals shall be limited to two submissions. The Engineer shall be compensated for additional reviews. In such an event, the Engineer will determine a cost for the additional review(s) based on previous review cost and provide to the Contractor. Upon receipt of payment, the Engineer will conduct the requested additional review(s).
- K. Project Data: Electronic Systems General Requirements: Section 280510.
 - 1. System Integrator personnel qualifications: (Project Manager, Project Engineer, On-site Supervising Technician).
 - 2. List of all manufacturers and equipment suppliers.
 - 3. Submittal schedule: Schedule shall be submitted within 30 days of Notice to Proceed and shall include time and duration for product data by group, shop drawings by group, touch screen demonstration station, and testing procedures.
 - 4. Where modifications are required to existing control systems, the schedule shall include phasing with identification of the time and duration of modifications to each portion of the work. Time and

- durations shall be reviewed with the Owner/User in order to allow continuous operation of the facility and maximal uptime of systems.
5. Functional block / riser diagram of complete integrated system with references to all related sub-system drawings. Diagrams must show all major communications interfaces within and between systems and interfaces to external systems.
 6. Floor plans indicating device locations and cable assignments/groupings. Submission of these plans indicates that the contractor has coordinated the placement of all devices with architectural plans, and coordinated raceway requirements with all related trades.
 7. Drawing plans and risers indicating complete conduit and raceway systems.
 8. Spare parts inventory with quantity, description and source listed.
 9. Testing: Provide complete testing procedure for electronic security systems. The procedure shall identify testing of each function of each device under each condition. Manufacturer recommended test procedures shall be incorporated into the testing procedure. All testing shall be project specific.
 10. Construction schedule: A schedule of electronic security system construction phase work shall be submitted within 60 days of Notice to Proceed and shall include time and duration of each of the items listed at a minimum. The schedule shall be updated periodically as needed throughout the duration of the project with resubmission required at each update or modification, but no less than quarterly.
 - a. Submittals (by group number where applicable)
 - b. Conduit and Raceway installation
 - c. Procurement
 - d. Assembly (by equipment room location)
 - e. Programming
 - f. Factory Testing of completed system
 - g. Shipping (by equipment room location)
 - h. Terminations (by equipment room location)
 - i. Field device installation (by building area)
 - j. Contractor preliminary testing (by building area)
 - k. Validation Testing
 - l. Test Upon Completion of Work
 - m. Operation and Training Manuals
 - n. Shakedown Period
 - o. Owner Training
 - p. Final Testing
 - q. Pre-Warranty Expiration Testing
 11. Schedule of Values: A schedule of values for the electronic security systems shall be submitted within 60 days of Notice to Proceed and shall include material and labor costs for each part of the work. Values for the following shall be provided at a minimum.
 - a. General Conditions: Section 280510
 - b. Submittals: Section 280510
 - c. Testing: Section 280510
 - 1) Factory Testing
 - 2) System Validation Testing
 - 3) Demonstration Upon Completion of Work:
 - d. Programming: All Sections
 - e. Cable and Wire: All Sections
 - f. Conduit and Raceways: All Sections
 - g. Electronic Control System: Section 284619
 - h. Touch Screen Control and Management System: Section 284623
 - i. Digital Intercom and Paging System: Section 285123
- L. Transient Surge Protection: Section 280510
1. Project Data: Submit material specifications and installation data for products specified herein.
 - a. Include electrical characteristics, and ratings for each type of TSP equipment.
 - b. Indicate wiring diagrams indicating internal connections of TSP components within each enclosure.

- c. Drawings shall be provided indicating unit dimensions, weights, mounting provisions, and connection details.
- d. Submittals of each system shall indicate location of TSP devices.

1.5 WEATHERPROOF EQUIPMENT AND LOCATIONS

- A. Weatherproof equipment and locations are where weatherproof (WP) is indicated or where equipment is not located inside a building.
- B. Enclosures and boxes to be NEMA 3R hot dipped galvanized steel, weatherproof cast iron or malleable iron boxes and covers, or NEMA 4X stainless steel.
- C. Mounting and support hardware to be hot dipped galvanized steel or stainless steel.

1.6 PROTECTION

- A. Provide covering and shielding for all equipment provided to protect from damage.
- B. Protect nameplates on equipment, to prevent defacing.
- C. Repair, restore or replace damaged, corroded and rejected items.

1.7 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, heat, 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 damaged equipment as determined by the Engineer. 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.

1.8 OPERATING AND MAINTENANCE DATA (SEE SECTION 01 78 23)

- A. Provide the following specific instructional material for this project for each electronic system. Product data shall be original data sheets. Copies are not acceptable. Product data, instructions and manuals from original packaging is preferred.
 - 1. Operations manual for all installed components and system as a whole.
 - 2. Maintenance manual for all installed components and system as a whole.

3. As-Built point-to-point diagrams, wiring diagrams and construction details.
4. All As-Built device termination schedules, IP address schedules, Network IP Scheme, and I/O schedules.
5. List of spare parts, materials and suppliers of all installed components. Provide name, address and telephone number and website for each supplier.
6. Emergency instructions for operational and maintenance requirements.
7. Startup and shutdown procedures for all major systems (IP Video servers, Intercom, PLC, Touch Screens).
8. Copies of all MFR warranties.
9. Approximate delivery lead time frame for replacement of component parts from suppliers.
10. Recommend inspection schedule and procedures for all components and system as a whole.
11. Complete approved As-Built shop drawings and product data for all components and system as a whole.
12. Provide all software administrative logins and passwords for each system. All software is Collin County owned with all rights and access to all administrative functions.

1.9 JOB CONDITIONS

- A. Cause as little interference or interruption of existing utilities and services as possible.
 1. Schedule work which will cause interference or interruption in advance with Owner, Architect or Engineer, authorities having jurisdiction and all affected trades.
- B. Examine Contract Documents to determine how other work will affect the execution of electronic systems.
- C. Determine and verify locations of all existing utilities on or near site.
- D. Make arrangements for and pay for necessary permits, licenses, and inspections required by Division 01.

1.10 EQUIPMENT AND SYSTEM IDENTIFICATION

- A. All electronic security systems and equipment shall be labeled for identification.
 1. Install a nameplate on each individual equipment rack, enclosure, boxes, cabinet, and significant equipment item with text to coordinate with approved submittal documents.
 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 phenolic 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. Allow room for fastener attachment.
 5. All equipment shall have the manufacturer's name, address, model number and rating on a nameplate 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. New raceway systems shall be labeled at all pull points and on each side of wall penetration, but in no case less than 20 feet between labels. Identify raceways with name of security system
 1. Apply preprinted labels with pressure sensitive, self-adhesive backing. If additional adhesion is required to hold label in place, use appropriate taping material wrapped completely around raceway.
 2. Position identification so that it is readily visible from eye level.
 3. Color scheme for labels:
 - a. Communications: Orange
 - b. Security Control: Green

- c. Video Surveillance: Blue
 - d. Network: Yellow
- C. All wire and cables shall have clearly marked wire markers at each and every termination point within 2 inches of termination. Each wire shall be identified by unique code.
- D. Labeling system suppliers:
- 1. Thomas & Betts
 - 2. Brady
 - 3. Westline
 - 4. Seton

1.11 RECORD DRAWINGS (SEE SECTION 01 7839)

- A. The Electronic systems contractor shall keep a complete set of all electronic systems contract drawings and the electronic systems shop drawings in the job site office.
- 1. Use these sets of drawings for showing as constructed installation of electronic security systems and equipment.
 - 2. Where any material, equipment, wiring or system components are installed differently from that shown, show such differences clearly and neatly using ink or indelible pencil.
 - 3. At project completion, submit the record set of contract drawings to Architect (see Division 01) in hard copy and electronic files in both PDF and AutoCAD format.
 - 4. At project completion, make corrections to the shop drawings on the original media and submit the corrected reproducible drawings to the Architect (See Division 01). Where the shop drawings were created on a computer aided drafting system, furnish AutoCAD compatible electronic drawing files of all corrected shop drawings.
- B. Software Records:
- 1. Submit final software programs on electronic media compatible with the installed system.
 - a. Transfer all software licenses to the Owner/User representative at the completion of the project. Transfer shall include customer support rights.
 - b. Fully comply with all license agreements for the installed software. Install sufficient quantities of each software program so that the Owner fully meets the intent of the publisher's site license agreement. When in doubt, contact the publisher for an interpretation and comply with that interpretation.
 - c. Provide the Owner with all original installation media and PDF manuals for every software program installed on the system.
 - d. Any proprietary key on any software are not allowed. All software will be owned and controlled solely by Collin County Government
 - 2. Standard and Custom Application Software:
 - a. Prepare and submit the licenses to all software installed for the system. Compile a list with each program name, its installed version number, the number of copies installed, location and serial number of each copy, the publisher's name and address, and the publisher's customer support telephone number.
 - b. Prepare and submit complete documentation of the final installed version of the application program, including a diagram of its component modules, subroutines, databases, libraries, drivers, and other parts. Narrative descriptions shall accompany the diagram, giving basic descriptions of each component and describing the interaction between components. Provide a complete, annotated listing of all application settings, or export file for settings on disc.
 - 3. User Data and User Programmable Software:
 - a. Provide complete documentation of all user data and user programmable software, including but not limited to properties, preferences, settings, configurations, component modules, plug-in modules, user subroutines, databases, libraries, drivers, macros, templates, objects, slides, maps, images, sounds, icons, screen savers, and any other software files for each site.

- b. Provide narrative descriptions and diagrams that give basic descriptions of each software component and the interaction between software components. Provide a complete, annotated software component listing.
 - c. Provide a USB media of the final operating version of the user data and user programmable software in accordance with Division 1 requirements. Provide three (3) copies of the media, properly labels and dated in hard cases.
 - d. Provide record of all new IP addresses assigned to the electronic security system devices and equipment.
4. Operators Guide
- a. Operators Guide shall outline the operation of each system. A guide is to be kept at each workstation for reference on the operation of the equipment.
 - b. Include written description in outline form how to operate the basics of the system. This shall include but not be limited to: access and control of individual devices, group control functions, emergency control functions, system acknowledgement and reset of alarms.
 - c. Include 8.5 x 11 inch graphics as needed to identify device locations and facilitate understanding of the written description.
 - d. Provide one copy for each work station and one master copy that may be reproduced by the County.
 - e. Laminate each guide for each workstation, or other approved method.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Acceptable manufacturers:
 1. See individual specification section.
- B. The product numbers contained herein are for reference only and may not be the most current available nor a complete listing of all features or options required. Where a manufacturer is listed without a product number, an equivalent item of the specified manufacturer is acceptable. Determination of equivalent is at the sole discretion of the Engineer. Where a conflict or ambiguity exists between the written description and the product number, the written description shall govern.
- C. Equipment installed in exterior applications shall be fitted with fasteners and exposed surfaces of stainless steel or other corrosion resistant material.
- D. Use only prime quality, new materials, apparatus and equipment.
- E. Use electrical materials approved by UL and bearing UL label where listing has been established for materials or devices in question.
 1. Manufactured items and fabricated assemblies of electrically operating equipment: UL approval or UL re-examination listing.
- F. Structural steel for supports: ASTM A36.
 1. Galvanize members installed in areas of high humidity or condensation and exterior locations.
 2. Furnish other members with shop coat of red lead primer.
 3. Shop fabricate for field assembly using bolts.
 4. Minimize field welding.
 5. Retouch primer after field welding.

2.2 COMPUTING EQUIPMENT

- A. All computing equipment shall be provide with, and software applications compatible with Windows 11 and Microsoft Server 2022 operating systems. In such a case compatibility is not available at the time of installation, it must be stated in writing during the submittal process, and the contractor shall upgrade the installed systems to Windows 11 and Microsoft Server 2022 operating systems prior to expiration of warranty and subsequently extend the warranty related to the system upgrade for an additional one year.

2.3 GROUNDING

- A. All equipment shall be grounded in accordance with the NEC, these specifications and drawings, and the equipment supplier's recommendations.

2.4 TRANSIENT SURGE PROTECTION

- A. Industry Reference Standards: The following specification and standards are incorporated into and become a part of this specification by reference.
 - 1. Underwriters Laboratories, Inc. (UL)
 - a. No. 1449 2nd Edition Standard for Safety
 - b. No. 497 A, B and C.
 - 2. Institute Of Electrical And Electronics Engineers (IEEE)
 - a. Std. 142 - Recommended Practice For Grounding
 - b. Std. 518 - Recommended Guide On Electrical Noise
 - 3. American National Standards Institute (ANSI)/IEEE
 - a. C62.41.1-2002 - IEEE Guide on the Surge Environment in Low Voltage (1000V and less) AC Power Circuits.
 - b. C.62.41.2-2002 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000V and Less) AC Power Circuits.
 - c. C62.36-2000 – IEEE Standard Test Method for Surge Protectors Used in Low-Voltage Data, Communications, and Signaling Circuits.
 - 4. National Electrical Manufacturers Association (NEMA)
 - a. NEMA LS-1-1992 – Low Voltage Surge Protection Devices
 - 5. International Electrotechnical Commission (IEC).
 - a. IEC 529:1989 – Type of protection through housing.
 - b. IEC 1024-1:1990 – Protection of structures against lightning – Part 1: general principles.
 - c. IEC 61643-21 – Low Voltage Surge Protective Device: SPD Connected to Telecommunication and signaling networks – Performance requirements and testing methods.
 - 6. Deutsch Industrial Norm (DIN)
 - a. DIN EN 50022: 1977/DIN EN 50022: 1978-05 Mounting rails 35mm wide for snap-on mounting of equipment
 - 7. Federal Information Processing Standards
 - a. Publication 94 (FIPS PUB 94)
- B. Acceptable manufactures: All device(s) shall be by the same manufacture.
 - 1. TSP Devices:
 - a. Base: Emerson/NTI, Ditek, Phoenix Contact, Transtector Systems, Inc.
 - 2. Other manufacturers desiring approval comply with Division 1
- C. All TSP devices installed shall utilize Silicon Avalanche Diodes (SAD) as the primary means of protection. Secondary protection shall be SASDs or Metal Oxide Varistors (MOVs). Each protection circuit shall be independent of each other and neither circuit shall short to ground on clamping transient surges.

- D. Each 120 VAC circuit or feeder required for the electronic control and monitoring system shall be provided with a TSP device.
- E. Each electronic security system circuit containing metallic conductor (s) shall be provided with a TSP device when leaving the confines of a building. Each electronic security system circuit containing metallic conductor(s) shall be provided with a TSP device when entering a building. Circuits serving building mounted devices or equipment that are located below the roof that originate or terminate in the building it is attached to, do not require TSP devices.
- F. Locate TSP device at first termination point within the building. Locate all TSP devices in cabinets or enclosures.
- G. All TSP devices shall be provided with a ground connection. The ground circuit shall be sized in conformance with the manufacturer's written requirements for proper grounding for the associated device. The ground conductor shall be routed and connected to the nearest electrical system ground point.
- H. Alarm contacts on TSP devices shall be connected to the electronic control system and annunciated as a system trouble alarm.

2.5 WIRING AND CABLE (AS IN MEANS AND METHODS OF SINGLE AND MULTIPLE CONDUCTOR CABLE INSTALLATION)

- A. Power wiring: Single conductor cable, soft drawn, copper wire with type THWN 600 volt insulation, UL listed.
- B. All cable shall be per manufacturer's written recommendation for the application and environment anticipated for this project, but in no case less than what is required by these specifications. All cable shall be of standard type available from multiple manufacturers. Replace cable determined to be inadequate for specified performance.
- C. All Class 1 wiring shall be building wire of type specified in Division 16 work. Provide overcurrent protection for conductors in accordance with NEC. Minimum sizes as follows:
 - a. Indication: 18 GA minimum.
 - b. Control: 14 GA minimum.
 - 2. All Class 2 wiring may be single conductor or multiple conductor cables. Conductors to be stranded type tinned copper, 22 GA minimum, PVC insulated.
- D. Pulling lubricant: Do not use cable pulling lubrication compound containing petroleum or other products which may deteriorate insulation.
- E. All cable installed in exterior underground conduit must be direct bury rated cable
- F. Color coding of conductors:
 - 1. Power circuits: in accord with NEC.
 - 2. Lock wiring: per drawings, match lock device color code where possible, similar throughout project.
- G. All cable installation shall be continuous from equipment/device terminal to equipment/ device terminal. No splicing of cables will be allowed.
- H. Where connection to devices provided with factory installed wire leads is required, use "Wing nut" or "Wire nut" insulated conical spring-type connectors. Do not make connections and taps with indenter-type connectors.

2.6 RACEWAYS, WIREWAYS, BOXES AND FITTINGS

- A. Raceways, wire ways, boxes and fittings shall be provided under Division 26.
- B. Raceways, wire ways, boxes and fittings shall be provided where indicated on drawings.
- C. Conduit:
 - 1. Electrical metallic tubing (EMT) with compression connectors shall be used where concealed above ceilings and in equipment rooms.
 - 2. Rigid galvanized conduit shall be used where exposed conduit is required. Exposed conduit that is below 15 feet above finished floor shall be anchored to walls or ceilings with two hole straps on no less than 24 inch centers.
- D. All raceways shall be sized for maximum 40 percent fill. All conductors shall be included in fill calculations. Minimum conduit size shall be 3/4".
- E. Lock pockets have limited capabilities to accommodate incoming and outgoing conduits. Lock pockets shall not be used for wire termination other than that required for connector of lock in pocket. Wiring for no more than three (3) adjacent locks may be routed through a lock pocket, provided the lock pockets will accommodate such. Coordinate with Detention Equipment Contractor for conduit entries,

2.7 SPARE PARTS

- A. Deliver spare parts in protective wrapping and packaging for proper storage.
- B. Provide spare parts as indicated in individual specification section.
- C. Spare parts shall be available to the Contractor to use as immediate replacements during the warranty period. The Contractor shall replace all spare parts used for the warranty requirements within 30 days of use.
- D. Provide the following spare parts:
 - 1. Transient Surge Protection: two (2) of each type used.

PART 3 - EXECUTION

3.1 GENERAL

- A. Use only workmen experienced in electronic security systems for installation of equipment and termination of wire/cable systems.
- B. When changes in location of any work are required, obtain approval of Engineer before making change. Engineer may move any item prior to or at time of rough-in up to 5 FT - 0 IN without extra cost.
- C. Do not change indicated sizes without written approval in accordance with Division 01 requirements.
- D. Equipment Installation:
 - 1. Install all equipment in accordance with the manufacturer's recommendations, and accepted shop drawings.
 - 2. Install all equipment in compliance with NEC requirements, NECA's "Standard of Installation", and recognized industry practices.

3. 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.
4. Locate equipment as close as practical to the locations shown on the Drawings.
5. Maintain minimum 3-foot working clearances on each side of equipment or equipment racks where access is required to inspect, service, or adjust.
6. 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 Engineer during the preparation of shop drawings.
7. Where the Engineer determines that equipment installation is not conveniently accessible for operation and maintenance, remove and reinstall equipment in a conveniently accessible manner.
8. Remove and protect existing equipment that is to be reinstalled. Make modifications and adjustments as required for re-mounting devices.
9. Insure all equipment is adequately ventilated and installed in such a way (rack spacing, additional cooling, etc.) so ALL equipment never exceeds manufactures published maximum operating temperature.

3.2 RENOVATION

- A. Verification of existing systems: Prior to completion of submittals, but in no case later than 90 days from Notice to Proceed, perform a complete operational test of the existing systems. Make notations of all non-functioning systems, equipment and/or devices and make recommendations for repair. Provide report no later than initial submittals.
 1. The testing of existing systems may involve testing intermediate devices in the circuit by measurement, application of jumpers, or similar devices in order to determine the capabilities of the downstream circuitry and devices that are scheduled to remain in operation. It is not the intent to remove all devices for testing but may require removing a sample device to determine a basis for evaluation.
 2. Determination will be made as part of the submittal review period as to what action is required for non-performing items.
 3. Prior to start of work on each subsequent phase of the work, re-verify performance of existing systems and devices to remain. Submit updated reports as needed.
 4. Failure to perform and submit results of pre-construction operational tests as described shall be indication that the Sub-Contractor accepts existing conditions as fully operational and will be fully responsible for specified operation.
 5. Sub-Contractor shall have no recourse after the pre-construction operational tests for claims relating to performance of existing systems, equipment and/or devices that remain or are re-used in the new work.
 6. Coordinate with Inspector for scheduling of pre-construction operational testing.
 7. All testing shall be non-destructive. Any work damaged shall be immediately repaired by the Contractor at Contractor cost.
- B. Work in renovated areas shall include removal of all abandoned systems equipment and wiring. Coordinate work of this section with that of related sections to make clear pathways as required for installation of new work.
- C. Where existing circuits are to be extended for connection to other equipment or systems, break existing circuit at an accessible location, install terminal box with terminal strips or connectors and extend circuitry as required.
- D. Existing devices and equipment that is to remain for re-use shall be tested for proper operation, opens and shorts prior to termination. If found to be defective, notify Architect or Engineer of nature of problem and recommended remedy. Minor modifications shall be made at no additional cost.

- E. Where devices are removed from walls or ceilings that are to remain, provide stainless steel blank cover plate over existing rough-in box.
- F. Where circuits that are to remain in order to maintain operation to remaining devices, verify continuity of circuits after removal of other equipment and/or devices. Where wire, cable and/or raceway modifications are required to maintain circuits, provide such modification as part of the work.
- G. Where existing equipment is indicated to be reused, contractor may provide new equipment of equal or greater capability and as specified for such new equipment. Such intent shall be indicated in the submittal documents.
- H. All equipment and/or devices removed shall be turned over to the Owner for use as spare parts. Remove devices and equipment in such a manner to maintain their integrity where possible. That equipment and/or devices not desired by the Owner shall be removed from the site at the contractor's expense.

3.3 PHASING OF THE WORK

- A. The work includes relocation, renovation and/or equipment replacement in control stations within the facility. The control systems of the facility shall remain sufficiently operational to maintain a safe and secure facility at all times. The contractor shall make all temporary accommodation as required to maintain operations.
- B. Each affected control stations shall be configured ready for use prior to transfer of circuits from the old control to the new. Circuits shall be transferred in logical groups such that at any time a given portion of the building can be controlled from a single point.
- C. All work shall be scheduled in advance with the Owner/User. Work during the night hours will be required for the transfer of major systems, equipment and circuits.
- D. The Owner/User will make reasonable accommodation for execution of the work. Such reasonable accommodation includes additional staff for operations and security during transfer periods, ready access to areas of transfer, and support for preliminary testing of transferred circuits and equipment.

3.4 CUTTING AND PATCHING

- A. Perform or pay for all cutting, fitting, repairing, patching and finishing of work of other sections where it is necessary to disturb such work to permit installation of work. Repair or replace existing or new work disturbed.
- B. Avoid cutting, where possible, by setting sleeves or frames, and by requesting openings in advance.
- C. Before cutting obtain approval of Architect or Engineer.
 - 1. Use only approved methods.
 - 2. Cut all holes neatly and as small as possible to admit work.
 - 3. Do not weaken walls or floors; locate holes in concrete to miss structural sections.
- D. Locate openings and sleeves to permit neat installation of equipment.
- E. Do not remove or damage fireproofing materials.
 - 1. Install hangers, inserts, supports, and anchors prior to installation of fireproofing.
 - 2. Repair or replace fireproofing removed or damaged, at no extra cost.

3.5 INSTALLATION OF EQUIPMENT

- A. Install all equipment in accord with manufacturer's recommendations.
- B. Provide all necessary anchoring devices and supports.
 - 1. Use structural supports suitable for equipment, or as indicated.
 - 2. Check weight and dimensions of equipment with shop drawings.
 - 3. Do not cut or weld to building structural members.
- C. Verify that equipment will fit support layouts indicated.
 - 1. Where substitute equipment is used, revise indicated supports to fit.
- D. Arrange for necessary openings to allow for admittance of equipment.
 - 1. Where equipment cannot be installed as structure is being erected, provide and arrange for building-in of boxes, sleeves or other devices to allow later installation.
- E. Prior to installation of electronic security equipment in control rooms and/or equipment rooms, complete all room finishes and provide a clean conditioned space for the electronic equipment installation. Maintain a secure, clean and conditioned space throughout the installation process. Where dust, dirt or moisture generating environment is anticipated or encountered after start of installation of equipment, cease work and wrap/seal all equipment in waterproof protective material. When environment is clean and conditioned, protective wrapping shall be removed, equipment cleaned, and work resumed.

3.6 FIELD QUALITY CONTROL (SEE DIVISION 1)

- A. Perform indicated tests to demonstrate workmanship, operation, and performance.
 - 1. Conduct tests in presence of inspectors of agencies having jurisdiction if required.
 - 2. Arrange date of tests in advance with, manufacturer and installer.
 - 3. Give all inspectors minimum of 24 hours notice.
 - 4. Furnish all labor and materials required for period of test.
- B. Repair or replace equipment and systems found inoperative or defective and re-test.
 - 1. If equipment or system fails re-test, replace it with products which conform to Contract Documents.
 - 2. Continue remedial measures and re-tests until satisfactory results are obtained.
- C. Test equipment and systems as indicated for each item, unless otherwise recommended by manufacturer.
- D. Coordinate work of this section with work of other sections to insure timely delivery and installation of work.
- E. Design all systems for continuous 24 hour operation.

3.7 TEST AND VERIFICATION

- A. General: The Contractor shall verify that all requirements of this specification are met. Verification shall be through a combination of analyses, inspections, demonstrations and tests, as described below.
- B. Verification by Inspection: Verification by inspection includes examination of an item and the comparison of pertinent characteristics against the qualitative or quantitative standard set forth in the cited paragraph. Inspection may require moving or partially disassembling the item to accomplish the verification. Inspection shall be made of all equipment installations, proper functioning of all locking hardware and lock controls, mounting and wiring of electrical and signal distribution cabinets and components, and mounting and placement of sensors, cameras, etc. to ensure requirements of the specifications are complied with and

that the overall installation is accomplished in a professional and workmanlike manner and in accordance with manufacturer's written recommendations. The Owner's quality control representative(s) shall have full opportunity to witness the required inspections or to conduct his own inspections of the installation.

- C. Verification by Test and Demonstration: The Contractor shall verify by formal demonstrations or tests that the requirements of this Specification have been met. All tests shall be documented and report of results submitted to the Engineer.
- D. Test Verification Requirements: Paragraphs 1-3 below list specific requirements which shall be verified by formal demonstration/test. THE ENGINEER SHALL BE NOTIFIED IN WRITING THIRTY (30) DAYS IN ADVANCE OF ALL SYSTEM TESTS.
1. Factory Tests: Following factory engineering and assembly, the Contractor shall individually test each sensor and other components and verify the proper functioning of each component within a particular subsystem. Each subsystem shall be similarly tested until all detection zones, alarm assessment components, alarm reporting and display, and access control functions have been verified. Any deficiency pertaining to these requirements shall be corrected by the Contractor prior to shipment of the equipment to the project site.
 - a. After fabrication, assembly and programming of the security electronics systems, perform tests of the integrated security electronics system, including duress alarm, access control, intercommunication, intercom, video surveillance, operator interface, and miscellaneous controls, with all functioning as a single, integrated system. Factory testing is a major milestone that shall commence only after all shop assembly, system integration, and software development is complete. Completion of the Factory testing is required prior to shipment of any system equipment to the site for installation.
 - b. Each input and output point, operational sequence, touch screen display, operation of touch screen and control panel will be tested. Provide sample field devices, approved mock up devices and jumpers to simulate actual field operating conditions. In addition, simulated system failures, response time, boot up time and other tests will be conducted as directed.
 - c. Conduct tests in strict accordance with an approved test procedure. Demonstrate full compliance with the required operating modes and sequences of operation. Record test results on a report that shall include a list of all personnel witnessing the tests, test methods used, and a record of each specific test made.
 - d. The factory testing shall include all equipment and programming for the entire facility.
 - e. Provide air transportation, car rental and lodging for Three Owner Representatives (3) and Engineer (1) to witness factory testing.
 2. Preliminary Tests: Following installation, the Contractor shall individually test each sensor and other components and verify the proper functioning of each component within a particular subsystem. Each subsystem shall be similarly tested until all detection zones, alarm assessment components, alarm reporting and display, and access control functions have been verified. Any deficiency pertaining to these requirements shall be corrected by the Contractor prior to final functional and operational tests of the system. When subsystem verification is complete, the entire system shall be tested to assure that all elements are compatible and function properly as a complete system.
 3. Demonstration Upon Completion of Work: Upon successful completion of the System Validation Test, the Contractor shall schedule and request final completion demonstration and the Engineer notified. The request and notification shall include certification that the installation is complete and operable and has satisfactorily performed the final tests specified herein. The acceptance testing shall be accomplished in the company of the Engineer and the Owner's representative(s). The demonstration shall be structured so that all sensors and controls are stimulated directly in their installed and finally adjusted positions and all audible and visual displays, signals, alarms and other responses are demonstrated. A log of all demonstration activities and results shall be maintained by the Contractor. Original copies of this log shall be submitted to the Engineer within seven days of the demonstration.
- E. Upon successful completion of the Demonstration Upon Completion of Work, the electronic security systems will be considered as substantially complete.

- F. The Contractor shall carefully plan and coordinate the demonstrations so that all activities can be satisfactorily completed within twenty four (24) cumulative hours. The Contractor shall provide all necessary instruments, labor and materials required for demonstrations, the equipment manufacturer's technical representative, and qualified technicians in sufficient numbers to perform the demonstration within the time limits imposed by this Specification.
- G. In the event that the Engineer are required to witness a retest at a later date because the Contractor is not adequately prepared to conduct the acceptance tests or because the systems being tested have failed such tests, which shall be solely determined by the Architect, the costs of witnessing additional tests (based on time and expenses at the established rates of the Engineer) shall be borne exclusively by the Contractor. In such an event, a change order to the General Construction Contract will be executed for compensation of the Engineer witnessing the tests.

3.8 ADJUST AND CLEAN (SEE DIVISION 01)

- A. Inspect all equipment and put in good working order.
- B. Clean all exposed and concealed items.
- C. Touch up paint where finish is damaged to original color and texture.
- D. Clear debris from and vacuum clean the interior of all turrets, consoles, equipment cabinets and enclosures.

3.9 WIRING

- A. All wiring within equipment: Point to point with appropriate terminal block connections for each wire and component termination.
 - 1. All connections mechanically secure.
 - 2. All terminations on terminal blocks.
 - 3. All terminal strips labeled to match submittal documents.
- B. All cable and wire: As recommended by manufacturer of system, minimum as indicated in individual sections.
 - 1. Standard type available from multiple manufacturers.
 - 2. Replace cable determined to be inadequate for specified performance.
 - 3. All cable and wire shall be professionally labeled and tagged at each point of termination to match submittal documents.
- C. Provide all wire and cable and perform all terminations. Check each cable system for opens, shorts, faults, or other discontinuities.
- D. All wiring shall be color coded throughout.
- E. Install all cable in conduit in accordance with other sections of these specifications. Minimum conduit size shall be 3/4 inch trade size. Size all conduit such that cable, wire and/or tubes do not to exceed 40 percent fill.
- F. All wire and cables shall be installed continuous from field device to terminal point in equipment cabinet, enclosure or console. No splices or intermediate terminations will be allowed
- G. All cables specified herein are based on indoor “dry” applications unless noted otherwise. Where actual construction conditions require cable other than indoor “dry” applications, provide suitable cable to meet performance requirements of the systems for which they the cable is to be provided.

- H. All Ethernet cabling shall be terminated on a patch panel in equipment room locations and RJ-45 wall/surface jacks in field locations. Factory patch cords shall be used to connect the Ethernet backbone to individual devices. No hand crimped RJ-45 connections allowed on the end of home-run Ethernet cables.

3.10 OWNER PERSONNEL TRAINING (SEE DIVISION 01)

- A. Provide training of operations and maintenance staff.
 - 1. Training shall be structured and developed to ensure proper understanding of systems to allow effective operation and maintenance of all systems in this Division of work.
 - 2. All training shall be conducted by professionals that are certified by the system manufacturer for the applicable equipment, software and integration.
- B. Training shall be divided into multiple groups. Participants may attend multiple sessions.
 - 1. Control station operations
 - 2. System administration
 - 3. Maintenance
- C. Conduct three (3) sessions for operational staff of duration of no less than 8 hours each.
- D. Conduct training sessions for maintenance staff, consisting of not less than three (3) sessions of eight (8) hours. Maintenance staff shall participate in operational staff training prior to maintenance training.
- E. Training shall be provided in a classroom environment at the facility and utilize installed equipment and systems to demonstrate operations and maintenance techniques.
- F. Provide digital video recording of all training on flash drives (FD). Furnish four (4) copies of each FD to owner with four (4) spare training manuals of each type. Provide electronic copies of training manuals in .pdf format. Provide four (4) FD copies of training manuals. FD media shall not be copy protected.
 - 1. Selected training shall be pre-recorded on FD in a classroom environment at the office of the integrator.
 - 2. Upon completion of the training at the project site, the Integrator shall update the training presentation based on feedback from the on-site training sessions and prepare final training /FD for the facility.
- G. No later than 120 days prior to anticipated initiation of training, the Integrator shall develop an outline of all training to be presented. The facility security administration will subsequently identify staff to participate in the training program. Based on this information the integrator shall prepare sufficient copies of training material to accommodate each participant.
 - A. The electronic security integrator/contractor shall arrange and pay for factory training of two (2) owner electronics technicians for selected systems (including travel expenses). Factory training does not replace required on-site contractor training.
 - 1. Digital Intercom and Paging System: Section 284630
 - a. Programming
 - b. Maintenance
 - 2. Electronic Control System: Section 284619
 - a. Programming
 - b. Maintenance
 - B. Submittal of Training Documents:
 - 1. List of Trainers including copy of certification by the system manufacturers. (minimum 120 days prior to scheduled training session)
 - a. Electronic Control System: Section 284619
 - b. Touch Screen Control and Management System: Section 284623

- c. Digital Intercom and Paging System: Section 285123
2. Training outline and attendee sign up lists (minimum 120 days prior to scheduled training session).
 3. Training manual(s); one for each training group.(minimum 30 days prior to scheduled training session).
 4. Prerecorded training demonstration FD: one for each training group (minimum 30 days prior to scheduled training session).

END OF SECTION 280510

SECTION 280555 - CABINETS AND ENCLOSURES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. General:
1. Furnish all labor, materials, tools, equipment, and services for all cabinets and enclosures as indicated in accordance with provisions of Contract Documents.
 2. Completely coordinate with work of all other trades.
 3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
 4. See Division 1 for General Requirements.
- B. Related work specified elsewhere:
1. Common Work Results for Electronic Security: Section 280510
 2. Electronic Control System: Section 284619
 3. Touch Screen Control and Management System: Section 284623
 4. Digital Intercom and Paging System: Section 285123

1.2 BASIS OF DESIGN

- A. Cabinets and enclosures are provided for the protection and security of the equipment contained therein.
- B. All interior and exterior cabinets and enclosures to accept Best cylinders and small format key cores. Best cores will be provided by the owner.
- C. All cabinets and enclosures shall be rated for the environment in which they are installed unless noted otherwise.
1. Type 1: Indoor use primarily to provide protection against contact with the enclosed equipment and against a limited amount of falling dirt.
 2. Type 3: Outdoor use to provide a degree of protection against windblown dust and windblown rain; undamaged by the formation of ice on the enclosure.
 3. Type 3R: Outdoor use to provide a degree of protection against windblown rain; undamaged by the formation of ice on the enclosure.
 4. Type 4: Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure.
 5. Type 4X: Either indoor or outdoor use to provide a degree of protection against falling rain, splashing water, and hose-directed water; undamaged by the formation of ice on the enclosure, resists corrosion.
 6. Type 12: Indoor use to provide a degree of protection against dust, dirt, fiber flyings, dripping water, and condensation of non-corrosive liquids.

1.3 QUALITY ASSURANCE (SEE SECTION 28 0510)

- A. Refer to NEC 312 for requirements associated with cabinets and enclosures.

1.4 SUBMITTALS (SEE SECTION 280510)

- A. Cabinets and Enclosures:
 - 1. Project data: Layouts of all electronic equipment rooms including floor plans and wall elevations. NEC required working clearances shall be identified.
 - 2. Shop drawings: Assembly drawings of each control console arrangement including plan view, elevations, and sections.
 - 3. Product data: Technical data sheets and specifications for each component.
 - 4. Test results: Cabinet and enclosure temperatures.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Acceptable manufacturers:
 - 1. Enclosures and cabinets:
 - a. Atlas Soundolier; www.atlassound.com
 - b. Hoffman; www.hoffmanonline.com
 - c. Middle Atlantic Products, Inc.; www.middleatlantic.com
 - d. Panduit, INC; <https://www.panduit.com>
 - e. Winsted; www.winsted.com
 - f. Or equal
 - 2. Other manufacturers desiring approval comply with Division 01.

2.2 EQUIPMENT CABINETS

- A. Cabinets:
 - 1. Cold rolled steel units, 12 GA angles, 14 GA posts, 16 GA molding and braces.
 - 2. Doors: 16 GA flush mount; plain or louvered, flush pulls.
 - 3. Panels: 16 GA flush mount; plain or louvered, quick removal.
 - 4. Tall floor mounted units:
 - a. Door control, Video Equipment and Network Patching Cabinets: Nominal 30 inches deep; 30 inches wide; 72 to 90 inches height; 24 inch EIA rack mounting frames. A manufacturer spacer section may be used on 24 inch wide units to obtain the additional wire/cable management space provided by this 30" inch wide requirement.
 - b. Intercom and Paging Equipment Cabinets: Nominal 30 inches deep; 24 inches wide; 72 to 90 inches height; 19 inch EIA rack mounting frames.
 - 5. Provide flush full front door with key lock on all cabinets.
 - 6. Provide flush full louvered rear door with key lock on cabinets with rear access. Provide flush full louvered panel on cabinets without access.
 - 7. Provide ventilation grille at base of unit.
 - 8. Provide ventilation fan where indicated on drawings or required to maintain manufacturer recommended equipment temperatures.
 - 9. Provide square side panels for all base cabinets.
 - 10. Provide 20A rated electrical power strip mounted in rear of cabinet to power 120 volt equipment. Where plug in power supplies are to be installed, install tie wrap around power supply and plug strip to prevent power supply from being accidentally removed.
 - 11. Provide blank plates by manufacturer to provide closure on all unused sections of units.
 - 12. Finish: textured enamel from manufacturer's standard colors as selected by architect.
 - 13. Middle Atlantic DRK/WRK Series, or equal

- B. Provide 19” roll out rotating system in steel host enclosure for the cabinets without access from the rear side of the cabinets (cabinet against wall). Rotating design of rack allows enhanced access to rear equipment connections, simplifying wiring. Equipment and cable weight limitations must be observed.
 - 1. Middle Atlantic WR Series, or equal.
- C. Provide 120VAC heavy duty, ball bearing, 100CFM minimum rear door or top mounted ventilation fan units where indicated on drawings or where required to maintain manufacturer recommended equipment temperatures. Install digital readout temperature gauge in each enclosure containing active electronic components. Position the temperature gauge’s thermostat wire away from ventilation fan, near the center of the enclosure to sense average ambient temperature. Test equipment for hot spots using digital IR thermometer to locate the ideal mounting location of the thermostat wire. Provide high temperature alarm contact and connect to electronic control system for annunciation on touch screen display.
 - 1. Ventilation fan unit: Lowell FW Series (or equivalent depending on manufacturer)
 - 2. Temperature gauge with thermostat: Johnson Controls A421 Series control and sensor
- D. Furnish door alarm contact switch on each door where cabinets are installed in spaces other than dedicated electronic security equipment rooms. Connect wiring to electronic control system for annunciation on designated control panel or touch screen display.

2.3 EQUIPMENT ENCLOSURES

- A. Provide wall mounted equipment enclosures where indicated on drawings.
- B. Equipment enclosures shall be shall be provided with hinged door and key lock.
- C. Furnish door alarm contact switch where enclosures are installed in spaces other than dedicated electronic security equipment rooms. Connect wiring to electronic control system for annunciation on designated control panel or touch screen display.
- D. Provide 115VAC ball bearing enclosure fans and intake vents where indicated on drawings or where required to maintain manufacturer recommended equipment temperatures. Install digital readout temperature gauge in each enclosure containing active electronic components. Position the temperature gauge’s thermostat wire away from ventilation fan, near the center of the enclosure to sense average ambient temperature. Test equipment for hot spots using digital IR thermometer to locate the ideal mounting location of the thermostat wire. Provide high temperature alarm contact and connect to electronic control system for annunciation on touch screen display.
 - 1. Ventilation fan unit: Hoffman HF Series (or equivalent depending on manufacturer)
 - 2. Temperature gauge with thermostat: Johnson Controls A421 Series control and sensor

2.4 WORKSTATION PC LOCKING ENCLOSURE WITH FORCED VENTILATION

- A. Where noted on drawings, provide a lockable, forced ventilation, steel PC enclosure for each workstation. PC Keyboards shall remain locked in enclosure as well. Position enclosures so that intake vents and exhaust fans are not blocked. More than one PC may be located in the same enclosure if size and space available floor allow. Ensure sufficient quantity of fans are installed to maintain temperatures below the threshold. Fans shall be 115VAC ball bearing fans and not USB powered.
 - 1. Mier Products: BW-2XX Series, or equal.

2.5 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, wire ways, 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 mounting rails as required for all equipment. Where applications of equipment with extended depth occur (i.e. UPS), provide internal mounting rails sufficient to allow doors to close, without contact with equipment and/or cabling.

2.6 SPARE PARTS (SEE SECTION 280500)

- A. Deliver spare parts in protective wrapping and packaging for proper storage.
- B. Provide the following spare parts:
 - 1. Fan unit: one (1) of each type
 - 2. Thermostat Sensor: one (1) of each type

PART 3 - EXECUTION

3.1 INSTALLATION (SEE SECTION 280510)

- A. All equipment shall be mounted in cabinets and enclosures so as to provide ready accessibility for equipment and termination. All cabinets and enclosures shall be located to provide working clearance in front of accessible equipment as required by the National Electrical Code.

- B. Provide wire/cable management throughout cabinets and enclosures. All wire/cable shall be physically supported within six (6) inches of termination.
- C. Bracing: Brace or anchor all free-standing cabinets using Unistrut or other approved method to building structure.
- D. Painting: Touch up all welds, scrapes and other mars in the enclosure finish with a rust inhibiting paint.

END OF SECTION 280555

SECTION 284619 - ELECTRONIC SECURITY CONTROL SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. General:

1. Furnish all labor, materials, tools, equipment, and services for all electronic control systems as indicated in accordance with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
4. See Division 01 for General Requirements.

B. Related work:

- | | |
|---|----------------|
| 1. Common Work Results for Electronic Security: | Section 280510 |
| 2. Cabinets and Enclosures: | Section 280555 |
| 3. Touch Screen Control and Management System: | Section 284623 |
| 4. Digital Intercom and Paging System: | Section 285123 |

1.2 BASIS OF DESIGN

- A. The electronic security system described within the specifications and drawings shall function as an integrated system. The control and monitoring stations shall function as a single control point, appearing to function as a single system. Although the system is made up of several sub- systems, they shall be integrated in both physical and electronic manner to achieve a single system presentation to the operator.
- B. The electronic control system is the central point of the integrated system. It performs all the logic and switching functions for the system as it communicates discreetly or through data interfaces to control stations, field devices (i.e. locks, intercoms, lights, power) and related systems. The system is made up of a single Programmable Logic Controller (PLC) connected to a network (ECSN).
- C. The touch screen control stations will generate commands to the ECS and receive status from the ECS. Communication between the touch screen control stations and the ECS shall be via the security network (ECSN).
- D. Interface between Digital Video Management System and ECS shall be provided. Video images shall be displayed, and video recorded on the basis of selected alarms (i.e. intercom acknowledge, door alarms, motion detection, duress alarms, etc.)
- E. Control of devices such as detention area lights, and power receptacles, etc. shall be control via electronic security control system using data interface between the security system and other trades.
- F. The electronic security system shall communicate over new 10G network that will use fiber optic backbone (single mode fiber) for data communication between all security equipment rooms.
- G. **All electronic security system programming and software integration between door control, intercom and paging system, access control system, video management system and any other systems listed in the construction documents shall be done by CML Security (per Collin County Commissioners Court Order, CO 2020-388-05-11).**

- H. The electronic control system is the central point of the integrated system. It performs all the logic and switching functions for the system as it communicates discreetly or through data interfaces to control stations, field devices (i.e. locks, lights, power), and related systems. The system is made up of several Programmable Logic Controllers (PLC) connected to a network (ECSN).
 - 1. The touch screen control stations will generate commands to the ECS and receive status from the ECS. Communication between the touch screen control stations and the ECS shall be via the security network (ECSN).
 - 2. Interface between Digital Video Management System and ECS shall be provided. Video images shall be displayed, and video recorded on the basis of selected alarms (i.e. intercom acknowledge, door alarms, motion detection, duress alarms, etc.)
 - 3. Provide Data interface using standard industry protocol for data communication (e.g. BACnet) between electronic security system and control systems provided by Div 26 contractor such as detention area lighting control and power receptacles.
 - 4. Miscellaneous devices (i.e. motion detectors, call buttons, duress buttons, etc.) shall be configured as inputs to the ECS with status displayed on the touch screen control stations.

1.3 SUBMITTALS (SEE SECTION 280510)

- A. Electronic Control System: Section 284619.
 - 1. Project data: Description of system operation indicating purpose and capabilities of each component of system with functional system diagram indicating all interfaces to other systems. Description shall include, and call attention to, all variances from the contract documents. Supply a sample of each maintenance report.
 - 2. Certification: Submit written certification that control wiring and locking control have been coordinated with security hardware. No submittal review will be conducted until receipt of certification. Certification letter shall read as follows:
 - a. "(Manufacturer/Supplier name) has reviewed all electrical characteristics and control wiring requirements of all electric operated security devices, i.e., electric locks, position switches, door operators to be installed in this project and has incorporated all modifications and revisions required to provide a completely coordinated and functional control system."
 - 3. Shop drawings: Complete installation drawings including system diagrams and terminal point to terminal point wiring diagrams or schedules
 - 4. Product data: Technical data sheets and specifications for each component.
 - 5. Power supply distribution and load calculations.
 - 6. Testing: Test reports of fiber optic cable installation.

PART 2 - PRODUCTS

- A. Acceptable manufacturers:
 - 1. ECSN Networking products (Managed Gigabit Series)
 - a. Base: Hirschmann (Belden), Phoenix Contact, N-Tron (Red Lion)
 - 2. Programmable Logic Controller (PLC).
 - a. Base: Omron NX (TO MATCH PHASE 1 AND 2)
 - 3. Power Supplies:
 - a. Class 1: Omron, Allen Bradley, Power One, Emerson Sola, Phoenix Contact, IDEC
 - b. Class 2: Omron, Allen Bradley, Power One, Emerson Sola, Phoenix Contact, IDEC
 - 4. Relays:
 - a. Base: Omron, Schrack, Allen Bradley, General Electric, Potter & Brumfield, Magnecraft, IDEC, Phoenix Contact, Finder
 - b. Lock interposing relays must be rated for 10A minimum and provide modular MOV insert.
 - 5. Other manufacturers desiring approval comply with Division 01.
- B. Systems:

1. Provide complete coordinated systems for operation, monitoring and control of systems as indicated on drawings and specifications.
2. Include push-to-test function for lamp test on each panel. Provide circuitry as required for protection of all components.
3. Provide all wire, cable, terminal blocks, and fittings.
4. Provide terminal strips or connectorized plugs for connection of all incoming field wiring.
5. All low voltage wiring in consoles shall be Class 1 or Class 2 power limited circuitry in strict accordance with NEC Article 725 except power cords for amplifiers, monitors, etc. Maintain separation of conductors as required.
6. Provide wire restraint and bundling to prevent strain on devices.
7. Terminate all wiring on terminal blocks for connection to field wiring. Label all terminal strips to coordinate with installation drawings.
8. Wiring system shall be Class 1 for both control and indication. Maintain separation of conductors per NEC Article 725.
9. Wiring and diagrams shown on drawings are provided for logic description only. Verify and install all wiring from approved shop drawings and installation drawings from manufacturers.
10. The interaction time between system input at the control station and the activation of a field device shall not exceed 0.5 second. Similarly, the interaction time between field input device and display on the control station shall not exceed 0.5 second. For group operations such as emergency release and group unlock, the interaction time between system input at the control station and the activation of the last field device of a group shall not exceed ten (10) seconds.

2.2 ELECTRONIC CONTROL SYSTEM NETWORK (ECSN)

- A. The Electronic Control System Network (ECSN) shall be made up of multiple PLC's and CPUs of other systems in a distributed processing system. Multiple PLCs shall be connected to the ECSN for intercommunications among all PLCs in the system and interface to Touch Screen stations (TS), Administration Station (ADS), File Server (FS), Facility Monitor Station and other related integrated system CPUs.
- B. The ECSN shall be a high speed, fault tolerant, Ethernet industrial data communications system. The interaction time between system input at the control station and the activation of a field device shall not exceed 0.5 second. Similarly, the interaction time between field input device and display on the control station or interface shall not exceed 0.5 second. For group operations such as emergency release and group unlock, the interaction time between system input at control location and the activation of the last field device of a group shall not exceed ten (10) seconds.
- C. The ECSN shall be Ethernet based network in compliance with IEEE 802.3. Connections to PLCs and touch screen stations shall be Category 6 copper cable.
 1. Network Switches shall be of heavy-duty design with fault tolerance by means of redundant power supplies. Switches shall consist of 1000 Mbps backplane with multiple 100BaseT ports for connection to PLCs and 1000 Mbps port for connection to other integrated system CPUs. LED indicators shall be provided for each port to include power, data, collision, link status. Contacts for remote alarm reporting shall be provided for such fault messages. Contacts for remote alarm reporting shall be displayed as a system alarm on the touch screen control and management system.
 2. Industrial Grade Network Switches:
 - a. Network switches shall allow the use of fiber, copper or hybrid modules containing Ethernet ports.
 - b. Network switches shall be expandable to 24 interface ports to meet network requirements.
 - c. All network switches interfaces shall be capable of automatic detection of 1000 Mbps data transmission rates.
 - d. Network switches shall be configurable via web-based management, SNMP or Telnet or locally.
 - e. Model:
 - 1) CISCO

3. The ECSN shall include connections to each PLC, TS, ADS/FS, and other integrated system CPUs. The ECSN shall be a physically separate network, connecting to other systems on separate VLANs such as the digital intercom system or IP CCTV system through servers or copper Ethernet connections.
4. Connect to indicator contacts (NC) on each network switch for remote trouble annunciation to Touch Screen Control and Management System.

2.3 PROGRAMMABLE LOGIC CONTROLLER (PLC)

- A. The Programmable Logic Controller shall be general purpose in nature and not custom designed for specific application. The PLC shall become location and operation specific upon installation of input/output modules and programming. The PLC shall be a standard product of a single manufacturer engaged in production of PLC's for industrial applications for a minimum of ten (10) years.
- B. Environmental ratings for all components of the PLC system, except programming equipment, shall meet or exceed the following requirements:
 1. Ambient Temperature rating of 32 to 140 F operational and -4 to 158 F storage.
 2. Humidity rating of 10% to 90% Relative Humidity (non-condensing).
 3. All system modules shall be designed so as to provide for free airflow convection cooling. No internal fans or other means of cooling except heat sinks shall be required
- C. The PLC shall meet the following standards: UL Listed, CSA Certified, and CE.
- D. The PLC system shall have been designed and tested to operate in an industrial environment.
- E. The PLC and I/O modules shall be of modular and rack mounted construction.
- F. The system power supplies shall be protected against short circuits.
- G. The PLC system shall be designed so that each control area operates totally independent of one another. Failure or loss of a controller shall not hamper the operation of any other controller.
- H. Programmable controller manufacturer must guarantee the availability of replacement/spare parts for a minimum of ten (10) years.
- I. All I/O modules and housings must be of a standard type and fully interchangeable with previous PLC series.
- J. All controllers and I/O structures of a single manufacturer shall be capable of being mounted on the same size fixing centers to allow for larger capacity controllers to be installed in the future should the facility require an expansion beyond the limits specified in the original contract documents.
- K. Controllers must be capable of driving local I/O racks, where local is defined as up to one hundred (100) feet from the control unit, without the need for further intelligent interface modules.
- L. Each PLC shall control all input/output functions of the control stations and associated remote devices for the area served. Each PLC shall provide interface between the control stations and related systems. Each PLC shall be furnished with sufficient processor capacity and memory to meet or exceed interaction time as specified.
- M. Racking System: Provide assembly with mounting slots for all modules required for electronic control system. Assembly shall include latching clamps or hold-down screws to secure modules in slots, dead front cover for covering I/O wiring terminals, and wire routing clips.
 1. Where multiple racks are required, provide bus expander unit to expand I/O capacity.

2. Input and output modules shall be available in 16, 32, 64, and 96 points per unit. The 32, 64, and 96-point units shall not be multiplexed I/O and shall have a thumbscrew secured, high density connector capable of accepting individual soldered or crimped connector pins or ribbon cable via IDC type connector configuration.
 3. Provide rack system power supply as required for final system configuration.
 4. Provide 20% spare input and 20% spare output capacity in each rack assembly.
- N. Processor: Provide processor module for installation in rack assembly. Processor shall include comprehensive self-test and self-diagnostic capabilities with dry contacts for remote monitoring in the event of controller fault.
1. Provide instruction set for control of quantity of input and output points as required by contract documents.
 2. This project requires a minimum of two (2) processors – minimum one CPU per equipment room plus spares as indicated.
 3. Provide real time clock with accuracy within 1 second per day at 25 degrees C, 16 seconds per day over full temperature and humidity range.
 4. Provide basic control logic instructions including but not limited to the following functions to provide operating features required by contract documents.
 - a. Logical AND, OR, XOR AND INVERT
 - b. On/Off Delay
 - c. Counters
 - d. Timers
 - e. Sequencers
 - f. Four Function Math (Add, Subtract, Multiply, Divide)
 - g. BCD Input and Output
 - h. Contacts
 - i. Coils
 - j. Block Instructions (conditional jumps)
 - k. Group Logic Functions
 - l. Array Math Functions
 5. Provide memory capacity for control system as required by contract documents. Include a minimum of 20% spare memory capacity. Install lithium battery for memory support in the event of power failure.
 6. System software shall be stored in EPROM. The operating software and fixed data base shall be stored in battery backed RAM.
 7. Provide system trouble output contact for monitoring. Output shall occur upon any of the following conditions:
 - a. Low battery
 - b. Processor trouble
 - c. Rack system trouble
 - d. Enclosure open
 - e. Power supply trouble
- O. Input/Output Modules: Provide digital or analog input/output modules as required for control system and field device connected. Modules shall plug in to rack assembly and contain 32 or 64 optically isolated inputs or outputs.
1. Provide red LED's indicators for "on" function.
 2. Modules shall be 12-24 VDC for interface to electronic relay control.
- P. Network Interface Modules: Provide module in each PLC for communications on the Ethernet ECSN.
- Q. Communication Modules: Provide capability of driving local I/O, where local is defined as up to one hundred (100) feet from the control unit, without the need for further intelligent interface modules or additional power supplies.

- R. Rack Power Supply: Provide DC power supply to rack assembly to power all modules mounted in the rack. Connect to rack with power supply cable.
 - 1. Include battery backup power to maintain random access memory (RAM) in the processor during power outages or power shutdown for a period of up to twelve (12) months.

2.4 PROGRAMMING

- A. Programming of electronic control system shall be via the network. The programming software may reside on the Administrative Station of the Touch Screen Control and Management System, or provide a separate and dedicated computer for such purpose.
- B. Provide software support for the Programmable Logic Controllers. Include capability for the following minimum functions:
 - 1. Password security.
 - 2. On-line program development and monitoring.
 - 3. Enter PID loop programming parameters
 - 4. Screen prompted processor programming instructions.
 - 5. Off-line processor program development.
 - 6. Copy all or part of off-line memory to processor memory and vice versa.
 - 7. Processor programming and monitoring by I/O labels.
 - 8. Advanced processor I/O diagnostics using TIME SCAN function.
 - 9. Coil verify capability.
 - 10. Annotated program documentation, with 18 character I/O labels and full page rung comments.
- C. Report generation: Provide programming as required to meet requirements of Section 284623: Touch Screen Control and Management System

2.5 SYSTEM CONTROL AND MONITORING FUNCTIONS

- A. Single Swing Door Lock with no-holdback feature requires continuous input to maintain unlocked.
 - 1. Control: Output unlock command causes door to unlock. Door will relock upon release of command
 - 2. Indication: Non-secure condition of door from lock bolt position or door position switch will open the input circuit.
- B. Single Swing Door Lock with no-holdback feature requiring momentary input.
 - 1. Control: Output unlock command causes door to unlock. Lock bolt is held electrically retracted for a preset period of time (set at 3 seconds).
 - 2. Indication: Non-secure condition of door from lock bolt position or door position switch open the input circuit.
- C. Single Swing Door Lock with mechanical holdback (standard lock configuration).
 - 1. Control: Output unlock command causes door to unlock. Lock bolt is held mechanically retracted until door is opened. Door relocks when door is reclosed.
 - 2. Indication: Non-secure condition of door from lock bolt position or door position switch will open input circuit.
- D. Electric Sliding Door/Overhead Gate
 - 1. Control: Output OPEN command shall cause the door/gate to open until limit switch is opened or a STOP or CLOSE output command is received. Output CLOSE command shall cause the door/gate to close until limit switch is opened or an OPEN or STOP output command received.
 - 2. Card Reader Control:

- a. At controlled and monitored sliding doors, presentation of a valid card shall cause door to open to a full open position, pause for one second and then recluse.
- b. When door is in an open position (not secure), presentation of a valid card shall cause the door to pause for one second and close.
3. Indication: Non-secure condition of door/gate from limit switch or door position switch will open input circuit.

E. Door Monitor

1. Control: None.
2. Indication: Non-secure condition of door from lock bolt position or door position switch shall illuminate a red LED.

F. Door Alarms:

1. Door prop: Controlled/monitored door remains unsecured longer than the preset timer
2. Unauthorized Access: Controlled/monitored door becomes unsecured by means other than the control system.
 - a. Unauthorized Access alarms shall be programmed with a delay to prevent false alarm from a door bounce effect.

G. Interlock Override

1. Control: Output INTERLOCK OVERRIDE command shall allow door to unlock/open despite part of interlock group.
2. Indication: None.

H. Intercom or Paging

1. Control: Output AUDIO command causes previous audio command to be canceled (if necessary), zone select and audio “Listen” to be activated.
2. Indication: Input from local intercom call push button initiates call request.

I. Intercom Call

1. Control: Reset of call via Alarm Silence and Alarm Reset functions.
2. Indication: Input from local intercom call push button initiates call request.

J. System Alarm: All system alarms shall be connected to NC contacts where provided.

1. Control: Reset of alarm via Alarm Silence and Alarm Reset functions.

2.6 RELAY INTERFACE

A. Provide relay interface between control system and all controlled devices.

1. Wire Connections: Wires shall be attached to the relays by means of cable-clamping terminal block activated by a screw. Connections shall be gas-tight and the terminal block shall be fabricated of non-ferrous, non-corrosive materials.
2. Equipment: relays shall include an integrated label holder that can be used to mark the device. Relays shall have indication of operation by way of an LED (Light Emitting Diode). Relays shall incorporate a free-wheeling diode to eliminate inductive kick-back. Isolation voltage of 4000 kV, 50 Hz, 1 minute shall be provided between input and output.
3. Provide current overload protection, surge suppression, LED indication of status, and troubleshooting features.
4. Relays: Electro-mechanical type, single or double pole, double throw.
 - a. Current rating: 125% of inrush current rating of device controlled, but not less than 10 amps. Rating for pneumatic lock relays not less than 3 amps.
 - b. Coil Voltage: 24 VDC or as required by application.
 - c. Contact voltage: 24 VDC or 120 VAC as required for application.
 - d. Isolation: 2500 VAC.

5. Provide surge protection on load side of each relay connected to a locking device, from normally open contact to ground
 6. Provide individual overcurrent protection (fuse, circuit breaker) for each relay serving an electro-mechanical locking device to protect relay and system circuitry from a short circuit failure at the lock.
 7. Where relay systems are made up of modular components for DIN rail mounting, all wiring points and plug connections shall be “touch safe” with no live voltages in accordance with IEC 529.
 - a. Mounting: all relays shall have integral mounting brackets to attach to 35mm DIN-rail conforming to DIN EN50022.
 - b. Wire Connections: wires shall be attached to the relays by means of cable-clamping terminal block activated by a screw. Connections shall be gas-tight and the terminal block shall be fabricated of non-ferrous, non-corrosive materials.
 - c. Equipment: relays shall include an integrated label holder that can be used to mark the device. Relays shall have indication of operation by way of an LED (Light Emitting Diode). Relays shall incorporate a free-wheeling diode to eliminate inductive kick-back. Isolation voltage of 4000 kV, 50 Hz, 1 minute shall be provided between input and output.
- B. Provide Data interface using standard industry protocol for data communication (e.g. BACfnet) between electronic security system and control systems provided by Div 26 contractor such as detention area lighting control, power receptacles, etc. For the relay schedule refer to “E” series of drawings.
1. Controlled circuits include:
 - a. Lights
 - 1) Dayroom (overhead, walkway)
 - 2) Cells
 - 3) Recreation/Exercise
 - b. Power receptacles
 - 1) Per Dayroom
- C. Label all relays and terminations with designations to match installation and maintenance drawings.

2.7 ENCLOSURES (SEE SECTION 280555)

- A. Where new enclosures are required, install all components of control system in NEMA enclosures with hinged doors(s), handle and key lock. All enclosures keyed alike. Coordinate any new enclosure locations with owner.
- B. Install engraved nameplate on each enclosure with system designation.
- C. Provide door switch for alarm input to electronic control system where required.

2.8 WIRE AND CABLE

- A. All Class 1 wiring shall be building wire of type specified in Division 26 work. Provide overcurrent protection for conductors in accordance with NEC. Minimum sizes as follows:
 1. Indication: 18 GA minimum.
 2. Control: 14 GA minimum.
- B. All Class 2 wiring may be single conductor or multiple conductor cables. Conductors to be stranded type tinned copper, 22 GA minimum, PVC insulated.
- C. Wire for new, low voltage electro-mechanical locks shall be in sized to provide rated voltage at lock. Voltage-drop calculations based on actual estimated distance, lock voltage and current will supersede

these minimums. Provide appropriately sized terminal blocks and relays for the wire gauge utilized. Minimum wire size for 24VDC locks shall be as follows.

1. Less than or equal to 200 feet of wire from power supply to lock: 14 gauge.
 2. More than 200 feet and less than or equal to 360 feet of wire from power supply to lock: 12 gauge.
 3. More than 360 feet and less than or equal to 570 feet of wire from power supply to lock: 10 gauge.
- D. Data cable for Ethernet connections shall be Category 6. Limit cable lengths to 300 feet maximum.
1. Data Cable: Unshielded 4-pair, shall exceed all requirements for ANSI/EIA/TIA-568-A-5 and support high speed communication network applications.
 - a. Category 6:
 - 1) Belden: 7881A – Dry, 7940A - Wet
 - 2) West Penn: 4246 – Dry, M58772 – Wet
 - 3) Commscope: CS37R – Dry, CS340 – Wet

2.9 POWER SUPPLY (SEE SECTION 285045)

- A. Provide power supplies as required for control and indication functions. Power supplies shall conform to requirements of NEC Article 725. Provide overcurrent protection of primary and distribute secondary overcurrent protection for secondary wiring circuits.
1. Class 1 power supplies shall be provided with overcurrent protection as required by NEC Article 725. Provide overcurrent protection for all conductors in accordance with ampere rating. Minimum conductor size served by a Class 1 power supply shall be 18 GA.
 2. Class 2 power supplies shall be power limited and/or overcurrent protected in accordance with NEC Article 725. Nameplate rating of power supply shall not exceed limits indicated in NEC Article 725. Minimum conductor size served by a Class 2 power supply shall be 22 GA.
- B. Power supply selection:
1. Load on power supplies shall not exceed 90 percent of nameplate rating of power supply.
 2. Size power supplies for nameplate ratings of each connected device and equipment item connected.
 3. Power supplies for 24 VDC locks shall be provide in sufficient quantity for simultaneous emergency release of multiple cell doors within a Housing Unit/Dayroom which allows all cells to be unlocked in a time delay sequence and held unlocked within 10 seconds in an emergency. Provide a minimum of one power supply for the lesser of each 32 locks or each dayroom, though final quantity must be based on lock power supply calculations.
- C. Power Supplies shall be fully enclosed and provide screw terminations for wires. Wires shall be attached by means of a cable-clamping terminal block. Connections shall be gas-tight and the terminal block shall be fabricated of non-ferrous, non-corrosive materials.
- D. All wiring points and plug connections shall be “touch safe” in accordance with IEC 529. Housings shall be fully enclosed with a rating of at least NEMA1.
- E. All power supplies shall have integral metal mounting feet to attach to 35mm DIN-rail conforming to DIN EN 50022.
- F. Power Supplies shall conform to CE electromagnetic compatibility as described in EN50081-1 and EN 50082-2.
- G. Power supplies shall be capable of being run in parallel mode without external circuitry to prevent load competing.
- H. Power Source (120 VAC) for equipment shall be provided by Division 26. Provide terminals for all incoming circuits provided. Distribute load equally among all circuits provided.

- I. Where groups of doors are operated with a single action, divide doors into sub-groups of eight doors or less and provide time delay between each sub-group.

2.10 SPARE PARTS (SEE SECTION 280510)

- A. Deliver spare parts in protective wrapping and packaging for proper storage.
- B. Provide the following spare parts.
 1. Programmable Logic Controller:
 - a. Processors, Hot Swappable Fully programmed: one of each type (1).
 2. Relays: Fifty of each type used (50)
 3. Fuses: Fifty of each type used (50)
 4. PLC Power supply: Two (2) of each type used
 5. Power supply: Two (2) of each type used
 6. ECSN Switch SFP: One (1) of each type used

PART 3 - EXECUTION

3.1 INSTALLATION (SEE SECTION 280510)

- A. Provide direct supervision of installation of electronic control system at project site.
- B. Clean area to receive electronic control system prior to installation.
- C. Connect all field wiring to terminal blocks provided. Verify all labeling and coordinate with record documents.

3.2 TESTING (SEE SECTION 280510)

- A. Testing Specifications for each fiber optic cable:
 1. All of the following test shall be performed on each fiber in each cable installed and each test results shall be provided in written form
 2. End to end attenuation test with power meter. Maximum attenuation on installed cables / fibers shall be within the manufacturer's specifications.
- B. The testing of both windows of each fiber optic cable.
 1. If splicing of a fiber optic cable is required due to site conditions, each fiber in the associated cable shall be tested using an Optical Time Division Reflectometer (OTDR). All testing information and locations of each splice shall be in written form and provided with the as-build documents. The following items must be tested on each fiber associated with a splice.
 - a. Test each strand on one wavelength in one direction on each segment, no jumper allowed, and document.
 - b. Test for overall continuity and document.
 - c. Verify the length of each segment and document.
 - d. Locate and indicate all splices on drawings.

3.3 WIRING (SEE SECTION 280510)

- A. Within consoles: point-to-point with appropriate terminal connections for every wire and component termination.

1. All connections mechanically secure.
2. All wiring and terminals clearly identified to facilitate connection of field wiring.
3. Field wiring shall be terminated on IEC style terminal blocks capable of being mounted on 35mm rail conforming to EN 50022.
4. Terminal blocks shall be “touch safe” in accordance of IEC 529 where no live voltage can make contact with a misplaced finger.
5. Terminal blocks shall be capable of being installed side by side, with no gap or air space required for heat dissipation.
6. Terminal block metal parts shall be made of a non-corrosive material.

B. All cable and wire within console to be standard type available from multiple manufacturers.

C. All electrically operated locks and locking devices shall be grounded. Provide green ground conductor. Connect to ground conductor or ground lug at lock or lock device. If a conductor or lug is not provided with the lock or locking device, install a ground lug on the lock case and connect to ground.

D. Wiring shall be installed in strict accordance with NEC Article 725.

3.4 OWNER PERSONNEL TRAINING (SEE SECTION 280510)

A. Provide training of owner personnel in proper operation and maintenance of electronic control systems.

B. Training Outline-Maintenance Staff

1. Systems Operation
2. Component Review
3. Routine Maintenance/Adjustments
4. Troubleshooting/Repair
5. Expansion Capabilities
6. Software Overview

END OF SECTION 284619

SECTION 284623 - TOUCH SCREEN CONTROL AND MANAGEMENT SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. General:

1. Furnish all labor, materials, tools, equipment, and services for a touch screen control and management system as indicated in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
4. See Division 01 for General Requirements.

B. Related work specified elsewhere:

- | | |
|---|----------------|
| 1. Common Work Results for Electronic Security: | Section 280510 |
| 2. Cabinets and Enclosures: | Section 280555 |
| 3. Electronic Control System: | Section 284619 |
| 4. Digital Intercom and Paging System: | Section 285123 |

1.2 BASIS OF DESIGN

- A. Touch screen control and management system shall provide the means to control and monitor all security devices in the facility via the electronic control system. Additionally, it shall provide archiving of events to a database with ability to generate reports from that database.
- B. The system shall consist of multiple new Touch Screen Control Stations, an Administration Station/File Server, and a report printer. The touch screen control stations, the administration station/file server shall be connected to an Ethernet network for communications and control.
- C. Touch screen control and management system shall provide the means to control and monitor all security devices in the expansion part of the facility via the electronic control system. Additionally, it shall provide archiving events to a database with the ability to generate reports from that database. The touch screen control system shall be configured to allow control transfer between all stations so that any touch screen station in the expanded part of the facility (Existing ADF, Phase 1 and Phase 2) shall be able to control and monitor entire facility (Existing ADF, Phase 1 and Phase 2 areas). Three (3) touch screen control stations in the Central Control Room (Room#109) and one in the Cluster Control Room (Room# 2011) shall be configured to control and monitor movement and the emergency functions in the entire ADF complex.
- D. The graphic display system on the touch screens shall consist of welcome and log-on screens, floor plan screens with control icons, utility screens for miscellaneous functions and other screens for supporting functions.
 - A. **All electronic security system programming and software integration between door control, intercom and paging system, access control system, video management system and any other systems listed in the construction documents shall be done by CML Security (per Collin County Commissioners Court Order, CO 2020-388-05-11).**

1.3 SUBMITTALS (SEE SECTION 280510)

- A. Electronic files of the electronic systems floor plans will be made available to the electronic system integrator upon request for the purpose of development of touch screen maps and other submittal requirements. A release form will be required to obtain the files.
- B. Touch Screen Control System: Section 284623
 - 1. Project data: Description of system operation indicating purpose and capabilities of each component of system with functional system diagram indicating all interfaces to other systems. Description shall include, and call attention to, all variances from the contract documents.
 - 2. Shop drawings: Complete installation drawings including system diagrams and terminal point to terminal point wiring diagrams.
 - 3. Product data: Technical data sheets and specifications for each component.
- C. Touch Screen Presentation and Display System: Section 284623
 - 1. Shop drawings:
 - a. 11x17 size color layout of each graphic map or full size color PDF.
 - b. List of system integrator suggested modifications to graphic maps.
 - c. Design of custom control stations.
 - d. Theory of Operation describing all functional operations of the system.
 - 2. Demonstration: Two operating touch screen stations shall be provided for the purpose of review of the presentation and display system. The stations shall be networked in order to demonstrate task group management features. Each function of the system shall be emulated via function keys.
 - a. Upon preliminary approval of the graphic maps, the Electronic Systems Integrator shall fabricate and program two networked touch screen control stations with all maps, icons, and functions as required by these contract documents.
 - b. Engineer Demonstration: The Electronic Systems Integrator shall set up the stations at the offices of the Engineer and demonstrate the operational capabilities. The stations shall remain at the offices of the Engineer for a minimum period of four weeks. At the end of the review period, the Engineer will provide the Electronic Systems Integrator with a listing of modifications and/or adjustments deemed appropriate for the proper operation of the unit.
 - c. Upon completion of the Engineer review, the Electronic Systems Integrator shall remove the unit from the offices of the Engineer and make all modifications and/or adjustments listed by the Engineer. If re-submittal is required, the Electronic Systems Integrator shall send updated software with instructions for loading and making operational or install updated software as necessary to allow review of revised operation.
 - d. Owner Review: Upon completion of the modifications and/or adjustments listed by the engineer, the Electronic Systems Integrator shall set up the station at the offices of the Owner and demonstrate the operational capabilities. The stations shall remain at the offices of the Owner for a review period of 30 days. At the end of the review period, the Engineer will provide the Electronic Systems Integrator with a listing of modifications and/or adjustments deemed appropriate for the proper operation of the unit.
 - e. Upon completion of the Owner review, the contractor shall make all modifications and/or adjustments listed by the Engineer and update the demonstration stations with software and hardware as required. If re-submittal is required, the Electronic Systems Integrator shall install updated software as necessary to allow review of revised operation. The demonstration stations shall remain at the offices of the Owner.
 - 3. Completion of the submittal review for this portion of the work shall not be construed as an approval of the presentation system. Modifications and adjustments shall be provided as needed after installation and field testing on site.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Manufacturers:
1. CPU:
 - a. Base: Dell (Collin County Standard)
 - b. Or Equal
 2. Monitors:
 - a. Base: ELO 2702L
 - b. Or Equal
 3. Touch Screen interface:
 - a. Base: Elo Touch Solutions
 - b. Or Equal
 4. Graphic User Interface:
 - a. Aveva (formally Wonderware Intouch Platform) 2020 or later
 - b. Aveva (formally InduSoft Web Studio)
 - c. Software listed above may not provide all functionality required by these specifications. Provide third party software applications where required to provide specified functionality. Any third-party software must be submitted and described in Theory of Operations.
 - d. The function-based presentation and management system described herein has been developed in prior applications using Wonderware. Use of another listed Graphic User Interface shall be verified by the Electronic Security Systems Integrator that the specified presentation and management system can be successfully developed to meet this specification.
 - e. Contractor must use the latest HMI software platform, fully compatible with Windows 11 and Server 2022 and SQL Server 2019 Standard.
 5. RDBMS software: (latest edition)
 - a. SQL Server 2022 Standard, or later
 6. Other manufacturers desiring approval comply with Division 01.

2.2 TOUCH SCREEN CONTROL AND MANAGEMENT SYSTEM

- A. General:
1. Acceptable Touch Screen Control & Management System: The specifications herein represent minimum criteria and do not necessarily describe each and every function of a touch screen control system. Complete functions for the touch screen control system will be developed in conjunction with the successful Electronics Systems Integrator during the submittal process. Completion of the submittal process should not be considered as final approval of the system. Final approval of the system will only come as a result of all field devices and equipment being installed and demonstrated to meet requirements of contract documents with clarifications in submittals.
 2. Abbreviations:
 - a. TS - Touch Screen Station(s)
 - b. ADS/FS - Administration Station/File Server (EXISTING SERVER DELL R340 TO BE REPLACED WITH THE LATEST HARDWARE AND SOFTWARE VERSION AVAILABLE 6 MONTHS PRIOR TO PROJECT COMPLETION)
 - c. GUI - Graphical User Interface
 - d. HMI - Human Machine Interface
 - e. RDBMS - Relational Database Management System
 - f. SQL - Sequential Query Language
 3. Latest anti-virus program(s) shall be provided to protect all software integrity and inform operator of possible corruption. All software shall be provided immune from known viruses.
- B. Description:
1. Provide a complete, fully integrated control and monitoring system for man-machine interface at locations indicated on the drawings utilizing TS and ADS/FS connected to the Network. Each TS shall be capable of complete individual and simultaneous facility control and monitoring. Provide

- all labor, materials, equipment, software, programming, and supervision to configure, integrate, install, program, calibrate, adjust, demonstrate, train, test, warrant, and maintain the total system.
2. All electronic security systems devices shall be controlled, monitored and displayed on graphic screens by the touch screen control and management system.
 3. The touch screen control and management system shall be compatible with the Network and function in conjunction with all electronic security systems to display, control and monitor all devices and functions in a GUI environment.
 4. Pre-recorded audio messages shall be linked to alarms based on alarm type, and alarm location. Audio message content shall be selected by the User. Audio messages shall be submitted by Integrator for review and approval as part of submittal requirements of Touch Screen Presentation and Display System.
 5. The interaction time between system input at the touch screen and the activation of a field device shall not exceed one half (0.5) second. Similarly, the interaction time between field input device and display on the touch screen shall not exceed one half (0.5) second.
 6. The interaction time to recall a complete graphic map shall not exceed one (1.0) second under normal operation and two (2.0) seconds under single station control of entire facility.
 7. No increase in reaction time for the system shall be acceptable due to multiple screens on line or due to combination of functional areas.
 8. Provide software tools, and all information needed for user modification of maps and text on graphic displays. Include capability of editing the activity descriptions.
 9. Recovery of TS Stations and Administration Station/File Server (ADS/FS) shall be accomplished via the ECS Network. A complete data copy of each individual CPU shall be maintained. The administrator shall have the option of recovering the remote station with the original backup media, or the monthly archived media backup. Backup and recovery procedures shall not effect system performance. Archive command selection shall be user friendly with prompts to guide the administrator through the backup/purge process for each station and system via ADS/FS. Complete backup and restore procedures for “all systems” shall be from the Administration Station.
 10. All equipment and software shall be readily available for purchase directly from the original equipment manufacturer other than the Electronics System Integrator.

C. Computers

1. All computers shall be of common manufacturer, assembly and features.
2. Each item of equipment or device that makes up a computer shall be of the same manufacturer. That is to say that all drives shall be of the same manufacturer and all CPU's will be of the same manufacturer, etc.
3. Computer minimum features:
 - a. Case and power supply:
 - 1) TS: SFF or Tower Workstation configuration with 300W minimum Gold or Platinum Rated 90%+ efficient Power Supply. Silver or Bronze and non-rated supplies not acceptable.
ADS/FS: 1U or 2U Rack Configuration with redundant hot plug 350W minimum server grade Power Supplies.
 - b. Operating System:
 - 1) TS: Windows 10 for Workstations up to 4 Cores.
 - 2) ADS/FS: Windows Server 2019 Standard or later. Server Essentials is not acceptable.
 - c. Microprocessor: Processors that do not support ECC memory are not acceptable.
 - 1) TS: 12th Gen Intel® Core™ i5-12500 (18 MB cache, 6 cores, 12 threads, 3.00 GHz to 4.60 GHz Turbo, 65 W)
 - 2) ADS/FS: Intel® Xeon® E-2374G 3.7GHz, 8M Cache, 4C/8T, Turbo (80W), 3200 MT/s
 - d. Memory:
 - 1) TS: Eight (8) gigabytes of DDR4 or better ECC type memory only. Non-ECC memory is not acceptable.
 - 2) ADS/FS: Sixteen (16) gigabytes of DDR4 or better ECC memory only. Non-ECC not acceptable.
 - e. Data Storage / Optical:

- 1) TS: 256 GB, M.2, PCIe NVMe, SSD, Class 35.
 - 2) ADS/FS: (3) 1 TB hard drives 10K SAS drives in RAID 6 configuration.
 - f. Graphics:
 - 1) TS: NVIDIA® T400, 4 GB GDDR6, 3 mDP to DP adapters or better.
 - 2) ADS/FS: On board graphics.
 - g. Audio: 32-bit multimedia sound package with speakers for playing voice messages or sounds (wave files).
 - h. Network: TS: 1000 Ethernet. ADS/FS: Dual 1000 Ethernet ports.
 - i. Printer ports: Number and type to support specified printers
 - j. Monitors:
 - 1) 24" Touch Screen Station: 24" LCD TFT Active Matrix, 1080P, 16 million colors, contrast ratio 3000:1, response time 25 ms, touch screen, viewing angle of 89 deg (up/down/left/right).
 - 2) 12" Touch Screen Open Frame Monitor: 12" LCD TFT Active Matrix, 720P, 16 million colors, contrast ratio 1500:1, response time 25 ms, touch screen, viewing angle of 89 deg (up/down/left/right).
 - 3) ADS/FS: 17" LED/LCD, 1080P Resolution, 16 million colors; Rackmount Keyboard Monitor Mouse (KMM) is an integrated keyboard, 17" monitor, and mouse in a compact 1U design, which allows a KVM switch to be mounted in the rear of the device. The rackmounted unit shall be provided with integrated 8 port KVM switch.
 - k. Provide wired pointing device for operator selection of all functions. (i.e. Trackball, laser mouse, etc.) Provide a mouse pad for each device.
- D. System Administration Station and File Server (ADS/FS):
1. The system shall include a system administration station for the purpose of assignment of parameters, report generation, software loading, network administration and diagnostics. In addition it may include compatible software for programming other systems including but not limited to the following:
 - a. Digital Intercom and Paging System. See Section 285123
 - b. Electronic Control System Programmable Logic Controllers. See Section 2846192
 2. Provide printer for reports and hard copy logging.
 - a. Provide laser printer (HP LaserJet or equal) for report printing.
 - b. B/W, supports double sided printing.
 - c. Ethernet and USB ports – wireless only not acceptable.
 - d. Drivers compatible with Windows Server 2016 Standard
 3. Administrative functions to be provided on ADS/FS shall include the following.
 - a. Priority levels shall be established for each alarm and device input. The assignment and changing of parameters shall be accessible from the ADS only under the System Manager password or higher access level.
 - 1) Life safety alarms (i.e. fire)
 - 2) Personnel alarms (i.e. duress, audio)
 - 3) Security alarms (i.e. exit or security barrier doors, unauthorized access, door prop)
 - 4) System alarms (i.e. UPS, electronic control system. communication faults, network alarms)
 - 5) Administrative intercom calls (i.e. control station, watch commander, jail captain, warden, shift supervisor)
 - 6) Movement intercom (i.e. sallyports, elevators, corridors)
 - 7) Reminder alarms
 - 8) Inmate intercom (i.e. cells)
 - 9) Acknowledged alarms
 - b. Each user shall be assigned a unique User ID and Password to access a touch screen station for operation. System shall be configured for no less than eight user access levels.
 - 1) Maintenance: Full and unlimited access.
 - 2) Administrator: Full access except diagnostics maintenance and repair duties. It shall include access for data archival, back-ups, and all privileges of lower access levels.

- 3) Systems Manager: Access to modifications of parameters, timer task groups, default set-ups, and all privileges of lower access levels.
 - 4) Supervisor: Operations of lower access levels plus ability to change task group assignments.
 - 5) Operator: Operation of all TS control and monitoring functions.
 - c. Reference timers and assignment of devices to reference timers shall be provided. Provide twelve reference timers (5 sec., 10 sec., 15 sec., 20 sec., 30 sec., 45 sec., 60 sec., 90 sec., 120 sec., 5 minutes, 10 minutes, 15 minutes).
 - d. Each alarming device (i.e. door, intrusion detection) shall be capable of having its functions, alarm and reminders individually adjusted by the user on the ADS.
 - e. Special functions shall be provided for use during construction, testing and start up phases of the work.
 - 1) Provide the capability to reset groups of door alarms via the utilities menu. Reset of door alarms shall be by functional area and global (entire facility).
 - 2) Provide the capability to disable groups of door alarms via the utilities menu. Disable of door alarms shall be by functional area and global (entire facility).
 - f. The ADS/FS shall synchronize all clocks in the electronic security systems on a daily basis, including but not limited to the following:
 - 1) Digital Intercom and Paging System
 - 2) Programmable Logic Controllers
 - 3) Touch Screen stations
 - 4) Access Control System
 - 5) Digital Video Management System
4. Report Generation:
- a. Archival reports of all alarms stored in the ADS/FS for a minimum period of 180 days with automatic back-up to server hard drives and manual backup to DVD/CD-RW.
 - b. Provide operations and maintenance reporting capabilities to include user definable pre-formatted report generation capable of accessing, retrieving, formatting, printing, and display of data developed for reports. This information shall be automatically and manually (user selected) imported into the RDBMS (SQL) and made available for report generation. Provide report generator software with preconfigured, user friendly queries for each alarm type.
 - c. Provide capability for automatic and manual archive of system history/data to backup media. Provide capabilities to purge and merge data automatically and manually based on administrative command.
- E. GPS NTP Network Time Server
1. The system shall include a GPS NTP server to sync all isolated security system network components (ADS, PLC, TS, CCTV, Intercom, etc.) to the same accurate time reference without the need for an internet connection. The NTP server shall have a built-in or external GPS and shall be deployable anywhere in the network and located so the best GPS signal can be achieved, such as an admin area equipment room. Coordinate any conduit requirements with Div.26.
 - a. Model:
 - 1) Time Machines TM2000A, or equal
 - 2) Spectracom
 - 3) Netclock
- F. Touch Screen Stations (TS):
1. Touch Screen Overlay – Surface Acoustic Wave
 - a. The surface acoustic wave overlay shall utilize a single glass panel design with no front layers or coating. Touch point activation shall be by piezoelectric transducers attached to the corners of the touch screen assembly.
 - b. The surface acoustic wave overlay shall have a minimum light transmission from the attached video display of ninety two percent.
 - c. The position accuracy shall have a maximum error of 0.125 inches regardless of screen size.

- d. Overlay durability shall be a minimum of two million touches with a finger at any given point and regardless of screen size.
 - e. Maximum activation force shall be twelve ounces and shall have the capability (through software) of setting the activation force from one ounce to the maximum.
 - f. Model:
 - 1) 24" SAW Monitor: Elo Touch 2401LM or equal.
 - 2) 12" SAW Open Frame: Elo Touch 1291L or equal. (Where shown on drawings)
 2. Communications interface console. See Section 28 5123
 3. The ADS/FS shall provide all necessary operations to control, monitor and record and archive all control and monitoring events. The ADS/FS shall provide the platform to edit the configuration of the Touch Screen Control and Management System.
 4. The ADS/FS shall be fitted with all necessary interfaces necessary for integration to the ECSN.
- G. Keyboard/Video/Mouse Switch:
1. Provide a Keyboard/Video/Mouse switch for common control of multiple CPUs in the security equipment room.
 - a. Administration Station/File Server (ADS/FS)
 - b. Access Control System: See Section 28 1300
 - c. PLC Programming Computer: See Section 28 4619
 - d. Video Management and Recording System: See Section 28 2300
 2. ATEN CL6708MW or equal: 1RU, 17" LED/LCD, 1080P, 8 port USB/DVI. Provide sufficient KVM cables and adapters for all connected servers and computers.
- H. Software:
1. All user licenses, software, original software media, manuals, backup images etc. shall be turned over to the Owner at completion of the project. All project specific application software shall be transferred at the end of the warranty period.
 2. Where network integration software is used, it shall be non-proprietary in nature and readily available for purchase from sources other than the Electronic Systems Integrator.
 3. Provide all software patches, custom programming and modifications to listed GUI as required to meet operational requirements specified herein.
 4. Provide log-on security password for ADS/FS and TS. Provide a minimum of 64 levels of password protection. The software shall include a RDBMS for access to a minimum of 1024 users.
 5. Support pre-formatted report printing capabilities with on-line utilities to edit and update database(s), report generation, alarm tags, point descriptions, etc. These utilities shall be protected by security level(s) and password protection.
 6. All drawings, programs, etc. shall remain confidential and the property of the Owner.
 7. Touch screen Operator Interface (GUI) Software / Human Machine Interface(HMI)
 - a. The GUI/HMI utilized shall be a commercially available development HMI package operating in a MicrosoftTM operating system environment. The software shall be programmed to the specified functions and features described in the contract documents.
 - b. Have an open architecture that allows the system to run in a multitasking environment with support for on-line dynamic data exchange with other applications such as expert systems, spreadsheets, and database (RDBMS/SQL) programs.
 - c. Allow quick and easy modification of the end application by users in the field.
 - d. Support distributed access through the alarm and historical modules as well as application development and transfer across a network with built-in Network Application Development (NAD) functionality.
 - e. Be able to access multiple data sources/items with a single tag name using functionality of built-in Dynamic Reference Addressing (DRA)
 - f. Support internally as well as third-party pre-animated graphical objects developed using tool kit provided by original HMI /OEM.

all areas of the facility. Salient characteristics pertaining to colors, icons, and graphics shall be confirmed during the submittal process. The cost of modifications during the submittal process and through substantial completion is the responsibility of the Electronic Systems Integrator.

- C. Graphic screen hierarchy and access shall be both operator and event driven. The system shall allow the operator to move between functional area maps via the floor, building and site maps, and move between maps within a functional area by touching the area of the functional map that is desired. The system shall also allow events to drive movement between screens.
- D. The presentation and display system described herein is preferred, however the integrator's typical display system may be used in lieu of that specified herein provided that the functionality of such include equivalent functionality to that specified and meets all requirements of applicable codes. Submission of alternate presentation and display system shall include a compliance matrix comparing or contrasting the proposed functionality and the specified functionality.
- E. Display icons:
 - 1. General:
 - a. Control of functions shall be accomplished by the touching of icons on the graphic video display. Touching of an icon shall initiate an audible beep for confirmation.
 - b. Each icon shall be distinct for its assigned function and consist of symbols and colors. Each change of status shall include that for both selection (confirmation of touch input) and verification (confirmation from controlled device).
 - c. Icons shall be created so that change in state is indicated by both color and graphical change.
 - d. All control icons (switch functions) used shall be of size that will facilitate a positive touch point. The minimum size shall be 0.375 inches square. Status indicators for intercom, doors, card readers, keypads, etc., shall be a maximum of 0.250 inch in diameter, or equivalent square, triangle or rectangle. Status indicators for duress alarms, and other alarms shall be a minimum of 0.250 inches in form, diameter, or equivalent square, triangle or rectangle.
 - e. A date and time function shall be displayed continuously in same location on all screens. All clocks shall automatically update and synchronize from the ADS/FS. Reset of system date and time shall be accomplished globally from the ADS/FS.
 - f. Each map shall be titled and numbered for reference in the same location on all screens.
 - g. A key plan of the building or site shall be displayed in the same location on all screens. The key plan shall be segmented by functional area. The functional area represented on the screen shall be shaded on the key plan to indicate location of area displayed with respect to the building or site.
 - 2. Graphic colors and text shall be chosen to meet the goals of the display system and emulate passive presentation systems.
 - a. Icons shall be gray in color when secure or inactive. Icon colors for alarm or non-secure conditions shall be distinct in color as described elsewhere in these specifications.
 - b. Interlocked areas shall be shaded gray to allow recognition of interlock conditions
 - c. The architectural room names shall be placed in each room on each screen to facilitate review and coordination of work. These labels shall be toggled on/off by function key on the TS keyboard. A separate function key shall be provided for each group of labels.
 - d. The architectural room numbers shall be placed adjacent to each room name on each screen to facilitate review and coordination of work. These labels shall be toggled on/off by function key on the keyboard. A separate function key shall be provided for each group of labels.
 - e. The architectural door numbers shall be placed adjacent to each door on each screen to facilitate review and coordination of work. These labels shall be toggled on/off by function key on the keyboard. A separate function key shall be provided for each group of labels.
 - f. Room names and numbers to coordinate with the Owner/User's signage shall be inserted into maps. Such names and numbers will be confirmed or identified in the submittal phase.
 - g. Text shall be of uniform font and size.
 - 1) Room names and general text: 12 pt.
 - 2) Room numbers: 10 pt.

- 3) Door numbers: 8 pt.
3. Functional Group Operation:
 - a. Functional group operation provides a single touch point for all items related to a given door with activation by icons on the Menu Bar of the screen. Those items which are not related to a door (i.e. cameras, panic buttons) shall be accessed via individual icons in the display area of the screen when not the result of an alarm input.
 - b. A functional group consists of those items that are related at a selected door location. The functional group will include, but not necessarily be limited to door control/monitoring, intercom(s), card reader(s), keypad(s), and electric key function.
 - c. Each functional group will be represented by a single touch point. When an event (i.e. call from an intercom, door alarm, reminder) is selected from the Activity List of the Menu Bar, the associated map shall be displayed and the selected functional group icon shall be automatically selected and highlighted. The touch point may be selected directly for use when not the result of selection from the Activity List of the Menu Bar.
 - 1) When the functional group has been selected automatically from the Activity List or manually by touching the touch point in the display area, the associated and applicable control icons in the menu bar shall be displayed.
 - 2) When activated by selection from the Activity List the calling intercom audio path shall be automatically activated. When activated directly by touching the functional group icon on a screen without selection from the Activity List, the audio paths for intercoms on both sides of the door shall be automatically activated.
 - 3) The camera icon shall not be a part of the functional group. Camera(s) associated with the functional group will display on the video monitor(s) upon selection of the functional group as described elsewhere in these specifications. Cameras shall be manually selectable by touching the camera icon on the screen.
4. Door Control Operations:
 - a. The icon for door control/status shall be within the functional group icon for the associated door. The door shall be indicated by a thick line or bar indicating the door position. The status icon for a door that is controlled on a given map shall be gray and graphically closed when the door is secure, red and graphically open when the door is unsecure, yellow when shunted, and flashing red when held unlocked. The status icon for a door that is monitored only on a given map shall be a round circle and shall be gray when secure, red when unsecure, yellow when shunted, and flashing red when held unlocked. Doors that are monitored only and indicate door status on monitor only screens shall be a round circle rather than a thick line or bar as described for the controlled door.
 - b. Normal operation of detention swing door(s) or a manual sliding door(s) with electric/pneumatic locking device(s) shall be such that touching the associated UNLOCK icon shall initiate an unlock command. The locking device(s) shall be controlled to withdraw the lock bolt and hold bolt withdrawn for a preset period of time (set default at three seconds) and then released.
 - c. Emergency release operation of detention swing door(s) or a manual sliding door(s) with an electric/pneumatic locking device shall be such that touching a HOLD UNLOCK icon shall initiate a hold unlock command. The locking device(s) shall be controlled to withdraw the lock bolt and hold withdrawn until the LOCK icon is touched or a global site, floor, or area emergency release mode reset is selected from Utility Screens. When emergency release of a group of doors is provided, the total group select mode of operation time shall not exceed ten (10) seconds. Door hold unlock activities shall be logged to the RDBMS for reporting purposes.
 - d. Normal and emergency release operation of full operable electric/ pneumatic sliding devices shall be such that touching the OPEN icon associated with a door will cause the door to stop momentarily (if moving) and then open. Touching the STOP icon while the door is in movement shall cause the door to stop. Touching the CLOSE icon when the door is not secure shall cause the door to stop momentarily (if moving) and then close to a secure condition.
 - e. Selective group release and/or inmate access of cell doors and assign-unassign functions shall be displayed in a dialogue box via the GROUP CONTROL icon in the menu bar.

- 1) Provide UNLOCK/OPEN icon in dialogue box for release of assigned doors. Assign/unassign functions shall be similar to that provided on the local control stations. When in the assign/unassign mode, a dialogue box shall be displayed to indicate the screen is not in an operational mode.
- 2) Assign/unassign of individual doors shall be accomplished by touching the ASSIGN/UNASSIGN icon followed by touching the individual door to be assigned. The assign/unassign function shall stay active until a SAVE, CANCEL, or UNLOCK/OPEN icon is touched. The SAVE icon shall save the assignments, the CANCEL shall cancel the changes made in the session, and the UNLOCK/ OPEN icons shall save the assignments and unlock/open the assigned doors.
- f. Emergency release of doors shall be displayed in a dialogue box via the EMERGENCY RELEASE icon in the menu bar.
 - 1) Upon confirmation in the dialogue box, all doors in the selected group to shall unlock and remain unlocked until the function is reset.
 - 2) Reset shall be via the dialogue box.
 - 3) Emergency release activities shall be logged to the RDBMS for reporting purposes.
 - 4) Monitoring/status of doors shall be displayed on all associated and applicable screens. Status indication shall be displayed on all screens regardless of task group assignment. The open contact position of the lock bolt switch or the door position switch shall indicate an unsecured status. The closed contact positions of the lock bolt switch and the door position switch shall indicate secure status.
- g. A door prop alarm shall be provided for each electrically controlled door. Any door left non-secure after its assigned time period shall generate an alarm to the Activity List. A pre-recorded audio message shall be associated with the alarm at the time it is placed in the first line of the Activity List. Initially set each door to 30 second reference timer. The time period shall be adjustable by the administrator via the ADS/FS.
 - 1) Upon activation of a door prop alarm an alarm event shall be generated. A pre-recorded audio message shall be associated with the alarm at time of occurrence. Selection of the alarm from the Activity List shall display the location of the alarm and activate the ALARM icon in the Menu Bar. See description of ALARM icon for SILENCE/RESET functions.
 - 2) Door prop alarm activities shall be logged to the RDBMS for reporting purposes.
 - 3) Door prop alarms are not required for cell doors in housing units, except those in maximum security cells
- h. An unauthorized access alarm shall be provided for each controlled or monitored door except where indicated on drawings. Any door that becomes non-secure without a command from the electronic security systems shall generate an alarm to the Activity List. A pre-recorded audio message shall be associated with the alarm at time it is placed in the first line of the Activity List.
 - 1) Upon activation of an unauthorized access alarm an alarm event shall be generated. A pre-recorded audio message shall be associated with the alarm at time of occurrence. Selection of the alarm from the Activity List shall display the location of the alarm and activate the ALARM icon in the Menu Bar. See description of ALARM icon for SILENCE/RESET functions.
 - 2) Unauthorized access alarm activities shall be logged to the RDBMS for reporting purposes.
 - 3) Unauthorized access alarms are not required for cell doors in housing units, except those in maximum security cells
 - 4) Unauthorized access alarms shall be programmed with a delay to prevent false alarm from a door bounce effect.
- i. A shunt function shall be provided for each door and alarm device (i.e. motion detector).
 - 1) Selection of a monitored door or security device followed by touching the SHUNT icon in the menu bar shall cause a dialogue box to be displayed. After confirmation the door prop, unauthorized access, or other alarm shall be ignored by the system.

- 2) A shunt timer shall be provided for each device. Initially set to 15 minute reference timer. The time period shall be adjustable by the administrator via the ADS/FS. Upon expiration of the timer, a reminder alarm shall be generated to the Activity List. Selection of the activity shall display a reminder that the device has been shunted and provide icons for CONTINUE and RESET.
- 3) Door shunt activities shall be logged to the RDBMS for reporting purposes.
- j. An interlock override function shall be provided for each door that is part of one or more interlock groups. An interlock shall prevent more than one door of a group from being opened/unlocked electrically. An interlock override function shall provide the means to defeat the interlock and electrically open/unlock more than one door of an interlock group.
 - 1) An attempt to open a door that is part of an interlock group while another door of the interlock group is non-secure shall cause a dialogue box to be displayed indicating presence of an interlock. A pre-recorded audio message shall be associated with the dialogue box display.
 - 2) The dialogue box shall include icons for OVERRIDE or CANCEL. Touching the OVERRIDE icon shall defeat the interlock and unlock the previously selected door. Touching the CANCEL icon shall return to the floor plan screen maintaining the interlock.
 - 3) Interlock override activities shall be logged to the RDBMS for reporting purposes.
- k. A function for enable/disable of card reader shall be provided for each door for which a card reader is provided. The control shall be part of the functional group. A status icon of a “CR” shall be displayed adjacent to the door. When the card reader is enabled on a door, the “CR” shall be yellow. When the card reader is disabled, the “CR” shall be gray.
- l. A function for enable/disable of electric key shall be provided for each door which an electric key cylinder is provided. The function shall be part of the functional group. A status icon of a “K” shall be displayed adjacent to the door. When the electric key is enabled, the “K” shall be yellow. When the electric key is disabled, the “K” shall be gray.
5. Intercom and Paging Control Operations:
 - a. The control of intercoms shall be within the functional group icon for the associated door. The status of the intercom shall be indicated by a speaker shaped icon at the intercom location. The status icon shall be gray when the intercom is inactive and yellow when the intercom is active. Icon in active state shall be graphically different than in inactive state.
 - b. The status of paging function shall be indicated by a speaker shaped icon at the paging location. The status icon shall be gray when the paging is inactive, and yellow when the paging is active. Icon in active state shall be graphically different than in inactive state.
7. Access Control Operations:
 - a. The control of an access control device (i.e. card reader) shall be via the functional group.
 - b. Exit push buttons, where provided, shall remain activated when access control device is disabled except when disabled as a result of a duress or panic alarm. Exit push buttons shall emulate a call-in switch upon activation of area duress/panic alarm(s).
8. Personal Alarm Operations:
 - a. The icons for personal alarms shall be displayed on the associated floor plan screen. The icon shall not be visible except when in the alarm condition. The icon shall be flashing red when active.
 - b. Upon activation of a personal alarm device (i.e. panic button, duress alarm) an alarm event will be generated. A pre-recorded audio message shall be associated with the alarm at time of occurrence. Selection of the alarm from the Activity List shall display the location of the alarm and activate the ALARM icon in the Menu Bar. See description of ALARM icon for SILENCE/RESET functions.
 - c. When a personal alarm is activated, local control functions shall be disabled (i.e. control stations, card readers), request to exit devices shall emulate call-in devices, and the audio channel shall open allowing audio monitoring of the area. Where video surveillance is provided for the affected area, the video image shall be displayed on the incident monitor. If there is more than one camera covering a large area, the incident monitor shall call up to four cameras in quad view.

9. Video Surveillance system:
 - a. Icons for cameras shall be located on the graphic in their approximate location or in a location that will support the visual relationship for operation of a remote device (i.e. intercom, door). Touching the icon shall cause the video image to be displayed on the associated incident monitor.
 10. Auxiliary System Alarms:
 - a. Annunciation of SE Room/head end UPS alarms shall be provided to indicate UPS on line and a summary alarm for other UPS manufacturer provided alarm functions. A pre-recorded audio message shall be associated with the alarm at time of occurrence.
 - b. Annunciation of electronic control system alarms shall be provided. A pre-recorded audio message shall be associated with the alarm at the time of occurrence.
- F. Welcome Screen:
1. Provide Welcome screen with the visual image or perspective of the facility, the logo of the Owner/User, and the Project Name. The Electronic Systems Integrator logo may be included on the Welcome Screen (only). Provide icons for LOG ON, CLEAN SCREEN and TRAINING.
 - a. Provide a Log On icon. Touching the LOG ON icon shall cause the Log on screen to be displayed. The Log on Screen shall be visual representation of a computer keyboard. The user shall be required to enter his/her User ID. A proper User ID shall display the visual image of a computer keyboard and request entry of a password. When password is being typed, asterisks shall appear instead of the actual text being typed to prevent viewing of password by others. Improper password shall generate a message indicating such. Successful entry of User ID and password shall cause the Main Screen to be displayed. Three unsuccessful log on attempts shall disable local touch screen stations where exposed to inmate activities.
 - b. Provide a CLEAN SCREEN icon. Touching the CLEAN SCREEN icon shall cause a blank screen with the message CLEAN SCREEN to be displayed with a countdown timer. The countdown timer shall be adjustable from the ADS/FS and preset at 30 seconds. The last five (5) second shall flash a warning message, TIMER IS EXPIRING, STOP CLEANING AND DO NOT TOUCH. Upon expiration of the timer the previous screen will be displayed.
 - c. Provide a TRAINING icon. Touching the TRAINING icon shall cause the Training Screen to be displayed. A user does not have to be logged into the system to access the training screens.
 2. Welcome Screen shall be displayed on system boot-up. Access to Windows functions shall not be accessible from the touch screen at any time.
 3. Provide screen saver consisting of the logo of the Owner/User. Activate only when operator is logged off the system. A text message shall inform operator to “touch screen”. Windows screen blanking shall be de-activated. Screen shall be displayed continuously then operator is logged on.
 4. The logo of the Owner/User and visual image of the facility will be provided in *.jpg electronic format. Update will be provided periodically during the submittal and installation time up to completion. Insertion of updated files shall be made by the systems integrator at no cost to the Owner.
- G. Main Screen:
1. Provide a Main Screen that is active when an operator is logged on the TS.
 - a. For single level buildings, the Main screen shall include a building floor plan with icons for functional area selection.
 - b. For multi-level buildings, provide a perspective view of the building with icons for floor selection. Upon selection, display floor plan selected with icons for functional area selection.
 - c. When the project consists of multiple buildings on a site, the SITE PLAN shall display the buildings and provide touch points for each. Touch of a building touch point shall cause the security screen of the main/first floor plan of the building to be displayed.
 - d. Icons for area selection shall be gray when not assigned to station and green when assigned to station.
 2. Provide the following icons in the display area of the Main Screen for LOG OFF and SITE PLAN.
 - a. Provide a LOG OFF icon on the Main Screen. Touching the LOG OFF icon shall cause a confirming dialogue box to be displayed providing a choice to LOG OFF, CHANGE USER,

- or CANCEL. Confirmation of LOG OFF shall log the operator out of the system and cause the Welcome Screen to be displayed and associated screen saver to be activated after preset time. At time of log off, task groups shall automatically transfer in accordance with assignment tables. Selection of CHANGE USER shall log the operator out of the system. User/Password screens to be displayed. (See Welcome Screen description above for log in procedure.) Activities shall continue to be received and held in the activity queue during the CHANGE USER process. Task Groups shall not transfer during this process. If a new user is not successfully logged on within 60 seconds, the function shall be canceled and tasks shall be transferred. Provide an on-screen timer to indicate countdown. Selection of CANCEL shall return to the Main Screen and resume operations.
- b. Provide a SITE PLAN icon on the Main Screen. Touching the SITE PLAN icons shall display the site plan of the facility including icons, graphics and functions for cameras, intrusion detection systems, etc.
- H. Menu Bar: Provide a Menu Bar at the bottom of each screen for operation of the touch screen. (Welcome Screen shall not have a Menu Bar.)
1. Provide an Activity List with a title line.
 - a. The title line shall include a column for each of: the time the activity was received, status (Acknowledged, Y or N), and activity description (minimum 40 characters). Non-acknowledged alarms shall be in red text, with acknowledged alarms shall be in yellow text.
 - b. The Activity List shall have a minimum of four lines displayed in the menu bar and an unlimited number of non-displayed lines for waiting activities.
 - c. The first (top) line of the Activity List shall display the activity that is selected and presently displayed. The first line shall be highlighted using a color background.
 - d. The activity in the second line of the Activity List shall be pre-selected and visually highlighted for selection by the SELECT icon.
 - e. Incoming activities shall be placed in the Activity List based on their assigned priority. Higher priority alarms shall be inserted above lower priority alarms. Activities of a common priority shall be arranged in first-in-first-out sequence. Activities of priority levels one two and three shall be linked with an audible alarm which shall sound upon receipt of the alarm (not wait for selection).
 2. Provide a SELECT icon that when touched will activate the selected activity from the second line of the Activity List, causing movement to the map associated with the selected activity and activation of the functional group or alarming device.
 3. Provide an IC RESET icon for reset of an intercom station. Touching IC RESET icon shall turn off the selected intercom station. Movement to a new map shall automatically turn off the selected intercom station.
 4. Provide an UNLOCK/OPEN icon.
 - a. The UNLOCK text shall display when a swing door or manual (kick-release) slider has been selected. Touching the UNLOCK icon shall cause the selected swing door to unlock or the selected manual (kick-release) slider to open.
 - b. The OPEN text shall display when a fully operational slider has been selected. Touching the OPEN icon shall cause the selected sliding door to open to its full open position unless the STOP or CLOSE icon is touched.
 - c. The space on the menu bar that was allocated for the icon shall be blank (no text) when no door is selected.
 5. Provide a HOLD UNLOCK/STOP icon.
 - a. The HOLD UNLOCK text shall display when a swing door or manual (kick-release) slider has been selected. Touching the HOLD UNLOCK icon shall cause a dialogue box to be displayed. When the dialogue box confirmation is made it shall cause the selected swing door or the selected manual (kick-release) slider to unlock/open and be electrically held unlocked/open. Door alarms shall be disabled when door is HOLD UNLOCK position.
 - b. The STOP text shall display when a fully operational slider is selected.
 - c. Each controlled door shall be provided with a reminder alarm when placed in the HOLD UNLOCK. A reminder that the door has been held unlocked shall be generated periodically

- based on the referenced timer assigned for the hold unlock function. Timer setting shall be initially set at 15 minutes. When the reminder timer has expired, an activity shall be generated and displayed in the Activity List. Selection of the activity shall cause a dialogue box to display with icons to CONTINUE, RESET, or HELP.
- 1) Selecting the CONTINUE icon shall continue the HOLD UNLOCK function and reinitiate the timer.
 - 2) Selecting the RESET icon shall release the HOLD UNLOCK function, allowing the door to be locked.
 - 3) Selecting the HELP icon shall cause the HELP: HOLD UNLOCK dialogue box to be displayed.
- d. The space on the menu bar that was allocated for the icon shall be blank (no text) when no door is selected.
6. Provide a CLOSE icon. The CLOSE text shall display when a fully operational slider or a manual (kick release) slider is selected.
 - a. The CLOSE function for the fully operational slider shall cause the door to close until locked.
 - b. The CLOSE function for a manual (kick release) slider shall release the door from its locked open position, allowing the door to be manually closed. When manual slider is standard configuration (without the locked open (NLO) position), the CLOSE function is not required nor displayed.
 - c. The space on the menu bar that was allocated for the icon shall be blank (no text) when no door is selected.
 7. Provide an ACTIVITY LIST icon for display of the entire Activity List. Such list shall be displayed in a pop-up window with an UP/DOWN (scroll), SELECT, CLEAR ALL, and CANCEL icon. The activity selected shall be highlighted using a color background. SELECT shall cause the highlighted line to be activated, pop-up window to be canceled, the activity placed in the selected line of the activity area, causing movement to the map associated with the selected activity and activation of the functional group or alarming device. CLEAR ALL shall cause a confirming dialogue box to be displayed. Upon confirmation, all activities in the queue shall be cleared.
 8. Provide an ALARM icon. The ALARM text shall be displayed when an alarm activity is selected (i.e. duress pushbutton, unauthorized access, door prop, motion detector, intrusion detection alarm).
 - a. Touching the ALARM icon shall cause a dialogue box to be displayed indicating the type of alarm, current status and icons for SILENCE, RESET, and HELP.
 - 1) When SILENCE is selected it shall cause the audible alarm to be silenced and the activity to be placed in the Activity List as an acknowledged alarm. Upon activation of the SILENCE function, an adjustable reminder timer (initially set at 15 minutes) will start. Upon expiration of the timer, a reminder alarm shall be generated and displayed in the Activity List.
 - 2) Selecting the RESET icon shall cause the alarm to be reset. If the local alarming device remains in alarm condition, a dialogue box shall be displayed indicating that “the local alarming device has not been physically reset and cannot be reset at this time.” In such a case the activity will remain as an acknowledged alarm with periodic reminders until alarm is reset.
 - 3) Selecting the HELP icon shall cause the HELP: ALARM dialogue box shall be displayed.
 - b. The space on the menu bar that was allocated for the ALARM icon shall be blank (no text) when no alarmed device has been selected.
 9. Provide a SHUNT icon. The SHUNT text shall be displayed when an alarming device (i.e. door, motion detector, intrusion detection alarm) has been selected.
 - a. Each alarming device shall be capable of having its alarm functions shunted. When an alarm is shunted the alarm shall be ignored.
 - b. Selecting the SHUNT icon shall cause a dialogue box to be displayed indicating current status and icons for SHUNT, CANCEL, and HELP.
 - 1) Selecting the SHUNT icon shall cause the alarm for the selected device to be shunted.
 - 2) Selecting the CANCEL icon shall close the dialogue box and return to the screen.
 - 3) Selecting the HELP icon shall cause the HELP: ALARM SHUNT dialogue box to be displayed

- c. Each alarming device shall be provided with a reminder alarm when placed in SHUNT. A reminder that the alarming device has been shunted shall be generated periodically based on the referenced timer assigned for the shunt function. Initially set to 15 minute reference timer. When the reminder timer has expired, an activity shall be generated and displayed in the Activity List. Selection of the activity shall cause a dialogue box to display with icons to CONTINUE, RESET, or HELP.
 - 1) Selecting the CONTINUE icon shall continue the SHUNT function and reinitiate the timer.
 - 2) Selecting the RESET icon shall release the SHUNT function, allowing the alarming device to be active.
 - 3) Selecting the HELP icon shall cause the HELP: ALARM SHUNT dialogue box to be displayed.
 - d. The space on the menu bar that was allocated for the SHUNT icon shall be blank (no text) when no alarming device is selected.
10. Provide an ELECTRIC KEY icon. The ELECTRIC KEY text shall be displayed when a door provided with an electric key function has been selected.
- a. Touching the ELECTRIC KEY icon shall cause a dialogue box to be displayed indicating current status and icons for DISABLE/ENABLE, CANCEL, or HELP.
 - 1) Selecting the DISABLE icon shall cause the ELECTRIC KEY function to be disabled. Selecting the ENABLE icon shall cause the ELECTRIC KEY function to be enabled.
 - 2) Selecting the CANCEL icon shall close the dialogue box and return to the screen.
 - 3) Selecting the HELP icon shall cause the HELP: ELECTRIC KEY dialogue box to be displayed
 - b. The space on the menu bar that was allocated for the ELECTRIC KEY icon shall be blank (no text) when no door with electric key function is selected.
11. Provide a CARD READER icon. The CARD READER text shall be displayed when a door provided with a CARD READER function has been selected.
- a. Touching the CARD READER icon shall cause a dialogue box to be displayed indicating current status and icons for DISABLE/ ENABLE, CANCEL, or HELP.
 - 1) Selecting the DISABLE icon shall cause the CARD READER function to be disabled. Selecting the ENABLE icon shall cause the CARD READER function to be enabled.
 - 2) Selecting the CANCEL icon shall close the dialogue box and return to the screen.
 - 3) Selecting the HELP icon shall cause the HELP: CARD READER dialogue box to be displayed
 - b. The space on the menu bar that was allocated for the CARD READER icon shall be blank (no text) when no door with CARD READER function is selected.
12. Provide a GROUP CONTROL icon. The GROUP CONTROL text shall be displayed when a housing area screen with groups of cells is displayed.
- a. Touching the GROUP CONTROL icon shall cause a dialogue box to be displayed with icons for assignment of cells to groups and release of groups of doors. Icons shall be provided for each cell door. Touching each icon shall alternately select/deselect the door from a group. Icons shall be provided for ASSIGN/UNASSIGN ALL, SAVE, UNLOCK/OPEN, CLOSE, CANCEL, and HELP.
 - 1) Selecting the ASSIGN/UNASSIGN ALL icon shall alternately assign or unassign all cells to the group.
 - 2) Selecting the SAVE icon shall save the current settings.
 - 3) Selecting the UNLOCK/OPEN icon shall unlock/open all cell doors assigned to the group.
 - 4) Selecting the CLOSE icon shall close all fully operational cell sliding doors and release all manually operated sliding cell doors assigned to the group.
 - 5) Selecting the CANCEL icon shall close the dialogue box and return to the screen.
 - 6) Selecting the HELP icon shall cause the HELP: GROUP CONTROL dialogue box to be displayed
 - b. The space on the menu bar that was allocated for the GROUP CONTROL icon shall be blank (no text) when a screen other than those for housing areas with groups of cells is displayed.

13. Provide an AUXILIARY CONTROL icon. The AUXILIARY CONTROL text shall be displayed when a screen depicts an area with auxiliary controls.
 - a. Touching the AUXILIARY CONTROL icon shall cause a dialogue box to be displayed with icons for each controlled device. Touching each icon shall alternately turn on/off the device. Icons shall be provided for CANCEL and HELP.
 - 1) Selecting the CANCEL icon shall close the dialogue box and return to the screen.
 - 2) Selecting the HELP icon shall cause the HELP: AUXILIARY CONTROL dialogue box to be displayed
 - b. The space on the menu bar that was allocated for the AUXILIARY CONTROL icon shall be blank (no text) when not on a screen where auxiliary controls are provided.
 14. Provide an EMERGENCY RELEASE icon. The EMERGENCY RELEASE text shall be displayed when a housing area screen with groups of cells is displayed.
 - a. Touching the EMERGENCY RELEASE icon shall cause a dialogue box to be displayed with icons for emergency release of groups of doors.
 - b. Each emergency release group shall be provided with a reminder alarm when placed in EMERGENCY RELEASE. A reminder that the group has been held placed in emergency release shall be generated periodically based on the referenced timer assigned for the hold unlock function. Timer setting shall be initially set at 15 minutes. When the reminder timer has expired, an activity shall be generated and displayed in the Activity List. Selection of the activity shall cause a dialogue box to display with icons to CONTINUE, RESET, or HELP.
 - 1) Selecting the CONTINUE icon shall continue the EMERGENCY RELEASE function and reinitiate the timer.
 - 2) Selecting the RESET icon shall release the EMERGENCY RELEASE function, causing swing door lock bolts to be released, fully operational sliding cell doors to close, and manually operated sliding doors to be released, allowing the doors to be closed/locked.
 - 3) Selecting the HELP icon shall cause the HELP: EMERGENCY RELEASE dialogue box to be displayed.
 - c. The space on the menu bar that was allocated for the EMERGENCY RELEASE icon shall be blank (no text) when a screen other than those for housing areas with groups of cells is displayed.
 - d. Activation of EMERGENCY RELEASE shall disable door prop alarms
 15. Provide a UTILITY icon. The UTILITY icon shall be displayed on all screens except the Welcome Screen. Touching the UTILITY icon shall cause the Utilities Screen to be displayed. (Utility Screen is described later in these specifications).
 16. Provide a MAIN icon. The MAIN icon and text shall be displayed on all screens except the Welcome and Main Screen. Touching the MAIN icon shall cause the Main Screen to be displayed.
 17. Provide a SCREEN icon with back and forward graphic arrows. The SCREEN icon shall be displayed on all screens except the Welcome Screen. Touching the back arrow icon shall cause the previous screen to be displayed. The system shall provide the ability to go back a minimum of six (6) previous screens. Touching the forward arrow shall allow return to the original screen in reverse order from which the back arrow sequence began.
 18. Provide icons for moving UP and DOWN between floors when facility includes multiple floors. Where no floors exist to move to from the presently displayed screen, the associated icon shall be blank.
- I. Utility Screen
1. Provide list of all utility functions associated with facility operations for operator selection, including, but not necessarily limited to the following.
 - a. Functional Area assignment screen: Assign functional areas to task groups using matrix display.
 - 1) List functional areas vertically on the left side and task groups horizontally along the top
 - 2) Provide icons in matrix to assign each functional area to a task group
 - 3) Provide separate screen for each of four time periods
 - 4) Provide DEFAULT icon on each screen for selection of default assignments
 - 5) Provide icons for SAVE and CANCEL

- 6) Access limited to Supervisor level and above
 - b. Task Group assignment screen: Assign task groups to touch screen stations.
 - 1) List task groups vertically on the left side and touch screen station horizontally along the top.
 - 2) Provide icons in matrix to assign each task group to a touch screen station in the priority to be assigned. Priority 1 shall be the first station the task group is to be assigned to. If that station is inactive, the task group shall be assigned to the touch screen designated as priority 2, and so on to the number of touch screen stations provided (plus future stations as indicated).
 - 3) Provide separate screen for each of four time periods.
 - 4) Provide DEFAULT icon on each screen for selection of default assignments for present time period. Selection of default on task group assignment screen shall also select defaults on the functional area assignment screen.
 - 5) Provide icons for SAVE and CANCEL. Selecting the SAVE icon shall save the selected assignments.
 - 6) Access limited to Supervisor level and above.
 - c. Functional Area Assigned screen: display list or graphic of functional areas under control of the touch screen making the query.
 - d. Control Transfer: display the status of each control location and provide capability for transfer of control.
 - e. Operator level assignment screen: display list of each function and the operator level required to perform function independently.
 - f. Electric Key Control screen: Provide a screen with icons representing each functional area of the building(s) to allow electric key control enable/disable by pre-assigned group, area, floor, and site.
 - g. Card Reader screen: Provide a screen with icons representing each functional area of the building(s) to allow card reader and keypad enable/disable by pre-assigned group, area, floor, and site.
 - h. Calibration Screen: Provide means to calibrate the screen for the operator using the features of the MMI/GUI software.
 - i. Configure Users: (Administrative User only) Provide means to add and delete Users and set User Names and User Passwords. Access limited to Manager and above
 - j. Help screen: Provide list of available help dialogue boxes.
 - k. Clean Screen: Provide access to clean screen function described previously.
 - l. Provide icons to return to Utility Screen or Main Screen on each screen under the Utility Screen.
- J. Help Screen:
 1. Provide list of help screens and dialogue boxes associated with the Presentation and Display System for operator selection, including, but not necessarily limited to the following.
 - a. Controlled door operations
 - b. Door Prop alarms
 - c. Unauthorized access alarms
 - d. Card Reader operations
 - e. Electric key operations
 - f. Group control operations
 - g. Emergency release operations
 - h. Alarm shunt
 - i. Interlock override
 - j. Queue and Activity List
 - k. Intercom
 - l. Paging
 - m. Auxiliary controls
 - n. Configure Users
 - o. Functional Area Assignment

- p. Task Group Assignment
 - q. Control Transfer
 - r. Supervisor override functions
 - s. Utilities
 - t. Others as needed and defined in submittals
2. Provide scrolling UP/DOWN, SELECT and CANCEL icons.

K. Building Screens

1. Screens shall be developed to display all areas of the facility. Plans shall be scaled to fit the available monitor screen. Screens shall include but not be limited to the following.
- a. An overall site and building(s) plan for selection of individual building, area or site.
 - b. An overall site plan with icons to include gate control, monitoring, camera locations, intrusion detection, etc.
 - c. An overall floor plan of each floor/level of each building of the facility
 - d. A floor plan of each functional building area such as housing, jail support, services, administration, etc.
 - e. Screens for housing areas with mezzanine cells shall position the mezzanine as a projection from the main level rather than separate screens or plans.
 - f. Each functional area within a building area including but not limited to the following:
 - 1) Public entry(s)
 - 2) Visitation area(s)
 - 3) Transportation
 - 4) Booking/Intake
 - 5) Service/Delivery
 - 6) Vehicle sally port(s)
 - 7) Maintenance
 - 8) Housing area(s)
 - 9) Support area(s)
 - 10) Administration area(s)
 - g. Screens for functional areas shall be displayed at a scale that will minimize the quantity of maps and display as much of the functional area as possible on a single map while maintaining sufficient spacing of touch points to prevent accidental selection of improper icon. Multiple screens may be required for each functional area
 - h. Separation of screens shall generally occur at traffic locations within the complex such as sally ports. At these locations the status of all related devices shall be indicated, while the control of functional groups within these areas shall be assigned to the adjacent areas that are to be entered.
 - i. Additional screens may be required to zoom in to selected areas due to scaling factors.
 - j. Movement icons shall be provided on building screens to allow movement to all adjacent areas. Movement icons shall consist of an arrow indicating the direction of movement and text describing the adjacent screen.
2. Each area of the building shall be provided a screen for full control/monitor and a separate screen for monitor only. The touch screen station assigned the functional area shall be provided with the full control/monitor screens. Other touch screen stations (not assigned the functional area) shall be provided with the monitor only screens. Screens for monitor only shall include the status of all doors, card readers. Monitor only screens shall include icons to allow selection of cameras associated with the screen. The status display of doors for monitor only screens shall be a round indicator as specified for a door that is monitored only. See Task Management.
3. Coordinate maps/screen layouts and orientations for all touch screen stations with owner prior to submittals.

L. Task Management:

1. A task management system shall be provided to allow distribution of workload among all TS stations “on-the-fly”. Assignment of tasks to TS shall be available at each TS and the ADS/FS. Default configurations shall be available from the ADS/FS only.

2. Each task shall be assignable to any station at any given time via a Task Assignment screen.
3. Prior to a TS being idled, another TS(s) must capture all task groups that are assigned to the station to be idled and shall be transferred to their next priority station in accordance with the task group assignment screen. All activities in queue Activity List of the station to be idled shall be transferred to the selected station(s) at time of transfer.

M. Dialogue Boxes:

1. Dialogue boxes shall be pop-up windows that are activated in order to provide information to the operator and allow confirmation of action or direct alternative actions.
2. Each controlled device shall be provided with an associated informational dialogue box and help dialogue box that shall contain information concerning the device or function selected. Provide all necessary development time with User's representative and Engineer after User Initial Review for development and recording text to be provided in dialogue boxes.
3. Dialogue boxes shall contain icons for movement to other functions as well as return to previous function.
4. Dialogue boxes shall be provided for, but not necessarily limited to the following functions.
 - a. Control station enable/disable
 - b. Interlock override
 - c. Alarm shunt
 - d. Unauthorized access
 - e. Card reader control
 - f. Group door operations
 - g. Emergency release and reset
 - h. Group assign/unassign
 - i. Alarm silence/reset.
 - j. Auxiliary controls
 - k. Interior security doors
 - l. Exterior perimeter security doors
 - m. Interior sallyport doors
 - n. Exterior perimeter sallyport doors
 - o. Duress Alarms
 - p. Hold Unlock
 - q. Door Prop Alarm
 - r. UPS Alarm
 - s. PLC Alarm

2.4 REPORT GENERATION

- A. Provide report generation capabilities from the ADS/FS for all system administration, inmate management, employee data, and security system maintenance.
- B. All data logging information shall be stored in the RDBMS.
 1. Provide data reporting program to generate activity reports based on user selectable search criteria.
 2. Provide for creation of custom reports to retrieve data from the database.
- C. Selected events shall be logged and archived on the FS for use in report generation from all devices connected to the electronic security control systems. Logging shall be for each application and each change in status. Provide means to print to logging printer at user selection for each alarm type. Include the following items for archival and optional printing.
 1. Log on Successful, Log on unsuccessful, Log off
 2. Duress alarm activation, Duress alarm reset
 3. Door unauthorized access, unauthorized access reset
 4. Door ajar, Door ajar reset
 5. Door unlock, open, close, hold unlock

6. Interlock override, Interlock override reset
 7. Emergency release
 8. Panic button activation, Panic button local reset, Panic button TS reset
 9. Cabinet tamper alarms
 10. ECS alarms
 11. UPS alarms
 12. Network alarms
 13. Task Group reassignment (local, automatic and administrative)
 14. Access Control System alarms
 15. Motion detection, Motion detector reset
- D. Report Generation: Provide access to the RDBMS to allow generation and printing of reports based on user requests and queries. Create the following preconfigured queries for demonstration during the FAT.
1. Employee Log Report:
 - a. Purpose: To query, display and print activity of each employee consisting of time logged in and/or out at each station or device.
 - b. Query options: Create report based on user entry of the following.
 - 1) Employee identification: Individual, All (default). Sort all reports by time. When by All is selected, sort alphabetically.
 - 2) Time (by minute) and Date: Time default shall be 12:00:00am to 11:59:59pm. Date default shall be present date.
 2. Door Activity Report:
 - a. Purpose: To query, display and print activity at each door in the facility.
 - b. Query options: Create report based on user entry of the following.
 - 1) Door identification: Individual, Area, All (default). Sort all reports by time. When by Area is selected, sort by door. When by All is selected, sort by Area by door.
 - 2) Time (by minute) and Date: Time default shall be 12:00:00am to 11:59:59pm. Date default shall be present date.
 3. Security System Report:
 - a. Purpose: Provide reports on security equipment and operations.
 - 1) Device Number: Alpha-numeric, 8 characters, changeable
 - 2) Device type: Alpha-numeric, 8 characters, changeable
 - 3) Installation Date: Alpha-numeric, 8 characters, changeable. (Initial installation date shall be set to date of project warranty initiation)
 - 4) Operations since installation: Alpha-numeric, 16 characters, system generated
 - 5) Date of Last Maintenance: Alpha-numeric, 8 characters, changed by input to device report
 - 6) Operations since last maintenance: Alpha-numeric, 16 characters, system generated
 - b. Query options: Create report based on user entry of the following.
 - 1) Device: Individual, Area, All (default). When Area is selected, sort by number, When All is selected, sort by area by number.
 - 2) Time (by minute) and Date: Time default shall be 12:00:00am to 11:59:59pm. Date default shall be present date.
 4. Security System Alarm Report:
 - a. Purpose: To query, display and print alarm activity on security system.
 - b. Query options: Create report based on user entry of the following. Sort all reports by time.
 - 1) Alarm Type: Individual, All (default). Sort all reports by time. When All is selected, sort by alarm type.
 - 2) Time (by minute) and Date: Time default shall be 12:00:00am to 11:59:59pm. Date default shall be present date.
 5. Interlock Override Report:
 - a. Purpose: To query, display and print all instances when interlocks were overridden.
 - b. Query options: Create report based on user entry of the following. Sort all reports by time.
 - 1) Building Area: Housing, Administration, Program, All (default). When All is selected, sort by area.

- 2) Time (by minute) and Date: Time default shall be 12:00:00am to 11:59:59pm. Date default shall be present date.
 - 3) List Station, door, operator, and date/time.
 6. Door Alarm (Unauthorized Access, Door Ajar) Report:
 - a. Purpose: To query, display and print all door operations not generated by a control system input.
 - b. Query options: Create report based on user entry of the following. Sort all reports by time.
 - 1) Building Area: Housing, Administration, Program, All (default). When All is selected, sort by area.
 - 2) Time (by minute) and Date: Time default shall be 12:00:00am to 11:59:59pm. Date default shall be present date.
 - 3) List door, control station, and date/time.
 7. Provide sufficient disk storage to accommodate 90 days of activity for all reports. Provide message on ADS/FS at end of each month suggesting database archival to back-up media. Provide warning message on ADS/FS and at each TS after 75 days if no back-up has been created. Warning message shall repeat every 24 hours until back-up is accomplished. Provide user friendly, menu driven back-up sequence.

PART 3 - EXECUTION

3.1 INSTALLATION (SEE SECTION 280510)

3.2 WIRING (SEE SECTION 280510)

3.3 TESTING (SEE SECTION 280510)

- A. Task group management capabilities shall be tested and demonstrated to ensure separation of control, audio, video, etc.
- B. Test and demonstration shall include assignment of a single task group to a single station one at a time in order to confirm isolation from all other task groups.

3.4 TECHNICAL SUPPORT

- A. Programming Updates:
 1. The Electronic Systems Integrator shall provide a minimum of twenty-four (24) hours of on-site programming changes to the touch screen displays to accommodate User requests after substantial completion. Programming changes shall be made by the original programmer or a qualified programmer familiar with the programming of the project. Provide supplementary programming for related systems as needed to support the changes in the touch screen displays
- B. Technical Support:
 1. Provide on-site programming and unlimited technical support during business hours for the duration of the warranty period (1 year from final acceptance) via a toll free telephone line.
 - a. Touch Screen software programming: 24 hours
 - b. Programmable logic controller programming: 16 hours
 - c. Related integrated systems programming (i.e. intercom, video): 16 hours

2. Provide a three ring binder with technical information, settings, and maintenance log for each system CPU. Provide diagnostic configuration reports on each system. Maintain and update this information throughout the warranty period.
3. Provide the ability to connect remotely to the system from the integrator's office through a gigabit Ethernet CAT6 A/B switch with switching controlled by a PLC output or serial connection to the ADS. Run a CAT6 cable to the owner's IDF or MDF for the outside line. Connect a secondary NIC from the ADS to the A/B switch's offline N.O. port, and the owner's outside connection to the Common port so that there is only a connection made when the facility authorizes the connection. The connection can be made by a manual switch on the unit, or through the touch screen interface using a Service screen created for this purpose. The connection will automatically disconnect after 8 hours if it is accidentally left on. The time may be extended through use of a warning timer. The Service screen should only be accessible with a supervisor level password. The purpose is to provide remote diagnostics of the overall system, download updated programs and to aid in troubleshoot of doors adjustment problems among other services.
 - a. L-Com LC-SNSW-C6-EC or equal.
4. Coordinate conduit requirements with Div. 26 for routing.

3.5 OWNER PERSONNEL TRAINING (SEE SECTION 280510)

- A. Provide training of owner personnel in proper operation and maintenance of touch screen control and management system.
- B. Training Outline-Operational staff:
 1. Log ON/OFF procedures
 2. All Utilities Functions
 3. Task Group Management
 4. Screen movement and navigation
 5. Acknowledgment/Responses
 6. Control Functions
 7. Emergency Operations
- C. Training Outline-Administrative:
 1. Review of each software package including diagnostic capabilities
 2. Database manipulation, settings and defaults
 3. Task Group Management
 4. Back-up and Restoration
 5. Report Generation
 6. Emergency Procedures
- D. Training Outline-Maintenance Staff:
 1. Systems Operation
 2. Component Review
 3. Routine Maintenance/Adjustments
 4. Hardware replacement, diagnostics, etc
 5. Expansion Capabilities

END OF SECTION 284623

SECTION 285123 - DIGITAL INTERCOM AND PAGING SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. General:

1. Furnish all labor, materials, tools, equipment, and services for digital intercom and paging system as indicated in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
4. See Division 1 for General Requirements.

B. Related work specified elsewhere:

- | | |
|---|----------------|
| 1. Common Work Results for Electronic Security: | Section 280510 |
| 2. Cabinets and Enclosures: | Section 280555 |
| 3. Electronic Control System: | Section 284619 |
| 4. Touch Screen Control and Management System: | Section 284623 |

1.2 BASIS OF DESIGN

- A. The project will include multiple intercom communication controllers configured in a network that will allow switching of system audio buses to a higher level control location when the local control station is disabled. All control location shall be provided with the intercom communication station and master intercom station. The communication will be networked together for data and audio communication purposes. Data exchange will be developed to provide functionality and integrated operation with electronic control system, touch screen control stations and the video management and recording systems.
- B. The purpose of the intercom and paging system is to provide fast “duplex,” voice master-to-master communication and half duplex master-to-intercom station communications. The system shall be configured to provide instant intercommunications between any stations in the system.
- C. Master-to-master communications is to be provided with programming capability to restrict access, conference, preset call groups and caller ID. Master stations shall use telephone sets with digital displays capable of being mounted on wall or desk.
- D. Intercom stations shall be provided in each single cell, on each side of remotely controlled doors and similar areas as indicated on the drawings. Paging of the dayroom is provided from any touch screen control station or master station.
- E. The project includes multiple intercom communication controllers configured in a network that will allow switching of system audio buses to a higher level control location when the local control station is disabled.
 1. The communication controllers shall be networked together for data and audio communication purposes. Data exchange shall be developed to provide functionality and integrated operation with electronic control system, digital controllers, touch screen control stations and the video surveillance systems

2. Desk mounted master stations and speaker/ microphone units shall be located at control stations and touch screen control stations for audio communications.
 3. The digital communication controllers shall be located in the designated security equipment rooms.
- F. A communication interface will be provided at each control station to allow intercom and paging functions to occur.
- G. The project includes configuration in a manner that will allow switching of system audio buses to a higher level control location when the local control station is disabled.
1. An audio switching network shall be provided in order to allow transfer of the audio bus from the local control location to higher level control.
 2. When a control station is disabled by a duress alarm or touch screen station, the audio of the local control shall be connected to the designated higher level control station. Upon disable of the local control station, calls from devices in the local area shall be routed to the designated higher level control station.
- H. At touch screen stations, cameras that are associated with intercom stations, acknowledgement of a call will cause the associated camera to be displayed.
- I. Paging systems
1. Paging is provided at the local housing unit for the purpose of general announcements to occupants and monitoring of ambient noise levels.
 - a. Paging horns are provided in the outdoor recreation areas associated with the housing units.
 - b. Ceiling mounted paging speakers are provided in the housing units.
 2. The paging system is a zoned system with all call options as listed in Schedule B at the end of this section

1.3 SUBMITTALS (SEE SECTION 280510)

- A. Digital Intercom and Paging System:
1. Project data: Description of system operation indicating purpose and capabilities of each component of system with functional system diagram indicating interfaces to all other systems. Description shall include, and call attention to, all variances from the contract documents.
 2. Shop drawings: Complete installation drawings including system diagrams and terminal point to terminal point wiring diagrams or schedules.
 3. Product data: Technical data sheets and specifications for each and every component.
 4. Calculations: Amplifier sizing

PART 2 - PRODUCTS

2.1 GENERAL

- A. Acceptable manufacturers: All systems by same manufacturer, having authorized installer and service organization.
1. Communication system:
 - a. Base:
 - 1) Harding Instruments Co. Ltd. Microcomm DXL (to match Phase 1)
 2. Other manufacturers desiring approval comply with Division 01 Requirements.

2.2 SYSTEM DESCRIPTION

- A. The system shall consist of a microprocessor controlled, fully "digital", PC programmable, network of switching digital communication controllers with redundant controlling computers.
- B. The system shall include all features and functions required for a fully operational integrated system. System shall be capable of adding optional features, equipment and interfaces.

2.3 SYSTEM DESCRIPTION

- A. The system shall consist of a microprocessor controlled, fully "digital", PC programmable, network of switching digital communication controllers with redundant controlling computers.
- B. The system shall include all features and functions required for a fully operational integrated system. System shall be capable of adding optional features, equipment and interfaces.

2.4 SYSTEM CONFIGURATION

- A. The system shall consist of digital communication controllers and remote cages as required. The digital communication controllers shall be interconnected with data and audio buses as required to provide maximum use of all audio channels and support the task group management system of the touch screen control and management system.
- B. The digital communication controllers and all associated equipment shall be mounted in the equipment cabinets or the new cabinets as specified in Section 28 0555 and located as shown on the drawings.
- C. System shall consist of duplex master stations with direct access buttons, with handsets, and with LCD displays, as indicated on the plans. Each master shall be capable of calling all other stations in the system unless specifically blocked or restricted through programming.
- D. System shall include a "supervisor's" display type master control station at or near the central digital communication controller to function as system maintenance and fault indication station.
- E. Administrative software shall be provided for management of all features and functions available on the system, and installed on the ADS/FS.

2.5 SYSTEM OPERATION

- A. Touch Screen Stations shall be provided with the operation of a master stations integrated into the graphic presentation system as described in Touch Screen Presentation and Display System. A speaker/microphone interface with headset jack shall be located at each touch screen station.
- B. Call placement from an intercom station: Integrate into touch screen presentation and display system.
 - 1. Depressing an intercom station's call push-button to place a call request in the queue of the master station or stations assigned to receive that station's calls. Calls to be queued in order of priority level associated with the intercom station and time the call was placed.
- C. Call answering at an intercom master station: Integrate into touch screen presentation and display system
 - 1. Intercom master stations to be able to answer the top call request in its queue by depressing the 'Next' function key. At the completion of the call, the 'End' function key to close the communication link and remove the call from the queue.

2. Subsequent calls may be similarly handled for the remaining calls in the queue.
3. Queued calls may be answered out of sequence by scrolling through the queue to the desired call. The selected call to flash on the display and may be answered by depressing the 'Enter' key. 'End' key to close the communication link, remove the call from the queue and return the master station display to the top of the queue.
4. A call that is currently connected to a master station to display that the call is connected, the type of device connected, and the identity of the connected device.

D. Voice Communication

1. Telephone handset voice communication between intercom master stations shall be full duplex.
2. Open voice communications between intercom master stations to be automatically switched half duplex with press-to-talk override.
3. Voice communications between intercom master stations and intercom stations to be automatically switched half duplex with press-to-talk override.

E. Station audio monitoring:

1. Master stations to be able to monitor an individual intercom station or a pre-defined group of intercom stations.
2. System shall permit establishing as many station monitor groups as there are unused station ID numbers.
3. Each master station shall individually control the rate at which stations in the monitor group are sequenced through.

F. Paging distribution:

1. Master stations to have the ability to page to pre-determined groups of intercom stations and/or loudspeaker zones.
2. Paging selection shall be made by selecting the page function and a group or zone from the selection list. Alternately, the zone number may be entered after the page function has been selected.

G. Video surveillance system interface:

1. System to transmit command signals to the video surveillance system (via TSCMS/ECS) to route camera signals to viewing monitors via the electronic control system network.
2. Whenever a master station answers a call from an intercom station or places a call to an intercom station, camera(s) associated with the intercom station shall be displayed on the associated video monitor with the master station.

H. Alarm handling:

1. System shall annunciate alarms and faults at the designated intercom master stations at each central control room.
2. Alarms shall be selectively acknowledged and canceled.
3. Event response programming to permit system output action to be automatically initiated upon receipt of each specific alarm.

2.6 EQUIPMENT AND PRODUCTS

A. DIGITAL COMMUNICATION CONTROLLERS (DCC's)

1. Digital Communication Controllers (DCC) to each form an intercom exchange capable of independent local operation. Each DCC Shall manage up to 13 VoIP master intercom stations and 200 intercoms with a maximum of 39 VoIP simultaneous audio channels.

2. Multiple DCC's to be networked together via Ethernet data networks to form larger systems. VoIP enabled systems shall utilize IEEE 802.1p/Q Quality of Service (QoS) compliant Ethernet networking equipment.
3. Each DCC shall include:
 - a. Process Control Card (PCC)
 - b. Internal PCI card (VoIP accelerator card)
 - c. Front panel keypad/display for system setup and maintenance.
 - d. 110 VAC, 60 Hz power supply for internal functions.
4. Process Control Card:
 - a. Process Control Card to contain system configuration and data, control exchange operations and switching, and provide exchange network ports.
 - b. Process Control Card to include:
 - 1) USB network ports for exchange expansion.
 - 2) Ethernet network ports for system expansion and external control by touch screen computers and graphic control panels.
 - 3) Two serial ports.
 - 4) An internal modem for transmitting and receiving data over a telephone line.

B. TALKBACK EXPANDERS (TBEs)

1. Talkback Expanders to provide 8 amplified paging outputs that can drive 25 Vrms loudspeaker circuits.
2. Each TBE is to:
 - a. Provide 5 watts output per channel
 - b. Allow adjacent channels to be bridged to obtain higher power.
 - c. Provide talkback capability on all channels.
 - d. Include Audio Level Alarm capability on all channels.

C. VoIP PAGING/TALKBACK AMPLIFIER (PTA)

1. Paging Talkback Amplifier to provide paging outputs that can drive 8 ohm or 25 Vrms loudspeaker circuits.
2. Each PTA is to;
 - a. Provide 5 watts output
 - b. Provides a line level output, line level input, two status inputs and a controlled DPDT relay output.
 - c. Provide talkback capability allowing a two-way conversation to be carried out over the loudspeaker.
 - d. Include Audio Level Alarm capability.

D. VoIP DESKTOP INTERCOM MASTER STATIONS

1. VoIP desktop intercom master stations shall consist of a display, keypads, internal speaker & microphone, telephone handset with hook switch, headset jack, and large visual alarm indicator.
2. The display shall provide a 128x64 pixel graphical (backlit) LCD capable of displaying a "title" row, three "data" rows, and two "menu" selection rows of two fields each.
3. Four context sensitive "soft" keys shall be provided next to the "menu" selection rows (two on each side) to facilitate menu selections.
4. Four "navigation" keys shall be provided below the display to assist in navigating the menu system and to facilitate adjustment of various system settings.
5. A standard 12-key telephone as well as dedicated "Release", "Mic Mute", "Speaker", "Volume Up", and "Volume Down" keys shall be provided.

6. Fourteen programmable “feature” keys, each with an LED indicator shall be provided.
7. The VoIP master station shall provide an ADA compatible telephone handset with coiled cord, terminated on an RJ9 connector.
8. The VoIP master station shall be fabricated from ruggedized plastics and provide a scratch and impact resistant window for the display. A two position stand shall also be provided.
9. Overall dimensions (excluding the stand): 8.5” x 8” x 2”.
10. The network connection shall be a 10/100Mbps (RJ45 connector) Ethernet port with support for IEEE 802.3af inline power. A separate power connector shall also be provided in case an IEEE 802.3af compliant Ethernet switch is not available. The master station shall also provide support for the IEEE 802.1p/Q Quality of Service (QoS) standard.

E. VoIP TOUCH SCREEN INTERCOM MASTER STATIONS

1. Desktop loudspeaker/microphone unit is to include compact, slim line bottom plate with stainless steel face, and rubber shock isolation mounting feet.
2. Unit to include a flush mount mic, front mounted loudspeaker, front mounted rotary volume control, and front access headphone jack.
3. Unit to include support for a privacy handset.
4. Unit to include a line level audio output of the speaker signal.
5. Unit to include an audio line level input/output for connecting to a third party external feedback suppressor or equalizer.
6. Unit to include support for external PTT switch.
7. Built in Automatic Gain Control (AGC)
8. The network connection shall be a 10/100Mbps (RJ45 connector) Ethernet port with support for IEEE 802.3af inline power. A separate power connector shall also be provided in case an IEEE 802.3af compliant Ethernet switch is not available. The master station shall also provide support for the IEEE 802.1p/Q Quality of Service (QoS) standard.
9. Unit to include a 2-port 10/100Mbps Ethernet switch to facilitate the connection of a second Ethernet device.

F. ADMINISTRATOR SOFTWARE

1. Administrator Software shall function on a standard PC to support system configuration, diagnostics, maintenance, and logging but not be required for system operation.
2. Administrator Software shall employ Windows features including views of system tree structure, tables of devices, screens for system settings and adjustments, and tables of operational data.
3. Configuration features to include:
 - a. Creation of overall system architecture.
 - b. Creation of multiple device templates.
 - c. Copy and paste functions with auto-numbering and auto-assignment to create device schedules.
 - d. Configuration error detection and alerts.
 - e. Device naming and call routing functions.
 - f. Device setting and performance functions.
4. Diagnostic and Maintenance features to include:
 - a. Verification of system configuration and installation.
 - b. Verification of system networks.
 - c. Verification of device connections.
 - d. Verification of system operation.
 - e. Diagnostics via modem or Ethernet ports.
5. Logging features to include:
 - a. Display of system activity with filtering options.
 - b. Search by time and date.
 - c. Search by device.
 - d. Search by parameter.

- G. Intercom Station Boards (As Required):
 - 1. Intercom station boards are to be used to interface generic intercom stations and loudspeakers to system station audio boards for two-way voice communication or audio monitoring.
 - 2. Units are to include microphone preamplifier, line supervision electronics, multiplexing electronics, and loudspeaker transformer.
 - 3. Units are to include pigtail and switch options as required for each location.

- H. Paging amplifiers:
 - 1. Provide paging amplifiers and zone switching as required to perform the functions described herein and indicated on the drawings.
 - 2. Paging amplifiers to be the constant voltage output type with power output capacities to drive the loudspeakers connected at sufficient levels with no more than 90% amplifier loading.
 - 3. Existing facility paging functionality and zoning shall be maintained at a minimum, and shall incorporate an All-Page feature to all ceiling speakers and horns.
 - 4. Coordinate Page Zones with owner for TS operation.
 - a. Atlas Sound 25V/70V
 - b. TOA Electronics 25V/70V
 - c. Equal

2.7 POWER SUPPLY

- A. Provide power supplies as required for audio equipment and functions. Power supplies shall conform to requirements of NEC Article 725. Provide over current protection of primary and distribute secondary over current protection for secondary wiring circuits.
 - 1. Class 1 power supplies shall be provided with over current protection as required by NEC Article 725. Provide over current protection for all conductors in accordance with ampere rating. Minimum conductor size served by a Class 1 power supply shall be 18 GA.
 - 2. Class 2 power supplies shall be power limited and/or over current protected in accordance with NEC Article 725. Nameplate rating of power supply shall not exceed limits indicated in NEC Article 725. Minimum conductor size served by a Class 2 power supply shall be 22 GA.
 - 3. Size power supplies to accommodate nameplate load of all components.
 - 4. Load on power supplies shall not exceed 90 percent of nameplate rating of power supply.

- B. Power Source (120 VAC) for equipment shall be provided by Division 16. Provide terminals for all incoming circuits provided.

2.8 WIRE AND CABLE

- A. Provide special cable and interface to accommodate field wiring:

- B. Provide wire and cable for operation described. Provide separate cable for each intercom station.
 - 1. Talk-back Page only: Minimum 22 GA one shielded pair. Daisy-Chained per zone.
 - a. Manufacturer (dry application):
 - 1) Belden 9462
 - 2) West Penn 291
 - 3) Comm/Scope, Inc.S222SSTR
 - 4) Liberty 22-2C-SH-GRY
 - b. Manufacturer (wet application):
 - 1) Belden 5501G1
 - 2) West Penn AQC291
 - 3) Comm/Scope, Inc.

4) Liberty

2. One-Way Page Only: Minimum 20 Gauge, unshielded pair. Daisy-Chained per zone.
 3. Factory manufactured field interface cables to be provided, as required, for all:
 - a. CBL-MST-A male DB-15 connector with 6 individually shielded twisted pairs for connecting to master station ports.
 - b. CBL-STN-A male DB-37 connector at one end with 16 individually shielded twisted pairs for connecting from station control card audio port to terminal blocks.
 - c. CBL-STQ-A with male DB-37 connectors at both ends and with 16 individually shielded twisted pairs. For connecting from station control card audio ports to QCB-120-1 Quick Connect Board.
 - d. CBL-SWT-A male DB-25 connector at one end with 16 individually unshielded twisted pairs for connecting from SCC- 300 station control card switch port to a terminal block.
 - e. CBL-SWQ-A with male DB-37 connectors at both ends and with 16 unshielded twisted pairs. For connecting from SCC- 300 station control card switch port to QCB-120-2 Quick Connect Board.
 4. Field wiring to conform to manufacturer’s recommendations.
- C. Data cable shall be Category 6. Limit cable lengths to 100 meters maximum.
1. Data Cable: Unshielded 4-Pair shall exceed all requirements for ANSI/EIA/TIA-568-A-5 and support high speed communication network applications.
 - a. Category 6:
 - 1) Belden: 7881A – Dry, 7940A - Wet
 - 2) West Penn: 4246 – Dry, M58772 – Wet
 - 3) Commscope: CS37R – Dry, CS340 – Wet

2.9 SPARE PARTS (SEE SECTION 280510)

- A. Deliver spare parts in protective wrapping and packaging for proper storage.
- B. Provide the following spare parts:
 1. Digital Communications Controller (DCC): One (1)
 2. Touch Screen Master Station: Two (2)
 3. Intercom Stations: Two (2) of each type used
 4. Paging Speakers and Horns: One (1) of each type used
 5. QCB boards and Station Cables (if used): One (1)

PART 3 - EXECUTION

3.1 INSTALLATION (SEE SECTION 280510)

- A. Shall be installed by qualified technicians who has been factory trained and certified.
- B. Wiring shall be uniform and in accordance with codes, standards and manufacturer’s instructions.
- C. Equipment shall be firmly secured, plumb, and level.
- D. All cable runs at the main terminal board and in all junction boxes shall be tagged and identified.
- E. Coordinate all work with other effected trades and contractors.

- F. Microphone, line and speaker levels shall be run in separate raceways and shall be separated from one another and from power cabling in racks and on terminal boards.
- G. Comply with the manufacturer's recommendations, procedures and standards for the setup and adjustment of the systems installed.
 - 1. Make all intercom speaker tap and amplifier gain adjustments prior to performance testing as follows:
 - a. Intercom Speaker Tap Adjustments: Select intercom taps for 75 dBA at 4 feet on-axis with power input equal to tap setting (e.g. at 1/2-watt input).
 - b. Once set, mark or identify all adjustment settings on the amplifiers and accessories.

3.2 WIRING (SEE SECTION 280510)

- A. Provide wiring as recommended by manufacturer but no less that specified herein.

3.3 SYSTEM INITIALIZING AND PROGRAMMING

- A. System shall include all software necessary for system configuration.
- B. System shall be turned on and adjustments made to meet requirements of specifications and on-site conditions.
- C. System shall be programmed to function as specified.
- D. Directory numbers, feature codes, and special programming shall be documented, printed and made available to owner.

3.4 SYSTEM TESTING (SEE SECTION 280510)

- A. Contractor to verify and document the full and proper operation of the complete system and system interfaces provided under this contract.
- B. Verification to include testing of all communication links including dialing, call request and cancel functions, volume level, and volume level adjustment. Proper routing of associated camera signals to operator monitors to be confirmed.
- C. System monitoring, paging, and program distribution to be verified for all devices providing those functions.
- D. All applicable intercom master station call handling and system control functions to be verified for each master station.
- E. Performance verification to ensure that system is configured as directed by the Owner for proper support of the facility's operation.
- F. Provide site services of manufacturer's representatives for testing, adjusting and balancing to ensure compliance with the Contract Documents. Factory trained technician in direct employ of the supplier shall provide on-site services for a minimum of 40 hours prior to the tests upon completion of the work to confirm system programming and operation.

3.5 OWNER PERSONNEL TRAINING (SEE SECTION 280510)

- A. Provide instruction in field programming of the equipment.
- B. Provide site services of appropriately qualified manufacturer's representatives where site training performed by the manufacturer's representatives is required to ensure compliance with the Contract Documents. Intercom station volume and paging speaker taps and/or amplifier volume must be balanced per owner preferences demonstrated during system testing.
- C.
- D. Training Outline-Operational staff
 - 1. Functions performed
 - 2. Acknowledgement/Responses
 - 3. Control Functions
 - 4. Emergency Staff Communications
- E. Training Outline-Maintenance Staff
 - 1. Systems Operation
 - 2. Component Review
 - 3. Routine Maintenance/Adjustments
 - 4. Troubleshooting/Repair
 - 5. Expansion Capabilities
 - 6. System Programming

END OF SECTION 285123