SOLICITATION, OFFER AND AWARD
(Construction, Alteration, or Repair)

IMPORTANT – The "offer" section on Page 2 must be fully completed by offeror.

1. CONTRACT NO.	2. SOLICITATION NO.	3. TYPE OF SOLICITATION	4. DATE ISSUED	5. PROJECT NUMBER	6. TRACKING NO.
696-FD-16-17-C117	696-FD-16-B001	☒ SEALED BID (IFB) ☐ NEGOTIATED (RFP)	09/02/2015	111322	11106003

7. ISSUED BY	8. ADDRESS OFFER TO
TEXAS DEPARTMENT OF CRIMINAL JUSTICE CONTRACTS AND PROCUREMENT INFORMATION TECHNOLOGY, CONSTRUCTION AND UTILITIES BRANCH TWO FINANCIAL PLAZA, SUITE 525 HUNTSVILLE, TX 77340	(SEE SECTION L, PARAGRAPH 11)

9. FOR INFORMATION CALL: ➔	A. NAME	B. TELEPHONE NO. (NO COLLECT CALLS)
	Lynne Piippo, CTPM, CTCM	PHONE NO.: (936) 437-7114 FAX NO. (325) 223-0310

Document Type: 9
Statutory Cite: 2166.003 (b)

ESTIMATED BUDGET: $3,078,500.00

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE STATE REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

Replace Security Control System – Billy Moore Unit
8500 North FM 3053
Overton, Texas 75684

As designed by:
Stanley Consultants, Inc.
6836 Austin Center Blvd., Suite 350
Austin, Texas 78731

Please provide the following information:
DUNS # 60-573-0659 TAX ID # 74-2947720 CHARTER # 0157319800

11. The Contractor shall begin performance within 10 calendar days and complete it within 310 calendar days as specified in the Notice to Proceed. This performance period is ☒ mandatory, ☐ negotiable. (* SEE SECTION F)

12A. THE CONTRACTOR MUST FURNISH, AT ITS OWN EXPENSE ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES", indicate within how many calendar days after award in Item 12B.)	12B. CALENDAR DAYS
☒ YES ☐ NO	14

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and two (2) copies to perform the work required are due at the place specified in Item 8 by 2:00 p.m. local time October 6, 2015. If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than **100** calendar days for acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)		
14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code) METROPLEX CONTROL SYSTEMS DBA ARGYLE SECURITY GROUP 12903 DELIVERY DRIVE SAN ANTONIO, TEXAS 78247	15A. Telephone No. (Include Area Code) (210) 495-5245 15B. Fax No.: (210) 494-5635	16. EMAIL ADDRESS DDEASON@ARGYLESECURITY.COM

AMOUNTS ➔	SEE BID SCHEDULE

17. The offeror agrees to furnish any required performance and payment bonds.

18. ACKNOWLEDGMENT OF ADDENDA / AMENDMENT
(The offeror acknowledges receipt to the solicitation – give number and date of each)

ADDENDA/ AMENDMENT NO.	A001	A002									
DATE	10/2/14	10/7/15									

19A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	19B. SIGNATURE	19C. OFFER DATE
DAVID DEASON, SR. VICE-PRESIDENT OF ESTIMATING		10/19/2015

AWARD (To be completed by State)

20. ITEMS ACCEPTED:

01	Replace Security Control System	$ 1,700,500.00
01A	Alternate 5-year warranty Specification Section 13400-1.09.B.1	$ 16,650.00
01B	Alternate 5-year warranty Specification Section 13432-2.03	$ 19,800.00
01C	Alternate 5-year warranty Specification Section 13775-1.07	$ 3,170.00
01D	Alternate 5-year warranty Specification Section 13775-3.06.D	$ 19,050.00
01E	Alternate 5-year warranty Specification Section 16730-1.02.A	$ 20,600.00

21. AMOUNT	22. AMOUNT IN WRITING
$1,779,770.00	One million seven hundred seventy-nine thousand seven hundred seventy dollars and no cents

23. ADMINISTERED BY	24. PAYMENT WILL BE MADE BY
Texas Department of Criminal Justice Contracts and Procurement, Information Technology, Construction and Utilities Branch Two Financial Plaza, Suite 525 Huntsville, TX 77340	Texas Department of Criminal Justice Accounts Payable P.O. Box 4018 Huntsville, TX 77342-4018

STATE WILL COMPLETE ITEM 25 OR 26 AS APPLICABLE

☐ 25. NEGOTIATED AGREEMENT Contractor is required to sign this document and return _____ copies to issuing office. Contractor agrees to furnish and deliver all items or perform all requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	☒ 26. **AWARD**: Your offer on this solicitation to the items listed above is accepted subject to Section D. Conditions Precedent to Award. The contract documents consist of (a). all documents included in TDCJ Solicitation Number 696-FD-16-B001and Solicitation Addenda; (b). all documents included in your Offer; and (c) this Solicitation, Offer and Award Document.
27A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	28A. NAME AND TITLE Brad Livingston Executive Director

27B. SIGNATURE	27C. DATE	28B. TEXAS DEPARTMENT OF CRIMINAL JUSTICE	28C. AWARD DATE
			12/15/15

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SECTION B

THE SCHEDULE
BID SCHEDULE

ITEM NO.	DESCRIPTION	QUANTITY	PRICE
01	**Base Bid**		
	Replace Security Control System at the Billy Moore Unit, located at 8500 North FM 3053, Overton, Texas as shown by the construction plans as prepared by Stanley Consultants, Inc.		
		Lump Sum	**$ 1,700,500.00**
01A	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13400 – 1.09.B.1		$ 16,650.00
01B	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13432 – 2.03		$ 19,800.00
01C	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13775 – 1.07		$ 3,170.00
01D	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13775 – 3.06.D		$ 19,050.00
01E	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 16730 – 1.02.A		$ 20,600.00
		Grand Total	**$ 1,779,770.00**

The Base Bid is separated as follows:

(1) Materials incorporated into the realty (Cannot be less than the price Contractor paid for materials)	$ 1,169,229.00
(2) Labor	$ 147,230.00
(3) Overhead and Profit (includes the cost of the Payment and Performance Bonds)	$ 384,041.00
TOTAL	**$ 1,700,500.00**

RECYCLED MATERIALS

The Texas Department of Criminal Justice is required to (1) eliminate procedures and specifications that discriminate against products made of recycled materials and (2) encourage the use of products made of recycled materials. If product(s) being bid on this solicitation (a) contains recycled material whether post-consumer or pre-consumer; or (b) is a product that has been remanufactured, rebuilt, or otherwise restored to a like new condition, bidder shall, as part of the bid response, indicate on the appropriate line item if product has recycled content.

Not Applicable

SECTION C

SPECIFICATION AND DRAWINGS

(SEE SECTION J, ATTACHMENT NO. 11 AND 12)

SECTION D

CONDITIONS PRECEDENT TO AWARD

The following are conditions precedent to the Award being an enforceable contract. In the event these conditions are not met, this Award shall be null and void and of no force or effect, unless Owner agrees in writing to the contrary.

The conditions precedent to the Award are:

1. Compliance with Section I. General Conditions, Article III., Contract Documents and Bonds, paragraph 3.5 Performance and Payment Bonds;

2. Compliance with Section I. General Conditions, Article V., Contract Responsibilities, paragraph 5.7 Insurance.

3. Compliance with Section K. Representations, Certifications and Other Statements of Bidders, paragraph 1, Historically Underutilized Business (HUB) Representation and Section I, General Conditions, Article II., Laws Governing Construction, paragraph 2.5 Historically Underutilized Business (HUB).

SECTION E

INSPECTION AND ACCEPTANCE

1. Inspection and acceptance shall be as stated in the Contract Documents. The Owner hereby reserves the right to perform inspections of the Work and any and all inspections performed by the Owner or by others for the Owner shall be for the sole benefit of the Owner. Quality control is and shall remain one hundred percent (100%) the responsibility of the Contractor.

2. **INSPECTION OF CONSTRUCTION**

   (a) *Definition:* "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

   (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work performed under the Contract conforms to Contract requirements. The Contractor shall maintain complete inspection records and make them available to the Owner. All Work shall be conducted under the general direction of the Owner and is subject to Owner inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract.

   (c) Owner inspections and tests are for the sole benefit of the Owner and do not:

      (1) Relieve the Contractor of responsibility for providing adequate quality control measures;

      (2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

      (3) Constitute or imply acceptance; or

      (4) Affect the continuing rights of the Owner after acceptance of the completed Work under paragraph (i) of this section.

   (d) The presence or absence of an Owner's inspector does not relieve the Contractor from any Contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Owner's written authorization.

   (e) The Contractor shall promptly furnish, at no increase in Contract Sum, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Owner. The Owner may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. The Owner shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the Contract.

   (f) The Contractor shall, without charge, replace or correct work found by the Owner not to conform to Contract requirements, unless in the public interest the Owner consents to accept the Work with an appropriate adjustment in Contract Sum. The Contractor shall promptly segregate and remove rejected material from the premises.

   (g) If the Contractor does not promptly replace or correct rejected Work, the Owner may:

      (1) By contract or otherwise, replace or correct the Work and charge the cost to the Contractor, or

(2) Terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire Work, the Owner decides to examine already completed Work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the Work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the Work is found to meet Contract requirements, the Owner shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the Work was thereby delayed, an extension of Contract Time.

(i) Unless otherwise specified in the Contract, the Owner shall accept, as promptly as practicable after completion and inspection, all Work required by the Contract or that portion of the Work the Owner determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Owner's rights under any warranty or guarantee.

SECTION F

DELIVERIES OR PERFORMANCE

1.1 CONTRACT TIME

The performance period for this Contract shall be **three hundred ten (310)** calendar days and shall begin on the date designated in the Notice to Proceed. All Work shall be completed within the amount of calendar days designated in the Notice to Proceed, unless otherwise modified by written agreement of the contracting parties.

2.1 LIQUIDATED DAMAGES - FAILURE TO COMPLETE WITHIN CONTRACT TIME

(a) If the Contractor fails to complete the Work within the time specified in the Contract, or any extension, the Contractor shall pay to the Owner as liquidated damages, the sum of **Six Hundred Five Dollars ($605.00)** for each available calendar day of delay.

(b) If the Owner terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned by the Owner in completing the Work.

(c) If the Owner does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the Work is completed or accepted.

(d) In the event that the Contractor fails to complete the Work within the time specified in the Contract and/or the Owner is assessing liquidated damages, the Contractor is bound to faithfully perform all contractual requirements until such time as the Work is satisfactorily completed or accepted by the Owner.

SECTION G

CONTRACT ADMINISTRATION DATA

1. POINT OF CONTACT

(a) The Contract Administrator shall be the primary point of contact and is responsible for the administration of all matters concerning bonds, insurance, disputes, claims, and all Change Orders estimated at $25,000.00 or more.

(b) The Project Administrator shall be the primary point of contact for all on site construction activities. All documents, correspondence, request for changes, Change Orders/Field Orders less than $25,000.00, requests for meetings, pre-final and final inspections and any and all other activities pertinent to the performance and daily administration of the Contract shall be coordinated with the Project Administrator unless otherwise excepted in the Contract Documents.

2. PAYMENTS

It is recommended that the Contractor receive payments via electronic funds transfer (EFT), also known as Direct Deposit. Regardless as to whether Direct Deposit is chosen, the Contractor shall submit a completed Vendor Maintenance Direct Deposit and Substitute W-9 Form (See Section J, Attachment No. 13) to the following address:

TDCJ Accounts Payable
P.O. Box 4018
Huntsville, Texas 77342-4018

If the Contractor has previously submitted a completed Vendor Maintenance Direct Deposit and Substitute W-9 Form to the TDCJ for another separate contract, another form is not required to be submitted. In the event the Contractor elects to decline Direct Deposit on the Vendor Maintenance Direct Deposit and Substitute W-9 Form, the payment will be mailed to the address provided in Section K, Article 14, Remittance Address.

SECTION H

SPECIAL CONDITIONS

The following Special Conditions supplements, modifies, changes, deletes from or adds to the General Conditions as specified herein. Where any Article of the General Conditions is modified or any paragraph or clause thereof is modified or deleted by these Special Conditions, the unaltered provisions of that Article, Paragraph, Sub-Paragraph or Clause of the General Conditions shall remain in effect.

1. CONTRACT DRAWINGS AND SPECIFICATIONS

The Contractor will be furnished four (4) complete sets of the Contract Drawings and Specifications (Project Manual) at no cost to the Contractor.

2. BACKGROUND CHECKS FOR CONTRACT CONSTRUCTION WORKERS

A. General Provisions

Contract Construction Workers, by Contract, are individuals employed by a private construction contractor or Subcontractor and whose access to Agency premises or privately operated correctional facilities have been approved by the Warden for the sole purpose of performing construction-related Work authorized by the TDCJ Facilities Division. Contract Construction Workers shall be subject to stringent security measures and be closely supervised upon access to Agency premises. Contract Construction Workers shall not be issued badges or ID cards, nor allowed to come and go at will. Contract Construction Workers shall be searched, and the tools and equipment furnished by the Contract Construction Workers shall be carefully inventoried and secured at all times.

B. Minor traffic violations are not considered criminal charges; however, an outstanding warrant resulting from a minor traffic violation shall cause a contract employee to be ineligible for conducting work on a unit or facility.

C. Criminal History Eligibility Criteria

Notwithstanding a misdemeanor conviction and a felony conviction, an individual may be considered on a case-by-case basis for approval to be a contract construction worker provided the individual meets the following eligibility criteria.

1. The individual shall have completed any sentence for criminal offense, including community supervision, and have not been incarcerated in a correctional facility for the previous two-year period.

2. The individual shall not have been convicted of any of the offenses listed below (to include soliciting, attempting, conspiring, or aiding others to engage, solicit, attempt or conspire to commit any of the listed offenses), or have been incarcerated in or sentenced to an adult correctional facility for any felony offense during which violence was used in the commission of the offense.

3. Homicide - (capital murder; murder; manslaughter; or any other homicide offense);

4. Kidnapping - (aggravated kidnapping; kidnapping; unlawful restraint or any other kidnapping offense);

5. Sexual Offense - (rape; sexual assault; sexual abuse; aggravated rape; aggravated sexual abuse; or any other sexual assault offense including indecency with a child);

6. Robbery - (robbery; aggravated robbery; or any other robbery offense);

7. Assault - (assault; aggravated assault; injury to a child; injury to an elderly person; or any other assault offense); or

8. Offense Involving Use or Exhibition of a Deadly Weapon (includes during the commission of the offense or during immediate flight therefrom and where an affirmative finding on use of a deadly weapon was made by the trial court or jury).

D. Criminal History Background Check

The Facilities Division's designated staff shall be responsible for:

1. Obtaining a current list of all Contract Construction Workers scheduled to access Agency premises; and

2. Ensuring that a criminal history background check is performed prior to the individual performing services for the Agency and on an annual basis. (Proper and complete documentation is crucial to timely completion of background checks.) The Department makes no commitment as to the length of time to complete a background check.

E. A contract construction worker with a prior conviction/incarceration must meet the following criteria:

1. A Contract Construction Worker must not have any pending charges for any criminal offense or have an outstanding warrant.

2. Former TDCJ employees who have separated employment under certain conditions may not be allowed on the unit/facility.

3. Immediate family members (parent, brother, sister, spouse, child, grandparent, aunt, uncle, nephew, niece) of an offender may not be allowed on the unit/facility.

4. Contract Construction Workers shall not be allowed to work on a unit/facility they have been assigned to as a former TDCJ offender.

5. The Warden may not allow a Contract Construction Worker on a unit/facility if the Warden believes the contract construction worker may jeopardize the safe and orderly operation of the unit/facility, pose a danger to offenders or employees, or place an undue logistical burden on staff.

3. SPECIAL SECURITY MEASURES

A. The Contractor shall provide the Facilities Division Project Administrator a list of all Contract Construction Workers who will be working on the unit. The Contractor shall daily update/revise the list as Contract Construction Workers are added or terminated and provide the Facilities

Division Project Administrator with the current list in effect. The list shall be in alphabetical order by employee's last name and shall include employee's driver's license number, social security number and company name. In addition, as new contract construction workers are added to the workforce, the Contractor shall provide the Facilities Division Project Administrator with a completed Non-Employee Background Questionnaire (included herein as Attachment No. 9) in advance of said employees being admitted to the worksite, for the background check to be conducted. Each Contract Construction Worker shall read and sign a copy of the Standards of Conduct for Civilian Construction Contractor's Employees (included herein as Attachment No. 1) acknowledging and agreeing to abide by these standards.

B. All Contract Construction Workers shall have read TDCJ's PD-22, "General Rules of Conduct and Disciplinary Action Guidelines for Employees", and PD-29, "Sexual Misconduct with Offenders", which are located on the Texas Department of Criminal Justice website at http://www.tdcj.state.tx.us/vacancy/hr-policy/index.htm, prior to commencing Work. Failure to adhere to these rules will result in contract employee's expulsion from the unit.

C. The Contractor shall provide a legible photocopy of one of the acceptable primary identification documents as stipulated by the Texas Department of Public Safety, which includes driver's license, State ID card, Federal ID card or a passport in conjunction with a photocopy of their Social Security Card for all Contract Construction Workers who will be working on the unit.

D. All Contract Construction Workers will report to the job site at the scheduled shift time and proceed into the facility as a group. At the end of the workday they will all leave in a similar group. Only work crew supervisors will be allowed to leave the unit's fenced compound under escort to procure additional tools or specialized tools. All Contract Construction Workers may eat their lunch in the work area or exit the unit in a group for lunch. Contract Construction Workers may not eat in the unit's cafeteria.

E. The Contractor will coordinate with the Unit Warden or designee the collection point for Contract Construction Workers to enter the fenced compound and measures to be taken to receive required security escort of Contract Construction Workers to construction site if through the unit compound.

F. Tools, generators, ladders, acetylene cutters, vehicular equipment or heavy equipment shall not be stored in the unit fenced compound.

G. Contractor shall implement measures to disable vehicular or heavy equipment (e.g., vehicles, graders, cherry pickers, etc.) when they are left unattended.

H. Contractor and Contract Construction Workers shall ensure a clear area be maintained a minimum of eight (8) feet from all fences. This area shall be clear of all debris, weeds and other construction material. All work sites will be cleared of construction debris at the end of each day. All debris is to be immediately removed to a secure area or to a designated area for disposal.

I. All vehicles will be searched upon entering and/or exiting the unit's fenced compound.

J. The Texas Department of Criminal Justice reserves the right to adopt any special rules as may be necessary to preserve the security of the institution should they become necessary. Coordination between the Unit Warden and Contractor shall be made as those situations arise.

K. All Contract Construction Workers appointed by Contractor who visit any TDCJ unit will be required to comply with that unit's security regulations.

4. EQUIPMENT/SYSTEM DEMONSTRATIONS

The equipment/system demonstrations along with the services to provide instruction in the operation and/or maintenance of equipment and systems to the Owner, as called for in the Technical Specifications, shall be scheduled and performed (at a time as directed by the Owner) not later than the first thirty (30) Day period after beneficial occupancy.

5. RELATIONSHIP OF PARTIES

Contractor is acting as an independent contractor and is wholly responsible for the day-to-day operations of its programs and employees; no joint venture, partnership, or agency exists nor shall be implied by the terms of this Contract. No employee of Contractor shall become an employee of the TDCJ by virtue of this Contract.

6. CONFIDENTIALITY

Any confidential information provided to or developed by the Contractor in the performance of the Contract shall be kept confidential unless otherwise provided by law and shall not be made available to any individual or organization by the Contractor or the Department without prior approval of the other party.

7. WAIVER

No waiver by either party of any default of the other under this Contract shall operate as a waiver of any future or other default, whether of a like or different character or nature.

8. SEVERABILITY

If any part of this Contract is contrary to any federal, state, or local law, it is not applicable and such invalidity shall not affect the other provisions or applications of this agreement which can be given effect without the invalid provision or application and to that end the provisions of this Contract are declared to be severable.

9. CONTRACT MODIFICATION

No other agreements, oral or written, shall constitute a part of this Contract unless such be made in writing, executed by the parties hereto or their successors, and expressly made a part thereof, and approved in writing by the Owner.

10. BID DEPOSIT (5% of Total Bid)

The Contractor further agrees that the Bid Deposit accompanying this Bid, payable to the Texas Department of Criminal Justice, and its amount is the measure of damages which the Owner will sustain by the failure of the undersigned to execute and deliver the Contract, Performance Bond and Payment Bond, insurance certificates and that if the undersigned defaults in executing the Agreement and/or in furnishing the aforementioned documents within fourteen (14) consecutive calendar days from Contract award, then the Bid Deposit shall become subject to forfeiture to the Owner. Bid Deposit is not required for bids totaling less than $25,000.00. Acceptable forms of bid deposits are limited to: irrevocable letter of credit issued by a financial institution subject to the laws of Texas; a surety or blanket bond from a company chartered or authorized to do business in Texas and United States Treasury listed; a United States Treasury Bond; or certificate of deposit.

11. STANDARD WORK WEEK

The standard work week shall be Monday through Friday, eight (8) hours per day. Any deviation from the standard work week schedule; including but not limited to weekends, holidays, extended hours, night work or four ten-hour days; must be approved by the Owner.

Utilizing the standard work week, the Contractor shall schedule the Work to be completed within the Contract Time, which is measured in calendar days rather than scheduled work days.

Approved work schedules other than the standard work week may be revoked for circumstances beyond the Owner's control or if the Contractor fails to maintain adequate staff, equipment or supervision for proper execution of the Work.

The actual work hours will be established at the pre-construction conference.

12. NOTICE TO PROCEED

It is the Owner's intent to issue a Notice to Proceed (NTP) at the pre-construction conference with an effective start date on the following Monday.

13. CONTRACT SCHEDULE

The Contractor shall comply with the following Special Conditions in conjunction with Section I, Article VIII of the General Conditions.

13.1 Contractor's Scheduler

The Project Scheduler shall be responsible for preparing, updating, and maintaining the Project Schedule, and for submitting the reports to the Owner required by the Contract Documents. The Project Scheduler shall be responsible for identifying and obtaining all necessary information from Subcontractors, vendors, suppliers and the Owner. The Project Scheduler shall be fully authorized to act on behalf of the Contractor with respect to performing all Project Schedule requirements.

The Project Scheduler shall have as a minimum the following qualifications:

(1) Two years of experience in preparing, updating and maintaining Critical Path Method (CPM) construction schedules of fifty activities or more using Primavera. (List such projects and describe the scheduling responsibilities of the proposed Project Scheduler on each).
(2) One year of experience using Primavera software in construction scheduling (List such projects and describe the scheduling responsibilities of the proposed Project Scheduler on each as well as provide contact information for Primavera experience verification).

After award of the Contract and prior to the Pre-Construction Conference, the Contractor shall submit for the Owner's approval a resume evidencing the qualifications listed above to the Project Administrator.

13.2 Activities shall be identified by buildings and activity durations shall be in units of whole workdays. Less than two percent (2%) of all non-procurement activities' original durations shall be greater than thirty (30) Days.

13.3 Within fourteen (14) Days after the start of the Contract Time, the Contractor shall submit the CPM Schedule.

13.4 The Project Schedule shall be updated on a monthly basis throughout the duration of the Work and until Contract completion.

13.5 Average workdays lost monthly due to Anticipated Adverse Weather Days:

Jan	Feb	Mar	April	May	Jun	July	Aug	Sept	Oct	Nov	Dec
7	7	7	7	7	6	5	5	6	5	7	7

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SECTION I

GENERAL CONDITIONS

ARTICLE I. GENERAL PROVISIONS

1.1 CONTRACT DEFINITIONS: Whenever the following terms are used in these General Conditions or in the other Contract Documents, the intent and meaning shall be interpreted as follows:

1.1.1 ADVERSE WEATHER DAY: A day on which the Contractor's current contract schedule indicates Work is to be performed, and which inclement weather and related affected site conditions prevent the Contractor from performing Work on critical activities for 50 percent or more of the Contractor's scheduled workday. Days qualifying as Adverse Weather Days are days in which the adverse weather conditions altered the physical site conditions rendering consequential disruption to the day's scheduled progress.

1.1.2 ARCHITECT/ENGINEER (A/E) and/or DESIGN PROFESSIONAL (DP): A person registered as an architect pursuant to Tex. Occ. Code Ann., Chapter 1051, as a landscape architect pursuant to Tex. Occ. Code Ann., Chapter 1052, a person licensed as a professional engineer pursuant Tex. Occ. Code Ann., Chapter 1001 and/or a firm employed to provide professional architectural or engineering services and to exercise overall responsibility for the design of a Project or a significant portion thereof, and to perform the contract administration responsibilities set forth in the Contract.

1.1.3 BENEFICIAL OCCUPANCY: The date of Beneficial Occupancy of the Work, or designated portion thereof, is the date jointly certified by the A/E and Owner when construction is so sufficiently complete, in accordance with the Contract Documents, that the Owner may, at the Owner's option, utilize the Work, or a designated portion thereof, for the use for which it is intended.

1.1.4 BUSINESS HOURS: Normal business hours are Monday through Friday from 8:00 a.m. until 5:00 p.m. Central Time.

1.1.5 CHANGE ORDER: A Change Order is a written order to the Contractor signed by the Owner issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his/her agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time.

1.1.6 CONTRACT CONSTRUCTION WORKER: Is an individual employed by a private construction contractor or subcontractor and whose access to Agency premises or a privately operated correctional facility has been approved by the Warden for the sole purpose of performing construction-related Work authorized by the TDCJ Facilities Division or the facility's owner. This definition does not include a purchase order/procurement card vendor.

1.1.7 CONTRACT: The Contract Documents form the **CONTRACT**, which represents the entire and integrated agreement between the Owner and the Contractor and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the A/E and Contractor, or (2) between the Owner and a Subcontractor or (3) between any persons or entities other than the Owner and Contractor. The A/E shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the A/E duties.

1.1.8 CONTRACT DOCUMENTS: The Contract Documents consist of the Solicitation, Offer and Award document inclusive of its Sections A through M and the Attachments and Exhibits thereto, Payment and Performance Bonds, Specifications, Drawings, Addenda issued prior to contract award, other documents listed in the Contract, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties or (2) a Change Order or (3) a Unilateral Change Order, or (4) a written order for a minor change in the Work (not involving an adjustment in the Contract Sum or an extension of the Contract Time) issued by the Owner or the A/E.

1.1.9 CONTRACTOR: The individual, corporation, company, partnership, firm or other organization that has contracted to perform the Work under the Contract with the Owner.

1.1.10 CONTRACT SUM: The Contract Sum is the total compensation payable to the Contractor for performing the Work as originally contracted for or as subsequently adjusted by Change Order.

1.1.11 CONTRACT TIME: The Contract Time is the total number of calendar days within which the Contractor shall commence and complete the Work to be performed, as originally contracted for or as subsequently adjusted by Change Order. The Contract Time will begin on the day designated in the Notice to Proceed.

1.1.12 DAY: Wherever the word "Day" is used in the Contract Documents, it shall be interpreted to mean a calendar day, which is not the same as a scheduled work day.

1.1.13 DRAWINGS: The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.14 ENVIRONMENTALLY SENSITIVE PRODUCT: A product that protects or enhances the environment or that damages the environment less than traditionally available products.

1.1.15 FIELD ORDER: An authorization given to the Contractor to proceed with a limited change in the Work. The Field Order guarantees that the Contractor will be compensated for the Work. However, the Contractor cannot request this compensation until the Field Order is included in a completed Change Order. Field Orders are not to exceed $25,000.00.

1.1.16 FURNISH: "Furnish", unless specifically limited in context, means; furnishing items specified to project site, to include unpacking and assembly. Owner furnished items shall be unloaded, unpacked and properly stored by the Contractor upon delivery. Assembly, if required, shall be by the Contractor.

1.1.17 INSTALL: "Install" means incorporating into the Work including all necessary labor, materials, equipment and connections to perform Work indicated.

1.1.18 OWNER: The Owner is the State of Texas acting through the Texas Department of Criminal Justice.

1.1.19 POST-CONSUMER MATERIALS: Finished products, packages or materials generated by a business entity or consumer that have served their intended end uses, and that have been recovered or otherwise diverted from the waste stream for the purpose of recycling.

1.1.20 PRE-CONSUMER MATERIALS: Materials or by-products that have not reached a business entity or consumer for an intended end use including industrial scrap material and overstock, or obsolete inventories from distributors, wholesalers and other companies. The term does not include materials and by-

products generated from, and commonly reused within, an original manufacturing process or separate operation within the same or a parent company.

1.1.21 PRELIMINARY PAY WORKSHEET: The Preliminary Pay Worksheet is a review document that reflects work performed and the established schedule of values. The Preliminary Pay Worksheet is submitted by the Contractor to the Owner prior to a request for progress payment.

1.1.22 PROJECT: The term "Project" shall comprise the total construction of which the Work performed under the contract documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.23 PROJECT MANUAL: The Project Manual is the volume(s) usually assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

1.1.24 PROVIDE: "Provide" means furnish and install.

1.1.25 RECYCLED MATERIAL CONTENT: The portion of a product made with Recycled Materials consisting of Pre-Consumer Materials (waste), Post-Consumer Materials (waste), or both.

1.1.26 RECYCLED MATERIALS: Materials, goods or products that contain recyclable materials, industrial waste, or hazardous waste that may be used in place of raw or virgin materials in manufacturing a new product.

1.1.27 RECYCLED PRODUCT: A product that meets the requirements for recycled material content as prescribed by the rules established by the Texas Commission on Environmental Quality in consultation with the Comptroller of Public Accounts (CPA). The product must be clearly identified as recycled by packaging, markings, literature, etc.

1.1.28 SAMPLES: Samples are physical examples furnished by the Contractor to illustrate materials, equipment or workmanship, and to assist in the establishment of standards by which the Work will be judged.

1.1.29 SHOP DRAWINGS: Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, and which illustrate some portion of the Work.

1.1.30 SPECIAL CONDITIONS: Special Conditions shall relate to a particular Project but shall not weaken the character or intent of the General Conditions. Special Conditions will supplement specific paragraphs of the General Conditions as specified in the Special Conditions.

1.1.31 SPECIFICATIONS: The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

1.1.32 SUBCONTRACTOR: A person or organization who contracts under, or for the performance of part or the entire Contract between the Owner and the Contractor. The subcontract may be direct with the Contractor or with another subcontractor.

1.1.33 WORK: The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, plant and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.2 EXECUTION AND CORRELATION

1.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

1.2.2 The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the required results.

1.2.3 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.4 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3 INTERPRETATION

1.3.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an", but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.3.2 In the interest of conciseness, sentences, statements, and clauses used exclude any form of verb "shall" normally expressed in verb phrase with verbs such as "furnish", "install", "provide", "perform", "construct", "erect", "comply", "apply", "submit", etc. Any such sentences, statements, and clauses are to be interpreted to include applicable form of phrase "the Contractor shall" and requirements described therein interpreted as mandatory elements of Contract.

1.3.3 In interest of conciseness, references to specification sections and details may be preceded by the word "see". Any such references are to be interpreted to include applicable form of phrase, "and comply with".

1.4 FIXED ASSET ACCOUNTING: Prior to final acceptance the Project Administrator will prepare a list of items included in the Work which are to be capitalized. This list will be generally limited to items having a value in excess of $5,000.00 and not being an integral part of the structure. The list will include but will not be limited to items such as emergency generator, food service equipment, laundry equipment, electronic equipment, etc. The Project Administrator will present the list of items to the Contractor who shall provide the value of each item on the list to the Project Administrator prior to final payment. The list will include the equipment with its cost, manufacturer, model number and serial number. Equipment and systems shall be listed by building wherein they are installed. In addition, the total value of each individual building must be specified.

1.5 DELIVERY: Name and address of Owner will not be used for deliveries. Owner will not accept delivery of products and materials and Owner will not be responsible for material losses, delays or other damages, including all impacts resulting from the use of the Owner's name and address for deliveries. Contractor shall make arrangements to have someone present for acceptance and unloading of all deliveries. Arrange deliveries in accordance with construction schedules and in ample time to facilitate inspection prior to installation and to not cause delay to the project.

1.6 PHOTOGRAPHS: Photographs shall be taken only with written permission of the Owner. (Progress photographs will not be required unless called for elsewhere.)

1.7 PRE-CONSTRUCTION CONFERENCE: After award of the contract a Pre-Construction Conference will be held to discuss mobilization and specific pre-construction activities. The Pre-Construction Conference will be conducted by the Owner. The A/E, the Owner and its representatives and the Contractor will participate. The prime objectives of the Pre-Construction Conference are to:

1. Introduce the Contractor to persons responsible for the monitoring and administration of the Work.

2. Develop a list of representatives of the Owner, the A/E and the Contractor who will be directly involved with the Project. This list shall include names, telephone numbers, functions and responsibilities. Key personnel's telephone numbers for after Business Hours shall be listed.

3. Establish interfaces between Contractor, Owner and A/E personnel.

4. Contractor shall furnish (in writing) the percent for social security, workman's compensation and like taxes, to be applied to the labor portion of the Change in Work/Cost Analysis for Work to be done by the Contractor.

5. Contractor shall furnish (in writing) the percent for social security, workman's compensation and like taxes, to be applied to the labor portion of the Change in Work/Cost Analysis for all of its Subcontractors.

6. Review the requirements for mobilization including:

   a. Location of temporary offices,

   b. Lay-down area,

   c. Security requirements,

   d. Safety requirements, and

   e. Reporting requirements.

1.8 PROJECT REVIEW MEETINGS: Project Review Meetings shall be held on a regularly scheduled basis. These meetings will provide a management level review of the Contractor's operations, assessment of progress and schedule, discussion and resolution of problems, and coordination of the activities of all parties concerned. The minutes of these meetings will provide a record related to the accomplishment of the Work. The Project Review Meetings are formal meetings and are held in addition to, and at a higher level than, weekly job meetings.

1.8.1 The Owner will chair these meetings. The Owner, the A/E's representative, the Owner's inspectors, and the Contractor's Project Manager/Superintendent or other representative as designated by the Contractor and approved by the Owner shall attend these meetings. Notice of the meeting will be sent to all parties by the Owner. Anyone required but not able to attend must send an authorized representative with full authority to participate in problem solving and decision making unless prior arrangements to be excused are made with the Owner.

1.8.2 The Project Review Meetings will be held monthly unless more frequent meetings are necessitated under certain circumstances. The Owner will determine the frequency of meetings, but they will, under no circumstances, be held less than monthly.

1.8.3 The Owner will prepare and distribute the minutes. These minutes will be published no later than one week after the conclusion of the meeting. In addition to the documentation of the meeting, the minutes will include the date, time and place of the meeting and the names of all attendees and their respective affiliations.

ARTICLE II. LAWS GOVERNING CONSTRUCTION

2.1 **COMPLIANCE WITH LAWS**: In the execution of the Contract, the Contractor must comply with all applicable State and Federal laws, including but not limited to laws concerned with labor and equal employment opportunity, safety and minimum wages, and patent, copyright and trademark rights. The Contractor shall make himself/herself familiar with and at all times shall observe and comply with all Federal, State and Local laws, ordinances and regulations which in any manner affect the conduct of the Work, and shall indemnify and save harmless the State and its official representatives against any claim arising from violation of any such law, ordinance or regulation by its self or by its Subcontractors or its employees.

2.1.1 The Contractor shall cooperate with applicable city or other government officials at all times where their jurisdiction prevails. The Contractor shall make application and payments for any permits and permanent utilities, which are required for the execution of the Work.

2.1.2 In the event of an apparent conflict between requirements of two or more codes or standards, the more restrictive requirement shall govern. Specific requests for interpretation shall be directed to the Owner.

2.2 **WAGE RATES**: The Contractor shall not pay less than the wage scale of the various classes of labor as shown on the "Prevailing Wage Schedule" provided by the Owner. The specified wage rates are minimum rates only. The Owner is not bound to pay any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract. The "Prevailing Wage Schedule" is not a representation that qualified labor adequate to perform the Work is available locally at the prevailing wage rates.

2.2.1 Notification to Workers: The Contractor shall notify each worker, in writing, of the following as they commence Work on the Contract: the worker's job classification, the established minimum wage rate requirement for that classification, as well as the worker's actual wage. The notice must be delivered to and signed in acknowledgement of receipt by the employee and must list both the wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by the Owner, the Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law.

2.2.1.1 Submit a copy of each worker wage-rate notification to the Owner with the application for progress payment for the period during which the worker was engaged in activities on behalf of the project.

2.2.1.2 The Prevailing Wage Schedule is determined by the Owner in compliance with Tex. Gov't Code, Chapter 2258. Should the Contractor at any time become aware that a particular skill or trade not reflected on the Owner's Prevailing Wage Schedule will be or is being employed in the Work, whether by the Contractor or by a subcontractor, the Contractor shall promptly inform the Owner of the proposed wage to be paid for the skill along with a justification for same. The Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the Prevailing Wage Schedule. In no case shall any worker be paid less than the wage indicated for Laborers.

2.2.1.3 Assessment for Violation: The Contractor and any Subcontractor will pay to the State an assessment of sixty dollars ($60) for each worker employed for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the Prevailing Wage Schedule.

2.2.1.4 COMPLAINTS OF VIOLATIONS

2.2.1.4.1 Owner's Determination of Good Cause. Upon receipt of information concerning a violation of Tex. Gov't Code, Chapter 2258, the Owner will, within 31 Days, make an initial determination as to whether good cause exists that a violation occurred. The Owner will send documentation of the initial determination to the Contractor against whom the violation was alleged, and to the worker involved. Upon making a good cause finding, the Owner will retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the Prevailing Wage Schedule and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

2.2.1.4.2 If the Contractor and claimant worker reach an agreement concerning the claim, the contractor shall promptly notify the Owner in a written document countersigned by the worker.

2.2.1.4.3 Arbitration Required: If the violation is not resolved within 14 days following initial determination by the Owner, the Contractor and the claimant worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Tex. Civ. Prac. & Rev. Code, Chapter 171. For a period not to exceed 10 Days, after which, if no agreement reached, a district court may be petitioned by any of the parties to the arbitration to appoint an arbitrator whose decision will be binding on all parties.

2.2.1.4.4 Arbitration Award: If an arbitrator assesses an award against the Contractor, the Contractor shall promptly furnish a copy of said award to the Owner. The Owner may use any amounts retained under Article 2.2.1.4.1 to pay the worker the amount as designated in the arbitration award. If the retained funds are insufficient to pay the worker in accordance with the arbitration award, the worker has a right of action against the Contractor, and/or the surety to receive the amount owed, plus attorneys' fees and court costs. The Owner has no duty to release any funds to either the claimant or the Contractor until it has received the notices of agreement or the arbitration award.

2.2.1.4.5 No Extension of Time: If the Owner's determination proves valid that good cause existed to believe a violation had occurred, the Contractor is not entitled to an extension of time for any delay arising directly or indirectly from the arbitration procedures set forth herein.

2.3 STATE SALES AND USE TAXES: The Owner qualifies for exemption from State and Local Sales and Use Taxes pursuant to the provisions of the Texas Tax Code (Title 2, Chapter 151, Subsection 151.311). Tangible personal property incorporated into the Owner's realty is exempt pursuant to Subsection 151.311 of the Texas Tax Code and the terms of a separated contract. The Contractor shall comply with applicable provisions of Chapter 34, Rules 3.291 and 3.357 of the Texas Administrative Code, or other procedures as may be prescribed by the Comptroller of Public Accounts.

2.4 ANTITRUST CLAIMS: The Contractor shall assign to the Owner any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States, 15 U.S.C. Secs. 1 et seq.

2.5 HISTORICALLY UNDERUTILIZED BUSINESS (HUB)

2.5.1 The Contractor shall be required to make a good faith effort to award necessary subcontracts to HUBs in accordance with Texas Government Code, Section 2161.181-182, 2161.252(b), and Texas Administrative Code (TAC), Title 34, Part 1, Chapter 20, Subchapter B, Rule 20.11. Pursuant to the

Comptroller of Public Accounts HUB Rules, TAC, Title 34 Part 1, Chapter 20, Subchapter B, Rules 20.13 and 20.14, the Contractor shall submit a HUB Subcontracting Plan (HSP) as part of the bid submission, as well as make a good faith effort to implement the HSP. The Contractor shall seek written approval from the Department prior to making any modifications to its HSP.

2.5.2 A detailed description of the HSP and required forms are included as Exhibit J.1.

2.5.3 The Contractor shall provide notice to all Subcontractors of their selection as a Subcontractor to this Contract. The notice must specify, at a minimum, this agency's name, the name of the Contract Administrator, this Contract's assigned contract number, the subcontracting opportunity the Subcontractor will perform, the approximate dollar value of the subcontract and the expected percentage of this Contract's total value that the subcontract represents. A copy of the notice shall be provided to the Contract Administrator no later than ten (10) working days after this Contract is awarded.

2.5.4 The Contractor shall submit to the Contract Administrator on a monthly basis (by the 5th Day of the following month) the Prime Contractor Progress Assessment Report, which is included in Exhibit J.1.

2.6 CLEAN WATER ACT AND THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

2.6.1 The Contractor shall comply with all federal and state laws pertaining to construction storm water activities including, but not limited to, the Clean Water Act (CWA), the National Pollution Discharge Elimination System (NPDES), Texas Water Code Section 26.04, and Texas Administrative Code, Title 30, Chapters 205, 305.44, and 305.128.

The Contractor shall complete and file Notice of Intent (NOI) and pay application fees with the Texas Commission on Environmental Quality (TCEQ). The Contractor shall be responsible for preparing and maintaining a Storm Water Pollution Prevention Plan (SWP3), and shall be recognized as the primary operator. The SWP3 shall be approved by the Owner before implementation. It shall be maintained by the Contractor on the job site and kept current at all times.

2.7 VENUE: In any legal action arising under this Contract, the laws of the State of Texas shall apply and venue will be in Travis County, Texas.

ARTICLE III. CONTRACT DOCUMENTS AND BONDS

3.1 COPIES FURNISHED - DRAWINGS AND SPECIFICATIONS: The Contractor will be furnished free of charge the number of complete sets of the Contract Drawings and Specifications as provided in the Special Conditions. Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the one requesting such additional sets.

3.2 OWNERSHIP OF DRAWINGS AND SPECIFICATIONS: All Drawings, Specifications and copies thereof furnished by the A/E are and shall remain the property of the Owner. They are not to be used on any other project. One contract set for each party to the Contract may be retained. All other sets are to be returned to the Owner through the A/E following completion of the Work if requested by the Owner.

3.3 DRAWINGS AND SPECIFICATIONS AT THE SITE: The Contractor shall keep on the site of Work a copy (in good order) of the Contract Documents, approved shop drawings and Modifications to the Contract Documents. The Contractor shall at all times give the Owner or its representatives and agents access thereto.

3.4 "RECORD SET" OF CONTRACT DOCUMENTS: The Contractor shall maintain a record set of Contract Documents, hereinafter called "Record Set", which reflects the conditions and representations of the Work performed whether it be directed by addendum, Change Order or otherwise. This information shall be recorded on shop drawings located at the construction site. The "Record Set" shall be readily available for review by the A/E and/or Owner and no Work shall be permanently concealed until all required information related to that Work has been recorded. The Contractor shall update the "Record Set" a minimum of once monthly. The "Record Set" will be reviewed as a part of the monthly Project Review Meeting in conjunction with the review of the Contractor's payment request. Payment may be withheld, to such extent necessary to protect the Owner from loss, unless the "Record Set" reflects current and accurate conditions. Upon completion of the Work, and prior to application for final payment, the Contractor shall furnish the "Record Set" to the A/E. The "Record Set" is required to provide an accurate and legible record of actual construction, including:

1. Measured horizontal and vertical locations of utilities and appurtenances referenced to permanent surface improvements.

2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.

3. Field changes of dimension and detail.

4. Changes made by modifications.

5. Details not on original contract drawings.

6. References to related shop drawings and modifications.

The A/E after review and approval will transmit the "Record Set" to the Owner for final disposition.

3.5 PERFORMANCE AND PAYMENT BONDS: Performance and Payment Bonds are not required on contracts of $25,000.00 or less unless otherwise stipulated. The Contractor shall provide, at its own expense, within fourteen (14) Days after award execution, in accordance with the provisions of Government Code, Title 10, Section 2253.021, the following bonds to the Owner: (1) Performance Bond for the sole protection of the State of Texas, which shall be in the amount of the Contract and conditioned on the faithful performance of the work in accordance with the Contract; and (2) Payment Bond for the sole protection of those supplying labor, materials, and/or equipment, which shall be in the amount of the Contract. Subcontractors are not required by the Owner to execute performance or payment bonds.

3.5.1 Each bond shall be executed by a corporate surety or corporate sureties duly authorized and admitted to do business in this State and licensed by this State to issue surety bonds, acceptable to the Owner, and on forms approved by the Attorney General of Texas. (Surplus lines insurance carriers, including sureties, are not qualified to issue payment and performance bonds required by Government Code, Title 10, Section 2253.021.) If any surety upon any bond furnished in connection with the Contract becomes insolvent, or otherwise not authorized to do business in this State, the Contractor shall promptly furnish equivalent security to protect the interests of the State of Texas and of persons supplying labor, materials and/or equipment in the prosecution of the Work contemplated by the Contract.

3.5.2 Each bond shall be accompanied by a valid Power-of-Attorney (issued by the Surety company and attached, signed and sealed, with the corporate seal, embossed to the bond) authorizing the agent who signs the bond to commit the company to the terms of the bond, and stating (on the face of the Power-of-Attorney) the limit, if any, in the total amount for which he/she is empowered to issue a single bond.

3.5.3 Bonds shall remain in effect and full force as required by the Contract Documents and applicable law.

3.5.4 The providing of Performance and Payment Bonds by Contractor, at the Contractor's expense must be accomplished within fourteen (14) Days following the Notice of Award, before a Notice to Proceed will be issued by the Owner. Failure to fulfill this requirement may result in forfeiture of the Contractor's bid security and termination of the Contract in accordance to paragraph 4.6.2.

3.5.5 In the event that the Contract price increases due to Change Orders, the Contractor shall be required, at the Contractor's expense, to provide both Performance and Payment bonds in an additional amount to 100 percent of the increase.

3.6 **INTERRELATION OF DOCUMENTS:** The interrelation of the Specifications, the Drawings and the Schedules is as follows: The Specifications determine the nature and setting of the several materials; the Drawings or Schedules establish the quantities, dimensions, details and locations. Anything mentioned in the Specifications and not shown on the Drawings or Schedules, or shown on the Drawings or Schedules and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.

3.6.1 Should the Drawings disagree one with another, or with the Specifications or should the Specifications disagree one with another, the better quality or greater quantity of Work or materials shall be included for bidding purposes and shall be performed or furnished. Figures given on large scale drawings govern small scale drawings.

3.6.2 The Scope of the Work, placed in the front part of each section of the Specifications, is intended to designate the scope and locations of all items of the Work included therein, either generally or specifically. It is not intended to limit the Scope of Work should plans, Schedules or notes indicate an increased scope. Inadvertent omission of an item from its proper section of the Specifications and its inclusion in another section shall not relieve the Contractor of responsibilities for the item specified.

3.6.3 In case of discrepancy in the figures, in the Drawings, in the Schedules, or in the Specifications, the matter shall be promptly submitted in writing to the A/E who will promptly make a determination in writing after review with the Owner. Any action taken by the Contractor without such a determination shall be at its own risk and expense.

3.6.4 Details labeled "Typical Details" or "Typical" on the Plans shall apply to all situations occurring on the Project that are the same or similar to those specifically detailed. Such details shall apply whether or not they are keyed in at each location. Questions regarding applicability of Typical Details shall be referred to the A/E.

3.7 **SALES TAX EXEMPTION CERTIFICATE:** TDCJ Accounts Payable Representative will provide Contractor with an "Exemption Certificate" for tangible personal property included in or to be included in the Work.

ARTICLE IV. CONTRACT ADMINISTRATION

4.1 **GENERAL ADMINISTRATION**: Unless otherwise provided for in the Contract Documents, the Owner will provide general administration of the Contract. The Owner assumes no responsibility for any understanding given or representation made orally by its agents prior to the execution of this Contract, unless such understanding(s) are expressly stated in the Contract. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor. Any failure by the Contractor to become acquainted with available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of successfully performing the Work or mutually agreed changes thereto.

4.1.1 The Owner reserves the right on appropriate occasions to issue instructions through other designated representatives.

4.1.2 All communications concerning the construction of the Work shall be furnished to the Owner, the A/E, and the Contractor by the party concerned. The administration of the Contract in regard to matters related to taxes, laws, and wage rates, Contract Documents, separate contracts, changes in the Work, payments, claims, acceptance, warranty and guarantee, federally funded projects, insurance, bonds and like matters is described in appropriate articles of these conditions or the Special Conditions appended hereto.

4.1.3 All instructions affecting Contract Sum, Contract Time or Contract interpretation shall be confirmed expeditiously in writing with copies furnished to the Owner, the A/E and the Contractor by the party issuing the instruction. No instruction affecting the A/E's design liability shall be issued without its prior written consent.

4.1.4 All oral communications affecting Contract Time, Contract Sum and Contract interpretation will be confirmed in writing. No oral communication, by itself, can authorize a change in the Work, the Contract Sum, the Contract Time, or waive compliance with the plans and specifications.

4.2 **ARCHITECT/ENGINEER'S ADMINISTRATION**: The A/E shall be a representative of the Owner during construction until final payment to the Contractor is due. The A/E will advise and consult with the Owner. The A/E has the authority to act on behalf of the Owner to the extent provided in the Contract Documents, unless otherwise modified by written instrument, which will be shown to the Contractor.

4.2.1 The A/E shall attend and participate in the Pre-Construction Conference, which will be held at a date, time and place established by the Owner and A/E.

4.2.2 In accordance with the contract between the A/E and Owner, the A/E shall visit the construction site at intervals appropriate to the stage of construction to reasonably determine that the Work is proceeding in accordance with the Contract Documents. The A/E shall provide a continuity of observations covering all phases of the Work but it shall not be exhaustive or continuous.

4.2.3 The A/E shall attend and participate in Project Review Meetings which will be held monthly on a regularly scheduled basis during construction, unless more frequent meetings are necessitated under certain circumstances, at the time and place (probably project site) established by the Owner. As a part of the Project Review Meeting the A/E will review the Contractor's payment request.

4.2.4 The A/E shall not have control or charge of and shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, for the acts or omissions of the Contractor, Subcontractors or any other persons performing any of the Work, or for the failure of any of them to carry out the Work in accordance with the Contract Documents.

4.2.5 The A/E shall assist the Owner in determining the amounts owing to the Contractor based on observations at the site and on evaluations of the Contractor's Application for Payment and shall assist the Owner in reviewing and approving Certificates of Payment. However, the A/E's assistance does not include the preparation of Certificates of Payment.

4.2.6 The A/E shall render design interpretations necessary for the proper execution or progress of the Work with reasonable promptness on request of either the Owner or the Contractor and shall render written interpretations within a reasonable time, on all claims, disputes and other matters in question relating to the design interpretation of the Contract Documents. Interpretations of the A/E shall be consistent with the intent

of and reasonably inferable from the Contract Documents and shall be in written or graphic form. The A/E's interpretations shall be final if consistent with the intent of the Contract Documents.

4.2.7 The A/E will make recommendations to the Owner regarding rejection of Work, which does not conform to the Contract Documents. Whenever, in the A/E's reasonable opinion, it is necessary or advisable for the implementation of the intent of the Contract Documents, the A/E will make recommendations to the Owner concerning special inspections and testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work be then fabricated, installed or completed.

4.2.8 The A/E shall assist the Owner in preparing Change Orders for the Owner's approval and execution in accordance with the Contract Documents, and shall have authority to order minor changes in the Work which do not involve an adjustment in the Contract Sum or an extension of the Contract Time and which are not inconsistent with the intent of the Contract Documents. The A/E's assistance is to be in the form of providing appropriate drawings and specifications and additional background information to the Owner.

4.2.9 The A/E shall assist the Owner in performing the following: inspections to determine the Date of Beneficial Occupancy or Pre-Final Inspection and the date of Final Completion; receiving and forwarding to the Owner for the Owner's review written warranties and related documents required by the Contract Documents and assembled by the Contractor.

4.2.10 The A/E shall be responsible for review and approval of all Contractor prepared and submitted documents prior to transmitting the final copies to the Owner. These documents will include instruction, maintenance and operational manuals, parts catalogs, wiring diagrams, directory of installing contractors, written warranties, bonds, receipts, affidavits, Record Set drawings and like publications or items required by the Contract Documents.

4.3 SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK: The Contractor shall not employ any Subcontractor to whom the A/E or the Owner may have a reasonable objection. The Contractor will not be required to employ any Subcontractor against whom he/she has a reasonable objection.

4.3.1 A change in any approved Subcontractor or the addition of any new Subcontractor can be made only with the written consent of the Owner.

4.3.2 Any part of the Work performed for the Contractor by a Subcontractor shall be pursuant to a written contract. The Contractor agrees to incorporate by reference the Contract Documents into every written subcontract and to bind every Subcontractor and every Subcontractor agrees to be bound by the terms of the Contract Documents as far as applicable to his/her Work. The Contractor shall furthermore fully inform its Subcontractors prior to executing an agreement with them that they will be required to perform their Work in conformance with related documents and to submit cost estimates and Change Order proposals in complete and full analytical detail when so required or requested. The Contractor shall indemnify the Owner for any Subcontractor's claim, which may result from the failure of the Contractor to incorporate the provisions of this Contract into the Agreement with any of its Subcontractors or entities.

4.4 ACCESS TO AND INSPECTION OF THE WORK: The Contractor shall provide sufficient, safe and proper facilities at all reasonable times for observation and/or inspection of the Work by the authorized representatives of the Owner. The A/E and the Owner will make periodic visits to the site to familiarize themselves with the progress and quality of the Work and to determine if the Work is proceeding in accordance with the Contract Documents.

4.4.1 The Contractor shall not cover up any Work with finishing materials or other building components prior to an inspection of the Work by the A/E or the Owner for approval of the installation. Should corrections of the Work be required for approval, cover up shall be delayed until another inspection can be made and approval is indicated. Verbal approval to proceed with subsequent operations shall be confirmed to the Contractor in writing by the inspecting party.

4.4.2 Inspections provided by personnel not located on-site; At least forty-eight (48) hours prior to the anticipated cover up inspection, the Contractor shall notify the Owner. Should the Owner fail to make the necessary inspection within an additional twenty-four (24) hour period, the Contractor may proceed with cover up Work, unless the Owner makes an arrangement with the Contractor for additional time in which to complete desired inspections.

4.4.2.1 Inspections provided by personnel located on-site; at least twenty-four (24) hours prior to the anticipated cover up inspection, the Contractor shall notify the Owner. Should the Owner fail to make the necessary inspection within an additional twenty-four (24) hour period, the Contractor may proceed with cover up Work, unless the Owner makes an arrangement with the Contractor for additional time in which to complete desired inspections.

4.4.2.2 For on-site inspection by other Authorities having Jurisdiction: The Contractor shall notify other Authorities having Jurisdiction, as required by said Authority, prior to the anticipated cover up inspection.

4.5 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS: The Owner reserves the right to perform construction or operations related to the Project with the Owner's own material and labor forces and to award other contracts in connection with other portions of the Project under these or similar conditions of the Contract.

4.5.1 When separate contracts are awarded for different portions of the Project, "the Contractor" in the Contract Documents in each case shall be the Contractor who signs each separate contract. This Contractor shall properly connect and coordinate its Work with the Work of other contractors. If any part of this Contractor's Work depends for proper execution or proper results on the Work of any other separate contractor or the Owner, this Contractor shall inspect and promptly report in writing to the Owner any discrepancies or defects he/she may find in such other Work that render it unsuitable for such proper execution and results. Failure of this Contractor to so inspect and report shall constitute an acceptance of the Owner's or other contractor's Work as fit and proper to receive its Work, except as to defects which may develop in the Owner's or other separate contractor's Work after the execution of this Contractor's Work.

4.5.2 Should this Contractor cause damage to the Work or property of the Owner and/or any separate contractor on the Project, this Contractor shall, upon due notice, endeavor to settle with the Owner and/or such other separate contractor by agreement. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify this Contractor who shall defend such proceedings and pay all costs in connection therewith, and if any judgment against the Owner arises therefrom, this Contractor shall pay or satisfy it.

4.5.2.1 The Contractor shall notify the Owner in writing of damages within twenty-four (24) hours after occurrence.

4.5.3 This Contractor shall afford the Owner and/or other separate contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their Work and shall properly connect and coordinate its Work with theirs.

4.5.4 The Owner reserves the right to make essential installations, which are pertinent to the immediate use of the Work or Project with the concurrence of the Contractor. Within this right the Owner may let other

contracts or may do such work with its own materials and labor forces. The Owner, in reserving this right, warrants that they will cooperate with the Contractor's forces and goals. The Contractor shall not commit or permit any act, which will interfere with the performance of work by any other separate contractor or company or by Owner employees. The Contractor shall cooperate to the end that the Owner may realize complete functioning of the Work or Project within the Contract Time.

4.6 CONTRACT TERMINATION:

4.6.1 Termination by Contractor. If the Work is stopped for a period of ninety (90) Days under an order of any court or other public authority having jurisdiction, or as a result of an act of government such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, then the Contractor may, upon ten (10) additional Days written notice to the Owner and the A/E, terminate the Contract and recover from the Owner payment for all Work executed and for any loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and overhead associated with such Work or losses and reasonable expenses resulting from such termination. If the cause of the Work stoppage is removed prior to the end of the ten (10) Day notice period, the Contractor may not terminate the Contract.

4.6.2 Termination by Owner. If the Contractor persistently or repeatedly refuses or fails to supply enough properly skilled workmen or proper materials or fails to make prompt payment when due to Subcontractors, laborers, or material men for materials and labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, or fails to so prosecute the Work or any portion thereof as to ensure its completion, within the Contract Time, or any extension thereof, specified in this Contract, then the Owner may, without prejudice to any right or remedy and after giving the Contractor and its Surety, if any, ten (10) Days written notice, terminate the Contract. In such event the procedure outlined in the performance bond, if any, for completion of the Work will be followed and the Owner may take possession of the site and utilize in completing the Work such materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and necessary therefore. Should the surety fail to respond within fifteen (15) Days following such notice and fail to pursue completion of the Work with diligence acceptable to the Owner, the Owner may arrange for completion of the Work and deduct the cost thereof from the unpaid Contract Sum remaining, including the cost of additional services made necessary by such default or neglect, in which event no further payment shall then be made by the Owner until all costs of completing the Work shall have been paid. If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including compensation for the A/E's additional services made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor or its surety shall pay the difference to the Owner. This obligation for payment shall survive the termination of the Contract. Whether or not the Contract is terminated, the Contractor and its Surety shall be liable for any damage to the Owner resulting from the Contractor's refusal or failure to complete the Work within the specified time.

4.6.2.1 If the Owner so terminates the Contract, the resulting damage will consist of the liquidated damages specified in the Contract until such reasonable time as may be required for final completion of the Work together with any increased costs occasioned by the Owner in completing the Work. Further, if the Owner does not terminate the Contract, the resulting damage will consist of such liquidated damages until the Work is completed or accepted.

4.6.2.2 After notice of termination of the Contract under the provisions of this clause, if it is determined for any reason that the Contractor was not in default or the delay was excusable, the Contract shall be equitably adjusted to compensate for such termination and the Contract modified accordingly; failure to agree to any such adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this Contract entitled "Disputes".

4.6.2.3 Should a court of competent jurisdiction determine that termination of the Contract was wrongful, then such termination shall be deemed a termination for convenience in accordance with paragraph 4.6.3 and Contractor's remedy will be solely in accordance with paragraph 4.6.3.

4.6.2.4 The rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

4.6.3 Termination for Convenience of Owner: Prior to, or during the performance of the Work, the Owner reserves the right to terminate the Contract for unforeseen causes not limited to court orders, loss of funding, acts of the government to discontinue the Work, etc., that may occur. Upon such an occurrence, the following procedures will be adhered to:

4.6.3.1 The Owner will immediately notify the A/E and the Contractor in writing, specifying the effective termination date of the Contract.

4.6.3.2 After receipt of the Notice of Termination, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due at that point in the Contract.

a. Stop all Work.

b. Place no further subcontracts or orders for materials or services.

c. Terminate all subcontracts.

d. Cancel all material and equipment orders as applicable.

e. Take action that is necessary to protect and preserve all property related to this Contract which is in the possession of the Contractor.

4.6.3.3 Within 180 days of the date of the Notice of Termination, the Contractor shall submit a final termination settlement proposal to the Owner based upon costs up to the date of termination, reasonable profit on Work done only, and reasonable demobilization costs. If the Contractor fails to submit the proposal within the time allowed, the Owner may determine the amount due to the Contractor because of the termination and shall pay the determined amount to the Contractor.

4.6.3.4 If the Contractor and the Owner fail to agree on the settlement amount, the matter will be handled as a dispute through administrative procedures as established in paragraph 5.2.1.

4.7 **WRITTEN NOTICE**: shall be considered to have been duly given if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail to the last business address known to one who gives the notice.

4.8 **DISPUTED MATTERS:** Disputed matters shall be handled through administrative procedures as established in paragraph 5.2.1.

ARTICLE V. CONTRACT RESPONSIBILITIES

5.1 **OWNER'S RESPONSIBILITIES**: The Owner shall furnish all available surveys describing the physical characteristics, legal description and limitations, known site utility locations and other information necessary to the Contractor which is under the Owner's control. Communication with the Contractor shall be in accordance with paragraph 4.1.2. Necessary actions of the Owner, including processing

of payments to the Contractor, shall be accomplished with reasonable promptness and subject to Government Code, Title 10, Chapter 2251.

5.1.1 All formal communications shall be through the Owner.

5.1.2 The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein.

5.2 OWNER-CONTRACTOR OBLIGATIONS: The Owner and the Contractor each bind themselves, partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any monies due or to become due to him/her hereunder, without the previous written consent of the Owner.

5.2.1 DISPUTES: Any dispute arising under this Contract that is not disposed of by mutual agreement between Owner and Contractor shall be resolved according to "Procedures for Resolving Contract Claims and Disputes," Rule §155.31, Texas Administrative Code, Title 37, Part VI, Chapter 155, Subchapter C.

5.2.1.1 If authorized to adjudicate a breach of contract claim against the Owner under Chapter 114, Civil Practice and Remedies Code, Contractor, prior to filing suit, shall comply with the dispute resolution process in subsections 155.31(h) – (q) of Rule §155.31 "Procedures for Resolving Contract Claims and Disputes." However, references therein to Chapter 2260 or the State Office of Administrative Hearings shall be inapplicable if contractor files suit under Chapter 114, Civil Practice and Remedies Code, after completion of the dispute resolution process.

5.2.1.2 At all times during the course of the dispute resolution process, the Contractor shall continue with the Work as directed, in a diligent manner and without delay, shall conform to the Owner's directive, decision or order, and shall be governed by all applicable provisions of the Contract Documents. Records of the Work shall be kept in sufficient detail to enable payment in accordance with applicable provisions in the Contract Documents, if this should become necessary.

5.2.1.3 This provision shall not be construed to prohibit contractor from seeking any other legal or equitable remedy to which it is entitled.

5.3 CONTRACTOR'S RESPONSIBILITIES: The Contractor shall supervise and direct the Work using its best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, safety, sequences and procedures, and for coordinating all portions of the Work under the Contract. The Contractor shall have read and be thoroughly familiar with the Contract Documents.

5.3.1 The Contractor shall provide, without extra charge, all incidental items required as a part of the Work, even though not particularly specified or indicated provided that the same are reasonably inferable for a complete working system from the Contract Documents and readily apparent therefrom, and if he/she has good reason for objecting to the use of a material, appliance, or method of construction as shown or specified, shall register their objections to the A/E, in writing, sending a copy to the Owner. Otherwise, the Contractor shall proceed with the Work under the stipulation that a satisfactory job is required.

5.3.2 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Owner or A/E in their administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

5.3.3 The Contractor is solely responsible for successful completion of the Project in accordance with the Plans and Specifications. The Contractor expressly acknowledges that the Owner has no duty to discover

Work that fails to conform to the Plans and Specifications and/or to point out such non-conforming Work to the Contractor. The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

5.3.4 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

5.3.5 CONTRACTOR INSPECTION OF WORK:

5.3.5.1 The Contractor shall provide and maintain the necessary equipment, material and supplies required to accomplish the testing and inspection hereunder.

5.3.5.2 The Contractor's Quality Control inspection system shall provide for procedures which will ensure the latest Drawings, Shop Drawings, Specifications and instructions required by the Contract and changes thereto are used in performing the Work.

5.3.5.3 The Owner reserves the right to observe at the source, the materials, supplies or services not manufactured or performed within the Contractor's facility. Such observation shall not constitute acceptance, nor shall it replace in any way the Contractor's responsibility for inspection or requirement to furnish an acceptable end item.

5.3.5.3.1 Prior to the start of Work under each separate Specification section, or prior to the start of Work where a change in a construction operation is contemplated by the Contractor, a coordination meeting will be held between the Contractor's Superintendent, the Contractor's Quality Control Manager, the A/E, and the appropriate representative of the Owner. Supervisory and Quality Control representatives of all applicable Subcontractors will also attend. The purpose of the meeting is to ensure that there are no misunderstandings regarding the quality as well as the technical requirements of the Contract. The Contractor's and applicable subcontractor's Quality Control representatives shall be on-site at all times during the Work and shall have the authority to affect the resolution of Quality problems including stopping the Work. The TDCJ Project Administrator shall be notified a minimum of 72 hours prior to any prework coordination meeting. As a minimum the following items shall be reviewed at the meeting:

a. Contract requirements;

b. Shop drawings and submittals;

c. Contractor's Quality Control Program requirements;

d. Adequacy of previous operations;

e. Availability of required materials and equipment;

f. Contractor's Quality Control inspections and tests;

g. TDCJ Quality Assurance inspections and tests;

h. Familiarity and proficiency of the Contractor's and each Subcontractor's workforce to perform the operation to required workmanship standards;

i. Safety and environmental precautions to be observed; and

j. Any other preparatory steps which the particular operation may be dependent upon.

5.3.5.3.2 Upon completion of a representative sample of a given feature of the Work and prior to the start of a new or changed operation, an appropriate Owner's representative(s) and the A/E will meet with the Contractor's Superintendent and Quality Control Manager and applicable Subcontractor's superintendent and their Quality Control representatives. The responsibility for scheduling and providing these samples in a timely manner so that the Work is not delayed or hindered lies solely with the Contractor. The following items will be checked at this meeting as a minimum:

a. Workmanship to establish quality standards;

b. Conformance to Contract Drawings and Specifications and the approved shop drawings or submittals;

c. Adequacy of materials;

d. Adequacy and results of inspection and testing methods; and

e. Adequacy of safety and environmental precautions.

Once approved, the representative sample will become the physical baseline by which ongoing Work is evaluated for quality and acceptability. To the maximum practical extent, approved representative samples of Work elements shall remain visible until all Work in the appropriate category is complete.

5.3.5.3.3 The Contractor shall monitor the Work on a daily basis to assure the continuing conformance of the Work to the workmanship standards established during the pre-work coordination meeting and initial inspections. Follow-up inspections will be recorded on the Contractor's daily Quality Control report.

5.3.5.4 The Contractor shall maintain adequate, current, factual records in an appropriate format of all inspections and tests performed to include as a minimum the type and number of inspections and tests, results of inspections and tests and proposed remedial or corrective actions necessary for any defective or rejected Work which does not meet Contract requirements. These records should include a statement that all supplies or materials and workmanship incorporated in the Work are in full compliance with the terms and requirements of the Contract Documents.

5.3.5.5 Before construction operations commence, the Owner and Contractor shall discuss the Quality Control inspection system requirements described in this Article and the interrelationship of Contractor, Owner and A/E systems and procedures. The Contractor shall designate an individual employed by the Contractor as Quality Control Manager in accordance with Technical Specification Section 01440.

5.3.5.6 The Owner shall notify the Contractor of any noncompliance with the foregoing provisions. Proposed corrective action will be submitted to the Owner by the Contractor within twenty-four (24) hours of notice of noncompliance for approval by the Owner and A/E. Upon approval, the Contractor shall take immediate corrective action. If the Contractor fails or refuses to take prompt action, the Owner may issue an order stopping all or part of the Work until the Contractor takes appropriate action. No portion of the time lost due to any such stop order shall be made the subject of a claim for extension of time or for excess costs or damages, including all impacts, by the Contractor.

5.3.5.7 Separate payment will not be made for providing and maintaining an effective Quality Control Program and all costs associated therein shall be included in the applicable unit prices or lump-sum prices contained in the bidding schedule.

5.3.6 Removal of Employees: The Owner may, in writing, require the Contractor to remove from the Work any employee the Owner finds careless, incompetent or otherwise objectionable. The Contractor will promptly remove from the Work said employee.

5.3.7 The foregoing are in addition to other duties and responsibilities of the Contractor enumerated herein.

5.3.8 The Owner reserves the right to provide supplemental Quality Assurance inspection. However, the primary responsibility for Quality Control remains with the Contractor.

5.4 **CONTRACTOR'S PROJECT MANAGER**: The Contractor shall employ, as a minimum, a competent Project Manager and a competent Superintendent. The Superintendent shall be in attendance at the Project site during the progress of the Work. The Project Manager and Superintendent shall be satisfactory to the Owner and shall not be changed except with the written approval of the Owner unless said individuals leave the employment of the Contractor. These individuals shall represent the Contractor and shall have full authority to act on the Contractor's behalf. All communications given to either individual shall be as binding as if given to the Contractor.

5.5 **ACTS AND OMISSIONS**: The Contractor shall be responsible for acts and omissions of its employees and Subcontractors, their agents and employees and other persons performing portions of the Work.

5.6 **CONDITIONS AT SITE OR BUILDING**

5.6.1 The Contractor is responsible for having visited the site and having ascertained pertinent local conditions such as location, accessibility, and general character of the site or the building, the character and extent of existing Work within and adjacent to the site, and any other Work being performed thereon at the time of the submission of his/her bid. Any failure to do so will not relieve the Contractor from responsibility for successfully performing the Work without additional expense to the Owner.

5.6.1.1 The Owner makes no representations as to the accuracy or completeness of the site information furnished to the Contractor by Owner and does not expressly or by implication warrant same and is not responsible for any interpretations or conclusions reached by the Contractor with respect thereto. It is Contractor's sole responsibility to verify to its own satisfaction all site information, including but not restricted to topographical data, borings, subsurface information, above and underground utilities and easements.

5.6.1.2 The Contractor shall take field measurements, and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the A/E at once, in writing, sending a copy to the Owner.

5.6.1.3 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the site with materials or equipment.

5.6.2 If, in the performance of the Contract, subsurface, latent or concealed conditions at the site are found to be materially different from the information included in the bid documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in Work of the character shown and specified, the A/E shall be notified in writing of such conditions before they are disturbed. Upon such notice, or upon his/her own observation of such conditions, the A/E, with the approval of the Owner, will promptly make such changes in the Drawings and Specifications as deemed necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which

the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of the Owner.

5.7 INSURANCE

5.7.1 The Contractor shall not commence Work under this Contract until he/she has obtained all the insurance required hereunder and certificates of such insurance have been filed with and accepted by the Owner. Insurance coverage shall provide for a 30-Day notice prior to cancellation or material change to the policy coverage and or limits. Acceptance of the insurance certificates by the Owner shall not relieve or decrease the liability of the Contractor.

5.7.2 Unless otherwise provided in the Special Conditions the Contractor shall provide and maintain, until the Work included in the Contract is completed and accepted by the Owner, the minimum insurance coverages that follow, provided that the limits of liability may be met in part by the use of umbrella or excess policies. The insurance policies required herein shall not contain the word "endeavor to" or similar wording which would fail to provide a binding obligation to provide such notice to the Owner of the cancellation of a policy or a material change to an insurance policy.

5.7.2.1 MINIMUM INSURANCE COVERAGES

Type of Coverage	Minimum Limits of Liability
1. Workers' Compensation	Statutory
2. Employers' Liability	
a. Bodily Injury by Accident	$500,000 ea. Accident
b. Bodily Injury by Disease	$500,000 ea. Employee
c. Bodily Injury by Disease	$500,000 Policy Limit
3. Commercial General Liability (Combined Bodily Injury & Property Damage)	$1,000,000 Aggregate $1,000,000 Products/Completed Operations $1,000,000 Personal & Advertising Liability $1,000,000 ea. Occurrence $50,000 Fire Damage $5,000 Medical Expense
4. Comprehensive Auto Liability	$1,000,000 Combined Single Limit
5. Builder's Risk/Installation Floater Insurance	

The Contractor shall obtain at its own expense on an All Risk of physical loss basis, Builder's Risk Insurance coverage including workmanship, acceptable to the Owner, in the amount of insurance equal at all times to 100% of the insurable value of materials delivered and labor performed. **Policy must include flood coverage if Work is to be executed in a flood zone as defined by the Federal Emergency Management Agency (FEMA) and Windstorm Coverage for locations designated as a First Tier Coastal County.** Any and all exclusions must be approved by the Owner. The policy so issued in the name of the Contractor shall also name its Subcontractors and the Owner as Loss Payee, as their respective interests may appear. The policy shall have an endorsement as follows:

> "This insurance shall be specific as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises."

6. Reserved

7. Umbrella Coverage:

The Contractor may provide the following minimum Coverage Limits, as recommended by the advice and counsel of the Contractor's insurance provider:

a. When Contract Amount equals less than $5,000,000.
Excess or Umbrella Policy of $1,000,000.

b. When Contract Amount exceeds $5,000,000.
Excess or Umbrella Policy of $5,000,000.

5.7.3 All policies shall contain special endorsements to include:

1. The Owner as additional insured (except Workers' Compensation and Employers' Liability);
2. Notice of Cancellation to Owner (minimum of 30 days); and
3. Waive subrogation against the TDCJ.

If the Contractor already has in force insurance policies that provide the required coverage, there is no need to purchase duplicate coverage for this Project. Provide riders to such existing policies to cover this Project.

5.7.4 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, the A/E, and their agents and employees from and against all claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph.

5.7.4.1 In any and all claims against the Owner and/or the A/E or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 5.7.4 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

5.7.4.2 The obligations of the Contractor under this Paragraph shall not extend to the liability of the A/E, and/or the Owner, their agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the A/E, and/or the Owner their agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

5.7.4.3 The parties agree that the terms, covenants and provisions of paragraph 5.7.4 shall survive the termination of this Contract.

5.8 SAFETY PRECAUTIONS AND PROGRAMS

5.8.1 It shall be the duty and responsibility of the Contractor and all of its Subcontractors to be familiar and comply with all requirements of Public Law 91-596, 29 U.S.C. Secs. 651 et seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto, and to enforce and comply with all of the provisions of this Act. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. At the Pre-Construction Conference the Contractor shall submit its safety program to the Owner for acceptance. Acceptance by the Owner shall not relieve the Contractor from errors or omissions in the program or from any and all safety obligations required by all applicable statutory requirements.

5.8.1.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

1. Employees on the Work and other persons who may be affected thereby;

2. The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or anyone directly or indirectly employed by any of them; and

3. Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

5.8.1.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

5.8.1.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

5.8.1.4 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner.

5.8.1.5 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

5.8.2 **TRENCH EXCAVATIONS:** On projects in which trench excavations will exceed a depth of five feet, the Contractor and all of its Subcontractors shall comply with all requirements of 29 C.F.R. Standards 1926.650, 1926.651 and 1926.652, Occupational Safety and Health Administration (OSHA). Contractor shall include for each selected trench excavation safety system to be utilized a separate pay item classification as a part of the Contract Sum breakdown required by paragraph 7.1. Such pay item classification shall be based on the linear feet of trench excavated. Further, Contractor shall also include in the Contract Sum breakdown a separate pay item for such shoring based on the square feet of shoring used. Before commencing any trench excavation that will exceed a depth of five feet, the Contractor will provide the Owner with detailed Plans and Specifications regarding the safety systems to be utilized. Said plans and specifications shall include a certification from a Registered Professional Engineer indicating full compliance with the OSHA provisions printed above.

5.8.3 In an emergency affecting the safety of persons or property, the Contractor shall act, at its discretion, to prevent threatened damage, injury or loss.

5.9 MATERIALS AND WORKMANSHIP

(a) All equipment, material, and articles incorporated into the work covered by this Contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this Contract. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Owner, is equal to that named in the specifications, unless otherwise specifically provided in the Contract.

(b) The Contractor shall obtain the Owner's approval of the machinery and mechanical and other equipment to be incorporated into the Work. When requesting approval, the Contractor shall furnish to the Owner the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this Contract or by the Owner, the Contractor shall also obtain the Owner's approval of the materials or items the Contractor contemplates incorporating into the Work. When requesting approval, the Contractor shall provide full information concerning the materials or items. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this Contract shall be performed in a skillful and workmanlike manner. The Owner may require, in writing, that the Contractor remove from the Work any employee the Owner deems incompetent, careless, or otherwise objectionable.

5.10 TESTS: If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be inspected, tested or approved, the Contractor shall give the Owner and the A/E timely notice of its readiness and of the date arranged so the Owner and A/E may observe such inspection, testing or approval. In addition, the Owner or the A/E may require special inspection, testing or approval of material or Work for compliance with the requirements of the Contract Documents. Upon direction of the Owner and the A/E, the Contractor shall promptly arrange for such special testing, inspection or approval procedure. The Contractor is responsible for employing the services of an acceptable testing laboratory and for performing all testing required. All costs associated with this testing shall be borne by the Contractor. Methods of testing shall be in accordance with the Contract Documents. The Owner reserves the right to perform Quality Assurance testing. The Owner shall pay for all Quality Assurance testing. The Contractor shall be responsible for the cost of the material being tested. If testing by either the Contractor's testing laboratory or the Owner's Quality Assurance testing laboratory determines material or workmanship is not in conformance with the Contract Documents, the Contractor shall be responsible for all costs associated with replacement of non-conforming Work or material. The Contractor shall further be responsible for the cost of any re-testing performed by the Owner's Quality Assurance Testing laboratory as a result of non-conforming Work. When directed by the Owner, verification of material compliance with the specifications shall be made by one of the following:

1. Manufacturer's certificate of compliance.

2. Mill certificate.

3. Testing laboratory certification.

4. Report of actual laboratory test from the Contractor's laboratory. Samples tested shall be selected as required by the Contract Documents or Industry Standard, whichever is more stringent and the method of testing shall comply with the Contract Documents.

5.11 REMOVAL OF DEFECTIVE WORK: If any materials furnished under this Contract are condemned by the Owner and/or A/E, the Contractor shall, after having received notice from the Owner or A/E to that effect, proceed to remove from the grounds or buildings all condemned materials, whether worked or un-worked, and take down all portions of the Work which the Owner and/or A/E shall by like written notice condemn as unsound or improper or as in any way failing to conform to the Contract Documents, and shall make good all Work damaged or destroyed thereby.

5.11.1 The Contractor shall without charge, replace all material or correct any workmanship found by the Owner and/or A/E not to conform to the Contract requirements, unless in the public interest the Owner consents to accept such material or workmanship with an appropriate adjustment in the Contract Sum.

5.11.2 If the Contractor does not promptly replace rejected material or correct rejected workmanship, the Owner may (1) by Contract or otherwise replace such material or correct such workmanship and charge the cost thereof to the Contractor, and/or (2) terminate the Contractor's employment in accordance with Article IV, and/or (3) or other action as referenced elsewhere in this Contract.

5.12 ROYALTIES AND PATENTS: The Contractor shall pay all royalties and license fees, and defend all suits or claims for infringement of any patent right and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such royalties and license fees and loss when a particular design or process, or the product of a particular manufacturer or manufacturers is specified; provided, however, if the Contractor has reason to believe the design, process or product specified constitutes an infringement of a patent, they shall be responsible for such royalties, license fees and loss unless he/she promptly gives such information to the Owner and the A/E.

5.12.1 The Contractor is responsible for ensuring that any substitution proposed at any time can be utilized as proposed without infringing on any patent, copyright, trademark or other form of intellectual property, and by submitting a request for substitution warrants to the A/E and the Owner that the proposed substitution can be implemented without such infringement. In reviewing substitution requests, the A/E and the Owner will make no determination as to the existence or potential infringement of such rights by the proposed substitution, and approval of substitution requests do not relieve the Contractor from its responsibilities under this section and paragraph. 2.1.

5.13 EQUAL MATERIALS: The Contractor shall be responsible for any additional costs or delays resulting from having furnished materials, equipment or fixtures other than those specified, and shall reimburse the Owner for any increased design costs resulting from such substitutions.

5.14 SHOP DRAWINGS AND SAMPLES: Shop Drawings and Samples shall be submitted as required by the Specifications.

5.14.1 The Contractor shall submit, with reasonable promptness and in orderly sequence, all Shop Drawings and Samples required by the Contract Documents, or subsequently by the A/E as covered by Contract Modifications. The Contractor shall review them for compliance with Contract Documents and shall certify that he/she has done so by stamp, or otherwise, affixed to each copy thereof. Submittal data presented without such certification will be returned without review or other comment, and any delay resulting therefrom will be the Contractor's responsibility.

5.14.1.1 The Contractor shall bear the cost of reproduction of Shop Drawings as may be required. Usually eight (8) copies are required, but the number will be established at the Pre-Construction Conference; a sepia may be required in lieu of one or more copies.

5.14.1.2 The Contractor shall, within 20 days after receipt of the Notice to Proceed submit to the Owner through the A/E a schedule of all items that shall be furnished for review and approval by the Owner and/or the A/E. The schedule shall also list all items that are to be reviewed and approved by the Contractor.

5.14.1.3 Such schedules shall include, among other things, Shop Drawings, manufacturer's literature, certificates of compliance, materials samples, materials colors, guarantees, etc.

5.14.1.4 The schedules shall indicate the type of item, Contract requirements reference, the Contractor's scheduled dates for submitting the above and like items and the projected need dates for approval answers from the Owner or the A/E and the projected or actual dates for procurement. The schedule shall show a minimum of thirty (30) Days after receipt for review and approval by the Owner and A/E, and if re-submittal is required, an additional fourteen (14) Days will be allowed for approval after receipt. The Contractor will revise and/or up-date this schedule as appropriate.

5.14.1.5 The submittal schedule shall be coordinated with the Owner-approved, Contractor-prepared and submitted progress schedule for all the Work. The Contractor shall revise and/or update the schedule as appropriate or as directed by the Owner to ensure consistency with the progress schedule as it may be revised and/or updated. Such revised submittal schedules shall be promptly provided to the Owner. Usually eight (8) copies are required, but the number will be established at the Pre-Construction Conference.

5.14.1.6 Furnishing of the schedule or revision thereto shall not be interpreted as relieving the Contractor of its obligation to comply with all the Specifications' requirements for the items on the schedule.

5.14.2 Shop Drawings and Samples shall be properly identified, as specified or as the Owner and/or the A/E may require. At the time of submission, the Contractor shall inform the Owner and the A/E in writing of any deviation in the Shop Drawings or Samples from the requirements of the Contract Documents.

5.14.3 By submitting Shop Drawings and Samples, the Contractor thereby represents that all field measurements, field construction criteria, materials, catalog numbers and similar data were verified, and that he/she has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and of the Contract Documents and he/she shall so certify as required by paragraph 5.14.1.

5.14.4 The A/E or the Owner, if required by Special Conditions, will review and approve the Shop Drawings and Samples with reasonable promptness, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The approval of a separate item shall not indicate approval of an assembly in which the item functions. The approval of the Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Owner and the A/E in writing of such deviation at the time of submission and the Owner or the A/E has not objected to the specific deviation. The approval shall not relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

5.14.4.1 The A/E will review and approve all submittals, color schedules, and specified mockups constituting Samples of finishes, such as architectural concrete and block sample panels.

5.14.5 The Contractor shall make any corrections required and shall resubmit the required number of corrected copies of the Shop Drawings or new Samples of materials until approved. The Contractor shall direct specific attention in writing to any new revisions other than the corrections required on previous submissions.

5.14.6 No Work requiring a Shop Drawing or Sample submission shall be commenced until the submission has been approved. All such Work shall be in accordance with approved Shop Drawings and Samples.

5.14.7 Shop Drawings shall be complete and detailed. If approved by the A/E, each copy of the Drawings will be identified as having received such approval by being so stamped and dated. If approval "with exception" or "as noted" by the A/E is so identified, stamped and dated, the Contractor shall comply with the notations so shown. If such qualified approval is so shown or if the drawings are not approved by the A/E or if resubmission is so directed, the Contractor shall make any corrections required or indicated by the A/E at the Contractor's expense.

5.14.8 When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the A/E shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

5.15 **CLEANING:** The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the Work, the Contractor shall remove from the Work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Owner. Upon completing the Work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Owner.

ARTICLE VI. CONTRACT CHANGES

6.1 **CHANGE ORDERS:** The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, and the Contract Sum and/or Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. If such changes cause an increase or decrease in the Contractor's costs of, or time required for, performance of the Contract, an equitable adjustment shall be made and confirmed in writing in a Change Order.

6.1.1 Such orders, designated or indicated to be change orders, include but are not limited to changes:

1) In the Contract Documents;
2) In the methods or manner of performance of the Work;
3) In the Owner-furnished facilities, equipment, materials, services, or sites;
4) Directing acceleration in the Work to accomplish its completion prior to the original Contract completion date.

6.1.2 Any other written order which shall include direction, instruction, interpretation, or determination from the Owner shall be treated as a potential Change Order under this clause, provided that the Contractor gives the Owner written notice, prior to performing Work, stating the date, circumstances, and source of the order and that the Contractor regards the order as a Change Order.

6.1.3 It is recognized by the parties hereto, and agreed by them, that the Specifications and Drawings may or may not be free from errors, omissions or imperfections, or require changes or additions in order for the Work to be completed to the satisfaction of the Owner, and that, accordingly, it is the express intention of the parties, notwithstanding any other provisions in this Contract, that any errors, omissions or imperfections in such Specifications and Drawings, or any changes in or additions to same, or to the Work ordered by Owner,

and any resulting delays in the Work or increases in Contractor's costs and expenses, shall not constitute or give rise to any claim, demand or cause of actions of any nature whatsoever in favor of Contractor, whether for breach of Contract, quantum meruit, or otherwise; provided, however, that Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by both parties, it being agreed hereby that such sum, together with any extension of time contained in said Change Order, shall constitute full compensation to Contractor for all costs, expenses and damages to Contractor, whether direct, consequential or otherwise in any wise incident to, arising out of, or resulting directly or indirectly from the Work performed by Contractor under such Change Order.

6.1.4 RESERVED

6.1.5 RESERVED

6.1.6 The Contractor agrees that the Owner or any of its duly authorized representatives shall have access to all Contractor records related to the Project to verify charges to the Contract. Further, the Contractor agrees to include these provisions in all subcontracts related to these projects. The Owner shall give the Contractor reasonable advance notice of intended audits.

6.1.6.1 Records may be reviewed during normal Business Hours and shall include accounting records, employee time sheets, estimating work papers, Change Order files, correspondence, canceled checks, related overhead records as applicable, and any and all supporting documents necessary to substantiate charges related to the Contract.

6.1.6.2 For the purpose of such examination, the Owner shall have access to said records of the Contractor or any related parties to the Contract from the effective date of this Contract, for the duration of the Work, and until two years after the date of final payment by the Owner to the Contractor. The period of access and examination described herein which relate to appeals under paragraph 5.2.1 of this Contract, litigation, or the settlement of claims arising out of the performance of this Contract shall continue until final disposition of such claims, appeals or litigation.

6.2 RESERVED

6.3 REQUESTS FOR EQUITABLE ADJUSTMENT:

6.3.1 Requests for equitable adjustment in Contract Sum shall be submitted not later than 20 Days after the occurrence giving rise to such request to the Owner and with copy to the A/E. The request shall be in writing and shall be supported in detail sufficient to provide for evaluation and prompt resolution.

6.3.2 No request shall be allowed for an equitable adjustment under this or any other provision of the Contract if asserted after final payment under this Contract.

6.4 REQUESTS FOR TIME EXTENSION: The Contractor shall comply with Article VIII when requesting time extensions.

6.5 MINOR CHANGES: The A/E, with concurrence of the Owner, will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time. Such changes shall be affected by written order, which the Contractor shall carry out promptly.

6.6 ADMINISTRATIVE PROCEDURES FOR CHANGE ORDER:

6.6.1 Lump Sum Proposal

6.6.1.1 In responding to a request for the Contractor to propose a price for a change in the Work, the Contractor shall furnish a lump sum proposal supported by a complete breakdown as described hereafter, indicating the estimated or actual cost to the Contractor for performance of the changed Work, including the applicable percentage of overhead and profit described hereafter. Any request for an extension of time must be justified and presented in adequate detail to permit evaluation. (See Article VIII, General Conditions).

6.6.1.1.1 The Proposal for the adjustment of the Contractor's Work shall show cost of any extra Work and shall consist of the following items:

a. Costs for materials and supplies. Costs shall be itemized to include unit cost, quantity and total cost. Costs reflected in the itemization shall reflect actual cost to the trade for material and supplies used.

b. Wages paid for skilled, semi-skilled, unskilled labor or equipment operators performing the additional Work. Wages shall be itemized to include trade(s), hourly rate, hours and total cost. Such labor may include working foremen; all other supervisors shall be excluded and shall be considered as a part of field supervision.

c. Costs for additional construction equipment solely for the use on the Change Order Work. Equipment costs shall be itemized to include type(s), the number(s) of each, hourly usage rate, hours of usage and total cost. Onsite equipment shall be employed in Change Order Work at no extra charge, unless the Change Order Work also contains a time extension. Equipment usage rates will be paid based on prevailing local or regional rates.

d. Transportation costs for delivery and handling of materials, supplies and equipment. Such costs shall be itemized in sufficient detail as to allow identification of items transported.

e. Total costs for field supervision (including superintendent), tools, use of other equipment on the job as necessary for economical performance of the Change Order Work, general office and field services and expenses, interference with other Work, adjustments to progress schedules and all other overhead including bond and insurance (except Workers' Compensation) and profit shall not exceed 15%.

f. To the total cost proposed for the Change Order Work which is the sum of a, b, c, d and e above will be added, if applicable, the net cost of the following: Workers' Compensation Insurance, Social Security, Retirement/Pension and/or other costs of a similar nature imposed upon the Contractor by the state or Federal owner, or both, which are incidental to such Change Order Work and which the Contractor would be required to pay.

g. Contractor mark-up. The Contractor will be allowed to add a maximum of 5% to cover all overhead expenses and profit, including supervision, small tools, insurance and bond when Work is performed by Subcontractors. It is expressly understood and agreed that when the Contractor performs the Work with its own forces, and where there is no Subcontractor involved, the Contractor will be allowed the 15% mark-up described in paragraph 6.6.1.1.1e and the 5% mark-up is then not applicable.

6.6.2 PROCESSING:

6.6.2.1 All approved changes in the Contract Sum or Contract Time will be issued by the Owner to the Contractor for Contractor's concurrence as a Field Order or Change Order. The Field Order is the Contractor's assurance of payment and authorization to proceed with the change. The Contractor shall not make application for payment of Work approved by a Field Order until the Field Order has been incorporated into the contract by a Change Order.

6.6.3 Unilateral Change Order: In the event that the Owner requires certain Work to be accomplished and the Contractor fails in the discharge of any or all of its responsibilities described herein, the Owner may issue a Unilateral Change Order which is a Change Order issued by or at the direction of the Owner without the full and timely agreement of the Contractor.

6.6.3.1 A Unilateral Change Order may be issued before, during or after the changed Work is physically accomplished under the following conditions:

a. Contractor fails to submit price and/or time extension proposal for the changed Work within the time requested by the Owner;

b. Negotiation fails to achieve an agreed price and/or time extension or there remains a disagreement concerning any part of the changed Work; or

c. Contractor fails or refuses to execute a Change Order provided that he/she has had opportunity to state his/her objections, and, if stated, they are not mutually resolved.

6.6.3.2 The terms of a Unilateral Change Order including the change in Contract Sum and/or Contract Time shall be determined by the Owner assisted by the A/E and shall, in the Owner's judgment, be fair and reasonable.

6.6.3.3 When a Unilateral Change Order has been issued, it will have the full force and effect of a Contract Modification. It will be included in schedules, payment estimates, reports and all official records of the Contract. The issuance of a Unilateral Change Order will not prejudice any of the Contractor's rights to dispute matters under other provisions of the Contract.

ARTICLE VII. CONTRACT PAYMENTS

7.1 CONTRACT SUM BREAKDOWN: The Contractor shall submit to the Owner for approval a breakdown of the Contract Sum, itemizing material and labor for the various classifications of the Work. The breakdown will be used for evaluation of progress payments.

7.1.1 The breakdown shall be submitted to the Owner not less than twenty (20) Days prior to the first request for payment, and this shall be a condition precedent to the processing of the first payment. This breakdown shall follow the sections of the Specifications and each item thereunder shall include its pro rata part of overhead and profit so that the sum of the items will equal the Contract Sum. The breakdown will correspond to the items of Work in the progress schedule, including the Work of Subcontractors. Each item shall be assigned labor or materials values, or both, the sub-total thereof equaling the value of the Work in place when completed.

7.1.2 No progress payments will be made prior to receipt and approval of the Contract Sum breakdown and project schedule, which shall be in such detail as required by the Owner.

7.2 PROGRESS PAYMENTS: Once each calendar month, the Owner will make a progress payment to the Contractor on the basis of a certified estimate, approved by the A/E, of the Work performed during the preceding calendar month under this Contract, including an affidavit that all payrolls, bills for labor, materials, equipment, or other indebtedness connected with such Work have been paid or will be paid within ten (10) Days after receipt of the progress payment, or within the period of time required by Government Code, Title 10, Section 2251.022; but to ensure the proper performance of this Contract, the Owner shall retain not less than five percent (5%) of the amount of each estimate until final completion and acceptance of all Work covered by this Contract. Should the Owner issue a Certificate of Beneficial Occupancy in accordance with Article IX, upon application by the Contractor approved by the A/E, and without terminating the Contract, the Owner may make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than the retainage stipulated in the Contract Documents, and if bonds have been furnished as provided in Article III, such payment shall be made under the terms and conditions governing final payment, and shall not constitute a waiver of claims. Final payment shall be made after completion of the Work by the Contractor in accordance with the Contract Documents.

7.2.1 PRELIMINARY PAY WORKSHEET TO THE APPLICATION AND CERTIFICATE FOR PAYMENT: Every month that a progress payment is to be requested, the Contractor shall submit to the Owner a complete, clean copy of a preliminary pay work sheet or preliminary Application and Certificate for Payment, to include the following:

7.2.1.1 The Contractor's estimate of the amount of Work performed, labor furnished and materials incorporated into the Work, using the established Schedule of Values.

7.2.1.2 An updated Work Progress Schedule.

7.2.1.3 Such additional documentation as the Owner may require as set forth in the Special Conditions or elsewhere in the Contract Documents.

7.2.2 CONTRACTOR'S APPLICATION FOR PROGRESS PAYMENT: As soon as practicable, but in no event later than seven Days after receipt of the Preliminary Pay Worksheet, the A/E and Owner will review with the Contractor the Preliminary Pay Worksheet and observe the condition of the Work. Based on this review, the Owner and the A/E may require modifications to the Preliminary Pay Worksheet prior to the submittal of an application for progress payment, and will promptly notify the Contractor of revisions necessary for approval. At the Progress Meeting or as soon as practicable, the Contractor shall submit its invoice to the Owner on the appropriate and completed form, reflecting the required modifications to the Schedule of Values required by the A/E and/or Owner. Contractor shall attach all additional documentation required by the Owner and/or A/E, as well as an affidavit of payment affirming that all payrolls, bills for labor, materials, equipment, subcontracted work and other indebtedness connected with the Contractor's invoice are paid or will be paid within the time specified in Texas Government Code, Chapter 2251. No invoice is complete unless it fully reflects all required modifications, with all required documentation attached, including the Contractor's affidavit.

7.2.3 CERTIFICATION BY ARCHITECT/ENGINEER: Upon receipt of the Contractor's invoice, the Owner will review the application for progress payment for completeness and forward to the A/E. The A/E will certify that the application is complete and payable, or that it is incomplete, stating reasons why. If the invoice is incomplete, the Contractor shall make the required corrections and resubmit the invoice to the Owner for processing.

7.2.4 No progress payments will be made prior to receipt and approval of all project schedules and subsequent updates which shall meet the requirements as specified in 8.3.3.

7.2.5 In preparing progress payments, all material installed, labor performed, and stored material as provided by Article 7.2.5.1 may be included in the progress upon which payment is based.

7.2.5.1 All stored materials which are included in the progress payment shall at no time exceed five (5) percent of the Contract Sum and shall:

1. Have been approved to be incorporated into the Work by the A/E.

2. Have been approved for storage by the Owner, provided that if the Owner requests same, shall be furnished with bills of lading, material invoices, shipping receipts, delivery receipts, etc. for any or all material in question.

3. Contractor shall provide proof of title to the stored material in the form of invoices.

   A. For material stored on-site which is scheduled for installation within 60 Days of arrival on the job-site and is properly stored and protected. Approved payment will be for invoiced amount less retainage.

   B. For material stored off-site which is scheduled for installation within 60 Days and stored at an Owner approved storage site and a 30-Day written notice of such storage has been provided before request for payment. Approved payment will be for the invoiced amount less retainage.

      1. Storage will be in an insured and bonded warehouse.

      2. Documentation shall include evidence of such bonding and insurance coverage acceptable to the Owner and a receipt for stored material to the Owner from the warehouse company.

      3. Such material shall be segregated in storage and shall be available for inspection by representatives of the Owner.

      4. The Contractor shall pay for any Owner incurred expense in verifying such storage.

7.2.5.2 Any exception to the provisions of Article 7.2.5.1 will be considered on a case by case basis in response to a written request by the Contractor. Any exceptions granted shall be for the sole benefit of the Owner and/or the Project.

7.2.6 The Owner may withhold or, on account of subsequently discovered evidence, nullify that part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

1. Defective Work not remedied.

2. Damage to Work or property of the Owner and/or of another contractor.

3. Failure to maintain scheduled progress.

4. Receipt of written notice by the Owner of unpaid bills, as stipulated in Texas Property Code, Section 53.232, if the Contractor has not provided a payment bond and if the Contract Sum does not exceed $25,000.00. Any funds so withheld shall be released to the Contractor if he/she furnishes a bond for release of lien as provided in Texas Property Code, Section

53.236. When the above grounds are removed, payment will be made for amounts withheld because of them.

5. Stored material not properly protected in accordance with the manufacturer's recommendations and the technical specifications, whichever is most stringent.

6. Failure to properly maintain and update the Record Set of Contract Documents.

7. Failure to comply with the wage rates provisions contained in the Contract.

8. Costs of re-testing, inspection or approval of materials or workmanship not in conformance with Contract requirements as stipulated in Article V, Paragraph 5.10.

9. Increased design costs and other associated costs resulting from Contractor substitutions.

10. Persistent failure to carry out the Work in accordance with the Contract Documents.

11. Reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or damages for the anticipated delay.

12. Failure to furnish to the Owner all instructional manuals, maintenance manuals, parts catalogs, wiring diagrams, operational manuals, spare parts, specified written warranties and like publications and parts for all installed equipment, systems and like items.

13. Re-inspection as defined in the Contract Documents.

7.2.7 All material and Work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and Work upon which payments have been made or the restoration of any damaged Work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.

7.2.8 Payments to the Contractor shall not be construed to release the Contractor or its surety from any obligation under this Contract.

7.2.9 The Owner will pay the Contract Sum as provided in the Contract Documents.

7.2.9.1 Update of the initial breakdown, as defined in paragraph 8.3, of the Contract Sum shall thereinafter be reflected in the periodic update of the Contractor's Progress Schedule described under Article VIII. In connection with any progress payment, if the Owner requests same, they shall be furnished manifest proof of any Contractor's or Subcontractor's value; and such account shall be in a form as requested.

7.2.9.2 Pay estimate certificates must be signed by a corporate official or a specifically authorized representative of the Contractor. If the latter, a copy of the written delegation of authority to sign must be filed with the Owner.

7.2.9.3 Terms of payment shall be in accordance with Government Code, Title 10, Chapter 2251.

7.3 LIEN FOR UNPAID LABOR AND MATERIALS:

7.3.1 When the value of the Contract between the Owner and the Contractor is not in excess of $25,000.00, claimants are referred to Texas Property Code, Section 53.231, for requirements that are prerequisite to the filing of a valid lien on funds unpaid to the Contractor at the time of filing the claim.

7.3.2 When the Contract between the Owner and the Contractor is in excess of $25,000.00, claims must be sent directly to the Contractor and its surety in accordance with Government Code, Title 10, Chapter 2253. The Owner will furnish, in accordance with such Article, a copy of the Payment Bond as provided therein to claimants upon their request. All claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or Surety. The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by an agent or employee.

7.4 PAYMENT OF DEBT OWED TO THE STATE OF TEXAS

As required by §2252.903, Government Code, Contractor agrees that any payments due under a contract resulting from this IFB shall be directly applied towards eliminating any debt or delinquency including, but not limited to, delinquent taxes, delinquent student loan payments, and delinquent child support, until the debt is paid in full. Contractor shall comply with rules adopted by the TDCJ under §403.055, 403.551, 2252.903, Government Code and other applicable laws and regulations regarding satisfaction of debts or delinquencies to the State of Texas.

7.5 RIGHT TO OFFSET

In the event the Owner determines that Contractor owes money to the Owner under any contract or purchase order, the Owner, upon providing the Contractor with written notice of its intent to offset, shall have the right to withhold monies due to the Contractor with respect to this Contract or purchase order or with respect to any contract or purchase order with the Owner and apply such monies to the money due to the Owner.

ARTICLE VIII. TIME AND SCHEDULING

8.1 TIME LIMITS: All time limits stated in the Contract Documents are of the essence of this Contract.

8.2 CONTRACT TIME: The Contract Time as outlined in Section F.1, is the number of calendar days in which the Contractor shall commence and complete the Work. The Contract Time shall be deemed to commence upon the date designated in the Notice to Proceed issued by the Owner. The Work must be complete by the end of the Contract Time. The Schedule is to encompass all activities between the start and completion of Contract Time.

8.3 PROGRESS AND COMPLETION: It is understood and acknowledged by the parties that the Work cannot be efficiently completed without the use of a competent Schedule, updated frequently and utilized by the Contractor for the planning, management, and coordination of the Work. It is further acknowledged that the needs of the Owner to coordinate the provision of materials and services called for by the Contract Documents require that the Owner be made aware of any events or circumstances that affect the Schedule or sequences of Work required to construct the project. **Therefore, the requirements of this Contract as to scheduling and reporting, as well as time limits for completion of the Work, are of the essence.**

8.3.1 The Contractor is solely responsible for determining the sequence of activities, the time estimates of the detailed construction activities and the means, methods, techniques, and procedures to be employed in

scheduling and completing the project in a timely manner. All Schedules required under the Contract Documents shall represent the Contractor's best judgment of how it will execute the Work in compliance with the Contract Documents.

By submitting any Schedule, report or update required by the Contract Documents, the Contractor represents to the Owner that the information set out therein is accurate, that the plan of Work set out is achievable, and that the Contractor intends to proceed according to the Schedule.

Acceptance of any such Schedule, report or update by the Owner serves only to acknowledge that the Contractor has fulfilled the contractual requirement to submit the same; in so doing, the Owner assumes no responsibility for any loss or damage to the Contractor and the Contractor remains solely responsible for the choice of sequences, durations, logic, and procedures reflected therein.

The purpose of the Project Schedule shall be to:

(1) Permit the Contractor to plan and coordinate its activities, and those of its Subcontractors, suppliers, and vendors, as well as action required by the Contract Documents of the Owner and A/E, so as to complete the Work in accordance with all applicable time limitations set forth in the Contract Documents;

(2) Provide timely and accurate information to the Owner on the progress of the Work and the Contractor's planned methods of implementation to achieve Completion, and to timely apprise the Owner of any events or circumstances that have delayed or threaten to delay the Work;

(3) Serve as a reliable model of the Work that will permit the accurate determination of the impact of any delaying event or circumstances upon the time of completion, and to permit the Contractor to identify and implement effective strategies to avoid or minimize delays;

(4) Permit the Contractor to identify and implement effective strategies of recovering lost time, where necessary.

The Critical Path Method (CPM) in calendar and work days, shall be used for the planning, scheduling, execution and reporting of the Work to be performed under the Contract.

The Project Schedule shall include a Project Schedule, a Schedule of Values, and computer-produced Schedule and Cost Reports as stipulated herein.

The Contractor shall provide the computer processing of the computer-produced reports and network diagram required by this article. The Contractor shall also provide, at no additional cost to the Owner, an electronic copy of the project network and of the computer-produced reports for the Preliminary Logic Network, Detailed Logic Network, Project Schedule Updates and Time Impact Analysis. The Contractor shall use "Primavera P6 Project Management" as its scheduling software.

The Contractor shall meet with the Owner within seven (7) calendar days after the start of the Contract Time to assure mutual understanding of the requirements of this article.

8.3.2 Contractor's Representative: Under this Contract the Contractor shall designate in writing an authorized representative in the Contractor's organization who shall be responsible for coordinating with the Owner during the preparation and maintenance of the Project Schedule. Qualifications of the Project Scheduler are outlined in Section H, paragraph 13.1.

Approval of the Schedule submissions shall be contingent upon acceptance of the Contractor's choice of authorized scheduling representative.

The Contractor's representative shall have complete authority to act on behalf of the Contractor in fulfilling the Project Schedule requirements and such authority shall not be interrupted throughout the duration of the Contract unless approved in writing by the Owner.

8.3.3 SCHEDULE DEVELOPMENT BY CONTRACTOR: Within a time period established in Section H, paragraph 13.3, after the start of the Contract Time, the Contractor shall submit one (1) electronic copy of its proposed CPM Schedule (hereinafter referred to as the Network) along with a supporting narrative to the Owner. The Contractor's Network shall consist of, but not be limited to, the following:

8.3.3.1 Proposed Procurement Activities.

(1) These procurement activities shall include mobilization, Shop Drawing submittals, Sample submittals, and fabrication and delivery of key and long-lead procurement items, including Owner furnished equipment and materials. The activities shall also indicate intended submittal dates and realistic delivery dates for fabrication and delivery activities.

(2) The Contractor shall also prepare a log which shall list all Shop Drawing and Sample submittals. This log shall be computerized on an Excel spreadsheet compatible with versions 6.0 or greater, and will include, at a minimum, the following information for each item:

(a) Item Number
(b) Spec Number
(c) Item Description
(d) Related Activity Number and Description
(e) Planned Date of Initial Submittal
(f) Actual Date(s) of Initial (and Subsequent) Submittals
(g) Planned Date of the A/E's Initial Response
(h) Actual Date(s) of the A/E's Initial (and Subsequent) Responses
(i) Status of the A/E's Initial (and Subsequent) Responses(s) - i.e. Approved, Rejected, Approved as Noted, etc.
(j) Comments

This log shall be updated monthly and included in the Contractor's monthly Schedule Update Report required under paragraph 8.3.5. If the Owner requires, the Contractor will also submit, at no additional charge to the Owner, the information contained herein as an electronic copy.

8.3.3.2 Proposed Commissioning / Inspection Activities

8.3.3.3 Proposed Cost and Resource Loading to show the direct man-days and labor/material cost estimated to perform the Work including Work by Subcontractors for each activity.

8.3.3.4 Proposed Construction Activities including erection or installation, testing of equipment or materials and operation and/or certification of equipment or materials.

(1) Activities shall be identified by building/area and activity durations shall be in units of whole Work days. Proposed durations assigned to each activity shall be the Contractor's best estimate of time required to complete the activity considering the scope and resources planned for the activity. Activity durations are established in Section H, paragraph 13.2.

(2) The Network as developed shall show the sequence and interdependence of activities required for complete performance of the Work. The Contractor shall be responsible for assuring all Work

sequences are logical and the Network shows a coordinated plan of the Work. This includes proposed sequence for equipment/system demonstrations.

8.3.3.4.1 The following shall be included with the Primavera database and depicted on the Network for each activity by building with the ability to compile if requested by the Owner.

(1) Activity identity number utilizing a numeric designation concept.

(2) Concise description of the Work represented by the activity defined and related to a specific pay item.

(3) A coding structure of building/area to allow for organization of work activities.

Failure by the Contractor to include any element of Work required for performance of the Contract shall not excuse the Contractor.

The Proposed Procurement and Construction Activities described in the above Subparagraph shall include the information required under paragraph 8.3.5.

The Contractor shall consult with the Owner for delivery of Owner furnished equipment or materials, and its principal Subcontractors and Suppliers relating to the preparation of its construction plan and Construction Schedule. Principal Subcontractors shall receive copies of those portions of the Contractor's Construction Schedule which relate to their Work and shall be continually advised of any updates or revisions to the Construction Schedule as the Work progresses. When the Contractor submits its Construction Schedule to the Owner or makes any proposed updates or revisions to such Schedule, it will be assumed by the Owner that the Contractor has consulted with and has the concurrence of its principal Subcontractors and Suppliers. The Contractor shall be solely responsible for ensuring that all Subcontractors and Suppliers comply with the requirements of the Construction Schedule for their portions of the Work.

SCHEDULE OF VALUES: At the time of completion of the Project Schedule, the Contractor shall submit to the Owner for review and approval a Schedule of Values, allocating a dollar value for the activities on the Network. The dollar value for the activity shall be the cost of the Work of the activity including labor, materials, and pro rata contribution of General Conditions requirements, overhead and profit. The sum of all activity costs shall equal the total Contract Sum.

Cost Reports: Initial and subsequent Cost Reports will include the following information for each activity, sorted first by building designation then by trade activity:

a. Activity number and description;

b. Percentage of value of Work in place against total value;

c. Cost of each activity separated into Labor and Materials;

d. Value of Work in place since last report;

e. Value of Work in place to date; and

f. Value of uncompleted Work.

As part of the updating process, the Contractor's computer will calculate, based upon progress data provided by the Contractor and agreed to by the Owner, the value of Work done for each activity less the amount previously paid for past percentages completed. Summation of all values of each activity less the appropriate percent of retainage shall be the amount payable to the Contractor as provided by paragraph 7.2.

The Contractor shall ensure that the critical path runs through onsite activities and that off-site activities do not control the critical path of the Network.

8.3.4 JOINT REVIEW, REVISION AND ACCEPTANCE: Within fourteen (14) Days of receipt of the Contractor's proposed Network, the Owner shall evaluate the Network for compliance with this article and other Contract requirements, and notify the Contractor of its findings.

If the Owner does not request a revision or justification, the Owner and the Contractor may meet within seven (7) Days of receipt of the Contractor's proposed Network for joint review of the proposed Network.

If the Owner does request a revision or justification, the Contractor shall, within seven (7) Days of receipt of the Owner's request, provide a satisfactory revision or adequate justification for those activities, logic and durations to the satisfaction of the Owner.

The Owner and the Contractor may meet within seven (7) Days of receipt of the Contractor's response for joint review of the correction or adjustment of the Contractor's proposed Network. In the joint review any areas which still do not comply with the Contract requirements, shall be subject to revision by the Contractor. In the event the Contractor fails to define any element of Work, activity or logic and the Owner review does not detect this omission or error, such omission or error, when discovered by the Contractor or Owner, shall be corrected by the Contractor at the next monthly Schedule Update (discussed hereinafter) and shall not affect any Milestone.

Within seven (7) Days after the joint review between the Contractor and Owner, the Contractor shall revise the Network in accordance with the agreements reached during the joint review and submit four (4) each computer-produced Schedule and Cost Reports and electronic copy as identified in paragraph 8.3.5.

If the Contractor's Schedule still does not comply with the Contract requirements, the Owner may, within seven (7) Days, request a meeting to remedy all remaining objections to the Project Schedule or discuss proper action as prescribed in Article VII of the Contract Documents.

Upon establishment of an agreed-upon Project Schedule, the Owner and the Contractor shall, at the Owner's discretion, sign and date on the face of the Project Schedule documents their respective approval. Subsequent to the Owner's acceptance of the Project Schedule, the Contractor shall proceed with the Work in accordance with the Project Schedule and shall not deviate therefrom unless revised in accordance with Paragraphs 8.3.7 or 8.3.8.

Acceptance by the Owner of the Contractor's Project Schedule will be a condition precedent to making any progress payments.

The Owner's review of the Contractor's Project Schedule is for conformance to the requirements of this provision only.

The activity cost for the Schedule of Values shall be coded with a cost code corresponding to the trade, Subcontractor or Supplier performing the Work so that subtotals for each division of the Work can be prepared.

The Schedule of Values shall, in the best judgment of the Contractor, represent a fair, reasonable and equitable dollar (cost) allocation for each activity on the Network.

The Contractor will provide, within seven (7) Days after acceptance of the Schedule of Values, a computer listing of all cost-loaded activities for the Owner's review.

8.3.5 PROJECT SCHEDULE UPDATE: The Project Schedule shall be updated as specified in Section H, paragraph 13.4 throughout the duration of the Work and until Contract Completion. The Contractor shall meet with the Owner each month at a Schedule Update meeting to review actual progress made through the date of the Schedule Update, including dates activities actually started and/or were completed, the percentage of Work completed and remaining duration on each activity started and/or completed. The data date of each Schedule Update shall be the first Day immediately following the last day of the progress payment period.

The following information shall be submitted by the Contractor on or before the last Day of the progress payment period, but not earlier than seven (7) Days before.

(1) One (1) original and three (3) reproduced marked-up copies of the previous month's Schedule Update computer-produced reports indicating the progress on Schedule activities and indicating actual activity start and/or complete dates, and revised (current) remaining durations.

(2) The Contractor shall indicate in writing those activities the Contractor plans to Work on during the following update month and current or anticipated conditions which have delayed or may delay the Work in order to discuss remedial action. The Contractor shall also explain, for Work which reflects less than satisfactory progress, whether any downstream Work will (or will not) be affected in a like manner and the Contractor's method of corrections.

(3) Any additional written information necessary to support the above.

In case of disagreements at the Schedule Update meeting concerning actual progress to date, the Owner's determination shall govern.

A Schedule Update meeting shall occur on or before the seventh (7th) Day following the submittal of the Schedule Update information. After this meeting the Contractor shall revise the Project Schedule to reflect progress as of the date of the Schedule Update and any revisions to the Project Schedule Update and any revisions to the Project Schedule (which shall be highlighted on the updated Network) and perform a computer-produced calculation to determine the status of the Project Schedule.

8.3.5.1 Each Project Schedule Update shall be forwarded to the Owner within seventy-two hours after the Schedule Update meeting and shall, at the Owner's request, include the following:

(1) A description of all activities completed during the preceding update period.

(2) A description of the progress made on activities listed as started but not completed.

(3) A description of any accepted revisions to the Schedule logic or initial activity durations, or activity costs.

(4) A narrative describing areas of the Work behind Schedule, reasons for delay and the Contractor's proposed method of recovery as required in accordance with paragraph 8.3.6.

(5) Prints of the updated Network indicating the progress made up to the date of the Schedule Update and indicating any revisions to the Network.

(6) One printed copy of the following computer-produced reports, and one (1) electronic copy of the reports:

(a) All activities sorted by building and early start.
(b) 60-day early start sorted by activity number showing predecessor and successor relationships.
(c) All activities sorted by building showing the actual mandays for completed and in-progress Work items.
(d) Accumulative curve showing scheduled and actual manpower for the total Project by month.

(7) The activity number, float, 60-day early start, and earned mandays computer-produced Schedule Reports listed above shall include for each activity depicted on the Network, the following information:

(a) Activity Number
(b) Activity Description
(c) Original Duration
(d) Remaining Duration
(e) Activity Responsibility Code
(f) Activity Early Start and Early Finish Dates
(g) Activity Late Start and Late Finish Dates
(h) Actual Start and Actual Finish Dates
(i) Total Float

(8) An updated submittal log as defined in paragraph 8.3.3.

(9) An electronic copy of the progressed Schedule Network "P6 for Windows".

The updating of the Project Schedule is essential for determining the estimate upon which progress payment will be made. If the Contractor fails or refuses to provide information required to accomplish a complete Project Schedule Update or revision as specified hereinafter the Contractor shall not be entitled to progress payments until the information necessary for a complete Schedule Update is furnished to the satisfaction of the Owner.

8.3.6 RECOVERY SCHEDULE:

8.3.6.1 Should the updated Construction Schedule show at any time during the Contractor's performance, in the sole opinion of the Owner, that the Project will be completed beyond the scheduled project completion date, or should Contractor be required to undertake actions under paragraph 8.4.4 of the General Conditions hereof, the Owner may request the Contractor to prepare a Recovery Schedule at no additional cost to the Owner (unless the Owner is solely responsible for the event or occurrence which has caused the Schedule slippage) explaining and displaying how Contractor intends to reschedule its Work in order to regain compliance with the Construction Schedule.

8.3.6.2 If the Contractor believes that all of the time can be recovered during the subsequent pay period, the Contractor will be permitted to prepare a Recovery Schedule as set forth below. However, if the Contractor believes that it will take more than thirty (30) Days to recover all of the lost time, he/she shall

prepare and submit a request for revision to the Construction Schedule and comply with all requirements of paragraph 8.3.8.

8.3.6.2.1 The Contractor shall prepare and submit to the Owner a Recovery Schedule, incorporating best available information from Subcontractors and others which will permit return to Construction Schedule at the earliest possible time. The Contractor shall prepare a Recovery Schedule to the same level of detail as the Construction Schedule. This Recovery Schedule shall be prepared in coordination with other separate contractors on the Project.

8.3.6.2.2 Within two (2) Days after submission of Recovery Schedule to the Owner, the Contractor shall participate in a conference with the Owner to review and evaluate the Recovery Schedule. Within two (2) Days of conference, the Contractor shall submit the revisions necessitated by the review for the Owner's review and acceptance. The Contractor shall use the accepted Recovery Schedule as its plan for returning to the Construction Schedule.

8.3.6.2.3 The Contractor shall confer daily with the Owner to assess the effectiveness of the Recovery Schedule. As a result of this conference, the Owner will direct the Contractor as follows:

a. If the Owner determines the Contractor is still behind Schedule, the Owner will direct the Contractor to prepare a Schedule Revision and comply with all of the requirements of a Schedule Revision as stated herein and the other requirements of the Contract Documents; provided, however, that nothing herein shall limit in any way the rights and remedies of the Owner as provided elsewhere in the Contract Documents.

b. If the Owner determines the Contractor has successfully complied with provisions of the Recovery Schedule, the Owner will direct the Contractor to return to the use of the accepted Construction Schedule.

8.3.7 PROJECT SCHEDULE REVISIONS: Updating the Project Schedule to reflect actual progress made up to the date of a Schedule Update shall not be considered revisions to the Project Schedule.

If, as a result of the monthly Project Schedule Update, it appears the Project Schedule no longer represents the actual prosecution and progress of the Work, the Owner will request, and the Contractor shall submit, a revision to the Project Schedule.

The Contractor may also request revisions to the Project Schedule in the event the Contractor's planning for the Work is revised. If the Contractor desires to make changes in the Project Schedule to reflect revisions in its method of operating and scheduling of the Work, the Contractor shall notify the Owner in writing, stating the reason for the proposed revision in accordance with the requirements of Paragraph 8.3.8.

If revision to the Project Schedule is contemplated, the Contractor or Owner shall so advise the other in writing at least seven (7) Days prior to the next Schedule Update meeting, describing the revision and setting forth the reasons thereof.

Should the Contractor desire to or otherwise be required under the Contract Documents to make modifications or changes in its method of operation, its sequence of Work or the durations of the activities in its Network, he/she shall do so in accordance with the requirements of the Contract Documents. Revisions to the accepted Network must be accepted in writing by the Owner.

The Contractor shall submit requests for revisions to the Network to the Owner, together with written rationale for revisions and description of logic for rescheduling Work and maintaining the Specific Dates listed in the

Contract Documents. Proposed revisions acceptable to the Owner will be incorporated into next update of Network.

In submitting any proposed Schedule Revisions to the Owner, the Contractor shall, at the Owner's request, submit therewith the following certification:

"The undersigned Contractor certifies that the proposed Schedule revision to the Network which is comprised of the graphic network of activities displayed on the sheets dated ____ and on the computerized mathematical reports dated ____ is Contractor's Schedule revision to the Network as required by the Contract Documents; and that said Schedule revision is a true and accurate representation of its plan to complete the Work, including all Change Orders that are in the Contractor's possession as of the foregoing date, and fully complies with the requirements of the Contract Documents. The Contractor further certifies that it will prosecute the Work in accordance with this Schedule revision, subject to any change therein which is implemented in accordance with the Contract Documents; and the Contractor further certifies that they have fully complied with all of the requirements of the Contract Documents relating to coordination of said Network."

Owner-directed revisions to the Project Schedule will not be incorporated into the Project Schedule without written notice to the Contractor, who shall respond in writing within seven (7) Days, either agreeing with the Owner's proposed revision, or setting forth justification why it should not be accomplished. If the Contractor's justification for not accomplishing the revision is reasonable, such revision will not be incorporated into the Project Schedule. The Contractor's failure to respond in writing within seven (7) Days will be deemed to be an acceptance of the Owner-directed revisions, and such revisions will be incorporated into the Project Schedule by the Contractor. Requests for revisions of activity data or other schedule-related information (e.g.: manpower, unit productivity rate, etc.) shall be made in accordance with the requirements of this Paragraph.

8.3.8 TIME IMPACT ANALYSIS FOR CHANGE ORDER, DELAYS AND CONTRACTOR REQUEST: When changes are initiated, delays are experienced, or the Contractor, in accordance with paragraph 8.3.7 desires to revise the Project Schedule, the Contractor shall submit to the Owner a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request on any critical activity. Each Time Impact Analysis shall include a Fragmentary Network (Network Analysis) demonstrating how the Contractor proposes to incorporate the change, delay or Contractor request into the Project Schedule. The Time Impact Analysis shall demonstrate the time impact to each and every affected activity in the Project Schedule utilizing the most recent Project Schedule Update as the basis for the Analysis. The date of the most recent Project Schedule Update shall be a date prior to the date the change is given to the Contractor, the date of delay occurred or the date the Contractor submits a request for a change. The event times used in the Time Impact Analysis shall be those included in the most recent Project Schedule Update or as adjusted by mutual agreement. The Time Impact Analysis shall include an electronic copy which shall contain the details of the change including, but not to be limited to, added, changed or deleted data for activities, logic restraints, resources or costs. If the Project Schedule is revised subsequent to submittal of a Time Impact Analysis but prior to its acceptance, the Contractor shall promptly indicate in writing to the Owner of the need for any modification to its Time Impact Analysis.

Activity delays shall not automatically mean that an extension of any milestone is warranted or due the Contractor. A change or delay may not affect existing critical activities or cause non-critical activities to become critical. A change or delay may result in only absorbing a part of the available total float that may exist within an activity chain of the Network, thereby not causing any effect on any milestone.

Float or slack time associated with one chain of activities is defined as the amount of time between earliest start date and latest start date or between earliest finish date and latest finish date for such activities, as calculated as part of the Network. Float or slack time shown on the Network is available for use by the Owner and the Contractor, whichever first needs the use or benefit of the float. No time extension will be given for an event or circumstance that only consumes available positive float.

The copy of each Time Impact Analysis shall be submitted within seven (7) Days after the commencement of a delay or the notice of direction for a change is given to the Contractor.

In cases where the Contractor does not submit a Time Impact Analysis within seven (7) Days, it is mutually agreed that the particular change, delay or Contractor request does not require an extension of time to a milestone and the Contractor hereby waives its right to subsequently request a time extension.

Acceptance or rejection of each Time Impact Analysis by the Owner shall be made within seven (7) calendar days after receipt unless subsequent meetings and negotiations are necessary. The Time Impact Analysis shall be incorporated into the Project Schedule after approval of the request for an extension of time as per paragraph 8.4.2.

8.3.9 RESPONSIBILITY FOR COMPLETION: The Contractor shall furnish sufficient forces, offices, facilities and equipment, and if approved by Owner, shall Work such hours including night shift and overtime operations as necessary to ensure the prosecution of the Work in accordance with the current monthly Project Schedule. If, in the opinion of the Owner, the Contractor falls behind in meeting the Project Schedule, the Contractor shall take such steps as may be necessary to improve its progress, provided that all additional steps are subject to Owner approval. Failure of the Contractor to comply with the requirements of this Paragraph shall be a basis for determination by the Owner that the Contractor is not prosecuting the Work with such diligence as will ensure completion within the milestones and scheduled completion date. Upon such determination, the Owner may terminate the Contractor's right to proceed with the Work or any separable part thereof, in accordance with the provisions of paragraph 4.6, or may take such other actions as may be deemed appropriate.

If the Contractor, after completing the Recovery and Revision processes as outlined in paragraphs 8.3.6 and 8.3.7, still cannot show a Schedule Completion which reflects the Contract Completion, a meeting between the Owner and Contractor must be held to discuss late completion of the Work. If in this meeting it is decided that the project cannot be finished by the Contract Completion date then the Owner may require the Contractor to prepare a Schedule which reflects a completion which can be met. Along with this Schedule, the Contractor should include a narrative which explains the reasons it cannot achieve the Contract Completion date and the steps it plans to implement to minimize the delay. This Schedule must adhere to the Schedule requirements outlined in the Contract and will be reviewed as the Contractor's Work Schedule in accordance with paragraph 8.3.4.

Acceptance of a Schedule with a late completion date does not constitute an extension of time by the Owner, or waive the Owner's right to a timely finish or damages for failure to complete timely. Failure of the Owner to direct acceleration does not relieve the Contractor from the duty to complete timely.

8.3.10 PERFORMANCE MONITORING: The Owner may elect throughout or at any time during the Project to record on a daily basis the number of workers and construction equipment working on each Schedule activity in each area of Project and give a copy of this log to the Contractor who shall be responsible for advising the Owner, without additional cost to the Owner, of any error in this Work history, in writing, within seven (7) Days of receipt of same. This information will be used by the Owner in its evaluation of the adequacy of the Contractor's performance and on-site manpower staffing, as well as in the evaluation of any Contractor or Subcontractor claims.

The Contractor shall prepare a report on a daily basis (a "Daily Construction Report") so as to record the following information as a minimum:

(1) Weather data including sky conditions, temperature, wind and precipitation;

(2) Work currently being performed and with the following information:

a. Manpower - listed by Contractor and craft,

b. Quantities installed, and

c. Problem areas discovered and/or resolved;

(3) Descriptions of the specific Work started, in progress, or completed;

(4) Other comments which the Contractor deems appropriate for recording. Each morning (or following day if a holiday) the Contractor shall submit the previous day's Daily Construction Reports to the Owner; and

(5) Stoppages and delays.

The Contractor shall prepare a Bar Chart representing current Work activity. This bar chart will be reviewed with the Owner at the start of each week. The Bar chart will depict two (2) weeks of Work progress beginning with the week of the review and shall be created from the last approved updated Schedule.

8.4 DELAYS AND EXTENSION OF TIME:

8.4.1 Requests for Time Extensions: Requests for extensions of time must be made in writing no later than twenty (20) Days after the occurrence of the delay or at the time of the next Project Schedule Update, whichever shall occur first. All time extension requests shall be based on the latest approved Schedule. The request must include a narrative describing how the occurrence affected the critical path. Additional documentation is to be made available at request of the Owner. Requests for extensions of time shall be stated in numbers of whole calendar days and shall be in accordance with paragraph 8.3.8.

8.4.2 The Contractor may be granted an extension of time because of changes ordered in the Contract or because of any unforeseeable occurrence deemed by the Owner as being beyond the Contractor's control, which constitutes a justifiable delay. The Owner may extend the time subject to the following provisions.

8.4.2.1 EXCUSABLE DELAYS

(1) Changes ordered by Owner
(2) Owner's express order to stop or suspend Work in whole or in part if for Owner's convenience
(3) Adverse weather in accordance with Section H, paragraph 13.5
(4) Failure of the Owner or A/E to timely take some action required by the Contractor, or to provide information timely
(5) Delays in transportation or unavailability of material, equipment or supply
(6) Strikes and Lockouts
(7) Design defects in accordance with paragraph 6.1.3
(8) Late delivery of OFCI items
(9) Any other unforeseeable causes which in the sole discretion of the Owner is determined to be beyond the Contractor's control

8.4.2.2 PROOF OF ENTITLEMENT

Contractor must show by Time Impact Analysis, using the most recent accepted Schedule Update before the delay occurred, that the delay was experienced in critical path activities and that it affected the Contract Completion Date.

Contractor must provide backup data (daily reports) documenting actual delay. Contractor must also show that a reasonable revision of the Schedule could not avoid the delay.

Contractor must show that they took reasonable steps to avoid or mitigate the delay.

8.4.2.3 RELIEF FOR DELAY

The Contractor is entitled to recover direct and general conditions costs of extended performance time only for the following types of excusable delay:

(1) Failure of the Owner or A/E to take required actions timely (e.g., failure to provide OFCI items), or provision of defective items and failure to provide timely information
(2) Changes ordered by Owner
(3) Design defects in accordance with paragraph 6.1.3
(4) Owner's express order to stop or suspend Work in whole or in part if for Owner's convenience.

The Owner shall ascertain the facts and the extent of the delay and extend the time for completing the Work when, in its judgment, the findings justify such an extension of Contract Time. The findings of the Owner are final and conclusive on both parties and subject to appeal only as provided in paragraph 5.2.1.

8.4.2.4 FORCE MAJEURE

Owner may grant relief from performance of the contract if the Contractor is prevented from performance by an act of war, order of legal authority, act of God, or other unavoidable cause not attributable to the fault or negligence of the Contractor. The burden of proof for the need of such relief shall rest upon the Contractor. To obtain release based on force majeure, the Contractor shall file a written request with Owner.

8.4.3 TIME EXTENSIONS FOR ADVERSE WEATHER

1. This provision specifies the procedure for determination of time extensions for adverse weather. Time extensions for adverse weather shall be submitted and reviewed monthly. In order for a time extension to be awarded for adverse weather, the following conditions must be satisfied:

a. The adverse weather experienced at the project site during the Contract Time must be found to exceed the adverse weather days anticipated for the project location during any given month. The days affected by adverse weather delays must be shown to be scheduled work days or that notice was given prior to the delay that work was going to proceed on that day.

b. The adverse weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without fault or negligence of the Contractor.

2. The Schedule of monthly anticipated adverse weather delays is shown in Section H, paragraph 13.5 for the project location and will constitute the baseline for monthly weather time evaluations. The Contractor's progress Schedule must reflect dependent activities.

3. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the Contract, the Contractor will record on the Daily Construction Report the occurrence of adverse weather and resultant impact to normally scheduled Work activities. The Project Administrator (Owner) will sign its concurrence or non-concurrence on the Daily Construction Report. Actual adverse weather delay days must prevent Work on critical activities for 50 percent or more of the Contractor's scheduled Workday.

The number of actual adverse weather delay days shall include days impacted by actual adverse weather and be calculated chronologically from the first to the last day of each month, and be recorded as full days. This will give the Contractor full consideration for equivalent fair weather work days. Then a modification can be issued in accordance with paragraph 8.4 of the General Conditions.

8.4.4 If the Work is behind Schedule and the rate of placement of Work is inadequate to regain scheduled progress so as to insure timely completion of the entire Work (Contract Completion Date) or a separable portion thereof, the Contractor, when so informed by the Owner, shall immediately take action to increase the rate of Work placement in a manner approved by Owner.

A Recovery Schedule shall be provided in accordance with paragraph 8.3.6.

8.4.4.1 The Contractor shall, within five (5) working days after being so informed, notify the Owner of the specific measures taken and planned to increase the rate of progress together with an estimate as to when scheduled progress will be regained. Should the plan of action be deemed inadequate by the Owner, the Contractor will take additional steps or make adjustments as necessary to its plan of action until it meets with Owner's approval. The increased rate of Work placement will continue until scheduled progress is recovered. If the cause of delay is not identified in paragraph 8.4.1.1 as an Excusable delay then the Contractor shall not be entitled to additional compensation for the effort it applies to the Work under the terms of paragraphs 8.3.6 and 8.3.7.

8.4.4.2 Failure by the Contractor to comply with the requirements of the Owner under this provision shall be grounds for determination that the Contractor is guilty of a substantial violation of provisions of the Contract Documents. Upon such determination the Owner may terminate the Contract as provided in paragraph 4.6.

8.4.4.3 The Contractor shall receive no compensation for delays or hindrances to the Work, including any extended overhead, other provisions of the Contract notwithstanding, except when direct and unavoidable extra cost results from the failure of the Owner to provide materials, if any, specified to be furnished by the Owner, or from the failure of the Owner, or A/E to provide instructions necessary for prosecution of the Work; provided, however, that the Owner will not be responsible for such additional compensation unless the Contractor gives timely written notice that they are being delayed or are about to be delayed by the failure to provide the materials or information; and provided further, that no claim shall be allowed for costs incurred prior to receipt of such notice.

8.4.4.4 Any directive or order to accelerate the Work will be in writing. Any directive or order terminating accelerated Work will be in writing.

8.4.4.5 No extension of time shall release the Contractor or the Surety furnishing its performance or payment bond from all obligations thereunder, which shall remain in full force until the discharge of the Contract.

8.5 FAILURE TO COMPLETE WORK ON TIME: The time set forth in the Contract for the completion of Work is an essential element of the Contract. Contractor's failure to complete the Work

within such time will cause damage to the Owner. Where appropriate, the value of such damages may be stated in Section F.

8.5.1 For each and every Day that the Work, or any portion of the Work, shall remain incomplete after the expiration of the Contract Time set in the Contract, or as extended by the Owner, the amount shown in Section F as liquidated damages will be deducted from the moneys due or to become due to the Contractor, not as a penalty, but as added expense including administrative and inspection costs. Liquidated damages shall cease to accrue at Final Completion.

8.5.2 The rights and remedies of the Owner provided in this Article are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE IX. BENEFICIAL OCCUPANCY

9.1 **BENEFICIAL OCCUPANCY:** If and only if the Owner should wish to use or occupy the Work, or portion thereof, prior to final completion the Owner shall request in writing that the Contractor determine if the Work, or portion thereof, so identified by the Owner is sufficiently complete to allow the Owner to occupy. Should the Contractor determine that the Work, or a designated portion thereof, acceptable to the Owner, is sufficiently complete, the Contractor shall prepare for submission to the A/E a comprehensive list of items remaining to be completed or corrected. Upon receipt of the Contractor's list and prior to the agreed date of Beneficial Occupancy, a joint inspection tour by the Contractor, Owner, and A/E, or their duly appointed representatives, shall be made. The A/E will furnish to the Contractor a list of items of Work to be completed and deficiencies to be corrected and the Contractor shall complete such remaining Work within the remaining Contract time or within the time frame stated on the Certificate of Beneficial Occupancy. Failure to achieve Final Completion within the Contract Time or time frame stated on the Certificate of Beneficial Occupancy will cause damage to the Owner and may subject the Contractor to Liquidated Damages as stated in Section F, Article 2 of the Contract.

9.2 **CERTIFICATION:** When the A/E and the Owner, on the basis of an inspection determines that the Work or a designated portion thereof is sufficiently complete, they will then prepare a Certificate of Beneficial Occupancy which shall establish the Date of Beneficial Occupancy; shall state the responsibilities of the Owner and the Contractor for maintenance, heat, utilities, and operation of permanent equipment; and shall fix the time within which the Contractor shall complete the items listed therein. The Certificate of Beneficial Occupancy shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to each of them in such Certificate. The Owner will furnish to the Contractor a letter indicating acceptance of the Work or designated portion thereof, subject to completion or correction of the listed items.

9.2.1 Following the joint inspection tour and the agreed date of Beneficial Occupancy, the Owner may occupy the building or facility or any part thereof for whatever purposes the Owner deems necessary. The Owner will assume responsibility, under the provisions of this Article, for the area they so occupies, except that the Contractor shall retain responsibility for the remaining items of Work until such are satisfactorily completed and accepted by the Owner.

9.2.2 At the time of joint inspection tour for Beneficial Occupancy, the Contractor shall furnish to the Owner all instructional manuals, maintenance manuals, parts catalogs, wiring diagrams, operational manuals, spare parts, specified written warranties and like publications for all installed equipment, systems and like items along with a complete accounting of all fixed assets which are incorporated into the Work, or portion thereof as required in paragraph 1.4. If the Contractor does not furnish these requirements and the Owner must obtain this information and data, the costs for this procurement will be deducted from payments due the Contractor.

9.3 ADDITIONAL INSPECTION COSTS: Contractor shall be charged with any cost for re-inspection resulting from substantial differences between the Contractor's list of items to be completed or corrected and the list of items resulting from the A/E inspection.

ARTICLE X. CONTRACT FINAL ACCEPTANCE AND PAYMENT

10.1 NOTIFICATION: When the Work is completed, the Contractor shall notify the A/E and the Owner in writing that the Work will be ready for Pre-Final Inspection on a definite date. A seventy-two (72) hour advance notice shall be given to the Owner. The Contractor must have performed an inspection of the Work, developed a punch list, and have corrected all items on that punch list prior to requesting a pre-final inspection. The Contractor's completed punch list must be submitted to the Owner at the time of the Pre-final Inspection request.

10.2 PRE-FINAL INSPECTION: A Pre-Final Inspection will be required for any Work for which there has been no Certificate of Beneficial Occupancy issued in accordance with Article IX. A joint inspection tour by the Contractor, Owner, and the A/E or their duly appointed representatives shall be made at the time the Contractor so advises the Owner and the A/E that the Work is ready for the Pre-Final Inspection. Following such inspection, the A/E and/or the Owner shall furnish to the Contractor a list of items of Work to be completed and deficiencies to be corrected and the Contractor shall complete such remaining Work within the remaining Contract Time.

10.2.1 At the time of Pre-Final Inspection the Contractor shall furnish to the Owner all instructional manuals, maintenance manuals, parts catalogs, wiring diagrams, operational manuals, spare parts, specified written warranties and like publications for all installed equipment, systems and like items along with a complete accounting of all fixed assets which are incorporated into the Work. If the Contractor does not furnish these requirements and the Owner must obtain this information and data, the costs for this procurement will be deducted from payments due the Contractor.

10.3 FINAL INSPECTION AND ACCEPTANCE: When the items identified in the A/E's Pre-Final Inspection or Beneficial Occupancy list are completed or corrected, the Contractor shall notify the A/E in writing that the Work will be ready for final inspection on a definite date. A seventy-two (72) hour advance notice shall be given to the Owner. Upon verification by the A/E that the Work is ready for final inspection and acceptance, the Owner will within ten (10) Days make a final inspection, then once the Work is found acceptable under the Contract Documents and the Contract is fully performed, make final payment to the Contractor.

10.3.1 To avoid delay in final payment, the Contractor shall have all necessary bonds, guarantees not previously furnished, receipts, affidavits, etc. prepared and signed in advance with a letter of transmittal listing each item to be furnished to the Owner at the time of final inspection.

10.3.2 Upon acceptance of the Work, the A/E and Owner shall execute a Final Completion Certificate in accordance with the Contract and deliver such document to the Contractor by mail or other means within ten (10) Days. The Contractor's requirement for Builder's Risk Insurance coverage of the Work may be terminated on the date of the executed final acceptance document. In the case where heating and ventilating, air conditioning or other systems must be tested seasonally, the Owner may accept the Work less such testing, and final acceptance of such systems will be accomplished after completion of successful tests. Upon final acceptance, the Owner may occupy or use the Work.

10.4 ADDITIONAL INSPECTION COSTS: Contractor shall be charged with any cost for re-inspection resulting from substantial differences between the Contractor's list of items to be completed or corrected and the list of items resulting from the A/E inspection.

10.5 FINAL PAYMENT DOCUMENTATION: Neither the final payment nor the remaining retained percentage shall become due until the Contractor submits to the A/E for transmittal to the Owner (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or its property might in any way be responsible, have been paid or will be paid or otherwise satisfied within thirty days after receipt of final payment from the Owner, or within the period of time required by Government Code, Title 10, Chapter 2251; (2) all guarantees and/or bonds as required on specific branches of the Work, and as further described in Article XI; (3) consent of Surety, if any, to final payment; and (4), if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims arising out of the Contract, to the extent and in such form as may be designated by the Owner. If any Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against any such claim.

10.6 FINAL PAYMENT: The making of final payment shall constitute a waiver of all claims by the Owner except those arising from: (1) faulty or defective Work appearing after Final Inspection and acceptance; (2) failure of the Work to comply with the requirements of the Contract Documents; or (3) terms of any special warranties required by the Contract Documents. Acceptance of final payment shall constitute a waiver of all claims by the Contractor except those specifically enumerated at the time of final payment and filed in accordance with Article VI.

10.6.1 Upon execution of the Final Completion certificate by the A/E and Owner, the Contractor shall submit a request for final payment signed by a Contractor principal. Such request shall be marked "FINAL PAYMENT". This request shall be reviewed, approved and certified by the A/E and shall be forwarded to the Owner. The Owner will then process final payment.

10.6.1.1 When the value of the Contract between the Owner and the Contractor is not in excess of $25,000.00, final payment to the Contractor will be withheld for a period of sixty (60) days following the last date upon which contracted Work is performed, or on which contracted material is delivered to the job-site, in order that unpaid claimants, who have furnished labor and/or materials for the Project to the Contractor, may be provided the time permitted by Texas Property Code, Section 53, to file claims against funds still due the Contractor.

ARTICLE XI. CONTRACT WARRANTY AND GUARANTEE

11.1 WARRANTY OF CONSTRUCTION

(a) In addition to any other warranties in this Contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that Work performed under this Contract conforms to the Contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any Subcontractor or supplier at any tier.

(b) The warranty shall be for the period of one (1) year or for the period stated in the specifications, whichever is greater, beginning on the date of the final acceptance of Work. If the Owner takes possession of any part of the Work before final acceptance, this warranty shall be for a period of one (1) year or as stated in the specifications, whichever is greater, beginning on the date the Owner takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner-owned controlled real or personal property, when that damage is the result of;

1. The Contractor's failure to conform to Contract requirements or

2. Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any Work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

(e) The Owner shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall;

1. Obtain all warranties that would be given in normal commercial practice;

2. Require all warranties to be executed, in writing, for the benefit of the Owner; and

3. Enforce all warranties for the benefit of the Owner.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Owner may bring suit at its expense to enforce a Subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or Subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Owner nor for the repair of any damage that results from any defect in Owner-furnished material or design.

(j) This warranty shall not limit the Owner's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

11.1.1 WARRANTY DATA: The Contractor shall provide all warranties as required by the Contract Documents. Warranties shall contain the following minimum information:

Contractor's name, address and telephone number.
Manufacturer's name, address and telephone number.
Model number and serial number for each item.
Installed location of each item.

11.1.2 DIRECTORY OF INSTALLING CONTRACTORS: The Contractor shall provide the name, address, telephone number, and Work scope for each Subcontractor participating in the project.

11.1.3 OPERATIONS AND MAINTENANCE MANUALS: The Contractor is responsible for obtaining the A/E's review and approval of all operation and maintenance manuals prior to transmitting the final copies to the Owner. The Contractor shall provide a minimum of three complete sets (per site) of the operation and maintenance manuals required by the Owner. Operation and maintenance manuals shall be

provided for all items as required in the Contract Documents, including all commissioning data, mechanical, electrical, plumbing, and electronic equipment furnished by the Contractor. Each operation and maintenance manual shall be bound in a three-ring side binder with a durable plastic cover. Each manual shall contain the following information:

1. Title and table of contents.
2. Name, address, and telephone number of Contractor, each installing Subcontractor and each supplier.
3. List of equipment and respective parts list for each.
4. Operating instructions.
5. Maintenance instructions.

ARTICLE XII. PRESERVATION OF SITE ASSETS

12.1 The Contractor shall take all necessary measures to protect existing trees and vegetation, structures and facilities, utilities and other improvements at or near the site of Work.

12.1.1 The Contractor shall preserve and protect all existing trees and vegetation such as shrubs and grass on or adjacent to site of Work which are not to be removed and which do not unreasonably interfere with the construction Work. Care will be taken in removing trees authorized for removal to avoid damage to other trees or vegetation to remain in place. All damage to existing trees and vegetation to remain in place caused by careless construction or removal operations shall be repaired by the Contractor at his/her expense and cost, as directed by the Owner.

12.2 The Contractor shall protect from damage all existing structures and facilities, utilities and other improvements at or near the site of Work, the location of which is evident or made known to the contractor, and will repair or restore any damage to such improvements resulting from failure to comply with the requirements of the Contract or to exercise reasonable care in the performance of the Work.

12.3 If the Contractor fails or refuses to exercise proper care for preservation and protection of site assets described hereunder or fails or refuses to repair all such resulting damage promptly, the Owner may have the necessary Work performed and charge the cost thereof to the Contractor.

ARTICLE XIII. OPERATION AND STORAGE AREAS

13.1 The Contractor will operate and maintain the operations areas and associated storage areas at the site of the Work in accordance with the following:

13.1.1 All Contractor operations, including storage of materials, and employee parking upon the site of Work shall be confined to areas designated by the Owner.

13.1.2 The Contractor may erect temporary buildings and make ready outside storage areas at its own expense, which shall remain its property. The Contractor shall remove such buildings, materials and associated utilities service lines upon completion of the Work, unless the Contractor requests, and the Owner provides written consent, that he/she may abandon such buildings and utilities in place.

13.1.3 The Contractor will use only established roadways or construct and use such temporary roadways as may be authorized by the Owner. Load limits of vehicles shall not exceed that prescribed by appropriate

regulations or law. The Contractor will provide protection to road surfaces, curbs, sidewalks and drainage structures to prevent damage and all damage thereto shall be repaired by and at the expense of the Contractor.

13.2 The Owner may restrict the Contractor's entry to the site to assigned entrances and routes.

13.3 The Contractor shall at all time keep the construction areas, including storage areas, used by them free from the accumulation of water, waste materials, or rubbish during performance of the Work. During the period of construction, and not less frequently than once a week, the Contractor shall remove from the site any and all waste materials, rubbish and trash, and shall dispose of such waste materials, rubbish and trash off the property of the Owner. Prior to the Contractor's requested date for final inspection, the Contractor shall remove any and all remaining equipment from the site and shall leave the premises in a clean, neat and workmanlike condition satisfactory to the Owner.

ARTICLE XIV. MISCELLANEOUS PROVISIONS

14.1 GOVERNING LAW

14.1.1 The Contract shall be governed by the laws of the State of Texas and any action, whether at law or in equity shall be brought exclusively in the State Courts of Texas.

14.2 RIGHTS AND REMEDIES

14.2.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

14.2.2 Failure to timely enforce, or the waiver of, any provision of these Contract Documents or any breach of nonperformance by the Owner or Contractor shall not be deemed a waiver by either of the parties of the right in the future to demand strict compliance and performance of any provision of these Contract Documents. No waiver or waivers of any breach or default (or any breaches or defaults) by any party hereto or of performance shall be deemed a waiver thereof in the future, nor shall any such waiver or waivers be deemed or construed to be waiver of subsequent breaches or defaults of any kind, character, or description, under any circumstances. Only duly authorized officers or employees of the Owner or Contractor are authorized to waive or modify any provision of these Contract Documents. All waivers or modifications of these Contract Documents shall be in writing.

14.3 **ENTIRE AGREEMENT:** This Contract shall be binding upon and inure to the benefit of the parties and their respective successors and assigns. The provisions of these Contract Documents constitute the entire agreement, understanding and representations, express or implied, between the Owner and the Contractor. Nothing in these Contract Documents, expressed or implied, is intended or shall be construed to confer upon any person other than the Owner and the Contractor, any right, remedy, or claim, legal or equitable.

14.4 **SEVERABILITY:** If any clause, provision, or section of this Contract be held illegal, invalid, or unenforceable by any court, the illegality, invalidity, or unenforceability of each clause, provision, or section shall not affect any of the remaining clauses, provisions, or sections hereof, and this Contract shall be construed and enforced as if such illegal, invalid, or unenforceable clause, provision, or section had not been contained herein. In case any agreement or obligation contained in the Contract is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Owner and the Contractor, as the case may be, to the full extent permitted by law.

14.5 INDEPENDENT CONTRACTOR

The Contractor understands that it is an independent contractor, wholly responsible for the day to day operations of its programs and employees; that no joint venture, partnership or agency exists nor shall be implied by the terms of the contract if the contract is awarded to Contractor; and that no employee of Contractor will become an employee of the Owner by virtue of this contract.

14.6 INDEMNIFICATION OF THE OWNER

The Contractor shall indemnify and save the Owner, the Texas Board of Criminal Justice, the State of Texas and its officers, agents and employees (hereinafter the State) harmless from and against:

A. Any and all claims arising from the conduct, management or performance of the contract by Contractor, its agents, subcontractors or employees, including, without limitation, any and all claims arising from:

1. Any breach or default on the part of the Contractor in the performance of any covenant or agreement on its part to be performed, pursuant to the terms of this contract;

2. Any act or negligence of the Contractor or any of its agents, subcontractors, servants, employees or licensees;

3. Any accident, injury or damage whatsoever caused to any person, firm or corporation.

B. All costs, reasonable attorney's fees, expenses and liabilities incurred in or about any such claim, action or proceeding brought thereon.

Nothing herein is intended to deprive the State or Contractor of the benefits of any law limiting exposure to liability and/or setting a ceiling on damages, or any laws establishing defenses for them. By entering into this Contract, the State does not waive its right of sovereign immunity, nor does the Contractor waive any immunity that may extend to it by operation of law. The aforementioned indemnification shall not be affected by a claim that negligence of the State or its respective agents, contractors, employees or licensees contributed in part to the loss or damage indemnified against.

C. The parties agree that the terms, covenants and provisions of Section I, Article 14.6 shall survive the termination of this Contract.

14.7 NON-AVAILABILITY/LOSS OF FUNDING

The Contractor understands that this contract may be terminated by TDCJ in the event TDCJ is not granted funding to pay for the services described in the contract documents or in the event that funding is lost due to either a reduction in the budget or a reallocation of budgeted funds and that funding of TDCJ is limited to funding actually authorized by the legislature of the State of Texas.

14.8 NOTICE

Required notices will be provided to the Texas Department of Criminal Justice, Contracts and Procurement, Information Technology, Construction and Utilities Branch, Two Financial Plaza, Suite 525, Huntsville, Texas 77340; Attn: Lynne Piippo, CTPM, CTCM, Contract Administrator and to Contractor at:

Metroplex Control Systems, Inc. dba Argyle Security Group
12903 Delivery Drive
San Antonio, Texas 78247

14.9 FINANCIAL OPERATIONS

14.9.1 Contractor shall establish and provide financial services and operations which comply with generally accepted accounting principles in order to ensure that the funds of the Owner are safeguarded and that the financial records accurately reflect the transactions relevant to the implementation of this Contract.

14.9.1.1 Contractor shall develop, implement and maintain a financial management system including accurate, correct and complete payroll, accounting and financial reporting records, cost source documentation, effective internal and budgetary controls, determination of reasonable, allowable and allocable cost elements, and timely and appropriate audits and resolution of any questionable or improper findings.

14.10 UTILIZATION OF PRODUCTS AND MATERIALS PRODUCED IN TEXAS

Contractor shall comply with Texas Government Code, Section 2155.4441 relating to service contract use of products produced in the State of Texas. In performing services under this Contract, the Contractor shall purchase products and materials produced in the State of Texas when they are available at a price and time comparable to products and materials produced outside of Texas.

14.11 ASSIGNMENT

The Contractor may not assign any interest in this Contract without the prior written consent of the Owner which consent the Owner may withhold at its sole discretion.

If the Owner so elects in its sole discretion, this Contract will terminate upon the occurrence of any of the following:

A. More than 50% of the assets of Contractor are sold;

B. Contractor is merged into, acquired by, or consolidated with another corporation or business entity; or is otherwise the subject of reorganization; or

C. Any shareholder or Owner of Contractor who owns at least 10% beneficial Ownership of contractor fails to continue to own at least 10%.

In the event that any sale, transfer, or assignment, **as referenced in paragraph A and B above,** is consented to by the Owner the transferee or its legal representative shall agree in writing with the Owner to assume, perform and be bound by the covenants, obligations and agreements contained herein.

14.12 AUTHORITY TO AUDIT

14.12.1 Contractor understands that acceptance of funds under this Contract acts as acceptance of the authority of the State Auditor's Office, or any successor agency, to conduct an audit or investigation in connection with those funds. Contractor further agrees to cooperate fully with the State Auditor's Office or its successor in the conduct of the audit or investigation, including providing all records requested. Contractor will ensure that this clause concerning the authority to audit funds received indirectly by subcontractors through Contractor and the requirement to cooperate is included in any subcontract it awards. Contractor will reimburse the State of Texas for all costs associated with enforcing this provision.

14.12.2 Contractor must retain all work and other supporting documents pertaining to this Contract, for purposes of inspecting, monitoring, auditing, or evaluating by TDCJ and any authorized agency of the State of Texas, including an investigation or audit by the State Auditor for period of four (4) years after the date of submission of the final invoice or until a resolution of all billing questions, whichever is later. Contractor shall maintain and retain supporting fiscal and any other documents relevant to showing that any payments under this Contract funds were expended in accordance with the laws and regulations of the State of Texas, including but not limited to, requirements of the Comptroller of the State of Texas and the State Auditor.

14.13 CONFIDENTIALITY AND OPEN RECORDS

14.13.1 Notwithstanding any provisions of this Contract to the contrary, Contractor understands that the TDCJ will comply with the Texas Public Information Act, Government Code, Chapter 552 as interpreted by judicial opinions and opinions of the Attorney General of the State of Texas. TDCJ agrees to notify Contractor in writing within a reasonable time from receipt of a request for information related to Contractor's work under this contract. Contractor will cooperate with TDCJ in the production of documents responsive to the request. The TDCJ will make a determination whether to submit a Public Information Act request to the Attorney General. Contractor will notify the TDCJ's General Counsel within twenty-four (24) hours of receipt of any third party requests for information that was provided by the State of Texas for use in performing the Contract. This Contract and all data and other information generated or otherwise obtained in its performance may be subject to the Texas Public Information Act. Contractor agrees to maintain the confidentiality of information received from the State of Texas during the performance of this Contract, including information which discloses confidential personal information particularly, but not limited to, social security numbers.

14.13.2 In accordance with Section 2252.907, Government Code, the Contractor acknowledges that this contract and information created or maintained in connection with this contract is public information and subject to disclosure as provided by Chapter 552, Government Code (Texas Public Information Act). The Public Information Act may require the Contractor to make information related to this contract available to the public pursuant to a request for public information. The Contractor agrees, upon request, to make information related to this contract that is not otherwise excepted from release by the Public Information Act available to the public in hard copy, unless the requestor of the information consents to receive the information in another mutually agreeable format. The Contractor acknowledges that the agency shall not provide legal counsel related to the Contractor's. compliance with the Public Information Act.

14.14 NO LIABILITY UPON TERMINATION

If this Contract is terminated for any reason, the TDCJ and the State of Texas shall not be liable to Contractor for any damages, claims, losses, or any other amounts arising from or related to any such termination. However, Contractor may be entitled to the remedies provided in Government Code, Chapter 2260.

14.15 LIMITATION ON AUTHORITY; NO OTHER OBLIGATIONS

Contractor shall have no authority to act for or on behalf of the TDCJ or the State of Texas except as expressly provided for in this Contract; no other authority, power or use is granted or implied. Contractor may not incur any debts, obligations, expenses, or liabilities of any kind on behalf of the State of Texas or the TDCJ.

14.16 INTELLECTUAL PROPERTY INDEMNIFICATION

The Contractor will indemnify, defend, and hold harmless the State of Texas and the TDCJ against any action or claim brought against the State of Texas and/or the TDCJ that is based on a claim that software infringes any patent rights, copyright rights or incorporated misappropriated trade secrets. Contractor will pay any damages attributable to such claim that are awarded against the State of Texas and/or the TDCJ in a judgment or settlement.

If the TDCJ's use of the software becomes subject to a claim, or is likely to become subject to a claim, in the sole opinion of the TDCJ, Contractor shall, at its sole expense (1) procure for the TDCJ the right to continue using such software under the terms of this Contract; or (2) replace or modify the software so that it is non-infringing.

14.17 RIGHTS TO DATA, DOCUMENTS AND COMPUTER SOFTWARE (STATE OWNERSHIP)

Any software, research, reports, studies, data, photographs, negatives or other documents, drawings or materials prepared by Contractor in the performance of its obligations under this Contract shall be the exclusive property of the State of Texas and all such materials shall be delivered to the TDCJ by the Contractor upon completion, termination, or cancellation of this Contract. Contractor may, at its own expense, keep copies of all its writings for its personal files. Contractor shall not use, willingly allow, or cause to have such materials used for any purpose other than the performance of Contractor's obligations under this Contract without the prior written consent of the TDCJ; provided, however, that Contractor shall be allowed to use non-confidential materials for writing samples in pursuit of the work. The ownership rights described herein shall include, but not be limited to, the right to copy, publish, display, transfer, prepare derivative works, or otherwise use the works.

14.18 ELECTRONIC AND INFORMATION RESOURCES ACCESSIBILITY STANDARDS, AS REQUIRED BY 1 TAC, CHAPTER 213

Effective September 1, 2006 state agencies and institutions of higher education shall procure products which comply with the State of Texas Accessibility requirements for Electronic and Information Resources specified in 1 TAC Chapter 213 when such products are available in the commercial marketplace or when such products are developed in response to a procurement solicitation.

Contractor shall provide the TDCJ with the URL to its Voluntary Product Accessibility Template (VPAT) for reviewing compliance with the State of Texas Accessibility requirements (based on the federal standards established under Section 508 of the Rehabilitation Act), or indicate that the product/service accessibility information is available from the General Services Administration "Buy Accessible Wizard" (http://www.buyaccessible.gov). Contractors not listed with the "Buy Accessible Wizard" or supplying a URL to their VPAT must provide the TDCJ with a report that addresses the same

accessibility criteria in substantively the same format. Additional information regarding the "Buy Accessible Wizard" or obtaining a copy of the VPAT is located at http://www.section508.gov/.

14.19 E-VERIFY SYSTEM

By entering into this Contract, the Contractor certifies and ensures that it utilizes and will continue to utilize, for the term of this Contract, the U.S. Department of Homeland Security's E-Verify system to determine the eligibility of:

1. All persons employed to perform duties within Texas, during the term of the Contract; and
2. All persons (including subcontractors) assigned by the Respondent to perform work pursuant to the Contract, within the United States of America.

The Contractor shall provide, upon request of the TDCJ, an electronic or hardcopy screenshot of the confirmation or tentative non-confirmation screen containing the E-Verify case verification number for attachment to the Form I-9 for the three most recent hires that match the criteria above, by the Contractor, and Contractor's subcontractors, as proof that this provision is being followed.

If this certification is falsely made, the Contract may be immediately terminated, at the discretion of the state and at no fault to the state, with no prior notification. The Contractor shall also be responsible for the costs of any re-solicitation that the state must undertake to replace the terminated Contract.

SECTION J

LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

ATTACHMENTS

No.	Description	Pages
1	Standards of Conduct for Civilian Construction Contractors Employees	3
2	Payment Bond	1
3	Performance Bond	1
4	Prevailing Wage Schedule (Heavy and Highway Construction)	3
5	Prevailing Wage Schedule (Building Construction)	4
6	Substitution Request (Bidding Phase)	
7	Substitution Request	2
8	Contractor Qualifications (TDCJ Master Contract File)	
9	Non-Employee Background Questionnaire	3
10	State Documents and Forms	36
11	Specifications	
12	Drawings	
13	Vendor Maintenance Direct Deposit and Substitute W-9 Form	2
14	Release of Claims	1

EXHIBIT:

1	HUB Subcontracting Plan (HSP)	9

SECTION K

REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF BIDDERS

1. HISTORICALLY UNDERUTILIZED BUSINESS (HUB) REPRESENTATION

The Bidder certifies that, if awarded the Contract, it will have "Historically Underutilized Business", participate in the Work to the extent of at least __Thirty nine____ percent (__39__%) of the total dollar amount of the Contract as awarded. Such participation in the Work means that amounts equal to or greater than the stated percentage of the total Contract amount will be paid to such Historically Underutilized Business for work done under subcontract, for the supply of materials to be incorporated in the Work, and (if the Bidder itself is a Historically Underutilized Business) for work accomplished by the Bidder with its own forces. Double counting shall be avoided.

1.1 REPRESENTATION

The Bidder represents and certifies as part of its offer that it [ ] is, or [X] is not a HUB certified by the Texas Procurement and Support Services.

2. CHILD SUPPORT REPRESENTATION

Under Section 231.006 of the Texas Family Code a child support obligator who is more than 30 days delinquent in paying child support and a business entity in which the obligator is a sole proprietor, partner, shareholder or Owner with an Ownership interest of at least 25% is not eligible to receive payments from state funds under a contract to provide property, materials or services.

Governmental entities and any corporation, including a non-profit corporation, that does not have a majority shareholder who is a natural person capable of being a child support obligator are not subject to Section 231.006.

Check **ONE**:
Bidder IS NOT subject to Section 231.006 ___X_____ (business entity DOES NOT have a sole proprietor, majority stockholder or substantial Owner who is a natural person capable of being a child support obligator).

Bidder IS subject to Section 231.006 _____ (business entity DOES have a sole proprietor, majority stockholder or substantial Owner who is a natural person capable of being a child support obligator).

If subject to Section 231.006, the bid must include names and social security numbers of each person with at least 25% Ownership of the business entity submitting Bid.

Not Applicable,	___-___-___
(Print Name)	SSN
Not Applicable,	___-___-___
(Print Name)	SSN
Not Applicable,	___-___-___
(Print Name)	SSN

Pursuant to Section 231.006 Family Code, the bidder certifies that the individual or business entity named in the Bid is not ineligible to receive the specified payments and acknowledges that any resultant contract may be terminated and payment may be withheld if this certification is inaccurate.

3. FRANCHISE TAX REPRESENTATION

The Bidder represents and certifies as part of its offer that it is not currently delinquent in the payment of any franchise tax owed the State of Texas.

4. PREFERENCE CLAIM

In accordance with 34 TAC Rule 20.38, the Bidder shall check below if claiming a preference. If the appropriate line is not marked, a preference will not be granted unless other documents included in the bid show a right to the preference.

N/A	Goods produced or offered by a Texas bidder that is owned by a Texas resident service-disabled veteran
X	Goods produced in Texas or offered by a Texas bidder that is not owned by a Texas resident service-disabled veteran
N/A	Agriculture products produced or grown in TX
N/A	Agriculture products and services offered by TX bidders
N/A	Services offered by a Texas bidder that is owned by a Texas resident service-disabled veteran
X	Services offered by a Texas bidder that is not owned by a Texas resident service-disabled veteran
N/A	Texas Vegetation Native to the Region
X	USA produced supplies, materials, equipment or agricultural products
N/A	Products of persons with mental or physical disabilities
N/A	Products made of recycled, remanufactured, or environmentally sensitive materials
N/A	including recycled steel
N/A	Energy efficient products
N/A	Rubberized asphalt paving material
N/A	Recycled motor oil and lubricants
N/A	Products produced at facilities located on formerly contaminated property
N/A	Products and services from economically depressed or blighted areas
N/A	Vendors that meet or exceed air quality standards
N/A	Recycled or Reused Computer Equipment of Other Manufacturers
N/A	Foods of Higher Nutritional Value (for consumption in a public cafeteria only)

5. NO COLLUSION

Bidder represents and certifies its employees, agents and representatives have not and shall not discuss or disclose the terms of their bid and its submission or response thereto with any third party other than persons or entities which Bidder engaged to assist it with respect to such response or submission.

Neither the Bidder nor the firm, corporation, partnership or institution represented by the Bidder or anyone acting for such firm, corporation or institution has violated the antitrust laws of the State or the Federal Antitrust Laws, nor communicated directly or indirectly the bid submitted to any competitor or any other person engaged in such line of business.

6. NO GRATUITIES

The Bidder represents and certifies that it has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant or A/E employed by the Agency in connection with the submitted bid.

7. NO COMPENSATION

Bidder represents and certifies that its employees, agents and representatives have not received compensation for participation in the preparation of the specifications for this solicitation.

8. HUMAN IMMUNO-DEFICIENCY VIRUS SERVICES ACT COMPLIANCE

8.1 Bidder certifies compliance with the HIV Services Act, [Health & Safety Code, Title 2, Subtitle D, Chapter 85] requirements for maintenance of confidentiality regarding HIV and its related conditions, including Acquired Immuno-Deficiency Syndrome (AIDS).

8.2 Bidder further certifies that workplace guidelines are developed and implemented. Bidder may elect to use workplace guidelines developed and implemented by the TDCJ.

8.3 In the absence of confidentiality guidelines, Bidder is not eligible to receive state funds.

9. COMMUNICABLE DISEASE PREVENTION & CONTROL ACT COMPLIANCE

Bidder certifies compliance with the applicable provisions of the Communicable Disease Prevention and Control Act, Health & Safety Code, Title 2, Subtitle D, Chapter 81.

10. CONFLICT OF INTEREST

10.1 Any individual who interacts with public purchasers in any capacity is required to adhere to the guidelines established in the Texas Government Code, Section 572.051. The Section outlines the ethical standards required of public purchasers, employees, and vendors who interact with public purchasers in the conduct of State business.

10.2 Specifically, a TDCJ employee may not have an interest in, or in any manner be connected with a contract or bid for a purchase of goods or services by an agency of the State; or in any manner, including by rebate or gift, accept or receive from a person to whom a contract may be awarded, directly or indirectly, anything of value or a promise, obligation, or contract for future reward or compensation. Entities who are interested in seeking business opportunities with the State must be mindful of these restrictions when interacting with public purchasers of the TDCJ or purchasers of other state agencies.

10.3 No Texas Department of Criminal Justice staff or Board Member shall have any conflict of interest or potential conflict of interest with the Bidder or any of its agents, including a financial interest, in this contract either currently or within the past two (2) years.

10.4 The Bidder covenants that Bidder has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of services required under this Contract and that no person having any such interest shall be employed by Bidder. No Bidder, Owner or agent shall have any conflict of interest or potential conflict of interest, including a financial interest with Texas Department of Criminal Justice staff, Texas Board of Criminal Justice member, Architect/Engineer (A/E), subcontractor, vendor or supplier affected by this Contract either currently or within the past two (2) years.

10.5 Any such conflict or potential conflict of interest shall be disclosed to the Owner by the party having such conflict before the execution of this Contract or within (10) Days of discovering the conflict. Owner representatives not affected by the conflict or potential conflict shall determine the severity of the conflict, if any, and recommend the appropriate remedial action to resolve the conflict without adversely affecting the interest of the Texas Department of Criminal Justice and its project schedule. Such remedial action could include cancellation of this Contract for the conflicting party.

10.6 Pursuant to Section 2155.004 (a) Texas Government Code, the Bidder has not received compensation for participation in the preparation of the specifications for this IFB. Under Section 2155.004 (b) Texas Government Code, the Bidder certifies that the individual or business entity named in this bid or Contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate.

11. EQUAL OPPORTUNITY

Bidder certifies compliance with all terms, provisions, and requirements of Titles VI and VII, Civil Rights Act of 1964, the Americans with Disabilities Act of 1990, and any other Federal, state, local or other anti-discriminatory act, law, statute or regulation, along with all amendments and revisions of the acts, laws, statutes or regulations, in the performance of this contract, and will not discriminate against any child or youth, client, employee, or applicant for employment because of race, creed or religion, age, sex, color, national or ethnic origin, handicap, or any other illegal discriminatory basis or criteria.

12. UNFAIR BUSINESS PRACTICES

Bidder certifies that it has not been found guilty in a judicial or state administrative agency proceeding of unfair business practices within the year preceding the effective date of this contract. Bidder further certifies that no officer of Bidder has served, within the past year, as an officer of another company which has been found guilty in a judicial or state administrative agency proceeding of unfair business practices. If the above certifications are false, any resulting contract will be void.

13. CONTRACTING WITH EXECUTIVE HEAD OF STATE AGENCY

Bidder represents and certifies that they are in compliance with Texas Government Code, Section 669.003 relating to contracting with executive head of a state agency.

If Section 669.003 applies, Bidder shall complete the following information in order for the bid to be evaluated:

Name of Former Executive: N/A

Name of State Agency: N/A

Date of Separation from State Agency: N/A

Position with Bidder: N/A

Date of Employment with Bidder: N/A

14. REMITTANCE ADDRESS

If the remittance address is different from the mailing address, Bidder shall enter the remittance address below. Failure to provide this information may impact payment.

Same as mailing address.

15. SUSPENSION, DEBARMENT, AND TERRORISM

Bidder certifies that the bidding entity and its principals are eligible to participate in this transaction and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state or local government entity and that bidder is in compliance with the State of Texas statues and rules relating to procurement and that bidder is in compliance with the Federal Government's Terrorism Watch List as described in Executive Order 13224. Entities ineligible for federal procurement are listed at https://www.sam.gov.

16. FRAUD, WASTE OR ABUSE

In accordance with Texas Government Code, Chapter 321, the State Auditor's Office (SAO) is authorized to investigate specific acts or allegations of impropriety, malfeasance or nonfeasance in the obligation, expenditure, receipt or use of state funds. If there is a reasonable cause to believe that fraud, waste or abuse has occurred at this agency, it can be reported to the SAO by calling 1-800-892-8348 or at the SAO's website at www.sao.state.tx.us. It can also be reported to the TDCJ Office of the Inspector General at 1-866-372-8329, the TDCJ Internal Audit Division at 1-512-406-5935, or Crime Stoppers at 1-800-832-8477.

17. VIOLATION OF FEDERAL LAW RELATING TO RECONSTRUCTION EFFORTS AS A RESULT OF HURRICANES RITA, KATRINA OR ANY OTHER DISASTER AFTER SEPTEMBER 24, 2005

Pursuant to Section 2261.053, Texas Government Code a state agency may not accept a bid or award a contract that includes proposed financial participation by a person who, during the five-year period preceding the date of the bid or award, has been convicted of violating a federal law or assessed a penalty in a federal civil or administrative enforcement action in connection with a contract awarded by the federal government for relief, recovery, or reconstruction efforts as a result of Hurricane Rita, Katrina, or any other disaster occurring after September 24, 2005. Under Section 2261.053, Texas Government Code, the Contractor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate.

18. NO LITIGATION

Bidder certifies that there is not now pending, or to its knowledge threatened, any action, suit or proceeding to which Bidder, or any of its employees, are a party, before or by any court or governmental agency or body, which may result in any material adverse change in Bidder's ability to perform its obligations under this Contract, or any such action, suit or proceeding related to environmental or civil rights matters; Bidder further certifies that no labor disturbance by the employees of Bidder exists or is imminent which may be expected to materially and adversely affect Bidder's ability to perform its obligations under this Contract. Prior to Owner making an award of this Contract, Owner may require Bidders being considered for the

award to recertify the representations set forth above. Owner, in its sole discretion, may disqualify any Bidder that in the opinion of Owner is a party, or who has any employees that are a party, to any action, suit or proceeding that may result in any material adverse change in Bidder's ability to perform its obligations under this Contract. During the term of this Contract, to include extensions hereof, Bidder shall notify Owner in writing within five days of Bidder having received knowledge of any actions, suits or proceedings filed against Bidder, or any of its employees, or to which Bidder, or any of its employees, are a party, before or by any court or governmental agency or body, which (1) may result in any material adverse change in Bidder's ability to perform its obligations under this Contract; or, (2) filed in any federal court, state court, or federal or state administrative hearing within the state of Texas regardless as to any anticipated material adverse change in Bidder's ability to perform its obligations under this Contract; or, (3) is brought by or on behalf of a state of Texas offender regardless as to any anticipated material adverse change in Bidder's ability to perform its obligations under this Contract.

19. IMMIGRATION

Bidder represents and warrants that it will comply with the requirements of the Immigration Reform and Control Act of 1986, Immigration Act of 1990, and the Illegal Immigration Reform and Immigration Responsibility Act of 1996, regarding employment verification and retention of verification forms for any individual who will perform any labor or services under this contract.

20. ADVERTISING OF AWARD

The Contractor agrees not to refer to awards in commercial advertising in such a manner as to state or imply that the product or service provided is endorsed or preferred by the Owner or is considered by the Owner to be superior to other products or services.

21. CONDITIONS PRECEDENT TO AWARD

Bidder hereby certifies, represents, and warrants that all conditions precedent set forth in Section D hereof shall be met within the periods of time specified in the Award.

BIDDER:

Name Metroplex Control Systems dba Argyle Security Group

By David Deason

Signature

Title Senior Vice President of Estimating

Date 10/19/2015

SECTION L

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

1. AMENDING AND MODIFYING BIDS/PUBLIC DISCLOSURE OF BIDS

1.1 No bid may be changed, amended or modified (by telegram or otherwise) after it has been submitted. A bid may be withdrawn, however, and be resubmitted at any time prior to the time set for bid opening.

1.2 Information, documentation, and other material in connection with this solicitation or any resulting contract may be subject to public disclosure pursuant to Chapter 552 of the Texas Government Code (the "Public Information Act"). Any part of the solicitation response that is of a propriety nature must be clearly and prominently marked as such by respondent. No public disclosures or news releases pertaining to this Contract shall be made without prior written approval of Owner.

2. REJECTION OF BIDS

A. Any bid that fails to conform to the essential requirements of the Invitation for Bids shall be rejected.

B. Any bid that does not conform to the applicable specifications shall be rejected unless the invitation authorized the submission of alternate bids and the supplies offered as alternates meet the requirements specified in the invitation.

C. Any bid that fails to conform to the delivery schedule or permissible alternates stated in the invitation shall be rejected.

D. A bid shall be rejected when the Bidder imposes conditions that would modify requirements of the invitation or limit the Bidder's liability to the Owner, since to allow the Bidder to impose such conditions would be prejudicial to other bidders. For example, bids shall be rejected in which the Bidder –

1. Protects against future changes in conditions, such as increased costs, if total possible costs to the Owner cannot be determined;

2. Fails to state a price and indicates that price shall be "price in effect at time of delivery";

3. States a price but qualifies it as being subject to "price in effect at time of delivery";

4. When not authorized by the invitation, conditions or qualifies a bid by stipulating that it is to be considered only if, before date of award, the Bidder receives (or does not receive) award under a separate solicitation;

5. Requires that the Owner is to determine that the Bidder's product meets applicable Owner specifications; or

6. Limits rights of the Owner under any Contract provision.

E. A low Bidder may be requested to delete objectionable conditions from a bid provided the conditions do not go to the substance, as distinguished from the form, of the bid, or work an injustice on other Bidders. A condition goes to the substance of a bid where it affects price, quantity, quality, or delivery of the items offered.

F. Any bid may be rejected if the Owner determines in writing that it is unreasonable as to price. Unreasonableness of price includes not only the total price of the bid, but the prices for individual line items as well.

G. Any bid may be rejected if the prices for any line items or sub-line items are materially unbalanced.

H. Bids received from any person or concern that is suspended, debarred, proposed for debarment, or declared ineligible as of the bid opening date shall be rejected unless a compelling reason determination is made.

I. Low bids received from concerns determined to be not responsible.

J. When a bid deposit is required and a Bidder fails to furnish the deposit in accordance with the requirements to the invitation for bids, the bid shall be rejected.

K. The originals of all rejected bids, and any written findings with respect to such rejections, shall be preserved with the papers relating to the acquisition. After submitting a bid, if all of a Bidder's assets or that part related to the bid are transferred during the period between the bid opening and the award, the transferee may not be able to take over the bid. Accordingly, the Owner shall reject the bid unless the transfer is affected by merger, operation of law or other means not barred.

L. Bids that do not include a completed HUB Subcontracting Plan shall be rejected.

3. NOTICE TO BIDDERS OF REJECTION OF ALL BIDS.

When it is determined necessary to reject all bids, the Owner shall notify each Bidder that all bids have been rejected and shall state the reason for such action.

4. MINOR INFORMALITIES OR IRREGULARITIES IN BIDS.

A minor informality or irregularity is one that is merely a matter of form and not of substance. It also pertains to some immaterial defect in a bid or variation of a bid from the exact requirements of the invitation that can be corrected or waived without being prejudicial to other Bidders. The defect or variation is immaterial when the effect on price, quantity, quality of delivery is negligible when contrasted with the total cost or scope of the supplies or services being acquired. The Owner either shall give the Bidder an opportunity to cure any irregularity in a bid or waive the deficiency, whichever is to the advantage of the Owner. Examples of minor informalities or irregularities include failure of a bidder to:

A. Return the number of copies of signed bids required by the invitation;

B. Furnish required information concerning the number of its employees;

C. Sign its bid, but only if:

1. The unsigned bid is accompanied by other material indication the Bidder's intention to be bound by the unsigned bid (such as the submission of a bid guarantee or a letter signed by the Bidder, with the bid, referring to and clearly identifying the bid itself); or

2. The firm submitting a bid has formally adopted or authorized, before the date set for opening of bids, the execution of documents by typewritten, printed, or stamped signature and submits evidence of such authorization and the bid carries such a signature.

D. Acknowledge receipt of an addendum / amendment to an invitation for bids, but only if-

1. The bid received clearly indicates that the Bidder received the addendum / amendment, such as where the addenda / amendment added another item to the invitation and the Bidder submitted a bid on the item; or

2. The addendum / amendment involves only a matter of form or has no effect on either of the following: price, quantity, quality or delivery of the item bid upon.

E. Furnish affidavits concerning parent company and affiliates, if required.

F. Execute the representations and certifications at Section K of the Solicitation and submit with the bid.

5. NON-RESIDENT BIDDERS

The attention of all Bidders is called to Texas Government Code, Title 10, Section 2252.001, 2252.002, 2252.003 and 2252.004. A Nonresident Bidder is defined as follows: "Nonresident Bidder" means a Bidder whose principal place of business is not in this State, but excludes a contractor whose ultimate parent company or majority Owner has its principal place of business in this State.

6. DISCREPANCIES AND AMBIGUITIES

A. If Bidder of proposed work is in doubt as to true meaning of any part of the Bid Documents or believes that discrepancies exist, Bidder shall submit written request for interpretation to the Contract Administrator. Such request must reach the Contract Administrator at least ten Days prior to time set for receipt of bids.

B. Bidder submitting request for interpretation is responsible for its prompt, timely and actual delivery.

C. Interpretations or explanations will not be made orally.

D. All interpretations or supplemental instructions will be provided in Addenda.

E. Copy of such Addendum will be issued to each entity holding Bid Documents.

F. Failure to receive such addenda / amendment does not relieve bidder from any obligation under his/her bid as submitted, Bidder is responsible to ensure receipt and acknowledgment of all addenda / amendments issued and may be cause for rejection of its bid.

7. SUBSTITUTIONS

A. Bidder requesting substitutions shall **submit written request to the Contract Administrator, no later than 5:00 PM, ten (10) Days prior to the time set for receipt of bids.**

B. Approvals of substitutions will be made by Addendum then distributed to each entity holding Bid Documents.

8. BID ACCEPTANCE

It is understood that the Owner reserves the right to accept or reject any and all bids and to waive all irregularities. It is further agreed that this Bid and Bid Bond shall be valid and not be withdrawn for a period of **one hundred (100) Days** from the date of opening thereof.

9. QUALIFICATIONS

Determination of Contractor responsibility will be based on the following criteria:

(a) Have adequate financial resources to perform the contract, or the ability to obtain them;

(b) Be able to comply with the required or proposed delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments;

(c) Have a satisfactory performance record. Have a satisfactory record of integrity and business ethics;

(d) Have the necessary organization, experience, accounting controls, and technical skills, or the ability to obtain them (including, as appropriate, such elements as production control procedures, property control systems, quality assurance measures, and safety programs applicable to materials to be produced or services to be performed by the prospective contractor and subcontractors);

(e) Have the necessary production, construction, and technical equipment and facilities, or the ability to obtain them; and

(f) Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

To this effect, bidders shall be required to submit documentation to support the above (such as Balance/Income Statements, a list of current projects, personnel list, list of equipment and facilities, and so forth). (See Attachment No. 8)

10. DOCUMENT AVAILABILITY

A. Bid Documents can be purchased from the Architect/Engineer as stated in the Notice to Bidders.

B. Number of sets obtainable: Any number may be purchased with adequate advance notice to issuing party. Only complete sets will be sold.

C. Ownership of documents: All documents are the property of the Texas Department of Criminal Justice.

11. SUBMISSION OF BIDS

Bids should be submitted on this form. Bids must be time stamped at the office designated in the solicitation on or before the hour and date specified for the bid opening. Any bid received at the designated location after the exact time specified will not be considered unless TDCJ determines that it was properly addressed and in the possession of TDCJ prior to the specified time but was late due to mishandling by the agency.

A. Submit only one original and two copies of the Bid (use forms furnished in documents).

B. All bids shall be in a sealed envelope and marked **"SEALED BID: Texas Department of Criminal Justice, Replace Security Control System – Billy Moore Unit. Do Not Open Until 2:00 p.m., October 6, 2015".**

C. Sealed bids may be mailed or hand delivered to the Texas Department of Criminal Justice at the following address:

TDCJ – Information Technology, Construction and Utilities Branch
Two Financial Plaza, Suite 525
Huntsville, Texas 77340
Attn: Lynne Piippo, CTPM, CTCM - Contract Administrator

(BIDS MUST BE RECEIVED BY 2:00 P.M. ON OCTOBER 6, 2015 AT THE DESIGNATED ADDRESS TO BE CONSIDERED RESPONSIVE)

D. All bids must be in original form with original signatures.

E. Faxed or e-mailed bids are not acceptable.

F. Faxed or e-mailed modifications to bids are not acceptable.

12. PREPARATION OF BID

As a reminder please ensure that you have:

A. Furnished your Dunn and Bradstreet Number (DUNS#), Tax Identification Number (TAX ID #) and Charter Number (Charter #) in the spaces provided on page 1 of the Solicitation, Offer, and Award form.

B. Completed blocks 10, 14, 15, 16, 18, 19A, 19B, and 19C on pages one (1) and two (2) of the Solicitation, Offer, and Award form.

C. Read and completed the blanks and signature block in Section K.

D. Completed the blanks in paragraph 14.8 of Section I.

E. Completed all required Attachments, including "Contractor's Qualification Form" (use Attachment 8 furnished in documents).

F. Bidders are required to submit a HUB Subcontracting Plan in accordance with Exhibit 1. ***Failure to submit the HUB Subcontracting Plan with appropriate forms will subject the bid to rejection from further consideration.***

G. Have provided the required 5% bid deposit.

H. Have acknowledged receipt of any Addenda/Amendment that may have been issued by completing Block 18 on Solicitation, Offer and Award Form or by enclosing copy of the Addenda/Amendment.

I. Have enclosed all of the above documents with your bid, to include any other information that may have been requested.

13. PRE-AWARD DATA

A. Within five (5) working days after official notification, the successful Bidder shall furnish the following documents:

(1) Written letter from Bidder's legal counsel as to Bidder's Resident or Nonresident status along with a copy of any statute in the state of a Nonresident Bidder which confers on a Resident Bidder any credit or assesses any Nonresident Bidder a penalty.

(2) Cost breakdown information for combination bids, if applicable.

14. BIDDER QUALIFICATIONS

Bidder must provide evidence that demonstrates the Bidder is qualified to satisfactorily perform the specified Work and must have worked in this trade for at least five (5) years. The Bidder shall submit written evidence to include a minimum of three (3) projects completed within the last ten (10) years of similar work, size and complexity to include the contracting party's name, telephone number, location, type of facility, construction cost and the date of completion.

SECTION M

EVALUATION FACTORS FOR AWARDS

1. Bidders must comply with material aspects of this Invitation for Bids to be considered responsive. Bidders must meet the qualifications and experience requirements to be considered for award.

   1.1 The Owner will evaluate bids in response to this solicitation without discussions with Bidder and in accordance with Texas Government Code, §2155.074. Contractor's prior performance may be used as a factor in the award.

   1.2 In accordance with Texas Administrative Code, Title 34, Chapter 20, Rule §20.31 (b), the Owner may negotiate if the Owner receives only one acceptable bid, or no acceptable bids, provided that the negotiations do not result in a material change to the advertised specifications.

2. In the event of tie bids, the preferences listed in Section K, Article 4 will be used to break the tie.

3. The Owner reserves the right, at its sole discretion, to make a single Contract award or multiple Contract awards from this solicitation. The Owner reserves the right to make no awards in the event of inconsistent pricing and/or the absence of available competition.

4. Alternate bids, if allowed for herein, will be evaluated based on the best interests of the Owner.

ATTACHMENTS

ATTACHMENT NO. 1

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

STANDARDS OF CONDUCT FOR CIVILIAN CONSTRUCTION CONTRACTORS EMPLOYEES

I. SECURITY MEASURES

A. GENERAL SECURITY MEASURES

No person working for or otherwise connected with the Contractor (his agents, subcontractors or their employees) shall be allowed to bring onto the owner's (state) property firearms, alcoholic beverages, drugs, or any other controlled substances with the exception of prescription medication. No such person shall cross any fences, except those fences designated to allow egress and ingress to the construction site. All vehicles shall be kept locked with windows up while on the owner's property. Contractors' employees shall avoid all contact with inmates, no employee shall converse with or otherwise communicate with any inmate. In addition to the usual civil and/or criminal penalties for violations of the above regulations, the owner reserves the right to refuse further entry to the job site to any individual who has violated the above restrictions. Further, the Owner reserves the right to immediately remove from the jobsite any individual who has violated the above restrictions.

II. EXPECTATIONS OF CONTRACTORS AND SUBS

A. ALL CONTRACTORS, SUBS, AND THEIR EMPLOYEES WILL:

1. Read and sign the Texas Department of Criminal Justice, Facilities Division, Standards of Conduct for Civilian Contractor Employees.

2. Refrain from bringing firearms, ammunition, controlled substances (with the exception of prescription drugs) or any other contraband items on the property of the Texas Department of Criminal Justice (I.D.). This includes in the personal vehicles of the on-site workers.

3. Vehicles will remain locked at all times when operator is absent.

4. There shall be no contact with any inmates in the TDCJ facilities except those which may be assigned to assist on an individual institutional project.

5. Approved visitors of inmates will not be allowed to work on any project that involves the unit where the visited inmate resides.

6. Vehicles are subject to search at anytime while on State Prison property.

B. GENERAL SECURITY FOR TOOL CONTROL:

1. All tools in tool boxes are to be inventoried with the total number of tools in each box plainly marked on the outside of the box.

2. Copies of tool inventories are to be filed with the entrance gate officer, the Owner's Designated Representative and the contractor's project superintendent. Any changes to an individual's tool box inventory should be immediately noted on all inventory sheets.

3. Tools should be cross-checked against the number on the tool box upon entry and exit from the facility.

4. Class "A" tools should receive special handling. When tools are not in use, they shall be kept and locked under key in a secure area and if possible rendered inoperable. Class "A" tools include, but are not limited to, tools most likely to be used in an escape attempt or do bodily harm. These generally include hacksaw blades, files, pipe wrenches, ladders, acetylene cutting tips, pipe and bolt cutters, etc.

5. At no time are Class "A" tools to be left unattended and when in use, the on-site TDCJ security officer will be notified.

6. Generators, ladders and acetylene cutters all must be secured at the end of each workday.

7. Emery wheels will be locked and rendered inoperable when not in use unless stored outside of the secure perimeter.

8. When a Class "A" tool is lost, the Assistant Warden for security or Warden shall be immediately notified.

    a. Any inmates who may have had access to the area will be held until a thorough search is made.

    b. A written report will be made covering the details of the loss.

9. All hazardous and poisonous chemicals, not in use, are to be stored in a locked tool trailer or other secure area. An inventory shall be maintained and direct supervision provided when the items are used at the work site. Upon completion of the project, the Contractor will be responsible for the removal of all hazardous materials and all hazardous waste generated under his control.

I have received a copy of the "STANDARDS OF CONDUCT FOR CIVILIAN CONSTRUCTION CONTRACTORS EMPLOYEES" issued by the Texas Department of Criminal Justice.

I have read, understand and will comply with this policy.

SIGNATURE

SOCIAL SECURITY #

DRIVERS LICENSE #

STATE

COMPANY

DATE

NAME

ADDRESS

CITY STATE ZIP

WITNESS

COMPANY

DATE

ATTACHMENT NO. 2

TEXAS STATUTORY PAYMENT BOND
CHAPTER 2253 THE GOVERNMENT CODE AS AMENDED
(PUBLIC WORKS)

STATE OF TEXAS
COUNTY OF _____:

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as Principal, and _____as Surety are hereby held and firmly bound unto the State of Texas in the penal sum of _____Dollars ($_____) for the payment whereof, the said Principal and Surety Bond themselves, their heirs, executors, administrators and successors, jointly and severally, firmly by these Presents.

The conditions of this obligation are such that whereas the Principal entered into a certain Contract, hereto attached, and made a part hereof with the State of Texas, acting by and through the Texas Department of Criminal Justice, dated _____ for the _____:

NOW, THEREFORE, the conditions of this obligation are such that, if the Principal shall promptly make payments to all claimants as defined in Chapter 2253 The Government Code, as amended and recodified, supplying labor and materials in the prosecution of the work provided for in said Contract, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

This bond is made and entered into solely for the protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract, and all such claimants shall have a direct right of action under the Bond as provided in Chapter 2253 The Government Code, as amended and recodified.

In WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals this _____ day of_____, 20____, the name and corporate seal of each party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.
SEAL:
ATTEST: SURETY'S AGENT:

_____

_____
COMPANY NAME

_____
PRINCIPAL ADDRESS

_____
BY: CITY, STATE, ZIP CODE

_____
SURETY TELEPHONE:

_____
BY:

ATTACHMENT NO. 3

TEXAS STATUTORY PERFORMANCE BOND
CHAPTER 2253 GOVERNMENT CODE AS AMENDED
(PUBLIC WORKS)

STATE OF TEXAS:
COUNTY OF _____:

LET IT BE KNOWN BY THIS INSTRUMENT:

That we, _____, as Principal and we, _____, a Corporation duly authorized to do business in this State, as Surety(s), are this date held and firmly bound unto the State of Texas in the amount of _____Dollars ($_____) for the payment of which indemnity the said Principal and Surety, by this declaration, do firmly bind themselves, their heirs, executors, administrators, successors and assigns, jointly and individually.

Since a Contract, which by reference is made a part hereof, exists between the Principal and the State of Texas, acting by and through the Texas Department of Criminal Justice, and dated _____for the conditions of this obligation are, therefore, such that it shall remain in full force and effect unless and until the Principal shall faithfully perform the Contract in accordance with the Contract Documents.

In the event of Principal's failure, as defined by the Contract Documents, to faithfully perform the Contract, Surety(s) will within fifteen (15) days of determination of default, assume full responsibility for completion of said Contract and become entitled to payment of the balance of the Contract amount, or the Surety shall make other arrangements satisfactory with the Texas Department of Criminal Justice for the completion of the defaulted work but in no event shall the Surety's liability exceed the penalty of this bond.

The liabilities, rights, limitations and remedies concerning this Bond shall be determined in accordance with the provisions of Chapter 2253 The Government Code, as amended and recodified, pursuant to which this Bond is executed.

IN WITNESS TO THIS DECLARATION, the said Principal and Surety(s) have signed and sealed this instrument this _____ day of _____, 20____.

PRINCIPAL

By _____

SURETY

By _____

Bond Identification No. _____

Address of Attorney-in-fact

_____

(Use of this form for the purposes indicated has been approved by the Attorney General of Texas)

ATTACHMENT NO. 4

PREVAILING WAGE SCHEDULE
(Heavy and Highway Construction)

General Decision Number: TX150011 01/02/2015 TX11

Superseded General Decision Number: TX20140011

State: Texas

Construction Types: Heavy and Highway

Counties: Bowie, Gregg, Rusk, Smith and Upshur Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015

* SUTX2011-004 08/02/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
(Paving and Structures).....	$ 13.16	
ELECTRICIAN.....	$ 19.87	
FORM BUILDER/FORM SETTER		
Paving & Curb.....	$ 13.93	
Structures.....	$ 13.38	
LABORER		
Asphalt Raker.....	$ 12.02	
Flagger.....	$ 8.50	
Laborer, Common.....	$ 10.08	
Laborer, Utility.....	$ 12.70	
Pipelayer.....	$ 14.64	
Work Zone Barricade Servicer.....	$ 11.46	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor.....	$ 13.88	
Asphalt Paving Machine.....	$ 12.35	
Broom or Sweeper.....	$ 10.08	
Crane, Lattice Boom 80 tons or less.....	$ 13.85	
Crawler Tractor.....	$ 13.62	
Excavator 50,000 pounds or less.....	$ 13.67	
Excavator Operator over 50,000 pounds.....	$ 13.52	
Foundation Drill, Truck Mounted.....	$ 22.05	
Front End Loader , over 3 cy.....	$ 12.33	
Front End Loader, 3 cy or less.....	$ 13.40	

Loader/Backhoe.....	$ 12.97
Mechanic.....	$ 17.47
Milling Machine.....	$ 12.22
Motor Grader, Fine Grade....	$ 16.88
Motor Grader, Rough.....	$ 15.83
Pavement Marking Machine....	$ 13.10
Roller, Asphalt.....	$ 11.96
Roller, Other.....	$ 10.44
Scraper.....	$ 10.85
Spreader Box.....	$ 13.12
Servicer.....	$ 14.11
Steel Worker (Reinforcing).....	$ 17.53
TRUCK DRIVER	
Lowboy-Float.....	$ 13.41
Off-Road Hauler.....	$ 10.08
Single Axle.....	$ 10.75
Single or Tandem Axle Dump..	$ 11.95
Tandem Axle Tractor w/Semi Trailer.....	$ 12.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

ATTACHMENT NO. 5

PREVAILING WAGE SCHEDULE
(Building Construction)

General Decision Number: TX150337 03/06/2015 TX337

Superseded General Decision Number: TX20140337

State: Texas

Construction Type: Building

Counties: Rusk and Upshur Counties in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015
1	01/30/2015
2	03/06/2015

BOIL0074-003 01/01/2014

	Rates	Fringes
BOILERMAKER.....	$ 23.14	21.55

ELEC1151-003 01/01/2014

	Rates	Fringes
ELECTRICIAN (Excludes Low Voltage Wiring and Installation of Sound and Communication Systems).....	$ 22.30	13%+5.15

ELEV0021-006 01/01/2015

	Rates	Fringes
ELEVATOR MECHANIC.....	$ 37.33	28.385

FOOTNOTES: a - A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

ENGI0178-005 06/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	$ 29.00	10.60
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	$ 27.50	10.60

IRON0084-011 06/15/2014

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	$ 22.02	6.35

PLUM0100-006 07/01/2013

	Rates	Fringes
PIPEFITTER.....	$ 26.88	8.83

* SUTX2014-063 07/21/2014

	Rates	Fringes
BRICKLAYER.....	$ 18.33	2.50
CARPENTER (Form Work Only).....	$ 13.63	0.00
CARPENTER, Excludes Form Work....	$ 25.00	0.00
CEMENT MASON/CONCRETE FINISHER...	$ 13.94	0.00
ELECTRICIAN (Communication Technician Only)....	$ 14.00	2.90
ELECTRICIAN (Low Voltage Wiring Only).....	$ 14.36	2.44
INSULATOR - MECHANICAL (Duct, Pipe & Mechanical System Insulation).....	$ 19.77	7.13
IRONWORKER, REINFORCING.....	$ 12.27	0.00
IRONWORKER, STRUCTURAL.....	$ 20.00	0.00
LABORER: Common or General.....	$ 11.20	0.00
LABORER: Mason Tender - Brick...	$ 11.36	0.00
LABORER: Mason Tender - Cement/Concrete.....	$ 10.66	0.00
LABORER: Pipelayer.....	$ 12.49	2.13
LABORER: Roof Tearoff.....	$ 11.28	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	$ 15.60	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	$ 13.93	0.00
OPERATOR: Bulldozer.....	$ 14.00	0.27
OPERATOR: Drill.....	$ 16.22	0.34
OPERATOR: Forklift.....	$ 14.83	0.00
OPERATOR: Grader/Blade.....	$ 15.10	1.94
OPERATOR: Loader.....	$ 12.62	2.42
OPERATOR: Mechanic.....	$ 17.52	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	$ 16.03	0.00
OPERATOR: Roller.....	$ 12.70	0.00

PAINTER (Brush, Roller, and Spray).....	$ 14.45	0.00
PLUMBER.....	$ 21.35	4.55
ROOFER.....	$ 13.75	0.00
SHEET METAL WORKER (HVAC Duct Installation Only)	$ 22.73	7.52
SHEET METAL WORKER, Excludes HVAC Duct Installation	$ 15.44	1.46
TILE FINISHER.....	$ 11.22	0.00
TILE SETTER.....	$ 14.74	0.00
TRUCK DRIVER: Dump Truck.....	$ 12.39	1.18
TRUCK DRIVER: Flatbed Truck.....	$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	$ 12.50	0.00
TRUCK DRIVER: Water Truck.....	$ 12.00	4.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

ATTACHMENT NO. 6

SUBSTITUTION REQUEST
BIDDING PHASE
Furnished with Invitation for Bids

ATTACHMENT NO. 7

SUBSTITUTION REQUEST - AFTER EXECUTION OF CONTRACT

TEXAS DEPARTMENT OF CRIMINAL JUSTICE

PROJECT: _____ PROJECT NO.: _____

TO: (A/E) FROM: (CONTRACTOR)

HEREBY REQUESTS ACCEPTANCE OF THE FOLLOWING PRODUCT OR SYSTEMS AS A SUBSTITUTION IN ACCORD WITH PROVISIONS OF DIVISION ONE OF SPECIFICATIONS:

1. SPECIFIED PRODUCT OR SYSTEM:
   Substitution request for (Generic Description): _____

   Specification Section No._____ Article(s) _____ Para.(s) _____

2. SUPPORTING DATA:
   - ☐ Product data for proposed substitution is attached (description of product, reference standards, performance and test data).
   - ☐ Sample is attached
   - ☐ Sample will be sent if requested

3. QUALITY COMPARISON:

	SPECIFIED PRODUCT	SUBSTITUTION
Name, brand:	_____	_____
Catalog No.:	_____	_____
Manufacturer:	_____	_____
Vendor:	_____	_____
Significant variations	_____	_____

   Maintenance Service Available: ☐ yes ☐ no

4. PREVIOUS INSTALLATIONS:
   Identification of similar projects on which proposed substitution was used: (Attach list)

   Project: _____ A/E: _____

   Address: _____ Owner: _____

   _____ Date Installed: _____

5. REASON FOR NON-AVAILABILITY OF SPECIFIED ITEM:
   Attach affidavit, certification or other data as proof of non-availability.

   - ☐ Strikes
   - ☐ Lockouts
   - ☐ Bankruptcy
   - ☐ Discontinuance of production
   - ☐ Proven shortage
   - ☐ Similar occurrences (explain below)

6. EFFECT OF SUBSTITUTION:

   Proposed substitution affects other parts of Work: ☐ No ☐ Yes (If yes, explain)

   _____

   _____

Substitution changes Contract Time: ☐ No ☐ Yes Add/Deduct_____ day

Substitution requires dimensional revision or redesign of structure or M & E Work:

☐ No ☐ Yes (If yes, attach complete data.)

Saving or credit to Owner, if any, for accepting substitution: $ _____

7. CONTRACTOR'S STATEMENT OF CONFORMANCE OF PROPOSED SUBSTITUTION TO CONTRACT REQUIREMENT:

I/we have investigated the proposed substitution. I/we:

- believe that is equal or superior in all respects to specified product, except as stated above;
- will provide the same warranty as specified for specified product;
- have included complete cost data and implications of the substitution;
- will pay redesign and special inspection costs caused by the use of this product;
- will pay additional costs to other contractors caused by the substitution;
- will coordinate the incorporation of the proposed substitution in the Work;
- will modify other parts of the Work as may be needed, to make all parts of the Work complete and functioning
- waive future claims for added cost to Contract cause by the substitution.
- warrant and represent to the Owner and the A/E that the proposed substitution does not infringe on any patents or other rights held by others, or that a license has been or will be obtained timely from the holders of such rights for the use of the substitute as proposed; and acknowledge that by accepting this substitution neither the A/E nor the Owner makes any warranty or representation to the Contractor or any Subcontractor regarding the existence or potential for such infringement.

Contractor: _____ Date: _____

By: _____

Answer all questions and complete all blanks - use "NA" if not applicable.

A/E'S REVIEW AND ACTION:

☐ Resubmit substitution request:

☐ Provide more information in following categories: _____

_____

☐ Sign Contractor's Statement of Conformance.

☐ Submit proof of non-availability.

☐ Substitution is accepted.

☐ Substitution is accepted, with the following comments: _____

_____

☐ Substitution not accepted.

_____

_____

A/E's Signature:_____Date:_____

ATTACHMENT NO. 8

CONTRACTOR QUALIFICATIONS
Completed copy to TDCJ Master Contract File

ATTACHMENT 9

Texas Department of Criminal Justice
Non-Employee Background Questionnaire

This information is needed for TDCJ to conduct a criminal history check to determine whether access to TDCJ units and departments should be approved. All questions shall be answered in full.

NOTE TO APPLICANT: With few exceptions, you are entitled upon request: (1) to be informed about the information the TDCJ collects about you; and (2) under Texas Government Code §§ 552.021 and 552.023, to receive and review the collected information. Under Texas Government Code § 559.004, you are also entitled to request, in accordance with the TDCJ procedures, that incorrect information the TDCJ has collected about you be corrected.

1. Name: _____ 2. Social Security No.: _____
   Last First Middle
   (As it appears on your Social Security Card)
3. Mailing Address: _____
   Street City State Zip
4. Date of Birth: _____ 5. Place of Birth: _____
   (MM/DD/YYYY) City State
6. Driver License No.: _____ State: _____ 7. Phone No.: ( ) _____
8. Other names used (maiden, alias, nicknames): _____
9. Sex: Male ☐ Female ☐ 10. E-mail Address: _____
11. Ethnic Origin: White ☐ Black ☐ Hispanic ☐ Asian/Pac. Islander ☐ Am. Ind/Alaskan ☐ Other ☐

12a. Have you previously been employed by TDCJ or worked in a TDCJ facility on a contract basis? Yes ☐ No ☐
If yes, give unit(s)/department(s), position(s) held, and dates: _____

12b. Have you engaged in sexual abuse in a prison, jail, lockup, community confinement facility, juvenile facility, or other institution?
☐ Yes ☐ No

12c. Have you been convicted of engaging or attempting to engage in sexual activity in the community facilitated by force, overt or implied threats of force, or coercion, or if the victim did not consent or was unable to consent or refuse? Yes ☐ No ☐

12d. Have you been civilly or administratively adjudicated to have engaged in sexual activity in the community facilitated by force, overt or implied threats of force, or coercion, or if the victim did not consent or was unable to consent or refuse? Yes ☐ No ☐

13. Are you related to any **employee** or **contract employee** of TDCJ? Yes ☐ No ☐ Unknown ☐
If yes, list name, relationship, and unit/department of assignment: _____

14a. Are you or any immediate member of your family (to include, but not limited to parent, brother, sister, spouse, or child) related to any TDCJ **offender** (incarcerated or on parole)? Yes ☐ No ☐ Unknown ☐
If yes, provide the name of the offender(s): _____

14b. Are you now or have you ever been involved in a spousal relationship with a TDCJ **offender** (incarcerated or on parole)?
This includes marriage, common-law marriage, lived together, or had a child together. Yes ☐ No ☐
If yes, provide the name of the offender(s): _____

14c. Do you have a current business partnership or gang association with a current TDCJ **offender** (incarcerated or on parole)?
Yes ☐ No ☐ If yes, provide the name of the offender(s): _____

14d. Are you on a current TDCJ offender's visitation list? Yes ☐ No ☐ If yes, provide the name of the offender(s):
_____

14e. Have you corresponded in the last year with a current TDCJ offender? Yes ☐ No ☐ If yes, provide the name of the offender(s): _____

NOTE:

- **If you answered yes to Question 14a, b, c, d, or e above, you are required to complete and submit a PERS 282A, Additional Offender Information.** The PERS 282A form is available from the TDCJ website at **www.tdcj.texas.gov**.

- If you have a personal relationship with an offender, who is not a relative, be sure to read the "Offender Relationships" paragraph on Page 3 of this questionnaire.

(Continued on Page 2)

IMPORTANT

Read the definition of conviction in Question 17. When answering questions 15 through 17, **do not include:** 1) any violation of law committed before your 17th birthday, if the final decision was made in juvenile court or under a youth offender law; 2) any conviction whose record was expunged under federal or state law; 3) minor traffic violations. **DWI, DUI, Open Container**, and **Driving While License Suspended** are not minor traffic violations and shall be listed.

15. Do you have any criminal charges currently pending? Yes ☐ No ☐
    If yes, please explain: _____

16. Are you on parole or probation, deferred adjudication, or under a pre-trial diversion agreement? Yes ☐ No ☐
    If yes, please explain: _____

17. Have you ever been convicted of a crime (misdemeanor or felony)? Yes ☐ No ☐ If yes, list each one below.
    Attach an additional page if necessary. **Include those that may not appear on your record at this time.**
    Important: For purposes of contract employment with TDCJ, convictions include sentenced to confinement, paid fine, time served, placed on probation (includes **deferred adjudication**), and court ordered restitution. See Falsification Policy on Page 3 of this questionnaire.

Date	Felony or Misdemeanor	Offense	Offense Class	City & State	Punishment

DOCUMENT REQUIREMENTS: You are required to provide with this questionnaire a **disposition** for each criminal charge you reported in Question 15, 16, and 17 above. A disposition is a statement of the charge, date, and the results of the case. If the charge was dismissed, the disposition shall state the reason for dismissal. Dispositions can normally be obtained from the **clerk of the court** having jurisdiction over the case.

18. Are you now or have you ever been a member of a street gang? Yes ☐ No ☐

    Are you now or have you ever been a member of or affiliated with an organization promoting racial, ethnic, or gender superiority or separation, independence from governmental laws and regulations, or overthrow of the United States Government?
    Yes ☐ No ☐

    If you answered yes to either of these questions, provide the following information:

    a. Name of the organization and dates of membership: _____

    b. Position or positions you held in the organization: _____

    c. Arrests and/or convictions resulting from your activities as a member: _____

19. Do you have any tattoos or markings on your body signifying membership or affiliation with a street gang or associated with organizations promoting racial, ethnic, or gender superiority or separation, independence from governmental laws and regulations, or overthrow of the United States Government? Yes ☐ No ☐
    If yes, provide a description and location of those tattoos or markings: _____

(Continued on Page 3)

FALSIFICATION POLICY

It is important that contract employee applicants provide accurate information in this questionnaire. **Failure to list any criminal conviction or other important information, such as prior employment with TDCJ or offender relationships, is considered falsification of the questionnaire and results in disqualification for contract employment access to TDCJ facilities for one year.**

As a criminal justice TDCJ, it is very important that we know if an applicant has a criminal record. In most cases, a criminal record does not disqualify you for access to TDCJ facilities. However, falsification of the questionnaire always disqualifies you, regardless of how well qualified you are otherwise.

What convictions shall be listed? All convictions handled in adult court shall be listed, no matter when or where they occurred. In Texas, if you are 17 years old or older, the case is always handled in adult court. If you are under 17, it still may be handled in adult court. As an exception, you are not required to list convictions for minor traffic violations. Examples of minor traffic violations are speeding, running stop signs, and no seat belts. Examples of crimes which are not minor traffic violations and shall be listed are DWI, DUI, Hit and Run, Assault with a Motor Vehicle, Reckless Driving, Open Container, and Driving While License is Suspended. Convictions that have been **expunged** under state or federal law do not have to be listed. Expunged means a judge signed an order directing all agencies with a record of the arrest and conviction destroy those records (this is not the same as a deferred adjudication, explained below).

What is a conviction? For TDCJ purposes, a conviction is a judgement or a verdict, a plea of guilty or nolo contendere, and/or a judicial finding of guilt substantiated by the evidence, which results in the payment of fines, forfeiture of collateral or bond, restitution, **deferred adjudication**, probation, community supervision, confinement, suspended sentence, or any other penalty imposed by a court of law or agreed upon by the accused. This includes instances where a pardon or a reprieve has been granted for any reason other than proof of innocence. **If you have a case handled by deferred adjudication, it shall be listed in your application, regardless of whether you think it is still on record.** On the other hand, a pre-trial diversion agreement is not considered a conviction for the purpose of employment with TDCJ and does not need to be included on your application.

Military Convictions. Convictions by court martial for criminal offenses shall also be listed.

Failure to Appear. If you were convicted of a routine traffic violation or other offense and did not pay the ticket on time or failed to appear to court, you may have been charged with and convicted of Failure to Appear. Failure to Appear is a separate crime and shall be listed.

Questions. If you have any questions concerning what shall be listed in this questionnaire, it is recommended you contact the Human Resources Division in Huntsville at (936) 437-3126 **before** you submit this questionnaire.

OFFENDER RELATIONSHIPS: TDCJ employees and contract employees with access to TDCJ facilities are prohibited from maintaining or developing a personal relationship with an offender who is not related to the employee. Prohibited relationships include those involving cohabitation, sexual misconduct, or actions that jeopardize or have the potential to jeopardize the security of the TDCJ. This means employees and contract employees may not have personal contact or relationships with offenders currently incarcerated or on parole outside of their official duties if this contact or relationship would jeopardize or has the potential to jeopardize the security of the TDCJ. Prohibited contact includes living together, writing letters or notes, telephone contact, visitation, and depositing funds into an offender's Inmate Trust Fund (ITF) account. If an employee or contract employee was once married to an offender or had a child together with an offender, employee contact with the offender may be limited to that which is ordered by the Court. As a condition of contract employment with TDCJ, contract employees with prohibited relationships shall sever those relationships. Sever means to cease any and all cohabitation, intimate encounters, verbal or written communications, visitation, or other prohibited contact. Continuation of a prohibited relationship after contract employment with TDCJ may result in denial of access to TDCJ facilities, if the TDCJ determines the relationship jeopardizes or has the potential to jeopardize the security of the TDCJ.

ADDITIONAL INFORMATION: All applicants, who may have contact with offenders, are ineligible for employment if they have committed any activity described in questions 12b, 12c, 12d.

CERTIFICATION: I certify that I have read and understand the above explanation of the TDCJ Policy on Falsification and Offender Relationships. I further certify that my answers on this questionnaire are true, complete and correct to the best of my knowledge and I have not evaded or omitted any part thereof to reflect an untruth. I understand falsification constitutes grounds for refusing or terminating access to TDCJ units and departments.

DUTY TO DISCLOSE: I hereby acknowledge that I have a duty to disclose any sexual misconduct during the term of my employment. I further acknowledge that I have a duty to disclose any misconduct on my part while working for previous employers.

Signature: _____ Date: _____

ATTACHMENT NO. 10

STATE DOCUMENTS AND FORMS
(Contract Conditions and Division 1 Govern This Section)

A. The following State Documents and forms (or equivalent forms generated by automated contract management software) will be used by the Contractor during the construction of the project, and are included in this attachment: To be equivalent, an automated form must contain all items of data shown on the original form, and be similar enough in format to be used interchangeably with the original. **Any equivalent automated forms must be approved by the Owner prior to beginning work.**

10.A.1	Payment Voucher
10.A.2	Request for Information
10.A.3	Change Proposal Request
10.A.4	Pending Change Request Cost Analysis
10.A.5	Pending Change Request Cost Analysis Summary Sheet
10.A.6	Change Order
10.A.7	Consent of Surety to Final Payment
10.A.8	Affidavit of Payment
10.A.9	Final Completion Certificate
10.A.10	Notice of Beneficial Occupancy
10.A.11	Reserved
10.A.12	Application and Certificate for Payment and Continuation Sheet (2 pages)
10.A.13	Labor Burden Log
10.A.14	Quality Control Daily Report
10.A.15	Quality Control Deficiency Notice
10.A.16	Quality Control Deficiency Log
10.A.17	Corrective Action for Notice of Non Conformance
10.A.18	Preparatory Inspection Checklist (4 pages)
10.A.19	Initial Inspection Checklist (2 pages)
10.A.20	Notification of Preparatory/Initial Inspection
10.A.21	Notification of Testing
10.A.22	Not to Exceed Field Order
10.A.23	Time Extension Request
10.A.24	Time Extension

B. The following forms will be used by TDCJ staff and/or consultants, and are included for the Contractor's information only:

10.B.1	Quality Assurance Field Report and Supplementary Page (2 pages)
10.B.2	Quality Assurance Remedial Action Request
10.B.3	Quality Assurance Remedial Action Request Log
10.B.4	Quality Assurance Notice of Non Conformance
10.B.5	Quality Assurance Notice of Non Conformance (N/C) Log

C. Some of the forms listed above are represented as samples reduced in size for purposes of this Project Manual. Full size forms shall be made available to the Contractor upon request.

10.A.1
STATE OF TEXAS
TEXAS DEPARTMENT OF CRIMINAL JUSTICE

PAYMENT VOUCHER

Agency No.	Remit Voucher to:	TDCJ-Facilities Division-Finance	Voucher No.	
696		#2 Financial Plaza Suite # 400	Voucher Amount	
		Huntsville, TX 77340	$	

Contract No.	Contract Date	SA No. or JOE No.	Period Covered for this Voucher	
			From:	To:

Project Location		Project Description
TDCJ Project No.	TDCJ Tracking No.	

Pay To: (Name, Address, City, State, Zip)

SERVICE AUTH/JOB ORDER/CONTRACT AMOUNT	$
ADDITIONS	$
TOTAL	$
DEDUCTIONS	$
TOTAL NET AMOUNT	$
TOTAL AMOUNT EARNED TO DATE	$
TOTAL RETAINED TO DATE	$
TOTAL EARNED LESS RETAINED AMOUNT	$
TOTAL PREVIOUSLY APPROVED	$
AMOUNT DUE THIS ESTIMATE	$

ARCHITECT/ENGINEER CERTIFICATION

I certify that I have verified this construction estimate and that it is a true and correct statement of work performed and materials supplied by the contractor, and that the contractor's statement of his account and the amount due him is correct and that all work and material included in the estimate have been performed in full accordance with terms and conditions of the corresponding construction contract documents and authorized changes thereto.

(Print Name)

Signature Date

PAYEE'S CERTIFICATION

I hereby certify that I am duly authorized to make this certification for and on behalf of

(Name of Payee Company/Claimant)

I further certify that the attached invoice is correct and that it corresponds in every particular with the supplies and/or services contracted for. I further certify that the account is true, correct and unpaid.

(Print Name)

Signature Date

AGENCY CERTIFICATION

I certify that the above services were rendered, or goods received, and that they correspond in every particular with the contract under which they were procured and that the invoice is true, and unpaid.

Date Approved for Payment

Name	Title	Date	Name	Title	Date
Name	Title	Date	Name	Title	Date

10.A.2

TEXAS DEPARTMENT OF CRIMINAL JUSTICE

FACILITIES DIVISION

Distribution to:
OWNER ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

REQUEST FOR INFORMATION

TO: _____ DATE: _____

FROM: _____ TDCJ JOB NUMBER: _____

RFI #: _____ PROJECT: _____

DESCRIPTION OF REQUEST FOR INFORMATION

SUBJECT: _____

_____

_____

_____

_____

_____

SPECIFICATIONS: _____

DRAWING(S): _____

SIGNED: _____

REPLY

_____

_____

_____

_____

_____

_____

SIGNATURE: _____

TITLE _____ DATE: _____

10.A.3
CHANGE PROPOSAL REQUEST

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

Distribution to:

- OWNER ☐
- ARCHITECT ☐
- CONTRACTOR ☐
- FIELD ☐
- OTHER ☐

PROJECT: _____ CHANGE PROPOSAL NO: _____
(name & address)

_____

_____

OWNER: Texas Department of Criminal Justice
Facilities Division

DATE: _____

TO: _____ ARCHITECT'S PROJECT NO.: _____
(contractor)

_____ CONTRACT FOR: _____

_____ NOTICE TO PROCEED DATE: _____

Please submit an itemized quotation for changes in the Contract Sum and/or Time incidental to proposed modifications to the Contract Documents described herein.

This is not a change order nor a direction to proceed with the work described herein.

Description: (Written description of the work)

Attachments: (List attached documents that support description)

Owner: Texas Department of Criminal Justice - Facilities Division

By: _____ Signature
Date

Architect/Engineer:

By: _____ Signature
Date

10.A.4

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

PENDING CHANGE REQUEST COST ANALYSIS

To be completed by General Contractor or Subcontractor
as outlined in the Uniform General Conditions Section 6.6.1

Work to be performed by: PCR: _____

☐ General Contractor ☐ Subcontractor TDCJ-FD JOB NO: _____

CONTRACTOR: _____

If Subcontractor, give company name: _____

Time Extension (if any): _____

Description of Change: _____

_____

_____

ADDITIONS AND/OR [CREDITS]

				A	B	C	D	E
Description	Quantity	Unit	Cost/Unit	Material	Labor	Equip	Trans	Storage
			Subtotals					

Line I Enter total of Columns A+B+C+D: _____

Line II If Line I indicates to an ADD, enter 15% of Line I:
If Line I indicates CREDIT, enter -0-: _____

Line III Enter total Column E (Storage) _____

Line IV Enter ____% of Column B for Workman's Comp
Social Security and like taxes: _____

Line V Total Line I thru Line IV
Enter here & on Summary Sheet _____

SIGNATURE _____ _____
Contractor/Subcontractor DATE

SIGNATURE _____ _____
TDCJ-PA DATE

10.A.5

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

PENDING CHANGE REQUEST COST ANALYSIS
SUMMARY SHEET

To be completed by General Contractor

Project: PCR Number: _____

TDCJ-FD Job No: _____

Contractor _____

Description of Change: _____

_____

_____

SUBCONTRACTOR (Company Name)			Subcontractor Adjustment from Line V of Subcontractor PCRCA.
1.			
2.			
3.			
4.			
5.			
6.			
7.			

I. Total Adjustment (this item) of work performed by subcontractors: _____

II. If General Contractor PCR/CA indicated CREDIT, enter here: _____

III. Total Line I - Line II: _____

IV. If Line III is an add, enter 5% of Line III for General Contractor: _____

V. If General Contractor PCR/CA indicates an ADD, enter here: _____

VI. Total Line III, Line IV and Line V (Equals total adjustment this item): _____

VII. Total Time Extension Requested (days): _____

SIGNATURE: _____ DATE: _____
Contractor

SIGNATURE: _____ DATE: _____
TDCJ-PA

10.A.6

STATE OF TEXAS

Texas Department of Criminal Justice – Facilities Division

CHANGE ORDER

Change Order No.:	
Distribution ☐ TDCJ-FD ☐ DP ☐ CONTRACTOR ☐ FIELD ☒ OTHER	
To:	Contract No.
Project:	MWR No.
Location:	Lonestar No.
	Date:

You are hereby authorized to make the following changes in the work under contract:

N.T.E. Field Order No./PCR No. _____ Cost $ _____

Description of Work: (NO MORE THAN 4 LINES)

It is mutually agreed that the ☐(Payment) ☐(Deduction) of $ _____ and a _____ Calendar Day Time Extension provided for in this Change Order constitutes full compensation to the Contractor. Whether direct, consequential or otherwise, in any wise incident to, or arising out of, or resulting directly from the work performed or modified by the Contractor under this Change Order. The contract date, including any Time Extensions is _____

For the above changes, the sum of: _____

will be applied to the contract price as follows:

ORIGINAL CONTRACT SUM	$
PREVIOUS ADDITIONS:	$
PREVIOUS DEDUCTIONS:	$
NET BALANCE:	$
☐ ADDITION OR ☐ SUBTRACTION	$
ADJUSTED CONTRACT PRICE	$

Approved by:

Contractor:	_____		Date _____
TDCJ-Project Eng.	_____	$5,000.00	Date _____
Eng. Branch Manager	_____	$10,000.00	Date _____
Director, Engineering	_____	$15,000.00	Date _____
Director, Facilities	_____	$25,000.00	Date _____
Chief Financial Officer	_____	$25,000.00+	Date _____
Executive Director	_____	Contract≥$1,000,000.00	Date _____

Program Administration Manager's Coordination _____ Date _____

10.A.7
TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

CONSENT OF SURETY
To Final Payment

Project: _____

Location: _____

Contractor: _____

Project Number: _____

In accordance with the provisions of the above-named contract between the Owner and the Contractor, the following named Surety:

on the Payment Bond of the following named Contractor:

hereby approves of final payment to the Contractor, and further agrees that said final payment to the Contractor shall not relieve the Surety Company named herein of any of its obligations to the following named Owner: as set forth in said Surety company's bond.

The State of Texas, by and through the Board of Directors of the Texas Department of Criminal Justice-Facilities Division IN WITNESS WHEREOF, the Surety Company has hereunto set its hand and seal this _____ day of _____ 20 _____

_____
(NAME OF SURETY COMPANY)

AFFIX CORPORATE
SEAL HERE

_____
(SIGNATURE OF AUTHORIZED REPRESENTATIVE)

TITLE _____

10.A.8
TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

AFFIDAVIT OF PAYMENT

Project: _____

Location: _____

Contractor: _____

Project Number: _____

To All Whom It May Concern:

WHEREAS, the undersigned has been employed by the Texas Department of Criminal Justice - Facilities Division to furnish labor and materials for _____ work, under a contract # _____ for the property described as Job # _____ in the _____ of _____ County of _____ State of Texas, of which the Texas Department of Criminal Justice - Facilities Division is the Owner.

NOW,THEREFORE, this _____ day of _____ 20 _____ the undersigned, as the Contractor for the above named Contract pursuant of the Conditions of the Contract hereby certifies that, except as listed below, he has paid in full or has otherwise satisfied all obligations for all materials and equipment furnished, for all work, labor and services performed, and for all know indebtedness and claims against the Contractor for damages arising in any matter in connection with the performance of the Contract referenced above for which the Owner or his property might in any way be held responsible.

EXCEPTIONS: (If none, write "NONE". If required by the Owner, the Contractor shall furnish bond satisfactory to the Owner for each exception.)

ATTACHMENTS:

1 Consent of Surety to Final Payment. (Whenever Surety is involved, Consent of Surety is required).

(Affix Corporate Seal Here)

_____
Contractor (Name of sole ownership, corporation or partnership)

_____
Signature of Authorized Representative

_____
Title

Sworn and Subscribed before me this _____ day of _____ 20 _____

_____
NOTARY PUBLIC

10.A.9

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

FINAL COMPLETION CERTIFICATE

Project No.: _____

PROJECT: _____
LOCATION: _____
CONTRACTOR: _____
CONTRACT FOR: _____

THE TEXAS DEPARTMENT OF CRIMINAL JUSTICE - FACILITIES DIVISION confirms that, to the best of its knowledge, information, and belief, based upon observations and inspections, the work for this Project has been completed in accordance with the terms and conditions of the Contract Documents.

The Texas Department of Criminal Justice - Facilities Division further confirms that the entire balance is due the Contractor.

($), as noted in the final Construction Voucher, is due and payable in accordance with Article 10 of the General Conditions.

Final payment from the Texas Department of Criminal Justice - Facilities Division shall constitute a waiver of all claims by the Texas Department of Criminal Justice - Facilities Division except for those arising from:

1. Unsettled liens
2. Faulty or defective work appearing after completion
3. Failure of the work to comply with the requirements of the Contract Documents
4. Terms of any special warranties required by the Contract Documents
5. The Owner's rights under any warranty or guarantee

ACCEPTANCE OF FINAL PAYMENT BY THE CONTRACTOR SHALL CONSTITUTE A WAIVER OF ALL CLAIMS BY THE CONTRACTOR.

_____ _____
DP DATE

_____ _____
CONTRACTOR DATE

_____ _____
TEXAS DEPARTMENT OF CRIMINAL JUSTICE/P.E. DATE

10.A.10
TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

NOTICE OF BENEFICIAL OCCUPANCY

HUNTSVILLE, TEXAS

TO: _____
CONTRACT ADMINISTRATOR

DATE:

FROM: _____
PROJECT ADMINISTRATOR

CONTRACT NO.			
JOB NUMBER		**PROJECT NAME**	
BUILDING NO.		**UNIT NAME**	
OCCUPANCY DATE		**UNIT LOCATION**	

BUILDING DESCRIPTION (purpose)

TYPE OF PROJECT ☐ NEW ☐ MODIFICATION / ADDITION

COST $ BUILDING SIZE: AREA: SQ. FT.

TYPE OF CONSTRUCTION

☐ Single Story	☐ Wood	☐ Block
☐ Multi-Story	☐ Metallic	☐ Concrete
	☐ Brick	☐ Combination (explain)

WORK PERFORMED BY

☐ General Contractor	☐ Construction
☐ Other (explain)	☐ Maintenance

COMMENTS/EXPLANATIONS

TDCJ-FD PE/ARCHITECT	DATE	ARCHITECT/ENGINEER	DATE
CONTRACTOR	DATE	PROJECT ADMINISTRATOR	DATE

C: TDCJ-FD PROJECT ADMINISTRATOR
ARCHITECT/ENGINEER

10.A.11

RESERVED

10.A.12

CONTINUATION SHEET

Distribution to:	
T.D.C.J.	
ARCHITECT	
CONTRACTOR	
FIELD	
OTHER	

APPLICATIONS NUMBER:

PERIOD TO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (C ÷ G)	BALANCE TO FINISH (C - G)	RETAINAGE
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	TOTALS:								

APPLICATION AND CERTIFICATE FOR PAYMENT
TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

Page one of _____

TO TDCJ:	FROM (CONTRACTOR):	APPLICATION NO:	Distribution to:	
			T.D.C.J.	
			A/E	
PROJECT:	TDCJ PROJECT NO.:	PERIOD TO:	CONTRACTOR	
			FIELD	
CONTRACT FOR:		CONTRACT DATE:	OTHER	

CONTRACTOR'S APPLICATION FOR PAYMENT

CHANGE ORDER SUMMARY			
Change Orders approved in previous months by Owner TOTAL		ADDITIONS	DEDUCTIONS
Approved this Month			
Number	Date Approved		
TOTALS			
Net change by Change Orders			

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief, the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

Application is made for Payment, as shown below, in connection with the Contract Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM _____
2. Net change by Change Order _____
3. CONTRACT SUM TO DATE (Line 1 ± 2) _____
4. TOTAL COMPLETED & STORED TO DATE (Column G on Continuation Sheet) _____
5. RETAINAGE:
   a. 5.00 % of Completed Work (Column D + E) _____
   b. 5.00 % of Stored Material (Column F) _____
   Total Retainage (Line 5a + 5b or Total in Column I) _____
6. TOTAL EARNED LESS RETAINAGE (Line 4 less Line 5 Total) _____
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate) _____
8. CURRENT PAYMENT DUE _____
9. BALANCE TO FINISH, PLUS RETAINAGE (Line 3 less Line 6) _____

State of : County of:

Subscribed and sworn to before me this day of , 19
Notary Public:
My Commission expires:

CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the A/E certifies to the Owner that to the best of their knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED **$0.00**

(Attach explanation if amount certified differs from the amount applied for.)

By: _____ *Date:* _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

10.A.13
TEXAS DEPARTMENT OF CRIMINAL JUSTICE
Facilities Division

LABOR BURDEN LOG

UNIT: _____

LOCATION: _____

DATE: _____

SUBMITTED BY: _____

(Contractor)

CONTRACTOR	F.I.C.A.	FEDERAL UNEMPLOY.	STATE UNEMPLOY.	WORKMAN'S COMP.	TOTAL
Sample	7.65%	0.80%	6.00%	17.55%	32.00%
SUBCONTRACTORS					

10.A.14

Quality Control Daily Report

To: _____ From: _____

TDCJ Project Administrator — Quality Control Manager

Project Name: _____ Date: _____

Project Location: _____ Report No.: _____

General Contractor: _____ Calendar Day: _____

Weather

Sky AM _____ Wind AM _____ Temp HI _____ Precip AM _____

PM _____ PM _____ LO _____ Amount PM _____

Site Conditions: _____

A) Major Work Activities:

Work Started:

In Progress:

Completed:

Materials Received:

B) Q C Inspections and Tests:

C) Manpower and Equipment

Contr. / Sub.	CRAFT	SUPV	JRNY	APPR	EQUIPMENT

D) Reports Prepared / Issued / Cleared: (List by No.)

Deficiency Notices: _____ Remedial Action Requests: _____

Notices Of Non-conformance: _____ Other ( ): _____

E) Summary Remarks:

Attachments: _____ Page _____ of _____

10.A.15
Quality Control Deficiency Notice

Project Name/ Location: _____ Def. No. _____

To: Contractor/ Subcontractor: _____

ATTENTION: _____ Contract Day No: _____

Pursuant to Inspection conducted on this date, you are hereby requested to immediately perform Corrective Actions relative to deficiencies detected in the work, as fully described below:

_____

_____

_____

Receipt of your Corrective Action Proposal is due by: _____

Receipt acknowledgement is _____ is not _____ required.

By: _____

Quality Control Manager Date

CORRECTIVE ACTION PROPOSAL

_____

_____

_____

_____

Drawings attached: _____

Approved/ Disapproved _____

A/ E Date

Approved/ Disapproved _____

TDCJ - PE Date

Approval/Disapproval _____

TDCJ-PA Date

Reinspection of your Corrective Actions will take place on: _____

Date Quality Control Manager

FOLLOW - UP

_____

_____

_____

_____

_____

Deficiency Cleared: _____ By: _____

Quality Control Manager Date

10.A.16
QUALITY CONTROL DEFICIENCY NOTICE LOG

TDCJ Job Number _____

General Contractor _____

Week Ending _____

DEF NO.	DOCUMENT REFERENCE	DATE OF NOTICE	REINSP. DATE	DEFICIENCY DESCRIPTION	PHYSICAL LOCATION	PROPOSED FIX DATE	DATE CLEARED	NO. DAYS RESPONSE

10.A.17

QUALITY CONTROL
CORRECTIVE ACTION FOR NOTICE OF NON-CONFORMANCE

Attention: _____ N/ C Report No: _____ Page No: ____ of _____

Proposal

Contractor's Description of Proposed Corrective Action (Use attachment if necessary)

_____

_____

_____

_____

Drawings attached: _____

Proposal Date: _____ Proposal By: _____
Quality Control Manager

Acceptance

_____

_____

_____

_____

Approved/ Disapproved: _____
A/ E Date

Approved/Disapproved: _____
TDCJ-PE Date

Approved/ Disapproved: _____
TDCJ - PA Date

Performance

Field Inspection Remarks (Reference Quality Assurance Field Report No.)

_____

_____

_____

_____

Disposition

The status of the subject Non-Conforming Item and of proper corrective action is as follows:

_____

_____

_____

_____

_____

TDCJ Project Administrator _____

PREPARATORY INSPECTION CHECKLIST

Project Name/Location: _____ Date: _____

General Contractor: _____ Contract Day No. _____

MAJOR DEFINABLE SEGMENT OF WORK:

_____

Related Specification Sections: _____

PERSONNEL PRESENT

(Print)

NAME	POSITION	COMPANY
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

(List additional personnel on reverse side)

A) Review of Contract Documents/Scope of Work to be Performed

B) Shop Drawings & Submittals Involved:

List All Submittals and Shop Drawings Required	Type of Approval Received
1.	
2.	
3.	
4.	
5.	
6.	

Have all items involved been submitted? Yes ☐ No ☐

What items involved have not been approved or submitted ?

Item	Status
1.	
2.	
3.	
4.	
5.	
6.	

C) Contractor's Quality Control Program Requirements:

D) Adequacy of Previous Operations (List of Problems Encountered):

E) Availability of Required Materials and Equipment:

Are all materials on hand? Yes ☐ No ☐

Are all materials on hand in accordance with Contract Documents ? Yes ☐ No ☐

List items not on hand or not in accordance with Contract Documents:

1. _____ 7. _____
2. _____ 8. _____
3. _____ 9. _____
4. _____ 10. _____
5. _____ 11. _____
6. _____ 12. _____

F) General Contractors Quality Control Inspections and Tests:

Provide Descriptions of Inspections to be performed:

_____

Provide Descriptions of Required Tests to be performed:

_____

G) TDCJ Quality Assurance Inspections and Tests:

_____

H) Familiarity and Proficiency of General Contractor's work force to perform work to required workmanship standards:

List anticipated problems:

I) Mockups:

Describe Mockup requirements:

J) Safety and Environmental Precautions(s) to be Observed:

Will Additional Safety Programs be required (i.e. Trench Safety): **Yes** ☐ **No** ☐

List these::

K) List any Attachments to this Form:

Quality Control Manager - General Contractor

Quality Control - Discipline Involved

10.A.19

INITIAL INSPECTION CHECKLIST

Project Name/Location: _____ Date: _____

General Contractor: _____

MAJOR DEFINABLE SEGMENT OF WORK:

_____

Related Specification Sections: _____

PERSONNEL PRESENT

(Print)

NAME	POSITION	COMPANY
1.		
2.		
3.		
4.		
5		
6.		
7.		
8.		
9.		
10.		

(List additional personnel on reverse side)

A) Is workmanship provided acceptable?

Yes _____ No _____ If not, explain:

_____

B) Does Baseline Sample of Work conform to Contract Drawings, Specifications, submittals, and shop drawings?

Yes _____ No _____ If not, explain:

_____

C) Are materials on-hand adequate to complete work?

Yes _____ No _____ If not, explain:

_____
_____
_____
_____
_____
_____
_____

D) Are Quality Control Inspections and Testing methods adequate?

Yes _____ No _____ If not, explain:

_____
_____
_____
_____
_____
_____
_____

E) Are shop drawings adequate?

Yes _____ No _____ If not, explain:

_____
_____
_____
_____
_____
_____
_____

F) Are Safety and Environmental precautions adequate?

Yes _____ No _____ If not, explain:

_____
_____
_____
_____
_____

_____
Quality Control Inspector - General Contractor

_____
Quality Control - Discipline Involved

10.A.20

Notification of Preparatory/ Initial Inspection

To: _____ From: _____
TDCJ Project Administrator Quality Control Manager

Project Name/ Location: _____ Date: _____

General Contractor: _____

MAJOR DEFINABLE SEGMENT OF WORK:

Related Specification Sections: _____

_____ Preparatory Inspection _____ Initial Inspection

Construction Supervisor Responsible: _____

Date of Inspection: _____

Time of Inspection: _____

Location of Inspection: _____

Describe Inspection Briefly: _____

Notification of Testing

To: _____ From: _____
TDCJ Project Administrator Quality Control Manager

Project Name/ Location: _____ Date: _____

General Contractor: _____

Type of Testing

Electrical _____ Mechanical _____ Equip. Perf. _____

Other (specify): _____

Related Specification Sections: _____

Construction Supervisor Responsible: _____

QC Rep/ Lab Rep to witness Test: _____

Date of Test: _____

Time of Test: _____

Location of Test: _____

Description of Test: _____

10.A.22

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

Distribution to:
TDCJ-FD ☒
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

FIELD ORDER

FIELD ORDER NO.:

TDCJ- JOB NO.:

DATE:

PROJECT:

LOCATION:

TO:
(Contractor)

RE:

WORK DESCRIPTION:

Cost: _____

Time Extension: _____

Approved by:

Contractor:	_____		Date _____
TDCJ-Project Eng.	_____	$5,000.00	Date _____
Eng. Branch Manager	_____	$10,000.00	Date _____
Director, Engineering	_____	$15,000.00	Date _____
Director, Facilities	_____	$25,000.00	Date _____

Program Analysis Manager's Coordination_____ Date_____

10.A.23
TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

Distribution to:
TDCJ-FD ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

TIME EXTENSION REQUEST

TDCJ-FD JOB NO.:

REQUEST NO.:

DATE:

PROJECT:

LOCATION:

FROM:

Number of Calendar Days requested: _____

Reason for Request:

Contractor: _____
Signature

Exhibit 10.A.24

FACILITIES DIVISION

TIME EXTENSION

Distribution to:

TDCJ/FD	(X)
ARCHITECT	(X)
CONTRACTOR	(X)
SCHEDULING	(X)
FIELD	( )

CONTRACT JOB NO: TIME EXTENSION NUMBER:

TDCJ-FD JOB NO: DATE:

PROJECT: LOCATION:

TO:

Your request for a Time Extension has been (disapproved)(approved) in the amount of _____

Calendar Days granted for _____

_____

_____

The New Contract Completion Date, including this Time Extension, will be _____

Project must be completed on or before the above date or liquidated damages may be assessed per Contractual Agreement.

Texas Department of Criminal Justice-PE _____

Previous Time Extension(s) _____ Calendar Days

This Time Extension _____ Calendar Days

Total Time Extension _____ Calendar Days

For Internal Purposes Only:

	CONCUR		NON-CONCUR
FDEBM	_____	DATE	_____
DE	_____	DATE	_____
FDPAM	_____	DATE	_____
DFD	_____	DATE	_____

10.B.1

Texas Department of Criminal Justice

Address:

Phone:

Fax:

DAILY REPORT

No.

COMPANY:

DATE:

REPORT PERIOD:

DAY:

PROJECT:

JOB: #

TEMPERATURE: **PRECIPITATION:** **SKY:** **WIND:**

ACTIVITY

MEETINGS

TDCJ Quality Assurance Inspector **Date**

10.B.1

EQUIPMENT Description	Source	Unit	Type	Work Area	Remarks

FIELD FORCE LABOR							
Category	Source	Supv	Frmn.	Jrny.	Appr.	Work Area	Remarks

VISITORS			
Time	Company	Visitor Name	Remarks

TDCJ Quality Assurance Inspector **Date**

10.B.2

Remedial Action Request

Page 1 of _____

Project Name _____ RAR. No. _____

Location: _____

ATTENTION: _____ Contract Day No: _____
Quality Control Manager

Pursuant to Inspection conducted on this date, you are hereby requested to immediately perform Corrective Actions relative to deficiencies detected in the work, as fully described below:

_____

_____

_____

_____

Receipt of your Corrective Action Proposal is due by: _____
Receipt acknowledgment is _____ is not _____ required.

By: _____
Texas Department of Criminal Justice Date

CORRECTIVE ACTION PROPOSAL

_____

_____

_____

_____

_____

Drawings attached: _____

Approved/ Disapproved _____
Design Professional Date

Approved/ Disapproved _____
TDCJ Project Engineer Date

FOLLOW - UP

Reinspection of your Corrective Actions will take place on: _____

_____

_____

_____

_____

_____

RAR Cleared: _____ By: _____
Texas Department of Criminal Justice Date

10.B.3
QUALITY ASSURANCE
REMEDIAL ACTION REQUEST LOG

Contract Title _____ Contract No. _____

Contractor _____ Date _____

N/C No.	RAR NO.	QA Rpt No.	Date of Occur	Date Issued	Planned Reinspect	Actual Reinspect	NC Description	Location	Status Open/Close/Etc.	Day Response

10.B.4

Quality Assurance Notice of Non-Conformance

Page 1 of _____

Project Name/
Location: _____ N/ C. No. _____

To: Contractor/ Subcontractor: _____

ATTENTION: _____ Contract Day No: _____
General Contractor Quality Control Manager

Notice is hereby given that the terms, materials, and or/ items of the work, as fully described below, were reviewed, inspected, or tested by this office and were found ***not*** to be in conformance with the requirements of the subject contract and ***your immediate attention and corrective actions are required.***

Be also advised that ***no payment*** will be made for the work deemed to be in non-conformance with the contract until such time as your corrective actions have been submitted, approved, and performed. (See Supplementary page for corrective action proposal, acceptance, and performance form).

Description of work elements requiring remedial actions:

_____

Contract References:

_____

Receipt By: _____
Title: _____
Company: _____
Date: _____

By: _____
TDCJ Project Administrator
Date: _____

10.B.5
QUALITY ASSURANCE
NOTICE OF NONCONFORMANCE (N/C) LOG

Contract Title _____ Contract No. _____

Contractor _____ Date _____

NC No.	RAR No/ QA Rpt No	Date of Occur	Date Issued	Planned Reinspect	Actual Reinspect	NC Descirption	LOCATION	Status Open/Close/Etc.	Day Response

ATTACHMENT NO. 11

Specifications are located in Specifications Manual

ATTACHMENT NO. 12

Drawings

Deleted

Attachment No. 13

TEXAS DEPARTMENT OF CRIMINAL JUSTICE

PO Box 4018 Huntsville, TX 77342-4018

VENDOR MAINTENANCE DIRECT DEPOSIT AND SUBSTITUTE W-9 FORM

Agency Use Only

☐ CPA ☐ AP ☐ DDS

☐ New Set-up ☐ New Mail Code

☐ Other:

Box 1	Legal Name (as shown on your tax return):				
Box 2	DBA:				
Box 3	Tax Information Mailing Address:		**Box 4**	Payment Address (If different from Tax Address):	
City:	State:	Zip:	City:	State:	Zip:
Phone:		Fax:	Email:		

Box 5	**Taxpayer Identification Number:**	☐ Social Security Number (SSN) ☐ Employer Identification Number (EIN) Note: Enter the same number used when filing your tax return
Box 6	**Federal Tax Classification:** Business Designation:	☐ Texas Corporation ☐ Limited Partnership ☐ Sole Owner ☐ Out-of-State Corporation ☐ General Partnership ☐ Individual Recipient ☐ Foreign Corporation ☐ Professional Association ☐ Government Entity ☐ Limited Liability Company ☐ Financial Institution ☐ TX State Agcy/University ☐ Other (Please Explain):
Box 7	**State Charter Information:**	State of Jurisdiction: File or Charter Number:
Box 8	**Sole Ownership Info:**	Sole Owner Name and SSN:
Box 9	**Partnership Information:**	Partner 1 Name and SSN/EIN: Partner 2 Name and SSN/EIN:
Box 10	**Profit Status:**	☐ Profit ☐ Non-Profit
Box 11	**Backup Withholding:** * Please see IRS Website	☐ Exempt from Backup Withholding
Box 12	**Certification:**	Under penalties of perjury, I certify that: 1) I have provided my correct taxpayer identification number and that 2) I am not subject to backup withholding as specified on the instruction page for this form and that 3) I am a US citizen or other US person. Signature: Print Preparer's Name: Phone Number: Date:

Box 13 DIRECT DEPOSIT INFORMATION

☐ Direct Deposit Setup ☐ Direct Deposit Change ☐ Direct Deposit Cancel ☐ I Decline Direct Deposit at this time

Financial Institution Name: Type: ☐ Checking ☐ Savings

Routing Transit Number: Account Number:

Will these payments be forwarded to a financial institution outside the United States? ☐ Yes ☐ No

I authorize the Texas Comptroller of Public Accounts to deposit my payments from the State of Texas to my financial institution electronically. I understand that the Texas Comptroller of Public Accounts will reverse any payments made to my account in error.

I further understand that the Texas Comptroller of Public Accounts will comply at all times with the National Automated Clearing House Association's rules. For further information on these rules, please contact your financial institution.

Authorized Signature Required:

Printed Name Required: Date:

TDCJ ALL INCLUSIVE VENDOR FORM
INSTRUCTIONS

Box	Required Information
1	**Legal Name**: Legal business name filed with the IRS. For Sole Ownership or Individual Recipient, excluding LLC, enter name of owner.
2	**DBA**: Name you are "Doing Business As" if different from legal business name.
3	**Tax Information Mailing Address:** Address where IRS tax information is sent. (i.e. W9, 1099, etc.)
4	**Payment Address: Remit** Address for payments if different from address in box 3.
5	**Taxpayer Identification**: Select the appropriate check box for the taxpayer identification number you are entering. ***Enter only one number.*** **Social Security**: enter your social security number only if you are doing business under your social security number and you report taxes to the IRS using a "DBA" or you are a Sole Proprietor. **OR** **Federal Tax Identification Number**: enter the Federal Employee Identification Number (FEIN) assigned to your business by the IRS if this is the number you use to report taxes to the IRS.
6	**Federal Tax Classification**: Select **only one** that describes the ownership type of business.
7	**State Charter Information:** The state where corporation or partnership status is filed and the file or charter number of corporation or partnership in that state.
8	**Sole Ownership Info:** Name and Social Security Number of Sole Owner (excluding LLC) if using an Employer Identification Number (EIN).
9	**Partnership Information:** Name and Social Security Number or EIN of all partners involved in the general partnership. Please attach additional sheet if needed.
10	**Profit Status**: Select **only one** that describes the profit status of the business.
11	**Exemption from Backup Withholding:** check this box if the business is exempt from Backup Withholding. For further information on Backup Withholding, see the following IRS Web site: http://www.irs.gov/pub/irs-pdf/fw9.pdf?portlet=3
12	**Certification:** You must cross out item 2 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. **THIS BOX MUST BE SIGNED AND DATED.** For more information go to IRS website at: http://www.irs.gov/pub/irs-pdf/fw9.pdf?portlet=3
13	Please check the box that is appropriate for this Direct Deposit Request. Enter name of Financial Institution. Check appropriate box for type of account. Enter the Routing Transit number (9 digits) for the Financial Institution listed. Enter bank account number. Please read the next three statements and check the appropriate box. **THIS BOX MUST BE SIGNED AND DATED.** Please enter the contact information of person completing this form.

Submit Completed form to:

Texas Department of Criminal Justice - Accounts Payable

PO Box 4018

Huntsville, TX 77342-4018

Email: tdcj.ap-invsvs@tdcj.texas.gov

Phone Number: 936/437-6350 or 936/437-8476 Fax Number: 936/437-6290

ATTACHMENT 14
RELEASE OF CLAIMS

CONTRACT NUMBER:_____

KNOW ALL MEN BY PRESENTS: In consideration of the premise and sum of $_____($_____) of which $_____($_____) has been paid, and a balance due of $_____($_____) is to be paid by the Texas Department of Criminal Justice (TDCJ) under the above noted Contract, the undersigned Contractor does release and discharge TDCJ, its officers, agents and employees, of and from all liabilities, obligations and claims whatsoever in law and equity arising out of or by virtue of said Contract, except specified claims in stated amounts, or in estimated amounts when the amounts are not susceptible of exact statement by the Contractor, as follows:

_____

_____

IN WITNESS WHEREOF, this release has been executed this _____ day of _____ _____, _____.

_____
(Contractor)

_____BY _____

_____TITLE _____

CERTIFICATE

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

(Corporate Seal) _____

EXHIBIT

Rev 10/14

HUB Subcontracting Plan (HSP)

In accordance with Texas Gov't Code §2161.252, the contracting agency has determined that subcontracting opportunities are probable under this contract. Therefore, all respondents, including State of Texas certified Historically Underutilized Businesses (HUBs) must complete and submit this State of Texas HUB Subcontracting Plan (HSP) with their response to the bid requisition (solicitation).

NOTE: Responses that do not include a completed HSP shall be rejected pursuant to Texas Gov't Code §2161.252(b).

The HUB Program promotes equal business opportunities for economically disadvantaged persons to contract with the State of Texas in accordance with the goals specified in the 2009 State of Texas Disparity Study. The statewide HUB goals defined in 34 Texas Administrative Code (TAC) §20.13 are:

- ***11.2 percent for heavy construction other than building contracts,***
- ***21.1 percent for all building construction, including general contractors and operative builders' contracts,***
- ***32.9 percent for all special trade construction contracts,***
- ***23.7 percent for professional services contracts,***
- ***26.0 percent for all other services contracts, and***
- ***21.1 percent for commodities contracts.***

- - Agency Special Instructions/Additional Requirements - -

In accordance with 34 TAC §20.14(d)(1)(D)(iii), a respondent (prime contractor) may demonstrate good faith effort to utilize Texas certified HUBs for its subcontracting opportunities if the total value of the respondent's subcontracts with Texas certified HUBs meets or exceeds the statewide HUB goal or the agency specific HUB goal, whichever is higher. When a respondent uses this method to demonstrate good faith effort, the respondent must identify the HUBs with which it will subcontract. If using existing contracts with Texas certified HUBs to satisfy this requirement, only contracts that have been in place for five years or less shall qualify for meeting the HUB goal. This limitation is designed to encourage vendor rotation as recommended by the 2009 Texas Disparity Study.

The TDCJ HUB goals are defined as:

- **17.5 percent for heavy construction other than building contracts. This goal is higher than the statewide goal and therefore must be the utilized goal for this category,**
- **36.9 percent for all building construction, including general contractors and operative builders contracts. This goal is higher than the statewide goal and therefore must be the utilized goal for this category,**
- **32.7 percent for all special trade construction contracts,**
- **23.6 percent for professional services contracts,**
- **24.6 percent for all other services contracts, and**
- **21 percent for commodities contracts.**

The TDCJ has determined that the HUB Category for this contract falls under the **Building Construction Contracts** Category.

The HUB Goal for this category is therefore identified as **36.9 %.**

For assistance in completing the HSP contact:
Sharon Schultz @ 936-437-7026
sharon.schultz@tdcj.texas.gov

SECTION 1: **RESPONDENT AND REQUISITION INFORM**

a. Respondent (Company) Name: Metroplex Control Systems, Inc. dba Argyle Security Group — State of Texas VID #: Not Applicable

Point of Contact: David Deason — Phone#: 210-495-5245

E-mail Address: Ddeason@argylesecurity.com — Fax #: 210-495-5613

b. Is your company a State of Texas certified HUB? ☐ - Yes ☒ - No

c. Requisition #: 696-FD-16-B001 — Bid Open Date: 10/20/2015 (mm/dd/yyyy)

Enter your company's name here: Metroplex Control Systems, Inc dba Argyle Security Group Requisition #: 696-FD-16-B001

SECTION 2: SUBCONTRACTING INTENTIONS RESPONDENT

After dividing the contract work into reasonable lots or portions to the extent consistent with prudent industry practices, and taking into consideration the scope of work to be performed under the proposed contract, including all potential subcontracting opportunities, the respondent must determine what portions of work, including goods and services, will be subcontracted. Note: In accordance with 34 TAC §20.11., an "Subcontractor" means a person who contracts with a prime contractor to work, to supply commodities, or to contribute toward completing work for a governmental entity.

a. Check the appropriate box (Yes or No) that identifies your subcontracting intentions:

☒ ***Yes***, I will be subcontracting portions of the contract. (If ***Yes***, complete Item b, of this SECTION and continue to Item c of this SECTION.)
☐ ***No***, I will not be subcontracting any portion of the contract, and I will be fulfilling the entire contract with my own resources. (If ***No***, continue to SECTION 3 and SECTION 4.)

b. List all the portions of work (subcontracting opportunities) you will subcontract. Also, based on the total value of the contract, identify the percentages of the contract you expect to award to Texas certified HUBs, and the percentage of the contract you expect to award to vendors that are not a Texas certified HUB (i.e., Non-HUB).

Item #	Subcontracting Opportunity Description	HUBs		Non-HUBs
		Percentage of the contract expected to be subcontracted to HUBs with which you have a continuous contract* in place for five (5) years or less.	Percentage of the contract expected to be subcontracted to HUBs with which you have a continuous contract* in place for more than five (5) years.	Percentage of the contract expected to be subcontracted to non-HUBs.
1	Electrical demolition of existing audio and door control system	1 %	%	%
2	Providing a new electrical raceway system for video surveillance and door control system	31.3 %	%	%
3	Providing and installing low-voltage cabling for door control, audio and video surveillance systems	5.5 %	%	%
4	Providing and installing a new network backbone wiring	.40 %	%	%
5	Labor Only- Installation of new control room metal casework	.80 %	%	%
6		%	%	%
7		%	%	%
8		%	%	%
9		%	%	%
10		%	%	%
11		%	%	%
12		%	%	%
13		%	%	%
14		%	%	%
15		%	%	%
	Aggregate percentages of the contract expected to be subcontracted:	39 %	%	%

(Note: If you have more than fifteen subcontracting opportunities, a continuation sheet is available online at http://window.state.tx.us/procurement/prog/hub/hub-subcontracting-plan/).

c. Check the appropriate box (Yes or No) that indicates whether you will be using **only** Texas certified HUBs to perform **all** of the subcontracting opportunities you listed in SECTION 2, Item b.

☒ ***Yes*** (If ***Yes***, continue to SECTION 4 and complete an "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed.)
☐ ***No*** (If ***No***, continue to Item d, of this SECTION.)

d. Check the appropriate box (Yes or No) that indicates whether the aggregate expected percentage of the contract you will subcontract **with Texas certified** HUBs with which you have a **continuous contract*** in place with for five (5) years or less **meets or exceeds** the HUB goal the contracting agency identified on page 1 in the **"Agency Special Instructions/Additional Requirements"**.

☒ ***Yes*** (If ***Yes***, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method A (Attachment A)" for **each of** the subcontracting opportunities you listed.)
☐ ***No*** (If ***No***, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method B (Attachment B)" for **each** of the subcontracting opportunities you listed.)

****Continuous Contract: Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.***

Enter your company's name here: Metroplex Control Systems, Inc. dba Argyle Security Group Requisition #: 696-ED-16-B001

SECTION 3. SELF PERFORMING JUSTIFICATION (If you responded "No "to SECTION 2, Item a, you must complete this SECTION and continue to SECTION 4)

Check the appropriate box (Yes or No) that indicates whether your response/proposal contains an explanation demonstrating how your company will fulfill the entire contract with its own resources. Not Applicable

☐ **Yes** (If **Yes**, in the space provided below **list the specific page(s)/section(s)** of your proposal which explains how your company will perform the entire contract with its own equipment, supplies, materials and/or employees.)

☐ **No** (If **No**, in the space provided below **explain how** your company will perform the entire contract with its own equipment, supplies, materials and/or employees.)

Not Applicable

SECTION 4 AFFIRMATION

As evidenced by my signature below, I affirm that I am an authorized representative of the respondent listed in SECTION 1, and that the information and supporting documentation submitted with the HSP is true and correct. Respondent understands and agrees that, if awarded any portion of the requisition:

- The respondent will provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor for the awarded contract. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.
- The respondent must submit monthly compliance reports (Prime Contractor Progress Assessment Report – PAR) to the contracting agency, verifying its compliance with the HSP, including the use of and expenditures made to its subcontractors (HUBs and Non-HUBs). (The PAR is available at http://www.window.state.tx.us/procurement/prog/hub/hub-forms/progressassessment/pt.xls).
- The respondent must seek approval from the contracting agency prior to making any modifications to its HSP, including the hiring of additional or different subcontractors and the termination of a subcontractor the respondent identified in its HSP. If the HSP is modified without the contracting agency's prior approval, respondent may be subject to any and all enforcement remedies available under the contract or otherwise available by law, up to and including debarment from all state contracting.
- The respondent must, upon request, allow the contracting agency to perform on-site reviews of the company's headquarters and/or work-site where services are being performed and must provide documentation regarding staffing and other resources.

Signature	David Deason	Senior Vice President of Estimating	10/19/2015
	Printed Name	Title	Date (mm/dd/yyyy)

Reminder:

- If you responded "**Yes**" to **SECTION 2, Items c or d**, you must complete an "HSP Good Faith Effort - Method A (Attachment A)" **for each** of the subcontracting opportunities you listed in SECTION 2, Item b.
- If you responded "**No**" **SECTION 2, Items c and d**, you must complete an "HSP Good Faith Effort - Method B (Attachment B)" **for each** of the subcontracting opportunities you listed in SECTION 2, Item b.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: Metroplex Control Systems, Inc. dba Argyle Security Group Requisition #: 696-FD-16-B001

IMPORTANT: If you responded "**Yes**" to **SECTION 2, Items c or d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for **each** of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf.

SECTION A-1 SUBCONTRACTING OPPORTUNITY

Enter the Item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: 1 **Description:** Electrical demolition of existing audio and door control system

SECTION A-2: SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
D & S Electric Services, INC.	☒ - Yes ☐ - No	1752912773400	$ 17,005	1 %
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: Metroplex Control Systems, Inc. dba Argyle Security Group Requisition #: 696-FD-16-B001

IMPORTANT: If you responded "**Yes**" to **SECTION 2, Items c or d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for **each** of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf.

SECTION A-1: SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: 2 **Description:** Providing a new electrical raceway system for a video surveillance and door control system

SECTION A-2: SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
D & S Electric Services, INC.	☒ - Yes ☐ - No	1752912773400	$ 532,257	31.3 %
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to **all** the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: Metroplex Control Systems, Inc. dba Argyle Security Group Requisition #: 696-FD-16-B001

IMPORTANT: If you responded "**Yes**" to **SECTION 2, Items c or d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf.

SECTION A-1: SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: 3 **Description:** Providing and installing low-voltage cabling for door control, audio and video surveillance systems

SECTION A-2: SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
D & S Electric Services, INC.	☒ - Yes ☐ - No	1752912773400	$ 93,528	5.5 %
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: Metroplex Control Systems, Inc. dba Argyle Security Group Requisition #: 696-FD-16-B001

IMPORTANT: If you responded **'Yes'** to **SECTION 2, Items c or d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for **each** of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf.

SECTION A-1 SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: 4 **Description:** Providing and installing a new network backbone wiring

SECTION A-2: SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
D & S Electric Services, INC.	☒ - Yes ☐ - No	1752912773400	$ 6802	.40 %
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
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	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: Metroplex Control Systems, Inc. dba Argyle Security Group Requisition #: 696-FD-16-B001

IMPORTANT: If you responded "***Yes***" to **SECTION 2, Items c or d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for **each** of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf.

SECTION A-1 SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: 5 **Description:** (Labor Only) Installation of new control room metal casework

SECTION A-2: SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
D & S Electric Services, INC.	☒ - Yes ☐ - No	1752912773400	$ 13,064	.80 %
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to **all** the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HUB Subcontracting Plan (HSP)
Prime Contractor Progress Assessment Report

This form must be completed and submitted to the contracting agency each month to document compliance with your HSP.

Contract/Requisition Number: 696-FD-16-17-C117 **Date of Award:** _____ **Object Code:** 936-73 (Agency Use Only)

Contracting Agency/University Name: **Texas Department of Criminal Justice**

Contract Administrator Name: Lynne Piippo

Contractor (Company) Name: Metroplex Control Systems, Inc. dba Argyle Security Group **State of Texas VID #:** 17429477205

Point of Contact: David Deason, Senior Vice-President of Estimating **Phone #:** (210) 495-5245

Reporting (Month) Period: _____ **Total Amount Paid this Reporting Period to Contractor:** $ _____

Report HUB and Non-HUB subcontractor information

Subcontractor's Name	Subcontractor's VID or HUB Certificate Number	*Texas Certified HUB? (Yes or No)	Total Contract $ Amount from HSP with Subcontractor	Total $ Amount Paid This Reporting Period to Subcontractor	Total Contract $ Amount Paid to Date to Subcontractor	Object Code (Agency Use Only)
D&S Electric Services, Inc. (electrical demolition)	17529127734	YES	$ 17,005.00	$	$	
D&S Electric Services, Inc. (electrical raceway system)	17529127734	YES	$ 532,257.00	$	$	
D&S Electric Services, Inc. (low-voltage cabling)	17529127734	YES	$ 93,528.00	$	$	
D&S Electric Services, Inc. (network backbone wiring)	17529127734	YES	$ 6,802.00	$	$	
D&S Electric Services, Inc. (labor, install metal casework)	17529127734	YES	$ 13,064.00	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
TOTALS:			$ 662,656.00	$	$	

Signature: _____ **Title:** _____ **Date:** _____

***Note: Prime contractors can verify subcontractor HUB certification status on-line at http://www2.cpa.state.tx.us/cmbl/cmblhub.html**

HSP-PAR Rev. 07/09

APPENDIX

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Project Manual

Texas Department of Criminal Justice
Billy Moore Unit
MWR 11106003

Billy Moore Unit – Replace Security Control System
Billy Moore Unit
Overton, Texas

STATE OF TEXAS
THOMAS J. MERGEN
104169
LICENSED
PROFESSIONAL ENGINEER

11-8-2013

Issued-for-Construction
November 8, 2013
Texas Firm Registration: F-174

Stanley Consultants INC.
A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

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16670 Surge Suppression Devices 3
16730 Intercom System 14

ARCHITECT/ENGINEER RESPONSIBILITY

The specification sections authenticated by my seal and signature are limited to the following:

DIVISION 1 - GENERAL REQUIREMENTS

DIVISION 12 – FURNISHINGS

12910 Control Room Consoles And Furnishings

DIVISION 13 – SPECIAL CONSTRUCTION

13400 Common Work Results for Process Systems
13432 Process Control Panels and Hardware
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16050 Basic Electrical Methods
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16120 Fiber Optic Cable System
16123 Wire and Cable
16130 Boxes
16140 Wiring Devices
16170 Grounding and Bonding
16190 Supporting Devices
16195 Electrical Identification
16670 Surge Suppression Devices
16730 Intercom System

SECTION 01010

SUMMARY OF WORK AND USE OF PREMISES

PART 1 - GENERAL

1.1 PROJECT DESCRIPTION

A. The Project consists of the replacement of door control system, intercom system, PA, and CCTV system in central control located in the administration building, east picket located in the east wing and west picket located in the west wing.

B. Project will demo existing MTI door control, intercom system, and PA system throughout the facility. Demo will include removal of existing cabling throughout the facility.

C. Project will replace existing cabling with new for the new designed systems.

1.2 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work of this section.

1.3 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for:

1. Labor, materials and equipment.

2. Tools, construction equipment and machinery.

3. Other facilities and services necessary of proper execution and completion of work.

B. TDCJ is exempt from sales tax on products permanently incorporated in work.

1. Obtain sales tax exemption certificate from TDCJ.

2. Place exemption certificate with invoices for materials incorporated in work.

3. Upon completion of work, file with TDCJ notarized statement that all purchases made under exemption certificate were entitled to be exempt.

4. Pay legally assessed penalties for improper use of exemption certificate number.

C. Secure and pay for, as necessary for proper execution and completion of Work, and as applicable at time of receipt of bids.

1. Government Fees (including inspection fees).

2. Licenses.

D. Give required notices to Warden. Also, TDCJ Communications at 936-437-1901 and 1-800-545-6005 before trenching or digging.

E. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of Work, including all provisions of the Occupational Safety and Health Administration, including Article 1926.21 (Safety Training and Education), and the Americans with Disabilities Act of 1991 (ADA).

F. Promptly submit written notice to TDCJ of observed variance of Contract Documents from legal requirements. Assume responsibility for Work known to be contrary to such requirements, without notice.

G. All fencing shall be kept secure at all times in a manner acceptable to the Warden. All temporary fencing shall be pre-approved by the Warden for use during construction.

H. All disconnected equipment shall be removed from inside the secure fenced area and secured in accordance with the Warden's instructions.

1.4 CONTRACTOR USE OF PREMISES

A. Keep driveways and entrances serving the premises clear and available to the TDCJ and the TDCJ's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

B. No private vehicles will be allowed inside the fence. Contractor's vehicles and equipment will be allowed in the areas required for work.

C. All Contractors' employees shall carry a picture identification card such as a driver's license or other identification as approved by the PA at all times.

D. All employees that work on the project must be cleared through Warden's office.

1.5 PRECEDENCE

A. The General and Special Conditions of the Contract take precedence over the technical specifications.

1.6 SCHEDULE

A. The following proposed schedule is based on days after notice to proceed.

1.	Project Kickoff Meeting	15 days
2.	Shop drawing review and approval	60 days

3.	Fabrication of Control Panels	150 days
	Electrical Conduit and Cable Installation	
	Procurement of Intercom System	
	Procurement of CCTV System	
4.	PLC Control Panel Factory Acceptance Testing	5 days
5.	West Picket PLC Control Panel Installation	60 days
	Intercom and CCTV Camera Installation	
6.	East Picket PLC Control Panel Installation	60 days
	Intercom and CCTV Camera Installation	
7.	Central Control PLC Control Panel Installation	30 days
	Intercom and CCTV Camera Installation	
8.	Training	15 days
9.	Total Construction Duration per Contract	

1.7 STAGING OF CONSTRUCTION

A. Contractor responsible for coordinating and staging of construction schedule.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 SECTION INCLUDES

A. General Quality Control.
B. Workmanship.
C. Manufacturer's Instructions.
D. Manufacturer's Certificates.
E. Manufacturer's Field Services.

1.3 RELATED SECTIONS

A. General and Special Conditions of the Contract: Contractor inspection and quality control system.
B. Section 01440 - Contractor's Quality Control: Contractor's quality control plan/program.

1.4 QUALITY CONTROL, GENERAL

A. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Engineer.
B. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Construction Document requirements.
C. Requirements of this section relate to customized fabrication and installation procedures, not production of standard products.
D. Specific quality control requirements for individual construction activities may be specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
E. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Construction Document requirements.
F. Requirements for the Contractor to provide quality control services required by the A/E, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.5 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances specified requirements indicate more rigid standards and more precise workmanship.
B. Perform Work by persons qualified to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.6 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Construction Documents, request clarification from A/E before proceeding.

1.7 MANUFACTURER'S CERTIFICATES

A. When required by individual Specifications Section, submit six manufacturer's certificates stating that products meet or exceed specified requirements.

1.8 MANUFACTURER'S FIELD SERVICES

A. When specified in respective Specification sections, require supplier or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and to provide instructions as applicable, and to make appropriate recommendations.

B. Representative shall submit written report to A/E listing observations and recommendations.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01440

CONTRACTOR'S QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the General and Special Conditions of the Contract. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product, which complies with the Contract requirements. The system shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence.

1.3 QUALITY CONTROL PLAN/PROGRAM

A. General: The Contractor shall furnish for review by the Owner at The Preconstruction meeting the Contractor Quality Control (QC) Plan proposed to implement the requirements of the General and Special Conditions of the Contract. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Owner will consider an interim plan for the first [30] days of operation. Construction will be permitted to begin only after acceptance of the QC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a QC Plan or another interim plan containing the additional features of work to be started.

B. Content of the QC Plan: The QC Plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers and purchasing agents:

1. A description of the quality control organization, including a chart showing lines of authority and acknowledgement that the QC Manager shall implement the three phase control system for all aspects of the work specified.

2. The name qualifications (in resume format), duties, responsibilities, and authorities of the person assigned the QC Manager.

3. A copy of the letter to the QC Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately

perform the functions of the QC Manager including authority to stop work which is not in compliance with the contract. A Copy of this letter will also be furnished to the Owner.

4. Procedures for scheduling, reviewing, approving, and managing submittals, including those of subcontractors, off-site fabricators, suppliers and purchasing agents. These procedures shall be in accordance with the General and Special Conditions of the Contract.

5. Control, verification and acceptance of testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test.

6. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

7. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

8. Reporting procedures, including proposed reporting formats.

9. A list of the definable features or units of work. A definable feature or unit of work is a portion of the Work, which is separate and distinct from other portions of the Work and has separate control requirements. Although each section of the Specifications may generally be considered as a definable feature or unit of work, the organization of the Specifications shall not determine the extent or scope of a definable feature or unit of work. This list will be mutually agreed upon by the Owner, A/E and Contractor during the coordination meeting.

C. Acceptance of Plan: Acceptance of the Contractor's plan or interim plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Owner reserves the right to require the Contractor to make changes in his QC Plan and operations including replacement of personnel, as necessary, to obtain the quality specified.

D. Notification of Changes: After acceptance of the QC plan, the Contractor shall notify the Owner in writing a minimum of seven calendar days prior to any proposed change in the QC Plan or QC Personnel. Proposed changes are subject to acceptance by TDCJ.

1.4 COORDINATION MEETING:

A. After the Preconstruction Conference, before start of construction, and prior to acceptance by the PA of the Quality Control Plan, a meeting shall be held to discuss the Contractor's quality control system. Attending this meeting shall be the Contractor's Project Manager, Contractor's General Superintendent, the Owners Quality Assurance Inspector, TDCJ

Project Administrator and site staff. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the QC operations, control activities, testing, administration of the system for both on-site and off-site work, and the interrelationship of Contractor's Management and Quality Control with the Owner's Quality Assurance. Minutes of the meeting shall be prepared by the PA and signed by both the Contractor and the Owner. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the QC system or procedures, which may require corrective action by the Contractor.

1.5 QUALITY CONTROL ORGANIZATION:

A. Quality Control (QC) Manager:

1. The Contractor shall identify an individual within his organization at the site of the work who shall be responsible for overall management of QC and have the authority to act in all QC matters for the Contractor. This QC Manager shall be on the site at all times during construction and will be employed by the Contractor, except as noted in the following. An alternate for the QC System Manager will be identified in the plan to serve in the event of the manager's absence. Period of absence may not exceed 2 weeks at any one time, and not more than 20 workdays during a calendar year. The requirements for the alternate will be the same as for the designated QC Manager.

2. The Quality Control Manager shall not be removed without the Owner's written consent.

B. QC Organizational Staffing:

1. The Contractor shall provide and maintain a QC Manager who shall be at the site of work at all times during progress, with complete authority to take any action necessary to ensure compliance with the contract.

2. Organizational Changes: The Contractor shall obtain Owner acceptance before replacing the QC Manager. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement. The Owner reserves the right to have replaced, of the Quality Control Manager who is in the opinion of the Owner not accomplishing his assigned duties.

C. QC Staff Qualifications: Following are the minimum requirements for the QC Manager. These minimum requirements will not necessarily assure an adequate staff to meet the QC requirements at all times during construction. When necessary for a proper QC organization, the Contractor shall add additional staff at no cost to the Owner. This listing of minimum staff in no way relieves the Contractor of meeting the basic requirements of

quality construction in accordance with contract requirements. All QC staff members shall be subject to acceptance by TDCJ.

1. QC Manager: An experienced construction person with a minimum of 5 years experience in related work and a minimum of 5 years verifiable experience as a construction contractor quality control representative.

1.6 QUALITY CONTROL PROCEDURES:

A. General: Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the Contract. The Quality Control shall be adequate to cover all construction operations, including both on-site and off-site fabrication, and shall be coordinated to the proposed construction sequence. The Quality Control shall be conducted by the QC manager for all definable features of work.

B. Three Point Inspection Plan: The Quality Control Manager with the Contractor's appropriate staff shall utilize the Three Point Inspection Plan as the basis of the following Quality Control procedures to assure conformance of the work performed by the Contractor to the requirements of the Contract Documents and to the approved Submittals.

C. Quality Control Procedures: In addition to the basic Three Part Inspection Plan requirements, the QC Manager shall conduct and implement the following Quality Control procedures for each definable feature of work:

1. Preparatory Coordination: Prior to the start of work under each separate definable segment of work, or prior to the start of work where a change in a construction operation is contemplated by the Contractor, a coordination meeting will be held between the Contractor's Superintendent, the Quality Control Manager, *Contractor's Quality Control Material Testing Lab-if testing is required in the definable segment of work,* and appropriate representatives of the Owners. Supervisory and Quality Control representatives of all applicable subcontractors will also attend. The purpose of the meeting is to ensure there are no misunderstandings regarding the quality as well as the technical requirements of the Contract. The Contractor's and applicable subcontractor's Quality Control representatives will be on site all times during the work and shall have the authority to effect the resolution of Quality problems including stopping the work. the following items will be reviewed at the meeting as a minimum:

a. Contract requirements;

b. Shop Drawings and Submittals;

c. Contractor's Quality Control Program requirements;

d. Adequacy of previous operations;

e. Availability of required materials and equipment;

f. Contractors Quality Control Inspections and tests;

g. TDCJ Quality Assurance inspections and tests;

h. Familiarity and proficiency of Contractor's and Subcontractor's work force to perform the operation to required workmanship standards;

i. Any other preparatory steps dependent upon the particular operation.

The TDCJ Project Administrator shall be notified a minimum of 72 hours prior to the beginning of any preparatory coordination meeting. The Contractor's Quality Control Manager will chair the meeting. The results of the preparatory coordination meeting shall be documented by separate minutes prepared by the Quality Control Manager and Attached to the Daily Quality Control Summary Report.

2. Initial Inspection: Upon completion of a representative sample of a given feature of the Work, and prior to the start of a new or changed operation, appropriate Owner's Representative(s) will meet with the Contractor's Superintendent, Quality Control Manager and applicable Subcontractor's Superintendent and their Quality Control Representatives, *and Contractor's Quality Control Material Testing Lab-if testing is required in the definable segment of work.* The responsibility for scheduling and providing these samples in a timely manner so that the work is not delayed or hindered lies solely with the Contractor. The following items will be checked at this meeting as a minimum;

a. Review minutes of preparatory meeting.

b. Conformance to Contract Drawings, Specifications and the accepted Shop Drawings or Submittal;

c. Adequacy of materials and articles utilized;

d. Adequacy and results of inspection and testing methods;

e. Adequacy of safety and environmental precautions.

Once approved, the representative sample will become the physical baseline by which ongoing work is compared for quality and acceptability. To the maximum practical extent, approved representative samples of work elements shall remain visible until all work in the appropriate category is complete. During this inspection all differences will be resolved. The initial phase should be repeated for each new crew to work on site or at any time acceptable specified quality standards are not being met.

The TDCJ Project Administrator shall be notified a minimum of 72 hours prior to the beginning of any initial inspection. The Contractor's Quality Control Manager will chair the initial inspection. The results of the initial inspection shall be documented by separate minutes prepared by the Quality Control Manager and attached to the daily quality control summary report.

3. Follow-up Phase: Daily checks shall be performed to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the QC documentation. Final follow-up-checks shall be conducted and all deficiencies corrected prior to the start of additional features of work, which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

4. Additional Preparatory and Initial Phases: Additional preparatory and initial phases may be conducted on the same definable features of work as determined by the Owner if the quality of on-going work is unacceptable; or if there are changes in the applicable QC staff or in the on-site production supervision or work crew; or if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

5. Pre-Final Acceptance Inspection: When the work is completed, the Contractor shall make a written request for Pre-Final Inspection in accordance with the General Conditions, giving the PA at least 72 hours advance notice. *The Project Administrator will schedule the Pre-Final Acceptance Inspection and will prepare a list of deficient or incomplete items (Punch List) discovered during the inspection.* The Punch List will be transmitted to the Contractor for correction of the deficient or incomplete items. Following correction of the deficient or incomplete items and notification by the Contractor in accordance with the General and Special Conditions of the Contract, the Project Administrator and the Design Professional will conduct the Final Acceptance inspection.

6. Punch List: During Pre-Final or Final Acceptance inspections, Work that is found to be incomplete, needing repair or in Nonconformance with the contract requirements such as loose bolts, damage, unsatisfactory workmanship, etc., will be identified on a Punch List. The Punch List will be distributed to the Contractor, the A/E and the Inspector Team, by the Project Administrator in accordance with the General Conditions.

7. Final Acceptance Inspection: After the Contractor has completed all items on the Punch List (generated from the Pre-Final Acceptance Inspection) he shall request a Final Acceptance Inspection on a definite date. Seventy-two (72) hours advance notice shall be given to the PA. Upon verification by the A/E that the work is ready

for Final Inspection and Acceptance, the Owner will within ten calendar days make Final Inspection.

1.7 DEFICIENT AND NON-CONFORMING WORK:

A. General:

1. Workmanship or materials which are found to be not in conformance with the Contract Documents shall be identified with a Deficiency issued by the Contractor's Quality Control Manager.

2. TDCJ reserves the right to maintain a staff of inspectors for random sampling of the materials and the work for conformance to Contract Documents. This does not relieve the Contractor in any way from his responsibility of Quality Control.

3. The Quality Control Manager shall request the Contractor to take remedial actions via a Deficiency where indicated by nonconforming work or materials found by test results.

4. All deficiencies instituted by Contractor must include the proposed corrective action to be taken, and submitted to the A/E and the PA for approval.

1.8 QUALITY CONTROL OF PRODUCT DELIVERY:

A. Inspection of Products and Equipment to be incorporated into the work;

1. Products and equipment delivered to the project site shall be subject to inspection by the Quality Control Manager for conformance with the Contract Documents and Submittals, prior to incorporation into the Work. TDCJ inspectors may monitor the Contractor's inspection procedures.

2. All products and equipment furnished by TDCJ and delivered to the project site shall be inspected by a TDCJ Inspector and the Quality Control Manager for shipping damage, and for identification and quantity, prior to incorporation into the Work.

3. Items which are found to be in nonconformance with Contract requirements shall be identified, issued a Deficiency by the Quality Control Manager and segregated from accepted products and equipment. These items shall not be incorporated into the Work until corrective action acceptable to TDCJ and the A/E has been completed.

4. Special requirements for storage, handling and tracking of hazardous material shall be monitored in strict accordance with Materials Safety Data Sheet requirements.

5. Items which are determined to have been improperly shipped, stored, or handled shall be deemed deficient and shall not be incorporated into the Work until the manufacturer has inspected the item in question and determined the repair work or

corrective actions necessary to validate the product warranty or restore the product to like new condition, subject to approval of TDCJ.

1.9 DOCUMENTATION:

A. The Contractor shall maintain current records of quality control operations, activities, and tests performed, including the work of subcontractors and suppliers. These records shall be on the sample forms included herein and shall include factual evidence that required quality control activities and specified tests have been performed, including but not limited to the following:

1. Contractor/subcontractor and their area of responsibility.
2. Operating plant/equipment with hours worked, idle, or down for repair.
3. Work performed today, giving location, description, and by whom.
4. Test and/or control activities performed with results and references to Contract requirements. The control phase shall be identified (Preparatory, Initial, and Follow-up). List deficiencies noted along with corrective action.
5. Material received with statement as to its acceptability and storage.
6. Identify submittals reviewed, with contract reference, by whom, and action taken.
7. Off-site surveillance activities, including actions taken.
8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
9. Record instructions given/received in the field.

B. The Contractor shall submit all documentation to the TDCJ PA daily within 24 hours after the date covered.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, temporary cooling in selected areas, and security and protection facilities.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by TDCJ, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, TDCJ's construction forces, testing agencies, and authorities having jurisdiction.

B. Water Service: Water from TDCJ's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electrical Power: Electrical power shall be provided by TDCJ for construction activities. Provide connections and extensions of services as required for construction operations.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, and staging areas. This shall be approved by the Warden through the PA.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before TDCJ's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds or Conex boxes sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
B. HVAC Equipment: Unless TDCJ authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
   1. Arrange with utility company, TDCJ, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
   1. Provide holding tank temporary facility.
C. Water Service: Use of TDCJ's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to TDCJ. At Beneficial Occupancy, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

H. Telephone Service: Only Project Superintendent may carry a cell phone into unit with the Warden's permission.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds. Comply with NFPA 241.
2. Maintain support facilities until near Final Completion. Remove before Final Completion. Personnel remaining after Final Completion will be permitted to use permanent facilities, under conditions acceptable to TDCJ.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

D. Project Identification and Temporary Signs: Provide Project identification and other signs as required for direction of delivery personnel. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted. Signs shall be 4'x4' and are to be approved by A/E and TDCJ PA.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

F. Provide base material and supports to support the temporary office buildings, parking, and storage containers.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Storage Containers: Provide temporary storage containers for the storage of all construction material and any other construction related equipment. All storage container locations shall be pre-approved by the Warden through the PA.

F. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Final Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Final Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are property of Contractor. TDCJ reserves right to take possession of Project identification signs.
   2. At Beneficial Occupancy, clean and renovate permanent facilities used during construction period.

END OF SECTION

SECTION 01650

FACILITY START-UP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 REQUIREMENTS INCLUDED

A. Starting of systems.

B. System demonstrations and Owner personnel instruction for equipment and systems for which operating and maintenance data is required.

1.3 RELATED SECTIONS

A. General and Special Conditions of the Contract.

B. Contractor's Quality Control - Section 01440.

C. Operation and Maintenance Manuals - Section 01730.

D. Security Control Systems – Section 13775.

E. Common Work Results for Process Systems – Section 13400.

F. The requirements of this Section apply to the following:

1. Intercom Systems
2. CCTV Systems
3. Door Control Systems

1.4 QUALITY ASSURANCE

A. Instructors:

1. Qualified member(s) of installers' staffs and qualified authorized representative(s) of component, assembly, or system manufacturer(s).
2. Refer to individual specification sections for additional requirements.

1.5 PRESENTATION

A. Project information:

1. Submit separate report for each system or type of equipment, subject to Owner's approval.
   a. Submit completed report; one copy to the PA.
2. Submit Owner Instruction Schedule to Owner, 30 days prior to first instruction. Coordinate schedule with the PA.

1.6 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify A/E and the PA 7 days prior to start-up of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of responsible manufacturer's technical representative and Contractor's personnel in accordance with manufacturer's instructions.

G. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

1.7 DEMONSTRATIONS AND INSTRUCTIONS

A. Instruct Owner's personnel in operation, adjustment and maintenance of operating equipment, and systems and finish materials.
   1. Schedule instruction at times agreed upon by Owner in accordance with General and Special Conditions of the Contract.

B. Instruct Owner's personnel in proper maintenance of finish materials.

C. Amount of time to be devoted to instructions shall be reasonable and consistent with size and complexity of equipment and as necessary to adequately instruct Owner's personnel in proper, safe operating and maintenance of equipment.

D. Use operating and maintenance manual as basis of instruction. Explain use of operating and maintenance manuals.

E. Tour building areas involved and identify:
   1. Maintenance points and access.
   2. Control locations and equipment.

F. Explain operating sequences.
   1. Identify location and show operation of switches, valves, and controls, used to start, stop and adjust systems.
   2. Explain use of flow diagrams, operating sequence diagrams, and other instructions.
   3. Demonstrate operation through complete cycle(s) and full range of operation in all modes, including testing and adjusting relevant to operation.

G. Explain use of control equipment, including temperature settings, switch modes, available adjustments, reading of gages; and functions that must be serviced only by authorized factory representatives.

H. Explain trouble shooting procedures.
   1. Demonstrate commonly occurring problems.
   2. Note procedures which must be performed by factory personnel.

I. Explain maintenance procedures and requirements.
   1. Identify items requiring periodic maintenance.
   2. Demonstrate typical preventive maintenance procedures and recommended typical maintenance intervals.
   3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
   4. Identify maintenance materials to be used.

J. Furnish tools required.

K. Contractor shall be required to provide training in accordance with schedule established by TDCJ through the PA, determined by the availability of personnel at the institution.

L. As part of the operator's training, one lesson plan shall be devoted to reviewing of the video disks recorded of the instruction per Specification Sections 13775 and 13432.
M. Duration: Dependent on system/equipment complexity. The conclusion of the training sessions shall be prior to system start-up and operation.
N. Instructors: Qualified manufacturer's representative(s).

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 DESCRIPTION

A. Comply with requirements stated in General and Special Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

B. Time of closeout is directly related to Pre-Final Inspection or Certificate of Beneficial Occupancy, and Final Inspection and Acceptance.

1.3 RELATED REQUIREMENTS

A. Fiscal provisions, legal submittals and additional administrative requirements – General and Special Conditions of the Contract.

B. Final Cleaning Up - Section 01710.

C. Project Record Documents - Section 01720.

D. Operation and Maintenance Manuals - Section 01730.

E. Warranties, bonds and closeout submittals required for specific products or work. Respective Specification Sections for that work.

1.4 PREREQUISITES TO PROJECT CLOSEOUT

A. Inspection Procedures:

1. Pre-Final Inspection: A Pre-Final Inspection shall be required for work for which there has been no Certificate of Beneficial Occupancy issued in accordance with Article X(10) of the General and Special Conditions of the Contract. Refer to Article X(10) of the General and Special Conditions of the Contract, paragraphs 10.1 and 10.2, for procedures. Note that prior to the pre-final inspection, Contractor is to perform his own inspection and punch list and provide this list of deficiencies to the TDCJ PA and A/E for their reference and review during the pre-final inspection.

2. Final Acceptance Inspection: Refer to General and Special Conditions of the Contract, paragraph 10.3, for procedures.

1.5 CLOSEOUT SUBMITTALS

A. At time of Pre-Final Inspection, submit following:

1. Project Record Documents: To requirements of Section 01720.

2. Operating and Maintenance Data, Instructions to Owner's Personnel: To requirements of Section 01730 and to Respective Specifications requiring specific warranties.

3. Warranties and Bonds: To requirements of General Conditions, Section 01740 and respective Specifications requiring specific warranties.

B. Prior to final payment, submit following:

1. Evidence of Payment and Release of Liens: To requirements of General and Special Conditions of the Contract.

2. Certificate of Insurance for Products and Completed Operations.

3. Other written evidence or documentation required by General and Special Conditions of the Contract.

1.6 FINAL APPLICATION FOR PAYMENT

A. Upon execution of Final Completion certificate by Owner and A/E, Contractor shall submit final Application for Payment in accordance with procedures and requirements stated in the General Conditions.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

SECTION 01710

FINAL CLEANING UP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 REQUIREMENTS INCLUDED

A. Final cleaning at completion of Work.

1.3 RELATED REQUIREMENTS

A. Cleaning up required for specific Products or Work: Specification Section for that Work as well as General and Special Conditions of the Contract.

1.4 DESCRIPTION

A. Execute final cleaning prior to pre-final inspection for final completion of each designated portion of the Work.

1.5 REGULATORY REQUIREMENTS

A. Fire Protection: Store volatile waste in covered metal containers and remove from premises daily.

B. Pollution Control: Conduct clean-up and disposal operations to comply with local codes, ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on the project site is prohibited.

2. Disposal of volatile fluid wastes, (such as mineral spirits, oil or paint thinner), in storm or sanitary sewer systems or into streams or waterways is prohibited.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Use only cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials recommended by manufacturer of surface to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. In addition to removal of debris and cleaning specified in other sections, clean interior and exterior sight exposed surfaces.

B. Employ skilled Workmen for final cleaning.

C. Remove grease, mastics, adhesives, dust, dirt, stains, labels, fingerprints and other foreign materials from sight exposed interior and exterior surfaces and finishes.

D. Repair, patch and touch up marred surfaces to match adjacent finishes.

E. Remove waste, debris, and surplus material from site. Clean grounds; remove stains, spills and foreign substances from paved areas. Broom clean paved surfaces; rake clean other surfaces of grounds.

F. Clean surfaces of equipment; remove excess lubrication.

G. Prior to final inspection, conduct an examination of sight-exposed interior and exterior surfaces, and all Work areas, to verify that entire Work is clean. Maintain cleaning until Final Acceptance.

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Maintenance and submittal of Record Documents.

1.2 RELATED REQUIREMENTS

A. Contract Closeout - Section 01700.

B. Operating and Maintenance Data - Section 01730.

C. General and Special Conditions of the Contract.

1.3 MAINTENANCE OF DOCUMENTS

A. Maintain at site one record copy of following: Contract Drawings, Specifications, Addenda, reviewed Shop Drawings and Product Data, Change Orders and other Modifications to Contract, field test reports, supplemental instructions and certifications.

B. Store documents in field office, apart from other documents used for construction. Provide files and racks for storage of documents.

C. Do not use Record Documents for construction purposes.

D. Make documents available at all times for inspection by A/E and TDCJ.

E. Label each document, "PROJECT RECORD" in two-inch-high printed letters.

1.4 RECORDING

A. Keep Record Documents current with construction progress. Post and update weekly.

B. Do not conceal any work until required information is recorded.

C. Record information on a set of Contract Drawings and Project Manual.

D. Contract and Shop Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.

2. Mark new information that is important to TDCJ, but was not shown on Contract Drawings or Shop Drawings. Also legibly mark to record actual construction:

   a. Depths of various elements of foundation and drilled piers in relation to first floor datum.

3. Note related Change Order numbers where applicable.

4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

5. Contractor shall provide shop drawings indicating system lay-out and point to point wiring diagrams showing each device with wiring connection that are required. Provide shop drawing for intercom system, CCTV system and door control system. Refer to individual specification for additional requirements.

6. Upon completion of the Work, submit record and shop Drawings to the A/E for TDCJ's records.

E. Specifications and Addenda: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data. Upon completion of work, submit to A/E for TDCJ's records. Legibly mark each section.

F. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in the actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications. Upon completion of mark-up, submit complete set of record Product Data to the A/E for the TDCJ's records.

G. Record Sample Submitted: Immediately prior to the date or dates of Final Inspection, the Contractor will meet at the site with the A/E and the TDCJ's personnel to determine which of the submitted Samples have been maintained during progress of the Work are to be transmitted to TDCJ for record purposes. Comply with delivery to the TDCJ's Sample storage area.

H. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Final Inspection complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the A/E for the TDCJ's records.

1.5 SUBMITTALS

A. At Contract close-out, deliver one copy of Record Documents to A/E for TDCJ.

B. Accompany submittal with transmittal letter in duplicate, containing: date, project title and number, Contractor's name and address, title and number of each Record Document and signature of Contractor or his authorized representative.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01730

OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 WORK INCLUDED

A. Prepare a complete and detailed Operation and Maintenance Manual for each type and model of product furnished and installed under this contract.

B. Prepare the manuals in the form of an instruction manual for TDCJ.

C. Provide complete and detailed information specifically for the products or systems provided for this project. Include the information required to operate and maintain the product or system.

D. Manuals are to be in addition to any information packed with or attached to the product when delivered. This information is to be taken from the product and provided as an attachment to the manual.

E. Manuals are to be delivered at the pre-final phase of construction.

1.3 GUARANTEES

Provide copies of the Manufacturer's warranties, guarantees, or service agreements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Print manuals on heavy, first quality paper.

1. Paper shall be 8-1/2" x 11" paper.

a. Reduce drawings and diagrams to 8-1/2" x 11" paper size.

b. When reduction is not practical, fold drawings and place each separately in a clear, super heavy weight, top loading polypropylene sheet protector designed for ring binder use. Provide a typed identification label on each sheet protector.

2. Punch paper for standard three-ring binders.

3. Binders are to have clear front, back, and spine covers.

4. Sheet lifters are to be provided.

5. Minimum size is 2" capacity. Maximum size is 3" capacity.

B. Provide tab indexes for each section of the manual.

1. Indexes are to be constructed of heavy-duty paper with a reinforced binding edge and punched holes to fit the binders.

2. Index is to have clear insertable tabs or may have clear tabs for a typed insert.

PART 3 - EXECUTION

3.1 MANUAL ORGANIZATION AND CONTENTS

A. Provide a Table of Contents listing each section of the manual for each product or system

1. Identify each product or system using the nomenclature shown in the Contract Documents.

2. Assign a number and letter to each section in the manual.

a. Assign a number to each product or system. The number is to correspond to TDCJ's equipment numbering system or other system designated by TDCJ's Representative.

b. A cross reference is to be provided for TDCJ's numbering system and designations for equipment indicated in the Contract Documents.

3. Provide index tabs for each section in the manual.

4. The designation on each index tab is to correspond to the number and letter assigned in the Table of Contents.

B. Include only the information that pertains to the product described. Annotate each sheet to:

1. Clearly identify the specific product or component installed.

2. Clearly identify the data applicable to the installation.

3. Delete reference to inapplicable information.

C. Supplement manual information with drawings as necessary to clearly illustrate relations of component parts of equipment and systems, and control and flow diagrams.

D. Identify each manual by placing a printed cover sheet in the front cover of the binder and as the first page in the manual. The first page is to be placed in a clear polypropylene sheet protector. The information on first page and the cover page are to include:

1. Name of TDCJ
2. Project Name
3. Volume Number
4. The Table of Contents for that Volume

E. Insert the Table of Contents into the spine of each manual.

F. Manuals for several products or systems may be provided in the same binder.

1. Sections for each product or system must be included in the same binder.
2. Sections must be in numerical order from volume to volume.

G. Correlate the data into related groups when multiple binders are used.

H. Fill binders to only 3/4 of their indicated capacity to allow for addition of materials to each binder by TDCJ.

3.2 EQUIPMENT AND SYSTEMS MANUAL CONTENT

Manual shall provide the following information:

A. A description of the unit and component parts.

B. Operating instructions for startup, normal operations, regulation, control, shutdown, emergency conditions, and limiting operating conditions.

C. Maintenance instructions including assembly, installation, alignment, adjustment, and checking instructions.

D. Troubleshooting guide.

E. Schedule of routine maintenance requirements.

F. Description of sequence of operation by the Control Manufacturer.

G. Warning for detrimental maintenance practices.

H. Parts lists including:

1. Part numbers for ordering new parts.
2. Assembly illustrations showing an exploded view of the complex parts of the product.

3. Predicted life of parts subject to wear.

4. List of the Manufacturer's recommended spare parts, current prices with effective date and number of parts recommended for storage.

5. Directory of a local source of supply for parts with company name, address, and telephone number.

6. Complete nomenclature and list of commercial replacement parts.

I. Outline cross section and assembly drawings, engineering data, test data, and performance curves.

J. Control schematics and point to point wiring diagrams prepared for field installation, including circuit directories of panel boards and terminal strips.

K. List of identification nameplates installed on equipment and valve identification.

L. Other information as may be required by the individual sections of the specifications.

3.3 ELECTRICAL AND ELECTRONICS SYSTEMS MANUAL

Manual shall provide the following information:

A. A description of the systems and component parts.

B. Control schematics and point to point wiring diagrams prepared for field installation. Include circuit directories of panel boards and terminal strips and as installed color coded wiring diagrams.

C. Operating procedures, maintenance procedures, and the Manufacturer's printed operating and maintenance instructions.

D. List of the Manufacturer's recommended spare parts, current prices with effective date, and number of parts recommended for storage.

E. Other information as may be required by the individual sections of the specifications.

3.4 LIST OF SERVICE ORGANIZATIONS

Provide a directory of authorized service organizations with company name, address, telephone number, and the contact person for warranty repair.

3.5 SUBMITTALS

A. The Manuals shall be prepared in final draft form and sent to the A/E for review and approval prior to training sessions.

B. Contractor/Subcontractor shall revise Manuals after receipt of review comments made by the A/E to correct deficiencies uncovered in on-site training sessions.

C. Submit six copies of revised and corrected Manuals.

END OF SECTION

SECTION 01740

WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 GENERAL

A. Compile specified warranties.

B. Review to verify compliance with Contract Documents.

C. Warranties shall be written in the name of TDCJ.

1.3 RELATED REQUIREMENTS

A. General Warranty of Construction - - Agreement and Conditions of the Contract.

B. Warranties and Certificates for specific products - Each respective Specification section.

C. Contract Closeout - - Section 01700.

D. Operation and Maintenance Manuals – Section 01730.

1.4 WARRANTY DATES

A. Unless otherwise stated in Contract Documents, warranties shall commence on the date of Final Acceptance or if requested by TDCJ through the PA, on date of Beneficial Occupancy for entire work or designated portion thereof.

1.5 SUBMITTAL REQUIREMENTS

A. Assemble warranties and certificates executed by each of respective manufacturers, suppliers and subcontractors.

B. Number of original signed copies required: 2 each.

C. Table of Contents: Neatly typed, using Table of Contents of Project Manual as format.

D. Provide complete information for each item.

1. Name and location of project.

2. Name and address of Contractor.

3. Product, equipment or system.

4. Firm, with name of principal, address and telephone number.

5. Scope.

6. Date of beginning and duration of warranty.

7. Provide information for TDCJ's personnel:

   a. Proper procedure in case of failure.

   b. Instances which might affect validity of warranty.

1.6 FORM OF SUBMITTALS

A. Assemble warranties and certificates in two separate 3-ring binders.

B. Format:

1. Size: 8-1/2 in. x 11 in., fold larger sheets to fit into binders.

2. Indexing: Tabbed fly-leaf for each separate product or system.

3. Identification: Each cover and spine printed with "WARRANTIES" and project title.

C. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers, custom printed.

1.7 TIME OF SUBMLTTALS

A. For equipment or component parts of equipment put into service during progress of construction: Submit documents within 10 days after inspection and acceptance.

1.8 SUBMITTALS REQUIRED

A. Submit warranties as specified in respective sections of Specifications.

1.9 WARRANTY PROVISIONS - GENERAL

A. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

B. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

C. Reinstatement of Warranty: When Work covered by warranty has failed and been corrected by replacement/rebuilding, reinstate warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with equitable adjustment for depreciation.

D. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether TDCJ has benefited from use of the Work through a portion of its anticipated useful service life.

E. Owner's Recourse: Written warranties made to TDCJ are in addition to implied warranties, and shall not limit the duties, obligations, right and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which TDCJ can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: TDCJ reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

F. TDCJ reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on all/part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

G. Spare parts provided to TDCJ with original installation shall not be used for Warranty repairs/replacements.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01750
SPARE PARTS AND MAINTENANCE MATERIAL

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for storage, handling, and delivery of spare parts and maintenance materials.

1.2 RELATED REQUIREMENTS

A. Contract Closeout Procedures - Section 01700.
B. Operation and Maintenance Manuals - Section 01730.

1.3 PRESENTATION OF SUBMITTALS

A. Contract Closeout Information:
1. Spare Parts: To TDCJ with letter of transmittal.
2. Maintenance Materials: To TDCJ with letter of transmittal.
3. Extra Materials: To TDCJ with letter of transmittal.

1.4 PRODUCTS REQUIRED

A. Provide to the PA, quantities of spare parts and tools, maintenance materials, and extra material as specified in individual specification sections.
B. Spare Parts and Tools: Package in clearly identified boxes.
1. Indicate manufacturer's name, part name and stock number.
2. Indicate piece of equipment for which part or tool is intended.
3. Indicate name, address and phone number of closest supplier.
4. Indicate specification number.
C. Maintenance Materials: Package in clearly identified boxes.
1. Indicate trade name and stock number.
2. Indicate for which item material is to be used.
3. Indicate name, address and phone number of closest supplier.
D. Extra Materials: Package in clearly identified containers, or install where indicated.
1. Provide products identical to those installed in Work. Include quantities in original purchase from manufacturer to avoid variations in manufacture.
2. Indicate trade name, stock number, size, color.
3. Indicate where product is to be used.
4. Indicate name, address and phone number of closest supplier.

1.5 DELIVERY

A. Deliver to the PA at time of Beneficial Occupancy or Pre-Final Inspection.
B. Deliver to location on site as directed by the PA.
C. Obtain receipt for delivered materials.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 12910

CONTROL ROOM CONSOLES AND FURNISHINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control room furnishings.

1.02 SUBMITTALS

A. Shop Drawings and Product Data with material samples, showing furnishing layouts, dimensions, model numbers, hardware, trim, and accessories.

B. Color/pattern samples:
1. Submit samples for Owner's approval upon award of Contract and shall include console laminate.
2. Samples submitted shall have minimum dimensions of 1' x 1'.
3. Minimum of 5 samples for each item identified above.
4. Samples shall be suitable to be matched together.

1.03 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacture and installation of control room or office furnishings with minimum of 5 years experience.

B. Manufacturer's product test data, performed and certified by independent testing agency, showing that product meets specified manufacturer's product.

C. Furnishings shall be suitable for use in control room environment manned 24 hours per day on continuous basis.

PART 2 PRODUCTS

2.01 EXISTING CONTROL ROOM CONSOLE MODIFICATIONS AND ACCESSORIES

A. Central control consoles:
1. Quantity: 1 section.
2. Key dimensions: As indicated on Drawings.

B. South Picket console:
1. Quantity: As required for area indicated on Drawings.
2. Key dimensions: As indicated on Drawings.

C. North Picket console:
1. Quantity: As required for area indicated on Drawings.
2. Key dimensions: As indicated on Drawings.

D. Table top work surface:
1. Thickness: 1" (minimum), 1-1/4" (maximum).
2. Material: MDF core laminate.
3. Color: Provide samples for TDCJ selection.

E. Table top stand: Provide supporting structure for mounting table top work surface in central control and each picket.

F. Drawers: Provide pencil drawers to be mounted under new console tops.

G. Accessories:
   1. Mounting brackets to brace console tops.
   2. Grommet and cable hole covers.
   3. Drawer hardware including slides and rollers.
   4. Console top convenience outlet:
      a. Quantity:
         1) Central Control: 3.
         2) North Picket: 3.
         3) South Picket: 3.
      b. Type: Pop-up convenience outlet.
      c. Configuration: 2 power outlets.
      d. Extension cord: 10'.
      e. Manufacturer: Glenbeigh BY-BE02137-C-20-DZA-120, or A/E approved equal.

H. Arrangement and location: Coordinate with TDCJ prior to installation.

I. Manufacturers: Formica, Wilsonart, or equivalent products from other manufacturers are acceptable.

PART 3 EXECUTION

3.01 INSTALLATION

A. Console: Assembly of console shall be accomplished without need of welding.

B. Install in accordance with manufacturer's instructions and as identified on Drawings.

C. Replace damaged material.

D. Protect furnishings until accepted by Owner.

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13400

COMMON WORK RESULTS FOR PROCESS SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Basic control system requirements for furnishing hardware, unconfigured software, configuration and programming, training, testing, startup and commissioning.

1.02 WORK BY OTHERS

A. None.

1.03 DEFINITIONS

A. Terms defined to describe use and performance of instruments used process industry and in accordance with ISA SP51.1 as follows:
   1. Accuracy: Degree of conformity of indicated value to a recognized accepted standard value, or ideal value.
   2. Availability: Ability of device or system to be used or acquired over a period of time.
   3. Redundancy: Amount of duplication for purpose of preventing failure of entire system upon failure of single component.
   4. Reliability: Probability that a device or system will perform its objective adequately, for period of time specified, under operating conditions specified.
   5. Repeatability: Ability to reproduce, among a number of consecutive measurements, output for same operating conditions, approaching from same direction for full range traverses.

B. Network diagram: Diagram detailing major components and communication interconnections of system. Diagrams shall show interfaces between equipment, communication highway details including differentiating between fiber optics and copper cables, and listing communications protocols.

1.04 ACTION SUBMITTALS

A. Prior to construction: Control system network diagrams, Control Panel Layout Drawings, and Bill of Materials.

B. During construction: Detailed connection diagrams for network communications.

1.05 INFORMATIONAL SUBMITTALS

A. Training plan containing course outlines and schedules for training to be provided on-site.

B. Factory demonstration test procedure.

C. Factory test schedule: Provide agenda for factory testing listing sequence in which system components shall be checked.

1.06 CLOSEOUT SUBMITTALS

A. Operation and maintenance manual, for information only:
   1. Complete instruction manuals and parts lists covering installation, operation, and maintenance of panel-mounted devices. Manuals shall include interface drawings defining terminal numbers and functions for interface with other instruments and equipment.

2. Schematic and wiring diagrams for each panel and enclosure. Show color of wire, termination points, terminal numbers, cable, and wire numbers.
3. Manufacturer's data and or specification sheets for control system equipment, showing design parameters, equipment catalog designations, calibration range, features and options provided. All sheets shall be identified with corresponding identification numbers.

B. Prior to project closeout:
1. Final operation and maintenance manuals.
2. Provide submittals updated to reflect "as-built" conditions.

1.07 QUALITY ASSURANCE

A. Qualifications:
1. Contractor shall be certified under International Standards Organization (ISO9001) Quality Guidelines.
2. System integrator: Company specializing in programming systems specified with minimum 5 years documented experience. Contractor shall demonstrate minimum of 5 years experience for projects of similar size and complexity involving control systems with continuous process operation, PID loop control, data communications, graphic screens and reports in similar applications.

B. After functional testing is witnessed by Owner or A/E representative, necessary corrections shall be made to system to satisfaction of Owner before system is shipped.

C. Manufacturer's qualifications: Contractor shall use manufacturers who's equipment will continue to be manufactured for a period of at least 3 years or who will maintain a stock of compatible spare parts for a period of 10 years after startup of control system.

D. Regulatory requirements: Work shall be in accordance with applicable requirements of following codes and standards.
1. Electronic Industry Association (EIA) 232-D – Interface Between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange
2. Institute of Electrical and Electronic Engineers (IEEE)
   a. ANSI/IEEE C37.90.1 – Standard Surge Withstand Capability (SWC) Tests for Protection Relay Systems
   b. ANSI/IEEE C37.90.2 – Trial Use Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Trans-receivers
3. National Fire Protection Association (NFPA):
   a. 70 – National Electrical Code
   b. 85 – Boiler and Combustion Systems Hazards Code
4. National Electrical Manufacturer's Association (NEMA):
   a. AB-1 – Molded Case Circuit Breakers
   b. ICS-1 – General Standards for Industrial Control and Systems
   c. ICS-2 – Standards for Industrial Control Devices, Controllers and Assemblies
   d. ICS-4 – Terminal Blocks for Industrial Use
   e. ICS-6 – Enclosures for Industrial Controls and Systems
5. International Society of Automation (ISA):
   a. ANSI/ISA-50.00.01 – Compatibility of Analog Signals for Electronic Industrial Process Instruments
   b. ANSI/ISA-51.1 – Process Instrumentation Terminology.

1.08 SITE CONDITIONS

A. Environmental design conditions.
1. Outdoor:
   a. Temperature: -20 to 120°F.
   b. Humidity: 10 to 100%.

2. Indoor:
   a. Temperature: 50 to 110ºF.
   b. Relative humidity: 10% - 90%, noncondensing.

B. Electrical supply characteristics: UPS-provided, 120-volt, single-phase, 60 Hz.

C. Control signals:
   1. Analog:
      a. Voltage: 24-volt dc.
      b. Range: 4 to 20 mA.
      c. Load impedance: 0 – 750 ohms, minimum.
   2. Discrete:
      a. Voltage: 120-volt ac, 24-volt dc.
      b. Contact type: Form C (1 NO, 1 NC), minimum.
      c. Rating: 2 amperes at 30-volts dc, minimum.

1.09 WARRANTY

A. Manufacturer's warranty:
   1. Warranty shall not begin until acceptance after final inspection of system by Owner.
   2. Specified availability shall be maintained throughout warranty period. Failure to achieve specified availability may at Owner option result in extension of warranty period until specified performance has been met for a continuous period equivalent to warranty period.

B. Special warranty (provide as alternate pricing and not part of base bid):
   1. Provide extended warranty for software and firmware supplied. Warranty shall provide parts and maintenance for installed system to Owner for period extending through startup and acceptance period of plant and for period extending 5 years beyond that date.
   2. Warranty provisions of license agreement shall cover system software and firmware including any third party software supplied with system.
   3. Provide telephone support service for period beginning with delivery of equipment and extending throughout software warranty period. Service shall provide telephone consultation services as required on operation, configuration development, trouble shooting, and maintenance of system hardware or software by persons in Contractor's organization who are thoroughly familiar with equipment and software supplied.

C. Extended correction period: Provide post-warranty software maintenance program. Program shall provide operating and configuration software upgrades for installed system to client for a period extending through startup and acceptance period of plant and for a period extending 5 years beyond that date.

1.10 LICENSE

A. Assign standard software license to Owner for software provided upon initial installation of each software component. Software licenses shall be issued in Owner's name and transferred without restrictions to Owner upon completion of Project.

B. Extend to Owner all rights of software purchase including telephone support during warranty period.

PART 2 PRODUCTS

2.01 SYSTEM REQUIREMENTS

A. System operation shall maintain constant duty cycle regardless of upsets, operator activities, or remote access of system from LAN.

B. Process variables shall be scanned, limit checked, broadcast and updated on monitor displays each second, synchronously.

C. Software maintenance functions shall not affect any drop in system except during download procedures.

D. System components shall be of solid-state, standardized, modular, plug-in construction. Modules shall be removable without need for rewiring.

E. Equipment shall be provided with operation indicating lights, test panels and other features to assist in testing and diagnostics. On-line self-diagnostic routines shall run automatically and notify operator of any malfunctions and location of malfunction.

F. Owner shall receive latest hardware technologies until equipment is purchased.

G. Provide special tools, test equipment, and software required for system installation, operation, and maintenance.

H. Expandability:
   1. System shall be expandable and easily changeable using "fill-in-the-blank" software.
   2. Expandable by addition of more drops. Addition of drops and new functions shall not affect existing operations and shall not degrade current performance.
   3. Expansion shall include addition of:
      a. Field equipment such as process controllers, local I/O modules, remote I/O communications modules, remote I/O modules, and serial interfaces to peripheral devices.
      b. Operator/engineering interface equipment such as operator workstation, engineering workstation, monitors, printers, and data archiving devices.
      c. Configuration additions such as I/O points, control loops, alarming, logging, performance calculations, environmental monitoring, graphics displays, sequence of events reporting, and historical data collection.
      d. Remote monitoring of system from existing LAN.
   4. Define overall system limitations proposed in terms of total I/O and update rates under all operating conditions.
   5. Expansion of system shall be implemented with hardware and software identical to that of base system if at all possible, or at a minimum shall be totally compatible with original system.

I. Reliability:
   1. Control system shall operate in power plant environment with high degree of reliability.
   2. Hardware shall consist of latest solid-state technology and packaged to operate in environment required.
   3. Control software shall implement simple, predictable, high-level task-specific organizations of modules.
   4. Failure of one drop will not affect any other drop in system.
   5. On-line diagnostics shall be provided to disconnect drop from process data highway should malfunction occur.
   6. Diagnostics shall be provided to quickly define failed part. Graphical representation for card-level diagnostics shall be provided.

J. Maintainability:
   1. Materials and equipment shall be standard products of reputable manufacturer regularly engaged in production of same. Where more than one unit of same item is required, items provided shall be identical.
   2. Contractor shall define number of different printed circuit cards, power supplies, and connectors required in system.
   3. Maintenance procedures shall be simple, straightforward and well documented.
   4. Software tools required to maintain, expand, reconfigure, and reload system shall be provided with each workstation.

K. Communications:
   1. Communication system shall provide redundancy such that single failure does not affect operation.
      a. Process data highway failure shall be reported to system immediately.
      b. System shall be capable of automatic detection and wrapping.
   2. Provide redundant process data highway. Process data highway shall be high-speed utilizing dual bus/star topologies, in accordance with ANSI 802.3.
   3. Highway data communication:
      a. Communication bus: Distributed controllers shall be interconnected with high-throughput network.
      b. Redundancy: Simplex Network shall utilized copper media backbone.
      c. Communication processors: Separate data highway network interface cards at each drop shall handle inter-drop communication and data transmission.
      d. Communication rate: Up to 100 MB/sec, sufficient to support at least 200,000 periodic data point values each second. Process variable information shall be available to every drop in system at least every 100 milliseconds.
      e. Communication media: Data highway backbone shall be copper or fiber optic media. Communication between highway and drops shall be copper or fiber optic media as required to meet system speed requirements.
      f. Communication protocol: Data highway communication shall use both synchronous and asynchronous modes.
      g. Reliability: No single drop point of failure shall disable any part of data highway. Self-diagnostics shall cause any drop to disconnect itself from system upon detection of any unrecoverable error.
   4. Management information communication:
      a. Communication Bus: Workstations shall interconnect to process data highway for new LAN. It shall be possible for remote devices to interconnect via bridges, switches, or routers.
      b. Communication protocol: Network shall be TCP/IP compliant.
      c. Redundancy: When used in redundant configuration network shall be capable of automatic error detection and wrapping when failure of primary bus or device is detected.

2.02 PERFORMANCE REQUIREMENTS

A. Accuracy: System shall report values conforming to standard values indicated by field instruments.

B. Availability: Overall system availability (operator workstation to field instruments) shall be 99% over 30-day test period. System is defined as available during periods where redundant component is out of service and network is still functional.

C. Reliability: Overall system reliability shall be 99% over 30-day test period.

D. Repeatability: System shall produce consistently acceptable results over 30-day test period.

E. Screen access and update within network shall be less than 2 seconds.

2.03 SOURCE QUALITY CONTROL

A. Prior to shipment of control equipment hardware and software, Owner and Engineer shall witness performance tests at Contractor's manufacturing facility.

B. Contractor shall be responsible for hardware and software provided for Contract and shall notify Owner and Engineer, in writing, when it is considered complete, in good operating condition, and ready for performance tests.

C. Testing costs:
   1. Pre-tests: Costs of conducting tests shall be borne by Contractor.
   2. Factory demonstration test:

a. Include cost of conducting factory demonstration test in Bid.
b. Owner will include cost of up to 3 persons including round trips for 5-day duration to Contractor's facility for factory demonstration tests.
c. Owner and Owner' Representative will each render bill to be paid by Contractor covering costs incurred by retesting or supplemental testing exceeding limits noted herein.
d. Billings to Contractor for Owner and Owner' Representative costs for retesting and supplemental testing exceeding limits noted herein shall be paid directly to Owner or Owner' Representative, as appropriate, within 30 calendar days from receipt by Contractor. Contractor's failure to pay such billings shall be cause for withholding final payment in amount equal to such costs.
e. Owner' Representative costs, when applicable, will be determined at Owner's Representative current per diem rates, plus direct expenses.

D. Factory demonstration tests:
1. Contractor's factory demonstration test shall include but not be limited to following requirements as described herein.
2. Visual inspection.
   a. Verify correctness of required tag identification of each system component and accessory including system processors, enclosures, peripherals, cabling, I/O boards, circuit breakers, power supply terminals, etc.
   b. Verify physical appearance and workmanship, hardware redundancy, furnished spare allocations and expandability conforms to specifications.
   c. Verify equipment is complete, marked and located according to parts lists, cabinet layouts and termination schedules.
   d. Check cable bundles, plugs and sockets, termination blocks and equipment racks and connections are clearly labeled.
3. Demonstration test:
   a. Input/output points: Confirm point-to-point wiring by continuity and verify database addressing, ranges, and alarm assignments by simulating one I/O point per I/O module at termination unit and viewing response on operator workstation. If any I/O point fails testing outlined above, Owner or Engineer reserves right to test points on associated I/O module.
      1) Analog inputs scaling, engineering unit values, and scan rates shall be verified. While cycling through input span, database alarm functions shall be demonstrated by noting graphic displays, alarm displays, and hard copy alarm documentation when alarm limits are exceeded.
      2) Analog output values shall be checked.
      3) Digital inputs shall be toggled to confirm status change and scan rate. Database linkages shall be verified by observing associated display data fields while changing state of database points and noting changes in state/color in respective fields. If alarms are generated, verify alarm listings and hard copy documentation.
      4) Digital output shall be checked.
   b. Demonstrate functionality of each control strategy.
      1) Use functional descriptions and control logic diagram.
      2) Simulate analog and discrete inputs as well as operator commands to demonstrate functionality of each control loop and sequence including both manual and automatic modes.
      3) Verify output signals response in proper direction and magnitude.
      4) Verify override and interlock logic.
      5) Verify action of controllers in both manual and automatic modes.
   c. Demonstrate functionality of digital communication interfaces:
      1) Verify communication interface with PLCs by forcing values in control program and monitoring response from operator workstation.
      2) Approximately 10% of values will be verified.
   d. Demonstrate on-line diagnostic capabilities including performance information statistics of stations and peripheral equipment.
   e. Demonstrate data management functions including one display of each type. Owner to select displays and trends to be demonstrated.

1) Review graphic display displays for content and verification of data field linkages.
2) Include verification that data collection occurs and that data collected and stored can be retrieved and displayed in form of reports or historical trends.
3) Simulated input data shall also be used to generate sample reports to confirm report format, calculation algorithms, and reporting frequencies.
4) Check trend displays during testing period.

f. Demonstrate system report generation including one specific report and one overall plant report. Owner will select report to be demonstrated.
1) Report content shall be verified to insure proper linkages, format, calculations and reporting frequencies.
2) Report format and logging capabilities shall be verified by introduction of real time data into database.
3) Report content shall be verified to insure proper linkages, format, calculations and reporting frequencies.

g. Demonstrate effects of system malfunctions on process controls.
1) Check power and grounding systems according to drawings. With main power disconnected, test earth grounds on power supply system be checking that there is an open circuit between cabinet frame and power rails.
2) Disconnect primary power supply to one of power modules in power supply systems. System should be unaffected in operation and supply failure alarm should be generated to operator for each system.
3) Disconnects highways and field buses to verify operation of redundant highway maintains system performance and a highway failure or backup highway selected alarm is generated.
4) Check redundant cards to verify that backup cards maintain system performance and appropriate alarm is generated.
5) Check that system properly reboots after power outage.

4. After factory demonstration testing, witnessed by Owner and Engineer, necessary corrections shall be made to system to satisfaction of Owner before system is shipped.

E. Tests results:
1. If system fails to perform properly:
a. Make necessary changes and adjustments to equipment.
b. Notify Owner and Engineer when system is ready for retesting.
c. Repeat factory demonstration testing at no cost to Owner or impact to project schedule.
2. If testing is substantially correct with minor defects, Contractor shall verify deficiencies are corrected in writing to Owner and Engineer.
3. Upon completion of hardware factory demonstration testing, Contractor shall submit certificate of test performance and compliance to Owner and Engineer.
4. Upon completion of application software application factory demonstration testing, Contractor shall submit certified copy of test results to Owner and Engineer. Included shall be a statement that system and application software have been tested and operate in accordance with specifications.

PART 3 EXECUTION

3.01 TRAINING

A. Provide training at Owner's site facilities following site acceptance tests. Training shall include aspects of operator's interface, system operation, and maintenance. Purpose of training session will be to answer questions by operations and maintenance personnel, which have arisen out of initial use of system during site acceptance.

B. Furnish training programs to train Owner' personnel in administration, configuration, operation, and maintenance of control system. Contractor shall provide basic required training and recommend additional training programs for Owner.

C. Two separate training programs shall be developed. Sessions shall be presented as operational training (2 sessions) and maintenance and configuration training (1 session). Training programs shall be conducted for numbers of personnel as listed below.
   1. Operator Training Group A: 3 personnel.
   2. Operator Training Group B: 3 personnel.
   3. Maintenance and configuration training:
      a. 3 maintenance technicians/personnel.
      b. 3 engineers/personnel.

D. Provide following quantities of training:
   1. Operator Training Group A: 40 hours.
   2. Operator Training Group B: 40 hours.
   3. Maintenance and Configuration Training: 40 hours.

E. Provide copies of training material for Owner.

F. Provide training to familiarize Owner' personnel with system. Training shall be oriented toward installed equipment and software and satisfy requirements for following.
   1. General training: Familiarize project management personnel, engineers, operators, and maintenance personnel with control system overview, philosophy, major hardware components, reporting, and data retrieval.
   2. Operator training:
      a. System equipment operation, both individually and collectively as operating system.
      b. Procedures required to operate and to modify each process from operator's workstation.
      c. Normal and abnormal startup and shutdown operating conditions.
      d. Operator/control system interactions in conjunction with use of process information system functions.
   3. Programmer training:
      a. Use and modify programs, as desired, during plant operation.
      b. Compose and generate required monitor-based process graphics and report/log formats.
      c. Write, edit, file, delete, and apply applicable programming language and high-level process control language programs necessary to implement control system and process information functions.
      d. Function and use of support and application software.

G. Training shall be taught by person with significant training experience. Instructor and course materials shall be approved in advance of training.

H. Tuition costs associated with training shall be included with Bid. For on-site training, food, lodging, and travel expenses for trainer shall be included.

I. Courses shall be scheduled such that courses do not overlap to allow same personnel to attend more than one training course.

J. Training shall be scheduled by system supplier minimum of 60 days in advance of start of training.

END OF SECTION

1) D. D. Erikson
2) T.J. Mergen

SECTION 13432

PROCESS CONTROL PANELS AND HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control panels and enclosures completely assembled with electrical controls mounted and wired for manufacturer's equipment.

B. Console operator interface station and enclosure completely assembled with electrical controls mounted and wired.

C. Mount and wire programmable logic controller and I/O chassis as specified in Section 13455 in selected panels and enclosures.

D. Performance tests.

1.02 ACTION SUBMITTALS

A. Shop Drawings:
1. Control panel and enclosures:
   a. Panel exterior general arrangement drawings showing location of surface and flushed mounted equipment.
   b. Panel interior arrangement drawings including:
      1) Locations and identification of terminal blocks.
      2) Locations and identification of racks/chassis and equipment mounted within.
      3) Arrangement of other equipment mounted inside panel identified by instrument tag number.
   c. Exterior panel wiring interface termination diagrams.
   d. List of nameplate legends and sizes for panel-mounted equipment.
2. Panel-mounted instruments: Manufacturer's data and/or specification sheets for control and instrument items, showing design parameters, equipment catalog designations, calibration range, features and options provided. Sheets shall be identified with corresponding instrument tag numbers.
3. Console operator interface station:
   a. Provide sample panel section mockups for TDCJ approval. Include various types of console pushbuttons (Option 1, 2, and 3) included in specifications. Layouts of panels shall be modified to incorporate larger pushbuttons specified for pushbutton Option 2 and pushbutton Option 3.
   b. Contractor shall not proceed with manufacturer of control console operator interface station until mockup is approved by TDCJ.

B. Quality assurance data:
1. Control panel and enclosures:
   a. Schematics and wiring diagrams identifying terminals, circuits, color of wire, and cable/wire numbers. Cable, wire, and terminal numbers for panels shall be assigned by panel provider. Cable, wire, and terminal numbers shall be instrument tag number oriented. Coordinate with electrical contractor to avoid duplication of wire and terminal numbers.
   b. Provide heat gain calculations for each panel/enclosure with all components energized and in operation. Calculations shall be based on ambient temperatures defined within specifications and with exterior panels in full exposure to sun. Provide adequate cooling for any panel in which internal cabinet operating temperature exceeds rating of any component mounted within enclosure.
2. Configurable controller, for information only: Listing of logical configuration of controller.

1.03 CLOSEOUT SUBMITTALS

A. Operation and maintenance manual.
   1. Complete instruction manuals and parts lists covering installation, operation, and maintenance of panel-mounted devices. Manuals shall include interface drawings defining terminal numbers and functions for interface with other instruments and equipment.
   2. Schematic and wiring diagrams for each panel/enclosure. Show color of wire, termination points, terminal numbers, cable and wire numbers.

B. Record Documents: "As-built" schematics and wiring diagrams defining terminals, cables, and wire numbers as specified above.

1.04 MAINTENANCE MATERIALS

A. Furnish separately packaged spare parts of following items:
   1. Fuses: 100% of each rating furnished with control equipment and used internally within panel/enclosure for circuit protection including, but not limited to, miscellaneous fuses on controllers, recorders, and indicators. Minimum of one standard package.
   2. Indicating lamps: 10% of each type furnished with control equipment. Minimum of one standard package.
   3. Relays: 10% of each type furnished with panel/enclosure. Minimum of one.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Ship control panels as recommended by control panel/enclosure manufacturer.

B. Provide removable eye bolt lifting lugs for large panels and suitable skids for safe handling.

C. Remove rack-mounted instruments, controllers, recorders, and indicators that could be damaged by shipment and package in original shipping cartons.

PART 2 PRODUCTS

2.01 DESIGN REQUIREMENTS

A. Panels shall satisfy UL-508A requirements.

2.02 FABRICATION

A. Size: Sufficient to house terminal blocks, wireways, power supplies, racks, chassis, and instruments required for each application. Provide 25% additional space for future expansion.

B. Oil-resistant gasket attached with oil-resistant adhesive.

C. Provide each panel/enclosure with industrial corrosion inhibitor emitters of sufficient size and quantity to protect contents of enclosure size selected. Emitters shall contain additional red metal inhibitors to protect brass and copper material in addition to ferrous metals.

D. Provide adequate cooling by means of air conditioners as necessary for any panel in which internal cabinet operating temperature exceeds rating of any component mounted within enclosure. Thermostat shall be used to control internal temperature.

E. Provide adequate heating by means of electric heater and thermostat for panel in which internal cabinet temperatures may fall below operating temperatures of component mounted within enclosure.

F. Provide "data pockets" for Drawing storage on inside face of panel.

G. Subpanels: Provide for full surface mounting of terminal blocks, wireways, power supplies, racks, chassis, and instruments.

H. Free-standing panels:
   1. Free-standing panels shall mount on 3" (75 mm) concrete pad provided.
   2. Construct control panel in accordance with manufacturer's standard, subject to Engineer's review.
   3. Control panel shall be self-supporting with angle iron or plate framework as necessary to obtain proper stiffness and support.
   4. Fabricate NEMA 12 control panel of 10-gage carbon steel plate with all-welded construction throughout. Welds shall be ground smooth, corners shall be rounded, and weld spatter cleaned. Corner construction shall be minimum of 1/8" inside radius.
   5. Provide reinforcing bracing from center of front panel to center of back.
   6. Surface of control panel shall be free from mars and defects. Finished panel surfaces shall be flat within 1/16" in 6'-0" and be smooth with rounded edges. Finished panel surfaces shall be 3/16" (5 mm) thick. Instrument cutouts and drilling shall be straight and true.
   7. Provide 10-gage full height access doors. Access doors shall have triple-point latch, stainless steel handle and lock, full length stainless steel "piano" type hinge, and sponge rubber gaskets. Door shall be supplied with devices to hold door in 105° position when fully opened.
   8. Provide, full-width, full height, real rectangular subpanel for *surface mounting of programmable controller,* other surface-mounted instruments, wiring troughs, and terminals strips.
   9. Provide full-length, side-mounted subpanels for installation of terminal strips.
   10. Base of control panel shall be adequately reinforced to permit anchoring to concrete pad.
   11. Supply 4 identical master keys which will operate all locks of each control panel.

I. Surface-mounted panels:
   1. Provide with seam-sealed construction with no holes or knockouts and with stainless steel collar studs for mounting subpanels.
   2. Provide Type 316 stainless steel hasp for padlocking.
   3. Provide full size subpanel.
   4. Color:
      a. Exterior: White, outdoor; gray, indoor.
      b. Interior: White.

J. Special features as specified in Panel Schedule:
   1. Panel nameplate.
   2. Size.
   3. Type.
   4. Style.
   5. Cable entry location.

K. Manufacturer: Control Engineering Company, Hoffman Engineering Company, or AE-approved equal.

2.03 PANEL-MOUNTED DEVICES

A. As specified for panel-mounting in Section 13455.

B. Control relays:
   1. Function: General logic hardware interlocks.
      a. Type: Plug-in.
      b. Construction: Continuous duty.
      c. Coil voltage: 120-volt ac, 60 Hz and 24-volt dc, as applicable.
      d. Switch configuration: 3-SPDT.
      e. Indication: Mechanical or LED to indicate energized relay.
      f. Switch rating: 10 amperes at coil voltage.
      g. Mounting: Socket for DIN-rail mounting.

h. Manufacturer: Allen Bradley, Type 700-HF, or AE-approved equal.
2. Function: Interposing relay for PLC output.
   a. Type: Plug-in.
   b. Construction: Continuous duty.
   c. Coil voltage: 120-volt ac, 60 Hz and 24-volt dc, as applicable.
   d. Switch configuration: 2-SPDT.
   e. Indication: Mechanical or LED to indicate energized relay.
   f. Switch rating: 5 amperes minimum at coil voltage.
   g. Mounting: Socket for DIN-rail mounting.

C. Surge suppressor:
1. Type: Pluggable surge suppression modules fitting into fixed base with hot swapping capability.
2. Capacity:
   a. Current: Up to 10kA surge current handling.
   b. Peak clamping voltage: <= 41.6 volt dc
   c. Resistance: 2.2 ohm in-line.
3. Discrete 24-volt dc signals:
   a. Circuits: 2 or 4, as shown on Drawings.
   b. Signals: Suitable for 24-volt dc discrete circuits.
   c. Model:
      1) 2 circuit plug-in module: PT 2x1-24DC-ST, Part No. 2856087, or AE-approved equal.
      2) 2 circuit base: PT 2x1-BE, Part No. 2856139.
      3) 4 circuit plug-in module: PT 4x1-24DC-ST, Part No. 2838322, or AE-approved equal.
      4) 4 circuit base: PT 4x1-BE, Part No. 2839363, or AE-approved equal.
4. Discrete 120-volt ac signals:
   a. Circuits: 2.
   b. Signals: Suitable for 120-volt ac discrete circuits.
   c. Model:
      1) 2 circuit plug-in module: PT 2x1VA-120AC-ST, Part No. 2839185, or AE-approved equal.
      2) 2 circuit base: PT BE/FM, Part No. 2839282, or AE-approved equal.
5. Ethernet signals
   a. Circuits – as shown on drawings.
   b. Signals – suitable for Ethernet communication.
6. Manufacturer: Phoenix Contact, or AE-approved equal.

D. One-shot relay:
1. Input voltage: 24 volts dc.
2. Output voltage 24 volts dc.
3. Contacts: 2 floating point PDT contacts.
4. Power Status display: Green LED.
5. Relay Active Status display: Yellow LED.
6. Manufacturer: Phoenix Contact, Model ETD-SL Series, or AE-approved equal.

E. Intrinsically safe barriers:
1. Function: Isolate switches in hazardous areas.
2. Type: Isolated switching.
3. Hazardous area classifications: Class I, II, III; Division 1, Groups A through G.
4. Power required: 120-volts ac, 60 Hz.
5. Mounting: Nonhazardous area on DIN rail.
6. Channels: 2.
7. Inputs: One dry contact per channel.
8. Outputs: SPDT relay contact per channel.
9. Manufacturer: Cooper Crouse Hinds, Model GHG-122-3121-D-1003, or AE-approved equal.

F. 24V DC power supply
1. Provide 1 or more 24-volt dc power supplies, as necessary, within each panel to power field transmitters, I/O, and related equipment.

2. Type: Simplex.
3. Input voltage:
   a. One 120-volt ac from panel uninterruptable power supply.
4. Rating: Amperage shall be 200% of required capacity.

G. 2V DC power supply
1. Provide 1 or more 2-volt dc, as necessary, within each panel to power LED lights in console operator interface station
2. Type: Simplex
3. Input voltage:
   a. One 120-volt ac power from panel uninterruptable power supply
4. Rating: Amperage shall be 200% of required capacity.

H. 4V DC power supply
1. Provide 1 or more 4-volt dc, as necessary, within each panel to power LED lights in console operator interface station
2. Type: Simplex
3. Input voltage:
   a. One 120-volt ac power from panel uninterruptable power supply
4. Rating: Amperage shall be 200% of required capacity.

I. Uninterruptable power supply
1. Provide 1 within each panel, reference IS-Series drawings.
2. Battery Type: Maintenance-free sealed Lead-Acid battery.
3. Input voltage:
   a. One 120-volt ac power from facility emergency power supply.
4. Alarms: Provide dry contact alarm for loss of power.
5. Power protection level of 9.
6. Size to provide five minute power to panel devices on loss of normal power, 750VA minimum.

2.04 CONSOLE OPERATOR INTERFACE STATION

A. Console:
1. Base cabinet: 10 gage stainless steel NEMA 12 lockable enclosure.
2. Seamless construction.
3. Color: Gray.
4. Quantity and size: Refer to IA-Series drawings.

B. Interface panel
1. Provide graphical layout similar to the existing control layout, refer to IA series drawings for layouts.
2. Material of construction:
   a. Polycarbonate overlay.
   b. Overlay shall be non-glare, non-yellowing, durable, and scratch resistant.
   c. Overlay shall be provided with a black background and through-colored lines and legends. Engraved lines and legends shall be reverse engraved and backfilled with accent colors.
   d. Entire graphics overlay shall be mounted to a 3/8" stainless steel enclosure to provide adequate mounting surface for the 8mm subminiature pushbuttons and lights.
3. Quantity and size: Refer to IA-Series drawings.

C. LED lights:
1. Color: Red, Green, Amber as shown on console layouts (IA-Series Drawings)
2. Voltage: 2 volts or 4 volts, as required.
3. Provide LED light with cable length to extend to terminal blocks in control panel.
4. Quantity and size: Refer to IA-Series drawings.
5. Manufacturer: Lumex Opto, or A/E approved equal.

D. Alarm horn:
   1. Continuous tone.
   2. Input voltage: 120-volt ac power.
   3. Manufacturer: Mallory, or A/E approved equal.

E. Sub-miniature pushbutton (Option 1):
   1. Size: 8 mm.
   2. Voltage rating: 30 volts-dc.
   3. Cap: Round, black.
   4. Barrel connector.
   5. Nonilluminated.
   6. Quantity and size: Refer to IA-Series drawings.
   7. Manufacturer/model: NKK/Series HB, or A/E approved equal.

F. Vandal-resistant miniature sealed pushbutton (Option 2):
   1. Size: 12.15 mm.
   2. Voltage rating: 50 volts-dc.
   3. Barrel connector.
   4. Nonilluminated.
   5. Quantity and size: Refer to IA-Series drawings.
   6. Manufacturer/model: ITW Switches/Series 57, or A/E approved equal.

G. Capacitance button (Option 3):
   1. Size: 25.4 mm.
   2. Voltage rating: 120 volts-ac.
   3. Nonilluminated.
   4. Touch controller module.
   5. Quantity and size: Refer to IA-Series drawings.

H. Manufacturer/model: Easter-Owens/Touchbolt, or A/E approved equal.

I. Light switches:
   1. Power lever: 10A @ 125/250V AC.
   2. Provide sealed version meeting IP67.
   3. Color: Black with On/Off Labling.
   4. Single pole double throw.

2.05 FACTORY WIRING

A. Provide complete factory wiring of control cabinet and equipment mounted thereon.

B. Provide separate circuits from power distribution panel for:
   1. UPS feeding PLC system and communication devices communication devices.
   2. Instrumentation and control devices.
   3. Lighting and service outlets.

C. Install continuous wire from terminal to terminal. Splices not acceptable.

D. Wire and cable:
   1. Analog signal cable:
      a. Configuration: Twisted pair, shielded, and jacketed.
      b. Insulation: 300-volt, 60°C, PVC, color-coded to permit identification of each conductor.
      c. Conductors: Stranded copper, 18 AWG.
      d. Shield: Metallized foil or tinned copper braid providing 100% coverage against noise together with 20 AWG stranded tinned drain wire.

2. Power wire:
   a. Rating: 600-volt, 90ºC, PVC insulation/jacket, Type MTW.
   b. Conductors: Stranded copper, 12 AWG.
3. Discrete signal wire:
   a. Rating: 600-volt, 90ºC, PVC insulation/jacket, Type MTW.
   b. Conductors: Stranded copper, 18 AWG.
4. Power and discrete signal wire insulation color:
   a. BLK: Line voltage.
   b. BRN: Line voltage/fused.
   c. RED: 120-volt control ac.
   d. ORG: 24-volt control ac.
   e. YEL: Caution/may be live from remote power source.
   f. GRN: Ground.
   g. BLU: Dc negative.
   h. VIO: Dc positive.
   i. WHT: Neutral at GND potential.

E. Group and route wire and cables from terminal blocks to panel-mounted instruments in separate wireways as follows:
   1. Low-voltage/low current dc analog signals (30-volts/50 mA or lower).
   2. High-voltage dc alarm signals (48-volts or greater).
   3. Low-voltage ac control signals (120-volts or lower).
   4. High-voltage ac power signals (greater than 120-volts).

F. Wiring interfaces:
   1. External connections:
      a. Install dedicated terminal strips for analog, discrete, and power signals.
      b. Provide manufacturer's standard connectors for communications, digital data, and multiplexed signals.
      c. Provide surge suppressor terminal blocks for analog and discrete signals that leave building structure: Refer to schematic diagrams for acceptable manufacturers.
      d. Provide intrinsically safe barriers for applications where field instruments are not rated as explosionproof for use in hazardous classified areas. Crouse-Hinds SPEC 504, or equal.
   2. Provide separate terminal strips and wireways for 120-volt ac and 24-volt dc circuits.
   3. Terminal block requirements:
      a. Type: High-density.
      b. Voltage: 600-volt.
      c. Wire range: 30 AWG to 12 AWG.
      d. Termination: Screw clamp compression with pressure plate.
      e. Mounting: Rail-mounted with end anchors and barriers.
      f. Spare: Provide greater amount of 20% or 6 terminals per terminal strip
      g. Manufacturer: Refer to schematic diagrams for acceptable manufacturers.
   4. Terminate maximum of 2 wires on single connect point.
   5. Wire PLC network communication cables point-to-point rather than terminating on interposing terminal blocks.
   6. Install power distribution blocks to parallel feed to power control devices. Parallel wiring from instrument to instrument not acceptable.
   7. Provide plug-in strip for ac supply power to devices requiring ac power via power cord.
   8. Circuit protection:
      a. Install individual circuit breakers for protection of control panel power supply circuits as identified above. Phoenix Contact TMC60 Series, or AE-approved equal.
      b. Group circuit breakers on separate terminal strip away from low-voltage instrumentation circuitry.
      c. Provide fuses or circuit breakers for protection of individual instrumentation circuits. Instrumentation circuits for field-mounted instruments may be combined in logical groupings of no more than 10 devices/signals.
         1) Fuses: Phoenix Contact UK 5-HESI Series, or AE-approved equal.

2) Circuit breakers: Phoenix Contact TMC42 Series, or AE-approved equal.

9. Provide 8 AWG internal copper grounding bus for ground connections.

G. Wire tags:
1. Type: Embossed, heat-shrink tubing. Fiber tape tagging not acceptable.
2. Color: White.
3. Identify both ends of wires and/or cables with permanent wire marker.

H. Service equipment:
1. Fluorescent lighting fixtures of sufficient size and quantity to provide 30 to 50 foot-candles of illumination within panel. Wire to UL-approved switch mounted inside panel.
2. Duplex, 120-volt ac, 3-wire grounded type convenience outlets. Provide 1 duplex receptacle per 12 sq ft of subpanel area. Service outlets shall be powered from separate voltage source than PLC equipment, as specified above.

2.06 NAMEPLATES

A. Provide permanent nameplates for devices mounted on or within panels. Provide separate nameplates. Standard nameplates included with instruments not acceptable. Plastic tape labeling not acceptable.

B. Type: Instrument nameplates shall be fabricated of laminated plastic, not less than 1/16" (2 mm) thick white Bakelite engraving stock with black core.

C. Size: Outside panel surface shall be 1" x 2" (25 mm x 50 mm), minimum.

D. Lettering: Engraved, approximately 3/16" (5 mm) high, minimum, subject to Engineer's review.

E. Attach with sheet metal screws after painting is complete. Glue adhesive not acceptable.

2.07 PAINTING AND FINISHING

A. Surfaces shall be commercial blast cleaned in accordance with SSPC SP6.

B. After preparation of surfaces, pits or indentations shall be filled with a 100% solid catalyzed epoxy putty compound.

C. After hardening of putty filler, filled areas shall be sanded smooth. Entire exterior surface shall be smooth and uniform to receive paint.

D. Manufacturer's standard interior and exterior paint shall be acceptable as primer coat.

E. Prepare interior and exterior surfaces for finish coat of paint in accordance with manufacturer's instructions.

F. Color:
1. Interior and subpanels: White.
2. Exterior, indoor panels: Slate gray.

G. Spray-apply paints to produce smooth, uniform coat, free of defects. SSPC PA-1 shall apply.

H. Each coat shall be properly cured according to manufacturer's instructions before application of succeeding coats.

2.08 SOURCE QUALITY CONTROL

A. Refer to Section 13400 for performance testing requirements.

PART 3 EXECUTION

3.01 INSTALLATION

A. Mount controls panels as shown on Drawings and/or where approved by Owner's representative.

B. Mount rigidly supported, level and plumb, and in such manner as to provide accessibility; protection from damage; isolation from heat, shock, and vibration; and freedom from interference with other equipment, piping, and electrical work.

C. Do not install equipment until adjacent heavy construction work has been completed to extent that damage will be unlikely to installation by such construction work.

D. Install outdoor surface-mounted panels within sun protection enclosures. Panels shall face north or east, where possible.

E. Install in accordance with manufacturer's recommendations.

3.02 FIELD PERFORMANCE TESTING

A. Refer to Section 13400 for operational availability test.

3.03 PANEL SCHEDULE

Item No.	Panel Nameplate	Size (inches) (H x W x D)	Type	Style	Cable Entry Location
1	WEST PICKET PLC CONTROL PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top
2	WEST PICKET GRAPHICS PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front and rear access	Bottom and Top
3	EAST PICKET PLC CONTROL PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom
4	EAST PICKET GRAPHICS PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front and rear access	Bottom
5	CENTRAL CONTROL PLC PANEL A	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top
6	CENTRAL CONTROL PLC PANEL B	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top
7	CENTRAL CONTROL PLC PANEL C	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13435

PROCESS CONTROL SOFTWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Product Data: Requirements for software, programming and configuration.

1.02 ACTION SUBMITTALS

A. Product Data:
   1. Logic programming and configuration.
   2. Input/output partitioning database, in Microsoft Access (latest version) format.

PART 2 PRODUCTS

2.01 SOFTWARE REQUIREMENTS

A. System software shall be fully integrated into one software package for both process control and operator interface.

B. Software shall require only one database for tag and point reference to be modified for hard I/O or soft I/O changes to system. Information in central database shall be automatically accessed or downloaded to various controllers or operator workstations.

C. Changes to database shall be automatically tracked and software shall be self-documenting.

D. Software, exclusive of application software, shall be most recent revision applicable to system hardware at time of software freeze date as defined in Contract Documents.

E. Provide autotune function with features including but not limited to following:
   1. Suitable for processes with slow and fast dynamics.
   2. Compatible with self-regulating and integrating processes.
   3. Immune to noise and process load disturbances.
   4. Permit tuning of PID control blocks whether blocks reside in process controller or Fieldbus device.

F. System software, including that supplied by third parties, shall be furnished to Owner and Engineer with licensing agreement allowing use of program on supplied equipment and copying for archive or training purposes. Licensing shall be supplied with PLC to allow I/O expansion up to I/O count provided (including 25% spare I/O) plus 10%.

G. Software shall provide standard trending features.

H. Operating system: Latest version of Microsoft Windows platform on which PLC is certified to operate.

I. Office suite: Microsoft OfficeProfessional, or latest version.

J. Control system software: Provide control system manufacturer's operator interface software and functionality from each control system workstation for:
   1. Human Machine Interface.
   2. Interfaces to third party systems.

K. Provide complete set of system software including gateway drivers including but not limited to following:
   1. Modbus data interface.
   2. Ethernet gateway.

2.02 PROGRAMMING AND CONFIGURATION

A. Process control shall not be carried out in PC-based operator workstations. Perform execution of configuration software and operation of I/O in dedicated redundant process controllers.

B. Provide application software configuration of system. System configuration shall include database development, control strategy implementation and debugging.

C. I/O partitioning, programming, configuration, graphic screens, control, indication, trending, alarming, status, sequence of events, reporting, archiving, testing, commissioning, and startup assistance shall be responsibility of Contractor.

D. Program and configure control systems in accordance with Section 13486.

PART 3 EXECUTION

NOT USED

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13455

PROGRAMMABLE LOGIC PROCESS CONTROLLERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Programmable controller system.

1.02 WORK BY OTHERS

A. None.

1.03 INFORMATIONAL SUBMITTALS

A. Product Data:
1. Manufacturer's installation instructions and product data.
2. Complete set of instruction manuals sufficient for installation, programming, and operation of equipment supplied.

1.04 ACTION SUBMITTALS

A. Shop Drawings:
1. System network drawing indicating model numbers of items provided.
2. Outline and installation drawings for equipment and accessories provided, including mounting requirements, and grounding requirements. Submittal shall clearly identify each item by instrument tag number or specification section number and paragraph, part or catalog number and options or accessories provided.

B. Quality assurance data:
1. Recommended spare parts list.
2. Name and address of Owner's local supplier for spare parts.
3. Name and address of nearest technical support. Provide description of technical support and availability for following:
   a. Equipment, system software, and data communication.
   b. Application software.
4. Within 30 days of Factory Demonstration Tests, provide detailed performance criteria and testing procedures used to determine satisfactory operation meeting functional performance criteria of control algorithms, data communications, etc., including operating system(s) for process control equipment hardware and software.

1.05 CLOSEOUT SUBMITTALS

A. Record documents which accurately record actual location of controller cabinets and input and output devices connected to system. Include:
1. Interconnection wiring and cabling information.
2. Terminal block layouts in controller cabinets.
3. Input/output schedule in Microsoft Excel or Microsoft Access file format.
4. Electronic media and hard copy of ladder logic and control description.

B. Operation and maintenance data for each item, including each type of I/O card and processing card provided.
1. Bound copies of operating and programming instructions for all items.
2. Card replacement, adjustments, and preventative maintenance procedures and materials.

3. Complete set of instruction manuals sufficient for installation, programming, and operation of equipment furnished.

1.06 MAINTENANCE MATERIALS

A. Furnish 1 uninstalled spare for every 5 (or portion thereof) processors, power supplies, boards, modules, assemblies, and cables for PLC system. Spare chassis is not required.

1.07 QUALITY ASSURANCE

A. Design, construct, and test in conformance to NEMA ICS 1, ICS 2, and ICS 3.

1.08 DELIVERY, HANDLING, AND STORAGE

A. Delivery, storage, and protection shall be in accordance with manufacturer's recommended procedures.

B. Accept products on site in factory containers and verify damage.

C. Store products in clean, dry area. Maintain temperature in accordance with NEMA ICS 1.

1.09 WARRANTY

A. Vendor's warranty shall not begin until final acceptance of system by Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Allen Bradley CompactLogix, or AE approved equal.

2.02 PERFORMANCE REQUIREMENTS

A. Functional performance: Configuration and base level programs shall conform to control strategies specified.

B. Reliability:
1. Equipment hardware and software shall have uptime operation meeting functional performance criteria in manner reasonably satisfactory to Owner and Engineer.
2. Control equipment shall have no component whose failure shall cause system to be non-operative.

2.03 PROGRAMMABLE CONTROLLER SYSTEM

A. System shall provide following capabilities:
1. Field instrumentation wiring terminations, instrument signal input/output for system, monitor and control functions, and self-diagnostics.
2. Ability to expand control equipment, i.e. add controllers and local graphic interface panels. Control equipment shall be computer-compatible, but shall not require computer for data communication device expansion.
3. Capable of supporting copper of fiber-optic data communication for processor, work station, and remote I/O networking.
4. Multiple processors shall function as a network interfaced through data communication system with network programming capability. Processors shall support simultaneous on-line/remote programming and continuous data acquisition and control. Programming shall employ fill-in-the-blanks or interactive techniques.

B. Data communication system shall be capable of supporting copper or fiber-optic media for processor, work station, local graphic operator interfaces, and remote I/O networking.
   1. Arrange system as indicated on Drawings.
   2. System hardware shall have sufficient data protection to prevent erroneous data communication during power-up or power-down.
   3. System shall recognize transmission format errors and either correct or request retransmission.
   4. Construct data communication of multipoint, multidrop configuration.
   5. Contractor shall be responsible for confirming final selection of components to support a fully complete and operable system.

C. Supply cabinets, consoles, power supplies, digital instrumentation, communications, interconnecting cables as required, and necessary voltage regulation or conditioning equipment for complete and operable system meeting performance and control description specifications.

D. Power supply: 120 volts ac, single-phase, 60 Hz.

E. Manufacturer shall have application training and customer assistance services available.

F. Major assemblies, subassemblies, circuit card, and devices shall be permanently marked with manufacturer's part or identification number.

G. Controller system shall be of modular design with plug-in processing unit, input/output frames or assemblies, and plug-in peripherals. Components shall be serviced and supported by same company.

H. Label I/O card strips with English descriptions.

I. Provide 5 spare CDs, DVDs, or other acceptable electronic media for use with programming panel.

2.04 SYSTEM COMPONENTS

A. Chassis:
   1. Capacity: 7, 10, or 17 slot.
   2. Catalog number: 1756-A7, 1756-A10, or 1756-A17 or A/E approved equal.

B. Power supply:
   1. Available input power source: 120-volt ac.
   2. Mounted left of chassis.
   3. Catalog number: 1769-PA75, or A/E approved equal.

C. Controller:
   1. Controller shall be configured by system integrator.
   2. Controller tasks: 32 tasks, 100 programs/task.
   3. Built-in communication ports: One USB 2.0.
   4. Communication options: EtherNet/IP.
   5. User Memory: 8 MB.
   6. CompactFlash Card: 1784-CF128 nonvolatile memory.
   7. I/O Memory: 980 KB.
   8. Lithium battery: 1756-BA.
   9. Configuration software requirements:
      a. Programming via RSLogix 5000 IEC 61131-3 compliant configuration software. Configuration software shall support relay ladders, structured text, function block diagram and sequential function chart programming.
      b. Program CPU on-line or off-line.
   10. Catalog number: ControlLogix 1756-L73, or A/E approved equal.

D. Local I/O modules:
   1. In addition to I/O quantities shown on Drawings and in Section 40 95 43-13, provide 20% spare installed I/O points of each type.
   2. Discrete input:
      a. Capacity: 32-point.
      b. Voltage: 24-volt dc, sinked.
      c. Grouping: 2 groups of 16 with common ground per group.
      d. Removable terminal block: 1756-TBNH 20 position NEMA screw clamp block RTB.
      e. Catalog number: 1756-Series, or A/E approved equal.
   3. Discrete output:
      a. Capacity: 32-point.
      b. Voltage: 24-volt dc, sourced.
      c. Removable terminal block: 1756-TBNH 20 position NEMA screw clamp block RTB.
      d. Catalog number: 1756-Series, or A/E approved equal.

E. Communication modules:
   1. Copper EtherNet I/P:
      a. Function: Interface ControlLogix system with other network components via copper media.
      b. Communication rate: 10/100 Mbps.
      c. TCP/IP connections: 128.
      d. Logix connections: 256.
      e. Connection:
         1) Single RJ-45 CAT 5 port.
         2) Single USB 1.1.
      f. Mounting position: Any slot in 1756 chassis.
      g. Catalog number: 1756-EN2T, or A/E approved equal.

2.05 PROGRAMMING DEVICE

A. Computer capable of interfacing with programmable controllers furnished by this contract. New laptop computer equipped with configuration and communication software shall be furnished to Owner. Refer to Section 13432 for specification requirements.

B. Programming device shall incorporate:
   1. Alphanumeric keypad.
   2. Function keys shall allow user to construct a relay ladder diagram on operator display screen, as well as complete programming instructions.

C. Programming controls shall permit user to enter, edit, and delete logic and to monitor registers in decimal, hexadecimal, binary or ASCII and obtain On/Off status of discrete I/O points.

2.06 PROGRAM DOCUMENTATION AND REPORT GENERATION SYSTEM

A. Programmable controller manufacturer shall provide a program documentation package to perform following tasks:
   1. Ladder diagram reports complete with ladder rungs; English description for every contact, bit, or word; organized logic sections with comment lines to identify logic function; rung comments to facilitate maintenance; and element cross references.
   2. Cross reference report: Sequential listing by element address of associated lines (or rungs).
   3. Input/output configuration summary: Table of entire I/O address range, showing which addresses are used by programmable controller program, which addresses have descriptions, and which are hardwired I/O points.
   4. Contact address listing: Lists I/O addresses and their associated symbolic definitions.
   5. Record, load, and verification of program logic with program file on compatible electronic media, and program difference listings.

B. Provide software to allow "off-line" programming using a Windows compatible computer. Software shall document program as listed above. Provide required accessories to load program between programming computer and programmable controller.PROGRAMMING

A. Configuration of control systems and their entry into microprocessor-based control system shall be responsibility of Contractor.

B. Configuration shall be derived from Section 13486.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's recommendations and/or where designated by Engineer.

B. Locate enclosures where shown on Drawings and/or designated by Engineer. Enclosure shall be positioned to allow doors to be fully opened for easy access to wiring and components.

C. Mount rigidly supported, level and plumb, and in such manner as to provide accessibility; protection from damage; isolation from heat, shock, and vibration; and freedom from interference with other equipment, piping, and electrical work. Equipment shall not be installed until adjacent heavy construction work has been completed to extent that damage will be unlikely to installation by such construction work.

D. Manufacturer's recommendations referred to herein shall be as stated in manufacturer's instruction books and/or by manufacturer's service representative. Final interpretation of "installation requirements" will be by Engineer.

3.02 FIELD QUALITY CONTROL

A. Following field demonstration tests shall be conducted:
   1. Visual check will be performed to ensure correct equipment.
   2. Latest revision of configuration and base level programs has been loaded.
   3. Complete loop functional checks shall be performed.
   4. Input signals shall be applied to each loop, and when applicable, outputs measured.

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13456

DIGITAL PROCESS CONTROL COMPUTERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Laptop software and hardware.

B. Installation and configuration of laptop software and graphics.

1.02 RELATED REQUIREMENTS

A. Section 13400 - Common Work Results for Process Systems: Design requirements, submittals, and testing.

B. Section 13486 - Control System Operational Description.

1.03 ACTION SUBMITTALS

A. Within 60 days after contract award, submit drawing list and submittal schedule.

B. Prior to construction, submit:
   1. Shop drawings, manufacturer's installation instructions, and product data.
   2. System network drawing illustrating relationship of major hardware, software, and data communications components including model or release numbers. Drawing shall encompass PLC, laptop, and data communication components including processor and I/O model numbers.

C. Refer also to Section 13400.

1.04 INFORMATIONAL SUBMITTALS

A. Outline and installation drawings for equipment and accessories provided, including mounting requirements, and grounding requirements. Submittal shall clearly identify each item by instrument tag number or specification section and paragraph, part or catalog number and options or accessories provided.

B. Recommended spare parts list including maintenance, special tools, and test equipment. Provide name and address of manufacturer's local supplier for spare parts.

1.05 CLOSEOUT SUBMITTALS

A. Operation and maintenance manuals:
   1. Provide complete set of instruction manuals sufficient for installation, programming, and operation of equipment furnished.
   2. SCADA program documentation: Commented, fully documented diagrams in hard copy and computer media format of "as installed" programs.
   3. Equipment and software manuals:
      a. Equipment list identifying components, model numbers, and release levels.
      b. Operation and maintenance data for each hardware and software component.
      c. Programming/configuration instructions for components.
   4. Detailed instructions on operation of utility programs.
   5. Documentation concerning system software development:
      a. Diagrams, code annotation, and other pertinent documents to define system.
      b. Database structures, views, tables, and indexes.

6. Equipment lists including manufacturer's name, part number, serial number, revision number, and recommended spare parts.
7. Communication parameters needed to interface with other computers (speed, number of data bits, parity, modem control, etc.).

B. Project Record Documents:
1. Hard copy and electronic files containing PLC configuration, and sequence of operations.
2. Provide 2 sets of System computer back-up data recovery disks for Server and SCADA/HMI computer on DVD-ROM media.

C. Maintenance contracts shall include, but not limited to, PLC software.

D. Software license:
1. Standard software license for software provided under Contract shall be assigned to Owner upon initial installation of each software component.
2. Rights of software purchase including telephone support during warranty period shall be extended to Owner.

1.06 QUALITY ASSURANCE

A. Regulatory requirements: Equipment shall be in conformance to most recent issue of NEMA ICS 1, unless otherwise specified.

B. Provide hardware to manufacturer's latest revision level.

C. Provide manufacturer's system software updates for installed version as issued, from date of initial equipment through end of warranty period of Contract. Display software revision level on main menus.

1.07 DELIVERY, HANDLING, AND STORAGE

A. Delivery, storage, and protection shall be in accordance with manufacturer's recommended procedures.

B. Accept products on site in factory containers and verify any damage.

C. Store products in clean, dry area. Maintain temperature in accordance with NEMA ICS 1.

1.08 WARRANTY

A. Provide 1-year warranty. Warranty shall not begin until final acceptance of system by Owner.

B. Specified availability shall be maintained throughout warranty period. Failure to achieve specified availability may at Owner option result in extension of warranty period until specified performance has been met for continuous period equivalent to warranty period.

PART 2 PRODUCTS

2.01 COMPUTERS

A. Laptop:
1. Quantity: 1.
2. Location: Hand over to Owner.
3. Computer:
   a. CPU: Intel Core 2 Duo with latest frequency available at time of award of Contract not less than 2.4 GHz, with 3M cache, 1066 MHz front side bus, minimum:
   b. Case color: Black.

c. Memory: 1 GB dual channel SDRAM, upgradable to 4 GB, minimum.
d. Power supply:
   1) 120-volt ac adapter, nominal 200-watt, minimum.
   2) Extended life battery.
   3) 12-volt vehicle power adapter.
e. System hard drive: 250 GB, 7200 rpm, SATA 3Gbps, minimum.
f. Optical drive: DVD+/-RW: 8X minimum.
g. Graphics card: 512MB nVidia Quadro, or AE-approved equal.
h. Speakers: 2, internal.
i. Ports, minimum:
   1) 1394 Firewire.
   2) USB, minimum of 2.
   3) RJ-45 Ethernet.
j. Wireless networking: 1397 802.11b/g mini-card.
k. Modem: Internal USB.
l. Display: 17" WUXGA UltraSharp 1920 x 1200 resolution.
m. Accessories: Provide leather carrying case.
n. Software:
   1) Operating system: Windows 7 Professional 32-bit, with latest service pack.
   2) SCADA system:
      a) GE Intelligent Platforms (Intellution) "iFIX," Version 5.1, or latest.
      b) Wonderware "InTouch," Version 10.1, or latest.
      c) Rockwell Software "FactoryTalk", or latest.
      d) AE-approved equal.
   3) PLC system: Rockwell software RSLogix 5000, RSLinx, latest version, or AE-approved equal.
   4) Security software: Norton Internet Security 2011, or latest or AE-approved equal.
   5) Application software:
      a) Microsoft Office 2007 Professional, or latest.
      b) Adobe Acrobat 9.0, or latest
      c) Or AE-approved equal.
   6) Remote access software: None.
o. Manufacturer: Dell Latitude Series, or AE-approved equal.

2.02 PRINTERS

A. Color laser:
   1. Type: Color LaserJet.
   2. Connectivity:
      a. USB
      b. 10/100 Base-T.
   3. Networking: TCP/IP Ethernet.
   4. Data cable: Provide as required for selected connectivity.
   5. Paper handling:
      a. Manual feed.
      b. Tray for letter, legal, executive, and envelopes.
   6. Printing: Automatic duplex.
   7. Print language: HP PCL 5c, HP PCL 6, PostScript Level 3 emulation.
   8. Memory: 128 MB.
   9. Print resolution: 600 x 600 dpi.
   10. Print speed: Up to 21 ppm.
   11. Toner cartridges: Black, Cyan, Yellow, Magenta.
   12. Manufacturer: HP LaserJet Model CP2025dn, or AE-approved equal.

2.03 NETWORK COMPONENTS

A. Managed Ethernet switch:
   1. Application: Interface PLC, HMIs, and laptop computer.
   2. Features:
      a. Provide with multicast traffic control utilizing Group Management Protocol (IGMP) snooping.
      b. Provide with querying and filtering capability.
   3. Ports: Quantity of 8, minimum.
   4. Power required: 24-volt dc.
   5. Manufacturer: Allen Bradley Model 1783-EMS08T, N-TRON Model 708TX, or AE-approved equal.

2.04 SYSTEM PROTECTION

A. Provide surge protection for input power and data communication, including phone modem and telemetry. Black Box, Phoenix Contact, or AE-approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. System integrator shall provide monitor, keyboard, mouse, cables, and other ancillary devices required to set up server computer if deliverable workstation is not available at time of set-up. Unless specified to be provided, ancillary set-up components shall not be purchased by or turned over to Owner.

B. Refer to Section 13400.

3.02 FIELD PERFORMANCE TESTS

A. Refer to Section 13400.

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13486
CONTROL SYSTEM OPERATIONAL DESCRIPTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control system description.

1.02 RELATED REQUIREMENTS

A. Section 13400 – Common Work Results for Process Systems.

B. Section 13435 – Process Control Software.

1.03 ACTION SUBMITTALS

A. Shop Drawings: Logic drawings.

1.04 CLOSEOUT SUBMITTALS

A. Record Documents: As-Built Logic drawings.

1.05 QUALITY ASSURANCE

A. Contractor shall implement logic in accordance with Drawings.

PART 2 PRODUCTS

2.01 CONTROL SYSTEM DESCRIPTION

A. Refer to "IL-Series" Loop drawings for control system descriptions.

PART 3 EXECUTION

NOT USED

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13775

CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closed circuit television (CCTV) system including, but not limited to:
   1. Head end equipment, cameras, lenses, camera enclosures and miscellaneous accessories.
   2. Power supplies.
   3. Mounting brackets and miscellaneous mounting materials.
   4. Mounting racks and consoles.
   5. Monitoring equipment, recording, and playback devices.
   6. Peripheral control equipment
   7. Cables and accessories.
   8. Wiring, outlet boxes, junction boxes, and other necessary materials.

B. Operator workstations.

1.02 INFORMATIONAL SUBMITTALS

A. Sequence of operations: Descriptive statement and single-line block diagram showing how related equipment interface and operate as complete closed circuit television system.

B. Product Data: Manufacturer's technical data/cut sheets on each product to be utilized.

C. Shop Drawings:
   1. Point-to-point device location wiring diagrams with system device locations accurately shown on scaled architectural floor plans. No other system(s) shall be included on these plans.
   2. Detailed schematic wiring diagrams for system devices. Wiring information shall include cable type, conductor routings, quantities and complete termination/connection details for devices used with system.

D. Communication Protocol: Provide written documentation confirming open protocol communications allowing CCTV system to communicate via ethernet to intercom control system and PLC system selected for this project.

E. Software: 1 set of fully functional closed circuit television system software in manufacturer's original media packaging.

F. Quality assurance data:
   1. Complete documentation of inspections and tests performed, including any applicable certifications. Documentation shall note replacement of any system component or devices that failed during initial testing. Record of system field tests.
   2. List of recommended spare parts.
   3. Warranty data.

1.03 CLOSEOUT SUBMITTALS:

A. Manufacturer's user's manuals for operations, administration, installation and maintenance.

B. Maintenance schedules and procedures.

C. Training materials.

D. Commissioning test plan and check-off list.

E. "As-Built" Record Drawings: During system installation, maintain separate hard copy set of device location floor plan drawings, schematic wiring diagrams and point-to-point device wiring diagrams of closed circuit television system to be used for Record Drawings. Set: kept up to date, reflecting all changes and additions made to system. Copies of final "as built" Record Drawings: provided to owner in DXF format using latest version of AutoCAD.

1.04 QUALITY ASSURANCE

A. Regulatory requirements:
   1. System and components shall be listed under appropriate UL testing standard for closed circuit television applications and installation shall be in compliance with UL listing.
   2. Standards of foreign organizations shall not be used without prior written approval from Engineer.

B. Manufacturer qualifications:
   1. Closed circuit television head end and peripheral devices shall be manufactured 100% by single ISO certified U.S. manufacturer (or division thereof).
   2. Manufacturer of equipment shall have produced similar equipment for minimum period of 5 years.
   3. Manufacturer's authorized service representative: Competent, factory- trained engineer or certified technician: present on site to guide final checkout and to ensure system integrity.
   4. System hardware, software, control, monitoring and recording equipment and peripheral devices shall be listed as product of single U.S. manufacturer under appropriate category by UL and shall bear UL label. Partial listing not acceptable; and shall be manufactured 100% by single U.S. manufacturer (or division thereof) and each component shall display manufacturer's name.

C. Installer qualifications:
   1. Employ technicians on site to guide final checkout and to ensure system integrity.
   2. Technician shall be factory trained, authorized representative of equipment manufacturer.

D. Contractor qualifications:
   1. Local installation and service organization, currently recognized as factory authorized representative by manufacturer of specified system.
   2. Minimum of 5 years documented closed circuit television system installations in correctional facilities with similar scope to requirements.
   3. Provide minimum of 3 references whose closed circuit television systems are of similar complexity and have been installed and maintained by Contractor in last 5 years.
   4. Able to provide parts and labor to expand system specified, if so requested, for period of 5 years from date of acceptance.
   5. At time of Bid, Contractor shall be licensed by state or local jurisdiction to perform security work within state. Contractors with security licenses or permits pending shall not be considered acceptable for bidding on Project.
   6. Assure personnel working on project are registered with state or local jurisdiction systems licensing board as provided for by current state statutes.

1.05 DELIVERY, STORAGE AND HANDLING

A. Equipment and accessories: Clearly label, cover, and protect from damage during shipment.

B. During delivery and storage, equipment shall be handled in manner that prevents damage, denting or scoring.

C. Equipment and components shall be stored in clean, dry environment, protected from weather, humidity and temperature variations, dirt, water, construction debris and physical damage in accordance with manufacturer's instructions.

1.06 PROJECT CONDITIONS

A. Verify temperature and humidity conditions for both indoor and outdoor applications.

B. Refer to manufacturer's data/cut sheets for environmental parameters for each specific component of closed circuit television system.

C. When applicable, interconnect control equipment to existing systems without disruption to existing operations.

1.07 WARRANTY

A. Warrant system hardware, software, and installation against defects and workmanship for minimum of 12 months, covering all parts and labor, after acceptance by Owner. Provide alternate pricing for 3 year and 5 year warranties; 3 year and 5 year warranties shall not be included in Contractor base bid.

B. Guarantee system application software/firmware remains current at all times with latest enhancements and is supported by closed circuit television system manufacturer with unlimited remote dial-in diagnostics capability and technical telephone support.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Pelco.

B. Axis

C. Bosch/Philips/Burle.

2.02 SYSTEM DESCRIPTION

A. Equipment and materials used shall be standard components manufactured and available for purchase as standard replacement parts.

B. System shall provide management, control, monitoring and recording of cameras located within building(s) and selected areas shown, using type of head end, camera and lens technology specified.

C. System shall include necessary software and programming to perform following functions:
   1. Intercom system shall initiate a signal to display predetermined CCTV's on a monitor adjacent to intercom master station answering a call.
   2. Closed circuit television operations.
   3. Control and monitoring of equipment indicated.

D. Provide necessary wiring, connections, testing, cabling, labor, tools, equipment, and ancillary materials.

E. Provide camera power supplies.

F. Install CCTV system and bring to operational status for acceptance including, but not limited to:
   1. Determine hardware, software and operations requirements for implementation.
   2. Install hardware and software.
   3. Setup and configure communications between head end control equipment, operator workstations, cameras, monitors and recording devices.
   4. Setup and configure system application and database.
   5. Test system operations based on point-by- point walk through inspection.

6. Perform end-user training.

2.03 DESIGN REQUIREMENTS

A. CCTV: Power over Ethernet (POE).

B. System controller: 120 volts ac, 60 Hz, single-phase, electrically supervised.

C. Low-voltage power: 9 to 40 volts ac or dc, isolated, reverse polarity protected.

D. Complete installation shall conform to latest versions of applicable sections of NFPA 70 and local codes and requirements.

E. Wiring: In strict compliance with NFPA 70.

F. Control equipment shall have transient surge protection devices complying with UL 864 requirements. Circuits leaving building where closed circuit television system head end equipment is located and traveling to outlying buildings/locations shall be supplied with appropriate transient surge suppression devices.

G. Locate surge suppressors immediately prior to circuit leaving main building and immediately after circuit enters outlying building/location, regardless of distance between main and outlying buildings/locations.

H. Plenum-rated wiring and surge suppressors between buildings shall comply with NFPA 70 and UL 497, A, B and C.

I. Nonplenum-rated wiring and surge suppressors between buildings shall comply with NFPA 70.

J. Closed circuit television system shall be compatible with, and provide interface to intercom control management system and PLC controlling building doors and cells.

2.04 CLOSED-CIRCUIT TELEVISION SYSTEM

A. IP video management system:
1. Consist of software operating on an optimized hardware platform. Software shall consist of base software with individual, nonexpiring licenses in required quantity.
2. System software updates: Downloadable from publicly available website.
3. Support up to 128 combined IP and analog video streams, with up to 64 direct-attached analog cameras. Analog streams shall be supported using encoders.
4. Provide 280 Mbps throughput for recording of analog and IP video streams, playback, and export.
5. Support recording of JPEG, MPEG-4 and H.264 IP streams.
6. Support H.264 Megapixel video streams up to 10 Megapixel resolution with quantities based on total system of 280 Mbps throughput for recording of analog and IP video streams, playback, and export.
7. Provide system with fully open architecture with support for both IP-specific camera and cameras with ONIVIF compliance.
8. Support automatic detection IP cameras.
9. Support up to 64 looping analog camera inputs with direct-attached 16-channel encoders; up to 4 direct-attached units. Direct-attached 16-channel encoders shall support H.264 compression, CIF, 2CIF, and D1 resolutions at maximum 30ips, 16 audio inputs, and RS422/485 PTZ control.
10. Support unlimited number of systems connected over a network. Each system shall contain 2 1GB network ports; 1 for IP camera/encoder data, and 1 to connect to a network for client computer access.
11. System shall be viewed, managed, and played back through a single user interface software.
12. Operate on a 2nd Generation Intel® Core™ i7 processor and 8 GB of RAM.
13. Utilize Windows® 7 Ultimate 64-bit operating system.

14. Support and have option for internal DVD+/-RW.
15. Contain 2 DVI-D ports.
16. Allow expansion of IP video channel capacity through a licensing without any hardware modification.
17. Support multiple models of IP cameras and encoders.
18. Support recording internal server with additional storage utilizing SCSI storage.
19. Allow archival of video data to computers or SAN storage devices over a network connection. Archival schedule shall be either automatic at user-defined intervals or manual and shall be configurable per connected camera.
20. System specifications:
    a. Processor: 2nd Generation Intel® Core™ i7.
    b. Internal memory: 8 GB RAM.
    c. Network: 2 Gigabit Ethernet RJ-45 (1000Base-T).
    d. Storage: Up to 8 TB.
    e. PCI-E slots: 1 PCI-E x 16 and 1 PCI-E x 4.
    f. Auxiliary interfaces:
        1) USB Ports: 1 front (USB 2.0), 4 rear (2 USB 3.0; 2 USB 2.0).
        2) Power Input: 100 to 240 volts ac, 50/60 Hz, Autoranging.
21. Environmental specifications:
    a. Operating temperature: 10° to 35°C (50° to 95°F).
    b. Operating humidity: 20% to 80%, noncondensing.
    c. Gradient: 10% per hour.
    d. Operating altitude: –15 to 3,048 m (–50 to 10,000 ft).
    e. Operating vibration: 0.25 G at 3 Hz to 200 Hz at a rate of 0.5 octave/minute.

B. IP video management client software:
1. Provide capability of running video management system.
2. A client computer with system compatible software shall be user interface for viewing one or more systems. Live and recorded video and current event video shall be displayed on any client computer using a proper login and password. Client computer shall be able to connect to an unlimited number of recorders simultaneously to display live and recorded video.
3. Unlicensed and available to be installed on as many clients as required by user.
4. Compatible with multiple DVR and NVR platforms.
5. Password controlled so password functionality set at each connected system will be recognized at client. Password shall limit ability to access live or recorded video and ability to export video.
6. Allow multiple monitor support for up to 4 displays/client workstation, providing virtual matrix functionality.
7. Allow connection of keyboard controllers to client workstation.
8. Allow video streams to be selectable from a system tree on an individual camera, individual system, client defined local groups, or from predefined recorder based groups.
9. Tab-based work environment with ability to undock tabs creating virtual workspace on single or multiple monitor clients.
    a. Client tabs: Include system management, live, and search options.
    b. Tabs can be displayed simultaneously on client.
10. Video export to any system accessible media including locally to HDD, CD/DVD, Flash USB device or to network storage.

2.05 INDOOR, VANDAL-RESISTANT, 0.5 MEGAPIXEL NETWORK MINI DOME CAMERA

A. Offer dual video streams with up to 0.5 megapixel resolution (800 x 600) in progressive scan format.

B. Provide extended Wide Dynamic Range (WDR), low-light performance, and anti-bloom technology.

C. Use a true WDR sensor taking multiple exposures at pixel level and have a rating for WDR of 120dB.

D. Compact size with integrated varifocal 2.8~10 mm lens.

E. Capable of firmware upgrades through a network using a software-based device utility.

F. Camera enclosure shall offer impact resistance rating of IK10++ per EN62262 (50J). Enclosure shall be vandal- and tamper-resistant.

G. Back box: Plenum rated in accordance with NFPA 70.

H. Provide accessory port for hardware expansion.

I. Provide advanced low-light capabilities with sensitivity down to 0.0013 lux.

J. Offer auto focus functionality.

K. Provide service connector to assist installer when setting field of view and focusing camera.

L. Provide line-in and line-out audio and built-in microphone.

M. Support 2 simultaneous, configurable video streams. H.264 and MJPEG compression formats shall be available for primary and secondary streams with selectable Unicast and Multicast protocols. Streams shall be configurable in a variety of frame rates and bit rates.

N. Camera day/night model shall have removable IR cut filter mechanism for increased sensitivity in low-light installations. IR cut filter removal shall be configurable through a Web browser.

O. Support industry standard power over Ethernet (PoE), IEEE 802.3af, Class 2 to supply power to camera over network.

P. Use a standard Web browser interface for remote administration and configuration of camera parameters.

Q. Offer video output port providing NTSC/PAL analog video output signal for adjusting field of view and when focusing camera.

R. Support standard IP protocols.

S. Support open architecture best practices with a published API available to third-party network video recording and management systems.

T. Meet or exceed following design and performance specifications.
   1. Imaging device: 1/3", effective.
   2. Imager type: CMOS.
   3. Imager readout: Progressive scan.
   4. Resolution, maximum: 800 x 600.
   5. Signal-to-noise ratio: 50 Db.
   6. Auto iris lens type: DC drive.
   7. Electronic shutter range: 1~1/77,000 sec.
   8. Wide dynamic range: Rated 120 dB at sensor.
   9. White balance range: 2,000° to 10,000°K.
   10. Sensitivity: f/1.2; 2,850°K; SNR > 20 Db.
   11. Dome attenuation.
   12. Clear dome: Zero light loss.
   13. Smoked dome: f/1.0 light loss.
   14. Video encoding: H.264 in Base profile and MJPEG.
   15. Frame rate: Up to 8.
   16. Supported protocols: TCP/IP, UDP/IP.
   17. Lens: 2.8-10mm VF.
   18. Resolutions: 0.5 Megapixel.

2.06 ENVIRONMENTAL OUTDOOR 1.3 MEGAPIXEL NETWORK MINI DOME CAMERA

A. Offer dual video streams with up to 1.3 megapixel resolution (1280 x 960) in progressive scan format.

B. Provide extended Wide Dynamic Range (WDR), low-light performance, and anti-bloom technology.

C. Use a true WDR sensor that takes multiple exposures at pixel level and has a rating for WDR of 120dB.

D. Compact size with integrated varifocal 2.8~10 mm lens.

E. Capable of firmware upgrades through a network using a software-based device utility.

F. Camera enclosure:
   1. Environmentally rated and offer an impact resistance rating of IK10++ per EN62262 (50J).
   2. Vandal- and tamper-resistant and outdoor rated.

G. Provide advanced low-light capabilities with sensitivity down to 0.0013 lux.

H. Offer auto focus functionality.

I. Support 2 simultaneous, configurable video streams. H.264 and MJPEG compression formats shall be available for primary and secondary streams with selectable Unicast and Multicast protocols. Streams shall be configurable in a variety of frame rates and bit rates.

J. Provide built-in heater able to operate below 5°C (41°F).

K. Camera (day/night model) shall have a removable IR cut filter mechanism for increased sensitivity in low-light installations. IR cut filter removal shall be configurable through a Web browser.

L. Support industry standard power over Ethernet (PoE), IEEE 802.3af, Class 2 to supply power to camera over network.

M. Use standard web browser interface for remote administration and configuration of camera parameters.

N. Offer video output port providing an NTSC/PAL analog video output signal for adjusting field of view and when focusing camera.

O. Support standard IP protocols.

P. Support open architecture best practices with a published API available to third-party network video recording and management systems.

Q. Meet or exceed following design and performance specifications:
   1. Imaging device: 1/3", effective.
   2. Imager type: CMOS.
   3. Imager readout: Progressive scan.
   4. Resolution, maximum: 1280 x 960.
   5. Signal-to-noise ratio: 50 Db.
   6. Auto iris lens type: DC drive.
   7. Electronic shutter range: 1~1/77,000 sec.
   8. Wide dynamic range: Rated 120 dB at sensor.
   9. White balance range: 2,000° to 10,000°K.
   10. Sensitivity: f/1.2; 2,850°K; SNR > 20 Db.
   11. Clear dome: Zero light loss.
   12. Smoked dome: f/1.0 light loss.
   13. Video encoding: H.264 in Base profile and MJPEG.

14. Frame rate: Up to 8.
15. Supported protocols: TCP/IP, UDP/IP.
16. Lens: 2.8-10mm VF.
17. Resolutions: 1.3 Megapixel.

2.07 MONITORS

A. High-resolution color LED monitor:
   1. 27" actual viewing area. When viewing images from 2 cameras at one time, each view will be equally sized on screen.
   2. Widescreen.
   3. Resolution: 2560 x 1440 at 60 hz 800 TV lines.
   4. Table top mountable, housed in durable metal cabinet constructed of 10 gage stainless steel with replaceable plexiglass viewing area.
   5. Front panel controls and on screen display for easy adjustment of settings.
   6. VGA, DVI, USB, component video connection and audio connections connection.
   7. Input power: 100 - 240 volts ac, 50/60 Hz.
   8. Vertical refresh rate: 76 Hz.
   9. Horizontal refresh rate: 89 kHz.
   10. Horizontal viewing angle: 178.
   11. Vertical viewing angle: 178.
   12. Anti-glare hard coating.
   13. Operating temperature: 14° - 122°F (-10 - 50°C).
   14. Operating humidity: 10-90%.

B. Mounting rack: CCTV system components shall be rack-mounted in suitable enclosure, commercially available from industry leading manufacturer.
   1. Standard EIA vertical rack cabinet with appropriate vents and blanks.
   2. Provide hardware 19" racks for each housing unit and central control.
      a. Rack cabinets:
         1) Lockable 19" rack enclosures and housed in electrical room of central control and 2 mechanical rooms on second floor of each housing unit.
         2) Cabinets shall contain hardware and patch panels required for field wiring to intercom and CCTV system.
         3) Size as required to house all equipment as provided and specified.
   3. Front door: Full length, gray tinted plexiglass.
   4. Provide surge protection power strip of sufficient size and capacity to handle CCTV equipment housed within rack. Include minimum of 2 spare receptacles.
   5. Coordinate layout of intercom/CCTV 19" hardware rack with CCTV manufacturer to ensure properly sized racks are provided.

C. Control console:
   1. Provide for each housing unit and central control (3 total) and locate within each picket.
   2. Front of console shall consist of a solid surface with holes for routing cables associated with intercom system and CCTV system and custom constructed of 10 gage stainless steel enclosure with front.
   3. Top surface: Minimum of 24" wide and same depth of adjacent PLC control console.
   4. Top surface: Provide space for 27" CCTV monitor, holes in top for routing of cables and intercom master station. CCTV monitor shall be located in a enclosure with a glass window to view images.
   5. Enclosure access doors: Lockable and may contain intercom and CCTV hardware.
   6. Coordinate layout of intercom/CCTV console and 19" hardware rack with CCTV manufacturer to ensure properly sized console is provided.

2.08 UNINTERRUPTABLE POWER SUPPLY (UPS)

A. Provide 1 UPS to sustain operation on IP video management system. UPS shall be provided to sustain operation of all equipment located in main command center for a period of 10 minutes.

B. Provide continuous, no-break power during complete or momentary loss of supply power.

C. In normal operating mode, UPS shall condition line power protecting against environmental conditions, power surge, power sag, under-voltage, over-voltage, line noise, frequency (variation of waveform), transients and harmonic distortion.

D. Provide external bypass switch to allow UPS to be removed from incoming power line for service.

2.09 CONDUIT AND WIRE

A. Conduit: 3/4" (19 mm) minimum, in accordance with NEC, local, and state requirements.

B. Wire/coax:
1. Copper.
2. Locate in conduit or raceway. Conduit fill shall not exceed 40%
3. In accordance with local, state, and national codes and as recommended by manufacturer of system.
4. Number, size and type of conductors: As recommended by system manufacturer and as shown on Drawings.
5. 120 volts ac power circuits: 12 AWG minimum, 600-volt insulation.

C. Terminal boxes, junction boxes and cabinets: UL-listed for intended use and purpose.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify Site conditions prior to installation.

3.02 INSTALLATION

A. Install system components and appurtenances in accordance with manufacturer's specifications, referenced practices, guidelines, and applicable codes. Furnish necessary interconnections, services, and adjustments required for complete and operable system as specified. Install control signal, communications, and data transmission line grounding as necessary to preclude ground loops, noise, and surges from adversely affecting system operation.

B. Install wiring in dedicated conduit/raceway throughout. Cable shall not be pulled into conduits or placed in raceways, compartments, outlet boxes, junction boxes, or similar fittings with other building wiring.

C. Low voltage wiring outside control consoles, cabinets, boxes, and similar enclosures: Plenum rated where required by code.

D. Individually number wiring conductors connected to terminal strips and identify each cable or wiring group extended from panel or cabinet to building mounted device with name and number of particular device as identified and shown on Drawings.

E. Dress down neatly exposed wiring inside and outside of control consoles, cabinets, boxes and similar enclosures and secure with wiring cleats or wire ties.

F. Dress down neatly exposed metallic flexible conduit and armored cable and secure with low profile metal fasteners.

G. Provide locks for cabinets, boxes, and similar enclosures containing system components and/or cabling and easily accessible to employees or to general public. Boxes located above ceiling level in occupied areas of building shall not be considered to be accessible.

H. Cover junction boxes and small device enclosures below ceiling level and easily accessible to employees or general public with suitable cover plate and secured with tamperproof screws.

I. Repair factory finishes where damaged during construction.

J. Support boxes independent of conduit/raceway system.

K. Cable splices shall not be acceptable. Where multiple cables are required, use approved coupling adaptors.

L. Anchor equipment securely to walls, floor, and building steel, unless otherwise defined. Use expansion anchors in concrete and masonry. Install equipment level and plumb.

M. System devices identified on building drawings are intended to generally indicate areas where such devices are to be located. Contractor shall be responsible for determining final location of devices in accordance with Owner's requirements.

N. Riser diagrams are schematic and do not show every conduit, wire box, fitting, or other accessories. Provide such materials as necessary for complete and functioning installation. Install in accordance with referenced codes and specifications. Use weatherproof equipment or covers where installed in areas exposed to weather.

O. Remove nonconducting material from contact surfaces before making grounding connections. Ground system in accordance with manufacturer's recommendations.

3.03 TESTING AND COMMISSIONING

A. Place system into full and proper operation as designed and specified.
   1. Verify hardware components are properly installed, connected, communicating, and operating correctly.
   2. Verify system software is installed, configured, and complies with specified functional requirements.

B. Perform final acceptance testing in presence of Owner's representative, executing point-by-point inspection against documented test plan demonstrating compliance with system requirements as designed and specified.
   1. Submit documented test plan to Owner at least 14 days in advance of acceptance test, inspection and check-off.
   2. Conduct final acceptance tests in presence of Owner's Representative, verifying each device point and sequence is operating correctly and properly reporting back to control panel and control center.
   3. Acceptance by Owner is contingent on successful completion of check-off. If check-off is not completed due to additional work required, reschedule and perform complete check-off until complete in one pass, unless portions of system can be verified as not adversely affected by need for additional work.
   4. System shall not be considered accepted until acceptance tests have been successfully checked-off. Beneficial use of part or all of system shall not be considered as acceptance.
   5. Correct any and all deficiencies observed during final check-off at no cost to Owner until equipment and system components operate properly.

3.04 MANUFACTURER'S FIELD SERVICES

A. Provide on-Site, factory-trained technician to assist, advise, and manage installation personnel.

B. Perform system software modifications, upgrades, or changes. Response time of technician to Site shall not exceed 4 hours.

C. Provide hardware, software, programming tools, and documentation necessary to modify system on Site. Modification may include addition and deletion of devices, circuits, changes to system operation, and custom label changes for devices.

D. System structure and software shall place no limit on type or extent of software modifications performed on Site.

3.05 TRAINING

A. Provide system operations, administration, and maintenance training by factory-trained, authorized representative of manufacturer qualified to instruct:
   1. Owner will designate personnel to be trained.
   2. Provide printed training materials for each trainee including product manuals, course outline, workbook or student guides and written examinations for certification.
   3. Provide hands-on training with operational equipment.
   4. Training: Orient to specific system being installed under this Contract as designed and specified.

3.06 MAINTENANCE

A. Perform manufacturer's recommended preventative maintenance on applicable components and/or devices.

B. Contractor shall be primary contact and respondent for service and support and shall be officially recognized and backed by closed circuit television system manufacturer.

C. Extended and/or out of warranty terms at reasonable and customary rates shall be available from Contractor.

D. Provide alternate pricing for extended warranty and maintenance service after acceptance by Owner, alternate pricing shall not be included in Contractor base bid.
   1. Length of Contract: For period of 5 years after expiration of initial warranty.
   2. Submit payment terms and conditions with alternate bid.

DATA SHEETS CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM		Equipment Name: Tag No.: Rev.	
DESCRIPTION	**UNITS**	**SPEC DATA**	**VENDOR DATA**
Manufacturer	-	By Manufacturer	
Catalog/Serial No.	-	By Manufacturer	
Location of manufacturer	-	By Manufacturer	
SITE ENVIRONMENTAL CONDITIONS			
Ambient Temperature	°F		
Altitude	Ft		
Hazardous Area	Y/N		
CCTV SYSTEM HEADEND			
Floor or rack mounted	Floor/Rack		
Rack size			
CPU	Y/N		
Intranet/Ethernet connection	Y/N		
LAN	Y/N		
Wan	Y/N		
Color			
Size			
CAMERAS **(Reference drawings for quantities)**			
Camera type			
Fixed Color	Y/N		
PTZ Color	Y/NY/N		
Lens	Y/N		
EnclosureLens type			
IndoorFixed	Y/NY/N		
OutdoorVarifocal	Y/NY/N		
Mounting type/stylePan-tilt-zoom	Y/N		
Color	Y/N		
Enclosure			
Indoor	Y/N		
Outdoor	Y/N		
Mounting type/style			

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16050
BASIC ELECTRICAL METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 - General Requirements apply to work in this section.

1.2 REQUIREMENTS OF REGULATORY AGENCIES AND STANDARDS

A. Regulatory Agencies: Installation, materials, equipment and workmanship shall conform to the latest editions of the following codes, standards, ordinances, regulations, etc.:
   1. National Electrical Code (NEC) (NFPA 70).
   2. Underwriters Laboratories (UL).
   3. American National Standards Institute (ANSI).
   4. National Fire Protection Association Codes (NFPA), including Life Safety Code.
   5. National Electrical Manufacturers Association (NEMA).
   6. Occupational Safety and Health Association (OSHA).
   7. Federal Americans with Disabilities Act (ADA).
   8. State of Texas Accessibilities Standards (Texas Civil Statutes).
   9. Texas Department of Licensing and Regulation (TDLR).
   10. City Electrical Codes and Ordinances.
   11. State Jail Facilities Standards, 1993 – State of Texas.
   12. Terms and conditions of the electrical utility and other authorities having lawful jurisdiction pertaining to the work required.

B. All conduit, boxes, power and control wiring shall be included, furnished and installed as a part of this project.

C. The work covered by Division 16 of the Specifications includes the furnishing of all materials, labor, transportation, tools, permits, and fees for the complete installation of all electrical work required in the Construction Drawings. The drawings are intended to convey the overall intent of the project. The contractor shall be responsible for product applications as required to provide complete and fully functioning system.

D. In the event that additional or special construction is required, the Contractor is responsible for providing all material and equipment which are usually furnished with such construction in order to complete the installation, whether indicated or not.

E. Installer Qualifications: Company specializing in installing the products specified in this section with minimum three years documented experience. Electricians shall be licensed for commercial work in Texas.

F. As indicated in the Notice to Bidders, the contractor is strongly encouraged to visit the site to familiarize himself with the existing conditions.
G. The contractor shall be responsible for all permits, fees, and licenses required for the project. All cost of such permits or fees shall be included in the bid.
H. All equipment and material shall be installed in accordance with the applicable manufacturer's recommendations and standards.
I. Install sleeves, sealant pans, and roof penetrations as required for the installation of the electrical work. All such work is subject to the approval of the A/E.
J. The Contractor shall familiarize himself with the requirements of the Division 1 and General and Special Conditions of the Contract of the specifications to be aware of specific restrictions relating to construction in a Correctional Facility.

1.3 SUBMITTALS

A. The intent of this section is to give general submittal information, refer to specific submittal information in the subsequent sections.
B. Submittals shall be in accordance with other sections as indicated. All submittals shall be complete and include model number, product data, etc. Prior approval before the project bid date is required for Division 16. All submittals will be reviewed by the A/E during the submittal process to determine technical acceptance.
C. Requirements for each submittal:
   1. Bear a dated stamp or specific written indication that the Contractor has reviewed and approved all submittal prior to submission to A/E.
   2. Be clearly and specifically marked as to which specific piece of equipment is being submitted, by use of a permanent marker, stamp, etc., so as to distinguish it from other pieces of equipment that may occur on the same page.
   3. Be clearly and specifically marked as to which available options are being submitted that are associated with a piece of equipment.
   4. Be complete with respect to quantities, dimensions, specific performance, materials, and similar data to enable the A/E to review the proposed equipment.
   5. Include product(s) date of manufacture.
D. In addition to the submittal review by the A/E of record, the submittals shall be reviewed by TDCJ personnel. All comments shall be incorporated by the Contractor.

PART 2 - PRODUCTS

2.1 EQUIPMENT REQUIREMENTS

A. The requirements for equipment specified or indicated on the drawings are based on information available at the time of design. If equipment furnished for installation has electrical requirements other than indicated, the Contractor shall make required

changes to accommodate the equipment supplied.

2.2 MATERIALS

A. All similar materials and equipment shall be the product of the same manufacturer for each subsystem in the design unless specified otherwise.
B. Materials and equipment shall be the standard products of manufacturers regularly engaged in the production of such material and shall be the manufacturer's current and standard design.
C. All materials used in the project shall be new.

PART 3 - EXECUTION

3.1 GENERAL

A. Fabrication, erection and installation of the complete electrical system shall be done in accordance with accepted good practice by qualified personnel experienced in such work and shall proceed in an orderly manner so as not to impede the progress of the project. The Contractor shall check all areas and surfaces where equipment material is to be installed, removed or relocated and report any unsatisfactory conditions before starting work. Commencement of work signifies this Contractor's acceptance of existing conditions. In the acceptance or rejection of the finished installation, no allowance will be made for lack of skill on the part of workmen. Surfaces requiring coatings will be completed prior to installation of any electrical work on these surfaces.
B. The drawings are diagrammatic. The installation requirements shall be carefully coordinated with structural, architectural and mechanical conditions and shall be adjusted to avoid conflict.
C. All work shall be concealed in walls, ceilings, chases unless specifically noted to be exposed or otherwise approved.
D. The locations of equipment are approximate and are not intended to convey the exact details and mounting of location of outlets, equipment and other items. Exact locations are to be field determined by actual measurements.
E. Consult all drawing details and specifications to provide for coordinated effort between various trades.
F. Disposal of Surplus and Waste Materials:
   1. Disposal: As a part of this contract, the Contractor shall provide for the off-site removal of all demolished equipment unless otherwise directed by TDCJ.
   2. Repair: Any damage that results from the work being performed by the Contractor shall be repaired in accordance with the General and Special Conditions of the Contract.
G. All submittals, substitutions or changes must be approved by A/E.
H. In all cases of conflict covering this scope of work, A/E shall be advised and approve in writing before proceeding with affected scope of work.

I. Deviation from this specification must be approved in writing by A/E prior to implementation.
J. All fasteners in inmate areas and less than 18 feet above the floor shall be tamper-resistant type torx head with center pin and approved by A/E. As a part of this contract provide 10 bits and 8 drivers for each size fastener.
K. At locations where new access doors are provided, key the doors to match existing access door locks. Paint all access doors to match existing finishes.
L. All devices, boxes, raceways, etc. installed in wet or hose-down areas shall be rated NEMA 4X.

3.2 PERFORMANCE TESTS

A. Thoroughly test all control circuits, and power circuits for proper operating condition and freedom from grounds and short circuits before acceptance is requested. All equipment, appliances and devices shall be operated under load conditions.
B. After the wiring system installation is complete, conduct operating tests for approval. Test all the wire, cable, devices and equipment after installation, to assure that all material continues to possess all the original characteristics as required by governing codes and standards listed in these specifications.
C. Perform such other tests as required by other sections of these specifications.
D. Furnish all instruments and labor for testing.
E. All material installed shall be listed, inspected, and approved by a nationally accepted testing laboratory such as UL and/or ETL. All material shall bear the UL or ETL label where available.
F. Refer to individual specification sections for additional performance tests for specific equipment.

3.3 SUBMITTAL AND APPROVAL OF MATERIALS

A. All requirements for submittals shall comply with the applicable provisions included in the individual specification sections.
B. All proposed material substitutions shall be done in accordance with applicable provisions of the TDCJ General and Special Conditions of the Contract.
C. A minimum of 8 sets of submittals shall be provided for all equipment.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16111
CONDUIT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Metal conduit.
B. Flexible metal conduit.
C. Liquidtight flexible metal conduit.
D. Electrical metallic tubing.
E. Non-metallic PVC conduit.
F. Fittings and conduit bodies.

1.3 RELATED SECTIONS

A. Section 16130 - Boxes.
B. Section 16170 - Grounding and Bonding.
C. Section 16190 - Supporting Devices.
D. Section 16195 - Electrical Identification.

1.4 REFERENCES

A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
C. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
D. ANSI/NFPA 70 - National Electrical Code.
E. NECA "Standard of Installation."

1.5 SUBMITTALS

A. Product Data: Provide for metallic conduit, flexible metal conduit, liquidtight flexible metal conduit, non-metallic conduit, fittings, conduit bodies and tamper-resistant fasteners.

1.6 PROJECT RECORD DOCUMENTS

A. Accurately record actual routing of conduits.

1.7 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.
B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle Products as indicated in the General Conditions.
B. Accept conduit on site. Inspect for damage.
C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.9 PROJECT CONDITIONS

A. Verify that field measurements are as shown on Drawings.
B. Verify routing and termination locations of conduit prior to rough-in or material.

C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

PART 2 - PRODUCTS

2.1 CONDUIT REQUIREMENTS

A. Minimum Size: 3/4 inch unless otherwise specified.

B. Wet and Damp Locations above grade: Use rigid galvanized steel or liquid tight flexible conduit.

C. Dry Locations: Use electrical metallic tubing for concealed locations and exposed locations except per Paragraph G below.

D. Below Slab: Non-metallic PVC conduit is acceptable within limitations specified.

E. Below Grade: Use only PVC-coated rigid galvanized steel, wrapped rigid galvanized steel, or non-metallic PVC conduit within limitations specified.

F. MC Cable: Shall not be utilized on this project.

G. All conduits where accessible in areas exposed to inmates up to 18'-0" above finished floor shall be rigid galvanized steel and shall have tamper-resistant fasteners. Inaccessible raceways may be EMT. Concealed conduits (inside pipe chases, above dry-wall or lay-in ceilings) and runs above 18' are considered inaccessible. Routing changes will be coordinated through the TDCJ Project Administrator subject to approval by the Unit Warden.

2.2 METAL CONDUIT

A. Manufacturers:

1. Allied
2. Wheatland
3. Or A/E approved equal.

B. Rigid Steel Conduit: ANSI C80.1.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel fittings.

2.3 FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Greenfield
2. Electri-Flex
3. Allied Tube
4. Or A/E approved equal.

B. Description: Interlocked steel construction. Aluminum is not permitted.

C. Fittings: ANSI/NEMA FB 1 with fittings approved for steel flex.

D. Applications: Use for final connections to motorized equipment subject to movement.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Ultratite
2. Electri-flex
3. Or A/E approved equal.

B. Description: Interlocked steel construction with PVC jacket.

C. Fittings: ANSI/NEMA FB 1.

D. Applications: Use for final connections to motorized equipment in exterior locations and areas subjected to moisture.

2.5 ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:
   1. Allied.
   2. Wheatland.
   3. Or A/E approved equal.

B. Description: ANSI C80.3; galvanized tubing.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel, compression type.

D. Applications: Do not use below grade or in exterior locations. Use only in interior locations.

2.6 NON-METALLIC PVC CONDUIT

A. Manufacturers:
   1. Carlon
   2. Allied
   3. Or A/E approved equal.

B. Description: NEMA TC2, Schedule 40 PVC. Flame retardant type resistant to bending and cracking.

C. Vertical risers and elbows installed below grade shall be rigid conduit with wrapping.

D. All underground elbows shall be long radius.

E. Do not use above grade.

2.7 CONDUIT FITTINGS

A. Couplings and Terminations for Rigid Steel Conduit: Factory-made steel threaded couplings conforming to ANSI/NEMA FB1; bushing at all boxes and cabinets, with locknuts inside and outside box or cabinet.

B. Couplings and Terminations for Electrical Metallic Tubing (Compression Couplings): Join lengths of EMT with steel compression type couplings conforming to ANSI/NEMA FB1. Attach EMT to boxes or cabinets with steel compression-type box connectors having an insulated throat with locknuts.

C. Couplings and Terminations for Flexible Metal Conduit: Conforming to ANSI/NEMA FB1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install conduit in accordance with NECA "Standard of Installation."

B. Arrange supports to prevent misalignment during wiring installation.

C. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.

D. Group related conduits; support using conduit rack. Construct rack using steel channel.

E. Fasten conduit supports to building structure and surfaces under provisions of Section 16190.

F. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports

G. Do not attach conduit to ceiling support wires.

H. Arrange conduit to maintain headroom and present neat appearance.

I. Route exposed conduit parallel and perpendicular to walls.

J. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
K. Maintain adequate clearance between conduit and piping.
L. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding
104 degrees F.
M. Cut conduit square using saw or pipecutter; de-burr cut ends.
N. Bring conduit to shoulder of fittings; fasten securely.
O. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
P. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2 inch size.
Q. Avoid moisture traps; install conduits with slopes and provide junction boxes with drain fittings at low points in conduit system.
R. Provide suitable fittings to accommodate expansion and deflection where conduit crosses, control and expansion joints.
S. Provide suitable pull string in each empty conduit except sleeves and nipples.
T. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
U. Ground and bond conduit under provisions of Section 16170.
V. Identify conduit under provisions of Section 16195.
W. All new and existing ducts/conduits shall be cleaned with flexible mandrel assembly. All existing underground conduits shall be thoroughly swabbed with a flexible mandrel prior to the installation of new cables.
X. All new exposed conduit routings shall be pre-approved prior to installation.
Y. All new conduit routing shall be approved by A/E.
Z. All wiring shall be in conduit.
AA. Contractor shall install fire sealant on conduit penetration through fire rated walls/ceilings. Sealant shall be rated to match the rated assembly.
BB. At each manhole and junction box, provide conductor and fiber optic cable tags as indicated in specification section.
CC. Contractor shall provide tamper resistant fasteners in areas where inmates are located. Refer to Section 16050 for additional information.
DD. Contractor shall provide conduit for new equipment as required.
EE. All exposed conduits located up to a height of 18 feet above floor level shall be rigid galvanized steel. Provide and install 2-hole conduit straps on 18 inch centers with tamper-resistant fasteners on these exposed conduits. This includes mechanical and electrical rooms.
FF. All empty conduits shall be capped.
GG. Underground conduits shall have a minimum cover of 24" above the top of the conduit. Refer to Section 16195 for marking tape.

3.2 INTERFACE WITH OTHER PRODUCTS

A. Install conduit to preserve fire resistance rating of partitions and other elements.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16120
FIBER OPTIC CABLE SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Multimode fiber optic cable for outdoor and indoor nonplenum use.

B. Conduit, panels and panel-mounted equipment.

C. Accessories, testing, and commissioning.

1.02 ACTION SUBMITTALS

A. Prior to construction:
   1. Manufacturer's catalog data and Bill of Material listing Contractor-furnished materials including quantities and catalog numbers for:
      a. Fiber optic cable.
      b. Patch cords.
      c. Connectors.
      d. Termination housings.
      e. Jumper management panel.
      f. Media converters.
      g. Power supplies.
   2. Panels and enclosures:
      a. Panel exterior general arrangement Drawings showing location of surface and flushed mounted equipment.
      b. Panel interior arrangement Drawings including:
         1) Locations and identification of terminal blocks.
         2) Locations and identifications of racks and chassis and equipment mounted within.
         3) Arrangement of other equipment mounted inside panel identified by instrument tag number.
      c. Exterior panel wiring interface termination diagrams.
      d. List of nameplate legends and sizes for panel-mounted equipment.
      e. Schematics and wiring diagrams identifying terminals, circuits, color of wire, and cable/wire numbers. Cable and wire numbers for external wiring will be assigned by Engineer. Cable, wire, and terminal numbers for panels shall be assigned by panel provider. Cable, wire, and terminal numbers shall be instrument tag number oriented.

1.03 INFORMATIONAL SUBMITTALS

A. Fiber optic signal budget and loss calculation.

B. Test reports:
   1. Optical time domain reflectometer (OTDR) factory fiber optic cable test report on the reel when shipping completed and reel first arrives at construction site.
   2. OTDR test report for fiber optic cable following installation and terminations.
   3. Installed fiber optic cable losses report.

C. Certification that fiber optic cable conforms to requirements of this specification and applicable EIA Standard RS-455 testing procedures.

D. Provide heat gain calculations for each cabinet with components energized and in operation. Calculations shall be based on ambient temperatures defined within specifications and with exterior panels in full exposure to sun. Provide adequate cooling for panel in which internal cabinet operating temperature exceeds rating of component mounted within enclosure.

E. Panel-mounted instruments: Tabulation of equipment including accessories listed separately where not assembled with equipment item. Tabulation shall include item number, service equipment description, or identification, part or catalog number and other information helpful to installation of equipment and coordination of Project.

1.04 CLOSEOUT SUBMITTALS

A. Operation and maintenance manual.
   1. Complete instruction manuals and parts lists covering installation, operation, and maintenance of panel-mounted devices. Manuals shall include interface Drawings defining terminal numbers and functions for interface with other instruments and equipment.
   2. Schematic and wiring diagrams for each panel/enclosure. Show color of wire, termination points, terminal numbers, cable and wire numbers.

B. Record Documents: "As-built" schematics and wiring diagrams defining terminals, cables, and wire numbers as defined above.

1.05 QUALITY ASSURANCE

A. Regulatory requirements: Work shall be in accordance with latest editions of EIA Standard RS-455, ANSI C2, NFPA 70; and shall comply with EPA regulations.

B. Cable shall be from same manufacturer, of same type, and of same size.

1.06 DELIVERY, STORAGE AND HANDLING

A. Preparation: Ship cable on reel. Radius of reel drum shall be greater than minimum bend radius of fiber.

B. Wind cable on reel so unwinding can be done without kinking cable. 2 meters of cable at both ends of cable shall be accessible for testing.

C. Attach permanent label on each reel showing length, cable identification number, cable size, cable type, attenuation, bandwidth, date of manufacture, and identifying spool number.

D. Provide water-resistant label and indelible writing on labels.

E. Fiber shall be packaged under sufficient low tension to avoid degradation of fiber strength due to static fatigue.

F. Ship control panels as recommended by control panel and enclosure manufacturer.

G. Remove rack-mounted instruments, controllers, recorders, and indicators that could be damaged by shipment and package in original shipping cartons.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Provide equipment and cable rated for continuous operation under ambient environmental operating conditions of -30ºF to 175ºF and humidity up to 100% condensing or as normally encountered for installed locations.

B. Overhead cabling shall be resistant to ultraviolet (UV) degradation.

PART 2 PRODUCTS

2.01 FIBER OPTIC CABLE

A. Use: All-dielectric, loose tube indoor and outdoor cable.

B. Type:
1. Loose tube, containing multimode fiber optic conductors. Individual fiber conductors shall be color-coded.
2. All-glass, graded index, dual window, multimode fiber optic wave guides.
3. Fiber shall have nominal core diameter of 50 microns.
4. Fiber shall be coated with cladding material, which is concentric with the core.
5. Fiber cladding diameter shall nominally be 125 microns. Protect fiber with protective tube, jacketed nonmetallic strength member, and exterior jacket.
6. Cable shall have transmission window centered at 850 and 1300 nanometer wavelengths.
7. Attenuation of multimode fiber cable shall be not greater than 4.0 dB/km at 850 nm and not greater than 1.5 dB/km at 1300 nm.

C. Construction: Cable components shall withstand environment where cable is installed for minimum of 20 years.
1. Mechanical stress: Mechanical stress present in cable shall not be transmitted to optical fibers. Fiber optic cable shall be all-dielectric, loose tube construction. In loose tube construction optical fibers shall be surrounded by tube buffer, be contained in channel, or otherwise loosely packaged to provide clearance between fibers and inside of container to allow for thermal expansion without constraining conductor. Protective container shall be extruded from material having coefficient of friction sufficiently low to allow fiber free movement.
2. Protective covering: Provide continuous covering on single length cable with same material, and shall be free from holes, splits, blisters, and other imperfections. Covering shall be flame-retardant (where installed in lengths over 50' in length indoors), moisture-resistant, nonnutrient to fungus, ultraviolet light resistant, nontoxic, and electrically nonconductive.
3. Strength members: Nonmetallic strength members shall be integral part of cable construction. Combined strength of members shall be sufficient to support stress of installation and protect cable in service. Minimum proof test level shall be 50,000 psi.
4. Cable outer jacket: Provide polyvinyl chloride cable jacket. Jacket shall be continuous, smooth, and free from holes, splits, blisters, and other imperfections. Jacket shall be flame-retardant, moisture-resistant, nonnutrient to fungus, ultraviolet light resistant, nontoxic, and electrically nonconductive.
5. Impact and crush resistance: EIA TIA 455-25A, Table 2 for minimum impact energy for specified cable diameter. Minimum crush resistance of 220 Newtons per square centimeter, tested in accordance with EIA 455-41.
6. Storage temperature range: -40°C minimum and 70°C maximum.
7. Rating: Indoor/outdoor riser and tray.

D. Cable: 2, 6, 12, 24 fiber strands, multimode.

E. Manufacturer: Belden, Corning, Panduit or A/E-approved equal.

2.02 PATCH CORDS

A. Pre-assembled end connections: Coordinate with intercom system manufacturer for connector type.

B. Fiber type: Multimode.

C. Fiber count: 2.

D. Cable construction: Interconnect.

E. Quantity: As required.

F. Length: As required.

G. Manufacturer: Corning Cable, Panduit, , or A/E-approved equal.

2.03 BUFFER TUBE FAN-OUT KIT

A. Function: Provide protection for fibers when terminating cables.

B. Length of tubing: 25" (635 mm).

C. Environment: Indoor/outdoor.

D. Quantity of fibers per buffer tube: 6.

E. Accessories:
1. Buffer tube fan-out kit assembly tool kit.
2. Buffer tube fan-out kit assembly consumables kit.

F. Manufacturer: Corning, Panduit, or A/E approved equal.

2.04 MECHANICAL TERMINATIONS

A. Connector type: Coordinate with intercom system manufacturer for connector type.

B. Fiber: 50 micron, multimode.

C. Insertion loss: 0.1 dB typical, 0.5 dB maximum.

D. Manufacturer: Corning, Panduit, or A/E-approved equal.

2.05 TERMINATION HOUSINGS

A. Use: Enclosure for termination of fiber optic cable(s).

B. Size: Accommodate fiber optic cable terminations.

C. Number of fibers: 2, 6, 12, 24, 48.

D. Location: As determined by Contractor for installation of PLC, Intercom, and CCTV systems selected.

E. Housing style: As required for application.

F. Provide breakout kits and other accessories as required for complete installation.

G. Single-panel housing (SPH):
1. Closet Connector Housing (CCH): Coordinate with intercom system manufacturer for connector type.
2. Construction: Black metal housing.
3. Dimensions: 6.3" H x 5.5" W x 2" D (160 mm H x 140 mm W x 50 mm D).
4. Accessories: Ledge-mount bracket.
5. Manufacturer: Corning, Panduit, or A/E approved equal. .

2.06 FIBER OPTIC PATCH PANEL

A. Use: Interconnection of fiber optics.

B. Location: As determined by Contractor for installation of PLC, intercom, and CCTV manufacturer selected.

C. Fibers within panel shall be terminated.

D. Style:
   1. Wall mounted style:
      a. Dimensions: As required.
      b. Rack units: .
      c. Doors: Front access solid doors.
      d. Color: Light gray.
      e. Manufacturer: Hoffman, Panduit, or A/E-approved equal.

E. Fabricate panel(s) in accordance with Section 13432 requirements.

F. Rating:
   1. Indoor: NEMA 12.
   2. Outdoor: NEMA 4X.

2.07 PANEL-MOUNTED EQUIPMENT

A. Copper-to-multimode fiber switch:
   1. Type: Hardened.
   2. 100-Mbps multimode fiber port: 1, Type ST.
   3. 100-Mbps copper ports: 5, Type RJ-45.
   4. Power: 120 volts ac.
   5. Manufacturer: Black Box, Panduit.

B. Power supplies
   1. Output voltage: 24-volts dc:
   2. Input voltage: 120 volts ac.
   3. Current output (maximum): 1.5 amperes.
   4. Size: 3.898" H x 1.378" W x 4.035" D (99 mm H x 35 mm W x 102.5 mm D).
   5. Manufacturer: Phoenix Contact, or A/E-approved equal.

2.08 SOURCE QUALITY CONTROL

A. Certify fiber optic cable conforms to requirements of this specification and applicable EIA Standard RS-455 testing procedures.

B. Fiber optic cable reel test: Test 100% of fibers with OTDR after shipment and prior to installation. Calibrate OTDR to show anomalies of 0.2 dB as minimum.

PART 3 EXECUTION

3.01 INSTALLATION - PANELS AND ENCLOSURES

A. Mount panels where acceptable to project administrator and Warden.

B. Mount rigidly supported, level and plumb, and in such manner as to provide accessibility; protection from damage; isolation from heat, shock, and vibration; and freedom from interference with other equipment, piping, and electrical work.

C. Do not install equipment until adjacent heavy construction work has been completed to extent that damage will be unlikely to installation by such construction work.

D. Install outdoor surface-mounted panels within sun protection enclosures.

E. Install jumper management panels directly above and below each CCH unit. One common jumper management panel may be used in applications where jumper management panel located between 2 CCHs.

F. Install in accordance with manufacturer's recommendations.

3.02 FIELD WIRING

A. Supports in vertical runs: As required by NFPA 70, Article 800.

B. Cable pulling:
1. Reels: Mount firmly on portable stand and secure against displacement.
2. Lubrication: Use an approved cable pulling lubricant with maximum coefficient of friction of 0.15.

C. Remove fiber coating material by mechanical means only.

D. Cable bending radius in accordance with manufacture data sheet.
1. "No load" condition: 15 times cable diameter, or 6" (152.4 mm), whichever is greater, minimum.
2. "Under load" (greater than 30% of full load): 20 times cable diameter, or 12" (304.8 mm), whichever is greater, minimum.

E. Install fiber optic cables in dedicated conduit between cabinets in separate rooms or buildings.

3.03 SPLICES

A. Not permitted.

3.04 CONNECTIONS

A. Fibers at each end of cable shall have jumpers or pigtails installed of not less than 3' (1 m) in length. Fibers at both ends of cable shall have connectors installed on jumpers. Mated pair loss, without rotational optimization, shall not exceed 1 dB. Pull strength between connector and attached fiber shall not be less than 20 lb (9 kg).

B. Identification and labeling:
1. Identification tags or labels shall be provided for each cable.
2. Markers, tags, and labels shall use indelible ink or etching which will not fade in sunlight, or in buried or underground applications.
3. Markers, tags, and labels shall not become brittle or deteriorate for period of 20 years.
4. Labeling format shall be identified and complete record shall be provided to Owner with final documentation.
5. Each cable shall be identified with type of signal being carried and termination points.

3.05 CONDUIT INSTALLATION

A. Provide 1" (25 mm) rigid galvanized steel conduit for indoor installation of fiber optic cable installed below 18' AFF.

B. New conduit installation shall comply with NFPA 70.

C. Openings in walls:
   1. Provide openings for passage of conduits through walls and floors.
   2. Sleeves:
      a. Provide for passage of conduits through walls or partitions.
      b. Material: Schedule 40 PVC conduit or pipe securely fastened in position.
   3. Openings made in existing walls and floors shall be patched and finished to match original material in composition and appearance.
   4. Openings made in fire-resistant rated walls shall be sealed after conduit installation to provide equivalent fire rating of wall.

D. Bends:
   1. Not more than equivalent of four 90° bends between pulling points.
   2. Use large radius (sweeps) for conduit bends.

3.06 FIELD QUALITY CONTROL

A. Test each fiber on reel after shipping is completed and prior to installation, using an OTDR. Cables with anomalies greater with 1 dB shall not be installed.

B. Testing shall be done by personnel qualified in fiber optic cable testing.

C. Test each fiber and fiber optic cable assembly in accordance with applicable test requirements of EIA Standard RS-455.

D. OTDR tests:
   1. Perform using test procedures of EIA 455-59.
   2. OTDR shall be calibrated to show anomalies of 0.2 dB as minimum. Photographs of traces shall be furnished to Owner.
   3. If circuit loss exceeds optical loss budget by more than 2 dB, circuit is unsatisfactory and shall be examined to determine problem. Owner shall be notified of problem and what procedures Contractor proposes to eliminate problem.

E. Submit typewritten report for each test to Owner.

END OF SECTION

1) J. N. Gavin
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SECTION 16123
WIRE AND CABLE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Power wiring rated at 600V or less.
B. Wiring connectors and connections.
C. Control wiring rated at 600V.
D. Communication wiring.

1.3 RELATED SECTIONS

A. Section 16195 - Electrical Identification.
B. Refer to individual specification sections for other types of wiring and cable to include intercom, fire alarm and fiber optic cable.

1.4 REFERENCES

A. Quality Control: Requirements for references and standards.
B. NECA Standard of Installation (National Electrical Contractors Association).
C. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
D. NFPA 70 - National Electrical Code.

1.5 SUBMITTALS FOR REVIEW

A. Product Data: Provide product data for all power wiring.
B. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by the product-testing agency.

1.6 REGULATORY REQUIREMENTS

A. Conform to NFPA 70.
B. Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.7 PROJECT CONDITIONS

A. Verify that field measurements are as indicated.
B. Conductor sizes are based on copper.
C. Wire and cable routing indicated is approximate unless dimensioned.

1.8 COORDINATION

A. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

PART 2 - PRODUCTS

2.1 POWER WIRE (LESS THAN 600V)

A. Manufacturers:
   1. Belden.
   2. Southwire.

3. American Cable.
4. Houston Wire and Cable.
5. or A/E approved equal.

B. Description: Single conductor insulated wire.
C. Conductor: Copper.
D. Insulation Voltage Rating: 600 volts.
E. Insulation: Minimum requirements of NFPA 70 and as specified herein.
F. Metal clad cable shall not be used on this project.

2.2 WIRING CONNECTORS

A. Split Bolt Connectors:
1. Ilsco.
2. Buchanan.
3. Burndy.
4. Or A/E approved equal.

B. Solderless Pressure Connectors:
1. Ilsco.
2. Buchanan.
3. Burndy.
4. Or A/E approved equal.

C. Spring Wire Connectors:
1. Ideal.
2. Thomas and Betts.
3. Or A/E approved equal.

D. Compression Connectors:
1. Ilsco.
2. Buchanan.
3. Burndy.
4. Or A/E approved equal.

2.3 CABLE

A. Multi-conductor cable for control, interlocks, routed in cable tray and conduit:
1. Voltage rating: 600-volt.
2. AWG: 14 minimum.
3. Conductors: Annealed, bare copper, Class B, stranded.
4. Insulation: Flame-retardant, cross-linked polyethylene (XLPE) or complying with NEC Type XHHW-2.
5. Jacket: Flame-retardant, heat, moisture, and sunlight-resistant; polyvinyl chloride (PVC).
6. Conductors shall be cabled together with nonhygroscopic fillers.
7. Cover cable assembly with helically applied binding tape with minimum 10% overlap.
8. Color coding: Insulated conductors shall have colored insulation meeting ICEA Method 1, Table E-2 color code (K2 color code).
9. Each cable shall be identified by means of surface ink printing indicating manufacturer, number of conductors, size, voltage rating, and UL listing as rated for cable tray.

10. Cables shall pass IEEE 383 70,000 Btu/hr, and ICEA T-29-520, 210,000 Btu/hr vertical tray flame tests.
11. Temperature rating: 90°C for normal operation in wet or dry locations.

B. Category 6 communication cable circuited in tray, conduit or used for field wiring internal to cabinets.
1. Conductor: Solid, bare copper minimum No. 23 AWG.
2. Insulation: Fluorinated ethylene propylene (FEP) insulated singles.
3. Insulated conductors: Unshielded, twisted 4 pairs enclosed with a spline fluorinated ethylene propylene filler material.
4. Cable assembly shall be covered with clear "Flamearrest" jacket, sequentially marked at 2' (600 mm) intervals. Ripcord shall be integrally installed to allow easy removal of jacket material.
5. Each communication cable shall be identified by means of surface ink printing indicating manufacturer, model, or catalog number. Cable shall meet TIA/EIA CAT6.
6. Cables shall be capable of passing UL flame test Type CMP.
7. Manufacturer: Belden, or AE approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Verify the existing conditions prior to pulling conductors in raceways.
B. Verify that mechanical work likely to damage wire and cable has been completed.
C. Verify that raceway installation is complete and supported.
D. Visually inspect wires and cables for damages.

3.2 PREPARATION
A. Completely and thoroughly swab raceway before installing wire.

3.3 WIRING METHODS
A. All Locations: Use only, Type THW or THHN/THWN insulation, in raceway.
B. Use wiring methods indicated.

3.4 INSTALLATION
A. Quality Control: Manufacturer's instructions.
B. Route wire and cable as required to meet Project Conditions.
C. Install cable in accordance with the NECA "Standard of Installation."
D. Use solid conductor for electrical feeders and branch panel circuits 10 AWG and smaller.
E. Use stranded conductors not smaller than 14 AWG for control circuits.
F. Use conductor not smaller than 12 AWG for power and lighting circuits with the exception of pre-manufactured fixture whips, listed for such use and not exceeding 6' in length.
G. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
H. Install all conductors in conduit.
I. Pull all conductors into raceway at same time.
J. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
K. Protect exposed cable from damage.

L. All cables shall be neatly supported.
M. Use suitable cable fittings and connectors.
N. Neatly train and lace wiring inside boxes, equipment, and panelboards.
O. Clean conductor surfaces before installing lugs and connectors.
P. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
Q. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
R. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
S. Identify and color code wire and cable under provisions of Section 16195. Identify each conductor with its circuit number or other designation indicated.
T. The number of conductors in each conduit run shall be limited to the requirements as indicated on the drawings and indicated in 2011 National Electrical Code.

3.5 FIELD QUALITY CONTROL

A. Quality Control: Field inspection, testing and adjusting.
B. Inspect and test in accordance with NETA ATS, except Section 4.
C. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16130
BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES
A. Wall and ceiling outlet boxes.
B. Pull and junction boxes.

1.3 RELATED SECTIONS
A. Section 16140 - Wiring Devices: Wall plates in finished areas.

1.4 REFERENCES
A. NECA - Standard of Installation.
B. NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
C. NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
E. NFPA 70 - National Electrical Code.

1.5 SUBMITTALS FOR CLOSEOUT
A. Contract Closeout: Submittals for Project closeout.
B. Record actual locations and mounting heights of outlet, pull, and junction boxes on project record documents.

1.6 REGULATORY REQUIREMENTS
A. Conform to requirements of NFPA 70.
B. Provide Products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 OUTLET BOXES
A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
B. Equipment Supporting Boxes: Rated for weight of equipment supported; include half-inch male fixture studs where required.
C. Cast Boxes: NEMA FB 1, Type FD, cast feralloy. Provide gasketed cover by box manufacturer.
D. Wall Plates for Finished Areas: As specified in Section 16140.
E. All boxes installed in areas exposed to inmates shall be cast, with no knockouts, and have tamper-resistant type torx head fasteners with center pin; fasteners shall be approved by A/E.

2.2 PULL AND JUNCTION BOXES

A. Surface Mounted Cast Metal Box: NEMA 250, Type 4; flat-flanged, surface mounted galvanized cast iron junction box. Provide a cast cover with neoprene gasket and stainless steel fasteners.

B. Boxes installed outdoors: NEMA 4X stainless steel rated.

C. All boxes installed in areas exposed to inmates shall be cast with no knockouts, and have tamper-resistant type torx head fasteners with center pin; fasteners shall be approved by A/E.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify locations of outlets in all locations areas prior to rough-in.

3.2 INSTALLATION

A. Install boxes in accordance with NECA "Standard of Installation."

B. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.

C. Set wall-mounted boxes at elevations to accommodate mounting heights specified in section for outlet device.

D. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Adjust box location up to 10 feet if required to accommodate intended purpose.

E. Orient boxes to accommodate wiring devices oriented as specified in Section 16140.

F. Maintain headroom and present neat mechanical appearance.

G. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

H. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.

I. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods as required.

J. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices.

K. Use flush-mounting outlet box in finished areas.

L. Do not install flush-mounted boxes back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separation in acoustic rated walls.

M. Secure flush-mounted box to interior wall and partition studs. Accurately position to allow for surface finish thickness.

N. Install flush-mounted box without damaging wall insulation or reducing its effectiveness.

O. Use adjustable steel channel fasteners for hung ceiling outlet box.

P. Do not fasten boxes to ceiling support wires.

Q. Support boxes independently of conduit.

R. Use gang box where more than one device is mounted together. Do not use sectional box.

S. Use gang box with plaster ring for single device outlets.
T. Use cast outlet box in exterior locations exposed to the weather and damp/wet locations.
U. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.
V. Provide touch up painting at all locations where existing boxes are removed from walls.
W. Junction boxes exposed to inmate accessible areas shall have minimum of 14 gauge thick cover plates.
X. Paint all new and existing fire alarm boxes and covers red.
Y. Junction boxes 4x4 and larger shall have a label installed on cover indicating purpose or wiring routed through box. Box labeling shall be pre-manufactured adhesive type. Markers shall not be permitted.

3.3 INTERFACE WITH OTHER PRODUCTS
A. Coordinate installation of outlet box for equipment connected under Section 16140.

3.4 ADJUSTING
A. Adjust flush-mounting outlets to make front flush with finished wall material.
B. Install knockout closures in unused box openings.

3.5 CLEANING
A. Clean interior of boxes to remove dust, debris, and other material.
B. Clean exposed surfaces and restore finish.

3.6 REPAIR
A. Repair any areas or surfaces damaged during conduit installation.
B. Paint (resurface) to original condition.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16140
WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Wall switches.
B. Receptacles.
C. Device plates covers.

1.3 RELATED SECTIONS

A. Section 16130 - Boxes.
B. Section 16195 – Electrical Identification.

1.4 REFERENCES

A. NECA - Standard of Installation.
B. NEMA WD 1 - General Requirements for Wiring Devices.
C. NEMA WD 6 - Wiring Device -- Dimensional Requirements.
D. NFPA 70 - National Electrical Code.

1.5 SUBMITTALS FOR REVIEW

A. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
B. Manufacturers with similar catalog numbers will not be considered as a basis for an equivalent product.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.
B. Provide Products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 RECEPTACLES

A. Manufacturers: Hubbell, Pass and Seymour or A/E approved equal.
B. Description: NEMA WD 1, Heavy-duty specification grade receptacle, with triple wipe contacts and grounding contacts integral with backstrap (no rivets)
C. Device Body: Ivory plastic for branch circuits for receptacles.
D. Configuration: NEMA WD 6, type as specified and indicated.
E. Convenience Receptacle: Type 5-20
F. GCFI Receptacle: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements. Hubbell, Pass and Seymour or A/E approved equal.

2.2 WALL PLATES
- A. Receptacle Cover Plate: Stainless steel.
- B. Weatherproof Cover Plate: Gasketed cast metal with gasketed device cover on exterior devices.
- C. Surface Mounted Plates: Galvanized steel plates

PART 3 - EXECUTION

3.1 EXAMINATION
- A. Verify that outlet boxes are installed at proper height.
- B. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- C. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.2 PREPARATION
- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean debris from outlet boxes, prior to device installation.

3.3 INSTALLATION
- A. Install in accordance with NECA "Standard of Installation."
- B. Install devices plumb and level.
- C. Install switches with OFF position down.
- D. Install receptacles with grounding pole on top.
- E. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.
- F. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- G. Connect wiring devices by wrapping conductor around screw terminal.
- H. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
- I. Install blank cover plate to match other wall plates on all unused boxes.
- J. Refer to Specification Section 16195, Electrical Identification, for receptacle labeling requirements.

3.4 INTERFACE WITH OTHER PRODUCTS
- A. Coordinate locations of outlet boxes provided under Section 16130 to obtain mounting heights specified and indicated on drawings.
- B. Install all wall switches, thermostats, and fire alarm pull stations at 48 inches above finished floor.
- C. Install convenience receptacles at 18 inches above finished floor.

3.5 FIELD QUALITY CONTROL
- A. Quality Control: Field inspection, testing, adjusting, and balancing.
- B. Inspect each wiring device for defects.
- C. Operate each wall switch with circuit energized and verify proper operation.
- D. Verify that each receptacle device is energized.
- E. Test each receptacle device for proper polarity.
- F. Test each GFCI receptacle device for proper operation.

3.6 ADJUSTING
- A. Adjust devices and wall plates to be flush and level.

3.7 CLEANING

A. Clean exposed surfaces to remove splatters and restore finish.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16170
GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Grounding electrodes and conductors
B. Equipment grounding conductors.
C. Bonding.

1.3 REFERENCES

A. Section 01400 – Quality Control.
B. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
C. NFPA 70 - National Electrical Code.

1.4 GROUNDING SYSTEM DESCRIPTION

A. Metal frame of the building.
B. Rod electrodes.

1.5 PERFORMANCE REQUIREMENTS

A. Grounding System Maximum Resistance: 10 ohms.

1.6 SUBMITTALS FOR REVIEW

A. Product Data: Provide for grounding electrodes and connections.

1.7 SUBMITTALS FOR CLOSEOUT

A. Section 01700 – Contract Closeout: Procedures for submittals.
B. Project Record Documents: Record actual locations of all components and grounding electrodes.
C. Certificate of Compliance: Indicate approval of installation by authority having jurisdiction.

1.8 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.
B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 MECHANICAL CONNECTORS

A. Material: Bronze.

2.2 WIRE

A. Material: Stranded copper.

B. Grounding Electrode Conductor: Minimum size to meet NFPA 70 requirements or as indicated on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide bonding to meet Regulatory Requirements.

B. Providing grounding connections to the surge protection devices as recommended by the equipment manufacturer.

C. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

3.2 FIELD QUALITY CONTROL

A. Section 01400 – Quality Control.

B. Inspect and test in accordance with NETA ATS, except Section 4. Provide test documentation to TDCJ PA.

C. Perform inspections and tests listed in NETA ATS, Section 7.13. Provide test documentation to TDCJ PA.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16190
SUPPORTING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Conduit and equipment supports.
B. Anchors and fasteners.

1.3 REFERENCES

A. NECA - National Electrical Contractors Association.
B. ANSI/NFPA 70 - National Electrical Code.

1.4 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.
B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.1 PRODUCT REQUIREMENTS

A. Materials and Finishes: Provide adequate corrosion resistance. All exterior fasteners shall be stainless steel.
B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
C. Anchors and Fasteners:
   1. Concrete Structural Elements: Use expansion anchors and preset inserts.
   2. Steel Structural Elements: Use beam clamps, spring steel clips and steel ramset fasteners.
   3. Concrete Surfaces: Use self-drilling anchors and expansion anchors.
   4. Sheet Metal: Use sheet metal screws.
D. All fasteners exposed to inmates shall be tamper resistant type torx head with center pin and approved by A/E.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".

C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.

D. Obtain permission from the A/E through the PA before drilling or cutting structural members.

E. Install surface-mounted cabinets and panelboards with minimum of four anchors.

F. Install conduit supports a maximum spacing specified in the NEC.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16195
ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
- A. Drawings, General Conditions and Special Conditions of the Contract, and Division 1 - General Requirements apply to work in this section.

1.2 SECTION INCLUDES
- A. Nameplates and labels.
- B. Wire and cable markers.

1.3 REFERENCES
- A. ANSI/NFPA 70 - National Electrical Code.

PART 2 - PRODUCTS

2.1 NAMEPLATES AND LABELS
- A. Engraved 3-layer laminated plastic, white letters on black background.
- B. Locations:
  1. Control equipment enclosure.
  2. Communication cabinets and computer cabinets.
  3. Field disconnects, start-stop stations, control panels.
  4. Junction boxes 4x4 and larger
  5. Interior to control cabinets where conduits enter. Provide label by conduit to identify field devices the conductors are connected to.
- C. Letter Size:
  1. Use 1/4-inch letters for identifying individual equipment and loads.
  2. Use 1/4-inch letters for identifying grouped equipment and loads.
  3. Use 3/4-inch letters for identifying Main Disconnect equipment.
- D. Nameplates and labels shall include:
  1. Equipment identification.
  2. Source of power.
  3. Junction boxes identifying type of circuits, electrical, intercom, and CCTV.
- E. Refer to Drawings for additional panel marking requirements for the unit shutdown switches at central control.

2.2 WIRE/CONDUIT/BOX MARKERS
- A. Description: Brady B-321 Heat-Shrink Polyolefin markers, or A/E approved equal. Typed label to identify each termination end point of the conductor. DC conductors shall identify polarity.
- B. Locations: Each conductor at wireway, pull boxes, outlet and junction boxes, and each load connection. All conduit penetrations identifying the location of each end. Provide label on all PLC Controls wire, fiber optic cables, intercom, CCTV, speaker and fire alarm wiring.
- C. Legend:
  1. Power and Lighting Circuits: Branch circuit or feeder numbers.

D. Boxes:
   1. Label each junction box in accessible locations to indicate the type of system (i.e.; security; power circuit - 1,3,5; etc.) Box labeling shall be pre-manufactured adhesive type. Markers shall not be permitted.
   2. Any new and existing boxes serving the fire alarm system shall have boxes painted red. Box covers shall also be painted red.

E. Overcurrent devices for fire alarm equipment.
   1. Provide labeling and circuit breaker identification in accordance with NFPA 72.

F. Paint band all fire alarm conduits (both reused existing and new) with 6" of red paint on 10' spacing, at both sides of every wall penetration, and every location entering/leaving a room. This painting shall be neatly done in a professional manner.

2.3 CABLE/FIBER TAGS

A. Polyethylene Tags: At each in-grade junction box and manhole, provide polyethylene tags that are a minimum of .08 inches thick, non-corrosive, non-conductive, resistive to acids, organic solvents. Provide a one-piece, nylon self locking tie. Identify cable with block letters.

2.4 UNDERGROUND CONDUIT MARKING TAPE

A. Description: Detectable solid foil core tape, color per APWA color code, 3" width, resists acids and alkalis found in soil.

B. Labeled "CAUTION BURIED COMMUNICATION LINE BELOW".

C. Manufacturers:
   1. Reef Industries.
   2. Pro-Line.
   3. Or A/E approved equal.

PART 3 - EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

A. Install nameplate and label parallel to equipment lines.

B. Secure nameplate to equipment front using screws or rivets.

C. Identify all conductors at every termination indicating endpoints of termination and tag identification as required.

D. Color coding for phase identification:

120/208 Volts	Phase
Black	A
Red	B
Blue	C
White	Neutral
Green	Ground

Conductor phase and voltage identification shall be made by color-coded insulation for all conductors smaller than No. 6 AWG. For conductors No. 6 AWG and larger, identification shall be made by color-coded insulation, or conductors with black insulation may be furnished and identified by colored electrical tape. Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16670
SURGE SUPPRESSION DEVICES

PART 1 - GENERAL

1.1 SECTION INCLUDES
- A. Surge Suppression Devices (SSD).

1.2 RELATED SECTIONS
- A. Section 16123 - Wire and Cable.
- B. Section 16170 - Grounding and Bonding.

1.3 REFERENCES
- A. The specified system shall be designed, manufactured, tested and installed in compliance with:
  1. Canadian Standards Association (CSA)
  2. American National Standards Institute and
  3. National Electrical Manufacturer Association (NEMA)
- B. Institute of Electrical and Electronic Engineers (ANSI/IEEE C62.11, C62,41, and C62.45)
- C. Federal Information Processing Standards Publication 94 (FIP PUB 94)
- D. National Fire Protection Association (NFPA 20, 70, 75 and 780)
- E. Underwriters Laboratories (UL 1449, UL 1283) MIL-STD-220A

1.4 DEVICE DESCRIPTION
- A. Self-contained series device. Devices Listed as RU (UL component) must be enclosed in a NEMA enclosure and installed per manufacturer's recommendations.

1.5 SUBMITTALS FOR REVIEW
- A. Product Data: Provide dimensions and materials of each component.
- B. Documentation of specified device's UL 1449 Listing and clamping voltage ratings of all protection modes shall be included as required product data submittal information.
- C. Documentation of the specified device's UL 1283 Complimentary Listing shall be included as required product data submittal information.
- D. Include product(s) date of manufacture.

1.6 PROJECT CLOSEOUT SUBMITTALS
- A. Furnish manufacturer's installation manual with installation, start up, trouble-shooting guide and operating instructions for the specified device.
- B. Furnish manufacturer's electrical and mechanical drawings which show device dimensions, weights, components, connection locations/details, mounting provisions, and wiring diagram.
- C. Record actual device locations.

1.7 REGULATORY REQUIREMENTS
- A. Product Listing: UL listed under UL 1449 (2-9-2007 Rev 2.5) Standard for Transient Voltage Surge Suppressions (TVSS) and the surge ratings shall be permanently affixed to the SSD.

PART 2 - PRODUCTS

2.1 SURGE SUPPRESSION DEVICES

A. Electrical:

1. Nominal operating voltage shall be 120V, two wire, plus ground.
2. Maximum continuous operating voltage shall be greater than 115% of the nominal system operating voltage.
3. Operating frequency range shall be at least 47 to 63 Hertz.
4. All protection modes shall be as defined by NEMA LS and shall follow IEEE 1100 recommendations for protection in all models.
5. Protection Modes:
   a. Line to Neutral Protection.
   b. Line to Ground Protection.
   c. Neutral to Ground protection.
   d. Surge current capacity, based on an 8 x 20 microsecond waveform shall be:
   e. Maximum single impulse current – 80 KA per phase.
6. Performance ratings shall be based on the UL 1449 listing ratings for IEEE C62.41 Category B3 impulse waveforms of 6kV 1.2 x 50 microseconds, 3kA 8 x 20 microsecond waveshapes.
7. Typical response time shall be 1.0 nanoseconds or less.
8. The SSD shall utilize metal oxide varistors for surge protection.
9. The SSD shall include optional fusing with status LED on unit face that takes the SSD off line without affecting the power to the load.
10. Manufacturers: Innovative Technology Model HS-30A, Surge Suppression Incorporated S-SPT12030A, or A/E approved equal.

B. Electronic:

1. Provide surge protection for 4 pair Cat 6 outside plant cables as well as Cat 6 UTP cables for Lan/Data applications
2. UL listed for primary (497) and isolated loop (497B) applications
3. Meets TIA/EIA standards 568 and 758 Cat 6 performances
4. Solid State protection
5. May be used between buildings as a building entrance protector or a isolated loop protection device.

2.2 ENVIRONMENTAL REQUIREMENTS

A. Storage temperature range shall be -55 to +85 C (-67 to +185 F)
B. Operating temperature range shall be -40 to +50 C (-40 to +122 F)
C. Operation shall be reliable in an environment with 0% to 95% non-condensing relative humidity.
D. SSD shall not generate any appreciable audible noise.
E. SSD shall not generate any appreciable magnetic fields.
F. SSD shall be capable of operating up to an altitude of 6,000 feet above sea level.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Connect SSD in series between power source and Control Panel power connection terminals, keeping conductors from SSD to Control Panel terminals as short and straight as practically possible. Follow the SSD manufacturer's recommended installation practices and comply with all applicable codes.

B. Mount SSD in NEMA 1 enclosures adjacent to Control Panel.

C. Electrical and mechanical drawings shall be provided by the manufacturer, which show SSD dimensions, weights, component and connection locations, mounting provisions, connection details and wiring diagram.

3.2 FIELD QUALITY CONTROL

A. Refer to General Conditions.

B. Inspect each wiring device for defects.

C. Verify that all connections are properly bonded.

3.3 WARRANTY

A. Refer to General Conditions for warranty requirements.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16730

INTERCOM SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Integrated rack mounted intercom/paging system including wiring, connections and testing.

1.02 PRICE AND PAYMENT PROCEDURES

A. Include alternate price for extended warranty and maintenance service after acceptance by Owner, alternate bid price shall not be included in Contractor Base Bid.
   1. Length of Contract shall be for a period of 5 years after expiration of initial warranty.
   2. Submit payment terms and conditions with alternate bid.

1.03 INFORMATIONAL SUBMITTALS

A. Product Data:
   1. Manufacturer's technical data/cut sheets on each product to be used.
   2. Equipment list, itemizing major system components. Each item shall be identified by manufacturer and model number, brief description of its function within system, and quantity provided.
   3. Sequence of operations: Descriptive statement and single-line block diagram showing how related equipment shall interface and operate as integrated intercom/paging system.

B. Quality assurance data:
   1. Complete documentation of inspections and tests performed, including any applicable certifications. Documentation shall note replacement of any system component or devices that failed during initial testing. Record of system field tests.
   2. List of recommended spare parts.
   3. Warranty data.

1.04 ACTION SUBMITTALS

A. Shop Drawings:
   1. Equipment rack detail drawing:
      a. Front view, showing location of rack mounted equipment.
      b. Rear view, showing necessary connections between components of system and power connections for components.
   2. Point-to-Point device location wiring diagrams with system device locations accurately shown on scaled architectural floor plans. No other system(s) shall be included on plans.
   3. Detailed schematic wiring diagrams for system devices. Wiring information shall include cable type, conductor routings, quantities and complete termination/connection details for devices used with system.
   4. Detailed system and controls descriptions.
   5. Detailed system and controls schematics.
   6. Detailed site specific operating instructions.

1.05 CLOSEOUT SUBMITTALS

A. Operation and maintenance data:
   1. Contractor shall provide 3 complete sets of operation and maintenance manuals for system supplied under this Contract.
      a. Installation Instructions: Manufacturer's printed instructions describing manufacturer's recommended installation procedures.

b. Operating Instructions: Manufacturer's printed instructions describing proper operation.
c. Equipment Identification: Nameplate information for each piece of equipment.
d. Maintenance Instructions: Manufacturer's printed instructions describing manufacturer's recommended maintenance.
e. Spare Parts Lists: Parts listing of spares provided under the Contract.
f. Suppliers and Contractors List: List of contractors and suppliers who supplied and installed equipment, systems, materials or finishes. Includes company name, address, and telephone number.
g. Tag Directories: Directory identifying tag number and equipment description and location.
h. Drawings List: List of contract and system drawings.
i. Product Data: Manufacturer's product data for equipment, systems, materials, and finishes.

B. Documentation:
1. Training materials.
2. Commissioning test plan and check-off list.

C. Maintenance contract: Demonstrate proof of after-hours service arrangements and provide telephone numbers to be used for such service.

D. Record Drawings: During system installation, maintain separate hard copy set of device location floor plan drawings, schematic wiring diagrams and point-to-point device wiring diagrams of integrated intercom/paging system to be used for Record Drawings. Set shall be kept up to date, reflecting changes and additions made to system. Copies of final "as-built" Record Drawings shall be provided to Owner in DXF format using latest version of AutoCAD.

1.06 QUALITY ASSURANCE

A. Regulatory requirements: Standards of foreign organizations shall not be used without prior written approval from Engineer.

B. Installer qualifications: Employ technicians on site to guide final checkout and to ensure system integrity. Technician shall be factory trained, authorized representative of equipment manufacturer.

C. Manufacturer qualifications:
1. Manufacturer shall have produced similar equipment for minimum period of 5 years.
2. Equipment, including peripheral devices, shall be manufactured 100% by single ISO certified U.S. manufacturer (or division thereof) and each component shall display manufacturer's name.
3. Equipment, including peripheral devices, shall be listed as product of single U.S. manufacturer under appropriate category by Underwriter's Laboratories, Inc., (UL), and shall bear UL label. Partial listing is not acceptable.
4. Manufacturer's authorized service representative: Competent, factory- trained Engineer or certified technician shall be present on site to guide final checkout and to ensure system integrity.

D. Contractor qualifications:
1. Contractor shall have minimum of 5 years documented intercom/paging system installations of similar scope to requirements of this specification.
2. Contractor shall have ability to provide parts and labor to expand system specified, if so requested, for period of 5 years from date of acceptance.
3. Contractor shall be local installation and service organization, currently recognized as factory authorized representative by manufacturer of specified intercom/paging system.
4. Provide minimum of 3 references whose integrated intercom/paging systems are of similar complexity and have been installed and maintained by Contractor in last 5 years.
5. At time of bid, Contractor shall be licensed by state or local jurisdiction to perform intercom system work within state. Contractors who have licenses or permits pending shall not be considered acceptable for bidding on this project.
6. Contractor shall assure that personnel working on project are registered with state or local jurisdiction Systems Licensing Board as provided for by current state statutes.

1.07 DELIVERY, STORAGE AND HANDLING

A. Equipment and accessories shall be clearly labeled, covered and protected from damage during shipment.

B. During delivery and storage, equipment shall be handled in manner that prevents damage, denting or scoring.

C. Equipment and components shall be stored in clean, dry environment, protected from weather, humidity and temperature variations, dirt, water, construction debris and physical damage in accordance with manufacturer's instructions.

1.08 SITE CONDITIONS

A. When applicable, interconnect control equipment to existing systems without disruption to existing operations.

B. Refer to manufacturer's data/cut sheets for environmental parameters for each specific component of intercom/paging system.

C. Verify temperature and humidity conditions for indoor and outdoor applications.

1.09 WARRANTY

A. Equipment and installation shall be warranted against defects and workmanship for minimum of 12 months, covering parts and labor, after acceptance by Owner.

B. Guarantee that integrated intercom/paging system can be upgraded, in future, with its manufacturer's latest enhancements and is supported by system manufacturer with unlimited technical telephone support.

C. Maintenance warranty:
   1. Provide warranty service during normal business hours and shall also demonstrate full capability of providing 24-hour service for after-hours emergency calls.
   2. After-hours emergency service shall be performed at Contractor's standard published service rates.
   3. Contractor shall be primary contact and respondent for service and support and shall be officially recognized and backed by integrated intercom/paging system manufacturer.
   4. Extended and/or out of warranty terms at reasonable and customary rates shall be available from Contractor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Harding Instrument Co. Ltd.

B. Dukane.

C. Stentofon.

D. SimplexGrinnell.

2.02 SYSTEM DESCRIPTION

A. Furnish, install, connect, and test component equipment required to form complete, operative, integrated intercom/paging system including, but not be limited to annunciators, speakers, microphones, mounting racks and consoles, cables and accessories, wiring, conduit (with pull strings), outlet boxes, junction boxes and other necessary materials

B. Provide necessary wiring, cabling, labor, tools, equipment, and ancillary materials necessary.

C. Install intercom/paging system and bring it to operational status for acceptance including but not limited to:
   1. Determine operations requirements for implementation.
   2. Supply and installation of an integrated intercom and communications system.
   3. System shall include equipment, installation, installation materials, set up, and testing to form a complete operating system.
   4. Independent system functions and integrated system functions shall be fully verified as part of system testing and commissioning.
   5. Work of this Contract also includes providing operating and maintenance manuals, training and demonstration, and extended warranty.

2.03 DESIGN REQUIREMENTS

A. Primary power: 120 volts ac, 60 Hz, single-phase, electrically supervised.

B. Complete installation shall conform to latest versions of applicable sections of NFPA 70 and local codes and requirements.

C. System wiring shall be in accordance with good engineering practices as established by EIA and NFPA 70. Wiring shall meet established state and local electrical codes. Wiring shall test free from grounds and shorts.

D. Control equipment shall have transient surge protection devices complying with UL 1449 and NFPA 70 requirements.

E. System shall include following functions:
   1. Door control intercom.
   2. Intercom station audio monitoring.
   3. Zoned public address.
   4. Multi-channel program distribution.
   5. Output and event response control.

F. System shall integrate with following other security and communication systems utilizing Ethernet to form a comprehensive facility management network:
   1. Graphic control panels.
   2. PLC door control system.
   3. Closed circuit television system.

G. System devices shall be designed for use in correctional facilities.

2.04 INTERCOM SYSTEM DESCRIPTION

A. System shall include comprehensive programmable microprocessor based communications system consisting of central control exchange capable of handling up to 200 remote stations.
   1. Locate programmable functions in battery backed RAM to prevent loss in power failure condition.

2. Systems shall have provisions for battery back-up and charger specifically designed for use with system power supplies. Systems using ac uninterruptible power supply (UPS) system not acceptable.
3. Provide controllers, expanders, paging amplifiers, intercom stations, master stations, and microphones for a complete intercom system.
4. Integrated intercom and communications system shall include following components:
   a. Digital controllers.
   b. Remote digital expanders.
   c. Station control cards.
   d. Paging expanders.
   e. Administrator software for configuring and maintaining system.
   f. Intercom master stations.
   g. Intercom stations.
   h. Discrete input/output modules.
   i. Auxiliary power supplies.
   j. Paging amplifiers.
   k. Loudspeakers and horn loudspeakers.
5. Interconnect digital controller, remote digital expanders, and paging expanders to form intercom exchanges capable of standalone local operation. Each digital controller shall be capable of supporting up to 4 remote digital expanders.
6. System capacity shall allow for 10 master stations and 250 intercom stations.
7. Intercom system shall include ability to be controlled by graphic control panels, pushbuttons, and switch selector panels.
8. System frequency response: 300 to 3,500 Hz.
9. Intercom station output: 82 dB SPL at 3' with 82 dB SPL input at face of transmitting station.
10. System equipment shall comply with radiation limits for Class A digital devices of FCC Rules Part 15, Subpart B.
11. Voice communications between intercom master stations and intercom stations shall be automatically switched half duplex with press-to-talk override.
12. Identification numbers for each category of device, group, zone, etc. shall range from 1 to 99,999.
13. Alphanumeric description for each device, group, zone, etc. shall allow up to 20 characters and spaces.
14. Intercom station field wiring shall be supervised for short circuit and open circuit faults.
15. System boards shall include self-diagnostic functions for complete operational and communication testing.
16. Devices shall be capable of insertion or removal from service while system is fully operational. Other system activity not directly related to unit's insertion or removal shall not be affected.
17. System diagnostics shall include ability to test system communications and devices from controller front panel keyboard.
18. System shall include ability to make on-line changes to system configuration.
19. System shall include logging functions for system activity and system maintenance.
20. On-line factory support shall be available through modem installed in controller.

2.05 INTERCOM SYSTEM OPERATION

A. Master Station types:
   1. Advanced master station:
      a. Display shall provide alphanumeric descriptions of functions, station and device names, and current activity. Function key labeling shall change depending on location within menu structure and options available to operator. Master station shall display current number of calls in queue, number of acknowledged calls, and number of disabled stations.
      b. Advanced master stations, through their command functions shall have ability to:
         1) Place and answer calls.
         2) Call requests can be programmed to be received by another master station.
         3) Make group calls and zoned public address announcements.
         4) Adjust their intercom volume level.
         5) Recall last station with a single control.

6) Adjust display back lighting.
7) Select 12 or 24 hour clock display.

c. Volume adjustments of master station and intercom station levels shall be controllable during communications. Each station's volume level shall be independently software controlled. Level settings shall remain in effect until modified by future adjustment.
d. Master stations shall include ability to be placed in unmanned mode, which automatically routes associated call handling functions to a pre-defined secondary master station.
e. Answer calls.
   1) Call requests can be programmed to be received by another master station.
   2) Make group calls and zoned public address announcements by pressing selected pushbuttons on control console.
f. Adjust their intercom volume level.
g. Recall the last station with a single control.
h. Call placement from an intercom station:
i. Depressing an intercom station's call push-button to place a call request in queue of master station or stations assigned to receive that station's calls. Calls shall be queued in order of priority level associated with intercom station and time that call was placed.
j. Advanced master station shall normally display identity of top 3 calls in its call request queue. Call identity includes the Door Number and/or an alphanumeric descriptor. Descriptor shall be up to 20 characters in length.
k. Advanced master station display shall indicate total number of calls currently in its queue. Scroll keys shall enable master station to view all calls in queue.
l. Calls not answered within pre-programmed time maybe place a secondary call request on an assigned master station.
m. Call answering at an intercom master station:
   1) System shall notify operator call is incoming. System shall provide call confirmation tone (single beep) at master station when call is placed. Tone verifies that call has been placed into system queue. Tone shall be programmable to be disabled if desired.
   2) Intercom system shall communicate with CCTV system via Ethernet and display pre-determined CCTV images on a monitor adjacent to master station answering call if intercom/door is not viewable from control console controlling the door.
   3) Intercom master stations shall be able to answer top call request in its queue by depressing 'Next' function key. At completion of call, 'End' function key shall close communication link and remove call from queue.
   4) Queued calls may be answered out of sequence by scrolling through queue to desired call. Selected call shall flash on display and may be answered by depressing 'Enter' key. Pressing 'End' key closes communication link, removes call from queue and returns master station display to top of queue.
n. Master station shall display identity and type of connected device.
o. Program distribution:
   1) System shall receive audio program from tuners, tape decks, etc. for program distribution to intercom stations and/or loudspeaker circuits.
   2) System shall distribute programs to remote digital exchanges through digital audio trunk. Additional program sources can be connected locally at each remote digital exchange.
   3) Program distribution (channel, volume, on, off) control is from intercom advanced master stations. Each intercom station, station group, or page zone shall be independently controllable.
   4) Program distribution shall be temporarily suspended to affected intercom stations or paging zones during paging announcements.
   5) Program distribution to affected intercom stations shall be temporarily suspended during voice communications.
p. Paging:
   1) Master stations shall have ability to page to pre-determined groups of intercom stations and/or loudspeaker zones.
   2) Paging selection shall be made by selecting page function and a group or zone from selection list. Alternately, zone number may be entered after page function has been selected.

q. CCTV interface:
   1) System shall transmit command signals to CCTV controller to route camera signals to viewing monitors.
   2) Whenever a master station answers a call from an intercom station or places a call to an intercom station, camera associated with intercom station shall be displayed on monitor associated with master station.

2. Master Audio Interface Station:
   a. Intercom station designated as a master station. Master audio interface intercom may be integrated into a control console or provided with a faceplate constructed of 11-gage brushed stainless. Internal steel offset grille shall restrict inserting objects through speaker grille. Stations shall be ruggedly constructed for use in correctional facilities and resistant to damage from misuse, soil, and sprays.
   b. Each intercom station shall incorporate an internal loudspeaker, microphone preamplifier, and function multiplexing circuitry. Pushbuttons shall provided on each station for answering intercom calls or paging specific zones. Pushbuttons shall be software assignable for placement of call requests or control of auxiliary functions.
   c. Pushbuttons shall be stainless steel and vandal-resistant. Pushbuttons shall be solid metal piezo-electric type with no moving parts and a 50 million operation lifetime.
   d. Loudspeakers: Waterproof mylar cone type.
   e. Master Audio Interface Stations shall have ability to:
      1) Answer calls.
      2) Call requests can be programmed to be received by another master station.
      3) Make group calls and zoned public address announcements by pressing selected pushbuttons on control console.
      4) Adjust their intercom volume level.
   f. Call placement from an intercom station:
      1) Depressing an intercom station's call push-button to place a call request Calls not answered within pre-programmed time maybe place a secondary call request on an assigned master station.
   g. Call answering at an Master Audio Interface Station:
      1) System shall notify operator call is incoming. System shall provide call confirmation tone (single beep) at master station when call is placed. Tone verifies that call has been placed into system queue. This tone shall be programmable to be disabled if desired.
      2) Intercom system shall communicate with CCTV system via Ethernet and display pre-determined CCTV images on a monitor adjacent to master station answering call if the intercom/door is not viewable from the control console controlling the door.
      3) Operator shall press and hold the pushbutton associated with the intercom wall station he desires to communicate with. While holding the pushbutton the operator may speak and it will be transmitted and emitted from the wall intercom speaker. Once the operator releases the pushbutton the wall intercom microphone is activated and the individual by the intercom may speak to the operator in the picket. Once communication is complete then the operator shall press the "Clear" pushbutton on the control console.
   h. Paging:
      1) Stations shall have ability to page to pre-determined groups of intercom stations and/or loudspeaker zones.
   i. CCTV interface:
      1) System shall transmit command signals to CCTV controller to route camera signals to viewing monitors.

2.06 HARDWARE

A. Digital controllers:
   1. Form an intercom exchange capable of independent local operation. Exchange capacity shall be increased by connecting up to 4 remote expanders to each controller.
   2. Multiple controllers may be networked together via digital audio trunks and/or Ethernet data networks to form larger systems.

3. Controller shall contain cards providing USB ports, Ethernet ports, serial ports, audio interface and programming capability required to control intercom system and communicate with other systems.
4. Front panel keypad/display for system setup and maintenance.
5. Convert incoming audio signals to digital format and outgoing signals to analog format.
6. intercom master station audio, press-to-talk and hook switch status transmitted over 2 single shielded pair cables with wiring supervision to detect open circuit and short circuit faults.
7. Internal modem for remote troubleshooting.

B. Remote digital expanders:
1. Provide master station and intercom features similar to digital controllers to facilitate exchange expansion.
2. Provide 8 amplified paging outputs that can drive 25 Vrms loudspeaker circuits and provide 5 watts output per channel. Adjacent channels may be bridged to obtain higher power.

C. Station control cards:
1. Provide card with minimum of 16 half-duplex intercom station ports which can be employed in adjacent pairs for full duplex devices.
2. Provide interface that converts incoming audio signals to digital format and outgoing signals to analog format. Each channel shall monitor status of up to 2 switches associated with each intercom station.
3. Provide separate audio power amplifier for nonblocking call operation.
4. Station audio, switch, and power functions may be transmitted over a single shielded pair cable with supervision to detect open circuit and short circuit faults.

D. Paging zone expanders: Provide 3 page inputs (from an audio amplifier) with each input having 6 selectable relay controlled outputs. One relay controlled output for each input that can be used to key an audio amplifier.

E. Administrator software for configuring and maintaining system:
1. Function on a standard PC to support system configuration, diagnostics, maintenance, and logging but not be required for system operation.
2. 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 shall 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 shall 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 shall include:
   a. Display of system activity with filtering options.
   b. Search by time and date.
   c. Search by device.
   d. Search by parameter.

F. Advanced intercom master station:
1. Desktop intercom master stations shall consist of display, keypads, internal speaker/microphone, telephone handset with hook switch, headset jack, and external buzzer contacts.

2. Display module shall consist of 4 line by 20-character alphanumeric LCD display mounted behind a brushed stainless steel faceplate. Display shall include scratch- and impact-resistant window, adjustable viewing angle, and adjustable back lighting. Character size: 0.19" H x 0.12" W.
3. Provide 5 function keys below display to enter menu selections. Function key action shall be labeled on display and vary according to location in menu structure and current options available.
4. Separate 19 button keypad shall include standard 12 numeric keypad keys, two scroll keys, enter key, clear key, headset key, mute key, and press-to-talk key.
5. Key switch lifetime for all keys, 10 million operations.
6. Telephone handset with coiled cord, press-to-talk bar, and hook switch cradle shall be mounted on side of master station. Lifting handset from hook switch automatically disconnect loudspeaker/microphone communications.
7. Desktop-mounted intercom master station top housing assembly shall be fabricated with single piece, brushed stainless steel, slope-faced faceplate. Rear, bottom, and side panels shall be single-piece formed steel with welded joints and matte black finish. Overall housing dimensions, excluding rubber feet, 9.5" W x 10.25" D x 4.5" H .

G. Basic master intercom station:
1. Network and power supply interface, audio amplification and processing module, network and operating status LED's, ribbon cable header for connection to display module.
2. External microphone interface with phantom power capability.
3. External loudspeaker interface.
4. Microphone with press-to-talk switch interface.
5. External buzzer contact closure interface.
6. Surface wall mount enclosure nominally 9" H x 6.5" W x 1.8" D.
7. Capable of activating 8 separate paging zones.

H. Discrete input/output modules:
1. Each discrete I/O (input/output) module shall interface up to 48 contact closure type input monitor points and 48 solid-state (16 relay, 48 relay) output control points. Outputs shall be current sink (voltage source, LED driver, form C contact) type.
2. Inputs shall be supervised for open circuit and short circuit faults in field wiring. With terminating resistors, each supervised input is able to monitor 2 contact points for total of 96 inputs.
3. DIO modules: Rack- or wall-mounted.

I. Network repeaters:
1. Extend LonWorks network cable limits or increase node limits. Each unit shall include 4 network ports. Data received on any port shall be retransmitted on other ports.
2. Units shall be surface wall-mounted and include depluggable screw terminal connectors, redundant power supply connections, and internal fuse to protect circuitry.

J. Analog intercom stations:
1. Design for mounting on existing backboxes or new two-gang boxes. Construct faceplates of 11-gage brushed stainless. Internal steel offset grille to restrict inserting objects through speaker grille. Stations shall be ruggedly constructed and resistant to damage from soil and sprays.
2. Each intercom station shall incorporate internal loudspeaker, microphone preamplifier, and function multiplexing circuitry. Provide one pushbutton on each station. Pushbuttons shall be software assignable for placement of call requests or control of auxiliary functions.
3. Pushbuttons shall be vandal-resistant and of stainless steel. Pushbuttons to be solid metal piezo-electric type with no moving parts and a 50 million operation lifetime.
4. Loudspeakers: Waterproof mylar cone type.
5. Intercom station functions shall be transmitted over a single shielded pair cable. Stations shall be provided with MTA type insulation displacement connector requiring no wire stripping for installation.
6. Outdoor intercom stations shall be identical in all respects to standard intercom stations, except that metal plates and hardware to be stainless steel, and internal circuitry and components shall be conformally coated.

K. Intercom station boards:
   1. Use to interface generic intercom stations and loudspeakers to system station audio boards for 2-way voice communication or audio monitoring.
   2. Units shall include microphone preamplifier, line supervision electronics, multiplexing electronics, and loudspeaker transformer.
   3. Units shall include pigtail and switch options as required for each location.

L. Paging amplifiers:
   1. Provide paging amplifiers and zone switching as required to perform functions described herein and indicated on Drawings.
   2. Constant voltage output type with power output capacities to drive loudspeakers connected at sufficient levels with no more than 90% amplifier loading.

M. Loudspeakers:
   1. Nominal 8" diameter dual cone type units. Loudspeakers to incorporate 6-ounce permanent magnet and include a 5-watt multi tap transformer for use on 25-volt and 70-volt constant voltage type distribution systems.
   2. Provide each loudspeaker with standard baffle plate and flush-mounted enclosure. Baffle and enclosure shall be all metal construction and finished in polar white baked on enamel.

N. Horn loudspeakers:
   1. Weatherproof compression driver units with integral screwdriver adjustable multi-tap transformer for use on both 25-volt and 70-volt constant voltage distribution systems. Integral mounting plate suitable for mounting on a standard outlet box shall include swivel type alignment bracket.
   2. Units shall be rated to handle 15 watts input power. Nominal sensitivity 110 dB SPL at 3' with 1 watt input.

O. Control console:
   1. Intercom control shall be built into door control console. This may be a faceplate mounted into door control console.
   2. Coordinate layout of the intercom with door control console manufacture and CCTV manufacturer to ensure properly sized cabinets and consoles are provided.

P. 19" hardware cabinet:
   1. Provide hardware 19" racks for each housing unit and administration building central control. Rack cabinets shall be lockable 19" rack enclosures and housed in central control and in the mechanical rooms on second floor of each housing unit. Cabinets shall contain hardware and patch panels required for field wiring to intercom and CCTV system.
   2. Coordinate layout of intercom/CCTV console and 19" hardware rack with CCTV manufacturer to ensure properly sized racks are provided.

2.07 UNINTERRUPTABLE POWER SUPPLY (UPS)

A. One UPS shall give provided to sustain operation on IP video management system. Provide UPS to sustain operation of all equipment located in main command center for a 10-minute period.

B. Provide continuous, no-break power during complete or momentary loss of supply power.

C. In normal operating mode, UPS shall condition line power protecting against environmental conditions, power surge, power sag, under-voltage, over-voltage, line noise, frequency (variation of the waveform), transients, and harmonic distortion.

D. Provide external bypass switch to allow UPS to be removed from incoming power line for service.

2.08 CONDUIT AND WIRE

A. Conduit: 3/4" (19 mm) minimum, in accordance with NEC, local, and state requirements.

B. Wire:
   1. Material: Copper.
   2. In conduit or raceway with conduit fill not exceeding 40%.
   3. In accordance with local, state and national codes and as recommended by manufacturer of intercom/paging system. Number, size and type of conductors shall be as recommended by system manufacturer and as shown on Drawings.
   4. 120-volt ac power circuits: 12 AWG minimum, 600-volt insulation.
   5. Wiring run in underground conduits: Suitable for wet locations.

C. Terminal boxes, junction boxes and cabinets: UL-listed for intended use and purpose.

D. Provide factory manufactured field interface cables to limit wire nut splice connections.

E. Field wiring shall conform to manufacturer's recommendations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify Site conditions prior to installation.

3.02 INSTALLATION

A. Inspect both substrate and conditions under which Work shall be performed. Do not proceed until unsatisfactory conditions have been corrected in and acceptable manner.

B. Verify accuracy of dimensions, allowances, and clearances on site prior to commencing with any work that may be affected by those dimensions, allowances, and clearances.

C. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

D. Supervise construction activities to ensure that no part of Work, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

E. Provide adequate ventilation for heat radiating equipment.

F. Install equipment to provide maximum safety to operating and maintenance personnel.

G. Install system components and appurtenances in accordance with manufacturer's specifications, referenced practices, guidelines and applicable codes. Furnish necessary interconnections, services and adjustments required for complete and operable system as specified. Control signal, communications and data transmission line grounding shall be installed as necessary to preclude ~~ground loops, noise and~~ surges from adversely affecting system operation.

H. Wiring shall be installed in dedicated conduit/raceway throughout. Cable shall not be pulled into conduits or placed in raceways, compartments, outlet boxes, junction boxes, or similar fittings with other building wiring.

I. Provide cabinets, boxes and similar enclosures containing integrated intercom/ paging system components and/or cabling easily accessible to employees or to general public with lock. Boxes located above ceiling level in occupied areas of building shall not be considered accessible.

J. Cover junction boxes and small device enclosures below ceiling level and easily accessible to employees or general public with suitable cover plate and secure with tamper proof screws.

K. Repair factory finishes where damaged during construction.

L. Support boxes independent of conduit/raceway system.

M. Anchor equipment securely to walls, floor, and building steel, unless otherwise defined. Use expansion anchors in concrete and masonry. Install equipment level and plumb.

N. System devices identified on building drawings are intended to generally indicate areas where such devices are to be located. Contractor shall be responsible for determining final location of these devices in accordance with Owner's requirements.

O. Riser diagrams are schematic and do not show every conduit, wire box, fitting or other accessories. Provide such materials as necessary for complete and functioning installation. Install in accordance with referenced codes and these specifications. Use weatherproof equipment or covers where installed in areas exposed to weather.

P. Remove nonconducting material from contact surfaces before making grounding connections. Ground intercom/paging system in accordance with manufacturer's recommendations.

Q. If more or larger conduit is required than exists or is indicated on Drawings, allow for such additional conduit in contract price.

R. System equipment shall be contained within equipment racks, cabinets, or closets. If more or larger racks or cabinets are required than exist or are indicated on Drawings, allow for such additional equipment racks and cabinets in contract price.

S. System equipment and field devices shall be held securely in place. Fastenings and supports shall be selected to provide a safety factor of 3.

T. System equipment equipped with plug in power connectors shall be connected to a dedicated receptacle. Do not use tap connectors for plugging in multiple plugs into a single receptacle.

U. Cable within equipment racks, cupboards, and cabinets, or on backboards, shall be neatly bundled and secured.

V. Wires shall not be nicked, have strands removed, or have frayed strands when removing insulation or terminating.

W. Provide factory-manufactured interface cables for each field interface board. Provide terminal blocks in cabinet or on backboard for factory cable interface to field wiring.

X. Color identification of wiring:
   1. Identify wiring by continuous insulation color.
   2. Where multi-conductor cables are used, use same color-coding system for identification of wiring throughout.
   3. Maintain uniform phasing and color-coding throughout system.

Y. Name identification of wiring:
   1. Identify wiring at all equipment locations, pull boxes, junction boxes, and outlet boxes.
   2. Develop uniform identification scheme for use throughout system.
   3. Record wire name identification on applicable drawings and provide wiring tables within operating and installation manuals.

Z. Use one of following marking materials:
   1. Heat shrink sleeves.
   2. Clear plastic tape wrap-on strips with designated labeling section.

AA. Install a UL497 rated surge suppression device on copper communication and power cables connected to intercom control equipment, see Section 16670.

3.03 TESTING AND COMMISSIONING

A. Place entire system into full and proper operation as designed and specified.

B. Verify hardware components are properly installed, connected, communicating and operating correctly.

C. Perform final acceptance testing in presence of Owner's Representative, executing point by point inspection against documented test plan demonstrating compliance with system requirements as designed and specified.
   1. Submit documented test plan to Owner at least 14 days in advance of acceptance test, inspection and check-off.
   2. Conduct final acceptance tests in presence of Owner's Representative, verifying each system component is operating correctly.
   3. Acceptance by Owner is contingent on successful completion of check-off; if check-off is not completed due to additional work required, re-schedule and perform complete check-off until complete in one pass, unless portions of system can be verified as not adversely affected by need for additional work.
   4. Integrated intercom/paging system shall not be considered accepted until acceptance tests have been successfully checked-off. Beneficial use of part or all of system shall not be considered as acceptance.
   5. Correct any and deficiencies observed during final check-off at no cost to Owner until equipment and system components operate properly.

3.04 MANUFACTURER'S FIELD SERVICES

A. Provide an on-site, factory-trained technician to assist, advise and manage installation personnel.

B. Provide system components necessary to modify/expand integrated intercom/paging system on site. Modification may include addition and deletion of devices, circuits, or changes to system operation. System design and structure shall place no limit on type or extent of modifications performed on site.

3.05 TRAINING

A. Provide system operations, administration and maintenance training by factory-trained, authorized representative of manufacturer qualified to instruct:
   1. Owner will designate personnel to be trained.
   2. Provide printed training materials for each trainee including product manuals, course outline, workbook or student guides and written examinations for certification.
   3. Provide hands-on training with operational equipment.
   4. Training shall be oriented to specific system being furnished as designed and specified.

B. Provide demonstration and instruction sessions to familiarize Owner's operation and maintenance personnel with systems and their operation and maintenance.

C. Establish agendas for demonstration and instruction sessions in conjunction with Owner. Coordinate scheduling of sessions with Owner.

D. Provide a four 4-hour sessions over 2 days for instruction and demonstrate operation of systems.

E. Provide 3 days of 8-hour technical seminars for 4 people to demonstrate configuration, troubleshooting, repair, and maintenance of system.

3.06 MAINTENANCE

A. Perform manufacturer's recommended preventative maintenance on applicable components and/or devices.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

NOTICE TO BIDDERS

The Texas Department of Criminal Justice (TDCJ) is inviting bids to Replace Security Control System at the Billy Moore Unit in Overton, Texas.

The project consists of the replacement of 300 existing door controls in combination with an intercom system with all new components. No locks are included. All work shall be performed as shown in the construction plans prepared by Stanley Consultants, Inc.

Contractor must provide evidence that demonstrates the contractor is qualified to satisfactorily perform the specified work and must have worked in this trade for at least five (5) years. The contractor shall submit written evidence to include a minimum of three (3) projects completed within the last ten (10) years of similar work, size and complexity to include the owner's name, telephone number, location, type of facility, construction cost and the date of completion with all bid proposals.

Contractors are required to submit a HUB Subcontracting Plan as detailed in Exhibit 1. Failure to submit a completed HUB Subcontracting Plan will result in the bid being rejected from further consideration.

Contractor must be bondable and insurable at the levels required. All bid proposals must be accompanied by a Bid Deposit in the amount of 5% of greatest amount bid. Performance and Payment Bonds in the amount of 100% of the contract amount will be required upon award of a contract.

The Owner reserves the right to reject any or all bids, and to waive any informality or irregularity.

It is the Owner's intent to issue the Notice to Proceed at the Pre-Construction Meeting with the performance period to begin on the following day.

Bid Documents can be purchased from Stanley Consultants, Inc. at a cost of $60.00 (Sixty Dollars), non-refundable per set, inclusive of mailing/delivery costs, or they may be viewed at various plan rooms. Payment checks for documents should be made payable to the Stanley Consultants, Inc. and sent to:

Stanley Consultants, Inc.
Attn: Gary Sutorius, Sr. Project Mgr.
6836 Austin Center Blvd., Suite 350
Austin, TX 78731
Phone: (512) 427-3600
Email: sutoriusgary@stanleygroup.com

A Pre-Bid Conference will be held at 10:00 a.m. on **September 17, 2015** at the Billy Moore Unit, 8500 North FM 3053, Overton, TX 75684, followed by a site-visit. **ONLY ONE SCHEDULED SITE VISIT WILL BE HELD FOR REASONS OF SECURITY AND PUBLIC SAFETY; THEREFORE, BIDDERS SHOULD ATTEND.**

Due to strict security please be aware that entrance to the unit will be denied to anyone in possession of any items to include, but not limited to, any of the following: weapons (including pocket knives), tobacco products, alcohol, cell phones, pagers and more than $25.00. Visitors are subjected to searches as they enter the facility and may be required to walk through electronic scanning equipment such as metal detectors. Access to the facility will be denied to anyone not willing to be searched. Appropriate attire required.

Bids will be publicly opened and read at **2:00 p.m.** on **October 6, 2015**, in the Contracts and Procurement Conference Room located at Two Financial Plaza, Suite 525, Huntsville, Texas. The Texas Department of Criminal Justice requires the Contractor to make a good faith effort to include Historically Underutilized Businesses (HUB's) in at least 36.9% of the total value of this construction contract award. Attention is called to the fact that not less than the minimum wage rates prescribed in the Special Conditions must be paid on these projects.

SOLICITATION, OFFER AND AWARD
(Construction, Alteration, or Repair)

IMPORTANT – The "offer" section on Page 2 must be fully completed by offeror.

1. CONTRACT NO.	2. SOLICITATION NO.	3. TYPE OF SOLICITATION	4. DATE ISSUED	5. PROJECT NUMBER	6. TRACKING NO.
	696-FD-16-B001	☒ SEALED BID (IFB) ☐ NEGOTIATED (RFP)	09/02/2015	111322	11106003

7. ISSUED BY	8. ADDRESS OFFER TO
TEXAS DEPARTMENT OF CRIMINAL JUSTICE CONTRACTS AND PROCUREMENT INFORMATION TECHNOLOGY, CONSTRUCTION AND UTILITIES BRANCH TWO FINANCIAL PLAZA, SUITE 525 HUNTSVILLE, TX 77340	(SEE SECTION L, PARAGRAPH 11)

9. FOR INFORMATION CALL: ➔	A. NAME	B. TELEPHONE NO. (NO COLLECT CALLS)
	Lynne Piippo, CTPM, CTCM	PHONE NO.: (936) 437-7114 FAX NO. (325) 223-0310

Document Type: 9 **Statutory Cite: 2166.003 (b)**	ESTIMATED BUDGET: $3,078,500.00

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE STATE REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS (Title, identifying no., date):

Replace Security Control System – Billy Moore Unit
8500 North FM 3053
Overton, Texas 75684

As designed by:
Stanley Consultants, Inc.
6836 Austin Center Blvd., Suite 350
Austin, Texas 78731

Please provide the following information:
DUNS # _____ TAX ID # _____ CHARTER # _____

11. The Contractor shall begin performance within 10 calendar days and complete it within 310 calendar days as specified in the Notice to Proceed. This performance period is ☒ mandatory, ☐ negotiable. (* SEE SECTION F)

12A. THE CONTRACTOR MUST FURNISH, AT ITS OWN EXPENSE ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES", indicate within how many calendar days after award in Item 12B.)	12B. CALENDAR DAYS
☒ YES ☐ NO	14

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and two (2) copies to perform the work required are due at the place specified in Item 8 by 2:00 p.m. local time October 6, 2015. If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than **100** calendar days for acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)		
14. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)	15A. Telephone No. (Include Area Code) ( ) _____ 15B. Fax No.: ( ) _____	16. EMAIL ADDRESS

AMOUNTS ➔	SEE BID SCHEDULE

17. The offeror agrees to furnish any required performance and payment bonds.

18. ACKNOWLEDGMENT OF ADDENDA / AMENDMENT
(The offeror acknowledges receipt to the solicitation – give number and date of each)

ADDENDA/ AMENDMENT NO.											
DATE											

19A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	19B. SIGNATURE	19C. OFFER DATE

AWARD (To be completed by State)

20. ITEMS ACCEPTED:

21. AMOUNT	22. AMOUNT IN WRITING
23. ADMINISTERED BY Texas Department of Criminal Justice Contracts and Procurement, Information Technology, Construction and Utilities Branch Two Financial Plaza, Suite 525 Huntsville, TX 77340	24. PAYMENT WILL BE MADE BY Texas Department of Criminal Justice Accounts Payable P.O. Box 4018 Huntsville, TX 77342-4018

STATE WILL COMPLETE ITEM 25 OR 26 AS APPLICABLE

☐ 25. NEGOTIATED AGREEMENT Contractor is required to sign this document and return _____ copies to issuing office. Contractor agrees to furnish and deliver all items or perform all requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.	☐ 26. **AWARD**: Your offer on this solicitation to the items listed above is accepted subject to Section D. Conditions Precedent to Award. The contract documents consist of (a). all documents included in TDCJ Solicitation Number 696-FD-16-B001and Solicitation Addenda; (b). all documents included in your Offer; and (c) this Solicitation, Offer and Award Document.
27A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN (Type or print)	28A. NAME AND TITLE Brad Livingston Executive Director

27B. SIGNATURE	27C. DATE	28B. TEXAS DEPARTMENT OF CRIMINAL JUSTICE By	28C. AWARD DATE

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SECTION B

THE SCHEDULE
BID SCHEDULE

ITEM NO.	DESCRIPTION	QUANTITY	PRICE
01	**Base Bid**		
	Replace Security Control System at the Billy Moore Unit, located at 8500 North FM 3053, Overton, Texas as shown by the construction plans as prepared by Stanley Consultants, Inc.		
		Lump Sum	$_____
01A	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13400 – 1.09.B.1		$_____
01B	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13432 – 2.03		$_____
01C	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13775 – 1.07		$_____
01D	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 13775 – 3.06.D		$_____
01E	**Alternate**		
	Provide pricing for an additional one-year period of warranty to include all parts, labor and certification for: Specification Section 16730 – 1.02.A		$_____

The Base Bid is separated as follows:

(1) Materials incorporated into the realty (Cannot be less than the price Contractor paid for materials)	$_____
(2) Labor	$_____
(3) Overhead and Profit (includes the cost of the Payment and Performance Bonds)	$_____
TOTAL	**$_____**

RECYCLED MATERIALS

The Texas Department of Criminal Justice is required to (1) eliminate procedures and specifications that discriminate against products made of recycled materials and (2) encourage the use of products made of recycled materials. If product(s) being bid on this solicitation (a) contains recycled material whether post-consumer or pre-consumer; or (b) is a product that has been remanufactured, rebuilt, or otherwise restored to a like new condition, bidder shall, as part of the bid response, indicate on the appropriate line item if product has recycled content.

_____

_____

_____

SECTION C

SPECIFICATION AND DRAWINGS

(SEE SECTION J, ATTACHMENT NO. 11 AND 12)

SECTION D

CONDITIONS PRECEDENT TO AWARD

The following are conditions precedent to the Award being an enforceable contract. In the event these conditions are not met, this Award shall be null and void and of no force or effect, unless Owner agrees in writing to the contrary.

The conditions precedent to the Award are:

1. Compliance with Section I. General Conditions, Article III., Contract Documents and Bonds, paragraph 3.5 Performance and Payment Bonds;

2. Compliance with Section I. General Conditions, Article V., Contract Responsibilities, paragraph 5.7 Insurance.

3. RESERVED

SECTION E

INSPECTION AND ACCEPTANCE

1. Inspection and acceptance shall be as stated in the Contract Documents. The Owner hereby reserves the right to perform inspections of the Work and any and all inspections performed by the Owner or by others for the Owner shall be for the sole benefit of the Owner. Quality control is and shall remain one hundred percent (100%) the responsibility of the Contractor.

2. **INSPECTION OF CONSTRUCTION**

   (a) *Definition:* "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

   (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work performed under the Contract conforms to Contract requirements. The Contractor shall maintain complete inspection records and make them available to the Owner. All Work shall be conducted under the general direction of the Owner and is subject to Owner inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract.

   (c) Owner inspections and tests are for the sole benefit of the Owner and do not:

      (1) Relieve the Contractor of responsibility for providing adequate quality control measures;

      (2) Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;

      (3) Constitute or imply acceptance; or

      (4) Affect the continuing rights of the Owner after acceptance of the completed Work under paragraph (i) of this section.

   (d) The presence or absence of an Owner's inspector does not relieve the Contractor from any Contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Owner's written authorization.

   (e) The Contractor shall promptly furnish, at no increase in Contract Sum, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Owner. The Owner may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. The Owner shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the Contract.

   (f) The Contractor shall, without charge, replace or correct work found by the Owner not to conform to Contract requirements, unless in the public interest the Owner consents to accept the Work with an appropriate adjustment in Contract Sum. The Contractor shall promptly segregate and remove rejected material from the premises.

   (g) If the Contractor does not promptly replace or correct rejected Work, the Owner may:

      (1) By contract or otherwise, replace or correct the Work and charge the cost to the Contractor, or

(2) Terminate for default the Contractor's right to proceed.

(h) If, before acceptance of the entire Work, the Owner decides to examine already completed Work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the Work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the Work is found to meet Contract requirements, the Owner shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the Work was thereby delayed, an extension of Contract Time.

(i) Unless otherwise specified in the Contract, the Owner shall accept, as promptly as practicable after completion and inspection, all Work required by the Contract or that portion of the Work the Owner determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Owner's rights under any warranty or guarantee.

SECTION F

DELIVERIES OR PERFORMANCE

1.1 CONTRACT TIME

The performance period for this Contract shall be **three hundred ten (310)** calendar days and shall begin on the date designated in the Notice to Proceed. All Work shall be completed within the amount of calendar days designated in the Notice to Proceed, unless otherwise modified by written agreement of the contracting parties.

2.1 LIQUIDATED DAMAGES - FAILURE TO COMPLETE WITHIN CONTRACT TIME

(a) If the Contractor fails to complete the Work within the time specified in the Contract, or any extension, the Contractor shall pay to the Owner as liquidated damages, the sum of **Six Hundred Five Dollars ($605.00)** for each available calendar day of delay.

(b) If the Owner terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned by the Owner in completing the Work.

(c) If the Owner does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the Work is completed or accepted.

(d) In the event that the Contractor fails to complete the Work within the time specified in the Contract and/or the Owner is assessing liquidated damages, the Contractor is bound to faithfully perform all contractual requirements until such time as the Work is satisfactorily completed or accepted by the Owner.

SECTION G

CONTRACT ADMINISTRATION DATA

1. POINT OF CONTACT

(a) The Contract Administrator shall be the primary point of contact and is responsible for the administration of all matters concerning bonds, insurance, disputes, claims, and all Change Orders estimated at $25,000.00 or more.

(b) The Project Administrator shall be the primary point of contact for all on site construction activities. All documents, correspondence, request for changes, Change Orders/Field Orders less than $25,000.00, requests for meetings, pre-final and final inspections and any and all other activities pertinent to the performance and daily administration of the Contract shall be coordinated with the Project Administrator unless otherwise excepted in the Contract Documents.

2. PAYMENTS

It is recommended that the Contractor receive payments via electronic funds transfer (EFT), also known as Direct Deposit. Regardless as to whether Direct Deposit is chosen, the Contractor shall submit a completed Vendor Maintenance Direct Deposit and Substitute W-9 Form (See Section J, Attachment No. 13) to the following address:

TDCJ Accounts Payable
P.O. Box 4018
Huntsville, Texas 77342-4018

If the Contractor has previously submitted a completed Vendor Maintenance Direct Deposit and Substitute W-9 Form to the TDCJ for another separate contract, another form is not required to be submitted. In the event the Contractor elects to decline Direct Deposit on the Vendor Maintenance Direct Deposit and Substitute W-9 Form, the payment will be mailed to the address provided in Section K, Article 14, Remittance Address.

SECTION H

SPECIAL CONDITIONS

The following Special Conditions supplements, modifies, changes, deletes from or adds to the General Conditions as specified herein. Where any Article of the General Conditions is modified or any paragraph or clause thereof is modified or deleted by these Special Conditions, the unaltered provisions of that Article, Paragraph, Sub-Paragraph or Clause of the General Conditions shall remain in effect.

1. CONTRACT DRAWINGS AND SPECIFICATIONS

The Contractor will be furnished four (4) complete sets of the Contract Drawings and Specifications (Project Manual) at no cost to the Contractor.

2. BACKGROUND CHECKS FOR CONTRACT CONSTRUCTION WORKERS

A. General Provisions

Contract Construction Workers, by Contract, are individuals employed by a private construction contractor or Subcontractor and whose access to Agency premises or privately operated correctional facilities have been approved by the Warden for the sole purpose of performing construction-related Work authorized by the TDCJ Facilities Division. Contract Construction Workers shall be subject to stringent security measures and be closely supervised upon access to Agency premises. Contract Construction Workers shall not be issued badges or ID cards, nor allowed to come and go at will. Contract Construction Workers shall be searched, and the tools and equipment furnished by the Contract Construction Workers shall be carefully inventoried and secured at all times.

B. Minor traffic violations are not considered criminal charges; however, an outstanding warrant resulting from a minor traffic violation shall cause a contract employee to be ineligible for conducting work on a unit or facility.

C. Criminal History Eligibility Criteria

Notwithstanding a misdemeanor conviction and a felony conviction, an individual may be considered on a case-by-case basis for approval to be a contract construction worker provided the individual meets the following eligibility criteria.

1. The individual shall have completed any sentence for criminal offense, including community supervision, and have not been incarcerated in a correctional facility for the previous two-year period.

2. The individual shall not have been convicted of any of the offenses listed below (to include soliciting, attempting, conspiring, or aiding others to engage, solicit, attempt or conspire to commit any of the listed offenses), or have been incarcerated in or sentenced to an adult correctional facility for any felony offense during which violence was used in the commission of the offense.

3. Homicide - (capital murder; murder; manslaughter; or any other homicide offense);

4. Kidnapping - (aggravated kidnapping; kidnapping; unlawful restraint or any other kidnapping offense);

5. Sexual Offense - (rape; sexual assault; sexual abuse; aggravated rape; aggravated sexual abuse; or any other sexual assault offense including indecency with a child);

6. Robbery - (robbery; aggravated robbery; or any other robbery offense);

7. Assault - (assault; aggravated assault; injury to a child; injury to an elderly person; or any other assault offense); or

8. Offense Involving Use or Exhibition of a Deadly Weapon (includes during the commission of the offense or during immediate flight therefrom and where an affirmative finding on use of a deadly weapon was made by the trial court or jury).

D. Criminal History Background Check

The Facilities Division's designated staff shall be responsible for:

1. Obtaining a current list of all Contract Construction Workers scheduled to access Agency premises; and

2. Ensuring that a criminal history background check is performed prior to the individual performing services for the Agency and on an annual basis. (Proper and complete documentation is crucial to timely completion of background checks.) The Department makes no commitment as to the length of time to complete a background check.

E. A contract construction worker with a prior conviction/incarceration must meet the following criteria:

1. A Contract Construction Worker must not have any pending charges for any criminal offense or have an outstanding warrant.

2. Former TDCJ employees who have separated employment under certain conditions may not be allowed on the unit/facility.

3. Immediate family members (parent, brother, sister, spouse, child, grandparent, aunt, uncle, nephew, niece) of an offender may not be allowed on the unit/facility.

4. Contract Construction Workers shall not be allowed to work on a unit/facility they have been assigned to as a former TDCJ offender.

5. The Warden may not allow a Contract Construction Worker on a unit/facility if the Warden believes the contract construction worker may jeopardize the safe and orderly operation of the unit/facility, pose a danger to offenders or employees, or place an undue logistical burden on staff.

3. SPECIAL SECURITY MEASURES

A. The Contractor shall provide the Facilities Division Project Administrator a list of all Contract Construction Workers who will be working on the unit. The Contractor shall daily update/revise the list as Contract Construction Workers are added or terminated and provide the Facilities

Division Project Administrator with the current list in effect. The list shall be in alphabetical order by employee's last name and shall include employee's driver's license number, social security number and company name. In addition, as new contract construction workers are added to the workforce, the Contractor shall provide the Facilities Division Project Administrator with a completed Non-Employee Background Questionnaire (included herein as Attachment No. 9) in advance of said employees being admitted to the worksite, for the background check to be conducted. Each Contract Construction Worker shall read and sign a copy of the Standards of Conduct for Civilian Construction Contractor's Employees (included herein as Attachment No. 1) acknowledging and agreeing to abide by these standards.

B. All Contract Construction Workers shall have read TDCJ's PD-22, "General Rules of Conduct and Disciplinary Action Guidelines for Employees", and PD-29, "Sexual Misconduct with Offenders", which are located on the Texas Department of Criminal Justice website at http://www.tdcj.state.tx.us/vacancy/hr-policy/index.htm, prior to commencing Work. Failure to adhere to these rules will result in contract employee's expulsion from the unit.

C. The Contractor shall provide a legible photocopy of one of the acceptable primary identification documents as stipulated by the Texas Department of Public Safety, which includes driver's license, State ID card, Federal ID card or a passport in conjunction with a photocopy of their Social Security Card for all Contract Construction Workers who will be working on the unit.

D. All Contract Construction Workers will report to the job site at the scheduled shift time and proceed into the facility as a group. At the end of the workday they will all leave in a similar group. Only work crew supervisors will be allowed to leave the unit's fenced compound under escort to procure additional tools or specialized tools. All Contract Construction Workers may eat their lunch in the work area or exit the unit in a group for lunch. Contract Construction Workers may not eat in the unit's cafeteria.

E. The Contractor will coordinate with the Unit Warden or designee the collection point for Contract Construction Workers to enter the fenced compound and measures to be taken to receive required security escort of Contract Construction Workers to construction site if through the unit compound.

F. Tools, generators, ladders, acetylene cutters, vehicular equipment or heavy equipment shall not be stored in the unit fenced compound.

G. Contractor shall implement measures to disable vehicular or heavy equipment (e.g., vehicles, graders, cherry pickers, etc.) when they are left unattended.

H. Contractor and Contract Construction Workers shall ensure a clear area be maintained a minimum of eight (8) feet from all fences. This area shall be clear of all debris, weeds and other construction material. All work sites will be cleared of construction debris at the end of each day. All debris is to be immediately removed to a secure area or to a designated area for disposal.

I. All vehicles will be searched upon entering and/or exiting the unit's fenced compound.

J. The Texas Department of Criminal Justice reserves the right to adopt any special rules as may be necessary to preserve the security of the institution should they become necessary. Coordination between the Unit Warden and Contractor shall be made as those situations arise.

K. All Contract Construction Workers appointed by Contractor who visit any TDCJ unit will be required to comply with that unit's security regulations.

4. EQUIPMENT/SYSTEM DEMONSTRATIONS

The equipment/system demonstrations along with the services to provide instruction in the operation and/or maintenance of equipment and systems to the Owner, as called for in the Technical Specifications, shall be scheduled and performed (at a time as directed by the Owner) not later than the first thirty (30) Day period after beneficial occupancy.

5. RELATIONSHIP OF PARTIES

Contractor is acting as an independent contractor and is wholly responsible for the day-to-day operations of its programs and employees; no joint venture, partnership, or agency exists nor shall be implied by the terms of this Contract. No employee of Contractor shall become an employee of the TDCJ by virtue of this Contract.

6. CONFIDENTIALITY

Any confidential information provided to or developed by the Contractor in the performance of the Contract shall be kept confidential unless otherwise provided by law and shall not be made available to any individual or organization by the Contractor or the Department without prior approval of the other party.

7. WAIVER

No waiver by either party of any default of the other under this Contract shall operate as a waiver of any future or other default, whether of a like or different character or nature.

8. SEVERABILITY

If any part of this Contract is contrary to any federal, state, or local law, it is not applicable and such invalidity shall not affect the other provisions or applications of this agreement which can be given effect without the invalid provision or application and to that end the provisions of this Contract are declared to be severable.

9. CONTRACT MODIFICATION

No other agreements, oral or written, shall constitute a part of this Contract unless such be made in writing, executed by the parties hereto or their successors, and expressly made a part thereof, and approved in writing by the Owner.

10. BID DEPOSIT (5% of Total Bid)

The Contractor further agrees that the Bid Deposit accompanying this Bid, payable to the Texas Department of Criminal Justice, and its amount is the measure of damages which the Owner will sustain by the failure of the undersigned to execute and deliver the Contract, Performance Bond and Payment Bond, insurance certificates and that if the undersigned defaults in executing the Agreement and/or in furnishing the aforementioned documents within fourteen (14) consecutive calendar days from Contract award, then the Bid Deposit shall become subject to forfeiture to the Owner. Bid Deposit is not required for bids totaling less than $25,000.00. Acceptable forms of bid deposits are limited to: irrevocable letter of credit issued by a financial institution subject to the laws of Texas; a surety or blanket bond from a company chartered or authorized to do business in Texas and United States Treasury listed; a United States Treasury Bond; or certificate of deposit.

11. STANDARD WORK WEEK

The standard work week shall be Monday through Friday, eight (8) hours per day. Any deviation from the standard work week schedule; including but not limited to weekends, holidays, extended hours, night work or four ten-hour days; must be approved by the Owner.

Utilizing the standard work week, the Contractor shall schedule the Work to be completed within the Contract Time, which is measured in calendar days rather than scheduled work days.

Approved work schedules other than the standard work week may be revoked for circumstances beyond the Owner's control or if the Contractor fails to maintain adequate staff, equipment or supervision for proper execution of the Work.

The actual work hours will be established at the pre-construction conference.

12. NOTICE TO PROCEED

It is the Owner's intent to issue a Notice to Proceed (NTP) at the pre-construction conference with an effective start date on the following Monday.

13. CONTRACT SCHEDULE

The Contractor shall comply with the following Special Conditions in conjunction with Section I, Article VIII of the General Conditions.

13.1 Contractor's Scheduler

The Project Scheduler shall be responsible for preparing, updating, and maintaining the Project Schedule, and for submitting the reports to the Owner required by the Contract Documents. The Project Scheduler shall be responsible for identifying and obtaining all necessary information from Subcontractors, vendors, suppliers and the Owner. The Project Scheduler shall be fully authorized to act on behalf of the Contractor with respect to performing all Project Schedule requirements.

The Project Scheduler shall have as a minimum the following qualifications:

(1) Two years of experience in preparing, updating and maintaining Critical Path Method (CPM) construction schedules of fifty activities or more using Primavera. (List such projects and describe the scheduling responsibilities of the proposed Project Scheduler on each).
(2) One year of experience using Primavera software in construction scheduling (List such projects and describe the scheduling responsibilities of the proposed Project Scheduler on each as well as provide contact information for Primavera experience verification).

After award of the Contract and prior to the Pre-Construction Conference, the Contractor shall submit for the Owner's approval a resume evidencing the qualifications listed above to the Project Administrator.

13.2 Activities shall be identified by buildings and activity durations shall be in units of whole workdays. Less than two percent (2%) of all non-procurement activities' original durations shall be greater than thirty (30) Days.

13.3 Within fourteen (14) Days after the start of the Contract Time, the Contractor shall submit the CPM Schedule.

13.4 The Project Schedule shall be updated on a monthly basis throughout the duration of the Work and until Contract completion.

13.5 Average workdays lost monthly due to Anticipated Adverse Weather Days:

Jan	Feb	Mar	April	May	Jun	July	Aug	Sept	Oct	Nov	Dec
7	7	7	7	7	6	5	5	6	5	7	7

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SECTION I

GENERAL CONDITIONS

ARTICLE I. GENERAL PROVISIONS

1.1 CONTRACT DEFINITIONS: Whenever the following terms are used in these General Conditions or in the other Contract Documents, the intent and meaning shall be interpreted as follows:

1.1.1 ADVERSE WEATHER DAY: A day on which the Contractor's current contract schedule indicates Work is to be performed, and which inclement weather and related affected site conditions prevent the Contractor from performing Work on critical activities for 50 percent or more of the Contractor's scheduled workday. Days qualifying as Adverse Weather Days are days in which the adverse weather conditions altered the physical site conditions rendering consequential disruption to the day's scheduled progress.

1.1.2 ARCHITECT/ENGINEER (A/E) and/or DESIGN PROFESSIONAL (DP): A person registered as an architect pursuant to Tex. Occ. Code Ann., Chapter 1051, as a landscape architect pursuant to Tex. Occ. Code Ann., Chapter 1052, a person licensed as a professional engineer pursuant Tex. Occ. Code Ann., Chapter 1001 and/or a firm employed to provide professional architectural or engineering services and to exercise overall responsibility for the design of a Project or a significant portion thereof, and to perform the contract administration responsibilities set forth in the Contract.

1.1.3 BENEFICIAL OCCUPANCY: The date of Beneficial Occupancy of the Work, or designated portion thereof, is the date jointly certified by the A/E and Owner when construction is so sufficiently complete, in accordance with the Contract Documents, that the Owner may, at the Owner's option, utilize the Work, or a designated portion thereof, for the use for which it is intended.

1.1.4 BUSINESS HOURS: Normal business hours are Monday through Friday from 8:00 a.m. until 5:00 p.m. Central Time.

1.1.5 CHANGE ORDER: A Change Order is a written order to the Contractor signed by the Owner issued after execution of the Contract, authorizing a change in the Work or an adjustment in the Contract Sum or the Contract Time. The Contract Sum and the Contract Time may be changed only by Change Order. A Change Order signed by the Contractor indicates his/her agreement therewith, including the adjustment in the Contract Sum and/or the Contract Time.

1.1.6 CONTRACT CONSTRUCTION WORKER: Is an individual employed by a private construction contractor or subcontractor and whose access to Agency premises or a privately operated correctional facility has been approved by the Warden for the sole purpose of performing construction-related Work authorized by the TDCJ Facilities Division or the facility's owner. This definition does not include a purchase order/procurement card vendor.

1.1.7 CONTRACT: The Contract Documents form the **CONTRACT**, which represents the entire and integrated agreement between the Owner and the Contractor and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a written Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the A/E and Contractor, or (2) between the Owner and a Subcontractor or (3) between any persons or entities other than the Owner and Contractor. The A/E shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the A/E duties.

1.1.8 CONTRACT DOCUMENTS: The Contract Documents consist of the Solicitation, Offer and Award document inclusive of its Sections A through M and the Attachments and Exhibits thereto, Payment and Performance Bonds, Specifications, Drawings, Addenda issued prior to contract award, other documents listed in the Contract, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties or (2) a Change Order or (3) a Unilateral Change Order, or (4) a written order for a minor change in the Work (not involving an adjustment in the Contract Sum or an extension of the Contract Time) issued by the Owner or the A/E.

1.1.9 CONTRACTOR: The individual, corporation, company, partnership, firm or other organization that has contracted to perform the Work under the Contract with the Owner.

1.1.10 CONTRACT SUM: The Contract Sum is the total compensation payable to the Contractor for performing the Work as originally contracted for or as subsequently adjusted by Change Order.

1.1.11 CONTRACT TIME: The Contract Time is the total number of calendar days within which the Contractor shall commence and complete the Work to be performed, as originally contracted for or as subsequently adjusted by Change Order. The Contract Time will begin on the day designated in the Notice to Proceed.

1.1.12 DAY: Wherever the word "Day" is used in the Contract Documents, it shall be interpreted to mean a calendar day, which is not the same as a scheduled work day.

1.1.13 DRAWINGS: The Drawings are the graphic and pictorial portions of the Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.14 ENVIRONMENTALLY SENSITIVE PRODUCT: A product that protects or enhances the environment or that damages the environment less than traditionally available products.

1.1.15 FIELD ORDER: An authorization given to the Contractor to proceed with a limited change in the Work. The Field Order guarantees that the Contractor will be compensated for the Work. However, the Contractor cannot request this compensation until the Field Order is included in a completed Change Order. Field Orders are not to exceed $25,000.00.

1.1.16 FURNISH: "Furnish", unless specifically limited in context, means; furnishing items specified to project site, to include unpacking and assembly. Owner furnished items shall be unloaded, unpacked and properly stored by the Contractor upon delivery. Assembly, if required, shall be by the Contractor.

1.1.17 INSTALL: "Install" means incorporating into the Work including all necessary labor, materials, equipment and connections to perform Work indicated.

1.1.18 OWNER: The Owner is the State of Texas acting through the Texas Department of Criminal Justice.

1.1.19 POST-CONSUMER MATERIALS: Finished products, packages or materials generated by a business entity or consumer that have served their intended end uses, and that have been recovered or otherwise diverted from the waste stream for the purpose of recycling.

1.1.20 PRE-CONSUMER MATERIALS: Materials or by-products that have not reached a business entity or consumer for an intended end use including industrial scrap material and overstock, or obsolete inventories from distributors, wholesalers and other companies. The term does not include materials and by-

products generated from, and commonly reused within, an original manufacturing process or separate operation within the same or a parent company.

1.1.21 PRELIMINARY PAY WORKSHEET: The Preliminary Pay Worksheet is a review document that reflects work performed and the established schedule of values. The Preliminary Pay Worksheet is submitted by the Contractor to the Owner prior to a request for progress payment.

1.1.22 PROJECT: The term "Project" shall comprise the total construction of which the Work performed under the contract documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.23 PROJECT MANUAL: The Project Manual is the volume(s) usually assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

1.1.24 PROVIDE: "Provide" means furnish and install.

1.1.25 RECYCLED MATERIAL CONTENT: The portion of a product made with Recycled Materials consisting of Pre-Consumer Materials (waste), Post-Consumer Materials (waste), or both.

1.1.26 RECYCLED MATERIALS: Materials, goods or products that contain recyclable materials, industrial waste, or hazardous waste that may be used in place of raw or virgin materials in manufacturing a new product.

1.1.27 RECYCLED PRODUCT: A product that meets the requirements for recycled material content as prescribed by the rules established by the Texas Commission on Environmental Quality in consultation with the Comptroller of Public Accounts (CPA). The product must be clearly identified as recycled by packaging, markings, literature, etc.

1.1.28 SAMPLES: Samples are physical examples furnished by the Contractor to illustrate materials, equipment or workmanship, and to assist in the establishment of standards by which the Work will be judged.

1.1.29 SHOP DRAWINGS: Shop Drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are prepared by the Contractor or any Subcontractor, manufacturer, supplier or distributor, and which illustrate some portion of the Work.

1.1.30 SPECIAL CONDITIONS: Special Conditions shall relate to a particular Project but shall not weaken the character or intent of the General Conditions. Special Conditions will supplement specific paragraphs of the General Conditions as specified in the Special Conditions.

1.1.31 SPECIFICATIONS: The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards and workmanship for the Work, and performance of related services.

1.1.32 SUBCONTRACTOR: A person or organization who contracts under, or for the performance of part or the entire Contract between the Owner and the Contractor. The subcontract may be direct with the Contractor or with another subcontractor.

1.1.33 WORK: The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, plant and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

1.2 EXECUTION AND CORRELATION

1.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

1.2.2 The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the required results.

1.2.3 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.4 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3 INTERPRETATION

1.3.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an", but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.3.2 In the interest of conciseness, sentences, statements, and clauses used exclude any form of verb "shall" normally expressed in verb phrase with verbs such as "furnish", "install", "provide", "perform", "construct", "erect", "comply", "apply", "submit", etc. Any such sentences, statements, and clauses are to be interpreted to include applicable form of phrase "the Contractor shall" and requirements described therein interpreted as mandatory elements of Contract.

1.3.3 In interest of conciseness, references to specification sections and details may be preceded by the word "see". Any such references are to be interpreted to include applicable form of phrase, "and comply with".

1.4 FIXED ASSET ACCOUNTING: Prior to final acceptance the Project Administrator will prepare a list of items included in the Work which are to be capitalized. This list will be generally limited to items having a value in excess of $5,000.00 and not being an integral part of the structure. The list will include but will not be limited to items such as emergency generator, food service equipment, laundry equipment, electronic equipment, etc. The Project Administrator will present the list of items to the Contractor who shall provide the value of each item on the list to the Project Administrator prior to final payment. The list will include the equipment with its cost, manufacturer, model number and serial number. Equipment and systems shall be listed by building wherein they are installed. In addition, the total value of each individual building must be specified.

1.5 DELIVERY: Name and address of Owner will not be used for deliveries. Owner will not accept delivery of products and materials and Owner will not be responsible for material losses, delays or other damages, including all impacts resulting from the use of the Owner's name and address for deliveries. Contractor shall make arrangements to have someone present for acceptance and unloading of all deliveries. Arrange deliveries in accordance with construction schedules and in ample time to facilitate inspection prior to installation and to not cause delay to the project.

1.6 PHOTOGRAPHS: Photographs shall be taken only with written permission of the Owner. (Progress photographs will not be required unless called for elsewhere.)

1.7 PRE-CONSTRUCTION CONFERENCE: After award of the contract a Pre-Construction Conference will be held to discuss mobilization and specific pre-construction activities. The Pre-Construction Conference will be conducted by the Owner. The A/E, the Owner and its representatives and the Contractor will participate. The prime objectives of the Pre-Construction Conference are to:

1. Introduce the Contractor to persons responsible for the monitoring and administration of the Work.

2. Develop a list of representatives of the Owner, the A/E and the Contractor who will be directly involved with the Project. This list shall include names, telephone numbers, functions and responsibilities. Key personnel's telephone numbers for after Business Hours shall be listed.

3. Establish interfaces between Contractor, Owner and A/E personnel.

4. Contractor shall furnish (in writing) the percent for social security, workman's compensation and like taxes, to be applied to the labor portion of the Change in Work/Cost Analysis for Work to be done by the Contractor.

5. Contractor shall furnish (in writing) the percent for social security, workman's compensation and like taxes, to be applied to the labor portion of the Change in Work/Cost Analysis for all of its Subcontractors.

6. Review the requirements for mobilization including:

   a. Location of temporary offices,

   b. Lay-down area,

   c. Security requirements,

   d. Safety requirements, and

   e. Reporting requirements.

1.8 PROJECT REVIEW MEETINGS: Project Review Meetings shall be held on a regularly scheduled basis. These meetings will provide a management level review of the Contractor's operations, assessment of progress and schedule, discussion and resolution of problems, and coordination of the activities of all parties concerned. The minutes of these meetings will provide a record related to the accomplishment of the Work. The Project Review Meetings are formal meetings and are held in addition to, and at a higher level than, weekly job meetings.

1.8.1 The Owner will chair these meetings. The Owner, the A/E's representative, the Owner's inspectors, and the Contractor's Project Manager/Superintendent or other representative as designated by the Contractor and approved by the Owner shall attend these meetings. Notice of the meeting will be sent to all parties by the Owner. Anyone required but not able to attend must send an authorized representative with full authority to participate in problem solving and decision making unless prior arrangements to be excused are made with the Owner.

1.8.2 The Project Review Meetings will be held monthly unless more frequent meetings are necessitated under certain circumstances. The Owner will determine the frequency of meetings, but they will, under no circumstances, be held less than monthly.

1.8.3 The Owner will prepare and distribute the minutes. These minutes will be published no later than one week after the conclusion of the meeting. In addition to the documentation of the meeting, the minutes will include the date, time and place of the meeting and the names of all attendees and their respective affiliations.

ARTICLE II. LAWS GOVERNING CONSTRUCTION

2.1 **COMPLIANCE WITH LAWS**: In the execution of the Contract, the Contractor must comply with all applicable State and Federal laws, including but not limited to laws concerned with labor and equal employment opportunity, safety and minimum wages, and patent, copyright and trademark rights. The Contractor shall make himself/herself familiar with and at all times shall observe and comply with all Federal, State and Local laws, ordinances and regulations which in any manner affect the conduct of the Work, and shall indemnify and save harmless the State and its official representatives against any claim arising from violation of any such law, ordinance or regulation by its self or by its Subcontractors or its employees.

2.1.1 The Contractor shall cooperate with applicable city or other government officials at all times where their jurisdiction prevails. The Contractor shall make application and payments for any permits and permanent utilities, which are required for the execution of the Work.

2.1.2 In the event of an apparent conflict between requirements of two or more codes or standards, the more restrictive requirement shall govern. Specific requests for interpretation shall be directed to the Owner.

2.2 **WAGE RATES**: The Contractor shall not pay less than the wage scale of the various classes of labor as shown on the "Prevailing Wage Schedule" provided by the Owner. The specified wage rates are minimum rates only. The Owner is not bound to pay any claims for additional compensation made by any Contractor because the Contractor pays wages in excess of the applicable minimum rate contained in the Contract. The "Prevailing Wage Schedule" is not a representation that qualified labor adequate to perform the Work is available locally at the prevailing wage rates.

2.2.1 Notification to Workers: The Contractor shall notify each worker, in writing, of the following as they commence Work on the Contract: the worker's job classification, the established minimum wage rate requirement for that classification, as well as the worker's actual wage. The notice must be delivered to and signed in acknowledgement of receipt by the employee and must list both the wages and fringe benefits to be paid or furnished for each classification in which the worker is assigned duties. When requested by the Owner, the Contractor shall furnish evidence of compliance with the Texas Prevailing Wage Law.

2.2.1.1 Submit a copy of each worker wage-rate notification to the Owner with the application for progress payment for the period during which the worker was engaged in activities on behalf of the project.

2.2.1.2 The Prevailing Wage Schedule is determined by the Owner in compliance with Tex. Gov't Code, Chapter 2258. Should the Contractor at any time become aware that a particular skill or trade not reflected on the Owner's Prevailing Wage Schedule will be or is being employed in the Work, whether by the Contractor or by a subcontractor, the Contractor shall promptly inform the Owner of the proposed wage to be paid for the skill along with a justification for same. The Contractor is responsible for determining the most appropriate wage for a particular skill in relation to similar skills or trades identified on the Prevailing Wage Schedule. In no case shall any worker be paid less than the wage indicated for Laborers.

2.2.1.3 Assessment for Violation: The Contractor and any Subcontractor will pay to the State an assessment of sixty dollars ($60) for each worker employed for each calendar day, or portion thereof, that the worker is paid less than the wage rates stipulated in the Prevailing Wage Schedule.

2.2.1.4 COMPLAINTS OF VIOLATIONS

2.2.1.4.1 Owner's Determination of Good Cause. Upon receipt of information concerning a violation of Tex. Gov't Code, Chapter 2258, the Owner will, within 31 Days, make an initial determination as to whether good cause exists that a violation occurred. The Owner will send documentation of the initial determination to the Contractor against whom the violation was alleged, and to the worker involved. Upon making a good cause finding, the Owner will retain the full amounts claimed by the claimant or claimants as the difference between wages paid and wages due under the Prevailing Wage Schedule and any supplements thereto, together with the applicable penalties, such amounts being subtracted from successive progress payments pending a final decision on the violation.

2.2.1.4.2 If the Contractor and claimant worker reach an agreement concerning the claim, the contractor shall promptly notify the Owner in a written document countersigned by the worker.

2.2.1.4.3 Arbitration Required: If the violation is not resolved within 14 days following initial determination by the Owner, the Contractor and the claimant worker must participate in binding arbitration in accordance with the Texas General Arbitration Act, Tex. Civ. Prac. & Rev. Code, Chapter 171. For a period not to exceed 10 Days, after which, if no agreement reached, a district court may be petitioned by any of the parties to the arbitration to appoint an arbitrator whose decision will be binding on all parties.

2.2.1.4.4 Arbitration Award: If an arbitrator assesses an award against the Contractor, the Contractor shall promptly furnish a copy of said award to the Owner. The Owner may use any amounts retained under Article 2.2.1.4.1 to pay the worker the amount as designated in the arbitration award. If the retained funds are insufficient to pay the worker in accordance with the arbitration award, the worker has a right of action against the Contractor, and/or the surety to receive the amount owed, plus attorneys' fees and court costs. The Owner has no duty to release any funds to either the claimant or the Contractor until it has received the notices of agreement or the arbitration award.

2.2.1.4.5 No Extension of Time: If the Owner's determination proves valid that good cause existed to believe a violation had occurred, the Contractor is not entitled to an extension of time for any delay arising directly or indirectly from the arbitration procedures set forth herein.

2.3 STATE SALES AND USE TAXES: The Owner qualifies for exemption from State and Local Sales and Use Taxes pursuant to the provisions of the Texas Tax Code (Title 2, Chapter 151, Subsection 151.311). Tangible personal property incorporated into the Owner's realty is exempt pursuant to Subsection 151.311 of the Texas Tax Code and the terms of a separated contract. The Contractor shall comply with applicable provisions of Chapter 34, Rules 3.291 and 3.357 of the Texas Administrative Code, or other procedures as may be prescribed by the Comptroller of Public Accounts.

2.4 ANTITRUST CLAIMS: The Contractor shall assign to the Owner any and all claims for overcharges associated with this Contract which arise under the antitrust laws of the United States, 15 U.S.C. Secs. 1 et seq.

2.5 RESERVED

2.6 CLEAN WATER ACT AND THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

2.6.1 The Contractor shall comply with all federal and state laws pertaining to construction storm water activities including, but not limited to, the Clean Water Act (CWA), the National Pollution Discharge Elimination System (NPDES), Texas Water Code Section 26.04, and Texas Administrative Code, Title 30, Chapters 205, 305.44, and 305.128.

The Contractor shall complete and file Notice of Intent (NOI) and pay application fees with the Texas Commission on Environmental Quality (TCEQ). The Contractor shall be responsible for preparing and maintaining a Storm Water Pollution Prevention Plan (SWP3), and shall be recognized as the primary operator. The SWP3 shall be approved by the Owner before implementation. It shall be maintained by the Contractor on the job site and kept current at all times.

2.7 VENUE: In any legal action arising under this Contract, the laws of the State of Texas shall apply and venue will be in Travis County, Texas.

ARTICLE III. CONTRACT DOCUMENTS AND BONDS

3.1 COPIES FURNISHED - DRAWINGS AND SPECIFICATIONS: The Contractor will be furnished free of charge the number of complete sets of the Contract Drawings and Specifications as provided in the Special Conditions. Additional complete sets of Drawings and Specifications, if requested, will be furnished at reproduction cost to the one requesting such additional sets.

3.2 OWNERSHIP OF DRAWINGS AND SPECIFICATIONS: All Drawings, Specifications and copies thereof furnished by the A/E are and shall remain the property of the Owner. They are not to be used on any other project. One contract set for each party to the Contract may be retained. All other sets are to be returned to the Owner through the A/E following completion of the Work if requested by the Owner.

3.3 DRAWINGS AND SPECIFICATIONS AT THE SITE: The Contractor shall keep on the site of Work a copy (in good order) of the Contract Documents, approved shop drawings and Modifications to the Contract Documents. The Contractor shall at all times give the Owner or its representatives and agents access thereto.

3.4 "RECORD SET" OF CONTRACT DOCUMENTS: The Contractor shall maintain a record set of Contract Documents, hereinafter called "Record Set", which reflects the conditions and representations of the Work performed whether it be directed by addendum, Change Order or otherwise. This information shall be recorded on shop drawings located at the construction site. The "Record Set" shall be readily available for review by the A/E and/or Owner and no Work shall be permanently concealed until all required information related to that Work has been recorded. The Contractor shall update the "Record Set" a minimum of once monthly. The "Record Set" will be reviewed as a part of the monthly Project Review Meeting in conjunction with the review of the Contractor's payment request. Payment may be withheld, to such extent necessary to protect the Owner from loss, unless the "Record Set" reflects current and accurate conditions. Upon completion of the Work, and prior to application for final payment, the Contractor shall furnish the "Record Set" to the A/E. The "Record Set" is required to provide an accurate and legible record of actual construction, including:

1. Measured horizontal and vertical locations of utilities and appurtenances referenced to permanent surface improvements.

2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of construction.

3. Field changes of dimension and detail.

4. Changes made by modifications.

5. Details not on original contract drawings.

6. References to related shop drawings and modifications.

The A/E after review and approval will transmit the "Record Set" to the Owner for final disposition.

3.5 PERFORMANCE AND PAYMENT BONDS: Performance and Payment Bonds are not required on contracts of $25,000.00 or less unless otherwise stipulated. The Contractor shall provide, at its own expense, within fourteen (14) Days after award execution, in accordance with the provisions of Government Code, Title 10, Section 2253.021, the following bonds to the Owner: (1) Performance Bond for the sole protection of the State of Texas, which shall be in the amount of the Contract and conditioned on the faithful performance of the work in accordance with the Contract; and (2) Payment Bond for the sole protection of those supplying labor, materials, and/or equipment, which shall be in the amount of the Contract. Subcontractors are not required by the Owner to execute performance or payment bonds.

3.5.1 Each bond shall be executed by a corporate surety or corporate sureties duly authorized and admitted to do business in this State and licensed by this State to issue surety bonds, acceptable to the Owner, and on forms approved by the Attorney General of Texas. (Surplus lines insurance carriers, including sureties, are not qualified to issue payment and performance bonds required by Government Code, Title 10, Section 2253.021.) If any surety upon any bond furnished in connection with the Contract becomes insolvent, or otherwise not authorized to do business in this State, the Contractor shall promptly furnish equivalent security to protect the interests of the State of Texas and of persons supplying labor, materials and/or equipment in the prosecution of the Work contemplated by the Contract.

3.5.2 Each bond shall be accompanied by a valid Power-of-Attorney (issued by the Surety company and attached, signed and sealed, with the corporate seal, embossed to the bond) authorizing the agent who signs the bond to commit the company to the terms of the bond, and stating (on the face of the Power-of-Attorney) the limit, if any, in the total amount for which he/she is empowered to issue a single bond.

3.5.3 Bonds shall remain in effect and full force as required by the Contract Documents and applicable law.

3.5.4 The providing of Performance and Payment Bonds by Contractor, at the Contractor's expense must be accomplished within fourteen (14) Days following the Notice of Award, before a Notice to Proceed will be issued by the Owner. Failure to fulfill this requirement may result in forfeiture of the Contractor's bid security and termination of the Contract in accordance to paragraph 4.6.2.

3.5.5 In the event that the Contract price increases due to Change Orders, the Contractor shall be required, at the Contractor's expense, to provide both Performance and Payment bonds in an additional amount to 100 percent of the increase.

3.6 INTERRELATION OF DOCUMENTS: The interrelation of the Specifications, the Drawings and the Schedules is as follows: The Specifications determine the nature and setting of the several materials; the Drawings or Schedules establish the quantities, dimensions, details and locations. Anything mentioned in the Specifications and not shown on the Drawings or Schedules, or shown on the Drawings or Schedules and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.

3.6.1 Should the Drawings disagree one with another, or with the Specifications or should the Specifications disagree one with another, the better quality or greater quantity of Work or materials shall be included for bidding purposes and shall be performed or furnished. Figures given on large scale drawings govern small scale drawings.

3.6.2 The Scope of the Work, placed in the front part of each section of the Specifications, is intended to designate the scope and locations of all items of the Work included therein, either generally or specifically. It is not intended to limit the Scope of Work should plans, Schedules or notes indicate an increased scope. Inadvertent omission of an item from its proper section of the Specifications and its inclusion in another section shall not relieve the Contractor of responsibilities for the item specified.

3.6.3 In case of discrepancy in the figures, in the Drawings, in the Schedules, or in the Specifications, the matter shall be promptly submitted in writing to the A/E who will promptly make a determination in writing after review with the Owner. Any action taken by the Contractor without such a determination shall be at its own risk and expense.

3.6.4 Details labeled "Typical Details" or "Typical" on the Plans shall apply to all situations occurring on the Project that are the same or similar to those specifically detailed. Such details shall apply whether or not they are keyed in at each location. Questions regarding applicability of Typical Details shall be referred to the A/E.

3.7 **SALES TAX EXEMPTION CERTIFICATE:** TDCJ Accounts Payable Representative will provide Contractor with an "Exemption Certificate" for tangible personal property included in or to be included in the Work.

ARTICLE IV. CONTRACT ADMINISTRATION

4.1 **GENERAL ADMINISTRATION**: Unless otherwise provided for in the Contract Documents, the Owner will provide general administration of the Contract. The Owner assumes no responsibility for any understanding given or representation made orally by its agents prior to the execution of this Contract, unless such understanding(s) are expressly stated in the Contract. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor. Any failure by the Contractor to become acquainted with available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of successfully performing the Work or mutually agreed changes thereto.

4.1.1 The Owner reserves the right on appropriate occasions to issue instructions through other designated representatives.

4.1.2 All communications concerning the construction of the Work shall be furnished to the Owner, the A/E, and the Contractor by the party concerned. The administration of the Contract in regard to matters related to taxes, laws, and wage rates, Contract Documents, separate contracts, changes in the Work, payments, claims, acceptance, warranty and guarantee, federally funded projects, insurance, bonds and like matters is described in appropriate articles of these conditions or the Special Conditions appended hereto.

4.1.3 All instructions affecting Contract Sum, Contract Time or Contract interpretation shall be confirmed expeditiously in writing with copies furnished to the Owner, the A/E and the Contractor by the party issuing the instruction. No instruction affecting the A/E's design liability shall be issued without its prior written consent.

4.1.4 All oral communications affecting Contract Time, Contract Sum and Contract interpretation will be confirmed in writing. No oral communication, by itself, can authorize a change in the Work, the Contract Sum, the Contract Time, or waive compliance with the plans and specifications.

4.2 **ARCHITECT/ENGINEER'S ADMINISTRATION**: The A/E shall be a representative of the Owner during construction until final payment to the Contractor is due. The A/E will advise and consult with the Owner. The A/E has the authority to act on behalf of the Owner to the extent provided in the Contract Documents, unless otherwise modified by written instrument, which will be shown to the Contractor.

4.2.1 The A/E shall attend and participate in the Pre-Construction Conference, which will be held at a date, time and place established by the Owner and A/E.

4.2.2 In accordance with the contract between the A/E and Owner, the A/E shall visit the construction site at intervals appropriate to the stage of construction to reasonably determine that the Work is proceeding in accordance with the Contract Documents. The A/E shall provide a continuity of observations covering all phases of the Work but it shall not be exhaustive or continuous.

4.2.3 The A/E shall attend and participate in Project Review Meetings which will be held monthly on a regularly scheduled basis during construction, unless more frequent meetings are necessitated under certain circumstances, at the time and place (probably project site) established by the Owner. As a part of the Project Review Meeting the A/E will review the Contractor's payment request.

4.2.4 The A/E shall not have control or charge of and shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, for the acts or omissions of the Contractor, Subcontractors or any other persons performing any of the Work, or for the failure of any of them to carry out the Work in accordance with the Contract Documents.

4.2.5 The A/E shall assist the Owner in determining the amounts owing to the Contractor based on observations at the site and on evaluations of the Contractor's Application for Payment and shall assist the Owner in reviewing and approving Certificates of Payment. However, the A/E's assistance does not include the preparation of Certificates of Payment.

4.2.6 The A/E shall render design interpretations necessary for the proper execution or progress of the Work with reasonable promptness on request of either the Owner or the Contractor and shall render written interpretations within a reasonable time, on all claims, disputes and other matters in question relating to the design interpretation of the Contract Documents. Interpretations of the A/E shall be consistent with the intent of and reasonably inferable from the Contract Documents and shall be in written or graphic form. The A/E's interpretations shall be final if consistent with the intent of the Contract Documents.

4.2.7 The A/E will make recommendations to the Owner regarding rejection of Work, which does not conform to the Contract Documents. Whenever, in the A/E's reasonable opinion, it is necessary or advisable for the implementation of the intent of the Contract Documents, the A/E will make recommendations to the Owner concerning special inspections and testing of the Work in accordance with the provisions of the Contract Documents, whether or not such Work be then fabricated, installed or completed.

4.2.8 The A/E shall assist the Owner in preparing Change Orders for the Owner's approval and execution in accordance with the Contract Documents, and shall have authority to order minor changes in the Work which do not involve an adjustment in the Contract Sum or an extension of the Contract Time and which are not inconsistent with the intent of the Contract Documents. The A/E's assistance is to be in the form of providing appropriate drawings and specifications and additional background information to the Owner.

4.2.9 The A/E shall assist the Owner in performing the following: inspections to determine the Date of Beneficial Occupancy or Pre-Final Inspection and the date of Final Completion; receiving and forwarding to

the Owner for the Owner's review written warranties and related documents required by the Contract Documents and assembled by the Contractor.

4.2.10 The A/E shall be responsible for review and approval of all Contractor prepared and submitted documents prior to transmitting the final copies to the Owner. These documents will include instruction, maintenance and operational manuals, parts catalogs, wiring diagrams, directory of installing contractors, written warranties, bonds, receipts, affidavits, Record Set drawings and like publications or items required by the Contract Documents.

4.3 SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK: The Contractor shall not employ any Subcontractor to whom the A/E or the Owner may have a reasonable objection. The Contractor will not be required to employ any Subcontractor against whom he/she has a reasonable objection.

4.3.1 A change in any approved Subcontractor or the addition of any new Subcontractor can be made only with the written consent of the Owner.

4.3.2 Any part of the Work performed for the Contractor by a Subcontractor shall be pursuant to a written contract. The Contractor agrees to incorporate by reference the Contract Documents into every written subcontract and to bind every Subcontractor and every Subcontractor agrees to be bound by the terms of the Contract Documents as far as applicable to his/her Work. The Contractor shall furthermore fully inform its Subcontractors prior to executing an agreement with them that they will be required to perform their Work in conformance with related documents and to submit cost estimates and Change Order proposals in complete and full analytical detail when so required or requested. The Contractor shall indemnify the Owner for any Subcontractor's claim, which may result from the failure of the Contractor to incorporate the provisions of this Contract into the Agreement with any of its Subcontractors or entities.

4.4 ACCESS TO AND INSPECTION OF THE WORK: The Contractor shall provide sufficient, safe and proper facilities at all reasonable times for observation and/or inspection of the Work by the authorized representatives of the Owner. The A/E and the Owner will make periodic visits to the site to familiarize themselves with the progress and quality of the Work and to determine if the Work is proceeding in accordance with the Contract Documents.

4.4.1 The Contractor shall not cover up any Work with finishing materials or other building components prior to an inspection of the Work by the A/E or the Owner for approval of the installation. Should corrections of the Work be required for approval, cover up shall be delayed until another inspection can be made and approval is indicated. Verbal approval to proceed with subsequent operations shall be confirmed to the Contractor in writing by the inspecting party.

4.4.2 Inspections provided by personnel not located on-site; At least forty-eight (48) hours prior to the anticipated cover up inspection, the Contractor shall notify the Owner. Should the Owner fail to make the necessary inspection within an additional twenty-four (24) hour period, the Contractor may proceed with cover up Work, unless the Owner makes an arrangement with the Contractor for additional time in which to complete desired inspections.

4.4.2.1 Inspections provided by personnel located on-site; at least twenty-four (24) hours prior to the anticipated cover up inspection, the Contractor shall notify the Owner. Should the Owner fail to make the necessary inspection within an additional twenty-four (24) hour period, the Contractor may proceed with cover up Work, unless the Owner makes an arrangement with the Contractor for additional time in which to complete desired inspections.

4.4.2.2 For on-site inspection by other Authorities having Jurisdiction: The Contractor shall notify other Authorities having Jurisdiction, as required by said Authority, prior to the anticipated cover up inspection.

4.5 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS: The Owner reserves the right to perform construction or operations related to the Project with the Owner's own material and labor forces and to award other contracts in connection with other portions of the Project under these or similar conditions of the Contract.

4.5.1 When separate contracts are awarded for different portions of the Project, "the Contractor" in the Contract Documents in each case shall be the Contractor who signs each separate contract. This Contractor shall properly connect and coordinate its Work with the Work of other contractors. If any part of this Contractor's Work depends for proper execution or proper results on the Work of any other separate contractor or the Owner, this Contractor shall inspect and promptly report in writing to the Owner any discrepancies or defects he/she may find in such other Work that render it unsuitable for such proper execution and results. Failure of this Contractor to so inspect and report shall constitute an acceptance of the Owner's or other contractor's Work as fit and proper to receive its Work, except as to defects which may develop in the Owner's or other separate contractor's Work after the execution of this Contractor's Work.

4.5.2 Should this Contractor cause damage to the Work or property of the Owner and/or any separate contractor on the Project, this Contractor shall, upon due notice, endeavor to settle with the Owner and/or such other separate contractor by agreement. If such separate contractor sues the Owner on account of any damage alleged to have been so sustained, the Owner shall notify this Contractor who shall defend such proceedings and pay all costs in connection therewith, and if any judgment against the Owner arises therefrom, this Contractor shall pay or satisfy it.

4.5.2.1 The Contractor shall notify the Owner in writing of damages within twenty-four (24) hours after occurrence.

4.5.3 This Contractor shall afford the Owner and/or other separate contractors reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their Work and shall properly connect and coordinate its Work with theirs.

4.5.4 The Owner reserves the right to make essential installations, which are pertinent to the immediate use of the Work or Project with the concurrence of the Contractor. Within this right the Owner may let other contracts or may do such work with its own materials and labor forces. The Owner, in reserving this right, warrants that they will cooperate with the Contractor's forces and goals. The Contractor shall not commit or permit any act, which will interfere with the performance of work by any other separate contractor or company or by Owner employees. The Contractor shall cooperate to the end that the Owner may realize complete functioning of the Work or Project within the Contract Time.

4.6 CONTRACT TERMINATION:

4.6.1 Termination by Contractor. If the Work is stopped for a period of ninety (90) Days under an order of any court or other public authority having jurisdiction, or as a result of an act of government such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the Work under a contract with the Contractor, then the Contractor may, upon ten (10) additional Days written notice to the Owner and the A/E, terminate the Contract and recover from the Owner payment for all Work executed and for any loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and overhead associated with such Work or losses and reasonable expenses resulting from such termination. If the cause of the Work stoppage is removed prior to the end of the ten (10) Day notice period, the Contractor may not terminate the Contract.

4.6.2 Termination by Owner. If the Contractor persistently or repeatedly refuses or fails to supply enough properly skilled workmen or proper materials or fails to make prompt payment when due to Subcontractors, laborers, or material men for materials and labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, or fails to so prosecute the Work or any portion thereof as to ensure its completion, within the Contract Time, or any extension thereof, specified in this Contract, then the Owner may, without prejudice to any right or remedy and after giving the Contractor and its Surety, if any, ten (10) Days written notice, terminate the Contract. In such event the procedure outlined in the performance bond, if any, for completion of the Work will be followed and the Owner may take possession of the site and utilize in completing the Work such materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and necessary therefore. Should the surety fail to respond within fifteen (15) Days following such notice and fail to pursue completion of the Work with diligence acceptable to the Owner, the Owner may arrange for completion of the Work and deduct the cost thereof from the unpaid Contract Sum remaining, including the cost of additional services made necessary by such default or neglect, in which event no further payment shall then be made by the Owner until all costs of completing the Work shall have been paid. If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including compensation for the A/E's additional services made necessary thereby, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor or its surety shall pay the difference to the Owner. This obligation for payment shall survive the termination of the Contract. Whether or not the Contract is terminated, the Contractor and its Surety shall be liable for any damage to the Owner resulting from the Contractor's refusal or failure to complete the Work within the specified time.

4.6.2.1 If the Owner so terminates the Contract, the resulting damage will consist of the liquidated damages specified in the Contract until such reasonable time as may be required for final completion of the Work together with any increased costs occasioned by the Owner in completing the Work. Further, if the Owner does not terminate the Contract, the resulting damage will consist of such liquidated damages until the Work is completed or accepted.

4.6.2.2 After notice of termination of the Contract under the provisions of this clause, if it is determined for any reason that the Contractor was not in default or the delay was excusable, the Contract shall be equitably adjusted to compensate for such termination and the Contract modified accordingly; failure to agree to any such adjustment shall be a dispute concerning a question of fact within the meaning of the clause of this Contract entitled "Disputes".

4.6.2.3 Should a court of competent jurisdiction determine that termination of the Contract was wrongful, then such termination shall be deemed a termination for convenience in accordance with paragraph 4.6.3 and Contractor's remedy will be solely in accordance with paragraph 4.6.3.

4.6.2.4 The rights and remedies of the Owner provided in this clause are in addition to any other rights and remedies provided by law or under this Contract.

4.6.3 Termination for Convenience of Owner: Prior to, or during the performance of the Work, the Owner reserves the right to terminate the Contract for unforeseen causes not limited to court orders, loss of funding, acts of the government to discontinue the Work, etc., that may occur. Upon such an occurrence, the following procedures will be adhered to:

4.6.3.1 The Owner will immediately notify the A/E and the Contractor in writing, specifying the effective termination date of the Contract.

4.6.3.2 After receipt of the Notice of Termination, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due at that point in the Contract.

a. Stop all Work.

b. Place no further subcontracts or orders for materials or services.

c. Terminate all subcontracts.

d. Cancel all material and equipment orders as applicable.

e. Take action that is necessary to protect and preserve all property related to this Contract which is in the possession of the Contractor.

4.6.3.3 Within 180 days of the date of the Notice of Termination, the Contractor shall submit a final termination settlement proposal to the Owner based upon costs up to the date of termination, reasonable profit on Work done only, and reasonable demobilization costs. If the Contractor fails to submit the proposal within the time allowed, the Owner may determine the amount due to the Contractor because of the termination and shall pay the determined amount to the Contractor.

4.6.3.4 If the Contractor and the Owner fail to agree on the settlement amount, the matter will be handled as a dispute through administrative procedures as established in paragraph 5.2.1.

4.7 **WRITTEN NOTICE**: shall be considered to have been duly given if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail to the last business address known to one who gives the notice.

4.8 **DISPUTED MATTERS:** Disputed matters shall be handled through administrative procedures as established in paragraph 5.2.1.

ARTICLE V. CONTRACT RESPONSIBILITIES

5.1 **OWNER'S RESPONSIBILITIES**: The Owner shall furnish all available surveys describing the physical characteristics, legal description and limitations, known site utility locations and other information necessary to the Contractor which is under the Owner's control. Communication with the Contractor shall be in accordance with paragraph 4.1.2. Necessary actions of the Owner, including processing of payments to the Contractor, shall be accomplished with reasonable promptness and subject to Government Code, Title 10, Chapter 2251.

5.1.1 All formal communications shall be through the Owner.

5.1.2 The foregoing are in addition to other duties and responsibilities of the Owner enumerated herein.

5.2 **OWNER-CONTRACTOR OBLIGATIONS:** The Owner and the Contractor each bind themselves, partners, successors, assigns and legal representatives to the other party hereto and to the partners, successors, assigns and legal representatives of such other party in respect to all covenants, agreements and obligations contained in the Contract Documents. The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any monies due or to become due to him/her hereunder, without the previous written consent of the Owner.

5.2.1 DISPUTES: Any dispute arising under this Contract that is not disposed of by mutual agreement between Owner and Contractor shall be resolved according to "Procedures for Resolving Contract Claims and Disputes," Rule §155.31, Texas Administrative Code, Title 37, Part VI, Chapter 155, Subchapter C.

5.2.1.1 If authorized to adjudicate a breach of contract claim against the Owner under Chapter 114, Civil Practice and Remedies Code, Contractor, prior to filing suit, shall comply with the dispute resolution process in subsections 155.31(h) – (q) of Rule §155.31 "Procedures for Resolving Contract Claims and Disputes." However, references therein to Chapter 2260 or the State Office of Administrative Hearings shall be inapplicable if contractor files suit under Chapter 114, Civil Practice and Remedies Code, after completion of the dispute resolution process.

5.2.1.2 At all times during the course of the dispute resolution process, the Contractor shall continue with the Work as directed, in a diligent manner and without delay, shall conform to the Owner's directive, decision or order, and shall be governed by all applicable provisions of the Contract Documents. Records of the Work shall be kept in sufficient detail to enable payment in accordance with applicable provisions in the Contract Documents, if this should become necessary.

5.2.1.3 This provision shall not be construed to prohibit contractor from seeking any other legal or equitable remedy to which it is entitled.

5.3 CONTRACTOR'S RESPONSIBILITIES: The Contractor shall supervise and direct the Work using its best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, safety, sequences and procedures, and for coordinating all portions of the Work under the Contract. The Contractor shall have read and be thoroughly familiar with the Contract Documents.

5.3.1 The Contractor shall provide, without extra charge, all incidental items required as a part of the Work, even though not particularly specified or indicated provided that the same are reasonably inferable for a complete working system from the Contract Documents and readily apparent therefrom, and if he/she has good reason for objecting to the use of a material, appliance, or method of construction as shown or specified, shall register their objections to the A/E, in writing, sending a copy to the Owner. Otherwise, the Contractor shall proceed with the Work under the stipulation that a satisfactory job is required.

5.3.2 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Owner or A/E in their administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

5.3.3 The Contractor is solely responsible for successful completion of the Project in accordance with the Plans and Specifications. The Contractor expressly acknowledges that the Owner has no duty to discover Work that fails to conform to the Plans and Specifications and/or to point out such non-conforming Work to the Contractor. The Contractor shall be responsible for inspection of portions of Work already performed under this Contract to determine that such portions are in proper condition to receive subsequent Work.

5.3.4 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

5.3.5 CONTRACTOR INSPECTION OF WORK:

5.3.5.1 The Contractor shall provide and maintain the necessary equipment, material and supplies required to accomplish the testing and inspection hereunder.

5.3.5.2 The Contractor's Quality Control inspection system shall provide for procedures which will ensure the latest Drawings, Shop Drawings, Specifications and instructions required by the Contract and changes thereto are used in performing the Work.

5.3.5.3 The Owner reserves the right to observe at the source, the materials, supplies or services not manufactured or performed within the Contractor's facility. Such observation shall not constitute acceptance, nor shall it replace in any way the Contractor's responsibility for inspection or requirement to furnish an acceptable end item.

5.3.5.3.1 Prior to the start of Work under each separate Specification section, or prior to the start of Work where a change in a construction operation is contemplated by the Contractor, a coordination meeting will be held between the Contractor's Superintendent, the Contractor's Quality Control Manager, the A/E, and the appropriate representative of the Owner. Supervisory and Quality Control representatives of all applicable Subcontractors will also attend. The purpose of the meeting is to ensure that there are no misunderstandings regarding the quality as well as the technical requirements of the Contract. The Contractor's and applicable subcontractor's Quality Control representatives shall be on-site at all times during the Work and shall have the authority to affect the resolution of Quality problems including stopping the Work. The TDCJ Project Administrator shall be notified a minimum of 72 hours prior to any prework coordination meeting. As a minimum the following items shall be reviewed at the meeting:

a. Contract requirements;

b. Shop drawings and submittals;

c. Contractor's Quality Control Program requirements;

d. Adequacy of previous operations;

e. Availability of required materials and equipment;

f. Contractor's Quality Control inspections and tests;

g. TDCJ Quality Assurance inspections and tests;

h. Familiarity and proficiency of the Contractor's and each Subcontractor's workforce to perform the operation to required workmanship standards;

i. Safety and environmental precautions to be observed; and

j. Any other preparatory steps which the particular operation may be dependent upon.

5.3.5.3.2 Upon completion of a representative sample of a given feature of the Work and prior to the start of a new or changed operation, an appropriate Owner's representative(s) and the A/E will meet with the Contractor's Superintendent and Quality Control Manager and applicable Subcontractor's superintendent and their Quality Control representatives. The responsibility for scheduling and providing these samples in a timely manner so that the Work is not delayed or hindered lies solely with the Contractor. The following items will be checked at this meeting as a minimum:

a. Workmanship to establish quality standards;

b. Conformance to Contract Drawings and Specifications and the approved shop drawings or submittals;

c. Adequacy of materials;

d. Adequacy and results of inspection and testing methods; and

e. Adequacy of safety and environmental precautions.

Once approved, the representative sample will become the physical baseline by which ongoing Work is evaluated for quality and acceptability. To the maximum practical extent, approved representative samples of Work elements shall remain visible until all Work in the appropriate category is complete.

5.3.5.3.3 The Contractor shall monitor the Work on a daily basis to assure the continuing conformance of the Work to the workmanship standards established during the pre-work coordination meeting and initial inspections. Follow-up inspections will be recorded on the Contractor's daily Quality Control report.

5.3.5.4 The Contractor shall maintain adequate, current, factual records in an appropriate format of all inspections and tests performed to include as a minimum the type and number of inspections and tests, results of inspections and tests and proposed remedial or corrective actions necessary for any defective or rejected Work which does not meet Contract requirements. These records should include a statement that all supplies or materials and workmanship incorporated in the Work are in full compliance with the terms and requirements of the Contract Documents.

5.3.5.5 Before construction operations commence, the Owner and Contractor shall discuss the Quality Control inspection system requirements described in this Article and the interrelationship of Contractor, Owner and A/E systems and procedures. The Contractor shall designate an individual employed by the Contractor as Quality Control Manager in accordance with Technical Specification Section 01440.

5.3.5.6 The Owner shall notify the Contractor of any noncompliance with the foregoing provisions. Proposed corrective action will be submitted to the Owner by the Contractor within twenty-four (24) hours of notice of noncompliance for approval by the Owner and A/E. Upon approval, the Contractor shall take immediate corrective action. If the Contractor fails or refuses to take prompt action, the Owner may issue an order stopping all or part of the Work until the Contractor takes appropriate action. No portion of the time lost due to any such stop order shall be made the subject of a claim for extension of time or for excess costs or damages, including all impacts, by the Contractor.

5.3.5.7 Separate payment will not be made for providing and maintaining an effective Quality Control Program and all costs associated therein shall be included in the applicable unit prices or lump-sum prices contained in the bidding schedule.

5.3.6 Removal of Employees: The Owner may, in writing, require the Contractor to remove from the Work any employee the Owner finds careless, incompetent or otherwise objectionable. The Contractor will promptly remove from the Work said employee.

5.3.7 The foregoing are in addition to other duties and responsibilities of the Contractor enumerated herein.

5.3.8 The Owner reserves the right to provide supplemental Quality Assurance inspection. However, the primary responsibility for Quality Control remains with the Contractor.

5.4 **CONTRACTOR'S PROJECT MANAGER**: The Contractor shall employ, as a minimum, a competent Project Manager and a competent Superintendent. The Superintendent shall be in attendance at the Project site during the progress of the Work. The Project Manager and Superintendent shall be satisfactory to the Owner and shall not be changed except with the written approval of the Owner unless said individuals

leave the employment of the Contractor. These individuals shall represent the Contractor and shall have full authority to act on the Contractor's behalf. All communications given to either individual shall be as binding as if given to the Contractor.

5.5 ACTS AND OMISSIONS: The Contractor shall be responsible for acts and omissions of its employees and Subcontractors, their agents and employees and other persons performing portions of the Work.

5.6 CONDITIONS AT SITE OR BUILDING

5.6.1 The Contractor is responsible for having visited the site and having ascertained pertinent local conditions such as location, accessibility, and general character of the site or the building, the character and extent of existing Work within and adjacent to the site, and any other Work being performed thereon at the time of the submission of his/her bid. Any failure to do so will not relieve the Contractor from responsibility for successfully performing the Work without additional expense to the Owner.

5.6.1.1 The Owner makes no representations as to the accuracy or completeness of the site information furnished to the Contractor by Owner and does not expressly or by implication warrant same and is not responsible for any interpretations or conclusions reached by the Contractor with respect thereto. It is Contractor's sole responsibility to verify to its own satisfaction all site information, including but not restricted to topographical data, borings, subsurface information, above and underground utilities and easements.

5.6.1.2 The Contractor shall take field measurements, and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the A/E at once, in writing, sending a copy to the Owner.

5.6.1.3 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the site with materials or equipment.

5.6.2 If, in the performance of the Contract, subsurface, latent or concealed conditions at the site are found to be materially different from the information included in the bid documents, or if unknown conditions of an unusual nature are disclosed differing materially from the conditions usually inherent in Work of the character shown and specified, the A/E shall be notified in writing of such conditions before they are disturbed. Upon such notice, or upon his/her own observation of such conditions, the A/E, with the approval of the Owner, will promptly make such changes in the Drawings and Specifications as deemed necessary to conform to the different conditions, and any increase or decrease in the cost of the Work, or in the time within which the Work is to be completed, resulting from such changes will be adjusted by Change Order, subject to the prior approval of the Owner.

5.7 INSURANCE

5.7.1 The Contractor shall not commence Work under this Contract until he/she has obtained all the insurance required hereunder and certificates of such insurance have been filed with and accepted by the Owner. Insurance coverage shall provide for a 30-Day notice prior to cancellation or material change to the policy coverage and or limits. Acceptance of the insurance certificates by the Owner shall not relieve or decrease the liability of the Contractor.

5.7.2 Unless otherwise provided in the Special Conditions the Contractor shall provide and maintain, until the Work included in the Contract is completed and accepted by the Owner, the minimum insurance coverages that follow, provided that the limits of liability may be met in part by the use of umbrella or excess policies. The insurance policies required herein shall not contain the word "endeavor to" or similar wording

which would fail to provide a binding obligation to provide such notice to the Owner of the cancellation of a policy or a material change to an insurance policy.

5.7.2.1 MINIMUM INSURANCE COVERAGES

Type of Coverage	Minimum Limits of Liability
1. Workers' Compensation	Statutory
2. Employers' Liability	
a. Bodily Injury by Accident	$500,000 ea. Accident
b. Bodily Injury by Disease	$500,000 ea. Employee
c. Bodily Injury by Disease	$500,000 Policy Limit
3. Commercial General Liability (Combined Bodily Injury & Property Damage)	$1,000,000 Aggregate $1,000,000 Products/Completed Operations $1,000,000 Personal & Advertising Liability $1,000,000 ea. Occurrence $50,000 Fire Damage $5,000 Medical Expense
4. Comprehensive Auto Liability	$1,000,000 Combined Single Limit

5. Builder's Risk/Installation Floater Insurance

The Contractor shall obtain at its own expense on an All Risk of physical loss basis, Builder's Risk Insurance coverage including workmanship, acceptable to the Owner, in the amount of insurance equal at all times to 100% of the insurable value of materials delivered and labor performed. **Policy must include flood coverage if Work is to be executed in a flood zone as defined by the Federal Emergency Management Agency (FEMA) and Windstorm Coverage for locations designated as a First Tier Coastal County.** Any and all exclusions must be approved by the Owner. The policy so issued in the name of the Contractor shall also name its Subcontractors and the Owner as Loss Payee, as their respective interests may appear. The policy shall have an endorsement as follows:

> "This insurance shall be specific as to coverage and not considered as contributing insurance with any permanent insurance maintained on the present premises."

6. Reserved

7. Umbrella Coverage:

The Contractor may provide the following minimum Coverage Limits, as recommended by the advice and counsel of the Contractor's insurance provider:

a. When Contract Amount equals less than $5,000,000.
Excess or Umbrella Policy of $1,000,000.

b. When Contract Amount exceeds $5,000,000.
Excess or Umbrella Policy of $5,000,000.

5.7.3 All policies shall contain special endorsements to include:

1. The Owner as additional insured (except Workers' Compensation and Employers' Liability);
2. Notice of Cancellation to Owner (minimum of 30 days); and
3. Waive subrogation against the TDCJ.

If the Contractor already has in force insurance policies that provide the required coverage, there is no need to purchase duplicate coverage for this Project. Provide riders to such existing policies to cover this Project.

5.7.4 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, the A/E, and their agents and employees from and against all claims, damages, losses, and expenses, including but not limited to attorney's fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Paragraph.

5.7.4.1 In any and all claims against the Owner and/or the A/E or any of their agents or employees by any employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 5.7.4 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

5.7.4.2 The obligations of the Contractor under this Paragraph shall not extend to the liability of the A/E, and/or the Owner, their agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the A/E, and/or the Owner their agents or employees provided such giving or failure to give is the primary cause of the injury or damage.

5.7.4.3 The parties agree that the terms, covenants and provisions of paragraph 5.7.4 shall survive the termination of this Contract.

5.8 SAFETY PRECAUTIONS AND PROGRAMS

5.8.1 It shall be the duty and responsibility of the Contractor and all of its Subcontractors to be familiar and comply with all requirements of Public Law 91-596, 29 U.S.C. Secs. 651 et seq., the Occupational Safety and Health Act of 1970, (OSHA) and all amendments thereto, and to enforce and comply with all of the provisions of this Act. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. At the Pre-Construction Conference the Contractor shall submit its safety program to the Owner for acceptance. Acceptance by the Owner shall not relieve the Contractor from errors or omissions in the program or from any and all safety obligations required by all applicable statutory requirements.

5.8.1.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

1. Employees on the Work and other persons who may be affected thereby;

2. The Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or anyone directly or indirectly employed by any of them; and

3. Other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

5.8.1.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

5.8.1.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

5.8.1.4 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner.

5.8.1.5 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

5.8.2 **TRENCH EXCAVATIONS:** On projects in which trench excavations will exceed a depth of five feet, the Contractor and all of its Subcontractors shall comply with all requirements of 29 C.F.R. Standards 1926.650, 1926.651 and 1926.652, Occupational Safety and Health Administration (OSHA). Contractor shall include for each selected trench excavation safety system to be utilized a separate pay item classification as a part of the Contract Sum breakdown required by paragraph 7.1. Such pay item classification shall be based on the linear feet of trench excavated. Further, Contractor shall also include in the Contract Sum breakdown a separate pay item for such shoring based on the square feet of shoring used. Before commencing any trench excavation that will exceed a depth of five feet, the Contractor will provide the Owner with detailed Plans and Specifications regarding the safety systems to be utilized. Said plans and specifications shall include a certification from a Registered Professional Engineer indicating full compliance with the OSHA provisions printed above.

5.8.3 In an emergency affecting the safety of persons or property, the Contractor shall act, at its discretion, to prevent threatened damage, injury or loss.

5.9 MATERIALS AND WORKMANSHIP

(a) All equipment, material, and articles incorporated into the work covered by this Contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this Contract. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Owner, is equal to that named in the specifications, unless otherwise specifically provided in the Contract.

(b) The Contractor shall obtain the Owner's approval of the machinery and mechanical and other equipment to be incorporated into the Work. When requesting approval, the Contractor shall furnish to the Owner the name of the manufacturer, the model number, and other information concerning the

performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this Contract or by the Owner, the Contractor shall also obtain the Owner's approval of the materials or items the Contractor contemplates incorporating into the Work. When requesting approval, the Contractor shall provide full information concerning the materials or items. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

(c) All work under this Contract shall be performed in a skillful and workmanlike manner. The Owner may require, in writing, that the Contractor remove from the Work any employee the Owner deems incompetent, careless, or otherwise objectionable.

5.10 **TESTS**: If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be inspected, tested or approved, the Contractor shall give the Owner and the A/E timely notice of its readiness and of the date arranged so the Owner and A/E may observe such inspection, testing or approval. In addition, the Owner or the A/E may require special inspection, testing or approval of material or Work for compliance with the requirements of the Contract Documents. Upon direction of the Owner and the A/E, the Contractor shall promptly arrange for such special testing, inspection or approval procedure. The Contractor is responsible for employing the services of an acceptable testing laboratory and for performing all testing required. All costs associated with this testing shall be borne by the Contractor. Methods of testing shall be in accordance with the Contract Documents. The Owner reserves the right to perform Quality Assurance testing. The Owner shall pay for all Quality Assurance testing. The Contractor shall be responsible for the cost of the material being tested. If testing by either the Contractor's testing laboratory or the Owner's Quality Assurance testing laboratory determines material or workmanship is not in conformance with the Contract Documents, the Contractor shall be responsible for all costs associated with replacement of non-conforming Work or material. The Contractor shall further be responsible for the cost of any re-testing performed by the Owner's Quality Assurance Testing laboratory as a result of non-conforming Work. When directed by the Owner, verification of material compliance with the specifications shall be made by one of the following:

1. Manufacturer's certificate of compliance.

2. Mill certificate.

3. Testing laboratory certification.

4. Report of actual laboratory test from the Contractor's laboratory. Samples tested shall be selected as required by the Contract Documents or Industry Standard, whichever is more stringent and the method of testing shall comply with the Contract Documents.

5.11 **REMOVAL OF DEFECTIVE WORK:** If any materials furnished under this Contract are condemned by the Owner and/or A/E, the Contractor shall, after having received notice from the Owner or A/E to that effect, proceed to remove from the grounds or buildings all condemned materials, whether worked or un-worked, and take down all portions of the Work which the Owner and/or A/E shall by like written notice condemn as unsound or improper or as in any way failing to conform to the Contract Documents, and shall make good all Work damaged or destroyed thereby.

5.11.1 The Contractor shall without charge, replace all material or correct any workmanship found by the Owner and/or A/E not to conform to the Contract requirements, unless in the public interest the Owner consents to accept such material or workmanship with an appropriate adjustment in the Contract Sum.

5.11.2 If the Contractor does not promptly replace rejected material or correct rejected workmanship, the Owner may (1) by Contract or otherwise replace such material or correct such workmanship and charge the cost thereof to the Contractor, and/or (2) terminate the Contractor's employment in accordance with Article IV, and/or (3) or other action as referenced elsewhere in this Contract.

5.12 ROYALTIES AND PATENTS: The Contractor shall pay all royalties and license fees, and defend all suits or claims for infringement of any patent right and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such royalties and license fees and loss when a particular design or process, or the product of a particular manufacturer or manufacturers is specified; provided, however, if the Contractor has reason to believe the design, process or product specified constitutes an infringement of a patent, they shall be responsible for such royalties, license fees and loss unless he/she promptly gives such information to the Owner and the A/E.

5.12.1 The Contractor is responsible for ensuring that any substitution proposed at any time can be utilized as proposed without infringing on any patent, copyright, trademark or other form of intellectual property, and by submitting a request for substitution warrants to the A/E and the Owner that the proposed substitution can be implemented without such infringement. In reviewing substitution requests, the A/E and the Owner will make no determination as to the existence or potential infringement of such rights by the proposed substitution, and approval of substitution requests do not relieve the Contractor from its responsibilities under this section and paragraph. 2.1.

5.13 EQUAL MATERIALS: The Contractor shall be responsible for any additional costs or delays resulting from having furnished materials, equipment or fixtures other than those specified, and shall reimburse the Owner for any increased design costs resulting from such substitutions.

5.14 SHOP DRAWINGS AND SAMPLES: Shop Drawings and Samples shall be submitted as required by the Specifications.

5.14.1 The Contractor shall submit, with reasonable promptness and in orderly sequence, all Shop Drawings and Samples required by the Contract Documents, or subsequently by the A/E as covered by Contract Modifications. The Contractor shall review them for compliance with Contract Documents and shall certify that he/she has done so by stamp, or otherwise, affixed to each copy thereof. Submittal data presented without such certification will be returned without review or other comment, and any delay resulting therefrom will be the Contractor's responsibility.

5.14.1.1 The Contractor shall bear the cost of reproduction of Shop Drawings as may be required. Usually eight (8) copies are required, but the number will be established at the Pre-Construction Conference; a sepia may be required in lieu of one or more copies.

5.14.1.2 The Contractor shall, within 20 days after receipt of the Notice to Proceed submit to the Owner through the A/E a schedule of all items that shall be furnished for review and approval by the Owner and/or the A/E. The schedule shall also list all items that are to be reviewed and approved by the Contractor.

5.14.1.3 Such schedules shall include, among other things, Shop Drawings, manufacturer's literature, certificates of compliance, materials samples, materials colors, guarantees, etc.

5.14.1.4 The schedules shall indicate the type of item, Contract requirements reference, the Contractor's scheduled dates for submitting the above and like items and the projected need dates for approval answers from the Owner or the A/E and the projected or actual dates for procurement. The schedule shall show a minimum of thirty (30) Days after receipt for review and approval by the Owner and A/E, and if re-submittal is required, an additional fourteen (14) Days will be allowed for approval after receipt. The Contractor will revise and/or up-date this schedule as appropriate.

5.14.1.5 The submittal schedule shall be coordinated with the Owner-approved, Contractor-prepared and submitted progress schedule for all the Work. The Contractor shall revise and/or update the schedule as appropriate or as directed by the Owner to ensure consistency with the progress schedule as it may be revised and/or updated. Such revised submittal schedules shall be promptly provided to the Owner. Usually eight (8) copies are required, but the number will be established at the Pre-Construction Conference.

5.14.1.6 Furnishing of the schedule or revision thereto shall not be interpreted as relieving the Contractor of its obligation to comply with all the Specifications' requirements for the items on the schedule.

5.14.2 Shop Drawings and Samples shall be properly identified, as specified or as the Owner and/or the A/E may require. At the time of submission, the Contractor shall inform the Owner and the A/E in writing of any deviation in the Shop Drawings or Samples from the requirements of the Contract Documents.

5.14.3 By submitting Shop Drawings and Samples, the Contractor thereby represents that all field measurements, field construction criteria, materials, catalog numbers and similar data were verified, and that he/she has checked and coordinated each Shop Drawing and Sample with the requirements of the Work and of the Contract Documents and he/she shall so certify as required by paragraph 5.14.1.

5.14.4 The A/E or the Owner, if required by Special Conditions, will review and approve the Shop Drawings and Samples with reasonable promptness, but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The approval of a separate item shall not indicate approval of an assembly in which the item functions. The approval of the Shop Drawings or Samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the Owner and the A/E in writing of such deviation at the time of submission and the Owner or the A/E has not objected to the specific deviation. The approval shall not relieve the Contractor from responsibility for errors or omissions in the Shop Drawings or Samples.

5.14.4.1 The A/E will review and approve all submittals, color schedules, and specified mockups constituting Samples of finishes, such as architectural concrete and block sample panels.

5.14.5 The Contractor shall make any corrections required and shall resubmit the required number of corrected copies of the Shop Drawings or new Samples of materials until approved. The Contractor shall direct specific attention in writing to any new revisions other than the corrections required on previous submissions.

5.14.6 No Work requiring a Shop Drawing or Sample submission shall be commenced until the submission has been approved. All such Work shall be in accordance with approved Shop Drawings and Samples.

5.14.7 Shop Drawings shall be complete and detailed. If approved by the A/E, each copy of the Drawings will be identified as having received such approval by being so stamped and dated. If approval "with exception" or "as noted" by the A/E is so identified, stamped and dated, the Contractor shall comply with the notations so shown. If such qualified approval is so shown or if the drawings are not approved by the A/E or if resubmission is so directed, the Contractor shall make any corrections required or indicated by the A/E at the Contractor's expense.

5.14.8 When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the A/E shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

5.15 CLEANING: The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the Work, the Contractor shall remove from the Work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Owner. Upon completing the Work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the Owner.

ARTICLE VI. CONTRACT CHANGES

6.1 CHANGE ORDERS: The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, and the Contract Sum and/or Contract Time will be adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be performed under the applicable conditions of the Contract Documents. If such changes cause an increase or decrease in the Contractor's costs of, or time required for, performance of the Contract, an equitable adjustment shall be made and confirmed in writing in a Change Order.

6.1.1 Such orders, designated or indicated to be change orders, include but are not limited to changes:

1) In the Contract Documents;
2) In the methods or manner of performance of the Work;
3) In the Owner-furnished facilities, equipment, materials, services, or sites;
4) Directing acceleration in the Work to accomplish its completion prior to the original Contract completion date.

6.1.2 Any other written order which shall include direction, instruction, interpretation, or determination from the Owner shall be treated as a potential Change Order under this clause, provided that the Contractor gives the Owner written notice, prior to performing Work, stating the date, circumstances, and source of the order and that the Contractor regards the order as a Change Order.

6.1.3 It is recognized by the parties hereto, and agreed by them, that the Specifications and Drawings may or may not be free from errors, omissions or imperfections, or require changes or additions in order for the Work to be completed to the satisfaction of the Owner, and that, accordingly, it is the express intention of the parties, notwithstanding any other provisions in this Contract, that any errors, omissions or imperfections in such Specifications and Drawings, or any changes in or additions to same, or to the Work ordered by Owner, and any resulting delays in the Work or increases in Contractor's costs and expenses, shall not constitute or give rise to any claim, demand or cause of actions of any nature whatsoever in favor of Contractor, whether for breach of Contract, quantum meruit, or otherwise; provided, however, that Owner shall be liable to Contractor for the sum stated to be due Contractor in any Change Order approved and signed by both parties, it being agreed hereby that such sum, together with any extension of time contained in said Change Order, shall constitute full compensation to Contractor for all costs, expenses and damages to Contractor, whether direct, consequential or otherwise in any wise incident to, arising out of, or resulting directly or indirectly from the Work performed by Contractor under such Change Order.

6.1.4 RESERVED

6.1.5 RESERVED

6.1.6 The Contractor agrees that the Owner or any of its duly authorized representatives shall have access to all Contractor records related to the Project to verify charges to the Contract. Further, the Contractor

agrees to include these provisions in all subcontracts related to these projects. The Owner shall give the Contractor reasonable advance notice of intended audits.

6.1.6.1 Records may be reviewed during normal Business Hours and shall include accounting records, employee time sheets, estimating work papers, Change Order files, correspondence, canceled checks, related overhead records as applicable, and any and all supporting documents necessary to substantiate charges related to the Contract.

6.1.6.2 For the purpose of such examination, the Owner shall have access to said records of the Contractor or any related parties to the Contract from the effective date of this Contract, for the duration of the Work, and until two years after the date of final payment by the Owner to the Contractor. The period of access and examination described herein which relate to appeals under paragraph 5.2.1 of this Contract, litigation, or the settlement of claims arising out of the performance of this Contract shall continue until final disposition of such claims, appeals or litigation.

6.2 RESERVED

6.3 REQUESTS FOR EQUITABLE ADJUSTMENT:

6.3.1 Requests for equitable adjustment in Contract Sum shall be submitted not later than 20 Days after the occurrence giving rise to such request to the Owner and with copy to the A/E. The request shall be in writing and shall be supported in detail sufficient to provide for evaluation and prompt resolution.

6.3.2 No request shall be allowed for an equitable adjustment under this or any other provision of the Contract if asserted after final payment under this Contract.

6.4 REQUESTS FOR TIME EXTENSION: The Contractor shall comply with Article VIII when requesting time extensions.

6.5 MINOR CHANGES: The A/E, with concurrence of the Owner, will have authority to order minor changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time. Such changes shall be affected by written order, which the Contractor shall carry out promptly.

6.6 ADMINISTRATIVE PROCEDURES FOR CHANGE ORDER:

6.6.1 Lump Sum Proposal

6.6.1.1 In responding to a request for the Contractor to propose a price for a change in the Work, the Contractor shall furnish a lump sum proposal supported by a complete breakdown as described hereafter, indicating the estimated or actual cost to the Contractor for performance of the changed Work, including the applicable percentage of overhead and profit described hereafter. Any request for an extension of time must be justified and presented in adequate detail to permit evaluation. (See Article VIII, General Conditions).

6.6.1.1.1 The Proposal for the adjustment of the Contractor's Work shall show cost of any extra Work and shall consist of the following items:

a. Costs for materials and supplies. Costs shall be itemized to include unit cost, quantity and total cost. Costs reflected in the itemization shall reflect actual cost to the trade for material and supplies used.

b. Wages paid for skilled, semi-skilled, unskilled labor or equipment operators performing the additional Work. Wages shall be itemized to include trade(s), hourly rate, hours and total

cost. Such labor may include working foremen; all other supervisors shall be excluded and shall be considered as a part of field supervision.

c. Costs for additional construction equipment solely for the use on the Change Order Work. Equipment costs shall be itemized to include type(s), the number(s) of each, hourly usage rate, hours of usage and total cost. Onsite equipment shall be employed in Change Order Work at no extra charge, unless the Change Order Work also contains a time extension. Equipment usage rates will be paid based on prevailing local or regional rates.

d. Transportation costs for delivery and handling of materials, supplies and equipment. Such costs shall be itemized in sufficient detail as to allow identification of items transported.

e. Total costs for field supervision (including superintendent), tools, use of other equipment on the job as necessary for economical performance of the Change Order Work, general office and field services and expenses, interference with other Work, adjustments to progress schedules and all other overhead including bond and insurance (except Workers' Compensation) and profit shall not exceed 15%.

f. To the total cost proposed for the Change Order Work which is the sum of a, b, c, d and e above will be added, if applicable, the net cost of the following: Workers' Compensation Insurance, Social Security, Retirement/Pension and/or other costs of a similar nature imposed upon the Contractor by the state or Federal owner, or both, which are incidental to such Change Order Work and which the Contractor would be required to pay.

g. Contractor mark-up. The Contractor will be allowed to add a maximum of 5% to cover all overhead expenses and profit, including supervision, small tools, insurance and bond when Work is performed by Subcontractors. It is expressly understood and agreed that when the Contractor performs the Work with its own forces, and where there is no Subcontractor involved, the Contractor will be allowed the 15% mark-up described in paragraph 6.6.1.1.1e and the 5% mark-up is then not applicable.

6.6.2 PROCESSING:

6.6.2.1 All approved changes in the Contract Sum or Contract Time will be issued by the Owner to the Contractor for Contractor's concurrence as a Field Order or Change Order. The Field Order is the Contractor's assurance of payment and authorization to proceed with the change. The Contractor shall not make application for payment of Work approved by a Field Order until the Field Order has been incorporated into the contract by a Change Order.

6.6.3 Unilateral Change Order: In the event that the Owner requires certain Work to be accomplished and the Contractor fails in the discharge of any or all of its responsibilities described herein, the Owner may issue a Unilateral Change Order which is a Change Order issued by or at the direction of the Owner without the full and timely agreement of the Contractor.

6.6.3.1 A Unilateral Change Order may be issued before, during or after the changed Work is physically accomplished under the following conditions:

a. Contractor fails to submit price and/or time extension proposal for the changed Work within the time requested by the Owner;

b. Negotiation fails to achieve an agreed price and/or time extension or there remains a disagreement concerning any part of the changed Work; or

c. Contractor fails or refuses to execute a Change Order provided that he/she has had opportunity to state his/her objections, and, if stated, they are not mutually resolved.

6.6.3.2 The terms of a Unilateral Change Order including the change in Contract Sum and/or Contract Time shall be determined by the Owner assisted by the A/E and shall, in the Owner's judgment, be fair and reasonable.

6.6.3.3 When a Unilateral Change Order has been issued, it will have the full force and effect of a Contract Modification. It will be included in schedules, payment estimates, reports and all official records of the Contract. The issuance of a Unilateral Change Order will not prejudice any of the Contractor's rights to dispute matters under other provisions of the Contract.

ARTICLE VII. CONTRACT PAYMENTS

7.1 **CONTRACT SUM BREAKDOWN**: The Contractor shall submit to the Owner for approval a breakdown of the Contract Sum, itemizing material and labor for the various classifications of the Work. The breakdown will be used for evaluation of progress payments.

7.1.1 The breakdown shall be submitted to the Owner not less than twenty (20) Days prior to the first request for payment, and this shall be a condition precedent to the processing of the first payment. This breakdown shall follow the sections of the Specifications and each item thereunder shall include its pro rata part of overhead and profit so that the sum of the items will equal the Contract Sum. The breakdown will correspond to the items of Work in the progress schedule, including the Work of Subcontractors. Each item shall be assigned labor or materials values, or both, the sub-total thereof equaling the value of the Work in place when completed.

7.1.2 No progress payments will be made prior to receipt and approval of the Contract Sum breakdown and project schedule, which shall be in such detail as required by the Owner.

7.2 **PROGRESS PAYMENTS**: Once each calendar month, the Owner will make a progress payment to the Contractor on the basis of a certified estimate, approved by the A/E, of the Work performed during the preceding calendar month under this Contract, including an affidavit that all payrolls, bills for labor, materials, equipment, or other indebtedness connected with such Work have been paid or will be paid within ten (10) Days after receipt of the progress payment, or within the period of time required by Government Code, Title 10, Section 2251.022; but to ensure the proper performance of this Contract, the Owner shall retain not less than five percent (5%) of the amount of each estimate until final completion and acceptance of all Work covered by this Contract. Should the Owner issue a Certificate of Beneficial Occupancy in accordance with Article IX, upon application by the Contractor approved by the A/E, and without terminating the Contract, the Owner may make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than the retainage stipulated in the Contract Documents, and if bonds have been furnished as provided in Article III, such payment shall be made under the terms and conditions governing final payment, and shall not constitute a waiver of claims. Final payment shall be made after completion of the Work by the Contractor in accordance with the Contract Documents.

7.2.1 **PRELIMINARY PAY WORKSHEET TO THE APPLICATION AND CERTIFICATE FOR PAYMENT:** Every month that a progress payment is to be requested, the Contractor shall submit to the Owner a complete, clean copy of a preliminary pay work sheet or preliminary Application and Certificate for Payment, to include the following:

7.2.1.1 The Contractor's estimate of the amount of Work performed, labor furnished and materials incorporated into the Work, using the established Schedule of Values.

7.2.1.2 An updated Work Progress Schedule.

7.2.1.3 Such additional documentation as the Owner may require as set forth in the Special Conditions or elsewhere in the Contract Documents.

7.2.2 **CONTRACTOR'S APPLICATION FOR PROGRESS PAYMENT:** As soon as practicable, but in no event later than seven Days after receipt of the Preliminary Pay Worksheet, the A/E and Owner will review with the Contractor the Preliminary Pay Worksheet and observe the condition of the Work. Based on this review, the Owner and the A/E may require modifications to the Preliminary Pay Worksheet prior to the submittal of an application for progress payment, and will promptly notify the Contractor of revisions necessary for approval. At the Progress Meeting or as soon as practicable, the Contractor shall submit its invoice to the Owner on the appropriate and completed form, reflecting the required modifications to the Schedule of Values required by the A/E and/or Owner. Contractor shall attach all additional documentation required by the Owner and/or A/E, as well as an affidavit of payment affirming that all payrolls, bills for labor, materials, equipment, subcontracted work and other indebtedness connected with the Contractor's invoice are paid or will be paid within the time specified in Texas Government Code, Chapter 2251. No invoice is complete unless it fully reflects all required modifications, with all required documentation attached, including the Contractor's affidavit.

7.2.3 **CERTIFICATION BY ARCHITECT/ENGINEER:** Upon receipt of the Contractor's invoice, the Owner will review the application for progress payment for completeness and forward to the A/E. The A/E will certify that the application is complete and payable, or that it is incomplete, stating reasons why. If the invoice is incomplete, the Contractor shall make the required corrections and resubmit the invoice to the Owner for processing.

7.2.4 No progress payments will be made prior to receipt and approval of all project schedules and subsequent updates which shall meet the requirements as specified in 8.3.3.

7.2.5 In preparing progress payments, all material installed, labor performed, and stored material as provided by Article 7.2.5.1 may be included in the progress upon which payment is based.

7.2.5.1 All stored materials which are included in the progress payment shall at no time exceed five (5) percent of the Contract Sum and shall:

1. Have been approved to be incorporated into the Work by the A/E.

2. Have been approved for storage by the Owner, provided that if the Owner requests same, shall be furnished with bills of lading, material invoices, shipping receipts, delivery receipts, etc. for any or all material in question.

3. Contractor shall provide proof of title to the stored material in the form of invoices.

   A. For material stored on-site which is scheduled for installation within 60 Days of arrival on the job-site and is properly stored and protected. Approved payment will be for invoiced amount less retainage.

   B. For material stored off-site which is scheduled for installation within 60 Days and stored at an Owner approved storage site and a 30-Day written notice of such storage has been

provided before request for payment. Approved payment will be for the invoiced amount less retainage.

1. Storage will be in an insured and bonded warehouse.

2. Documentation shall include evidence of such bonding and insurance coverage acceptable to the Owner and a receipt for stored material to the Owner from the warehouse company.

3. Such material shall be segregated in storage and shall be available for inspection by representatives of the Owner.

4. The Contractor shall pay for any Owner incurred expense in verifying such storage.

7.2.5.2 Any exception to the provisions of Article 7.2.5.1 will be considered on a case by case basis in response to a written request by the Contractor. Any exceptions granted shall be for the sole benefit of the Owner and/or the Project.

7.2.6 The Owner may withhold or, on account of subsequently discovered evidence, nullify that part of any certificate to such extent as may be necessary to protect the Owner from loss on account of:

1. Defective Work not remedied.

2. Damage to Work or property of the Owner and/or of another contractor.

3. Failure to maintain scheduled progress.

4. Receipt of written notice by the Owner of unpaid bills, as stipulated in Texas Property Code, Section 53.232, if the Contractor has not provided a payment bond and if the Contract Sum does not exceed $25,000.00. Any funds so withheld shall be released to the Contractor if he/she furnishes a bond for release of lien as provided in Texas Property Code, Section 53.236. When the above grounds are removed, payment will be made for amounts withheld because of them.

5. Stored material not properly protected in accordance with the manufacturer's recommendations and the technical specifications, whichever is most stringent.

6. Failure to properly maintain and update the Record Set of Contract Documents.

7. Failure to comply with the wage rates provisions contained in the Contract.

8. Costs of re-testing, inspection or approval of materials or workmanship not in conformance with Contract requirements as stipulated in Article V, Paragraph 5.10.

9. Increased design costs and other associated costs resulting from Contractor substitutions.

10. Persistent failure to carry out the Work in accordance with the Contract Documents.

11. Reasonable evidence that the Work will not be completed within the Contract Time and that the unpaid balance would not be adequate to cover actual or damages for the anticipated delay.

12. Failure to furnish to the Owner all instructional manuals, maintenance manuals, parts catalogs, wiring diagrams, operational manuals, spare parts, specified written warranties and like publications and parts for all installed equipment, systems and like items.

13. Re-inspection as defined in the Contract Documents.

7.2.7 All material and Work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and Work upon which payments have been made or the restoration of any damaged Work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.

7.2.8 Payments to the Contractor shall not be construed to release the Contractor or its surety from any obligation under this Contract.

7.2.9 The Owner will pay the Contract Sum as provided in the Contract Documents.

7.2.9.1 Update of the initial breakdown, as defined in paragraph 8.3, of the Contract Sum shall thereinafter be reflected in the periodic update of the Contractor's Progress Schedule described under Article VIII. In connection with any progress payment, if the Owner requests same, they shall be furnished manifest proof of any Contractor's or Subcontractor's value; and such account shall be in a form as requested.

7.2.9.2 Pay estimate certificates must be signed by a corporate official or a specifically authorized representative of the Contractor. If the latter, a copy of the written delegation of authority to sign must be filed with the Owner.

7.2.9.3 Terms of payment shall be in accordance with Government Code, Title 10, Chapter 2251.

7.3 LIEN FOR UNPAID LABOR AND MATERIALS:

7.3.1 When the value of the Contract between the Owner and the Contractor is not in excess of $25,000.00, claimants are referred to Texas Property Code, Section 53.231, for requirements that are prerequisite to the filing of a valid lien on funds unpaid to the Contractor at the time of filing the claim.

7.3.2 When the Contract between the Owner and the Contractor is in excess of $25,000.00, claims must be sent directly to the Contractor and its surety in accordance with Government Code, Title 10, Chapter 2253. The Owner will furnish, in accordance with such Article, a copy of the Payment Bond as provided therein to claimants upon their request. All claimants are cautioned that no lien exists on the funds unpaid to the Contractor on such Contract, and that reliance on notices sent to the Owner may result in loss of their rights against the Contractor and/or Surety. The Owner is not responsible in any manner to a claimant for collection of unpaid bills, and accepts no such responsibility because of any representation by an agent or employee.

7.4 PAYMENT OF DEBT OWED TO THE STATE OF TEXAS

As required by §2252.903, Government Code, Contractor agrees that any payments due under a contract resulting from this IFB shall be directly applied towards eliminating any debt or delinquency including, but not limited to, delinquent taxes, delinquent student loan payments, and delinquent child support, until the debt is paid in full. Contractor shall comply with rules adopted by the TDCJ under §403.055, 403.551, 2252.903, Government Code and other applicable laws and regulations regarding satisfaction of debts or delinquencies to the State of Texas.

7.5 RIGHT TO OFFSET

In the event the Owner determines that Contractor owes money to the Owner under any contract or purchase order, the Owner, upon providing the Contractor with written notice of its intent to offset, shall have the right to withhold monies due to the Contractor with respect to this Contract or purchase order or with respect to any contract or purchase order with the Owner and apply such monies to the money due to the Owner.

ARTICLE VIII. TIME AND SCHEDULING

8.1 TIME LIMITS: All time limits stated in the Contract Documents are of the essence of this Contract.

8.2 CONTRACT TIME: The Contract Time as outlined in Section F.1, is the number of calendar days in which the Contractor shall commence and complete the Work. The Contract Time shall be deemed to commence upon the date designated in the Notice to Proceed issued by the Owner. The Work must be complete by the end of the Contract Time. The Schedule is to encompass all activities between the start and completion of Contract Time.

8.3 PROGRESS AND COMPLETION: It is understood and acknowledged by the parties that the Work cannot be efficiently completed without the use of a competent Schedule, updated frequently and utilized by the Contractor for the planning, management, and coordination of the Work. It is further acknowledged that the needs of the Owner to coordinate the provision of materials and services called for by the Contract Documents require that the Owner be made aware of any events or circumstances that affect the Schedule or sequences of Work required to construct the project. **Therefore, the requirements of this Contract as to scheduling and reporting, as well as time limits for completion of the Work, are of the essence.**

8.3.1 The Contractor is solely responsible for determining the sequence of activities, the time estimates of the detailed construction activities and the means, methods, techniques, and procedures to be employed in scheduling and completing the project in a timely manner. All Schedules required under the Contract Documents shall represent the Contractor's best judgment of how it will execute the Work in compliance with the Contract Documents.

By submitting any Schedule, report or update required by the Contract Documents, the Contractor represents to the Owner that the information set out therein is accurate, that the plan of Work set out is achievable, and that the Contractor intends to proceed according to the Schedule.

Acceptance of any such Schedule, report or update by the Owner serves only to acknowledge that the Contractor has fulfilled the contractual requirement to submit the same; in so doing, the Owner assumes no responsibility for any loss or damage to the Contractor and the Contractor remains solely responsible for the choice of sequences, durations, logic, and procedures reflected therein.

The purpose of the Project Schedule shall be to:

(1) Permit the Contractor to plan and coordinate its activities, and those of its Subcontractors, suppliers, and vendors, as well as action required by the Contract Documents of the Owner and A/E, so as to complete the Work in accordance with all applicable time limitations set forth in the Contract Documents;

(2) Provide timely and accurate information to the Owner on the progress of the Work and the Contractor's planned methods of implementation to achieve Completion, and to timely apprise the Owner of any events or circumstances that have delayed or threaten to delay the Work;

(3) Serve as a reliable model of the Work that will permit the accurate determination of the impact of any delaying event or circumstances upon the time of completion, and to permit the Contractor to identify and implement effective strategies to avoid or minimize delays;

(4) Permit the Contractor to identify and implement effective strategies of recovering lost time, where necessary.

The Critical Path Method (CPM) in calendar and work days, shall be used for the planning, scheduling, execution and reporting of the Work to be performed under the Contract.

The Project Schedule shall include a Project Schedule, a Schedule of Values, and computer-produced Schedule and Cost Reports as stipulated herein.

The Contractor shall provide the computer processing of the computer-produced reports and network diagram required by this article. The Contractor shall also provide, at no additional cost to the Owner, an electronic copy of the project network and of the computer-produced reports for the Preliminary Logic Network, Detailed Logic Network, Project Schedule Updates and Time Impact Analysis. The Contractor shall use "Primavera P6 Project Management" as its scheduling software.

The Contractor shall meet with the Owner within seven (7) calendar days after the start of the Contract Time to assure mutual understanding of the requirements of this article.

8.3.2 Contractor's Representative: Under this Contract the Contractor shall designate in writing an authorized representative in the Contractor's organization who shall be responsible for coordinating with the Owner during the preparation and maintenance of the Project Schedule. Qualifications of the Project Scheduler are outlined in Section H, paragraph 13.1.

Approval of the Schedule submissions shall be contingent upon acceptance of the Contractor's choice of authorized scheduling representative.

The Contractor's representative shall have complete authority to act on behalf of the Contractor in fulfilling the Project Schedule requirements and such authority shall not be interrupted throughout the duration of the Contract unless approved in writing by the Owner.

8.3.3 SCHEDULE DEVELOPMENT BY CONTRACTOR: Within a time period established in Section H, paragraph 13.3, after the start of the Contract Time, the Contractor shall submit one (1) electronic copy of its proposed CPM Schedule (hereinafter referred to as the Network) along with a supporting narrative to the Owner. The Contractor's Network shall consist of, but not be limited to, the following:

8.3.3.1 Proposed Procurement Activities.

(1) These procurement activities shall include mobilization, Shop Drawing submittals, Sample submittals, and fabrication and delivery of key and long-lead procurement items, including Owner furnished equipment and materials. The activities shall also indicate intended submittal dates and realistic delivery dates for fabrication and delivery activities.

(2) The Contractor shall also prepare a log which shall list all Shop Drawing and Sample submittals. This log shall be computerized on an Excel spreadsheet compatible with versions 6.0 or greater, and will include, at a minimum, the following information for each item:

(a) Item Number
(b) Spec Number

(c) Item Description
(d) Related Activity Number and Description
(e) Planned Date of Initial Submittal
(f) Actual Date(s) of Initial (and Subsequent) Submittals
(g) Planned Date of the A/E's Initial Response
(h) Actual Date(s) of the A/E's Initial (and Subsequent) Responses
(i) Status of the A/E's Initial (and Subsequent) Responses(s) - i.e. Approved, Rejected, Approved as Noted, etc.
(j) Comments

This log shall be updated monthly and included in the Contractor's monthly Schedule Update Report required under paragraph 8.3.5. If the Owner requires, the Contractor will also submit, at no additional charge to the Owner, the information contained herein as an electronic copy.

8.3.3.2 Proposed Commissioning / Inspection Activities

8.3.3.3 Proposed Cost and Resource Loading to show the direct man-days and labor/material cost estimated to perform the Work including Work by Subcontractors for each activity.

8.3.3.4 Proposed Construction Activities including erection or installation, testing of equipment or materials and operation and/or certification of equipment or materials.

(1) Activities shall be identified by building/area and activity durations shall be in units of whole Work days. Proposed durations assigned to each activity shall be the Contractor's best estimate of time required to complete the activity considering the scope and resources planned for the activity. Activity durations are established in Section H, paragraph 13.2.

(2) The Network as developed shall show the sequence and interdependence of activities required for complete performance of the Work. The Contractor shall be responsible for assuring all Work sequences are logical and the Network shows a coordinated plan of the Work. This includes proposed sequence for equipment/system demonstrations.

8.3.3.4.1 The following shall be included with the Primavera database and depicted on the Network for each activity by building with the ability to compile if requested by the Owner.

(1) Activity identity number utilizing a numeric designation concept.

(2) Concise description of the Work represented by the activity defined and related to a specific pay item.

(3) A coding structure of building/area to allow for organization of work activities.

Failure by the Contractor to include any element of Work required for performance of the Contract shall not excuse the Contractor.

The Proposed Procurement and Construction Activities described in the above Subparagraph shall include the information required under paragraph 8.3.5.

The Contractor shall consult with the Owner for delivery of Owner furnished equipment or materials, and its principal Subcontractors and Suppliers relating to the preparation of its construction plan and Construction Schedule. Principal Subcontractors shall receive copies of those portions of the Contractor's Construction Schedule which relate to their Work and shall be continually advised of any updates or revisions to the

Construction Schedule as the Work progresses. When the Contractor submits its Construction Schedule to the Owner or makes any proposed updates or revisions to such Schedule, it will be assumed by the Owner that the Contractor has consulted with and has the concurrence of its principal Subcontractors and Suppliers. The Contractor shall be solely responsible for ensuring that all Subcontractors and Suppliers comply with the requirements of the Construction Schedule for their portions of the Work.

SCHEDULE OF VALUES: At the time of completion of the Project Schedule, the Contractor shall submit to the Owner for review and approval a Schedule of Values, allocating a dollar value for the activities on the Network. The dollar value for the activity shall be the cost of the Work of the activity including labor, materials, and pro rata contribution of General Conditions requirements, overhead and profit. The sum of all activity costs shall equal the total Contract Sum.

Cost Reports: Initial and subsequent Cost Reports will include the following information for each activity, sorted first by building designation then by trade activity:

a. Activity number and description;

b. Percentage of value of Work in place against total value;

c. Cost of each activity separated into Labor and Materials;

d. Value of Work in place since last report;

e. Value of Work in place to date; and

f. Value of uncompleted Work.

As part of the updating process, the Contractor's computer will calculate, based upon progress data provided by the Contractor and agreed to by the Owner, the value of Work done for each activity less the amount previously paid for past percentages completed. Summation of all values of each activity less the appropriate percent of retainage shall be the amount payable to the Contractor as provided by paragraph 7.2.

The Contractor shall ensure that the critical path runs through onsite activities and that off-site activities do not control the critical path of the Network.

8.3.4 JOINT REVIEW, REVISION AND ACCEPTANCE: Within fourteen (14) Days of receipt of the Contractor's proposed Network, the Owner shall evaluate the Network for compliance with this article and other Contract requirements, and notify the Contractor of its findings.

If the Owner does not request a revision or justification, the Owner and the Contractor may meet within seven (7) Days of receipt of the Contractor's proposed Network for joint review of the proposed Network.

If the Owner does request a revision or justification, the Contractor shall, within seven (7) Days of receipt of the Owner's request, provide a satisfactory revision or adequate justification for those activities, logic and durations to the satisfaction of the Owner.

The Owner and the Contractor may meet within seven (7) Days of receipt of the Contractor's response for joint review of the correction or adjustment of the Contractor's proposed Network. In the joint review any areas which still do not comply with the Contract requirements, shall be subject to revision by the Contractor. In the event the Contractor fails to define any element of Work, activity or logic and the Owner review does not detect this omission or error, such omission or error, when discovered by the Contractor or Owner, shall

be corrected by the Contractor at the next monthly Schedule Update (discussed hereinafter) and shall not affect any Milestone.

Within seven (7) Days after the joint review between the Contractor and Owner, the Contractor shall revise the Network in accordance with the agreements reached during the joint review and submit four (4) each computer-produced Schedule and Cost Reports and electronic copy as identified in paragraph 8.3.5.

If the Contractor's Schedule still does not comply with the Contract requirements, the Owner may, within seven (7) Days, request a meeting to remedy all remaining objections to the Project Schedule or discuss proper action as prescribed in Article VII of the Contract Documents.

Upon establishment of an agreed-upon Project Schedule, the Owner and the Contractor shall, at the Owner's discretion, sign and date on the face of the Project Schedule documents their respective approval. Subsequent to the Owner's acceptance of the Project Schedule, the Contractor shall proceed with the Work in accordance with the Project Schedule and shall not deviate therefrom unless revised in accordance with Paragraphs 8.3.7 or 8.3.8.

Acceptance by the Owner of the Contractor's Project Schedule will be a condition precedent to making any progress payments.

The Owner's review of the Contractor's Project Schedule is for conformance to the requirements of this provision only.

The activity cost for the Schedule of Values shall be coded with a cost code corresponding to the trade, Subcontractor or Supplier performing the Work so that subtotals for each division of the Work can be prepared.

The Schedule of Values shall, in the best judgment of the Contractor, represent a fair, reasonable and equitable dollar (cost) allocation for each activity on the Network.

The Contractor will provide, within seven (7) Days after acceptance of the Schedule of Values, a computer listing of all cost-loaded activities for the Owner's review.

8.3.5 PROJECT SCHEDULE UPDATE: The Project Schedule shall be updated as specified in Section H, paragraph 13.4 throughout the duration of the Work and until Contract Completion. The Contractor shall meet with the Owner each month at a Schedule Update meeting to review actual progress made through the date of the Schedule Update, including dates activities actually started and/or were completed, the percentage of Work completed and remaining duration on each activity started and/or completed. The data date of each Schedule Update shall be the first Day immediately following the last day of the progress payment period.

The following information shall be submitted by the Contractor on or before the last Day of the progress payment period, but not earlier than seven (7) Days before.

(1) One (1) original and three (3) reproduced marked-up copies of the previous month's Schedule Update computer-produced reports indicating the progress on Schedule activities and indicating actual activity start and/or complete dates, and revised (current) remaining durations.

(2) The Contractor shall indicate in writing those activities the Contractor plans to Work on during the following update month and current or anticipated conditions which have delayed or may delay the Work in order to discuss remedial action. The Contractor shall also explain, for Work which reflects less than

satisfactory progress, whether any downstream Work will (or will not) be affected in a like manner and the Contractor's method of corrections.

(3) Any additional written information necessary to support the above.

In case of disagreements at the Schedule Update meeting concerning actual progress to date, the Owner's determination shall govern.

A Schedule Update meeting shall occur on or before the seventh (7th) Day following the submittal of the Schedule Update information. After this meeting the Contractor shall revise the Project Schedule to reflect progress as of the date of the Schedule Update and any revisions to the Project Schedule Update and any revisions to the Project Schedule (which shall be highlighted on the updated Network) and perform a computer-produced calculation to determine the status of the Project Schedule.

8.3.5.1 Each Project Schedule Update shall be forwarded to the Owner within seventy-two hours after the Schedule Update meeting and shall, at the Owner's request, include the following:

(1) A description of all activities completed during the preceding update period.

(2) A description of the progress made on activities listed as started but not completed.

(3) A description of any accepted revisions to the Schedule logic or initial activity durations, or activity costs.

(4) A narrative describing areas of the Work behind Schedule, reasons for delay and the Contractor's proposed method of recovery as required in accordance with paragraph 8.3.6.

(5) Prints of the updated Network indicating the progress made up to the date of the Schedule Update and indicating any revisions to the Network.

(6) One printed copy of the following computer-produced reports, and one (1) electronic copy of the reports:

(a) All activities sorted by building and early start.
(b) 60-day early start sorted by activity number showing predecessor and successor relationships.
(c) All activities sorted by building showing the actual mandays for completed and in-progress Work items.
(d) Accumulative curve showing scheduled and actual manpower for the total Project by month.

(7) The activity number, float, 60-day early start, and earned mandays computer-produced Schedule Reports listed above shall include for each activity depicted on the Network, the following information:

(a) Activity Number
(b) Activity Description
(c) Original Duration
(d) Remaining Duration
(e) Activity Responsibility Code
(f) Activity Early Start and Early Finish Dates
(g) Activity Late Start and Late Finish Dates

(h) Actual Start and Actual Finish Dates
(i) Total Float

(8) An updated submittal log as defined in paragraph 8.3.3.

(9) An electronic copy of the progressed Schedule Network "P6 for Windows".

The updating of the Project Schedule is essential for determining the estimate upon which progress payment will be made. If the Contractor fails or refuses to provide information required to accomplish a complete Project Schedule Update or revision as specified hereinafter the Contractor shall not be entitled to progress payments until the information necessary for a complete Schedule Update is furnished to the satisfaction of the Owner.

8.3.6 RECOVERY SCHEDULE:

8.3.6.1 Should the updated Construction Schedule show at any time during the Contractor's performance, in the sole opinion of the Owner, that the Project will be completed beyond the scheduled project completion date, or should Contractor be required to undertake actions under paragraph 8.4.4 of the General Conditions hereof, the Owner may request the Contractor to prepare a Recovery Schedule at no additional cost to the Owner (unless the Owner is solely responsible for the event or occurrence which has caused the Schedule slippage) explaining and displaying how Contractor intends to reschedule its Work in order to regain compliance with the Construction Schedule.

8.3.6.2 If the Contractor believes that all of the time can be recovered during the subsequent pay period, the Contractor will be permitted to prepare a Recovery Schedule as set forth below. However, if the Contractor believes that it will take more than thirty (30) Days to recover all of the lost time, he/she shall prepare and submit a request for revision to the Construction Schedule and comply with all requirements of paragraph 8.3.8.

8.3.6.2.1 The Contractor shall prepare and submit to the Owner a Recovery Schedule, incorporating best available information from Subcontractors and others which will permit return to Construction Schedule at the earliest possible time. The Contractor shall prepare a Recovery Schedule to the same level of detail as the Construction Schedule. This Recovery Schedule shall be prepared in coordination with other separate contractors on the Project.

8.3.6.2.2 Within two (2) Days after submission of Recovery Schedule to the Owner, the Contractor shall participate in a conference with the Owner to review and evaluate the Recovery Schedule. Within two (2) Days of conference, the Contractor shall submit the revisions necessitated by the review for the Owner's review and acceptance. The Contractor shall use the accepted Recovery Schedule as its plan for returning to the Construction Schedule.

8.3.6.2.3 The Contractor shall confer daily with the Owner to assess the effectiveness of the Recovery Schedule. As a result of this conference, the Owner will direct the Contractor as follows:

a. If the Owner determines the Contractor is still behind Schedule, the Owner will direct the Contractor to prepare a Schedule Revision and comply with all of the requirements of a Schedule Revision as stated herein and the other requirements of the Contract Documents; provided, however, that nothing herein shall limit in any way the rights and remedies of the Owner as provided elsewhere in the Contract Documents.

b. If the Owner determines the Contractor has successfully complied with provisions of the Recovery Schedule, the Owner will direct the Contractor to return to the use of the accepted Construction Schedule.

8.3.7 PROJECT SCHEDULE REVISIONS: Updating the Project Schedule to reflect actual progress made up to the date of a Schedule Update shall not be considered revisions to the Project Schedule.

If, as a result of the monthly Project Schedule Update, it appears the Project Schedule no longer represents the actual prosecution and progress of the Work, the Owner will request, and the Contractor shall submit, a revision to the Project Schedule.

The Contractor may also request revisions to the Project Schedule in the event the Contractor's planning for the Work is revised. If the Contractor desires to make changes in the Project Schedule to reflect revisions in its method of operating and scheduling of the Work, the Contractor shall notify the Owner in writing, stating the reason for the proposed revision in accordance with the requirements of Paragraph 8.3.8.

If revision to the Project Schedule is contemplated, the Contractor or Owner shall so advise the other in writing at least seven (7) Days prior to the next Schedule Update meeting, describing the revision and setting forth the reasons thereof.

Should the Contractor desire to or otherwise be required under the Contract Documents to make modifications or changes in its method of operation, its sequence of Work or the durations of the activities in its Network, he/she shall do so in accordance with the requirements of the Contract Documents. Revisions to the accepted Network must be accepted in writing by the Owner.

The Contractor shall submit requests for revisions to the Network to the Owner, together with written rationale for revisions and description of logic for rescheduling Work and maintaining the Specific Dates listed in the Contract Documents. Proposed revisions acceptable to the Owner will be incorporated into next update of Network.

In submitting any proposed Schedule Revisions to the Owner, the Contractor shall, at the Owner's request, submit therewith the following certification:

"The undersigned Contractor certifies that the proposed Schedule revision to the Network which is comprised of the graphic network of activities displayed on the sheets dated ____ and on the computerized mathematical reports dated ____ is Contractor's Schedule revision to the Network as required by the Contract Documents; and that said Schedule revision is a true and accurate representation of its plan to complete the Work, including all Change Orders that are in the Contractor's possession as of the foregoing date, and fully complies with the requirements of the Contract Documents. The Contractor further certifies that it will prosecute the Work in accordance with this Schedule revision, subject to any change therein which is implemented in accordance with the Contract Documents; and the Contractor further certifies that they have fully complied with all of the requirements of the Contract Documents relating to coordination of said Network."

Owner-directed revisions to the Project Schedule will not be incorporated into the Project Schedule without written notice to the Contractor, who shall respond in writing within seven (7) Days, either agreeing with the Owner's proposed revision, or setting forth justification why it should not be accomplished. If the Contractor's justification for not accomplishing the revision is reasonable, such revision will not be incorporated into the Project Schedule. The Contractor's failure to respond in writing within seven (7) Days will be deemed to be an acceptance of the Owner-directed revisions, and such revisions will be incorporated into the Project Schedule by the Contractor. Requests for revisions of activity data or other schedule-related information (e.g.: manpower, unit productivity rate, etc.) shall be made in accordance with the requirements of this Paragraph.

8.3.8 TIME IMPACT ANALYSIS FOR CHANGE ORDER, DELAYS AND CONTRACTOR REQUEST: When changes are initiated, delays are experienced, or the Contractor, in accordance with paragraph 8.3.7 desires to revise the Project Schedule, the Contractor shall submit to the Owner a written Time Impact Analysis illustrating the influence of each change, delay, or Contractor request on any critical activity. Each Time Impact Analysis shall include a Fragmentary Network (Network Analysis) demonstrating how the Contractor proposes to incorporate the change, delay or Contractor request into the Project Schedule. The Time Impact Analysis shall demonstrate the time impact to each and every affected activity in the Project Schedule utilizing the most recent Project Schedule Update as the basis for the Analysis. The date of the most recent Project Schedule Update shall be a date prior to the date the change is given to the Contractor, the date of delay occurred or the date the Contractor submits a request for a change. The event times used in the Time Impact Analysis shall be those included in the most recent Project Schedule Update or as adjusted by mutual agreement. The Time Impact Analysis shall include an electronic copy which shall contain the details of the change including, but not to be limited to, added, changed or deleted data for activities, logic restraints, resources or costs. If the Project Schedule is revised subsequent to submittal of a Time Impact Analysis but prior to its acceptance, the Contractor shall promptly indicate in writing to the Owner of the need for any modification to its Time Impact Analysis.

Activity delays shall not automatically mean that an extension of any milestone is warranted or due the Contractor. A change or delay may not affect existing critical activities or cause non-critical activities to become critical. A change or delay may result in only absorbing a part of the available total float that may exist within an activity chain of the Network, thereby not causing any effect on any milestone.

Float or slack time associated with one chain of activities is defined as the amount of time between earliest start date and latest start date or between earliest finish date and latest finish date for such activities, as calculated as part of the Network. Float or slack time shown on the Network is available for use by the Owner and the Contractor, whichever first needs the use or benefit of the float. No time extension will be given for an event or circumstance that only consumes available positive float.

The copy of each Time Impact Analysis shall be submitted within seven (7) Days after the commencement of a delay or the notice of direction for a change is given to the Contractor.

In cases where the Contractor does not submit a Time Impact Analysis within seven (7) Days, it is mutually agreed that the particular change, delay or Contractor request does not require an extension of time to a milestone and the Contractor hereby waives its right to subsequently request a time extension.

Acceptance or rejection of each Time Impact Analysis by the Owner shall be made within seven (7) calendar days after receipt unless subsequent meetings and negotiations are necessary. The Time Impact Analysis shall be incorporated into the Project Schedule after approval of the request for an extension of time as per paragraph 8.4.2.

8.3.9 RESPONSIBILITY FOR COMPLETION: The Contractor shall furnish sufficient forces, offices, facilities and equipment, and if approved by Owner, shall Work such hours including night shift and overtime operations as necessary to ensure the prosecution of the Work in accordance with the current monthly Project Schedule. If, in the opinion of the Owner, the Contractor falls behind in meeting the Project Schedule, the Contractor shall take such steps as may be necessary to improve its progress, provided that all additional steps are subject to Owner approval. Failure of the Contractor to comply with the requirements of this Paragraph shall be a basis for determination by the Owner that the Contractor is not prosecuting the Work with such diligence as will ensure completion within the milestones and scheduled completion date. Upon such determination, the Owner may terminate the Contractor's right to proceed with the Work or any separable part thereof, in accordance with the provisions of paragraph 4.6, or may take such other actions as may be deemed appropriate.

If the Contractor, after completing the Recovery and Revision processes as outlined in paragraphs 8.3.6 and 8.3.7, still cannot show a Schedule Completion which reflects the Contract Completion, a meeting between the Owner and Contractor must be held to discuss late completion of the Work. If in this meeting it is decided that the project cannot be finished by the Contract Completion date then the Owner may require the Contractor to prepare a Schedule which reflects a completion which can be met. Along with this Schedule, the Contractor should include a narrative which explains the reasons it cannot achieve the Contract Completion date and the steps it plans to implement to minimize the delay. This Schedule must adhere to the Schedule requirements outlined in the Contract and will be reviewed as the Contractor's Work Schedule in accordance with paragraph 8.3.4.

Acceptance of a Schedule with a late completion date does not constitute an extension of time by the Owner, or waive the Owner's right to a timely finish or damages for failure to complete timely. Failure of the Owner to direct acceleration does not relieve the Contractor from the duty to complete timely.

8.3.10 PERFORMANCE MONITORING: The Owner may elect throughout or at any time during the Project to record on a daily basis the number of workers and construction equipment working on each Schedule activity in each area of Project and give a copy of this log to the Contractor who shall be responsible for advising the Owner, without additional cost to the Owner, of any error in this Work history, in writing, within seven (7) Days of receipt of same. This information will be used by the Owner in its evaluation of the adequacy of the Contractor's performance and on-site manpower staffing, as well as in the evaluation of any Contractor or Subcontractor claims.

The Contractor shall prepare a report on a daily basis (a "Daily Construction Report") so as to record the following information as a minimum:

(1) Weather data including sky conditions, temperature, wind and precipitation;

(2) Work currently being performed and with the following information:

a. Manpower - listed by Contractor and craft,

b. Quantities installed, and

c. Problem areas discovered and/or resolved;

(3) Descriptions of the specific Work started, in progress, or completed;

(4) Other comments which the Contractor deems appropriate for recording. Each morning (or following day if a holiday) the Contractor shall submit the previous day's Daily Construction Reports to the Owner; and

(5) Stoppages and delays.

The Contractor shall prepare a Bar Chart representing current Work activity. This bar chart will be reviewed with the Owner at the start of each week. The Bar chart will depict two (2) weeks of Work progress beginning with the week of the review and shall be created from the last approved updated Schedule.

8.4 DELAYS AND EXTENSION OF TIME:

8.4.1 Requests for Time Extensions: Requests for extensions of time must be made in writing no later than twenty (20) Days after the occurrence of the delay or at the time of the next Project Schedule Update, whichever shall occur first. All time extension requests shall be based on the latest approved Schedule. The

request must include a narrative describing how the occurrence affected the critical path. Additional documentation is to be made available at request of the Owner. Requests for extensions of time shall be stated in numbers of whole calendar days and shall be in accordance with paragraph 8.3.8.

8.4.2 The Contractor may be granted an extension of time because of changes ordered in the Contract or because of any unforeseeable occurrence deemed by the Owner as being beyond the Contractor's control, which constitutes a justifiable delay. The Owner may extend the time subject to the following provisions.

8.4.2.1 EXCUSABLE DELAYS

(1) Changes ordered by Owner
(2) Owner's express order to stop or suspend Work in whole or in part if for Owner's convenience
(3) Adverse weather in accordance with Section H, paragraph 13.5
(4) Failure of the Owner or A/E to timely take some action required by the Contractor, or to provide information timely
(5) Delays in transportation or unavailability of material, equipment or supply
(6) Strikes and Lockouts
(7) Design defects in accordance with paragraph 6.1.3
(8) Late delivery of OFCI items
(9) Any other unforeseeable causes which in the sole discretion of the Owner is determined to be beyond the Contractor's control

8.4.2.2 PROOF OF ENTITLEMENT

Contractor must show by Time Impact Analysis, using the most recent accepted Schedule Update before the delay occurred, that the delay was experienced in critical path activities and that it affected the Contract Completion Date.

Contractor must provide backup data (daily reports) documenting actual delay. Contractor must also show that a reasonable revision of the Schedule could not avoid the delay.

Contractor must show that they took reasonable steps to avoid or mitigate the delay.

8.4.2.3 RELIEF FOR DELAY

The Contractor is entitled to recover direct and general conditions costs of extended performance time only for the following types of excusable delay:

(1) Failure of the Owner or A/E to take required actions timely (e.g., failure to provide OFCI items), or provision of defective items and failure to provide timely information
(2) Changes ordered by Owner
(3) Design defects in accordance with paragraph 6.1.3
(4) Owner's express order to stop or suspend Work in whole or in part if for Owner's convenience.

The Owner shall ascertain the facts and the extent of the delay and extend the time for completing the Work when, in its judgment, the findings justify such an extension of Contract Time. The findings of the Owner are final and conclusive on both parties and subject to appeal only as provided in paragraph 5.2.1.

8.4.2.4 FORCE MAJEURE

Owner may grant relief from performance of the contract if the Contractor is prevented from performance by an act of war, order of legal authority, act of God, or other unavoidable cause not attributable to the fault or negligence of the Contractor. The burden of proof for the need of such relief shall rest upon the Contractor. To obtain release based on force majeure, the Contractor shall file a written request with Owner.

8.4.3 TIME EXTENSIONS FOR ADVERSE WEATHER

1. This provision specifies the procedure for determination of time extensions for adverse weather. Time extensions for adverse weather shall be submitted and reviewed monthly. In order for a time extension to be awarded for adverse weather, the following conditions must be satisfied:

a. The adverse weather experienced at the project site during the Contract Time must be found to exceed the adverse weather days anticipated for the project location during any given month. The days affected by adverse weather delays must be shown to be scheduled work days or that notice was given prior to the delay that work was going to proceed on that day.

b. The adverse weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without fault or negligence of the Contractor.

2. The Schedule of monthly anticipated adverse weather delays is shown in Section H, paragraph 13.5 for the project location and will constitute the baseline for monthly weather time evaluations. The Contractor's progress Schedule must reflect dependent activities.

3. Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the Contract, the Contractor will record on the Daily Construction Report the occurrence of adverse weather and resultant impact to normally scheduled Work activities. The Project Administrator (Owner) will sign its concurrence or non-concurrence on the Daily Construction Report. Actual adverse weather delay days must prevent Work on critical activities for 50 percent or more of the Contractor's scheduled Workday.

The number of actual adverse weather delay days shall include days impacted by actual adverse weather and be calculated chronologically from the first to the last day of each month, and be recorded as full days. This will give the Contractor full consideration for equivalent fair weather work days. Then a modification can be issued in accordance with paragraph 8.4 of the General Conditions.

8.4.4 If the Work is behind Schedule and the rate of placement of Work is inadequate to regain scheduled progress so as to insure timely completion of the entire Work (Contract Completion Date) or a separable portion thereof, the Contractor, when so informed by the Owner, shall immediately take action to increase the rate of Work placement in a manner approved by Owner.

A Recovery Schedule shall be provided in accordance with paragraph 8.3.6.

8.4.4.1 The Contractor shall, within five (5) working days after being so informed, notify the Owner of the specific measures taken and planned to increase the rate of progress together with an estimate as to when scheduled progress will be regained. Should the plan of action be deemed inadequate by the Owner, the Contractor will take additional steps or make adjustments as necessary to its plan of action until it meets with Owner's approval. The increased rate of Work placement will continue until scheduled progress is recovered. If the cause of delay is not identified in paragraph 8.4.1.1 as an Excusable delay then the Contractor shall not be entitled to additional compensation for the effort it applies to the Work under the terms of paragraphs 8.3.6 and 8.3.7.

8.4.4.2 Failure by the Contractor to comply with the requirements of the Owner under this provision shall be grounds for determination that the Contractor is guilty of a substantial violation of provisions of the Contract Documents. Upon such determination the Owner may terminate the Contract as provided in paragraph 4.6.

8.4.4.3 The Contractor shall receive no compensation for delays or hindrances to the Work, including any extended overhead, other provisions of the Contract notwithstanding, except when direct and unavoidable extra cost results from the failure of the Owner to provide materials, if any, specified to be furnished by the Owner, or from the failure of the Owner, or A/E to provide instructions necessary for prosecution of the Work; provided, however, that the Owner will not be responsible for such additional compensation unless the Contractor gives timely written notice that they are being delayed or are about to be delayed by the failure to provide the materials or information; and provided further, that no claim shall be allowed for costs incurred prior to receipt of such notice.

8.4.4.4 Any directive or order to accelerate the Work will be in writing. Any directive or order terminating accelerated Work will be in writing.

8.4.4.5 No extension of time shall release the Contractor or the Surety furnishing its performance or payment bond from all obligations thereunder, which shall remain in full force until the discharge of the Contract.

8.5 FAILURE TO COMPLETE WORK ON TIME: The time set forth in the Contract for the completion of Work is an essential element of the Contract. Contractor's failure to complete the Work within such time will cause damage to the Owner. Where appropriate, the value of such damages may be stated in Section F.

8.5.1 For each and every Day that the Work, or any portion of the Work, shall remain incomplete after the expiration of the Contract Time set in the Contract, or as extended by the Owner, the amount shown in Section F as liquidated damages will be deducted from the moneys due or to become due to the Contractor, not as a penalty, but as added expense including administrative and inspection costs. Liquidated damages shall cease to accrue at Final Completion.

8.5.2 The rights and remedies of the Owner provided in this Article are in addition to any other rights and remedies provided by law or under this Contract.

ARTICLE IX. BENEFICIAL OCCUPANCY

9.1 BENEFICIAL OCCUPANCY: If and only if the Owner should wish to use or occupy the Work, or portion thereof, prior to final completion the Owner shall request in writing that the Contractor determine if the Work, or portion thereof, so identified by the Owner is sufficiently complete to allow the Owner to occupy. Should the Contractor determine that the Work, or a designated portion thereof, acceptable to the Owner, is sufficiently complete, the Contractor shall prepare for submission to the A/E a comprehensive list of items remaining to be completed or corrected. Upon receipt of the Contractor's list and prior to the agreed date of Beneficial Occupancy, a joint inspection tour by the Contractor, Owner, and A/E, or their duly appointed representatives, shall be made. The A/E will furnish to the Contractor a list of items of Work to be completed and deficiencies to be corrected and the Contractor shall complete such remaining Work within the remaining Contract time or within the time frame stated on the Certificate of Beneficial Occupancy. Failure to achieve Final Completion within the Contract Time or time frame stated on the Certificate of Beneficial Occupancy will cause damage to the Owner and may subject the Contractor to Liquidated Damages as stated in Section F, Article 2 of the Contract.

9.2 CERTIFICATION: When the A/E and the Owner, on the basis of an inspection determines that the Work or a designated portion thereof is sufficiently complete, they will then prepare a Certificate of Beneficial Occupancy which shall establish the Date of Beneficial Occupancy; shall state the responsibilities of the Owner and the Contractor for maintenance, heat, utilities, and operation of permanent equipment; and shall fix the time within which the Contractor shall complete the items listed therein. The Certificate of Beneficial Occupancy shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to each of them in such Certificate. The Owner will furnish to the Contractor a letter indicating acceptance of the Work or designated portion thereof, subject to completion or correction of the listed items.

9.2.1 Following the joint inspection tour and the agreed date of Beneficial Occupancy, the Owner may occupy the building or facility or any part thereof for whatever purposes the Owner deems necessary. The Owner will assume responsibility, under the provisions of this Article, for the area they so occupies, except that the Contractor shall retain responsibility for the remaining items of Work until such are satisfactorily completed and accepted by the Owner.

9.2.2 At the time of joint inspection tour for Beneficial Occupancy, the Contractor shall furnish to the Owner all instructional manuals, maintenance manuals, parts catalogs, wiring diagrams, operational manuals, spare parts, specified written warranties and like publications for all installed equipment, systems and like items along with a complete accounting of all fixed assets which are incorporated into the Work, or portion thereof as required in paragraph 1.4. If the Contractor does not furnish these requirements and the Owner must obtain this information and data, the costs for this procurement will be deducted from payments due the Contractor.

9.3 ADDITIONAL INSPECTION COSTS: Contractor shall be charged with any cost for re-inspection resulting from substantial differences between the Contractor's list of items to be completed or corrected and the list of items resulting from the A/E inspection.

ARTICLE X. CONTRACT FINAL ACCEPTANCE AND PAYMENT

10.1 NOTIFICATION: When the Work is completed, the Contractor shall notify the A/E and the Owner in writing that the Work will be ready for Pre-Final Inspection on a definite date. A seventy-two (72) hour advance notice shall be given to the Owner. The Contractor must have performed an inspection of the Work, developed a punch list, and have corrected all items on that punch list prior to requesting a pre-final inspection. The Contractor's completed punch list must be submitted to the Owner at the time of the Pre-final Inspection request.

10.2 PRE-FINAL INSPECTION: A Pre-Final Inspection will be required for any Work for which there has been no Certificate of Beneficial Occupancy issued in accordance with Article IX. A joint inspection tour by the Contractor, Owner, and the A/E or their duly appointed representatives shall be made at the time the Contractor so advises the Owner and the A/E that the Work is ready for the Pre-Final Inspection. Following such inspection, the A/E and/or the Owner shall furnish to the Contractor a list of items of Work to be completed and deficiencies to be corrected and the Contractor shall complete such remaining Work within the remaining Contract Time.

10.2.1 At the time of Pre-Final Inspection the Contractor shall furnish to the Owner all instructional manuals, maintenance manuals, parts catalogs, wiring diagrams, operational manuals, spare parts, specified written warranties and like publications for all installed equipment, systems and like items along with a complete accounting of all fixed assets which are incorporated into the Work. If the Contractor does not furnish these requirements and the Owner must obtain this information and data, the costs for this procurement will be deducted from payments due the Contractor.

10.3 FINAL INSPECTION AND ACCEPTANCE: When the items identified in the A/E's Pre-Final Inspection or Beneficial Occupancy list are completed or corrected, the Contractor shall notify the A/E in writing that the Work will be ready for final inspection on a definite date. A seventy-two (72) hour advance notice shall be given to the Owner. Upon verification by the A/E that the Work is ready for final inspection and acceptance, the Owner will within ten (10) Days make a final inspection, then once the Work is found acceptable under the Contract Documents and the Contract is fully performed, make final payment to the Contractor.

10.3.1 To avoid delay in final payment, the Contractor shall have all necessary bonds, guarantees not previously furnished, receipts, affidavits, etc. prepared and signed in advance with a letter of transmittal listing each item to be furnished to the Owner at the time of final inspection.

10.3.2 Upon acceptance of the Work, the A/E and Owner shall execute a Final Completion Certificate in accordance with the Contract and deliver such document to the Contractor by mail or other means within ten (10) Days. The Contractor's requirement for Builder's Risk Insurance coverage of the Work may be terminated on the date of the executed final acceptance document. In the case where heating and ventilating, air conditioning or other systems must be tested seasonally, the Owner may accept the Work less such testing, and final acceptance of such systems will be accomplished after completion of successful tests. Upon final acceptance, the Owner may occupy or use the Work.

10.4 ADDITIONAL INSPECTION COSTS: Contractor shall be charged with any cost for re-inspection resulting from substantial differences between the Contractor's list of items to be completed or corrected and the list of items resulting from the A/E inspection.

10.5 FINAL PAYMENT DOCUMENTATION: Neither the final payment nor the remaining retained percentage shall become due until the Contractor submits to the A/E for transmittal to the Owner (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or its property might in any way be responsible, have been paid or will be paid or otherwise satisfied within thirty days after receipt of final payment from the Owner, or within the period of time required by Government Code, Title 10, Chapter 2251; (2) all guarantees and/or bonds as required on specific branches of the Work, and as further described in Article XI; (3) consent of Surety, if any, to final payment; and (4), if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of claims arising out of the Contract, to the extent and in such form as may be designated by the Owner. If any Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against any such claim.

10.6 FINAL PAYMENT: The making of final payment shall constitute a waiver of all claims by the Owner except those arising from: (1) faulty or defective Work appearing after Final Inspection and acceptance; (2) failure of the Work to comply with the requirements of the Contract Documents; or (3) terms of any special warranties required by the Contract Documents. Acceptance of final payment shall constitute a waiver of all claims by the Contractor except those specifically enumerated at the time of final payment and filed in accordance with Article VI.

10.6.1 Upon execution of the Final Completion certificate by the A/E and Owner, the Contractor shall submit a request for final payment signed by a Contractor principal. Such request shall be marked "FINAL PAYMENT". This request shall be reviewed, approved and certified by the A/E and shall be forwarded to the Owner. The Owner will then process final payment.

10.6.1.1 When the value of the Contract between the Owner and the Contractor is not in excess of $25,000.00, final payment to the Contractor will be withheld for a period of sixty (60) days following the last date upon which contracted Work is performed, or on which contracted material is delivered to the job-site,

in order that unpaid claimants, who have furnished labor and/or materials for the Project to the Contractor, may be provided the time permitted by Texas Property Code, Section 53, to file claims against funds still due the Contractor.

ARTICLE XI. CONTRACT WARRANTY AND GUARANTEE

11.1 WARRANTY OF CONSTRUCTION

(a) In addition to any other warranties in this Contract, the Contractor warrants, except as provided in paragraph (i) of this clause, that Work performed under this Contract conforms to the Contract requirements and is free of any defect in equipment, material, or design furnished, or workmanship performed by the Contractor or any Subcontractor or supplier at any tier.

(b) The warranty shall be for the period of one (1) year or for the period stated in the specifications, whichever is greater, beginning on the date of the final acceptance of Work. If the Owner takes possession of any part of the Work before final acceptance, this warranty shall be for a period of one (1) year or as stated in the specifications, whichever is greater, beginning on the date the Owner takes possession.

(c) The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition, the Contractor shall remedy at the Contractor's expense any damage to Owner-owned controlled real or personal property, when that damage is the result of ;

1. The Contractor's failure to conform to Contract requirements or

2. Any defect of equipment, material, workmanship, or design furnished.

(d) The Contractor shall restore any Work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement.

(e) The Owner shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

(f) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense.

(g) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall;

1. Obtain all warranties that would be given in normal commercial practice;

2. Require all warranties to be executed, in writing, for the benefit of the Owner; and

3. Enforce all warranties for the benefit of the Owner.

(h) In the event the Contractor's warranty under paragraph (b) of this clause has expired, the Owner may bring suit at its expense to enforce a Subcontractor's, manufacturer's, or supplier's warranty.

(i) Unless a defect is caused by the negligence of the Contractor or Subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defects of material or design furnished by the Owner nor for the repair of any damage that results from any defect in Owner-furnished material or design.

(j) This warranty shall not limit the Owner's rights under the Inspection and Acceptance clause of this contract with respect to latent defects, gross mistakes, or fraud.

11.1.1 WARRANTY DATA: The Contractor shall provide all warranties as required by the Contract Documents. Warranties shall contain the following minimum information:

Contractor's name, address and telephone number.
Manufacturer's name, address and telephone number.
Model number and serial number for each item.
Installed location of each item.

11.1.2 DIRECTORY OF INSTALLING CONTRACTORS: The Contractor shall provide the name, address, telephone number, and Work scope for each Subcontractor participating in the project.

11.1.3 OPERATIONS AND MAINTENANCE MANUALS: The Contractor is responsible for obtaining the A/E's review and approval of all operation and maintenance manuals prior to transmitting the final copies to the Owner. The Contractor shall provide a minimum of three complete sets (per site) of the operation and maintenance manuals required by the Owner. Operation and maintenance manuals shall be provided for all items as required in the Contract Documents, including all commissioning data, mechanical, electrical, plumbing, and electronic equipment furnished by the Contractor. Each operation and maintenance manual shall be bound in a three-ring side binder with a durable plastic cover. Each manual shall contain the following information:

1. Title and table of contents.

2. Name, address, and telephone number of Contractor, each installing Subcontractor and each supplier.

3. List of equipment and respective parts list for each.

4. Operating instructions.

5. Maintenance instructions.

ARTICLE XII. PRESERVATION OF SITE ASSETS

12.1 The Contractor shall take all necessary measures to protect existing trees and vegetation, structures and facilities, utilities and other improvements at or near the site of Work.

12.1.1 The Contractor shall preserve and protect all existing trees and vegetation such as shrubs and grass on or adjacent to site of Work which are not to be removed and which do not unreasonably interfere with the construction Work. Care will be taken in removing trees authorized for removal to avoid damage to other trees or vegetation to remain in place. All damage to existing trees and vegetation to remain in place caused by careless construction or removal operations shall be repaired by the Contractor at his/her expense and cost, as directed by the Owner.

12.2 The Contractor shall protect from damage all existing structures and facilities, utilities and other improvements at or near the site of Work, the location of which is evident or made known to the contractor, and will repair or restore any damage to such improvements resulting from failure to comply with the requirements of the Contract or to exercise reasonable care in the performance of the Work.

12.3 If the Contractor fails or refuses to exercise proper care for preservation and protection of site assets described hereunder or fails or refuses to repair all such resulting damage promptly, the Owner may have the necessary Work performed and charge the cost thereof to the Contractor.

ARTICLE XIII. OPERATION AND STORAGE AREAS

13.1 The Contractor will operate and maintain the operations areas and associated storage areas at the site of the Work in accordance with the following:

13.1.1 All Contractor operations, including storage of materials, and employee parking upon the site of Work shall be confined to areas designated by the Owner.

13.1.2 The Contractor may erect temporary buildings and make ready outside storage areas at its own expense, which shall remain its property. The Contractor shall remove such buildings, materials and associated utilities service lines upon completion of the Work, unless the Contractor requests, and the Owner provides written consent, that he/she may abandon such buildings and utilities in place.

13.1.3 The Contractor will use only established roadways or construct and use such temporary roadways as may be authorized by the Owner. Load limits of vehicles shall not exceed that prescribed by appropriate regulations or law. The Contractor will provide protection to road surfaces, curbs, sidewalks and drainage structures to prevent damage and all damage thereto shall be repaired by and at the expense of the Contractor.

13.2 The Owner may restrict the Contractor's entry to the site to assigned entrances and routes.

13.3 The Contractor shall at all time keep the construction areas, including storage areas, used by them free from the accumulation of water, waste materials, or rubbish during performance of the Work. During the period of construction, and not less frequently than once a week, the Contractor shall remove from the site any and all waste materials, rubbish and trash, and shall dispose of such waste materials, rubbish and trash off the property of the Owner. Prior to the Contractor's requested date for final inspection, the Contractor shall remove any and all remaining equipment from the site and shall leave the premises in a clean, neat and workmanlike condition satisfactory to the Owner.

ARTICLE XIV. MISCELLANEOUS PROVISIONS

14.1 GOVERNING LAW

14.1.1 The Contract shall be governed by the laws of the State of Texas and any action, whether at law or in equity shall be brought exclusively in the State Courts of Texas.

14.2 RIGHTS AND REMEDIES

14.2.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

14.2.2 Failure to timely enforce, or the waiver of, any provision of these Contract Documents or any breach of nonperformance by the Owner or Contractor shall not be deemed a waiver by either of the parties

of the right in the future to demand strict compliance and performance of any provision of these Contract Documents. No waiver or waivers of any breach or default (or any breaches or defaults) by any party hereto or of performance shall be deemed a waiver thereof in the future, nor shall any such waiver or waivers be deemed or construed to be waiver of subsequent breaches or defaults of any kind, character, or description, under any circumstances. Only duly authorized officers or employees of the Owner or Contractor are authorized to waive or modify any provision of these Contract Documents. All waivers or modifications of these Contract Documents shall be in writing.

14.3 ENTIRE AGREEMENT: This Contract shall be binding upon and inure to the benefit of the parties and their respective successors and assigns. The provisions of these Contract Documents constitute the entire agreement, understanding and representations, express or implied, between the Owner and the Contractor. Nothing in these Contract Documents, expressed or implied, is intended or shall be construed to confer upon any person other than the Owner and the Contractor, any right, remedy, or claim, legal or equitable.

14.4 SEVERABILITY: If any clause, provision, or section of this Contract be held illegal, invalid, or unenforceable by any court, the illegality, invalidity, or unenforceability of each clause, provision, or section shall not affect any of the remaining clauses, provisions, or sections hereof, and this Contract shall be construed and enforced as if such illegal, invalid, or unenforceable clause, provision, or section had not been contained herein. In case any agreement or obligation contained in the Contract is held to be in violation of law, then such agreement or obligation shall be deemed to be the agreement or obligation of the Owner and the Contractor, as the case may be, to the full extent permitted by law.

14.5 INDEPENDENT CONTRACTOR

The Contractor understands that it is an independent contractor, wholly responsible for the day to day operations of its programs and employees; that no joint venture, partnership or agency exists nor shall be implied by the terms of the contract if the contract is awarded to Contractor; and that no employee of Contractor will become an employee of the Owner by virtue of this contract.

14.6 INDEMNIFICATION OF THE OWNER

The Contractor shall indemnify and save the Owner, the Texas Board of Criminal Justice, the State of Texas and its officers, agents and employees (hereinafter the State) harmless from and against:

A. Any and all claims arising from the conduct, management or performance of the contract by Contractor, its agents, subcontractors or employees, including, without limitation, any and all claims arising from:

1. Any breach or default on the part of the Contractor in the performance of any covenant or agreement on its part to be performed, pursuant to the terms of this contract;

2. Any act or negligence of the Contractor or any of its agents, subcontractors, servants, employees or licensees;

3. Any accident, injury or damage whatsoever caused to any person, firm or corporation.

B. All costs, reasonable attorney's fees, expenses and liabilities incurred in or about any such claim, action or proceeding brought thereon.

Nothing herein is intended to deprive the State or Contractor of the benefits of any law limiting exposure to liability and/or setting a ceiling on damages, or any laws establishing defenses for them. By entering into this Contract, the State does not waive its right of sovereign immunity, nor does the Contractor waive any immunity that may extend to it by operation of law. The aforementioned indemnification shall not be affected by a claim that negligence of the State or its respective agents, contractors, employees or licensees contributed in part to the loss or damage indemnified against.

C. The parties agree that the terms, covenants and provisions of Section I, Article 14.6 shall survive the termination of this Contract.

14.7 NON-AVAILABILITY/LOSS OF FUNDING

The Contractor understands that this contract may be terminated by TDCJ in the event TDCJ is not granted funding to pay for the services described in the contract documents or in the event that funding is lost due to either a reduction in the budget or a reallocation of budgeted funds and that funding of TDCJ is limited to funding actually authorized by the legislature of the State of Texas.

14.8 NOTICE

Required notices will be provided to the Texas Department of Criminal Justice, Contracts and Procurement, Information Technology, Construction and Utilities Branch, Two Financial Plaza, Suite 525, Huntsville, Texas 77340; Attn: Lynne Piippo, CTPM, CTCM, Contract Administrator and to Contractor at:

_____

_____

_____

14.9 FINANCIAL OPERATIONS

14.9.1 Contractor shall establish and provide financial services and operations which comply with generally accepted accounting principles in order to ensure that the funds of the Owner are safeguarded and that the financial records accurately reflect the transactions relevant to the implementation of this Contract.

14.9.1.1 Contractor shall develop, implement and maintain a financial management system including accurate, correct and complete payroll, accounting and financial reporting records, cost source documentation, effective internal and budgetary controls, determination of reasonable, allowable and allocable cost elements, and timely and appropriate audits and resolution of any questionable or improper findings.

14.10 UTILIZATION OF PRODUCTS AND MATERIALS PRODUCED IN TEXAS

Contractor shall comply with Texas Government Code, Section 2155.4441 relating to service contract use of products produced in the State of Texas. In performing services under this Contract, the Contractor shall purchase products and materials produced in the State of Texas when they are available at a price and time comparable to products and materials produced outside of Texas.

14.11 ASSIGNMENT

The Contractor may not assign any interest in this Contract without the prior written consent of the Owner which consent the Owner may withhold at its sole discretion.

If the Owner so elects in its sole discretion, this Contract will terminate upon the occurrence of any of the following:

A. More than 50% of the assets of Contractor are sold;

B. Contractor is merged into, acquired by, or consolidated with another corporation or business entity; or is otherwise the subject of reorganization; or

C. Any shareholder or Owner of Contractor who owns at least 10% beneficial Ownership of contractor fails to continue to own at least 10%.

In the event that any sale, transfer, or assignment, **as referenced in paragraph A and B above,** is consented to by the Owner the transferee or its legal representative shall agree in writing with the Owner to assume, perform and be bound by the covenants, obligations and agreements contained herein.

14.12 AUTHORITY TO AUDIT

14.12.1 Contractor understands that acceptance of funds under this Contract acts as acceptance of the authority of the State Auditor's Office, or any successor agency, to conduct an audit or investigation in connection with those funds. Contractor further agrees to cooperate fully with the State Auditor's Office or its successor in the conduct of the audit or investigation, including providing all records requested. Contractor will ensure that this clause concerning the authority to audit funds received indirectly by subcontractors through Contractor and the requirement to cooperate is included in any subcontract it awards. Contractor will reimburse the State of Texas for all costs associated with enforcing this provision.

14.12.2 Contractor must retain all work and other supporting documents pertaining to this Contract, for purposes of inspecting, monitoring, auditing, or evaluating by TDCJ and any authorized agency of the State of Texas, including an investigation or audit by the State Auditor for period of four (4) years after the date of submission of the final invoice or until a resolution of all billing questions, whichever is later. Contractor shall maintain and retain supporting fiscal and any other documents relevant to showing that any payments under this Contract funds were expended in accordance with the laws and regulations of the State of Texas, including but not limited to, requirements of the Comptroller of the State of Texas and the State Auditor.

14.13 CONFIDENTIALITY AND OPEN RECORDS

14.13.1 Notwithstanding any provisions of this Contract to the contrary, Contractor understands that the TDCJ will comply with the Texas Public Information Act, Government Code, Chapter 552 as interpreted by judicial opinions and opinions of the Attorney General of the State of Texas. TDCJ agrees to notify Contractor in writing within a reasonable time from receipt of a request for information related to Contractor's work under this contract. Contractor will cooperate with TDCJ in the production of documents responsive to the request. The TDCJ will make a determination whether to submit a Public Information Act request to the Attorney General. Contractor will notify the TDCJ's General Counsel within twenty-four (24) hours of receipt of any third party requests for information that was provided by the State of Texas for use in performing the Contract. This Contract and all data and other information generated or otherwise obtained in its performance may be subject to the Texas Public Information Act. Contractor agrees to maintain the confidentiality of information received from the State of Texas during the performance of this

Contract, including information which discloses confidential personal information particularly, but not limited to, social security numbers.

14.13.2 In accordance with Section 2252.907, Government Code, the Contractor acknowledges that this contract and information created or maintained in connection with this contract is public information and subject to disclosure as provided by Chapter 552, Government Code (Texas Public Information Act). The Public Information Act may require the Contractor to make information related to this contract available to the public pursuant to a request for public information. The Contractor agrees, upon request, to make information related to this contract that is not otherwise excepted from release by the Public Information Act available to the public in hard copy, unless the requestor of the information consents to receive the information in another mutually agreeable format. The Contractor acknowledges that the agency shall not provide legal counsel related to the Contractor's. compliance with the Public Information Act.

14.14 NO LIABILITY UPON TERMINATION

If this Contract is terminated for any reason, the TDCJ and the State of Texas shall not be liable to Contractor for any damages, claims, losses, or any other amounts arising from or related to any such termination. However, Contractor may be entitled to the remedies provided in Government Code, Chapter 2260.

14.15 LIMITATION ON AUTHORITY; NO OTHER OBLIGATIONS

Contractor shall have no authority to act for or on behalf of the TDCJ or the State of Texas except as expressly provided for in this Contract; no other authority, power or use is granted or implied. Contractor may not incur any debts, obligations, expenses, or liabilities of any kind on behalf of the State of Texas or the TDCJ.

14.16 INTELLECTUAL PROPERTY INDEMNIFICATION

The Contractor will indemnify, defend, and hold harmless the State of Texas and the TDCJ against any action or claim brought against the State of Texas and/or the TDCJ that is based on a claim that software infringes any patent rights, copyright rights or incorporated misappropriated trade secrets. Contractor will pay any damages attributable to such claim that are awarded against the State of Texas and/or the TDCJ in a judgment or settlement.

If the TDCJ 's use of the software becomes subject to a claim, or is likely to become subject to a claim, in the sole opinion of the TDCJ, Contractor shall, at its sole expense (1) procure for the TDCJ the right to continue using such software under the terms of this Contract; or (2) replace or modify the software so that it is non-infringing.

14.17 RIGHTS TO DATA, DOCUMENTS AND COMPUTER SOFTWARE (STATE OWNERSHIP)

Any software, research, reports, studies, data, photographs, negatives or other documents, drawings or materials prepared by Contractor in the performance of its obligations under this Contract shall be the exclusive property of the State of Texas and all such materials shall be delivered to the TDCJ by the Contractor upon completion, termination, or cancellation of this Contract. Contractor may, at its own expense, keep copies of all its writings for its personal files. Contractor shall not use, willingly allow, or cause to have such materials used for any purpose other than the performance of Contractor's obligations under this Contract without the prior written consent of the TDCJ; provided, however, that Contractor shall be allowed to use non-confidential materials for writing samples in pursuit of the work. The ownership

rights described herein shall include, but not be limited to, the right to copy, publish, display, transfer, prepare derivative works, or otherwise use the works.

14.18 ELECTRONIC AND INFORMATION RESOURCES ACCESSIBILITY STANDARDS, AS REQUIRED BY 1 TAC, CHAPTER 213

Effective September 1, 2006 state agencies and institutions of higher education shall procure products which comply with the State of Texas Accessibility requirements for Electronic and Information Resources specified in 1 TAC Chapter 213 when such products are available in the commercial marketplace or when such products are developed in response to a procurement solicitation.

Contractor shall provide the TDCJ with the URL to its Voluntary Product Accessibility Template (VPAT) for reviewing compliance with the State of Texas Accessibility requirements (based on the federal standards established under Section 508 of the Rehabilitation Act), or indicate that the product/service accessibility information is available from the General Services Administration "Buy Accessible Wizard" (http://www.buyaccessible.gov). Contractors not listed with the "Buy Accessible Wizard" or supplying a URL to their VPAT must provide the TDCJ with a report that addresses the same

accessibility criteria in substantively the same format. Additional information regarding the "Buy Accessible Wizard" or obtaining a copy of the VPAT is located at http://www.section508.gov/.

14.19 E-VERIFY SYSTEM

By entering into this Contract, the Contractor certifies and ensures that it utilizes and will continue to utilize, for the term of this Contract, the U.S. Department of Homeland Security's E-Verify system to determine the eligibility of:

1. All persons employed to perform duties within Texas, during the term of the Contract; and
2. All persons (including subcontractors) assigned by the Respondent to perform work pursuant to the Contract, within the United States of America.

The Contractor shall provide, upon request of the TDCJ, an electronic or hardcopy screenshot of the confirmation or tentative non-confirmation screen containing the E-Verify case verification number for attachment to the Form I-9 for the three most recent hires that match the criteria above, by the Contractor, and Contractor's subcontractors, as proof that this provision is being followed.

If this certification is falsely made, the Contract may be immediately terminated, at the discretion of the state and at no fault to the state, with no prior notification. The Contractor shall also be responsible for the costs of any re-solicitation that the state must undertake to replace the terminated Contract.

SECTION J

LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

ATTACHMENTS

No.	Description	Pages
1	Standards of Conduct for Civilian Construction Contractors Employees	3
2	Payment Bond	1
3	Performance Bond	1
4	Prevailing Wage Schedule (Heavy and Highway Construction)	4
5	Prevailing Wage Schedule (Building Construction)	5
6	Substitution Request (Bidding Phase)	2
7	Substitution Request (After execution of Contract)*	1
8	Contractor Qualifications	7
9	Non-Employee Background Questionnaire	3
10	State Documents and Forms*	36
11	Specifications	
12	Drawings	
13	Vendor Maintenance Direct Deposit and Substitute W-9 Form*	1
14	Release of Claims*	1
*	To be provided at time of award	

EXHIBIT:

1	HUB Subcontracting Plan (HSP)	43

SECTION K

REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF BIDDERS

1. RESERVED

2. CHILD SUPPORT REPRESENTATION

Under Section 231.006 of the Texas Family Code a child support obligator who is more than 30 days delinquent in paying child support and a business entity in which the obligator is a sole proprietor, partner, shareholder or Owner with an Ownership interest of at least 25% is not eligible to receive payments from state funds under a contract to provide property, materials or services.

Governmental entities and any corporation, including a non-profit corporation, that does not have a majority shareholder who is a natural person capable of being a child support obligator are not subject to Section 231.006.

Check **ONE**:
Bidder IS NOT subject to Section 231.006 _____ (business entity DOES NOT have a sole proprietor, majority stockholder or substantial Owner who is a natural person capable of being a child support obligator).

Bidder IS subject to Section 231.006 _____ (business entity DOES have a sole proprietor, majority stockholder or substantial Owner who is a natural person capable of being a child support obligator).

If subject to Section 231.006, the bid must include names and social security numbers of each person with at least 25% Ownership of the business entity submitting Bid.

_____,	_____-_____-_____
(Print Name)	SSN
_____,	_____-_____-_____
(Print Name)	SSN
_____,	_____-_____-_____
(Print Name)	SSN

Pursuant to Section 231.006 Family Code, the bidder certifies that the individual or business entity named in the Bid is not ineligible to receive the specified payments and acknowledges that any resultant contract may be terminated and payment may be withheld if this certification is inaccurate.

3. FRANCHISE TAX REPRESENTATION

The Bidder represents and certifies as part of its offer that it is not currently delinquent in the payment of any franchise tax owed the State of Texas.

4. PREFERENCE CLAIM

In accordance with 34 TAC Rule 20.38, the Bidder shall check below if claiming a preference. If the appropriate line is not marked, a preference will not be granted unless other documents included in the bid show a right to the preference.

_____ Goods produced or offered by a Texas bidder that is owned by a Texas resident service-disabled veteran
_____ Goods produced in Texas or offered by a Texas bidder that is not owned by a Texas resident service-disabled veteran
_____ Agriculture products produced or grown in TX
_____ Agriculture products and services offered by TX bidders
_____ Services offered by a Texas bidder that is owned by a Texas resident service-disabled veteran
_____ Services offered by a Texas bidder that is not owned by a Texas resident service-disabled veteran
_____ Texas Vegetation Native to the Region
_____ USA produced supplies, materials, equipment or agricultural products
_____ Products of persons with mental or physical disabilities
_____ Products made of recycled, remanufactured, or environmentally sensitive materials including recycled steel
_____ Energy efficient products
_____ Rubberized asphalt paving material
_____ Recycled motor oil and lubricants
_____ Products produced at facilities located on formerly contaminated property
_____ Products and services from economically depressed or blighted areas
_____ Vendors that meet or exceed air quality standards
_____ Recycled or Reused Computer Equipment of Other Manufacturers
_____ Foods of Higher Nutritional Value (for consumption in a public cafeteria only)

5. NO COLLUSION

Bidder represents and certifies its employees, agents and representatives have not and shall not discuss or disclose the terms of their bid and its submission or response thereto with any third party other than persons or entities which Bidder engaged to assist it with respect to such response or submission.

Neither the Bidder nor the firm, corporation, partnership or institution represented by the Bidder or anyone acting for such firm, corporation or institution has violated the antitrust laws of the State or the Federal Antitrust Laws, nor communicated directly or indirectly the bid submitted to any competitor or any other person engaged in such line of business.

6. NO GRATUITIES

The Bidder represents and certifies that it has not given, offered to give, nor intends to give at any time hereafter any economic opportunity, future employment, gift, loan, gratuity, special discount, trip, favor, or service to a public servant or A/E employed by the Agency in connection with the submitted bid.

7. NO COMPENSATION

Bidder represents and certifies that its employees, agents and representatives have not received compensation for participation in the preparation of the specifications for this solicitation.

8. HUMAN IMMUNO-DEFICIENCY VIRUS SERVICES ACT COMPLIANCE

8.1 Bidder certifies compliance with the HIV Services Act, [Health & Safety Code, Title 2, Subtitle D, Chapter 85] requirements for maintenance of confidentiality regarding HIV and its related conditions, including Acquired Immuno-Deficiency Syndrome (AIDS).

8.2 Bidder further certifies that workplace guidelines are developed and implemented. Bidder may elect to use workplace guidelines developed and implemented by the TDCJ.

8.3 In the absence of confidentiality guidelines, Bidder is not eligible to receive state funds.

9. COMMUNICABLE DISEASE PREVENTION & CONTROL ACT COMPLIANCE

Bidder certifies compliance with the applicable provisions of the Communicable Disease Prevention and Control Act, Health & Safety Code, Title 2, Subtitle D, Chapter 81.

10. CONFLICT OF INTEREST

10.1 Any individual who interacts with public purchasers in any capacity is required to adhere to the guidelines established in the Texas Government Code, Section 572.051. The Section outlines the ethical standards required of public purchasers, employees, and vendors who interact with public purchasers in the conduct of State business.

10.2 Specifically, a TDCJ employee may not have an interest in, or in any manner be connected with a contract or bid for a purchase of goods or services by an agency of the State; or in any manner, including by rebate or gift, accept or receive from a person to whom a contract may be awarded, directly or indirectly, anything of value or a promise, obligation, or contract for future reward or compensation. Entities who are interested in seeking business opportunities with the State must be mindful of these restrictions when interacting with public purchasers of the TDCJ or purchasers of other state agencies.

10.3 No Texas Department of Criminal Justice staff or Board Member shall have any conflict of interest or potential conflict of interest with the Bidder or any of its agents, including a financial interest, in this contract either currently or within the past two (2) years.

10.4 The Bidder covenants that Bidder has no existing interest and will not acquire any interest, direct or indirect, which could conflict in any manner or degree with the performance of services required under this Contract and that no person having any such interest shall be employed by Bidder. No Bidder, Owner or agent shall have any conflict of interest or potential conflict of interest, including a financial interest with Texas Department of Criminal Justice staff, Texas Board of Criminal Justice member, Architect/Engineer (A/E), subcontractor, vendor or supplier affected by this Contract either currently or within the past two (2) years.

10.5 Any such conflict or potential conflict of interest shall be disclosed to the Owner by the party having such conflict before the execution of this Contract or within (10) Days of discovering the conflict. Owner representatives not affected by the conflict or potential conflict shall determine the severity of the conflict, if any, and recommend the appropriate remedial action to resolve the conflict without adversely affecting the interest of the Texas Department of Criminal Justice and its project schedule. Such remedial action could include cancellation of this Contract for the conflicting party.

10.6 Pursuant to Section 2155.004 (a) Texas Government Code, the Bidder has not received compensation for participation in the preparation of the specifications for this IFB. Under Section 2155.004 (b) Texas Government Code, the Bidder certifies that the individual or business entity named in this bid or Contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate.

11. EQUAL OPPORTUNITY

Bidder certifies compliance with all terms, provisions, and requirements of Titles VI and VII, Civil Rights Act of 1964, the Americans with Disabilities Act of 1990, and any other Federal, state, local or other anti-discriminatory act, law, statute or regulation, along with all amendments and revisions of the acts, laws, statutes or regulations, in

the performance of this contract, and will not discriminate against any child or youth, client, employee, or applicant for employment because of race, creed or religion, age, sex, color, national or ethnic origin, handicap, or any other illegal discriminatory basis or criteria.

12. UNFAIR BUSINESS PRACTICES

Bidder certifies that it has not been found guilty in a judicial or state administrative agency proceeding of unfair business practices within the year preceding the effective date of this contract. Bidder further certifies that no officer of Bidder has served, within the past year, as an officer of another company which has been found guilty in a judicial or state administrative agency proceeding of unfair business practices. If the above certifications are false, any resulting contract will be void.

13. CONTRACTING WITH EXECUTIVE HEAD OF STATE AGENCY

Bidder represents and certifies that they are in compliance with Texas Government Code, Section 669.003 relating to contracting with executive head of a state agency.

If Section 669.003 applies, Bidder shall complete the following information in order for the bid to be evaluated:

Name of Former Executive: _____

Name of State Agency: _____

Date of Separation from State Agency: _____

Position with Bidder: _____

Date of Employment with Bidder: _____

14. REMITTANCE ADDRESS

If the remittance address is different from the mailing address, Bidder shall enter the remittance address below. Failure to provide this information may impact payment.

_____

_____

_____

15. SUSPENSION, DEBARMENT, AND TERRORISM

Bidder certifies that the bidding entity and its principals are eligible to participate in this transaction and have not been subjected to suspension, debarment, or similar ineligibility determined by any federal, state or local government entity and that bidder is in compliance with the State of Texas statues and rules relating to procurement and that bidder is in compliance with the Federal Government's Terrorism Watch List as described in Executive Order 13224. Entities ineligible for federal procurement are listed at https://www.sam.gov.

16. FRAUD, WASTE OR ABUSE

In accordance with Texas Government Code, Chapter 321, the State Auditor's Office (SAO) is authorized to investigate specific acts or allegations of impropriety, malfeasance or nonfeasance in the obligation,

expenditure, receipt or use of state funds. If there is a reasonable cause to believe that fraud, waste or abuse has occurred at this agency, it can be reported to the SAO by calling 1-800-892-8348 or at the SAO's website at www.sao.state.tx.us. It can also be reported to the TDCJ Office of the Inspector General at 1-866-372-8329, the TDCJ Internal Audit Division at 1-512-406-5935, or Crime Stoppers at 1-800-832-8477.

17. VIOLATION OF FEDERAL LAW RELATING TO RECONSTRUCTION EFFORTS AS A RESULT OF HURRICANES RITA, KATRINA OR ANY OTHER DISASTER AFTER SEPTEMBER 24, 2005

Pursuant to Section 2261.053, Texas Government Code a state agency may not accept a bid or award a contract that includes proposed financial participation by a person who, during the five-year period preceding the date of the bid or award, has been convicted of violating a federal law or assessed a penalty in a federal civil or administrative enforcement action in connection with a contract awarded by the federal government for relief, recovery, or reconstruction efforts as a result of Hurricane Rita, Katrina, or any other disaster occurring after September 24, 2005. Under Section 2261.053, Texas Government Code, the Contractor certifies that the individual or business entity named in this bid or contract is not ineligible to receive the specified contract and acknowledges that this contract may be terminated and payment withheld if this certification is inaccurate.

18. NO LITIGATION

Bidder certifies that there is not now pending, or to its knowledge threatened, any action, suit or proceeding to which Bidder, or any of its employees, are a party, before or by any court or governmental agency or body, which may result in any material adverse change in Bidder's ability to perform its obligations under this Contract, or any such action, suit or proceeding related to environmental or civil rights matters; Bidder further certifies that no labor disturbance by the employees of Bidder exists or is imminent which may be expected to materially and adversely affect Bidder's ability to perform its obligations under this Contract. Prior to Owner making an award of this Contract, Owner may require Bidders being considered for the award to recertify the representations set forth above. Owner, in its sole discretion, may disqualify any Bidder that in the opinion of Owner is a party, or who has any employees that are a party, to any action, suit or proceeding that may result in any material adverse change in Bidder's ability to perform its obligations under this Contract. During the term of this Contract, to include extensions hereof, Bidder shall notify Owner in writing within five days of Bidder having received knowledge of any actions, suits or proceedings filed against Bidder, or any of its employees, or to which Bidder, or any of its employees, are a party, before or by any court or governmental agency or body, which (1) may result in any material adverse change in Bidder's ability to perform its obligations under this Contract; or, (2) filed in any federal court, state court, or federal or state administrative hearing within the state of Texas regardless as to any anticipated material adverse change in Bidder's ability to perform its obligations under this Contract; or, (3) is brought by or on behalf of a state of Texas offender regardless as to any anticipated material adverse change in Bidder's ability to perform its obligations under this Contract.

19. IMMIGRATION

Bidder represents and warrants that it will comply with the requirements of the Immigration Reform and Control Act of 1986, Immigration Act of 1990, and the Illegal Immigration Reform and Immigration Responsibility Act of 1996, regarding employment verification and retention of verification forms for any individual who will perform any labor or services under this contract.

20. ADVERTISING OF AWARD

The Contractor agrees not to refer to awards in commercial advertising in such a manner as to state or imply that the product or service provided is endorsed or preferred by the Owner or is considered by the Owner to be superior to other products or services.

21. CONDITIONS PRECEDENT TO AWARD

Bidder hereby certifies, represents, and warrants that all conditions precedent set forth in Section D hereof shall be met within the periods of time specified in the Award.

BIDDER:

Name_____

By_____

Signature_____

Title_____

Date_____

SECTION L

INSTRUCTIONS, CONDITIONS AND NOTICES TO OFFERORS

1. AMENDING AND MODIFYING BIDS/PUBLIC DISCLOSURE OF BIDS

1.1 No bid may be changed, amended or modified (by telegram or otherwise) after it has been submitted. A bid may be withdrawn, however, and be resubmitted at any time prior to the time set for bid opening.

1.2 Information, documentation, and other material in connection with this solicitation or any resulting contract may be subject to public disclosure pursuant to Chapter 552 of the Texas Government Code (the "Public Information Act"). Any part of the solicitation response that is of a propriety nature must be clearly and prominently marked as such by respondent. No public disclosures or news releases pertaining to this Contract shall be made without prior written approval of Owner.

2. REJECTION OF BIDS

A. Any bid that fails to conform to the essential requirements of the Invitation for Bids shall be rejected.

B. Any bid that does not conform to the applicable specifications shall be rejected unless the invitation authorized the submission of alternate bids and the supplies offered as alternates meet the requirements specified in the invitation.

C. Any bid that fails to conform to the delivery schedule or permissible alternates stated in the invitation shall be rejected.

D. A bid shall be rejected when the Bidder imposes conditions that would modify requirements of the invitation or limit the Bidder's liability to the Owner, since to allow the Bidder to impose such conditions would be prejudicial to other bidders. For example, bids shall be rejected in which the Bidder –

1. Protects against future changes in conditions, such as increased costs, if total possible costs to the Owner cannot be determined;

2. Fails to state a price and indicates that price shall be "price in effect at time of delivery";

3. States a price but qualifies it as being subject to "price in effect at time of delivery";

4. When not authorized by the invitation, conditions or qualifies a bid by stipulating that it is to be considered only if, before date of award, the Bidder receives (or does not receive) award under a separate solicitation;

5. Requires that the Owner is to determine that the Bidder's product meets applicable Owner specifications; or

6. Limits rights of the Owner under any Contract provision.

E. A low Bidder may be requested to delete objectionable conditions from a bid provided the conditions do not go to the substance, as distinguished from the form, of the bid, or work an injustice on other Bidders. A condition goes to the substance of a bid where it affects price, quantity, quality, or delivery of the items offered.

F. Any bid may be rejected if the Owner determines in writing that it is unreasonable as to price. Unreasonableness of price includes not only the total price of the bid, but the prices for individual line items as well.

G. Any bid may be rejected if the prices for any line items or sub-line items are materially unbalanced.

H. Bids received from any person or concern that is suspended, debarred, proposed for debarment, or declared ineligible as of the bid opening date shall be rejected unless a compelling reason determination is made.

I. Low bids received from concerns determined to be not responsible.

J. When a bid deposit is required and a Bidder fails to furnish the deposit in accordance with the requirements to the invitation for bids, the bid shall be rejected.

K. The originals of all rejected bids, and any written findings with respect to such rejections, shall be preserved with the papers relating to the acquisition. After submitting a bid, if all of a Bidder's assets or that part related to the bid are transferred during the period between the bid opening and the award, the transferee may not be able to take over the bid. Accordingly, the Owner shall reject the bid unless the transfer is affected by merger, operation of law or other means not barred.

L. Bids that do not include a completed HUB Subcontracting Plan shall be rejected.

3. NOTICE TO BIDDERS OF REJECTION OF ALL BIDS.

When it is determined necessary to reject all bids, the Owner shall notify each Bidder that all bids have been rejected and shall state the reason for such action.

4. MINOR INFORMALITIES OR IRREGULARITIES IN BIDS.

A minor informality or irregularity is one that is merely a matter of form and not of substance. It also pertains to some immaterial defect in a bid or variation of a bid from the exact requirements of the invitation that can be corrected or waived without being prejudicial to other Bidders. The defect or variation is immaterial when the effect on price, quantity, quality of delivery is negligible when contrasted with the total cost or scope of the supplies or services being acquired. The Owner either shall give the Bidder an opportunity to cure any irregularity in a bid or waive the deficiency, whichever is to the advantage of the Owner. Examples of minor informalities or irregularities include failure of a bidder to:

A. Return the number of copies of signed bids required by the invitation;

B. Furnish required information concerning the number of its employees;

C. Sign its bid, but only if:

1. The unsigned bid is accompanied by other material indication the Bidder's intention to be bound by the unsigned bid (such as the submission of a bid guarantee or a letter signed by the Bidder, with the bid, referring to and clearly identifying the bid itself); or

2. The firm submitting a bid has formally adopted or authorized, before the date set for opening of bids, the execution of documents by typewritten, printed, or stamped signature and submits evidence of such authorization and the bid carries such a signature.

D. Acknowledge receipt of an addendum / amendment to an invitation for bids, but only if-

1. The bid received clearly indicates that the Bidder received the addendum / amendment, such as where the addenda / amendment added another item to the invitation and the Bidder submitted a bid on the item; or

2. The addendum / amendment involves only a matter of form or has no effect on either of the following: price, quantity, quality or delivery of the item bid upon.

E. Furnish affidavits concerning parent company and affiliates, if required.

F. Execute the representations and certifications at Section K of the Solicitation and submit with the bid.

5. NON-RESIDENT BIDDERS

The attention of all Bidders is called to Texas Government Code, Title 10, Section 2252.001, 2252.002, 2252.003 and 2252.004. A Nonresident Bidder is defined as follows: "Nonresident Bidder" means a Bidder whose principal place of business is not in this State, but excludes a contractor whose ultimate parent company or majority Owner has its principal place of business in this State.

6. DISCREPANCIES AND AMBIGUITIES

A. If Bidder of proposed work is in doubt as to true meaning of any part of the Bid Documents or believes that discrepancies exist, Bidder shall submit written request for interpretation to the Contract Administrator. Such request must reach the Contract Administrator at least ten Days prior to time set for receipt of bids.

B. Bidder submitting request for interpretation is responsible for its prompt, timely and actual delivery.

C. Interpretations or explanations will not be made orally.

D. All interpretations or supplemental instructions will be provided in Addenda.

E. Copy of such Addendum will be issued to each entity holding Bid Documents.

F. Failure to receive such addenda / amendment does not relieve bidder from any obligation under his/her bid as submitted, Bidder is responsible to ensure receipt and acknowledgment of all addenda / amendments issued and may be cause for rejection of its bid.

7. SUBSTITUTIONS

A. Bidder requesting substitutions shall **submit written request to the Contract Administrator, no later than 5:00 PM, ten (10) Days prior to the time set for receipt of bids.**

B. Approvals of substitutions will be made by Addendum then distributed to each entity holding Bid Documents.

8. BID ACCEPTANCE

It is understood that the Owner reserves the right to accept or reject any and all bids and to waive all irregularities. It is further agreed that this Bid and Bid Bond shall be valid and not be withdrawn for a period of **one hundred (100) Days** from the date of opening thereof.

9. QUALIFICATIONS

Determination of Contractor responsibility will be based on the following criteria:

(a) Have adequate financial resources to perform the contract, or the ability to obtain them;

(b) Be able to comply with the required or proposed delivery or performance schedule, taking into consideration all existing commercial and governmental business commitments;

(c) Have a satisfactory performance record. Have a satisfactory record of integrity and business ethics;

(d) Have the necessary organization, experience, accounting controls, and technical skills, or the ability to obtain them (including, as appropriate, such elements as production control procedures, property control systems, quality assurance measures, and safety programs applicable to materials to be produced or services to be performed by the prospective contractor and subcontractors);

(e) Have the necessary production, construction, and technical equipment and facilities, or the ability to obtain them; and

(f) Be otherwise qualified and eligible to receive an award under applicable laws and regulations.

To this effect, bidders shall be required to submit documentation to support the above (such as Balance/Income Statements, a list of current projects, personnel list, list of equipment and facilities, and so forth). (See Attachment No. 8)

10. DOCUMENT AVAILABILITY

A. Bid Documents can be purchased from the Architect/Engineer as stated in the Notice to Bidders.

B. Number of sets obtainable: Any number may be purchased with adequate advance notice to issuing party. Only complete sets will be sold.

C. Ownership of documents: All documents are the property of the Texas Department of Criminal Justice.

11. SUBMISSION OF BIDS

Bids should be submitted on this form. Bids must be time stamped at the office designated in the solicitation on or before the hour and date specified for the bid opening. Any bid received at the designated location after the exact time specified will not be considered unless TDCJ determines that it was properly addressed and in the possession of TDCJ prior to the specified time but was late due to mishandling by the agency.

A. Submit only one original and two copies of the Bid (use forms furnished in documents).

B. All bids shall be in a sealed envelope and marked **"SEALED BID: Texas Department of Criminal Justice, Replace Security Control System – Billy Moore Unit. Do Not Open Until 2:00 p.m., October 6, 2015".**

C. Sealed bids may be mailed or hand delivered to the Texas Department of Criminal Justice at the following address:

TDCJ – Information Technology, Construction and Utilities Branch
Two Financial Plaza, Suite 525
Huntsville, Texas 77340
Attn: Lynne Piippo, CTPM, CTCM - Contract Administrator

(BIDS MUST BE RECEIVED BY 2:00 P.M. ON OCTOBER 6, 2015 AT THE DESIGNATED ADDRESS TO BE CONSIDERED RESPONSIVE)

D. All bids must be in original form with original signatures.

E. Faxed or e-mailed bids are not acceptable.

F. Faxed or e-mailed modifications to bids are not acceptable.

12. PREPARATION OF BID

As a reminder please ensure that you have:

A. Furnished your Dunn and Bradstreet Number (DUNS#), Tax Identification Number (TAX ID #) and Charter Number (Charter #) in the spaces provided on page 1 of the Solicitation, Offer, and Award form.

B. Completed blocks 10, 14, 15, 16, 18, 19A, 19B, and 19C on pages one (1) and two (2) of the Solicitation, Offer, and Award form.

C. Read and completed the blanks and signature block in Section K.

D. Completed the blanks in paragraph 14.8 of Section I.

E. Completed all required Attachments, including "Contractor's Qualification Form" (use Attachment 8 furnished in documents).

F. Bidders are required to submit a HUB Subcontracting Plan in accordance with Exhibit 1. ***Failure to submit the HUB Subcontracting Plan with appropriate forms will subject the bid to rejection from further consideration.***

G. Have provided the required 5% bid deposit.

H. Have acknowledged receipt of any Addenda/Amendment that may have been issued by completing Block 18 on Solicitation, Offer and Award Form or by enclosing copy of the Addenda/Amendment.

I. Have enclosed all of the above documents with your bid, to include any other information that may have been requested.

13. PRE-AWARD DATA

A. Within five (5) working days after official notification, the successful Bidder shall furnish the following documents:

(1) Written letter from Bidder's legal counsel as to Bidder's Resident or Nonresident status along with a copy of any statute in the state of a Nonresident Bidder which confers on a Resident Bidder any credit or assesses any Nonresident Bidder a penalty.

(2) Cost breakdown information for combination bids, if applicable.

14. BIDDER QUALIFICATIONS

Bidder must provide evidence that demonstrates the Bidder is qualified to satisfactorily perform the specified Work and must have worked in this trade for at least five (5) years. The Bidder shall submit written evidence to include a minimum of three (3) projects completed within the last ten (10) years of similar work, size and complexity to include the contracting party's name, telephone number, location, type of facility, construction cost and the date of completion.

SECTION M

EVALUATION FACTORS FOR AWARDS

1. Bidders must comply with material aspects of this Invitation for Bids to be considered responsive. Bidders must meet the qualifications and experience requirements to be considered for award.

   1.1 The Owner will evaluate bids in response to this solicitation without discussions with Bidder and in accordance with Texas Government Code, §2155.074. Contractor's prior performance may be used as a factor in the award.

   1.2 In accordance with Texas Administrative Code, Title 34, Chapter 20, Rule §20.31 (b), the Owner may negotiate if the Owner receives only one acceptable bid, or no acceptable bids, provided that the negotiations do not result in a material change to the advertised specifications.

2. In the event of tie bids, the preferences listed in Section K, Article 4 will be used to break the tie.

3. The Owner reserves the right, at its sole discretion, to make a single Contract award or multiple Contract awards from this solicitation. The Owner reserves the right to make no awards in the event of inconsistent pricing and/or the absence of available competition.

4. Alternate bids, if allowed for herein, will be evaluated based on the best interests of the Owner.

ATTACHMENTS

ATTACHMENT NO. 1

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

STANDARDS OF CONDUCT FOR CIVILIAN CONSTRUCTION CONTRACTORS EMPLOYEES

I. SECURITY MEASURES

A. GENERAL SECURITY MEASURES

No person working for or otherwise connected with the Contractor (his agents, subcontractors or their employees) shall be allowed to bring onto the owner's (state) property firearms, alcoholic beverages, drugs, or any other controlled substances with the exception of prescription medication. No such person shall cross any fences, except those fences designated to allow egress and ingress to the construction site. All vehicles shall be kept locked with windows up while on the owner's property. Contractors' employees shall avoid all contact with inmates, no employee shall converse with or otherwise communicate with any inmate. In addition to the usual civil and/or criminal penalties for violations of the above regulations, the owner reserves the right to refuse further entry to the job site to any individual who has violated the above restrictions. Further, the Owner reserves the right to immediately remove from the jobsite any individual who has violated the above restrictions.

II. EXPECTATIONS OF CONTRACTORS AND SUBS

A. ALL CONTRACTORS, SUBS, AND THEIR EMPLOYEES WILL:

1. Read and sign the Texas Department of Criminal Justice, Facilities Division, Standards of Conduct for Civilian Contractor Employees.

2. Refrain from bringing firearms, ammunition, controlled substances (with the exception of prescription drugs) or any other contraband items on the property of the Texas Department of Criminal Justice (I.D.). This includes in the personal vehicles of the on-site workers.

3. Vehicles will remain locked at all times when operator is absent.

4. There shall be no contact with any inmates in the TDCJ facilities except those which may be assigned to assist on an individual institutional project.

5. Approved visitors of inmates will not be allowed to work on any project that involves the unit where the visited inmate resides.

6. Vehicles are subject to search at anytime while on State Prison property.

B. GENERAL SECURITY FOR TOOL CONTROL:

1. All tools in tool boxes are to be inventoried with the total number of tools in each box plainly marked on the outside of the box.

2. Copies of tool inventories are to be filed with the entrance gate officer, the Owner's Designated Representative and the contractor's project superintendent. Any changes to an individual's tool box inventory should be immediately noted on all inventory sheets.

3. Tools should be cross-checked against the number on the tool box upon entry and exit from the facility.

4. Class "A" tools should receive special handling. When tools are not in use, they shall be kept and locked under key in a secure area and if possible rendered inoperable. Class "A" tools include, but are not limited to, tools most likely to be used in an escape attempt or do bodily harm. These generally include hacksaw blades, files, pipe wrenches, ladders, acetylene cutting tips, pipe and bolt cutters, etc.

5. At no time are Class "A" tools to be left unattended and when in use, the on-site TDCJ security officer will be notified.

6. Generators, ladders and acetylene cutters all must be secured at the end of each workday.

7. Emery wheels will be locked and rendered inoperable when not in use unless stored outside of the secure perimeter.

8. When a Class "A" tool is lost, the Assistant Warden for security or Warden shall be immediately notified.

    a. Any inmates who may have had access to the area will be held until a thorough search is made.

    b. A written report will be made covering the details of the loss.

9. All hazardous and poisonous chemicals, not in use, are to be stored in a locked tool trailer or other secure area. An inventory shall be maintained and direct supervision provided when the items are used at the work site. Upon completion of the project, the Contractor will be responsible for the removal of all hazardous materials and all hazardous waste generated under his control.

I have received a copy of the "STANDARDS OF CONDUCT FOR CIVILIAN CONSTRUCTION CONTRACTORS EMPLOYEES" issued by the Texas Department of Criminal Justice.

I have read, understand and will comply with this policy.

SIGNATURE	SOCIAL SECURITY #
DRIVERS LICENSE #	STATE
COMPANY	DATE
NAME	
ADDRESS	

CITY STATE ZIP

WITNESS

COMPANY

DATE

ATTACHMENT NO. 2

TEXAS STATUTORY PAYMENT BOND
CHAPTER 2253 THE GOVERNMENT CODE AS AMENDED
(PUBLIC WORKS)

STATE OF TEXAS
COUNTY OF _____:

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as Principal, and _____as Surety are hereby held and firmly bound unto the State of Texas in the penal sum of _____Dollars ($_____) for the payment whereof, the said Principal and Surety Bond themselves, their heirs, executors, administrators and successors, jointly and severally, firmly by these Presents.

The conditions of this obligation are such that whereas the Principal entered into a certain Contract, hereto attached, and made a part hereof with the State of Texas, acting by and through the Texas Department of Criminal Justice, dated _____ for the _____.

NOW, THEREFORE, the conditions of this obligation are such that, if the Principal shall promptly make payments to all claimants as defined in Chapter 2253 The Government Code, as amended and recodified, supplying labor and materials in the prosecution of the work provided for in said Contract, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

This bond is made and entered into solely for the protection of all claimants supplying labor and material in the prosecution of the work provided for in said Contract, and all such claimants shall have a direct right of action under the Bond as provided in Chapter 2253 The Government Code, as amended and recodified.

In WITNESS WHEREOF, the above bound parties have executed this instrument under their several seals this ____ day of_____, 20____, the name and corporate seal of each party being hereto affixed and these presents duly signed by its undersigned representative pursuant to authority of its governing body.
SEAL:
ATTEST: SURETY'S AGENT:

_____

_____
COMPANY NAME

_____
PRINCIPAL ADDRESS

_____
BY: CITY, STATE, ZIP CODE

_____
SURETY TELEPHONE:

_____
BY:

ATTACHMENT NO. 3

TEXAS STATUTORY PERFORMANCE BOND
CHAPTER 2253 GOVERNMENT CODE AS AMENDED
(PUBLIC WORKS)

STATE OF TEXAS:
COUNTY OF _____:

LET IT BE KNOWN BY THIS INSTRUMENT:

That we, _____, as Principal
and we, _____, a Corporation
duly authorized to do business in this State, as Surety(s), are this date held and firmly bound unto the State of Texas in the amount of _____Dollars ($_____) for the payment of which indemnity the said Principal and Surety, by this declaration, do firmly bind themselves, their heirs, executors, administrators, successors and assigns, jointly and individually.

Since a Contract, which by reference is made a part hereof, exists between the Principal and the State of Texas, acting by and through the Texas Department of Criminal Justice, and dated _____ _____for the conditions of this obligation are, therefore, such that it shall remain in full force and effect unless and until the Principal shall faithfully perform the Contract in accordance with the Contract Documents.

In the event of Principal's failure, as defined by the Contract Documents, to faithfully perform the Contract, Surety(s) will within fifteen (15) days of determination of default, assume full responsibility for completion of said Contract and become entitled to payment of the balance of the Contract amount, or the Surety shall make other arrangements satisfactory with the Texas Department of Criminal Justice for the completion of the defaulted work but in no event shall the Surety's liability exceed the penalty of this bond.

The liabilities, rights, limitations and remedies concerning this Bond shall be determined in accordance with the provisions of Chapter 2253 The Government Code, as amended and recodified, pursuant to which this Bond is executed.

IN WITNESS TO THIS DECLARATION, the said Principal and Surety(s) have signed and sealed this instrument this _____ day of _____, 20____.

PRINCIPAL	SURETY
By _____	By _____

Bond Identification No. _____

Address of Attorney-in-fact

_____

(Use of this form for the purposes indicated has been approved by the Attorney General of Texas)

ATTACHMENT NO. 4

PREVAILING WAGE SCHEDULE
(Heavy and Highway Construction)

General Decision Number: TX150011 01/02/2015 TX11

Superseded General Decision Number: TX20140011

State: Texas

Construction Types: Heavy and Highway

Counties: Bowie, Gregg, Rusk, Smith and Upshur Counties in Texas.

HEAVY & HIGHWAY CONSTRUCTION PROJECTS

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015

* SUTX2011-004 08/02/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER		
(Paving and Structures).....	$ 13.16	
ELECTRICIAN.....	$ 19.87	
FORM BUILDER/FORM SETTER		
Paving & Curb.....	$ 13.93	
Structures.....	$ 13.38	
LABORER		
Asphalt Raker.....	$ 12.02	
Flagger.....	$ 8.50	
Laborer, Common.....	$ 10.08	
Laborer, Utility.....	$ 12.70	
Pipelayer.....	$ 14.64	
Work Zone Barricade Servicer.....	$ 11.46	
POWER EQUIPMENT OPERATOR:		
Asphalt Distributor.....	$ 13.88	
Asphalt Paving Machine.....	$ 12.35	

Broom or Sweeper.....	$ 10.08
Crane, Lattice Boom 80 tons or less.....	$ 13.85
Crawler Tractor.....	$ 13.62
Excavator 50,000 pounds or less.....	$ 13.67
Excavator Operator over 50,000 pounds.....	$ 13.52
Foundation Drill, Truck Mounted.....	$ 22.05
Front End Loader , over 3 cy.....	$ 12.33
Front End Loader, 3 cy or less.....	$ 13.40
Loader/Backhoe.....	$ 12.97
Mechanic.....	$ 17.47
Milling Machine.....	$ 12.22
Motor Grader, Fine Grade....	$ 16.88
Motor Grader, Rough.....	$ 15.83
Pavement Marking Machine....	$ 13.10
Roller, Asphalt.....	$ 11.96
Roller, Other.....	$ 10.44
Scraper.....	$ 10.85
Spreader Box.....	$ 13.12
Servicer.....	$ 14.11
Steel Worker (Reinforcing).....	$ 17.53
TRUCK DRIVER	
Lowboy-Float.....	$ 13.41
Off-Road Hauler.....	$ 10.08
Single Axle.....	$ 10.75
Single or Tandem Axle Dump..	$ 11.95
Tandem Axle Tractor w/Semi Trailer.....	$ 12.50

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number

used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

ATTACHMENT NO. 5

PREVAILING WAGE SCHEDULE
(Building Construction)

General Decision Number: TX150337 03/06/2015 TX337

Superseded General Decision Number: TX20140337

State: Texas

Construction Type: Building

Counties: Rusk and Upshur Counties in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Executive Order (EO) 13658 establishes an hourly minimum wage of $10.10 for 2015 that applies to all contracts subject to the Davis-Bacon Act for which the solicitation is issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.10 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/02/2015
1	01/30/2015
2	03/06/2015

BOIL0074-003 01/01/2014

	Rates	Fringes
BOILERMAKER.....	$ 23.14	21.55

ELEC1151-003 01/01/2014

	Rates	Fringes
ELECTRICIAN (Excludes Low Voltage Wiring and Installation of Sound and Communication Systems).....	$ 22.30	13%+5.15

ELEV0021-006 01/01/2015

	Rates	Fringes
ELEVATOR MECHANIC.....	$ 37.33	28.385

FOOTNOTES: a - A. 6% under 5 years based on regular hourly rate for all hours worked. 8% over 5 years based on regular hourly rate for all hours worked. New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the Friday after Thanksgiving Day, Christmas Day, and Veterans Day.

ENGI0178-005 06/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	$ 29.00	10.60
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	$ 27.50	10.60

IRON0084-011 06/15/2014

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	$ 22.02	6.35

PLUM0100-006 07/01/2013

	Rates	Fringes
PIPEFITTER.....	$ 26.88	8.83

* SUTX2014-063 07/21/2014

	Rates	Fringes
BRICKLAYER.....	$ 18.33	2.50
CARPENTER (Form Work Only).....	$ 13.63	0.00
CARPENTER, Excludes Form Work....	$ 25.00	0.00
CEMENT MASON/CONCRETE FINISHER...	$ 13.94	0.00
ELECTRICIAN (Communication Technician Only)....	$ 14.00	2.90
ELECTRICIAN (Low Voltage Wiring Only).....	$ 14.36	2.44
INSULATOR - MECHANICAL (Duct, Pipe & Mechanical System Insulation).....	$ 19.77	7.13
IRONWORKER, REINFORCING.....	$ 12.27	0.00
IRONWORKER, STRUCTURAL.....	$ 20.00	0.00
LABORER: Common or General.....	$ 11.20	0.00
LABORER: Mason Tender - Brick...	$ 11.36	0.00
LABORER: Mason Tender - Cement/Concrete.....	$ 10.66	0.00
LABORER: Pipelayer.....	$ 12.49	2.13
LABORER: Roof Tearoff.....	$ 11.28	0.00

OPERATOR: Backhoe/Excavator/Trackhoe.....	$ 15.60	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	$ 13.93	0.00
OPERATOR: Bulldozer.....	$ 14.00	0.27
OPERATOR: Drill.....	$ 16.22	0.34
OPERATOR: Forklift.....	$ 14.83	0.00
OPERATOR: Grader/Blade.....	$ 15.10	1.94
OPERATOR: Loader.....	$ 12.62	2.42
OPERATOR: Mechanic.....	$ 17.52	3.33
OPERATOR: Paver (Asphalt, Aggregate, and Concrete)	$ 16.03	0.00
OPERATOR: Roller.....	$ 12.70	0.00
PAINTER (Brush, Roller, and Spray).....	$ 14.45	0.00
PLUMBER.....	$ 21.35	4.55
ROOFER.....	$ 13.75	0.00
SHEET METAL WORKER (HVAC Duct Installation Only)	$ 22.73	7.52
SHEET METAL WORKER, Excludes HVAC Duct Installation	$ 15.44	1.46
TILE FINISHER.....	$ 11.22	0.00
TILE SETTER.....	$ 14.74	0.00
TRUCK DRIVER: Dump Truck.....	$ 12.39	1.18
TRUCK DRIVER: Flatbed Truck.....	$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	$ 12.50	0.00
TRUCK DRIVER: Water Truck.....	$ 12.00	4.11

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is

a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

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A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- an existing published wage determination
- a survey underlying a wage determination
- a Wage and Hour Division letter setting forth a position on a wage determination matter
- a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those

Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION

ATTACHMENT NO. 6

SUBSTITUTION REQUEST - BIDDING PHASE

TEXAS DEPARTMENT OF CRIMINAL JUSTICE

PROJECT: _____ PROJECT NO.: _____

TO: (ARCHITECT) FROM: (BIDDER)

HEREBY REQUESTS ACCEPTANCE OF THE FOLLOWING PRODUCT OR SYSTEMS AS A SUBSTITUTION IN ACCORD WITH PROVISIONS OF THE BIDDING DOCUMENTS:

1. SPECIFIED PRODUCT OR SYSTEM:
   Substitution request for (Generic Description): _____

   Specification Section No._____ Article(s) _____ Para.(s)_____

2. SUPPORTING DATA:
   - ☐ Product data for proposed substitution is attached (description of product, reference standards, performance and test data).
   - ☐ Sample is attached
   - ☐ Sample will be sent if requested

3. QUALITY COMPARISON:

	SPECIFIED PRODUCT	SUBSTITUTION
Name, brand:	_____	_____
Catalog No.:	_____	_____
Manufacturer:	_____	_____
Vendor:	_____	_____
Significant variations	_____	_____

   Maintenance Service Available: ☐ yes ☐ no

   Spare Parts Source: _____

4. PREVIOUS INSTALLATIONS:
   Identification of similar projects on which proposed substitution was used: (Attach list)
   Project: _____ Architect: _____
   Address: _____ Owner:_____
   _____ Date Installed: _____

5. REASON FOR NOT GIVING PRIORITY TO SPECIFIED ITEMS:
   _____
   _____
   _____

6. EFFECT OF SUBSTITUTION:
   Proposed substitution affects other parts of Work: ☐ No ☐ Yes (If yes, explain)
   _____
   _____

Substitution requires dimensional revision or redesign of structure or M & E Work:

☐ No ☐ Yes (If yes, attach complete data.)

7. BIDDER'S/SUPPLIER'S STATEMENT OF CONFORMANCE OF PROPOSED SUBSTITUTION TO CONTRACT REQUIREMENT:

I/we have investigated the proposed substitution. I/we:

- believe that it is equal or superior in all respects to specified product, except as stated above; and
- will provide the same warranty as specified for specified product; and
- have included complete implications of the substitution; and
- will pay redesign and other costs caused by the substitution which subsequently become apparent; and
- will pay costs to modify other parts of the Work as may be needed, to make all parts of the Work complete and functioning resulting from the substitution.
- warrant and represent to the Owner and the Architect that the proposed substitution does not infringe on any patents or other rights held by others, or that a license has been or will be obtained timely from the holders of such rights for the use of the substitute as proposed; and acknowledge that by accepting this substitution neither the Architect nor the Owner makes any warranty or representation to the Contractor or any Subcontractor regarding the existence or potential for such infringement.

Bidder/Supplier: _____ Date: _____
By: _____

Answer all questions and complete all blanks - use "NA" if not applicable.

REVIEW AND ACTION:

☐ Resubmit substitution request:

☐ Provide more information in following categories: _____
_____

☐ Sign Bidder's/Supplier's Statement of Conformance.

☐ Substitution is accepted.

☐ Substitution is accepted, with the following comments: _____
_____

☐ Substitution not accepted.

☐ No action taken. Substitution Request received less than time set forth in Section L.7.

_____ _____
Architect's Signature Date

ATTACHMENT NO. 7

SUBSTITUTION REQUEST - AFTER EXECUTION OF CONTRACT

TEXAS DEPARTMENT OF CRIMINAL JUSTICE

Copies will be provided to the successful bidder after the bid opening or after award as applicable and will be made available upon request.

ATTACHMENT NO. 8

TEXAS DEPARTMENT OF CRIMINAL JUSTICE
FACILITIES DIVISION

CONTRACTOR'S QUALIFICATIONS

_____
Name of Firm

( ) Corporation ( ) Partnership ( ) Proprietorship

Address _____

_____
City State Zip Code

Telephone Nos. _____ FAX No.

How long has company worked in this trade? _____ year(s).

_____
Parent Company

Owners and/or Partners

Name	**Percentage of Ownership**
_____	_____%
_____	_____%
_____	_____%

Affiliates, Divisions & Subsidiaries (add sheets as required)

Name _____
Address _____
Telephone _____ FAX No. _____

Name _____
Address _____
Telephone _____ FAX No. _____

Name _____
Address _____
Telephone _____ FAX No. _____

FOR CORPORATION ONLY

Date of Incorporation

Name of State(s) in which incorporated

If not incorporated in Texas: Give Certificate of Authority to do business in Texas

Certificate # & Date

President's Name

Vice President's Name

Secretary's Name

Treasurer's Name

FOR PARTNERSHIP ONLY

Date of Organization

Is the Partnership :
General ☐ Limited ☐ Association ☐

Names and addresses of all partners (include zip codes). Use additional sheet if necessary.

1. _____

2. _____

3. _____

FINANCIAL CONDITION

Dun & Bradstreet Rating and I.D. code _____

MAXIMUM BONDING CAPACITY:

Individual Project Bonding Company with mailing address, zip code and telephone number

Aggregate Bonding Company with mailing address, zip code and telephone number

Attach statement of Financial Condition, including Contractor's latest regular dated financial statement or balance sheet which must contain the following items:

CURRENT ASSETS: (Cash, joint venture accounts, accounts receivable, accrued interest on notes, deposits and materials and prepaid expenses), net fixed assets and other assets.

CURRENT LIABILITIES: (Accounts payable, notes payable, accrued interest on notes, provision for income taxes, advances received from owners, accrued salaries, accrued payroll taxes), other liabilities and capital, (capital stock, authorized and outstanding shares par values, earned surplus).

Date of Statement or Balance Sheet

Name & address with zip code

Bank Reference: _____

Finance/Credit Reference

Institution Name _____

Address _____

Officer's Names/Titles _____

Name, Telephone Number/FAX Number Of Contact _____

_____

Institution Name _____

Address _____

Officer's Names/Titles _____

Name, Telephone Number/FAX Number Of Contact _____

_____

Institution Name _____

Address _____

Officer's Names/Titles _____

Name, Telephone Number/FAX Number Of Contact _____

_____

What is largest contract you have financed (if applicable) U.S. $_____

What is largest contract you have arranged financing for (if applicable) U.S. $_____

Business Volume

Average annual billable volume during the past five years U.S. $_____
Estimated billable volume this year: U.S. $_____
Estimated volume carryover next year: U.S. $_____

Contract Values

Preferred Contract Value: (in U.S. Dollars)				
	____	50,000.00 (and under)		
	____	50,000.00	-	100,000.00
	____	100,000.00	-	300,000.00
	____	300,000.00	-	500,000.00
	____	500,000.00	-	1,000,000.00
	____	1,000,000.00	-	5,000,000.00
	____	5,000,000.00	-	10,000,000.00
	____	10,000,000.00	-	50,000,000.00
	____	50,000,000.00	-	100,000,000.00
	____	100,000,000.00 (and over)		

Maximum contract value that can be handled effectively:

U. S. $ _____ over _____ months.

GENERAL INFORMATION

_____

Percent (%) of work done by own staff

_____

No. years in business

If you have done business under different name, please give name and address.

_____

Has firm ever failed to complete project or defaulted on a contract?
If so, state where and why.

_____

_____

_____

Has firm ever been engaged in litigation over any contract? If so, explain.

PERSONNEL

Total permanent employees:

Construction _____ Administration _____ Engineering

Type of engineering performed: _____
Highest manpower level in past three years: _____
Lowest manpower level in past three years: _____

Proposed organization for the execution of the work; listing all personnel committed to participate in the execution of the work, including their previous experience and positions held in previous jobs as well as in bidder's organization. **(List on separate sheet using the following format**)

Name	Present Position or Office	Years of Experience	Typical Amount	Type of Work Responsible for

EQUIPMENT

List the major equipment, type and quantity proposed for the execution of the work.

_____

_____

_____

_____

_____

_____

_____

_____

Name of Firm (Contractor) _____

Signature of Owner or Officer_____

Title of Person Signing_____

CURRENT PROJECTS

List the major construction projects your organization has underway on this date:

PROJECT	OWNER	PHONE NO.	ARCH./ENGR.	PHONE NO.	CONTRACT AMOUNT	PERCENT COMPLETE	SCHEDULED COMPLETION

COMPLETED PROJECTS

List the major construction projects your organization has completed in the past five years:

PROJECT	OWNER	PHONE NO.	ARCH./ENGR.	PHONE NO.	CONTRACT AMOUNT	PERCENT COMPLETE	SCHEDULED COMPLETION

ATTACHMENT 9

Texas Department of Criminal Justice
Non-Employee Background Questionnaire

This information is needed for TDCJ to conduct a criminal history check to determine whether access to TDCJ units and departments should be approved. All questions shall be answered in full.

NOTE TO APPLICANT: With few exceptions, you are entitled upon request: (1) to be informed about the information the TDCJ collects about you; and (2) under Texas Government Code §§ 552.021 and 552.023, to receive and review the collected information. Under Texas Government Code § 559.004, you are also entitled to request, in accordance with the TDCJ procedures, that incorrect information the TDCJ has collected about you be corrected.

1. Name: _____ 2. Social Security No.: _____
   Last First Middle
   (As it appears on your Social Security Card)
3. Mailing Address: _____
   Street City State Zip
4. Date of Birth: _____ 5. Place of Birth: _____
   (MM/DD/YYYY) City State
6. Driver License No.: _____ State: _____ 7. Phone No.: ( ) _____
8. Other names used (maiden, alias, nicknames): _____
9. Sex: Male ☐ Female ☐ 10. E-mail Address: _____
11. Ethnic Origin: White ☐ Black ☐ Hispanic ☐ Asian/Pac. Islander ☐ Am. Ind/Alaskan ☐ Other ☐

12a. Have you previously been employed by TDCJ or worked in a TDCJ facility on a contract basis? Yes ☐ No ☐
If yes, give unit(s)/department(s), position(s) held, and dates: _____

12b. Have you engaged in sexual abuse in a prison, jail, lockup, community confinement facility, juvenile facility, or other institution?
☐ Yes ☐ No

12c. Have you been convicted of engaging or attempting to engage in sexual activity in the community facilitated by force, overt or implied threats of force, or coercion, or if the victim did not consent or was unable to consent or refuse? Yes ☐ No ☐

12d. Have you been civilly or administratively adjudicated to have engaged in sexual activity in the community facilitated by force, overt or implied threats of force, or coercion, or if the victim did not consent or was unable to consent or refuse? Yes ☐ No ☐

13. Are you related to any **employee** or **contract employee** of TDCJ? Yes ☐ No ☐ Unknown ☐
If yes, list name, relationship, and unit/department of assignment: _____

14a. Are you or any immediate member of your family (to include, but not limited to parent, brother, sister, spouse, or child) related to any TDCJ **offender** (incarcerated or on parole)? Yes ☐ No ☐ Unknown ☐
If yes, provide the name of the offender(s): _____

14b. Are you now or have you ever been involved in a spousal relationship with a TDCJ **offender** (incarcerated or on parole)?
This includes marriage, common-law marriage, lived together, or had a child together. Yes ☐ No ☐
If yes, provide the name of the offender(s): _____

14c. Do you have a current business partnership or gang association with a current TDCJ **offender** (incarcerated or on parole)?
Yes ☐ No ☐ If yes, provide the name of the offender(s): _____

14d. Are you on a current TDCJ offender's visitation list? Yes ☐ No ☐ If yes, provide the name of the offender(s): _____

14e. Have you corresponded in the last year with a current TDCJ offender? Yes ☐ No ☐ If yes, provide the name of the offender(s): _____

NOTE:

- **If you answered yes to Question 14a, b, c, d, or e above, you are required to complete and submit a PERS 282A, Additional Offender Information.** The PERS 282A form is available from the TDCJ website at **www.tdcj.texas.gov**.

- If you have a personal relationship with an offender, who is not a relative, be sure to read the "Offender Relationships" paragraph on Page 3 of this questionnaire.

(Continued on Page 2)

IMPORTANT

Read the definition of conviction in Question 17. When answering questions 15 through 17, **do not include:** 1) any violation of law committed before your 17th birthday, if the final decision was made in juvenile court or under a youth offender law; 2) any conviction whose record was expunged under federal or state law; 3) minor traffic violations. **DWI, DUI, Open Container**, and **Driving While License Suspended** are not minor traffic violations and shall be listed.

15. Do you have any criminal charges currently pending? Yes ☐ No ☐
    If yes, please explain: _____

16. Are you on parole or probation, deferred adjudication, or under a pre-trial diversion agreement? Yes ☐ No ☐
    If yes, please explain: _____

17. Have you ever been convicted of a crime (misdemeanor or felony)? Yes ☐ No ☐ If yes, list each one below.
    Attach an additional page if necessary. **Include those that may not appear on your record at this time.**
    Important: For purposes of contract employment with TDCJ, convictions include sentenced to confinement, paid fine, time served, placed on probation (includes **deferred adjudication**), and court ordered restitution. See Falsification Policy on Page 3 of this questionnaire.

Date	Felony or Misdemeanor	Offense	Offense Class	City & State	Punishment

DOCUMENT REQUIREMENTS: You are required to provide with this questionnaire a **disposition** for each criminal charge you reported in Question 15, 16, and 17 above. A disposition is a statement of the charge, date, and the results of the case. If the charge was dismissed, the disposition shall state the reason for dismissal. Dispositions can normally be obtained from the **clerk of the court** having jurisdiction over the case.

18. Are you now or have you ever been a member of a street gang? Yes ☐ No ☐

    Are you now or have you ever been a member of or affiliated with an organization promoting racial, ethnic, or gender superiority or separation, independence from governmental laws and regulations, or overthrow of the United States Government?
    Yes ☐ No ☐

    If you answered yes to either of these questions, provide the following information:

    a. Name of the organization and dates of membership: _____

    b. Position or positions you held in the organization: _____

    c. Arrests and/or convictions resulting from your activities as a member: _____

19. Do you have any tattoos or markings on your body signifying membership or affiliation with a street gang or associated with organizations promoting racial, ethnic, or gender superiority or separation, independence from governmental laws and regulations, or overthrow of the United States Government? Yes ☐ No ☐
    If yes, provide a description and location of those tattoos or markings: _____

(Continued on Page 3)

FALSIFICATION POLICY

It is important that contract employee applicants provide accurate information in this questionnaire. **Failure to list any criminal conviction or other important information, such as prior employment with TDCJ or offender relationships, is considered falsification of the questionnaire and results in disqualification for contract employment access to TDCJ facilities for one year.**

As a criminal justice TDCJ, it is very important that we know if an applicant has a criminal record. In most cases, a criminal record does not disqualify you for access to TDCJ facilities. However, falsification of the questionnaire always disqualifies you, regardless of how well qualified you are otherwise.

What convictions shall be listed? All convictions handled in adult court shall be listed, no matter when or where they occurred. In Texas, if you are 17 years old or older, the case is always handled in adult court. If you are under 17, it still may be handled in adult court. As an exception, you are not required to list convictions for minor traffic violations. Examples of minor traffic violations are speeding, running stop signs, and no seat belts. Examples of crimes which are not minor traffic violations and shall be listed are DWI, DUI, Hit and Run, Assault with a Motor Vehicle, Reckless Driving, Open Container, and Driving While License is Suspended. Convictions that have been **expunged** under state or federal law do not have to be listed. Expunged means a judge signed an order directing all agencies with a record of the arrest and conviction destroy those records (this is not the same as a deferred adjudication, explained below).

What is a conviction? For TDCJ purposes, a conviction is a judgement or a verdict, a plea of guilty or nolo contendere, and/or a judicial finding of guilt substantiated by the evidence, which results in the payment of fines, forfeiture of collateral or bond, restitution, **deferred adjudication**, probation, community supervision, confinement, suspended sentence, or any other penalty imposed by a court of law or agreed upon by the accused. This includes instances where a pardon or a reprieve has been granted for any reason other than proof of innocence. **If you have a case handled by deferred adjudication, it shall be listed in your application, regardless of whether you think it is still on record.** On the other hand, a pre-trial diversion agreement is not considered a conviction for the purpose of employment with TDCJ and does not need to be included on your application.

Military Convictions. Convictions by court martial for criminal offenses shall also be listed.

Failure to Appear. If you were convicted of a routine traffic violation or other offense and did not pay the ticket on time or failed to appear to court, you may have been charged with and convicted of Failure to Appear. Failure to Appear is a separate crime and shall be listed.

Questions. If you have any questions concerning what shall be listed in this questionnaire, it is recommended you contact the Human Resources Division in Huntsville at (936) 437-3126 **before** you submit this questionnaire.

OFFENDER RELATIONSHIPS: TDCJ employees and contract employees with access to TDCJ facilities are prohibited from maintaining or developing a personal relationship with an offender who is not related to the employee. Prohibited relationships include those involving cohabitation, sexual misconduct, or actions that jeopardize or have the potential to jeopardize the security of the TDCJ. This means employees and contract employees may not have personal contact or relationships with offenders currently incarcerated or on parole outside of their official duties if this contact or relationship would jeopardize or has the potential to jeopardize the security of the TDCJ. Prohibited contact includes living together, writing letters or notes, telephone contact, visitation, and depositing funds into an offender's Inmate Trust Fund (ITF) account. If an employee or contract employee was once married to an offender or had a child together with an offender, employee contact with the offender may be limited to that which is ordered by the Court. As a condition of contract employment with TDCJ, contract employees with prohibited relationships shall sever those relationships. Sever means to cease any and all cohabitation, intimate encounters, verbal or written communications, visitation, or other prohibited contact. Continuation of a prohibited relationship after contract employment with TDCJ may result in denial of access to TDCJ facilities, if the TDCJ determines the relationship jeopardizes or has the potential to jeopardize the security of the TDCJ.

ADDITIONAL INFORMATION: All applicants, who may have contact with offenders, are ineligible for employment if they have committed any activity described in questions 12b, 12c, 12d.

CERTIFICATION: I certify that I have read and understand the above explanation of the TDCJ Policy on Falsification and Offender Relationships. I further certify that my answers on this questionnaire are true, complete and correct to the best of my knowledge and I have not evaded or omitted any part thereof to reflect an untruth. I understand falsification constitutes grounds for refusing or terminating access to TDCJ units and departments.

DUTY TO DISCLOSE: I hereby acknowledge that I have a duty to disclose any sexual misconduct during the term of my employment. I further acknowledge that I have a duty to disclose any misconduct on my part while working for previous employers.

Signature: _____ Date: _____

ATTACHMENT NO. 10

State Documents and Forms

Copies will be provided to the successful bidder after the bid opening or after award as applicable and will be made available upon request.

ATTACHMENT NO. 11

Specifications are located in Part 2

ATTACHMENT NO. 12

Drawings

Deleted

ATTACHMENT NO. 13

Contractor Direct Deposit Authorization Package

Copies will be provided to the successful bidder after the bid opening or after award as applicable and will be made available upon request.

ATTACHMENT NO. 14

Release of Claims

Copies will be provided to the successful bidder after the bid opening or after award as applicable and will be made available upon request.

EXHIBIT

HUB Subcontracting Plan (HSP)

In accordance with Texas Gov't Code §2161.252, the contracting agency has determined that subcontracting opportunities are probable under this contract. Therefore, all respondents, including State of Texas certified Historically Underutilized Businesses (HUBs) must complete and submit this State of Texas HUB Subcontracting Plan (HSP) with their response to the bid requisition (solicitation).

NOTE: Responses that do not include a completed HSP shall be rejected pursuant to Texas Gov't Code §2161.252(b).

The HUB Program promotes equal business opportunities for economically disadvantaged persons to contract with the State of Texas in accordance with the goals specified in the 2009 State of Texas Disparity Study. The statewide HUB goals defined in 34 Texas Administrative Code (TAC) §20.13 are:

- ***11.2 percent for heavy construction other than building contracts,***
- ***21.1 percent for all building construction, including general contractors and operative builders' contracts,***
- ***32.9 percent for all special trade construction contracts,***
- ***23.7 percent for professional services contracts,***
- ***26.0 percent for all other services contracts, and***
- ***21.1 percent for commodities contracts.***

- - Agency Special Instructions/Additional Requirements - -

In accordance with 34 TAC §20.14(d)(1)(D)(iii), a respondent (prime contractor) may demonstrate good faith effort to utilize Texas certified HUBs for its subcontracting opportunities if the total value of the respondent's subcontracts with Texas certified HUBs meets or exceeds the statewide HUB goal or the agency specific HUB goal, whichever is higher. When a respondent uses this method to demonstrate good faith effort, the respondent must identify the HUBs with which it will subcontract. If using existing contracts with Texas certified HUBs to satisfy this requirement, only contracts that have been in place for five years or less shall qualify for meeting the HUB goal. This limitation is designed to encourage vendor rotation as recommended by the 2009 Texas Disparity Study.

The TDCJ HUB goals are defined as:

- **17.5 percent for heavy construction other than building contracts. This goal is higher than the statewide goal and therefore must be the utilized goal for this category,**
- **36.9 percent for all building construction, including general contractors and operative builders contracts. This goal is higher than the statewide goal and therefore must be the utilized goal for this category,**
- **32.7 percent for all special trade construction contracts,**
- **23.6 percent for professional services contracts,**
- **24.6 percent for all other services contracts, and**
- **21 percent for commodities contracts.**

The TDCJ has determined that the HUB Category for this contract falls under the **Building Construction Contracts** Category.

The HUB Goal for this category is therefore identified as **36.9 %**.

For assistance in completing the HSP contact:
Sharon Schultz @ 936-437-7026
sharon.schultz@tdcj.texas.gov

SECTION-1: RESPONDENT AND REQUISITION INFORM

a. Respondent (Company) Name: _____ State of Texas VID #: _____

Point of Contact: _____ Phone #: _____

E-mail Address: _____ Fax #: _____

b. Is your company a State of Texas certified HUB? ☐ - Yes ☐ - No

c. Requisition #: _____ Bid Open Date: _____ (mm/dd/yyyy)

Enter your company's name here: _____ Requisition #: _____

SECTION-2: SUBCONTRACTING INTENTIONS RESPONDENT

After dividing the contract work into reasonable lots or portions to the extent consistent with prudent industry practices, and taking into consideration the scope of work to be performed under the proposed contract, including all potential subcontracting opportunities, the respondent must determine what portions of work, including goods and services, will be subcontracted. Note: In accordance with 34 TAC §20.11., an "Subcontractor" means a person who contracts with a prime contractor to work, to supply commodities, or to contribute toward completing work for a governmental entity.

a. Check the appropriate box (Yes or No) that identifies your subcontracting intentions:

☐ ***Yes***, I will be subcontracting portions of the contract. (If ***Yes***, complete Item b, of this SECTION and continue to Item c of this SECTION.)

☐ ***No***, I will not be subcontracting any portion of the contract, and I will be fulfilling the entire contract with my own resources. (If ***No***, continue to SECTION 3 and SECTION 4.)

b. List all the portions of work (subcontracting opportunities) you will subcontract. Also, based on the total value of the contract, identify the percentages of the contract you expect to award to Texas certified HUBs, and the percentage of the contract you expect to award to vendors that are not a Texas certified HUB (i.e., Non-HUB).

Item #	Subcontracting Opportunity Description	HUBs		Non-HUBs
		Percentage of the contract expected to be subcontracted to HUBs with which you have a continuous contract* in place for five (5) years or less.	Percentage of the contract expected to be subcontracted to HUBs with which you have a continuous contract* in place for more than five (5) years.	Percentage of the contract expected to be subcontracted to non-HUBs .
1		%	%	%
2		%	%	%
3		%	%	%
4		%	%	%
5		%	%	%
6		%	%	%
7		%	%	%
8		%	%	%
9		%	%	%
10		%	%	%
11		%	%	%
12		%	%	%
13		%	%	%
14		%	%	%
15		%	%	%
	Aggregate percentages of the contract expected to be subcontracted:	%	%	%

(Note: If you have more than fifteen subcontracting opportunities, a continuation sheet is available online at http://window.state.tx.us/procurement/prog/hub/hub-subcontracting-plan/).

c. Check the appropriate box (Yes or No) that indicates whether you will be using **only** Texas certified HUBs to perform **all** of the subcontracting opportunities you listed in SECTION 2, Item b.

☐ ***Yes*** (If ***Yes***, continue to SECTION 4 and complete an "HSP Good Faith Effort - Method A (Attachment A)" for each of the subcontracting opportunities you listed.)

☐ ***No*** (If ***No***, continue to Item d, of this SECTION.)

d. Check the appropriate box (Yes or No) that indicates whether the aggregate expected percentage of the contract you will subcontract **with Texas certified** HUBs with which you have a **continuous contract*** in place with for five (5) years or less **meets or exceeds** the HUB goal the contracting agency identified on page 1 in the "**Agency Special Instructions/Additional Requirements**".

☐ ***Yes*** (If ***Yes***, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method A (Attachment A)" for **each** of the subcontracting opportunities you listed.)

☐ ***No*** (If ***No***, continue to SECTION 4 **and** complete an "HSP Good Faith Effort - Method B (Attachment B)" for **each** of the subcontracting opportunities you listed.)

***Continuous Contract: Any** existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.*

Enter your company's name here: _____ Requisition #: _____

SECTION-3: SELF PERFORMING JUSTIFICATION (If you responded "No "to SECTION 2, Item a, you must complete this SECTION and continue to SECTION 4)

Check the appropriate box (Yes or No) that indicates whether your response/proposal contains an explanation demonstrating how your company will fulfill the entire contract with its own resources.

☐ **Yes** (If ***Yes***, in the space provided below **list the specific page(s)/section(s)** of your proposal which explains how your company will perform the entire contract with its own equipment, supplies, materials and/or employees.)

☐ **No** (If ***No***, in the space provided below **explain how** your company will perform the entire contract with its own equipment, supplies, materials and/ or employees.)

SECTION-4: AFFIRMATION

As evidenced by my signature below, I affirm that I am an authorized representative of the respondent listed in SECTION 1, and that the information and supporting documentation submitted with the HSP is true and correct. Respondent understands and agrees that, if awarded any portion of the requisition:

- The respondent will provide notice as soon as practical to all the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor for the awarded contract. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.
- The respondent must submit monthly compliance reports (Prime Contractor Progress Assessment Report – PAR) to the contracting agency, verifying its compliance with the HSP, including the use of and expenditures made to its subcontractors (HUBs and Non-HUBs). (The PAR is available at http://www.window.state.tx.us/procurement/prog/hub/hub-forms/progressassessmentrpt.xls).
- The respondent must seek approval from the contracting agency prior to making any modifications to its HSP, including the hiring of additional or different subcontractors and the termination of a subcontractor the respondent identified in its HSP. If the HSP is modified without the contracting agency's prior approval, respondent may be subject to any and all enforcement remedies available under the contract or otherwise available by law, up to and including debarment from all state contracting.
- The respondent must, upon request, allow the contracting agency to perform on-site reviews of the company's headquarters and/or work-site where services are being performed and must provide documentation regarding staffing and other resources.

Signature	Printed Name	Title	Date (mm/dd/yyyy)

Reminder:

- If you responded "**Yes**" to **SECTION 2, Items c or d**, you must complete an "HSP Good Faith Effort - Method A (Attachment A)" **for each** of the subcontracting opportunities you listed in SECTION 2, Item b.
- If you responded "**No**" **SECTION 2, Items c and d,** you must complete an "HSP Good Faith Effort - Method B (Attachment B)" **for each** of the subcontracting opportunities you listed in SECTION 2, Item b.

HSP Good Faith Effort - Method A (Attachment A)

Enter your company's name here: _____ Requisition #: _____

IMPORTANT: If you responded "***Yes***" to **SECTION 2, Items c or d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method A (Attachment A)" for **each** of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-a.pdf.

SECTION A-1: SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: _____ **Description:** _____

SECTION A-2: SUBCONTRACTOR SELECTION

List the subcontractor(s) you selected to perform the subcontracting opportunity you listed above in SECTION A-1. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to **all** the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity they (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

HSP Good Faith Effort - Method B (Attachment B)

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Enter your company's name here: _____ Requisition #: _____

IMPORTANT: If you responded **"No"** to **SECTION 2, Items c** and **d** of the completed HSP form, you must submit a completed "HSP Good Faith Effort - Method B (Attachment B)" for **each** of the subcontracting opportunities you listed in **SECTION 2, Item b** of the completed HSP form. You may photo-copy this page or download the form at http://window.state.tx.us/procurement/prog/hub/hub-forms/hub-sbcont-plan-gfe-achm-b.pdf.

SECTION B-1: SUBCONTRACTING OPPORTUNITY

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

Item #: _____ **Description:** _____

SECTION B-2: MENTOR PROTÉGÉ PROGRAM

If respondent is participating as a Mentor in a State of Texas Mentor Protégé Program, submitting its Protégé (Protégé must be a State of Texas certified HUB) as a subcontractor to perform the subcontracting opportunity listed in SECTION B-1, constitutes a good faith effort to subcontract with a Texas certified HUB towards that specific portion of work.

Check the appropriate box (Yes or No) that indicates whether you will be subcontracting the portion of work you listed in SECTION B-1 to your Protégé.

☐ **Yes** (If ***Yes***, to continue to SECTION B-4.)

☐ **No / Not Applicable** (If ***No*** or ***Not Applicable***, continue to SECTION B-3 and SECTION B-4.)

SECTION B-3: NOTIFICATION OF SUBCONTRACTING OPPORTUNITY

When completing this section you MUST comply with items **a, b, c** and **d**, thereby demonstrating your Good Faith Effort of having notified Texas certified HUBs and trade organizations or development centers about the subcontracting opportunity you listed in SECTION B-1. Your notice should include the scope of work, information regarding the location to review plans and specifications, bonding and insurance requirements, required qualifications, and identify a contact person. When sending notice of your subcontracting opportunity, you are encouraged to use the attached HUB Subcontracting Opportunity Notice form, which is also available online at http://www.window.state.tx.us/procurement/prog/hub/hub-subcontracting-plan.

Retain supporting documentation (i.e., certified letter, fax, e-mail) demonstrating evidence of your good faith effort to notify the Texas certified HUBs and trade organizations or development centers. Also, be mindful that a working day is considered a normal business day of a state agency, not including weekends, federal or state holidays, or days the agency is declared closed by its executive officer. The initial day the subcontracting opportunity notice is sent/provided to the HUBs and to the trade organizations or development centers is considered to be "day zero" and does not count as one of the seven (7) working days.

a. Provide written notification of the subcontracting opportunity you listed in SECTION B-1, to three (3) or more Texas certified HUBs. Unless the contracting agency specified a different time period, you must allow the HUBs at least seven (7) working days to respond to the notice prior to your submitting your bid response to the contracting agency. When searching for Texas certified HUBs, ensure that you use the State of Texas' Centralized Master Bidders List (CMBL) and Historically Underutilized Business (HUB) Search directory located at http://mycpa.state.tx.us/tpasscmblsearch/index.jsp. HUB Status code "**A**" signifies that the company is a Texas certified HUB.

b. List the three (3) Texas certified HUBs you notified regarding the subcontracting opportunity you listed in SECTION B-1. Include the company's Vendor ID (VID) number, the date you sent notice to that company, and indicate whether it was responsive or non-responsive to your subcontracting opportunity notice.

Company Name	VID Number	Date Notice Sent (mm/dd/yyyy)	Did the HUB Respond?
			☐ - Yes ☐ - No
			☐ - Yes ☐ - No
			☐ - Yes ☐ - No

c. Provide written notification of the subcontracting opportunity you listed in SECTION B-1 to two (2) or more trade organizations or development centers in Texas to assist in identifying potential HUBs by disseminating the subcontracting opportunity to their members/participants. Unless the contracting agency specified a different time period, you must provide your subcontracting opportunity notice to trade organizations or development centers at least seven (7) working days prior to submitting your bid response to the contracting agency. A list of trade organizations and development centers that have expressed an interest in receiving notices of subcontracting opportunities is available on the Statewide HUB Program's webpage at http://www.window.state.tx.us/procurement/prog/hub/mwb-links-1/.

d. List two (2) trade organizations or development centers you notified regarding the subcontracting opportunity you listed in SECTION B-1.Include the date when you sent notice to it and indicate if it accepted or rejected your notice.

Trade Organizations or Development Centers	Date Notice Sent (mm/dd/yyyy)	Was the Notice Accepted?
		☐ - Yes ☐ - No
		☐ - Yes ☐ - No

HSP Good Faith Effort - Method B (Attachment B) Cont.

Enter your company's name here: _____ Requisition #: _____

SECTION B-4: SUBCONTRACTOR SELECTION

Enter the item number and description of the subcontracting opportunity you listed in SECTION 2, Item b, of the completed HSP form for which you are completing the attachment.

a. Enter the item number and description of the subcontracting opportunity for which you are completing this Attachment B continuation page.

Item #: _____ **Description:** _____

b. List the subcontractor(s) you selected to perform the subcontracting opportunity you listed in **SECTION B-1**. Also identify whether they are a Texas certified HUB and their VID number, the approximate dollar value of the work to be subcontracted, the expected percentage of work to be subcontracted, and indicate whether the company is a Texas certified HUB.

Company Name	Texas certified HUB	VID # (Required if Texas certified HUB)	Approximate Dollar Amount	Expected Percentage of Contract
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%

c. If any of the subcontractors you have selected to perform the subcontracting opportunity you listed in SECTION B-1 is **not** a Texas certified HUB, provide written justification for your selection process (attach additional page if necessary):

REMINDER: As specified in SECTION 4 of the completed HSP form, if you (respondent) are awarded any portion of the requisition, you are required to provide notice as soon as practical to **all** the subcontractors (HUBs and Non-HUBs) of their selection as a subcontractor. The notice must specify at a minimum the contracting agency's name and its point of contact for the contract, the contract award number, the subcontracting opportunity it (the subcontractor) will perform, the approximate dollar value of the subcontracting opportunity and the expected percentage of the total contract that the subcontracting opportunity represents. A copy of the notice required by this section must also be provided to the contracting agency's point of contact for the contract no later than ten (10) working days after the contract is awarded.

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HUB Subcontracting Opportunity Notification Form

In accordance with Texas Gov't Code, Chapter 2161, each state agency that considers entering into a contract with an expected value of $100,000 or more shall, before the agency solicits bids, proposals, offers, or other applicable expressions of interest, determine whether subcontracting opportunities are probable under the contract. The state agency I have identified below in **Section B** has determined that subcontracting opportunities are probable under the requisition to which my company will be responding.

34 Texas Administrative Code, §20.14 requires all respondents (prime contractors) bidding on the contract to provide notice of each of their subcontracting opportunities to at least three (3) Texas certified HUBs (who work within the respective industry applicable to the subcontracting opportunity), and allow the HUBs at least seven (7) working days to respond to the notice prior to the respondent submitting its bid response to the contracting agency. In addition, at least seven (7) working days prior to submitting its bid response to the contracting agency, the respondent must provide notice of each of its subcontracting opportunities to two (2) or more trade organizations or development centers (in Texas) that serves members of groups (i.e., Asian Pacific American, Black American, Hispanic American, Native American, Woman, Service Disabled Veteran) identified in Texas Administrative Code, §20.11(19)(C).

We respectfully request that vendors interested in bidding on the subcontracting opportunity scope of work identified in **Section C, Item 2**, reply no later than the date and time identified in **Section C, Item 1**. Submit your response to the point-of-contact referenced in **Section A**.

SECTION: A PRIME CONTRACTOR'S INFORMATION

Company Name: _____ **State of Texas VID #:** _____

Point-of-Contact: _____ **Phone #:** _____

E-mail Address: _____ **Fax #:** _____

SECTION: B CONTRACTING STATE AGENCY AND REQUISITION INFORMATION

Company Name: _____

Point-of-Contact: _____ **Phone #:** _____

Requisition #: _____ **Bid Open Date#:** _____ (mm/dd/yyyy)

SECTION: C SUBCONTRACTING OPPORTUNITY RESPONSE DUE DATE, DESCRIPTION, REQUIREMENTS AND RELATED INFORMATION

1. Potential Subcontractor's Bid Response Due Date:

If you would like for our company to consider your company's bid for the subcontracting opportunity identified below in Item 2, we must receive your bid response no later than _____ (Central Time) on _____ Date (mm/dd/yyyy).

In accordance with 34 TAC §20.14, each notice of subcontracting opportunity shall be provided to at least three (3) Texas certified HUBs, and allow the HUBs at least seven (7) working days to respond to the notice prior to submitting our bid response to the contracting agency. In addition, at least seven (7) working days prior to us submitting our bid response to the contracting agency, we must provide notice of each of our subcontracting opportunities to two (2) or more trade organizations or development centers (in Texas) that serves members of groups (i.e., Asian Pacific American, Black American, Hispanic American, Native American, Woman, Service Disabled Veteran) identified in Texas Administrative Code, §20.11(19)(C).

(A working day is considered a normal business day of a state agency, not including weekends, federal or state holidays, or days the agency is declared closed by its executive officer. The initial day the subcontracting opportunity notice is sent/provided to the HUBs and to the trade organizations or development centers is considered to be "day zero" and does not count as one of the seven (7) working days.)

2. Subcontracting Opportunity Scope of Work:

3. Required Qualifications: ☐ - Not Applicable

4. Bonding/Insurance Requirements: ☐ - Not Applicable

5. Location to review plans/specifications: ☐ - Not Applicable

Rev. 07/27/15

HUB Subcontracting Plan (HSP)
Prime Contractor Progress Assessment Report

This form must be completed and submitted to the contracting agency each month to document compliance with your HSP.

Contract/Requisition Number: _____ **Date of Award:** _____ (mm/dd/yyyy) **Object Code:** _____ (Agency Use Only)

Contracting Agency/University Name: Texas Department of Criminal Justice

Contract Administrator Name: _____

Contractor (Company) Name: _____ **State of Texas VID #:** _____

Point of Contact: _____ **Phone #:** _____

Reporting (Month) Period: _____ **Total Amount Paid this Reporting Period to Contractor:** $ _____

Report HUB and Non-HUB subcontractor information

**Note: Texas certified HUB status can be verified on line at: https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp*

Subcontractor's Name	*Texas certified HUB? (Yes or No)	Subcontractor's VID or HUB Certificate Number (Required if Texas certified HUB)	Total Contract $ Amount from HSP with Subcontractor	Total $ Amount Paid This Reporting Period to Subcontractor	Total Contract $ Amount Paid to Date to Subcontractor	Object Code (Agency Use Only)
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
TOTALS:			$	$	$	

Signature: _____ **Title:** _____ **Date:** _____

TRADE ORGANIZATIONS/DEVELOPMENT CENTERS

ORGANIZATION	MAILING ADDRESS	PHONE	FAX	EMAIL
American Indian Chamber of Commerce of Texas	11245 Indian Trail, Dallas, TX 76679	972-241-6450	972-241-6454	tcce@txbiz.org
Asian Contractor Association	4201 Ed Bluestein Blvd., Austin, TX 78721	512-926-5400	512-926-5410	asiancontractor@gmail.com
Black Contractors Association – Dallas/Fort Worth	1409 S. Lamar Street, Suite 251, Dallas,TX 75215	214-928-7097	214-485-0467	rwashington@blackcontractors.org
Dallas Black Chamber of Commerce	2838 Martin Luther King Jr. Boulevard, Dallas, TX 75215	214-421-5200	214-421-5510	chum@dbcc.org
DFW Minority Supplier Development Council	8828 N Stemmons Frwy, 5th Floor, Suite 550, Dallas, TX 75247	214-630-0747	214-637-2241	construction@dfwmsdc.com
Dallas Hispanic Chamber of Commerce	4622 Maple Avenue, Suite. 207, Dallas, TX 75219	214-521-6007	214-520-1687	gquezada.gdhcc.com
Del Mar College PTAC, Corpus Christi Black C of C	101 Baldwin Blvd., CED-146, Corpus Christi, TX 78404	361-698-1025	361-698-1024	ptac@delmar.edu
El Paso Hispanic Chamber of Commerce	2401 E. Missouri, El Paso 79903	915-566-4066	915-566-9714	treed@elpasombdacenter.com
Fort Worth Metropolitan Black Chamber of Commerce	1150 South Freeway, Suite 211, Fort Worth, TX 76104	817-871-6538	817-332-6438	bbolden@fwmbcc.org
Golden Triangle Minority Business Council	PO Box 21664, Beaumont, TX 77720	409-962-8530	409-722-5402	hatcher.beverly@gtmbc.com
Greater Asian Chamber of Commerce	8001 Centre Park Dr. STE 160, Austin, TX 78754	512-407-8240	use email	Exec.Admin@AustinAsianChamber.org
Greater Austin Black Chamber	912 E. 11th Street, Suite A, Austin, TX 78702	512-459-1181	512-459-1183	nmc@austinbcc.org
Greater Houston Business Procurement Forum	17071/2 South Post Oak Blvd., PMB 273, Houston, TX 77056	832-216-2185	713-436-8333	miltonthibodeaux@gmail.com
Hispanic Contractors Association - Houston	7 Parker Road, Houston, TX 77076	832-883-5078	Use email	randymagdaleno@yahoo.com
Hispanic Contractors Association –San Antonio	8300 Pat Booker, RM 233 Live Oak, San Antonio, TX 78233	210-444-1100	210-444-1101	dave@hcadesa.org
Hispanic Contractors Association – Regional	2210 W. Illinois Avenue, Dallas, TX 75224-1636	972-786-0909	972-786-0910	yolanda@regionalhca.org
Houston Hispanic Chamber of Commerce	1801 Main Street, Suite 890, Houston, TX 77002	713-644-7070	713-644-7377	mzarate@houstonhispanicchamber.com
Houston Minority Supplier Development Council	Three Riverway, Suite 555, Houston, TX 77056	713-271-7805	713-271-9770	angela.freeman@hmsdc.org
National Association of Minority Contractors Inc.– Houston	3825 Dacoma St., Houston, TX. 77092	713-843-3791	713-843-3743	info@namctexas.org
San Antonio Hispanic Chamber of Commerce	200 East Grayson, Suite 203, San Antonio, TX 78215	210-225-0462	210-225-2485	briannad@sahcc.org
Southwest Minority Supplier Development Council	912 Bastrop Highway, Ste. 101, Austin, TX 78741	512-386-8766	512-386-8988	smsdc@smsdc.org
	4100 NW Loop 410 Ste 230, San Antonio, TX 78229	512-659-2160	Use email	xenia@smsdc.org
Texas Association of African American Chambers of Commerce (TAAACC)	P.O. Box 13064, Austin, TX 78711-3064	512-535-5610	Use email	taaacc179@yahoo.com
Texas Association of Historically Underutilized Businesses	P.O. Box 684726, Austin, TX 78768-4726	512-468-0113	915-5857751	rmata@tgsaustin.com
Texas Association of Mexican American Chambers of Commerce (TAMACC)	P.O. Box 41780, Austin, TX 78704	512-444-5727	512-444-4929	panton@tamacc.org
Tri-County Black Chamber of Commerce	P.O. Box 88376, Houston, TX 77288	832-875-3977	281-336-0870	procurement@tcbcc.org
U.S. Hispanic Contractors Association de Austin	920 E Dean Keeton, Austin, TX 78705	512-922-0507		info@ushca-austin.com
U.S. Pan Asian American Chamber of Commerce SW	202 E. Border Street, Suite 144, Arlington, TX 76010	682-367-1393	817-469-9485	gmcdermott@uspaacc-sw.org
Women's Business Council - Southwest	2201 North Collins, Suite 158, Arlington, TX 76011	817-299-0566	817-299-0949	asteele@wbcsouthwest.org
Women's Business Enterprise Alliance (WBEA)	9800 NW Frwy, Suite 120, Houston, TX 77092	713-681-9232	713-681-9242	bids@wbea-texas.org
Women Contractors Association (WCA)	134 Vintage Park Blvd. Houston, TX 77070	713-807-9977	713-807-9917	director@womencontractors.org

HUB Subcontracting Plan (HSP)
QUICK CHECKLIST

While this HSP Quick Checklist is being provided to merely assist you in readily identifying the sections of the HSP form that you will need to complete, it is very important that you adhere to the instructions in the HSP form and instructions provided by the contracting agency.

➤ **If you will be awarding all of the subcontracting work you have to offer under the contract to only Texas certified HUB vendors, complete:**

- ☐ Section 1 - Respondent and Requisition Information
- ☐ Section 2 a. - Yes, I will be subcontracting portions of the contract
- ☐ Section 2 b. - List all the portions of work you will subcontract, and indicate the percentage of the contract you expect to award to Texas certified HUB vendors
- ☐ Section 2 c. - Yes
- ☐ Section 4 - Affirmation
- ☐ GFE Method A (Attachment A) - Complete an Attachment A for each of the subcontracting opportunities you listed in Section 2 b.

➤ **If you will be subcontracting any portion of the contract to Texas certified HUB vendors and Non-HUB vendors, and the aggregate percentage of all the subcontracting work you will be awarding to the Texas certified HUB vendors with which you have a *continuous contract** in place for five (5) years or less *meets or exceeds* the HUB Goal the contracting agency identified in the "Agency Special Instructions/Additional Requirements", complete:**

- ☐ Section 1 - Respondent and Requisition Information
- ☐ Section 2 a. - Yes, I will be subcontracting portions of the contract
- ☐ Section 2 b. - List all the portions of work you will subcontract, and indicate the percentage of the contract you expect to award to Texas certified HUB vendors and Non-HUB venders
- ☐ Section 2 c. - No
- ☐ Section 2 d. - Yes
- ☐ Section 4 - Affirmation
- ☐ GFE Method A (Attachment A) - Complete an Attachment A for each of the subcontracting opportunities you listed in Section 2 b.

➤ **If you will be subcontracting any portion of the contract to Texas certified HUB vendors and Non-HUB vendors or only to Non-HUB vendors, and the aggregate percentage of all the subcontracting work you will be awarding to the Texas certified HUB vendors with which you have a *continuous contract** in place for five (5) years or less *does not meet or exceed* the HUB Goal the contracting agency identified in the "Agency Special Instructions/Additional Requirements", complete:**

- ☐ Section 1 - Respondent and Requisition Information
- ☐ Section 2 a. - Yes, I will be subcontracting portions of the contract
- ☐ Section 2 b. - List all the portions of work you will subcontract, and indicated the percentage of the contract you expect to award to Texas certified HUB vendors and Non-HUB vendors
- ☐ Section 2 c. - No
- ☐ Section 2 d. - No
- ☐ Section 4 - Affirmation
- ☐ GFE Method B (Attachment B) - Complete an Attachment B for each of the subcontracting opportunities you listed in Section 2 b.

➤ **If you will not be subcontracting any portion of the contract and will be fulfilling the entire contract with your own resources, complete:**

- ☐ Section 1 - Respondent and Requisition Information
- ☐ Section 2 a. - No, I will not be subcontracting any portion of the contract, and I will be fulfilling the entire contract with my own resources
- ☐ Section 3 - Self Performing Justification
- ☐ Section 4 - Affirmation

***Continuous Contract:** Any existing written agreement (including any renewals that are exercised) between a prime contractor and a HUB vendor, where the HUB vendor provides the prime contractor with goods or service under the same contract for a specified period of time. The frequency the HUB vendor is utilized or paid during the term of the contract is not relevant to whether the contract is considered continuous. Two or more contracts that run concurrently or overlap one another for different periods of time are considered by CPA to be individual contracts rather than renewals or extensions to the original contract. In such situations the prime contractor and HUB vendor are entering (have entered) into "new" contracts.*

HUB SUBCONTRACTOR LISTING - SECURITY CONTROL SYSTEM / BILLY MOORE UNIT

Company Name	Contact Person	Address	City	Zip	Email	Phone	Fax	Business Description
3D ELECTRIC	Desmond Wendell Burnett	PO BOX 783	PEARLAND	77588-0783	deswburn@att.net	281-989-1165		Electrical systems installation and maintenance of such systems - commercial and industrial.
A & A ELECTRIC COMPANY OF BEAUMONT, INC.	Lee Acevedo Jr	PO BOX 22986	BEAUMONT	77720	gina@aaelectricbmt.com	409-842-4437	409-842-5230	ELECTRICAL CONTRACTOR-COMMERCIAL & RESIDENTIAL
3 C ELECTRIC, LLC	Wacey Hoyle	7859 BREEZEWOOD DR	IOLA	77861-3936	hoyle3celectric@yahoo.com	979-676-1885		Electrical contracting for residential, commercial, and industrial.
3G ELECTRICAL SUPPLY INC	DAVID RUIZ	811 E CALTON RD	LAREDO	78041-3677	david@3gelectric.com	956-724-2151	956-723-0016	WHOLESALE AND RETAIL OF ELECTRICAL SUPPLIES, LIGHTING. INDUSTRIAL, COMMERCIAL AND RESIDENTIAL
459 ENTERPRISES, LLC	Christopher W. Bush	2120 W. BRAKER LN., SUITE H	AUSTIN	78758	cbush@bossyhd.com	512-266-1149	512-853-7920	We also audio visual, surveillance and security solutions.
A & A ELECTRIC COMPANY OF BEAUMONT, INC.	Lee Acevedo Jr	P O BOX 22986	BEAUMONT	77720	gina@aaelectricbmt.com	409-842-4437	409-842-5230	ELECTRICAL CONTRACTOR-COMMERCIAL & RESIDENTIAL
A MARKETING & SERVICE CO.	ALVARO RODRIGUEZ	P O BOX 681195	SAN ANTONIO	78268-1195	protector@stic.net	210-684-1635	210-684-2464	Electrical Specialy Supplier
A PHOTO IDENTIFICATION, INC.	Paula Rosanne Bliss	PO BOX 211836	BEDFORD	76095-8836	rbliss@aphotoid.com	972-660-7904	972-660-7946	Identification equipment and supplies, time and attendance equipment and supplies, laminating equipment and supplies, mobile video surveillance, bus cameras.
A PLUS ELECTRIC, INC.	Johnny Loza	1214 LUKE ST.	IRVING	75061	jloza@apluselec.com	972-313-8686	972-313-8211	ELECTRICAL CONSTRUCTION AND MAINTENANCE SERVICE

A-ALARM FIRE & SECURITY SYSTEMS	CATHY RESTIVO	P O BOX 7654	WACO	76714	cathy.restivo@a1firesec.com	800-456-8787	254-776-8854	Sales and Service of Fire Alarm Systems, Burglar Alarm Systems, Camera - Surveilance Systems, Cat-5 & Cat-6 Cabling Systems, Fire Extinguishers, Access Control Card Systems, and Fire Sprinkler System.
AAUSA ELECTRIC SUPPLY, INC.	Jim Brennan	1301 S INTERSTATE 35	AUSTIN	78741-1173	jbrennan@aausasupply.com	512-247-3206		We are a full line electrical distributor. Our products range from lighting, generators, and trnsformers to wire & cable. We have supported projects for the federal government, around the world.
AB GROUP	Rebecca Rodriguez	P.O. BOX 681046	SAN ANTONIO	78268-1046	doorscope@stic.net	210-684-1635	210-684-2464	Doorviewers,Surge Protection Devices, SPD/TVSS, UPS, Battery Back-up units,Harmonic Suppression Systems
ABLE ELECTRIC INC.	Steve Johnson	135 BELTON ST	MC DADE	78650-5133	able@ableelso.com	512-487-7765	469-730-4010	Electrical and solar, new construction and service.
ABSOLUTE SERVICES	CARRIE SEGREE	2005 INDUSTRIAL DR	MCALLEN	78504-4009	asmcallen1@aol.com	956-631-6931	956-618-0749	Install, service and sell Fire,Sound,CCTV, Access Control, and Gate systems. Additionally, provide monitoring of systems.
A-C SALES COMPANY	CLAUDIA WADE or ALVIN WADE	P. O. BOX 7572	FORT WORTH	76111	supplies@a-csales.net	817-831-8801	817-665-9236	Commercial Wholesale Electricity/Gas. Wholesale electrical supplies, such as transformers, circuit breakers, motor control, variable frequency drives, lights fixtures and outside pole lights.

ACCULIGHT SOLUTIONS	Diana Nicholls	3010 SAN ROCENDO ST APT 3332	FORT WORTH	76116-0657	diana@acculightsolutions.com	214-799-1522		Audio, Visual and Lighting sales, installation, programming and service. Primarily lighting programming and service.
ACCURATE ADVANTAGE GROUP, INC.	Teresa L. Line	5430 LBJ FREEWAY, SUITE 1200	DALLAS	75240	info@Accurate-Advantage.com	214-295-8660	214-257-7678	Electrical and Lighting Products Sales.
ACCUTRONICS, INC.	Rachelle Gonzalez	PO BOX 100478	SAN ANTONIO	78201-1778	rgonzalez@accutronicsinc.com	210-736-5300	210-734-8463	VAR Time & Attendance, Parking Revenue & Access Control, Identification & Badging Systems, Sales, Service & Supplies
AC-DC INC	Maurilio H Martinez	1519 E PRICE	LAREDO	78040	maurym@acdclaredo.com	956-724-4684	956-724-8084	electrical services, new electrical construction, Data and Voice installation
ADVANCED SECURITY CONTRACTORS INC	VIRGINIA ROBINSON	135 RIO WEST DRIVE	EL PASO	79932	virginia@ascsecure.com	915-845-0272	915-845-0280	Installs, maintains and services the following: Burglar alarms, fire alarms, closed circuit television, access control. Bosch, Vicon, Hirsch-Identive, GE Security, SAY, i3Int'l,IQinvision certified
ADVANTAGE SUPPLY	Carol Bane	PO BOX 471103	FORT WORTH	76147-1103	bids@advantagesupply.us	817-377-8094	817-377-8095	Distributor of mechanical, electronical, plumbing, HVAC, industrial, janitorial, promotional products, parts and equipment. Office products, business furniture & installation, computer supplies & safety products.

AFRICA 2000, INC.	Ndiago Lo	3202 IGLOO RD.	HOUSTON	77032	lo@africa2000inc.com	281-209-2400	281-209-2402	Broker of International Freight Forwarding, Container Loading, Wood Crating Service (Ocean and Air)
AIM OVER-THE-RD, LLC FKA AIM GLOBAL LOGI	Angelica Garcia-Dunn	PO BOX 259	KATY	77492-0259	agarcia@aimgloballogistics.com	713-489-8911	866-562-5988	Transportation arrangement- We provide transportation services by Ocean, Air, and land. We specialize in domestic and International freight, Heavy Haul cargo, Rig Movements, Containers, break-bulk shipments, LTL, Hot Shot loads and locals.
ALERT ELECTRICAL CONTRACTORS, INC.	Emilio Maldonado	P.O. BOX 7908	CORPUS CHRISTI	78467	alertelectric@att.net	361-289-1406	361-289-1407	Electrical
ALEXCO ELECTRIC, LLC	Alejandro Hinojosa	816 E MILE 4 RD	PALMHURST	78573	alexhino@aol.com	956-583-6408	956-583-6418	Electrical Contractor.
ALL TRADES ELECTRICAL CONTRACTORS, INC.	RAFAEL GUTIERREZ	11005 ARGAL CT.	EL PASO	79935-3712	rgutierrez@alltradeselectrical.com	915-629-0830	915-629-0862	ELECTRICAL CONTRACTOR, NEW CONSTRUCTION, SERVICE CALLS, REMODEL, T.I., EMERGENCY CALLS
ALLIED ELECTRIC SERVICES, INC.	Paige Paul	PO BOX 2691	GEORGETOWN	78627-2691	paige@alliedelectric.us	512-930-0767	512-868-1250	Electrical Contractor
ALMAN CONSTRUCTION SERVICES LPC	Samuel J. Guzman	7677 HUNNICUT ROAD	DALLAS	75228	sguzman@almanelec.com	214-388-1800	214-388-1818	Electrical Contractors
AMERICA TRANSPORTATION GROUP, INC.	Veronica Castaneda	14002 MINES RD	LAREDO	78045-7827	vcastaneda@americatransportation.net	956-725-7700	956-725-8800	Over the road transportation services.
AMIGO SERVICES, INC.	President - Sylvia A. Villanueva	5916 WISDOM CREEK	DALLAS	75249-2822	amigoservices@sbcglobal.net	972-979-0280	972-780-4710	INSPECTION, INSTALLATION, SERVICE AND REPAIR OF FIRE SPRINKLERS, FIRE ALARMS, FIRE PUMPS, AND BACKFLOW PREVENTERS. INSPECTION OF FIRE EXTINGUISHERS.

AMKAR ELECTRICAL CONSTRUCTION	Lynn C.Watson	AND SERVICES, LP	HURST	76053	lynn.watson@amkarinc.com	817-510-0771	800-794-7719	Electrical construction, both new and remodel, including commercial....
AMPS ELECTRICAL A/C AND HEATING	Sam F. Canty	6361 SINGLETON BLVD	DALLAS	75212-3017	ampsindallas@usa.com	214-678-0041	214-678-0635	electrical contractors and technicians provide Residential or Commercial Electrical Services
APEC, LLC	Jorge Salinas	15384 TRADESMAN DR.	SAN ANTONIO	78249	absolutepwr@satx.rr.com	210-647-3138	210-509-8869	Complete electrical installations on new ground up retail stores, retail-tenant finish outs, ground up restaurants, shell buildings, office buildings, warehouse buildings, commercial remodels/additions and residential applications.
APPLIED NETWORK SECURITY L.L.C	President/Samuel Yamthe	9800 N LAMAR BLVD STE 218	AUSTIN	78753-4144	styamthe@appliednetworksecurity.com	512-490-1572	866-779-2154	Applied Network Security sales security products and related software. provides and installs security systems including camera, video Surveillance, access control and alarm systems. We also provide security monitors services for intrusion systems.
ARC LIGHT ELECTRIC, INC.	Shannon Hutchinson	PO BOX 230905	HOUSTON	77223	shannon@arclightelectric.net	713-645-4777	713-645-4710	ELECTRICAL CONTRACTING
ARMOR PROFESSIONAL SECURITY SYSTEMS	Neal Garcia	4710 17TH STREET	LUBBOCK	79416	nealgarcia@the806inc.com	806-780-9601	806-791-5225	Access control - CCTV - Burglar Alarms - Fire alarms - Security systems.

A-ROCKET MOVING & STORAGE, INC.	Deandre Sam	3401 CORDER STREET	HOUSTON	77021	dmsam@arocket.com	713-748-6024	713-748-1780	Commercial and residential moving, warehousing, crating, storage & delivery service.
ASPIRE SALES, LLC	Janak,Sandra	13000 MURPHY RD, # 118	STAFFORD	77477-3960	aspiresales@aspiresales.net	281-242-2471	281-242-2475	Electrical contractors-Residential,Commercial wiring,service. New construction,remodels. Generator sales,installation,and service.Lighting specialist,
AUDIO-VIDEO I CORP.	Pamela E Beckham	P.O. BOX 8	AMARILLO	79105-0008	pbeckham@audio-videocorp.com	806-379-7700	806-374-7064	Electronic Equipment & Services
AV CUSTOM CABLE & SECURITY LLC	Ken Dillard	3900 STATE HIGHWAY 6 S STE 108	COLLEGE STA	77845-5831	Ken@avcustomcablesecurity.com	979-703-5260	979-488-4089	Installing low voltage fiber, access controls, security and alarm systems, telephones, data systems
AVID CONTROLS, INC.	Savell,Lori	PO BOX 1106	CYPRESS	77410-1106	lsavell@avidcontrolsinc.com	281-640-8604	281-640-8606	Manufacturer of Electrical Distribution Equipment, Drilling, Dredging, Mining Industries
AWS, INC.	MICHAEL HUERTA	4402 S CONGRESS AVE	AUSTIN	78745-1945	admin@awsolutions.net	512-233-4638	512-441-9473	Install, terminate, and test: Voice and Data cable, Cat 5/5e Cable, Coaxial gCable, Cable Runway/Routing Systems. Install: Wireless Networking equipment, Equipment Cabinets, Equipment Racks, Sell and install Telecom Equipment. Video cameras
B & E TRUCKING CO.	Bill Hall	7014 BUTTERFIELD	SAN ANTONIO	78227	bhall69032@gmail.com	210-267-8188	210-267-8188	Trucking & Material Hauling
BAYTECH SUPPLY INC	Bonnie YABLONSKI	1248 AUSTIN HWY STE 106-212	SAN ANTONIO	78209-4821	baytincorp@aol.com	210-828-3100	210-828-3294	distributor of products from more than 20,000 manufacturers.

BECKWITH ELECTRONIC ENGINEERING COM	MR SCHLUTER	5050 BECKWITH BLVD	SAN ANTONIO	78249-2247	TSCHLUTER@BEEC.COM	210-699-6441	210-699-6800	Sales, installation & service of communication systems.
BENMAR ELECTRIC, LLC	BENITO MARTINEZ	PO BOX 720861	MCALLEN	78504-0861	BENMAR@BENMARELECTRIC.COM	956-631-9995	956-631-9996	Electrical contractor - Commercial service and new construction.
BETANCOURT ELECTRIC, INC.	MANUEL BETANCOURT	8106 WETZEL ROAD	DICKINSON	77539-8417	terryeubanks@betancourt-electric.com	409-908-0953	409-908-0844	ELECTRICAL CONTRACTOR
BG TECHNOLOGIES OF AUSTIN, L.L.C.	LindaGibson	2301 DENTON DRIVE	AUSTIN	78758	linda@bg-technologies.com	512-336-2299	512-336-3811	Distributor of industrial electronics, electrical, material handling, and safety items.
BILLY STEWART, INC.	Tonjah Stewart	10606 SHADY TRL STE 114	DALLAS	75220	tstewart@billystewartinc.com	214-350-5095	214-350-1610	Installation of energy management controls.
BLACK ELECTRIC INC	ROSALEE B BLACK	PO BOX 126	MYRA	76253	BLACK@NTIN.NET	940-736-2227	940-736-2278	ELECTRICAL CONTRACTOR-SERVICES AND SUPPLIES
BLUE STAR ELECTRIC, LLC	SALLY L. WALKER	4701 SHOREWOOD DRIVE	ARLINGTON	76016	BLUESTARELECT@AOL.COM	817-253-7513	817-561-2812	Sale of Electrical and Mechanical Equipment and Material
BNC CONSULTANTS LLC	Brenda Savage	1922 MATTERHORN DR	GARLAND	75044-6738	bjsavage50@gmail.com	972-559-4768		Hot Shot Runs,Freight Brokers, Senior Citizen Errand Service
BRIDGES ELECTRIC, INC.	Hollis J. Bridges	15330 LBJ FRWY, STE #315	MESQUITE	75150	bridgeselectricinc@sbcglobal.net	972-686-8100	972-686-8101	ELECTRICAL CONTRACTOR
BROWNS PERMIAN ELECTRIC COMPANY	DENISE BROWN	P. O. BOX 5073	MIDLAND	79704		432-683-2971	432-683-2977	COMMERCIAL ELECTRICAL CONSTRUCTION.
BUCHANAN GENERAL STORE	MAUREEN EACHUS	10240 W. HWY 29	BURNET	78611	buchanangeneralstore@gmail.com	512-793-6600	512-793-6615	HARDWARE;PLUMBING;ELECTRICAL;GARDEN SUPPLIES (GENERAL STORE)
BULLCHASE, INC.	Marianne Galea	1420 CYPRESS CREEK RD. SUITE 200 - 310	CEDAR PARK	78613	marianne@bullchase.com	888-558-2855	888-531-2929	value added reseller of Maintenance, Repair & Operations (MRO) products.

BURGOON COMPANY DBA EVCO PARTNERS, LP	Nancy Evans	PO BOX 1168	GALVESTON	77553-1168	office@burgooncompany.com	409-766-1900	409-766-1899	value added HUB, sources and supplies AEDs, MRO, Safety,Lab, Medical, and Emergency Notice Supplies and Equipment. We team with major suppliers to offer a world class logistics platform.
BY TRUCK INC	Jeff Scott Jr	PO BOX 174161	ARLINGTON	76003-4161	bytruck-corp@usa.net	817-455-6333	817-516-1866	Hauling services provided by dump truck, transport road construction aggregates, landscaping materials, demolition haul off.
C & C ALCOSER TRUCKING	Cristoval Alcoser	4606 PINE HURST MESA	SAN ANTONIO	78247	alcosertrucking@sbcglobal.net	210-771-5458	210-599-1197	Trucking Hauling-Earth Materials
CALIBER SOLUTIONS	Kellye Badon	P O BOX 22761	BEAUMONT	77720	jleblanc@calibersolutions.com	409-554-0800	409-554-0811	electrical contractor supplying procurement, fabrication, electrical assembly field construction and heat & stream tracing.
CCT SUPPLY	Nancy Thomas	1358 SANDPIPER DR	CORPUS CHRISTI	78412-3818	cctsupplyelectrical@gmail.com	361-993-3567	361-334-0379	Electrical supplies, cables and wires,ballasts, bulbs & fixtures,circuit breakers,generators, all lamps,fixtures, poles,lighted signs,lighting controls,complete lighting systems,batteries
CDI VENTURES, INC.	Joseph Weyel	PO BOX 831146	SAN ANTONIO	78283-1146	joseph@cdi-tech.net	210-488-9066	210-488-9025	ELECTRICAL AND TELECOMMUNICATIONS CABLING INSTALLATION

CENTER ENTERPRISES INC	David Kuykendall	7405 RAILHEAD LN	HOUSTON	77086-3247	estimating@go-cec.com	713-861-5762	713-861-2603	Remodels and new electrical construction, service, maintenance and telecommunications.
CENTRAL ELECTRIC ENTERPRISES & COMPANY,	ALFRED MARTINEZ	2320 S.W. 36TH ST	SAN ANTONIO	78237-4036	CHRIS@CENTRALELECTRICSA.COM	210-433-9999	210-435-7777	ELECTRICAL CONTRACTOR EQUIPPED FOR ALL COMMERCIAL & INDUSTRIAL NEEDS
CENTRAL TEXAS HAULING	Javier Rodriguez	5202 BLUE SAGE DRIVE	PEARLAND	77584	cthpearland@aol.com	281-485-0849	281-485-0849	Tandem Truck - Earth Hauling
CHIRP SECURITY & AUDIO, L.L.C.	Robbie Verrett	PO BOX 150997	AUSTIN	78715-0997	sales@chirpsecurity.com	512-377-1718		Burglar Alarm, Fire Alarm, CCTV Cameras, Access Control, Audio, Video. Sales, Installation, Monitoring, Service.
CHT SERVICES, LLC	Jennifer Weedon	6470 S COUNTY ROAD 458	NORMANGEE	77871	jweedon73@gmail.com	936-396-6017	936-396-6017	Distributor of mechanical, electrical, plumbing, building construction materials, products, parts, and services.
CLARK HARDWARE, LTD.	Raymundo Perez	1202 CLARK BLVD.	LAREDO	78040	vcantu@clarkhardwareltd.com	956-723-2241	956-727-7532	WHOLESALE, HARDWARE, PLUMBING, IRRIGATION, AND INDUSTRIAL SUPPLIES
CLARY E&I SERVICES, LLC	Sandy Gatlin	P.O. BOX 343	OVERTON	75684	s.gatlin@claryei.com	903-834-0115	903-834-0116	Electrical and Instrumentation Installation and Maintenance at industrial locations.
COMPETITIVE CHOICE INC.	Aundrea Young	P.O. BOX 35743	HOUSTON	77235-5743	aundrea@competitivechoice.net	713-838-1144	713-838-1188	industrial distributor and supplier of MRO, electrical, plumbing and chemical solutions.
CORPUS CHRISTI ELECTRIC CO., INC.	Amanda Kellar	PO BOX 2884	CORPUS CHRISTI	78403-2884	akellar@cc-electric.com	361-882-2564	361-882-8318	Wholesaler of electrical materials, technical services, engineered products, cameras and process control systems.

CR ELECTRIC & SUPPLY LLC	Shelley Nelson	13800 MADRONE MOUNTAIN WAY	AUSTIN	78737-8822	snelson@crelectricsupply.com	512-517-6706		Purchasing and/or selling electrical materials
CRAGG'S DO IT BEST LUMBER AND	Douglas Cragg	HOME CENTER, INC.	SPRING BRANCH	78070-6177	craggsdib@gvtc.com	830-438-4732	830-438-4785	Building materials, hardware,electrical,plumbing,paint,housewares,lawn and garden supplies. Equipment rental.
CRE GROUP, LLC	Tracy L. Lovoi	208 WINKLER DRIVE	HOUSTON	77087	tlovoi@cregroup.com	832-287-6035	713-225-0554	Intercom/communication sales and service
CUSTOM ELECTRICAL ASSEMBLIES INC	Robert A Flores	PO BOX 630293	NACOGDOCHES	75963-0293	raflores@suddenlink.net	936-715-4011	936-371-4079	Electrical
D&G ELECTRICAL SERVICES LLC	Amy Garrett	PO BOX 1739	DRIPPING SPGS	78620-1739	amy@dghotwire.com	512-829-4711	512-894-0340	Electrical Contractor for Commercial & Residential
D&SS CONSTRUCTION INC	JANNA SCHURY	P O BOX 8313	CORPUS CHRISTI	78468	jschury@aol.com	361-992-3566	361-992-8627	GENERAL CONTRACTOR.
D.E.E.R. TRUCKING, LLC	RAY, DERRICK	491 HAMPEL ROAD	PALMER	75152	DEERTRUCKINGLLC@YAHOO.COM	972-228-4615	972-228-4615	HAULING
DAN-ELI ACE FORWARDING INC	FIDENCIO FLORES JR	2201 UVALDE AVE., SUITE 19	MCALLEN	78503	daneliace@aol.com	956-682-2746	956-631-9700	AIR FREIGHT, Hot shot service, transportation, air, land, ocean,
DFW LINQ TRANSPORT, INC	Hector Dayer	2300 VALLEY VIEW LANE	IRVING	75062	hector@linqtransport.com	800-975-4813	972-573-4238	General Freight Trucking, Long-Distance, Truckload
DIAMOND P ENTERPRISES INC.	Domingo Perez, Jr.	3300 MILAM DRIVE	BROWNWOOD	76801	diamondp@gte.net	325-643-5629	325-646-5356	Electrical Contractors
DOUBLE S MARKETING, LP	Shelley S. Nelson	13800 MADRONE MOUNTAIN WAY	AUSTIN	78737	schmidt24@austin.rr.com	512-517-6706	512-376-2851	Sales of Electrical Supplies, Gear, Equipment, etc to subcontractors in the construction industry

DURAN INDUSTRIES, INC.	Daniel Basquez	1401 TI BLVD	RICHARDSON	75081-4892	dbasquez@duranco.com	972-238-7122	972-238-7123	WHOLESALE DISTRIBUTOR OF ELECTRICAL AND LIGHTING PRODUCTS GEARED TOWARDS FACILITEIS MAINTENANCE, REPAIR, AND OPERATIONS IN CONSTRUCTION, INDUSTRIAL, COMMERCIAL AND RESIDENTIAL BUILDINGS AND STRUCTURES
DYNAMARK SECURITY CENTERS	William Mandel	6622 JEFFERSON RD	CORPUS CHRISTI	78413-6068	wmandel@dynamark.cc	361-852-5276	361-852-5294	Residetial / Commercial / Industrial / Ranch. Burgal / Fire / Personal Security Alarms, Monitoring, Access Control, CCTV, Intercom, Custom Gates, Cellular Back-up. Central Vac Units. Custom Application
EDGE COMMUNICATIONS, LLC	Stephanie Ferrari	11603 SPRING CYPRESS RD	HOUSTON	77375	stephanie@edgecommllc.com	281-598-1022	281-200-3344	Wholesale Electrical/Construction supplies
EDGE ELECTRIC, INC.	RUSSELL JOHNSON	PO BOX 252	DRIFTWOOD	78619-0252	RUSSELL@EDGEELECTRICINC.COM	512-853-9647	512-853-9020	COMMERCIAL ELECTRICAL SERVICES - NEW CONSTRUCTION, REMODEL, TENANT FINISH OUT, SERVICE WORK/REPAIRS/MAINTENANCE.
EHH ELECTRIC SERVICE, LLC	Stella Grinage	1423 S. WW WHITE RD, SUITE 2	SAN ANTONIO	78220-4901	ehardemon@sbcglobal.net	210-385-0220	866-943-7308	Electrical--Layout, Bid, Demo, Install outlets, Power, Fixtures
EL PASO J. A.G., INC.	Patricia Castro	230 CHELSEA ST	EL PASO	79905-1746	jag@elpasojag.com	915-533-8607	480-247-4616	Electrical by trade, commercial, industrial, residential.

EL PASO SOL POWER ELECTRIC	Juan Gonzalez	1521 CEDARDALE PL	EL PASO	79925	jagsse@yahoo.com	915-867-4310	915-222-8930	Provide and install Electrical material, devices and services in residential, commercial and Industrial.
ELDRIDGE ELECTRIC CO. OF BEAUMONT, INC.	Bobby Hines	13315 WESTERN OAK DRIVE	HELOTES	78023	bhines@eldridge-electric.com	210-695-9113	210-695-9792	Provides electrical,voice,data and fiber optic cabling solutions.
ELECTRICIAN SERVICE	Jose A Trevino	712 S PARK ST	UVALDE	78801-6106	joe_electricianser@sbcglobal.net	830-278-9602		running conduit, general wiring, trenching, installing transformers, running secondary wiring, installing panel boards up to 2200 Amps and commercial electrical work.
ELECTRIPRO INC. DBA INTEGRATED TECHNOLOG	Robert A. Martinez	4509 OSBORNE DR	EL PASO	79922-1070	Sales@intechd.com	915-532-8687	915-532-1701	Security and Electrical Contractors. Sales and Service of all Security and Electrical products to include CCTV, Access Control, Gate Systems, Fire Detection/Fire Suppression, Design Svcs, Power Factor and Thermographic studies, Power Quality and more.
ELECTRONIC ASSEMBLY SERVICES, INC.	Evelyn Fletcher	4501 SOUTH PINEMONTSUITE 108	HOUSTON	77041	efletcher@easinchou.com	713-686-4390	713-686-4399	ASSEMBLES PC BOARDS, ELECTRICAL/MECHANICAL, CABLES, HARNESSES, AND CONTROL PANELS.
ENERGY ELECTRIC SUPPLY, INC.	ENRIQUE SAAVEDRA	PO BOX 690442	HOUSTON	77269	energyelectric@comcast.net	281-376-5165	281-257-9818	ELECTRICAL SUPPLIES
EPOTEX ELECTRIC LLC	Felipe A Velasquez	3914 HARLAND DR	HOUSTON	77092	felipe@epotexelectric.com	832-216-8166	713-476-9190	Electrical residencia,comercial and industrial.
ETHOS DISTRIBUTION PARTNERS LLC	Natalie Bazan Arellano	7929 WHEEL RIM CIR	AUSTIN	78749-2895	natalie@ethosdistribution.com	713-825-2124		electrical, plumbing, and general construction materials and supplies.

EXACT SUPPLY COMPANY, LLC	Joe Martinez	PO BOX 1644	PFLUGERVILLE	78691-1644	joe@exactsupply.com	512-497-7867	512-432-5766	Industrial supplies, pumps, and motors.
EXCARGO SERVICES, INC.	Faschingbauer,Marcia H.	PO BOX 230306	HOUSTON	77223-0306	mhfaschingbauer@excargo.com	713-921-7700	832-204-4256	Local and regional trucking, warehousing, container drayage, truckload and intermodal.
FLORES TECHNICAL SERVICES, INC.	David Schmitz	13531 FLOYD CIRCLE	DALLAS	75243	gflores@fts-dfw.com	972-792-7793	972-792-7149	INSTALLATION OF ELECTRONIC SECURITY & FIRE SYSTEMS, Also ELECTRICAL Systems
FMW DISTRIBUTORS, INC.	FRAN WHITEHEAD	58 BROOKGREEN CIR S	MONTGOMERY	77356-8360	admin@fmw411.com	936-449-6059	936-647-0003	MANUFACTURER'S REPRESENTATIVE AND DISTRIBUTOR OF MRO EQUIPMENT & SUPPLIES, INCLUDING HVAC, SECURITY, ELECTRONICS, ELECTRICAL, SAFETY PRODUCTS.
FOUR FEATHERS ALARM, LLC	John Palmer	3621 POTTSBORO RD # 137	DENISON	75020-9311	john.palmer@fourfeathersalarm.com	903-647-4105		Fire, Security, Surveillance, Access Control and Communication Systems. New installation, Retro-fit, Maintenance, Inspections.
FRANCISCO CRUZ, INC.	Francisco Cruz	7355 MOLINE ST	HOUSTON	77087-4425	texansone@electricals-inc.com	713-926-2899	713-926-8172	New Electrical Installation.
FREDDIE AMERICA LIMITED LIABILITY CO	Freddie Luis Lopez	426 WALNUT ST	DUNCANVILLE	75116-3432	freddie1@freddieamerica.com	972-352-5200	972-352-5200	electrical contracting for commercial, industrial, electrical maintenance, planning, solar and residential.
FREEMAN SALES, LLC	Sarah Thompson	8992 PRESTON RD STE 110	FRISCO	75034	freemansales@tx.rr.com	469-568-4918	469-568-4919	Light fixtures, switchgear, fire alarms, and various systems.

GALAXY ELECTRONICS COMPANY	samyang@galaxyee.com	201 E ARAPAHO RD	RICHARDSON	75081-6203	samyang@galaxyee.com	972-234-0065	972-234-0066	MANUFACTURER OF CUSTOM FIBER OPTIC & COOPER CABLE ASSEMBLIES. PRODUCTS INCLUDE CAT5E/CAT6 ETHERNET PATCH CORDS, FIBER OPTIC PASSIVE COMPONENTS, AND FIBER OPTIC ENCLOSURES FOR DATA & VOICE TRANSFER.
GALLEGOS ELECTRIC, INC.	PRES/JUAN R. GALLEGOS	1350 EL JARDIN HTS. RD.	BROWNSVILLE	78526	GALLEGOSELECTRIC@EMAIL.COM	956-542-0058	956-548-1392	eLECTRICAL CONTRACTOR, REPARIS, ADDITIONS, AND NEW CONSTRUCTION OF ELECTRICAL INSTALLATIONS.
GARCOM, INC.	JESUS ALBERTO GARCIA	1008 DIESEL DR	EL PASO	79907-3100	info@garcominc.com	915-859-2424	915-775-0222	PLACEMENT OF TELECOMMUNICATIONS HARDWARE, ENGINEERING, TRENCHING, ONSITE INSTALLATION
GENESIS TELECOM, INC.	Debra Schindler-Boultinghouse	1225 NORTH LOOP W STE 705	HOUSTON	77008-1757	debra@genesisbcs.com	713-868-5415	713-868-6128	TELECOM, SECURITY, AND STRUCTURED CABLING BUSINESS. VoIP systems, IP security and video surveillance systems, access control systems, HD video conferencing, LAN,WAN & POE switches, & structured cabling installation. LED lighting retrofit solutions
GLOBE ELECTRIC SUPPLY COMPANY, INC.	EDNA DOUADI	PO BOX 710548	HOUSTON	77271-0548	stever@globelectric.com	289-933-0909	281-933-1001	Wholesale Distributor
GLORY-LE TRUCKING COMPANY	Leatra Medlow	P. O. BOX 450072	HOUSTON	77245	spholliday24@hotmail.com	713-434-9773	281-433-7444	Speciality Hauling-prestressed concrete. steel pipes, steel sheet piling and misc. equipment

GOLDEN LOGISTICS, LLC	Barbara A. Billups	2766 HARNEY RD	SAN ANTONIO	78234-2688	goldenlogistics310@yahoo.com	210-854-3877	210-492-9595	Logistics Consulting, Courier, Logistics, Warehousing
GONZALES COMMERCIAL ELECTRIC CORPORATION	Robert J. Gonzales	5235 MILWEE STREET	HOUSTON	77092	robertg@gonzalesce.com	713-697-3559	713-697-3568	Electrical Installation Services
GOODE SOLUTIONS	Brenda J Goode	PO BOX 1910	BOYD	76023	pgjb8_@msn.com	817-992-0037	855-631-4153	Supply needed items to service industry.
GREYDOT LIMITED LIABILITY COMPANY	Tyrell Stevens	5960 N SAM HOUSTON PKWY E	HUMBLE	77396-3280	tdstevens2007@gmail.com	832-641-8037		Electrical; residential & commercial
GULF COAST ELECTRIC CO., INC.	MONTY PICARD	2005 PECOS STREET	BEAUMONT	77701	monty@gulfcoastelectric.com	409-833-2828	409-833-4308	ELECTRICAL CONTRACTOR - COMMERCIAL - LIGHT INDUSTRIAL/RESIDENTIAL
H. J. LAREDO CO., INC.	Hector Laredo	15306 BELLPORT DR	HOUSTON	77084-7402	hector@laredoco.com	281-345-0981		Master Electrician &Texas A/C Contractor. Electrical services: maintenance, repairs, wiring and installations
HAMPTON INDUSTRIES LLC	Sarah Hampton Cambas	5250 BROWNWAY ST	HOUSTON	77056-4932	hamptonindustriesllc@gmail.com	713-561-3853		Freight Management Logistics; Materials and Supplies Distribution Management; Electrical Cables, Wires, Equipment and Supplies, Generators
HAROS PARTNERS, LP	Heriberto Haros	7514 MANSFIELD HWY	KENEDALE	76060	heriberto@harosbros.com	817-572-6332	817-478-4420	Underground Utility Construction.
HARRIS UNLIMITED	DARIRON L HARRIS	828 EDGEWOOD DR	DESOTO	75115-4333	darironh@yahoo.com	214-683-3584		Interstate trucking company that specializes in expedited freight delivery.
HARRISON TRUCK LINES, INC.	JEANETTE HARRISON	P O BOX 486	BELLVILLE	77418	jeanetteharrison20@yahoo.com	979-865-9127	979-865-5214	TRUCKING SERVICE
HAUL-LINE, INC.	Ricardo Gomez	8529 ARBOLEDA	EL PASO	79907	haul_line@yahoo.com	915-346-2132	915-856-3243	Transportation/Logistics

HDD ENTERPRISES	HAROLD WASH	900 PECAN ST E	PFLUGERVILLE	78660-8048	hwash35@gmail.com	512-287-0660	512-777-4939	INDUSTRIAL supplies,pumps motors,plumbing,electrical,HVAC,safety equipment,laboratory,Janitorial,
HENDERSON TELECOM SERVICES, INC.	Jan Henderson	8520 SWEETWATER DR	HOUSTON	77037	janh@cwhendersonelectric.com	281-447-5821		Provide and install cable for data and telecommunications.
HENRY DEL LLANO, INC.	Henry Del Llano	PO BOX 5245	CORPUS CHRISTI	78465	henry@cielectrical.com	361-885-0315	361-885-0324	ELECTRICAL CONSTRUCTION & MAINTENANCE
HERCULES ENTERPRISES	Gil Aguirre Jr	3718 EDGAR PARK AVE	EL PASO	79904	gila30468@aol.com	915-730-9465	915-400-5346	Electrical Engineering and Consulting Services
HIB TECHNICAL INSTALLATION SERVICES, INC	Harold D. Barnes	8309 LUNA DR	ROWLETT	75088-7679	hibtic.usavet@gmail.com	214-450-8896	972-463-0812	Cable and wiring Installation, Project Management, Test, Maintain, Site Surveys, Fiber Optic, Splicing Cables, Telecommunication
HI-TECH SECURITY, INC.	Lou Ann Young	2801 KINGSWOOD DRIVE	GRAPEVINE	76051	louannyoung@verizon.net	817-481-8771	817-946-3923	INSTALLATION OF FIRE ALARM & SECURITY SYSTEMS
HI-TEK SOUND & SIGNAL, INC.	JO MARIE FERNANDEZ	4030 TIFFANY CT	EL PASO	79938-9648	hiteksoundsignalep@sbcglobal.net	915-855-2255	915-855-2742	Sales,installion,and testing as required by N.F.P.A. of Fire Alarm Systems,Access Control,Camera Systems,Public Address Systems.
HJD CAPITAL ELECTRIC, INC.	Dave Wineman	5424 W US HIGHWAY 90	SAN ANTONIO	78227-4219	dwineman@hjdcapital.com	210-681-0954	210-684-0009	General Contractor Electrical Contractor
HORN'S CREW TRUCKING	Alvin Horn	107 B CHERIE	LONGVIEW	75604-3275	hornscrewhornscrew@yahoo.com	903-295-5856	903-295-5856	Freight transport,cleans up Construction, Waste disposal hauling
HOUBOLTCO, INC.	Virginia Cox	PO BOX 87181	HOUSTON	77287	houbolico@yahoo.com	713-943-9695	713-946-0210	General Contractor's supplies covering many trades in the construction industry.

HOUSTON FIRE & SECURITY	Vincent Bonoan	15112 LEE ROAD, STE. 401	HUMBLE	77396	houstonfire23@earthlink.net	281-446-2182	281-446-8513	INSTALLATION OF FIRE ALARM SYSTEM & SECURITY SYSTEMS
HUNEKE ENTERPRISES, L.L.C.	Joseph Huneke	307 S ELM ST	WAXAHACHIE	75165	josephhuneke@hunekeenterprises.com	972-935-0310	972-937-9044	Electrical Contracting
IDI ELECTRIC LLC	Richard White	4607 RO DRIVE	SPICEWOOD	78669-6458	rwhite@idielectric.com	512-436-9204		Electrical Contractor
INFINITY CREATIONS AND ELECTRIC COMPANY	RICARDO GONZALEZ	1308 PROLONGACION GONZALEZ RD	WESLACO	78596-2775	INFINITYCREATIONSELECTRIC@YAHOO.COM	956-578-9251		Electrical contractor.
INTEGRUS ELECTRIC, LTD.	Brenda Montgomery	735 PLAZA BLVD., #116	COPPELL	75019	brenda.montgomery@integruselectric.com	972-459-0469	972-459-0412	Commercial, Industrial and residential electrical installations.
INTELLIGENT INTEGRATED SYSTEMS, LLC	Carlos Miranda	2517 MERRIMAC DR	LEAGUE CITY	77573-4813	cmiranda@intelli-systemstech.com	281-332-3576	832-533-2519	electrical contracting, audio/video and consumer electronics, systems integration, automation, low voltage wiring
INTERNAL CONTROL SYSTEMS, INC.	Diane L. Jackson	3019 ALVIN DEVANE BLVD.	AUSTIN	78741	djackson@internalcontrolsys.com	512-326-1177	512-326-1207	Design, install, service integrated access control, fire alarm, security, intercom, voice/data, structured cable systems in Central and South Texas.
J & B ELECTRIC, INC.	Betric Carrillo	14300 NORTHWEST FREEWAY, SUITE A-9	HOUSTON	77040		713-895-7588	713-895-7944	Electrical contractor.
J. P. RYAN ENTERPRISES, INC.	MARY RYAN	P O BOX 7778	THE WOODLANDS	77387	pr@ryansales.net	281-363-1106	281-367-0187	HIGH VOLTAGE ELECTRICAL EQUIPMENT REPRESENTATIVES AND DISTRIBUTORS
J.S. ELECTRIC, INC.	Brenda Schmidt	4702 FM 1327	BUDA	78610-9624	jselectric@jselectric.com	512-243-2700	512-243-2702	ELECTRICAL CONTRACTING & SERVICE
JAKECO CONSTRUCTION, INC.	Nicole	347 ROSE MEADOW DR	LA VERNIA	78121-4764	jacoinc@aol.com	210-745-1302	210-745-1357	Industrial/commercial Contracting, general contracting Electrical contracting

JAM ELECTRICAL, INC.	Marlyss Young	330 COUNTY ROAD 4011	DAYTON	77535-7426	jamelectric@gmail.com	713-898-1286	281-385-2871	Electrical contractor-install conduit, electrical wire, lights,generators, lighting & surge protection.
JAMES EVANS SERVICES	James W. Evans	1671 RIVERVIEW DR. STE 205-B	LEWISVILLE	75056	kwhitehead@jescitx.com	214-621-3504	469-200-8580	Electrical Contractor, residential, commercial, industrial, lighting
JOSEPH & SAMMEL, INC.	Raymond Evans	407 BAYLOR ST.,	AUSTIN	78746	raymond@swestelectric.com	512-320-0900	512-320-8141	wholesale electrical distributor; electrical & lighting supplies, Lighting pole work, bucket truck.
JPL ELECTRIC, LLC	JANET E LEBLANC	11720 DUGAT RD	BEAUMONT	77705-9021	janetleblanc@sbcglobal.net	409-794-1780	409-794-1780	ELECTRICAL CONTRACTOR - COMMERCIAL - LIGHT INDUSTRIAL
JTE COMPANY LLC	Jeff Ellison	405 SUNFLOWER DR.	PFLUGERVILLE	78691-3605	jtecollc@gmail.com	512-934-1905	512-990-9850	Supplier of Tools, Equipment, and Materials for industrial use.
K&M ELECTRICAL SERVICES LLC	Heather Romero	12742 CINCO DE MAYO	SAN ANTONIO	78252-1942	KandMElectricalServices@yahoo.com	210-363-1478		Electrical:Commercial
KGR SUPPLY, LLC	KAREN G. RIKER	920 BLUEBONNET DR STE 100	IRVING	75060	AKRIKER@VERIZON.NET	972-438-1069	972-579-8069	ELECTRICAL EQUIPMENT SUPPLIER
K-INDUSTRIAL SUPPLY & SALES	Karon L. Syracuse	300 BELCHER ST	CLEVELAND	77327	k_industrial_supply@yahoo.com	281-853-7195	281-592-0425	INDUSTRIAL SUPPLY-WELDING, SUPPLY PIPE VALVES, FITTINGS-STEEL; JANITORIAL SUPPLY ELECTRICAL SUPPLY COMPRESSORS POWER TOOLS SAFETY, SUPPLY LUB
KJK LOGISTICS INCORPORATED	Kristy J Kroll	115 HAHNE RD	BANDERA	78003-6113	kris@ets-atlanta.com	830-928-1717	210-247-9379	Transportation of freight via truckload,expedited truck, domestic air charter, international air & ocean.

K-MAX FREIGHT	Nicole Frederick-Walker	PO BOX 381	WALLER	77484	KMaxFreight@gmail.com	832-675-5434		Transportation of freight / goods
KNOST ELECTRIC INC	Jo E. Knost	700 NORTH MAIN	BEAUMONT	77701	knostelectric@sbcglobal.net	409-833-0770	409-833-0271	Electrical Contracting
L.G. ELECTRICAL SERVICES LLC	Leonel Garcia	11106 CORA STREET	HOUSTON	77088	lgelectric@sbcglobal.net	281-272-9180	832-230-0170	Electrical Contractor, Installation low voltage & high voltage, service, repairs, troubleshooting, Prime Contractor or Subcontractor.
LARSONS MUSTANG ELECTRIC CO., INC.	Dr. Rebecca D Larson	P.O. BOX 489	MOODY	76557	rebecca@mustangelectric.me	254-853-3152	254-853-3162	ELECTRICAL CONTRACTOR - COMMERCIAL INDUSTRIAL
LD2 SERVICES, INC	Leslie Divin	342 SENTINEL OAKS	PINEHURST	77362	ld2services@yahoo.com	713-252-8786		Electrical, Civil and Mechanical Supplier
LECTRICS &, INC.	Cheryl R. Pritzen	17110 SILVERTHORNE LANE	SPRING	77379	lectricsinc@hotmail.com	281-320-9007	281-320-2161	Electrical Machinery Equipment And Supplies
LEE CONTRACT CARRIERS, INC.	LISA LEE	P O BOX 26764	AUSTIN	78755-0764	info@leecontractcarriers.com	512-272-4524	512-272-4541	local & long distance transportation & moving, storage, machinery moving, packing, crating, rigging, office moving
LEE ELECTRIC	Greg Lee	4206A 50TH ST #47	LUBBOCK	79413	leeelectric@att.net	806-368-8295	806-368-8296	Electrical Contractor for commercial,residential Electrical--- and light industrial electrical
LEXINE INC	Frank	322 N 3RD ST	MCALLEN	78501-2506	frank@lexinegroup.com	956-992-0690	956-992-0765	Structured Cabling & Equipment Installations for: Security/Surveillance CCTV, Data/Computer/Network, Audio/Video, Electrical, Solar PV Systems, Residential & Commercial. Service & Maintenance.

LILLY'S TRUCKING AND ESCAVATION, INC.	Kennard Lilly	617 RIDGECREST	LONGVIEW	75602	klilly@prodigy.net	903-387-0320	903-758-0221	Transporting and hauling, trucking, inluding dump truck and excavation.
LOGAN TRANSPORTATION, INC.	BILLY STEEN	13100 W HIGHWAY 80 E	ODESSA	79765-9629	BSTEEN.LOGANTRANS@YAHOO.COM	432-559-5665	432-561-5350	Freight/transportation in the areas of: oilfield,pipe racks,tubing,casing,BOP'S,elevators,lumber,building supplies and heavy equipment.
LOGISTICS TRADE INTERNATIONAL	Yezbel Garcia	3966 GREENS PRAIRIE RD W	COLLEGE STATION	77845-7339	yezbelg@tint.net	979-268-4200	979-690-1900	Logistics- transportation of goods
LOGNET WORLDWIDE, INC.	VANDARISE CLARK	3340 GREENS RD. STE. 880	HOUSTON	77032-2240	van_clark@lognetworldwide.com	281-449-5067	281-449-9285	PROVIDING CARGO TRANSPORTATION AND LOGISTICAL SERVICES WORLDWIDE VIA AIR, SEA, OR GROUND TRANSPORTATION.
LOW VOLTAGE SOLUTIONS, INC.	Tri Pazoureck	11496 LUNA RD	FARMERS BRANCH	75234-9425	tri.pazoureck@lvsinc.com	972-556-0656	972-556-0651	electrical installation company that is hired by large controls companies. We are hired to perform the installation of the electrical work for their controls and some fire alarm systems.
LTH ENTERPRISES, LTD	JUANITA VALARIE NEIDIG/PARTNER	19025 LITTIG ROAD	ELGIN	78621	valarie@lthtexas.com	512-281-9579	512-281-5541	SELL OF ELECTRICAL COMMODITIES & MRO.
M C SUPPLY COMPANY, INC.	MARGARET CAPEHART/PRESIDENT	P O BOX 92397	SOUTHLAKE	76092-3211	margaret.capehart@verizon.net	817-421-3023	817-421-0318	CONTRUCTION AND ELECTRICAL SUPPLIES FOR RESALE
M.J. CARGILE TRUCKING	Melvin J. Cargile	17442 OLD SOUR LAKE RD	BEAUMONT	77713-3632	cargilemj@yahoo.com	409-758-7676	409-752-3868	Trucking Company, Hauling Dirt, Sand, Gravel and Miscellanies Hauling Freight Equipment by Flatbed Trailer
M3 ENTERPRISE LLC	Gay Lazarine Thomas	514 COUNTY ROAD 503	NACOGDOCHES	75961-0160	thomastgt@windstream.net	713-253-1822	936-569-0706	Towing, Recovery and Heavy Hauling

M5 CONTROLS CORP.	MARK TOVAR	PO BOX 1001	CIBOLO	78108-1001	MTOVAR@M5CONTROLS.COM	210-659-1105		Control panels,circuit brakers,disconnects,contactors ,overload relays,fuses,relays,pump panels,variable frequency drives,solid state soft starters,magnetic motor starters,combination starters.
MACK MANUFACTURING & MACHINE INC.	Janet Mack	5875 E STATE HIGHWAY 21	BRYAN	77808-8637	janetmackbolt@yahoo.com	979-778-8088	979-778-8310	Industrial construction and manufacturing supply
MAGRABBIT-DEDICATED FLEET, LLC	Tommy Hodinh	1212E ANDERSON LANE STE 800	AUSTIN	78752	thodinh@magrabbit.com	512-310-9903	512-310-8497	Local Delivery and Fleet Management
MARVIN GROVES ELECTRIC CO INC	MARVIN GROVES	P O BOX 2305	WICHITA FALLS	76307	m.groves@marvingroveselectric.com	940-767-2711	940-767-4688	electrical construction, general construction, security, fire alarm, gen sets,
MAT-ERIEL VAL-UES, LLC	Valerie Meverden	3223 EAGLE RDG	HARKER HEIGHTS	76548-8677	materielvalues@aol.com	254-340-4641		Wholesale agent/broker for electrical equipment and supplies.
MAVICH, LLC	FAITH GORDON	525 COMMERCE ST	SOUTHLAKE	76092-9190	SALES@MAVICH.COM	682-503-4484		electronic components including interconnects, semiconductors, passives, and specialty products from top industry suppliers.
MCA COMMUNICATIONS INC	Sherri Crist	525 NORTHVILLE	HOUSTON	77037	sales@mcacom.com	281-591-2434	281-591-7545	Installation & Maintenance of Voice, Data, Fiber, Video, Sound & Security
MCCAFFETY ELECTRIC CO., INC.	Pam Barnes	PO BOX 163	HUNTSVILLE	77342-0163	pambarnes@mccaffetyelectric.com	936-295-2831	936-291-6313	Electrical Sales and Service - Residental and Commercial/Contracting

MCCOY ELECTRICAL SERVICES, LLC	Tonya McCoy	100 MESQUITE ST	GIDDINGS	78942	tonya@mccoyelectricalservices.com	979-716-7221		Master Electrician licensed to service generators,branch circuits,ups systems, pdu's,main switch gear,service panels,sub panels,lighting configurations,specially certified
MERRIGAN ELECTRIC, LLC	CHRISTINE L MERRIGAN	1115 ANTELOPE RIDGE	CEDAR PARK	78613	chris@merriganelectric.com	512-944-3217	512-287-4070	ELECTRICAL INSTALLATION, SERVICE AND REPAIR.
MILESTONE SUPPLY, LLC	Alifya Musa	26 DARTMOOR ST.	SUGAR LAND	77479	saburm@gmail.com	281-313-0755	281-491-0343	HARDWARE, PLUMBING, TEXTILE, ELECTRONICS SUPPLIER
MILLENNIUM ELECTRICAL CONTRACTORS, INC.	Ana Leticia Medina	12770 EDGEMERE C3	EL PASO	79938	ana@milenniumelectrical-inc.com	915-856-1821	915-855-6394	ELECTRIC CONTRACTOR.
MISSION TRADE SERVICE, LLC.	Linda Q. Benke	1106 GREY OAK DR	SAN ANTONIO	78213-2015	linda@missiots.com	210-897-3100		low voltage and cable installation, including but not limited to security, phone, and data cable.
MORENO SUPPLY, INC.	RALPH MORENO	4140 BILLY MITCHELL DR.	ADDISON	75001	ralphellenmoreno@msn.com	972-233-4429	972-233-4906	ELECTRICAL WHOLESALE-products sold to electrical contractors.
MOUNTAIN ELECTRIC CORPORATION	ANNA FULLER	4616 TITANIC AVE	EL PASO	79904-3335	melectric@elpbizclass.com	915-755-5118	915-755-7239	ELECTRIC CONTRACTOR
NEXT LEVEL MOVERS LLC	HAROLD SMITH	52 BIG TRL	MISSOURI CITY	77459-6827	hsmith@nextlevelmovers.com	281-489-4667	832-440-0261	MOVING SERVICES, TRANSPORTATION & STORAGE
NORTH STAR ELECTRIC CO.	Robert Valdez	10925 IOTA	SAN ANTONIO	78217		210-590-2566	210-590-7416	Electrical Installation, maintenance and service.
NORTHPOINT II TECHNOLOGIES DBA A&M ELECT	Hector Macias	13321 TOBACCO RD	EL PASO	79938-8963	hectorm@anmelectronics.com	915-591-6300	915-591-6301	Manufacturing of custom cable assys, wire harnesses, injection molding, fiber optic assy & termination, integration of electronic bays/panels

NORTHWEST ELECTRIC, LLC.	Northwest Electric, LLC.	1805 HOLLY TRL	CEDAR PARK	78613-6444	business@northwestelectric.us	512-704-6426	512-717-6740	Installation of electrical lighting, gear and equipment.
ORTEGA ELECTRICAL SOLUTIONS	Daniel Ortega	125 N GUADALUPE ST STE 101	SAN MARCOS	78666-5677	dannyortega11@gmail.com	512-665-3719	512-392-2444	Supply of electrical supplies to contractors
PANCHO'S TRANSPORTATION SERVICES, LLC	Frank Quesada	PO BOX 420007	LAREDO	78042	pquesada@pnqs.com	956-722-6446	956-726-3810	Regionally Trucking and transportation.
PETE'S ELECTRIC	Pedro Silguero	28115 BEAN RD	SAN BENITO	78586-8236	peteselectricco@aol.com	956-241-6995	956-748-3556	Electrical Subcontractor.
PINNACLE ELECTRIC INC	Charles M. Hernandez	5009 MOSSON RD.	FORT WORTH	76119	pinnacle_hernandez@sbcglobal.net	817-561-2503	817-561-2776	Electrical Contractor
PRECISION SECURITY, LLC	Joe Gutierrez	7810 LATIGO	SAN ANTONIO	78227	joegutierrez_ps@yahoo.com	210-854-1898		Security company specializing in the design, management and complete installation of security systems.
PREFERRED TECHNOLOGIES, INC.	Charlie Castillo, Jr.	1414 WEDGEWOOD STREET	HOUSTON	77093	shauncastillo@pref-tech.com	281-442-0550	281-449-5597	Security access, cable infrastructure, CCTV, perimeter detction design & installation
PREMIER INDUSTRIAL SUPPLY, LLC	Andre Barnes	11625 CUSTER RD	FRISCO	75035	abarnes@premierindustrials.com	214-592-4962	214-592-8154	constuction products, cable lines and components, electrical supplies and components
PRO TECH FAST LLC	Lonny P. Gordon	817 CEDAR RIDGE ST	HARKER HEIGHTS	76548-1521	gordon@protechfirealarm.com	254-423-0947	254-699-6322	Test,Inspect,Maintain and provide parts for Fire Alarm Systems, Kitchen Hoods and Fire Extinguishers.
PROFAM SERVICES LLC	Marlon Peoples	4834 JOHN VICTOR DR	SAN ANTONIO	78220-1825	mpeoples2014@gmail.com	210-417-6080	210-855-3488	Local Freight transportation courier and delivery service.
PROGRESSIVE PROTECTION SECURITY	EDDIE NOTGRASS	SYSTEMS, INC.	BELTON	76513-4568	eddie@ppprotection.com	254-933-9025	254-933-9022	Installation and maintenance of commercial/residential Security/CCTV/Intercom/Paging and PA Systems.

PROJECT SUPPORT SERVICES	PATRICIA M. BLANTON	4904 BAY OAKS COURT	COLLEGE STATION	77845	patti@pss-texas.com	979-255-6561	979-690-2049	Electrical Product Sales.
PRONTO SHIPPING AND PACKAGING	Tramell Kukoyi	SERVICES, INC.	HOUSTON	77056-6601	tramell.kukoyi@prontoairfreight.com	713-782-1703	713-782-1713	air freight and trucking company
PTS SERVICE	Bozena Gorecka	101 SHASTA DR.	HICKORY CREEK	75065	piotr.74687@yahoo.com	940-326-9537	940-326-9538	Low voltage-special systems installation (fire alarm, PA, CCTV, sound, etc)
PULIDO TRUCKING, L.P.	Jose J. Pulido	514 W. 16TH STREET	HOUSTON	77008	pulido.trucking@comcast.net	713-514-0500	713-514-0511	Transportation for Fuel and Waste (Hazardous/Nonhazardous)
PURPOSE TRANSPORTATION LLC	KELLEY H CRAWFORD	701 HANOVER DR	GRAPEVINE	76051-7674	kelley@purposetransportation.com	972-746-4585	972-746-4584	transportation company, providing truckloads, hot shots, less than truckloads, and heavy haul.
QSS, L.C.	Pate Muse	220 BARREN SPRINGS DR., SUITE 4	HOUSTON	77090	emuse@qualitysecurity.com	281-820-9650	281-820-9797	Burglar, Fire, Cctv Systems Installation
QUINTANILLA TRANSPORTATION SERVICES	ROLANDO QUINTANILLA/OWNER	505 UNION PACIFIC	LAREDO	78045	ROQUIN@TQ.COM.MX	956-796-9775		Transportation Services.
R &R ENTERPRISES	ROSA GONZALES	3127 HITCHING POST	SAN ANTONIO	78217	rgonzales890@satx.rr.com	210-804-0959	210-804-1373	RESALE ELECTRIC MATERIAL, PLUMBING, ELECTRONICS, ETC..
R.E. WALDRIP & CO., INC.	Belinda Waldrip	PO BOX 396	PAMPA	79066-0396	belinda@rewinc.co	806-665-0433	806-665-1002	Electrical Supplies/Materials
R.F. ELECTRIC, INC.	Raymond Fuentes, Sr	1359 CRAMPTON ST	DALLAS	75207	raymondsfuentes@yahoo.com	214-631-8033	214-951-0346	Electrical Contractor
R.K. BASS ELECTRIC, INC.	Andy Bass	1200 E FM 2410 RD	HARKER HEIGHTS	76548-6846	cheryl@basselectric.com	254-698-8751	254-698-3411	Installing and Designing Complete Electrical Systems since 1985. Specializing in new electrical construction and commercial/residential service.

RAVING FAN TECHNOLOGIES, INC.	Connie Jo Coker	11876 FM 3270	TYLER	75708-3228	ConnieJo@rft-silverthorne.com	903-877-1776	903-877-3228	Comprehensive Structured Cabling Solutions Raving Fan Technologies is an experienced installer of cabling,fiber optics and monitoring equipment. Providing project mgmt, installation for all voice,data,video,fiber,coax cabling and monitoring systems.
RAY CANNEDY SECURITY & INVESTIGATIONS	MARY Cannedy SEIGLER	MARY CANNEDY SEIGLER	WICHITA FALLS	76308	mary@cannedysecurity.com	940-322-3856	940-322-3859	SECURITY SERVICES, GUARDS, ARMORED CARS, SECURITY SYSTEMS
REAL NETWORK SERVICES INC.	Jose Reyes	14209 PROTON RD	DALLAS	75244-3606	bids@aboutreal.com	214-475-3065	972-284-7221	Electrical Contractors
RJM GROUP, LLC DBA CITY BUILD UTILITY S	Robert Juarez	2801 HARRISBURG BLVD	HOUSTON	77003-1984	robert@citybuildsupplies.com	713-227-0508	713-227-0518	Supplier of Broadband Infrastructure products and test equipment and tools specializing in fiber optic network materials such as HDPE & PVC pipe, Vaults/Handholes, Fiber Optic & Copper cable, Splice Closures and Voice/Data connectivity products.
RME SUPPLY COMPANY	Rhonda J. Kelly	9435 LANDIS DR	BEAUMONT	77707-1152	rhondajk69@gmail.com	888-839-8713	888-818-6455	General merchandise supplier of building supplies, janitorial supplies, paper supplies and office supplies.
ROWLETT'S HARDWARE	Rodney Rowlett	1460 W HENDERSON ST	CLEBURNE	76033-5105	rodney@rowletthardware.com	817-645-7277	817-645-4206	Hardware Store, Propane, Feed, Culverts, Electrical, Plumbing, Paint, Hand Tools, Dickies Clothing

RSM LIGHTING, LLC	Kathleen McCarthy	3808 HARVEY PENICK DR	ROUND ROCK	78664-3953	kathleen@saltle.com	512-272-5000	512-272-8000	Electrical Contractor-ALL Work Install/Maintain Indoor/Outdoor Lights&Signs;Retrofit,Refurbish,New Construction; Parking Lot/Pole Light,Security/Emergency Light;Sign Repair/Service;Monthly Inspections;Bucket trucks;Genie lift;Repelling;Banners
RZ COMMUNICATIONS	Andrew Ramirez	1400 SMITH ROAD	AUSTIN	78721-3563	aramirez@rzaustin.com	512-386-7336	512-386-7350	Sell, install and service two way radio and related communication equipment
SALAZAR ELECTRIC & B DOUBLE E	Manuel Salazar	PO BOX 555	SWEETWATER	79556-0555	salazarelectriccontractor@gmail.com	325-236-6530	877-535-1101	Electrical Contractor residential, commercial and industrial type work.
SAR TRANSPORTATION LLC	Pam Davis	1101 JARVIS ROAD	SAGINAW	76179-5612	pam@sartrans.com	817-232-2599		Trucking and sale of aggregates and road building materials.
SECURE CAM INC.	David J. Torres	3100 INDEPENDENCE PRKWY STE 311-404	PLANO	75075	david@securecaminc.com	972-509-9300	972-509-9332	Security Systems Services (except Locksmiths)
SHAYCO, L.L.C.	Beth Kelly	2810 PRAIRIE CT	WYLIE	75098-6582	bkelly2442@yahoo.com	972-880-2065		logistics support and management for truckload, ltl, international and rail freight.

SIGMA SURVEILLANCE INC. DBA STS 360	Jessica Clark	1081 OHIO DR STE 1	PLANO	75093-5357	jessica@sts360.com	214-427-5559	972-392-3635	High Level IP Security Integrator -extensive experience in Gov/Ed – DIR Vendor – Offering security services such as surveillance, networking, access, Intrusion, Perimeter, Campus-Visitor Security, panic alarms and monitoring
SILVAS TRUCKING, LLC	Benito Silva	2509 JANICE LANE	FORT WORTH	76112	silvastruckingllc@att.net	817-401-9317	628-213-2569	Trucking, transportation,delivery,long/short hauls, construction dumptrucks services.
SIMBA INDUSTRIES	Vickie Kasten	PO BOX 3141	GRAPEVINE	76099-3141	sales@simbaindustries.com	817-251-4800	817-722-8377	industrial supplies of all catagories for Government entities. including elec, HVAC, mech, Safety, Watertreatment, Aviation (GSE), fire, police, health, electronics, plumbing, etc., and much more.
SITLLC, LLC	Alexander Rodas	5125 S MCCOLL RD STE A	EDINBURG	78539-8211	arodas@sitllc.com	888-748-0956	888-748-0956	Audio, Video, Computer Networks, Telephone/Intercom, Climate Control, Lighting Control, Home Theater, Home/Building Automation, Window Treatment, Surveillance and Security Systems Installation and Maintenance
SMART DELIVERY SERVICE INC	Shawn Benjamin	751 PORT AMERICA PLACE	GRAPEVINE	76051-7638	sbenjamin@smart-delivery.com	817-540-0000	817-540-0003	Local Messengers and Local Delivery

SOLARTECH ELECTRIC	Roy Triggs	2408 BOZOKI RD	CLEBURNE	76031-7767	roy@solartechelectric.com	817-353-8939		design, install, & maintain commercial and industrial electrical systems. We design, install, & maintain solar pv systems.
SPIRIT TRUCKING LLC	Darci A. Uetrecht	4009 LILLIAN LN	AUSTIN	78749-3948	darci@spirittruckingllc.com	512-410-5326		Local general trucking and courier delivery services
SRB DISTRIBUTING	STEPHANIE R. BERNARDO	8112 CLEAR RIVER LN.	DENTON	76210	steph@srbdistributing.com	940-594-6107	469-287-6586	WHOLSALE DISTRIBUTOR OF BUILDING MATERIALS, INCLUDING FINISHED & UNFINISHED GOODS.
STENCE ELECTRIC, INC.	Glenda Stence	1001 W. 2ND ST	TAYLOR	76574	Glenda@stenceelectric.com	512-365-7785	512-365-1923	Industrial and Commercial Electrical Construction and Service
STERLING ELECTRICAL SERVICES, LLC DBA ST	Ruben Larez	3931 HALIK STREET	PEARLAND	77581	RL@SterlingWiring.com	281-997-0999	866-941-6310	Electrical, Power, & Lighting service & maintenance. Fiber Optic installation & termination. IP Phone Systems & Communictions. All cabling. UPS System
SWOFFORD ELECTRIC SUPPLY CORPORATION	GAY SWOFFORD	1160 NORTH GREAT SOUTHWEST PKWY	GRAND PRAIRIE	75050	gayswofford@swbell.net	972-647-1671	972-647-2650	SALE OF ELECTRICAL WIRING, INDOOR/OUTDOOR LTG DEVICES, POLES, FIRE & CARBON MONOXIDE MONITORS
TAG COMMUNICATIONS L.P.	Thomas A. Gonzales	16422 HUFSMITH-KOHRVILLE RD.	HOUSTON	77070	MarkT@tagcompanies.com	281-376-6055	281-376-7545	Installer of voice and data infrastructures, including fiber optic and copper cabling.
TDS EXPRESS INC	Virginia Kirk	PO BOX 2311	ATHENS	75751	skgk01@aol.com	903-681-6891	903-338-2148	TRANSPORTATION OF GOODS (FREIGHT)
TELTECH COMMUNICATIONS LLC	Lisa M Hanlon	6641 WOODLAND HILLS LANE	PLANO	75024	lisa@ttcsales.com	970-390-1658	469-777-3161	Other Electronic Parts and Equipment Merchant Wholesalers

SOLARTECH ELECTRIC	Roy Triggs	2408 BOZOKI RD	CLEBURNE	76031-7767	roy@solartechelectric.com	817-353-8939		design, install, & maintain commercial and industrial electrical systems. We design, install, & maintain solar pv systems.
SPIRIT TRUCKING LLC	Darci A. Uetrecht	4009 LILLIAN LN	AUSTIN	78749-3948	darci@spirittruckingllc.com	512-410-5326		Local general trucking and courier delivery services
SRB DISTRIBUTING	STEPHANIE R. BERNARDO	8112 CLEAR RIVER LN.	DENTON	76210	steph@srbdistributing.com	940-594-6107	469-287-6586	WHOLSALE DISTRIBUTOR OF BUILDING MATERIALS, INCLUDING FINISHED & UNFINISHED GOODS.
STENCE ELECTRIC, INC.	Glenda Stence	1001 W. 2ND ST	TAYLOR	76574	Glenda@stenceelectric.com	512-365-7785	512-365-1923	Industrial and Commercial Electrical Construction and Service
STERLING ELECTRICAL SERVICES, LLC DBA ST	Ruben Larez	3931 HALIK STREET	PEARLAND	77581	RL@SterlingWiring.com	281-997-0999	866-941-6310	Electrical, Power, & Lighting service & maintenance. Fiber Optic installation & termination. IP Phone Systems & Communictions. All cabling. UPS System
SWOFFORD ELECTRIC SUPPLY CORPORATION	GAY SWOFFORD	1160 NORTH GREAT SOUTHWEST PKWY	GRAND PRAIRIE	75050	gayswofford@swbell.net	972-647-1671	972-647-2650	SALE OF ELECTRICAL WIRING, INDOOR/OUTDOOR LTG DEVICES, POLES, FIRE & CARBON MONOXIDE MONITORS
TAG COMMUNICATIONS L.P.	Thomas A. Gonzales	16422 HUFSMITH-KOHRVILLE RD.	HOUSTON	77070	MarkT@tagcompanies.com	281-376-6055	281-376-7545	Installer of voice and data infrastructures, including fiber optic and copper cabling.
TDS EXPRESS INC	Virginia Kirk	PO BOX 2311	ATHENS	75751	skgk01@aol.com	903-681-6891	903-338-2148	TRANSPORTATION OF GOODS (FREIGHT)
TELTECH COMMUNICATIONS LLC	Lisa M Hanlon	6641 WOODLAND HILLS LANE	PLANO	75024	lisa@ttcsales.com	970-390-1658	469-777-3161	Other Electronic Parts and Equipment Merchant Wholesalers

THREE R FREIGHT, INC.	Rita Trammel	P O BOX 53185	LUBBOCK	79423-3185	threerfreight@aol.com	806-745-9300	803-403-1599	ARRANGEMENT OF SHIPPING FREIGHT BETWEEN CUSTOMER AND CARRIER.
TIGER TRANSPORTATION, INC.	Lynda Kroneman	P.O. BOX 2396	BELLAIRE	77402-2396	lynda@tigertransportation.com	713-666-5200	713-666-4848	TRUCKING INDUSTRY
TRANSPORTATION SUPPORT SERVICES,	PAMELA REGAN HAYES	INC.	IRVING	75014	PHAYES@TSSMOVES.COM	972-438-4151	972-438-3907	FREIGHT TRANSPORTATION LOGISTICS
TRAVERSE COMMUNICATIONS CONSULTING, LLC	MICHAEL ADAM SOTO	P.O. BOX 136788	FORT WORTH	76136-0788	msoto@traverseconsulting.com	817-781-2254		DESIGN SERVICES FOR COMMUNICATIONS INFRASTRUCTURE, SECURITY, POWER SYSTEMS ANALYSIS, VOICE AND DATA SYSTEMS.
TRINITY BAY CONSTRUSTION & DEVELOPMENT,	Alfred Mitchell	P.O. BOX 18742	SUGAR LAND	77459	tdcacase@yahoo.com	218-995-1657		Licensed Electrical Contractor, General Contractor, Industrial, Commericial and Residental construction.
TRITON SUPPLY, INC.	Traci Cockrell	6012 CAMPUS CIRCLE DR W	IRVING	75063-2678	traci@tritonsupply.net	214-382-4662	214-382-4663	providing project management and materials such as lamps, ballasts, light fixtures, switchgear, fuses, batteries, wire and cable, HVAC, Pumps, plumbing, window film, etc.
TROJAN ELECTRIC, INC.	MANUEL GONZALES	2515 MILLER LN	ARLINGTON	76013	manuelg@trojanelectric.com	817-467-1137	817-467-9562	ELECTRICAL CONTRACTOR
TURNKEY SECURITY, INC.	RICHARD MARTINEZ	PO BOX 1889	MANCHACA	78652-1889	richard@turnkeysecurity.com	512-292-8405	512-292-1370	Access Control, CCTV & Security systems Installation

TWISTED PAIR DATACOM SUPPLY, INC.	Sharon K. Morris	1111 JUPITER ROAD, SUITE 106-A	PLANO	75074	smorris@twistedsupply.com	972-767-2507	469-241-1505	Sale of cabling and cabling supplies. Fiber, CAT5e cabling CAT 3 cabling, CAT 6 cabling, patch panels, racks, inserts, jacks, faceplates, cabling testers, tie wraps, coaxial cable, rg connectors, etc.
U/N ELECTRIC SERVICE, INC.	Andrew Freeman	12634 RIVERHILL COURT	HOUSTON	77014	unelectric@att.net	281-919-2567	281-919-2568	Electrical.
UNITED CARRIERS LLC	Hector Bilbao	PO BOX 81762	AUSTIN	78708-1762	hector@unitedcarriers.com	512-213-2600	866-662-6116	Provide Logistics and Transportation of Freight in Texas and the US.
UNITED CONTROLS LLC	Jaime Perez	314 E NAKOMA ST STE K	SAN ANTONIO	78216-2733	info@unitedcontrols.biz	210-365-6946	830-438-9741	Low voltage wiring, Audio/video, & Control systems
VANGUARD FIRE SYSTEMS, L.P.	Cynthia Richter	2340 PATTERSON INDUSTRIAL DR	PFLUGERVILLE	78660-8303	cindy@vgfire.com	512-989-1600	512-989-1631	Design, Install, repair & maintain fire sprinklers,alarm and security systems.
VG ELECTRIC CONTRACTING, LLC	Victor Garcia	11901 BLUE CREEK DR	ALEDO	76008-3504	victor@vgecllc.com	972-408-6763	817-561-7520	Electrical Contractors and Other Wiring Installation Contractors
VILLARREAL & SONS ENTERPRISES, INC.	Ricardo Villarreal	PO BOX 2258	ANTHONY	79821-2258	RICK@ELECTRIC-1.COM	915-351-2444	915-351-7979	ElectricalService/CCTV& Access Control/IT/Solar Elec Install Cabling:New/Remodel,ltg retrofit,serv changes/upgrades; t/s&repair,power analysis/factor correction,control systems,bucket truck.TDLR CEU. 2.) Solar system design & install
WALKER COUNTY HARDWARE, INC.	JUDI HARDING	PO BOX 1086	HUNTSVILLE	77342-1086	WALKERHARD@TXCYBER.COM	936-295-7751	936-295-7731	retail hardware store,lawn and garden,paint,power tools & gift.

WARRIOR ELECTRIC INC.	Samuel Daniels	3401 LIBERTY RD. #1	HOUSTON	77026	ssandals@aol.com	713-223-5567	713-224-1054	Commercial and residential wiring.
WAYNE ELECTRIC, INC.	Smith,Sybill	11910 TRICKEY ROAD	HOUSTON	77067	sybill.m.smith@hotmail.com	281-872-8350	281-872-8377	ELECTRICAL CONTRACTOR
WEISINGER ELECTRIC, INC	Beth Weisinger	PO BOX 1366	LUFKIN	75902-1366	weisingr@consolidated.net	936-639-6076	936-639-6078	Electrical Contractor - commercial, industrial, residential service
WHIT'S ELECTRIC SUPPLY COMPANY, INC.	James Whitlock	10903 CULLEN BOULEVARD	HOUSTON	77047-1153	jowla47@aol.com	713-731-2941	713-731-8758	Electrical Supplies And Equipment
WHOLESALE ELECTRIC SUPPLY OF HOUSTON,INC	matt fowler	PO BOX 230197	HOUSTON	77223-0197	mfowler@wholesaleelectric.com	713-748-6100	713-749-8415	SALE OF ELECTRICAL SUPPLIES TO COMMERCIAL, RESIDENTIAL, INDUSTRIAL, AND VARIOUS OTHER CUSTOMERS.
WILLIS ELECTRICAL SALES, LLC	Sean Willis	10060 W GULF BANK RD	HOUSTON	77040-3160	sean.willis@williselectricalsales.com	281-469-1268	281-469-1214	Wholesale and retail sales of electrical enclosures,components, and customized control panels.
WIRE LINK NETWORK SERVICES INC.	Lynn Harris Dunn	4206 ROLLO COURT	FLOWER MOUND	75028	wirelinkservices@yahoo.com	469-223-0838	214-721-8774	Installation of low voltage cabling for voice, data, fiber optics, IT, electrical, access control and video surveillance.
WMB DESIGN & SUPPLY, LLC	Maureen M. Gilroy	8419 SHARPCREST ST	HOUSTON	77036-5509	maureen@wmbdesign-supply.com	281-300-8705	713-779-6507	Supplying Security Cameras, Cable, Mounting Brackets, Motion Censors, and other materials for various construction projects.
WOLVERINE ELECTRICAL CONTRACTORS, INC	James Vasquez	102 WOODCREST	SAN ANTONIO	78209	jv-wolveelec@sbcglobal.net	210-828-9976	210-522-0517	Electrical Contractor

WOOD ELECTRIC	Faustino Lucio III	11940 BALLIOL LN	CROWLEY	76036	woodelectricgroup@yahoo.com	817-645-6000	888-852-2724	Electrical services in a residential and/or commercial setting that can include repair, maintenance, remodel jobs and new installations.
YEAR ONE ELECTRICAL CONTRACTOR, LLC	Cesar Sanchez	10277 VALLE DE ORO DR	EL PASO	79927-3930	yearoneelectric@yahoo.com	915-500-4003		Electrical
ZITRO ELECTRIC, L.L.C.	Juan Ortiz	604 PALMVIEW DR.	PALMVIEW	78574	saray@zitroelectric.com	956-581-8899	956-581-8892	Commercial electrical service/commercial electrical service and new construction
ZOLUTIONS, LLC	Zoe Mayfield	4626 FLOYD ST	HOUSTON	77007	zoe@mayfieldelectric.com	713-864-6336	713-864-5181	Electrical supplies and services, such as wire, fuses, bulbs, ballast, etc, and installation, maintenance, and repair of the above
Lynne Piippo - August 28,2015								

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Project Manual

Texas Department of Criminal Justice
Billy Moore Unit
MWR 11106003

Billy Moore Unit – Replace Security Control System
Billy Moore Unit
Overton, Texas

STATE OF TEXAS
THOMAS J. MERGEN
104169
LICENSED
PROFESSIONAL ENGINEER

11-8-2013

Issued-for-Construction
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Stanley Consultants INC.
A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

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16670 Surge Suppression Devices 3
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ARCHITECT/ENGINEER RESPONSIBILITY

The specification sections authenticated by my seal and signature are limited to the following:

DIVISION 1 - GENERAL REQUIREMENTS

DIVISION 12 – FURNISHINGS

12910 Control Room Consoles And Furnishings

DIVISION 13 – SPECIAL CONSTRUCTION

13400 Common Work Results for Process Systems
13432 Process Control Panels and Hardware
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16123 Wire and Cable
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16140 Wiring Devices
16170 Grounding and Bonding
16190 Supporting Devices
16195 Electrical Identification
16670 Surge Suppression Devices
16730 Intercom System

SECTION 01010

SUMMARY OF WORK AND USE OF PREMISES

PART 1 - GENERAL

1.1 PROJECT DESCRIPTION

A. The Project consists of the replacement of door control system, intercom system, PA, and CCTV system in central control located in the administration building, east picket located in the east wing and west picket located in the west wing.

B. Project will demo existing MTI door control, intercom system, and PA system throughout the facility. Demo will include removal of existing cabling throughout the facility.

C. Project will replace existing cabling with new for the new designed systems.

1.2 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work of this section.

1.3 CONTRACTOR'S DUTIES

A. Except as specifically noted, provide and pay for:

1. Labor, materials and equipment.

2. Tools, construction equipment and machinery.

3. Other facilities and services necessary of proper execution and completion of work.

B. TDCJ is exempt from sales tax on products permanently incorporated in work.

1. Obtain sales tax exemption certificate from TDCJ.

2. Place exemption certificate with invoices for materials incorporated in work.

3. Upon completion of work, file with TDCJ notarized statement that all purchases made under exemption certificate were entitled to be exempt.

4. Pay legally assessed penalties for improper use of exemption certificate number.

C. Secure and pay for, as necessary for proper execution and completion of Work, and as applicable at time of receipt of bids.

1. Government Fees (including inspection fees).

2. Licenses.

D. Give required notices to Warden. Also, TDCJ Communications at 936-437-1901 and 1-800-545-6005 before trenching or digging.

E. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of Work, including all provisions of the Occupational Safety and Health Administration, including Article 1926.21 (Safety Training and Education), and the Americans with Disabilities Act of 1991 (ADA).

F. Promptly submit written notice to TDCJ of observed variance of Contract Documents from legal requirements. Assume responsibility for Work known to be contrary to such requirements, without notice.

G. All fencing shall be kept secure at all times in a manner acceptable to the Warden. All temporary fencing shall be pre-approved by the Warden for use during construction.

H. All disconnected equipment shall be removed from inside the secure fenced area and secured in accordance with the Warden's instructions.

1.4 CONTRACTOR USE OF PREMISES

A. Keep driveways and entrances serving the premises clear and available to the TDCJ and the TDCJ's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

B. No private vehicles will be allowed inside the fence. Contractor's vehicles and equipment will be allowed in the areas required for work.

C. All Contractors' employees shall carry a picture identification card such as a driver's license or other identification as approved by the PA at all times.

D. All employees that work on the project must be cleared through Warden's office.

1.5 PRECEDENCE

A. The General and Special Conditions of the Contract take precedence over the technical specifications.

1.6 SCHEDULE

A. The following proposed schedule is based on days after notice to proceed.

1.	Project Kickoff Meeting	15 days
2.	Shop drawing review and approval	60 days

3.	Fabrication of Control Panels	150 days
	Electrical Conduit and Cable Installation	
	Procurement of Intercom System	
	Procurement of CCTV System	
4.	PLC Control Panel Factory Acceptance Testing	5 days
5.	West Picket PLC Control Panel Installation	60 days
	Intercom and CCTV Camera Installation	
6.	East Picket PLC Control Panel Installation	60 days
	Intercom and CCTV Camera Installation	
7.	Central Control PLC Control Panel Installation	30 days
	Intercom and CCTV Camera Installation	
8.	Training	15 days
9.	Total Construction Duration per Contract	

1.7 STAGING OF CONSTRUCTION

A. Contractor responsible for coordinating and staging of construction schedule.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 SECTION INCLUDES

A. General Quality Control.
B. Workmanship.
C. Manufacturer's Instructions.
D. Manufacturer's Certificates.
E. Manufacturer's Field Services.

1.3 RELATED SECTIONS

A. General and Special Conditions of the Contract: Contractor inspection and quality control system.
B. Section 01440 - Contractor's Quality Control: Contractor's quality control plan/program.

1.4 QUALITY CONTROL, GENERAL

A. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Engineer.
B. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Construction Document requirements.
C. Requirements of this section relate to customized fabrication and installation procedures, not production of standard products.
D. Specific quality control requirements for individual construction activities may be specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
E. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Construction Document requirements.
F. Requirements for the Contractor to provide quality control services required by the A/E, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.5 WORKMANSHIP

A. Comply with industry standards except when more restrictive tolerances specified requirements indicate more rigid standards and more precise workmanship.
B. Perform Work by persons qualified to produce workmanship of specified quality.
C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.6 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Construction Documents, request clarification from A/E before proceeding.

1.7 MANUFACTURER'S CERTIFICATES

A. When required by individual Specifications Section, submit six manufacturer's certificates stating that products meet or exceed specified requirements.

1.8 MANUFACTURER'S FIELD SERVICES

A. When specified in respective Specification sections, require supplier or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and to provide instructions as applicable, and to make appropriate recommendations.

B. Representative shall submit written report to A/E listing observations and recommendations.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01440

CONTRACTOR'S QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 GENERAL

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the General and Special Conditions of the Contract. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product, which complies with the Contract requirements. The system shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence.

1.3 QUALITY CONTROL PLAN/PROGRAM

A. General: The Contractor shall furnish for review by the Owner at The Preconstruction meeting the Contractor Quality Control (QC) Plan proposed to implement the requirements of the General and Special Conditions of the Contract. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The Owner will consider an interim plan for the first [30] days of operation. Construction will be permitted to begin only after acceptance of the QC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a QC Plan or another interim plan containing the additional features of work to be started.

B. Content of the QC Plan: The QC Plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by subcontractors, fabricators, suppliers and purchasing agents:

1. A description of the quality control organization, including a chart showing lines of authority and acknowledgement that the QC Manager shall implement the three phase control system for all aspects of the work specified.

2. The name qualifications (in resume format), duties, responsibilities, and authorities of the person assigned the QC Manager.

3. A copy of the letter to the QC Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately

perform the functions of the QC Manager including authority to stop work which is not in compliance with the contract. A Copy of this letter will also be furnished to the Owner.

4. Procedures for scheduling, reviewing, approving, and managing submittals, including those of subcontractors, off-site fabricators, suppliers and purchasing agents. These procedures shall be in accordance with the General and Special Conditions of the Contract.

5. Control, verification and acceptance of testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test.

6. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

7. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.

8. Reporting procedures, including proposed reporting formats.

9. A list of the definable features or units of work. A definable feature or unit of work is a portion of the Work, which is separate and distinct from other portions of the Work and has separate control requirements. Although each section of the Specifications may generally be considered as a definable feature or unit of work, the organization of the Specifications shall not determine the extent or scope of a definable feature or unit of work. This list will be mutually agreed upon by the Owner, A/E and Contractor during the coordination meeting.

C. Acceptance of Plan: Acceptance of the Contractor's plan or interim plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Owner reserves the right to require the Contractor to make changes in his QC Plan and operations including replacement of personnel, as necessary, to obtain the quality specified.

D. Notification of Changes: After acceptance of the QC plan, the Contractor shall notify the Owner in writing a minimum of seven calendar days prior to any proposed change in the QC Plan or QC Personnel. Proposed changes are subject to acceptance by TDCJ.

1.4 COORDINATION MEETING:

A. After the Preconstruction Conference, before start of construction, and prior to acceptance by the PA of the Quality Control Plan, a meeting shall be held to discuss the Contractor's quality control system. Attending this meeting shall be the Contractor's Project Manager, Contractor's General Superintendent, the Owners Quality Assurance Inspector, TDCJ

Project Administrator and site staff. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the QC operations, control activities, testing, administration of the system for both on-site and off-site work, and the interrelationship of Contractor's Management and Quality Control with the Owner's Quality Assurance. Minutes of the meeting shall be prepared by the PA and signed by both the Contractor and the Owner. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the QC system or procedures, which may require corrective action by the Contractor.

1.5 QUALITY CONTROL ORGANIZATION:

A. Quality Control (QC) Manager:

1. The Contractor shall identify an individual within his organization at the site of the work who shall be responsible for overall management of QC and have the authority to act in all QC matters for the Contractor. This QC Manager shall be on the site at all times during construction and will be employed by the Contractor, except as noted in the following. An alternate for the QC System Manager will be identified in the plan to serve in the event of the manager's absence. Period of absence may not exceed 2 weeks at any one time, and not more than 20 workdays during a calendar year. The requirements for the alternate will be the same as for the designated QC Manager.

2. The Quality Control Manager shall not be removed without the Owner's written consent.

B. QC Organizational Staffing:

1. The Contractor shall provide and maintain a QC Manager who shall be at the site of work at all times during progress, with complete authority to take any action necessary to ensure compliance with the contract.

2. Organizational Changes: The Contractor shall obtain Owner acceptance before replacing the QC Manager. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement. The Owner reserves the right to have replaced, of the Quality Control Manager who is in the opinion of the Owner not accomplishing his assigned duties.

C. QC Staff Qualifications: Following are the minimum requirements for the QC Manager. These minimum requirements will not necessarily assure an adequate staff to meet the QC requirements at all times during construction. When necessary for a proper QC organization, the Contractor shall add additional staff at no cost to the Owner. This listing of minimum staff in no way relieves the Contractor of meeting the basic requirements of

quality construction in accordance with contract requirements. All QC staff members shall be subject to acceptance by TDCJ.

1. QC Manager: An experienced construction person with a minimum of 5 years experience in related work and a minimum of 5 years verifiable experience as a construction contractor quality control representative.

1.6 QUALITY CONTROL PROCEDURES:

A. General: Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the Contract. The Quality Control shall be adequate to cover all construction operations, including both on-site and off-site fabrication, and shall be coordinated to the proposed construction sequence. The Quality Control shall be conducted by the QC manager for all definable features of work.

B. Three Point Inspection Plan: The Quality Control Manager with the Contractor's appropriate staff shall utilize the Three Point Inspection Plan as the basis of the following Quality Control procedures to assure conformance of the work performed by the Contractor to the requirements of the Contract Documents and to the approved Submittals.

C. Quality Control Procedures: In addition to the basic Three Part Inspection Plan requirements, the QC Manager shall conduct and implement the following Quality Control procedures for each definable feature of work:

1. Preparatory Coordination: Prior to the start of work under each separate definable segment of work, or prior to the start of work where a change in a construction operation is contemplated by the Contractor, a coordination meeting will be held between the Contractor's Superintendent, the Quality Control Manager, *Contractor's Quality Control Material Testing Lab-if testing is required in the definable segment of work,* and appropriate representatives of the Owners. Supervisory and Quality Control representatives of all applicable subcontractors will also attend. The purpose of the meeting is to ensure there are no misunderstandings regarding the quality as well as the technical requirements of the Contract. The Contractor's and applicable subcontractor's Quality Control representatives will be on site all times during the work and shall have the authority to effect the resolution of Quality problems including stopping the work. the following items will be reviewed at the meeting as a minimum:

a. Contract requirements;

b. Shop Drawings and Submittals;

c. Contractor's Quality Control Program requirements;

d. Adequacy of previous operations;

e. Availability of required materials and equipment;

f. Contractors Quality Control Inspections and tests;

g. TDCJ Quality Assurance inspections and tests;

h. Familiarity and proficiency of Contractor's and Subcontractor's work force to perform the operation to required workmanship standards;

i. Any other preparatory steps dependent upon the particular operation.

The TDCJ Project Administrator shall be notified a minimum of 72 hours prior to the beginning of any preparatory coordination meeting. The Contractor's Quality Control Manager will chair the meeting. The results of the preparatory coordination meeting shall be documented by separate minutes prepared by the Quality Control Manager and Attached to the Daily Quality Control Summary Report.

2. Initial Inspection: Upon completion of a representative sample of a given feature of the Work, and prior to the start of a new or changed operation, appropriate Owner's Representative(s) will meet with the Contractor's Superintendent, Quality Control Manager and applicable Subcontractor's Superintendent and their Quality Control Representatives, *and Contractor's Quality Control Material Testing Lab-if testing is required in the definable segment of work.* The responsibility for scheduling and providing these samples in a timely manner so that the work is not delayed or hindered lies solely with the Contractor. The following items will be checked at this meeting as a minimum;

a. Review minutes of preparatory meeting.

b. Conformance to Contract Drawings, Specifications and the accepted Shop Drawings or Submittal;

c. Adequacy of materials and articles utilized;

d. Adequacy and results of inspection and testing methods;

e. Adequacy of safety and environmental precautions.

Once approved, the representative sample will become the physical baseline by which ongoing work is compared for quality and acceptability. To the maximum practical extent, approved representative samples of work elements shall remain visible until all work in the appropriate category is complete. During this inspection all differences will be resolved. The initial phase should be repeated for each new crew to work on site or at any time acceptable specified quality standards are not being met.

The TDCJ Project Administrator shall be notified a minimum of 72 hours prior to the beginning of any initial inspection. The Contractor's Quality Control Manager will chair the initial inspection. The results of the initial inspection shall be documented by separate minutes prepared by the Quality Control Manager and attached to the daily quality control summary report.

3. Follow-up Phase: Daily checks shall be performed to assure continuing compliance with contract requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the QC documentation. Final follow-up-checks shall be conducted and all deficiencies corrected prior to the start of additional features of work, which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

4. Additional Preparatory and Initial Phases: Additional preparatory and initial phases may be conducted on the same definable features of work as determined by the Owner if the quality of on-going work is unacceptable; or if there are changes in the applicable QC staff or in the on-site production supervision or work crew; or if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

5. Pre-Final Acceptance Inspection: When the work is completed, the Contractor shall make a written request for Pre-Final Inspection in accordance with the General Conditions, giving the PA at least 72 hours advance notice. *The Project Administrator will schedule the Pre-Final Acceptance Inspection and will prepare a list of deficient or incomplete items (Punch List) discovered during the inspection.* The Punch List will be transmitted to the Contractor for correction of the deficient or incomplete items. Following correction of the deficient or incomplete items and notification by the Contractor in accordance with the General and Special Conditions of the Contract, the Project Administrator and the Design Professional will conduct the Final Acceptance inspection.

6. Punch List: During Pre-Final or Final Acceptance inspections, Work that is found to be incomplete, needing repair or in Nonconformance with the contract requirements such as loose bolts, damage, unsatisfactory workmanship, etc., will be identified on a Punch List. The Punch List will be distributed to the Contractor, the A/E and the Inspector Team, by the Project Administrator in accordance with the General Conditions.

7. Final Acceptance Inspection: After the Contractor has completed all items on the Punch List (generated from the Pre-Final Acceptance Inspection) he shall request a Final Acceptance Inspection on a definite date. Seventy-two (72) hours advance notice shall be given to the PA. Upon verification by the A/E that the work is ready

for Final Inspection and Acceptance, the Owner will within ten calendar days make Final Inspection.

1.7 DEFICIENT AND NON-CONFORMING WORK:

A. General:

1. Workmanship or materials which are found to be not in conformance with the Contract Documents shall be identified with a Deficiency issued by the Contractor's Quality Control Manager.

2. TDCJ reserves the right to maintain a staff of inspectors for random sampling of the materials and the work for conformance to Contract Documents. This does not relieve the Contractor in any way from his responsibility of Quality Control.

3. The Quality Control Manager shall request the Contractor to take remedial actions via a Deficiency where indicated by nonconforming work or materials found by test results.

4. All deficiencies instituted by Contractor must include the proposed corrective action to be taken, and submitted to the A/E and the PA for approval.

1.8 QUALITY CONTROL OF PRODUCT DELIVERY:

A. Inspection of Products and Equipment to be incorporated into the work;

1. Products and equipment delivered to the project site shall be subject to inspection by the Quality Control Manager for conformance with the Contract Documents and Submittals, prior to incorporation into the Work. TDCJ inspectors may monitor the Contractor's inspection procedures.

2. All products and equipment furnished by TDCJ and delivered to the project site shall be inspected by a TDCJ Inspector and the Quality Control Manager for shipping damage, and for identification and quantity, prior to incorporation into the Work.

3. Items which are found to be in nonconformance with Contract requirements shall be identified, issued a Deficiency by the Quality Control Manager and segregated from accepted products and equipment. These items shall not be incorporated into the Work until corrective action acceptable to TDCJ and the A/E has been completed.

4. Special requirements for storage, handling and tracking of hazardous material shall be monitored in strict accordance with Materials Safety Data Sheet requirements.

5. Items which are determined to have been improperly shipped, stored, or handled shall be deemed deficient and shall not be incorporated into the Work until the manufacturer has inspected the item in question and determined the repair work or

corrective actions necessary to validate the product warranty or restore the product to like new condition, subject to approval of TDCJ.

1.9 DOCUMENTATION:

A. The Contractor shall maintain current records of quality control operations, activities, and tests performed, including the work of subcontractors and suppliers. These records shall be on the sample forms included herein and shall include factual evidence that required quality control activities and specified tests have been performed, including but not limited to the following:

1. Contractor/subcontractor and their area of responsibility.
2. Operating plant/equipment with hours worked, idle, or down for repair.
3. Work performed today, giving location, description, and by whom.
4. Test and/or control activities performed with results and references to Contract requirements. The control phase shall be identified (Preparatory, Initial, and Follow-up). List deficiencies noted along with corrective action.
5. Material received with statement as to its acceptability and storage.
6. Identify submittals reviewed, with contract reference, by whom, and action taken.
7. Off-site surveillance activities, including actions taken.
8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
9. Record instructions given/received in the field.

B. The Contractor shall submit all documentation to the TDCJ PA daily within 24 hours after the date covered.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01500
TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, temporary cooling in selected areas, and security and protection facilities.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by TDCJ, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, TDCJ's construction forces, testing agencies, and authorities having jurisdiction.

B. Water Service: Water from TDCJ's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electrical Power: Electrical power shall be provided by TDCJ for construction activities. Provide connections and extensions of services as required for construction operations.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, and staging areas. This shall be approved by the Warden through the PA.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before TDCJ's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds or Conex boxes sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
B. HVAC Equipment: Unless TDCJ authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
   1. Arrange with utility company, TDCJ, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
   1. Provide holding tank temporary facility.
C. Water Service: Use of TDCJ's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to TDCJ. At Beneficial Occupancy, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

H. Telephone Service: Only Project Superintendent may carry a cell phone into unit with the Warden's permission.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds. Comply with NFPA 241.
2. Maintain support facilities until near Final Completion. Remove before Final Completion. Personnel remaining after Final Completion will be permitted to use permanent facilities, under conditions acceptable to TDCJ.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

D. Project Identification and Temporary Signs: Provide Project identification and other signs as required for direction of delivery personnel. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted. Signs shall be 4'x4' and are to be approved by A/E and TDCJ PA.

1. Provide temporary, directional signs for construction personnel and visitors.
2. Maintain and touchup signs so they are legible at all times.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

F. Provide base material and supports to support the temporary office buildings, parking, and storage containers.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

C. Stormwater Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Storage Containers: Provide temporary storage containers for the storage of all construction material and any other construction related equipment. All storage container locations shall be pre-approved by the Warden through the PA.

F. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

G. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Final Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Final Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are property of Contractor. TDCJ reserves right to take possession of Project identification signs.
   2. At Beneficial Occupancy, clean and renovate permanent facilities used during construction period.

END OF SECTION

SECTION 01650

FACILITY START-UP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 REQUIREMENTS INCLUDED

A. Starting of systems.

B. System demonstrations and Owner personnel instruction for equipment and systems for which operating and maintenance data is required.

1.3 RELATED SECTIONS

A. General and Special Conditions of the Contract.

B. Contractor's Quality Control - Section 01440.

C. Operation and Maintenance Manuals - Section 01730.

D. Security Control Systems – Section 13775.

E. Common Work Results for Process Systems – Section 13400.

F. The requirements of this Section apply to the following:

1. Intercom Systems
2. CCTV Systems
3. Door Control Systems

1.4 QUALITY ASSURANCE

A. Instructors:

1. Qualified member(s) of installers' staffs and qualified authorized representative(s) of component, assembly, or system manufacturer(s).
2. Refer to individual specification sections for additional requirements.

1.5 PRESENTATION

A. Project information:

1. Submit separate report for each system or type of equipment, subject to Owner's approval.
   a. Submit completed report; one copy to the PA.
2. Submit Owner Instruction Schedule to Owner, 30 days prior to first instruction. Coordinate schedule with the PA.

1.6 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify A/E and the PA 7 days prior to start-up of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of responsible manufacturer's technical representative and Contractor's personnel in accordance with manufacturer's instructions.

G. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

1.7 DEMONSTRATIONS AND INSTRUCTIONS

A. Instruct Owner's personnel in operation, adjustment and maintenance of operating equipment, and systems and finish materials.
   1. Schedule instruction at times agreed upon by Owner in accordance with General and Special Conditions of the Contract.

B. Instruct Owner's personnel in proper maintenance of finish materials.

C. Amount of time to be devoted to instructions shall be reasonable and consistent with size and complexity of equipment and as necessary to adequately instruct Owner's personnel in proper, safe operating and maintenance of equipment.

D. Use operating and maintenance manual as basis of instruction. Explain use of operating and maintenance manuals.

E. Tour building areas involved and identify:
   1. Maintenance points and access.
   2. Control locations and equipment.

F. Explain operating sequences.
   1. Identify location and show operation of switches, valves, and controls, used to start, stop and adjust systems.
   2. Explain use of flow diagrams, operating sequence diagrams, and other instructions.
   3. Demonstrate operation through complete cycle(s) and full range of operation in all modes, including testing and adjusting relevant to operation.

G. Explain use of control equipment, including temperature settings, switch modes, available adjustments, reading of gages; and functions that must be serviced only by authorized factory representatives.

H. Explain trouble shooting procedures.
   1. Demonstrate commonly occurring problems.
   2. Note procedures which must be performed by factory personnel.

I. Explain maintenance procedures and requirements.
   1. Identify items requiring periodic maintenance.
   2. Demonstrate typical preventive maintenance procedures and recommended typical maintenance intervals.
   3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
   4. Identify maintenance materials to be used.

J. Furnish tools required.

K. Contractor shall be required to provide training in accordance with schedule established by TDCJ through the PA, determined by the availability of personnel at the institution.

L. As part of the operator's training, one lesson plan shall be devoted to reviewing of the video disks recorded of the instruction per Specification Sections 13775 and 13432.
M. Duration: Dependent on system/equipment complexity. The conclusion of the training sessions shall be prior to system start-up and operation.
N. Instructors: Qualified manufacturer's representative(s).

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01700

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 DESCRIPTION

A. Comply with requirements stated in General and Special Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

B. Time of closeout is directly related to Pre-Final Inspection or Certificate of Beneficial Occupancy, and Final Inspection and Acceptance.

1.3 RELATED REQUIREMENTS

A. Fiscal provisions, legal submittals and additional administrative requirements – General and Special Conditions of the Contract.

B. Final Cleaning Up - Section 01710.

C. Project Record Documents - Section 01720.

D. Operation and Maintenance Manuals - Section 01730.

E. Warranties, bonds and closeout submittals required for specific products or work. Respective Specification Sections for that work.

1.4 PREREQUISITES TO PROJECT CLOSEOUT

A. Inspection Procedures:

1. Pre-Final Inspection: A Pre-Final Inspection shall be required for work for which there has been no Certificate of Beneficial Occupancy issued in accordance with Article X(10) of the General and Special Conditions of the Contract. Refer to Article X(10) of the General and Special Conditions of the Contract, paragraphs 10.1 and 10.2, for procedures. Note that prior to the pre-final inspection, Contractor is to perform his own inspection and punch list and provide this list of deficiencies to the TDCJ PA and A/E for their reference and review during the pre-final inspection.

2. Final Acceptance Inspection: Refer to General and Special Conditions of the Contract, paragraph 10.3, for procedures.

1.5 CLOSEOUT SUBMITTALS

A. At time of Pre-Final Inspection, submit following:

1. Project Record Documents: To requirements of Section 01720.

2. Operating and Maintenance Data, Instructions to Owner's Personnel: To requirements of Section 01730 and to Respective Specifications requiring specific warranties.

3. Warranties and Bonds: To requirements of General Conditions, Section 01740 and respective Specifications requiring specific warranties.

B. Prior to final payment, submit following:

1. Evidence of Payment and Release of Liens: To requirements of General and Special Conditions of the Contract.

2. Certificate of Insurance for Products and Completed Operations.

3. Other written evidence or documentation required by General and Special Conditions of the Contract.

1.6 FINAL APPLICATION FOR PAYMENT

A. Upon execution of Final Completion certificate by Owner and A/E, Contractor shall submit final Application for Payment in accordance with procedures and requirements stated in the General Conditions.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF SECTION

SECTION 01710

FINAL CLEANING UP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 REQUIREMENTS INCLUDED

A. Final cleaning at completion of Work.

1.3 RELATED REQUIREMENTS

A. Cleaning up required for specific Products or Work: Specification Section for that Work as well as General and Special Conditions of the Contract.

1.4 DESCRIPTION

A. Execute final cleaning prior to pre-final inspection for final completion of each designated portion of the Work.

1.5 REGULATORY REQUIREMENTS

A. Fire Protection: Store volatile waste in covered metal containers and remove from premises daily.

B. Pollution Control: Conduct clean-up and disposal operations to comply with local codes, ordinances and anti-pollution laws.

1. Burning or burying of rubbish and waste materials on the project site is prohibited.

2. Disposal of volatile fluid wastes, (such as mineral spirits, oil or paint thinner), in storm or sanitary sewer systems or into streams or waterways is prohibited.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Use only cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials recommended by manufacturer of surface to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. In addition to removal of debris and cleaning specified in other sections, clean interior and exterior sight exposed surfaces.

B. Employ skilled Workmen for final cleaning.

C. Remove grease, mastics, adhesives, dust, dirt, stains, labels, fingerprints and other foreign materials from sight exposed interior and exterior surfaces and finishes.

D. Repair, patch and touch up marred surfaces to match adjacent finishes.

E. Remove waste, debris, and surplus material from site. Clean grounds; remove stains, spills and foreign substances from paved areas. Broom clean paved surfaces; rake clean other surfaces of grounds.

F. Clean surfaces of equipment; remove excess lubrication.

G. Prior to final inspection, conduct an examination of sight-exposed interior and exterior surfaces, and all Work areas, to verify that entire Work is clean. Maintain cleaning until Final Acceptance.

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Maintenance and submittal of Record Documents.

1.2 RELATED REQUIREMENTS

A. Contract Closeout - Section 01700.

B. Operating and Maintenance Data - Section 01730.

C. General and Special Conditions of the Contract.

1.3 MAINTENANCE OF DOCUMENTS

A. Maintain at site one record copy of following: Contract Drawings, Specifications, Addenda, reviewed Shop Drawings and Product Data, Change Orders and other Modifications to Contract, field test reports, supplemental instructions and certifications.

B. Store documents in field office, apart from other documents used for construction. Provide files and racks for storage of documents.

C. Do not use Record Documents for construction purposes.

D. Make documents available at all times for inspection by A/E and TDCJ.

E. Label each document, "PROJECT RECORD" in two-inch-high printed letters.

1.4 RECORDING

A. Keep Record Documents current with construction progress. Post and update weekly.

B. Do not conceal any work until required information is recorded.

C. Record information on a set of Contract Drawings and Project Manual.

D. Contract and Shop Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.

2. Mark new information that is important to TDCJ, but was not shown on Contract Drawings or Shop Drawings. Also legibly mark to record actual construction:

   a. Depths of various elements of foundation and drilled piers in relation to first floor datum.

3. Note related Change Order numbers where applicable.

4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

5. Contractor shall provide shop drawings indicating system lay-out and point to point wiring diagrams showing each device with wiring connection that are required. Provide shop drawing for intercom system, CCTV system and door control system. Refer to individual specification for additional requirements.

6. Upon completion of the Work, submit record and shop Drawings to the A/E for TDCJ's records.

E. Specifications and Addenda: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data. Upon completion of work, submit to A/E for TDCJ's records. Legibly mark each section.

F. Record Product Data: Maintain one copy of each Product Data submittal. Mark these documents to show significant variations in the actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications. Upon completion of mark-up, submit complete set of record Product Data to the A/E for the TDCJ's records.

G. Record Sample Submitted: Immediately prior to the date or dates of Final Inspection, the Contractor will meet at the site with the A/E and the TDCJ's personnel to determine which of the submitted Samples have been maintained during progress of the Work are to be transmitted to TDCJ for record purposes. Comply with delivery to the TDCJ's Sample storage area.

H. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Final Inspection complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the A/E for the TDCJ's records.

1.5 SUBMITTALS

A. At Contract close-out, deliver one copy of Record Documents to A/E for TDCJ.

B. Accompany submittal with transmittal letter in duplicate, containing: date, project title and number, Contractor's name and address, title and number of each Record Document and signature of Contractor or his authorized representative.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01730

OPERATION AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 WORK INCLUDED

A. Prepare a complete and detailed Operation and Maintenance Manual for each type and model of product furnished and installed under this contract.

B. Prepare the manuals in the form of an instruction manual for TDCJ.

C. Provide complete and detailed information specifically for the products or systems provided for this project. Include the information required to operate and maintain the product or system.

D. Manuals are to be in addition to any information packed with or attached to the product when delivered. This information is to be taken from the product and provided as an attachment to the manual.

E. Manuals are to be delivered at the pre-final phase of construction.

1.3 GUARANTEES

Provide copies of the Manufacturer's warranties, guarantees, or service agreements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Print manuals on heavy, first quality paper.

1. Paper shall be 8-1/2" x 11" paper.

a. Reduce drawings and diagrams to 8-1/2" x 11" paper size.

b. When reduction is not practical, fold drawings and place each separately in a clear, super heavy weight, top loading polypropylene sheet protector designed for ring binder use. Provide a typed identification label on each sheet protector.

2. Punch paper for standard three-ring binders.

3. Binders are to have clear front, back, and spine covers.

4. Sheet lifters are to be provided.

5. Minimum size is 2" capacity. Maximum size is 3" capacity.

B. Provide tab indexes for each section of the manual.

1. Indexes are to be constructed of heavy-duty paper with a reinforced binding edge and punched holes to fit the binders.

2. Index is to have clear insertable tabs or may have clear tabs for a typed insert.

PART 3 - EXECUTION

3.1 MANUAL ORGANIZATION AND CONTENTS

A. Provide a Table of Contents listing each section of the manual for each product or system

1. Identify each product or system using the nomenclature shown in the Contract Documents.

2. Assign a number and letter to each section in the manual.

a. Assign a number to each product or system. The number is to correspond to TDCJ's equipment numbering system or other system designated by TDCJ's Representative.

b. A cross reference is to be provided for TDCJ's numbering system and designations for equipment indicated in the Contract Documents.

3. Provide index tabs for each section in the manual.

4. The designation on each index tab is to correspond to the number and letter assigned in the Table of Contents.

B. Include only the information that pertains to the product described. Annotate each sheet to:

1. Clearly identify the specific product or component installed.

2. Clearly identify the data applicable to the installation.

3. Delete reference to inapplicable information.

C. Supplement manual information with drawings as necessary to clearly illustrate relations of component parts of equipment and systems, and control and flow diagrams.

D. Identify each manual by placing a printed cover sheet in the front cover of the binder and as the first page in the manual. The first page is to be placed in a clear polypropylene sheet protector. The information on first page and the cover page are to include:

1. Name of TDCJ
2. Project Name
3. Volume Number
4. The Table of Contents for that Volume

E. Insert the Table of Contents into the spine of each manual.

F. Manuals for several products or systems may be provided in the same binder.

1. Sections for each product or system must be included in the same binder.
2. Sections must be in numerical order from volume to volume.

G. Correlate the data into related groups when multiple binders are used.

H. Fill binders to only 3/4 of their indicated capacity to allow for addition of materials to each binder by TDCJ.

3.2 EQUIPMENT AND SYSTEMS MANUAL CONTENT

Manual shall provide the following information:

A. A description of the unit and component parts.

B. Operating instructions for startup, normal operations, regulation, control, shutdown, emergency conditions, and limiting operating conditions.

C. Maintenance instructions including assembly, installation, alignment, adjustment, and checking instructions.

D. Troubleshooting guide.

E. Schedule of routine maintenance requirements.

F. Description of sequence of operation by the Control Manufacturer.

G. Warning for detrimental maintenance practices.

H. Parts lists including:

1. Part numbers for ordering new parts.
2. Assembly illustrations showing an exploded view of the complex parts of the product.

3. Predicted life of parts subject to wear.

4. List of the Manufacturer's recommended spare parts, current prices with effective date and number of parts recommended for storage.

5. Directory of a local source of supply for parts with company name, address, and telephone number.

6. Complete nomenclature and list of commercial replacement parts.

I. Outline cross section and assembly drawings, engineering data, test data, and performance curves.

J. Control schematics and point to point wiring diagrams prepared for field installation, including circuit directories of panel boards and terminal strips.

K. List of identification nameplates installed on equipment and valve identification.

L. Other information as may be required by the individual sections of the specifications.

3.3 ELECTRICAL AND ELECTRONICS SYSTEMS MANUAL

Manual shall provide the following information:

A. A description of the systems and component parts.

B. Control schematics and point to point wiring diagrams prepared for field installation. Include circuit directories of panel boards and terminal strips and as installed color coded wiring diagrams.

C. Operating procedures, maintenance procedures, and the Manufacturer's printed operating and maintenance instructions.

D. List of the Manufacturer's recommended spare parts, current prices with effective date, and number of parts recommended for storage.

E. Other information as may be required by the individual sections of the specifications.

3.4 LIST OF SERVICE ORGANIZATIONS

Provide a directory of authorized service organizations with company name, address, telephone number, and the contact person for warranty repair.

3.5 SUBMITTALS

A. The Manuals shall be prepared in final draft form and sent to the A/E for review and approval prior to training sessions.

B. Contractor/Subcontractor shall revise Manuals after receipt of review comments made by the A/E to correct deficiencies uncovered in on-site training sessions.

C. Submit six copies of revised and corrected Manuals.

END OF SECTION

SECTION 01740

WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General Conditions of the Contract for Construction, Special Conditions and Division 1 – General Requirements apply to work of this section.

1.2 GENERAL

A. Compile specified warranties.

B. Review to verify compliance with Contract Documents.

C. Warranties shall be written in the name of TDCJ.

1.3 RELATED REQUIREMENTS

A. General Warranty of Construction - - Agreement and Conditions of the Contract.

B. Warranties and Certificates for specific products - Each respective Specification section.

C. Contract Closeout - - Section 01700.

D. Operation and Maintenance Manuals – Section 01730.

1.4 WARRANTY DATES

A. Unless otherwise stated in Contract Documents, warranties shall commence on the date of Final Acceptance or if requested by TDCJ through the PA, on date of Beneficial Occupancy for entire work or designated portion thereof.

1.5 SUBMITTAL REQUIREMENTS

A. Assemble warranties and certificates executed by each of respective manufacturers, suppliers and subcontractors.

B. Number of original signed copies required: 2 each.

C. Table of Contents: Neatly typed, using Table of Contents of Project Manual as format.

D. Provide complete information for each item.

1. Name and location of project.

2. Name and address of Contractor.

3. Product, equipment or system.

4. Firm, with name of principal, address and telephone number.

5. Scope.

6. Date of beginning and duration of warranty.

7. Provide information for TDCJ's personnel:

   a. Proper procedure in case of failure.

   b. Instances which might affect validity of warranty.

1.6 FORM OF SUBMITTALS

A. Assemble warranties and certificates in two separate 3-ring binders.

B. Format:

1. Size: 8-1/2 in. x 11 in., fold larger sheets to fit into binders.

2. Indexing: Tabbed fly-leaf for each separate product or system.

3. Identification: Each cover and spine printed with "WARRANTIES" and project title.

C. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers, custom printed.

1.7 TIME OF SUBMLTTALS

A. For equipment or component parts of equipment put into service during progress of construction: Submit documents within 10 days after inspection and acceptance.

1.8 SUBMITTALS REQUIRED

A. Submit warranties as specified in respective sections of Specifications.

1.9 WARRANTY PROVISIONS - GENERAL

A. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

B. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

C. Reinstatement of Warranty: When Work covered by warranty has failed and been corrected by replacement/rebuilding, reinstate warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with equitable adjustment for depreciation.

D. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether TDCJ has benefited from use of the Work through a portion of its anticipated useful service life.

E. Owner's Recourse: Written warranties made to TDCJ are in addition to implied warranties, and shall not limit the duties, obligations, right and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which TDCJ can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: TDCJ reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

F. TDCJ reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on all/part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

G. Spare parts provided to TDCJ with original installation shall not be used for Warranty repairs/replacements.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01750
SPARE PARTS AND MAINTENANCE MATERIAL

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Procedures for storage, handling, and delivery of spare parts and maintenance materials.

1.2 RELATED REQUIREMENTS

A. Contract Closeout Procedures - Section 01700.
B. Operation and Maintenance Manuals - Section 01730.

1.3 PRESENTATION OF SUBMITTALS

A. Contract Closeout Information:
1. Spare Parts: To TDCJ with letter of transmittal.
2. Maintenance Materials: To TDCJ with letter of transmittal.
3. Extra Materials: To TDCJ with letter of transmittal.

1.4 PRODUCTS REQUIRED

A. Provide to the PA, quantities of spare parts and tools, maintenance materials, and extra material as specified in individual specification sections.
B. Spare Parts and Tools: Package in clearly identified boxes.
1. Indicate manufacturer's name, part name and stock number.
2. Indicate piece of equipment for which part or tool is intended.
3. Indicate name, address and phone number of closest supplier.
4. Indicate specification number.
C. Maintenance Materials: Package in clearly identified boxes.
1. Indicate trade name and stock number.
2. Indicate for which item material is to be used.
3. Indicate name, address and phone number of closest supplier.
D. Extra Materials: Package in clearly identified containers, or install where indicated.
1. Provide products identical to those installed in Work. Include quantities in original purchase from manufacturer to avoid variations in manufacture.
2. Indicate trade name, stock number, size, color.
3. Indicate where product is to be used.
4. Indicate name, address and phone number of closest supplier.

1.5 DELIVERY

A. Deliver to the PA at time of Beneficial Occupancy or Pre-Final Inspection.
B. Deliver to location on site as directed by the PA.
C. Obtain receipt for delivered materials.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 12910

CONTROL ROOM CONSOLES AND FURNISHINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control room furnishings.

1.02 SUBMITTALS

A. Shop Drawings and Product Data with material samples, showing furnishing layouts, dimensions, model numbers, hardware, trim, and accessories.

B. Color/pattern samples:
1. Submit samples for Owner's approval upon award of Contract and shall include console laminate.
2. Samples submitted shall have minimum dimensions of 1' x 1'.
3. Minimum of 5 samples for each item identified above.
4. Samples shall be suitable to be matched together.

1.03 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacture and installation of control room or office furnishings with minimum of 5 years experience.

B. Manufacturer's product test data, performed and certified by independent testing agency, showing that product meets specified manufacturer's product.

C. Furnishings shall be suitable for use in control room environment manned 24 hours per day on continuous basis.

PART 2 PRODUCTS

2.01 EXISTING CONTROL ROOM CONSOLE MODIFICATIONS AND ACCESSORIES

A. Central control consoles:
1. Quantity: 1 section.
2. Key dimensions: As indicated on Drawings.

B. South Picket console:
1. Quantity: As required for area indicated on Drawings.
2. Key dimensions: As indicated on Drawings.

C. North Picket console:
1. Quantity: As required for area indicated on Drawings.
2. Key dimensions: As indicated on Drawings.

D. Table top work surface:
1. Thickness: 1" (minimum), 1-1/4" (maximum).
2. Material: MDF core laminate.
3. Color: Provide samples for TDCJ selection.

E. Table top stand: Provide supporting structure for mounting table top work surface in central control and each picket.

F. Drawers: Provide pencil drawers to be mounted under new console tops.

G. Accessories:
   1. Mounting brackets to brace console tops.
   2. Grommet and cable hole covers.
   3. Drawer hardware including slides and rollers.
   4. Console top convenience outlet:
      a. Quantity:
         1) Central Control: 3.
         2) North Picket: 3.
         3) South Picket: 3.
      b. Type: Pop-up convenience outlet.
      c. Configuration: 2 power outlets.
      d. Extension cord: 10'.
      e. Manufacturer: Glenbeigh BY-BE02137-C-20-DZA-120, or A/E approved equal.

H. Arrangement and location: Coordinate with TDCJ prior to installation.

I. Manufacturers: Formica, Wilsonart, or equivalent products from other manufacturers are acceptable.

PART 3 EXECUTION

3.01 INSTALLATION

A. Console: Assembly of console shall be accomplished without need of welding.

B. Install in accordance with manufacturer's instructions and as identified on Drawings.

C. Replace damaged material.

D. Protect furnishings until accepted by Owner.

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13400

COMMON WORK RESULTS FOR PROCESS SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Basic control system requirements for furnishing hardware, unconfigured software, configuration and programming, training, testing, startup and commissioning.

1.02 WORK BY OTHERS

A. None.

1.03 DEFINITIONS

A. Terms defined to describe use and performance of instruments used process industry and in accordance with ISA SP51.1 as follows:
   1. Accuracy: Degree of conformity of indicated value to a recognized accepted standard value, or ideal value.
   2. Availability: Ability of device or system to be used or acquired over a period of time.
   3. Redundancy: Amount of duplication for purpose of preventing failure of entire system upon failure of single component.
   4. Reliability: Probability that a device or system will perform its objective adequately, for period of time specified, under operating conditions specified.
   5. Repeatability: Ability to reproduce, among a number of consecutive measurements, output for same operating conditions, approaching from same direction for full range traverses.

B. Network diagram: Diagram detailing major components and communication interconnections of system. Diagrams shall show interfaces between equipment, communication highway details including differentiating between fiber optics and copper cables, and listing communications protocols.

1.04 ACTION SUBMITTALS

A. Prior to construction: Control system network diagrams, Control Panel Layout Drawings, and Bill of Materials.

B. During construction: Detailed connection diagrams for network communications.

1.05 INFORMATIONAL SUBMITTALS

A. Training plan containing course outlines and schedules for training to be provided on-site.

B. Factory demonstration test procedure.

C. Factory test schedule: Provide agenda for factory testing listing sequence in which system components shall be checked.

1.06 CLOSEOUT SUBMITTALS

A. Operation and maintenance manual, for information only:
   1. Complete instruction manuals and parts lists covering installation, operation, and maintenance of panel-mounted devices. Manuals shall include interface drawings defining terminal numbers and functions for interface with other instruments and equipment.

2. Schematic and wiring diagrams for each panel and enclosure. Show color of wire, termination points, terminal numbers, cable, and wire numbers.
3. Manufacturer's data and or specification sheets for control system equipment, showing design parameters, equipment catalog designations, calibration range, features and options provided. All sheets shall be identified with corresponding identification numbers.

B. Prior to project closeout:
1. Final operation and maintenance manuals.
2. Provide submittals updated to reflect "as-built" conditions.

1.07 QUALITY ASSURANCE

A. Qualifications:
1. Contractor shall be certified under International Standards Organization (ISO9001) Quality Guidelines.
2. System integrator: Company specializing in programming systems specified with minimum 5 years documented experience. Contractor shall demonstrate minimum of 5 years experience for projects of similar size and complexity involving control systems with continuous process operation, PID loop control, data communications, graphic screens and reports in similar applications.

B. After functional testing is witnessed by Owner or A/E representative, necessary corrections shall be made to system to satisfaction of Owner before system is shipped.

C. Manufacturer's qualifications: Contractor shall use manufacturers who's equipment will continue to be manufactured for a period of at least 3 years or who will maintain a stock of compatible spare parts for a period of 10 years after startup of control system.

D. Regulatory requirements: Work shall be in accordance with applicable requirements of following codes and standards.
1. Electronic Industry Association (EIA) 232-D – Interface Between Data Terminal Equipment and Data Communication Equipment Employing Serial Binary Data Interchange
2. Institute of Electrical and Electronic Engineers (IEEE)
   a. ANSI/IEEE C37.90.1 – Standard Surge Withstand Capability (SWC) Tests for Protection Relay Systems
   b. ANSI/IEEE C37.90.2 – Trial Use Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Trans-receivers
3. National Fire Protection Association (NFPA):
   a. 70 – National Electrical Code
   b. 85 – Boiler and Combustion Systems Hazards Code
4. National Electrical Manufacturer's Association (NEMA):
   a. AB-1 – Molded Case Circuit Breakers
   b. ICS-1 – General Standards for Industrial Control and Systems
   c. ICS-2 – Standards for Industrial Control Devices, Controllers and Assemblies
   d. ICS-4 – Terminal Blocks for Industrial Use
   e. ICS-6 – Enclosures for Industrial Controls and Systems
5. International Society of Automation (ISA):
   a. ANSI/ISA-50.00.01 – Compatibility of Analog Signals for Electronic Industrial Process Instruments
   b. ANSI/ISA-51.1 – Process Instrumentation Terminology.

1.08 SITE CONDITIONS

A. Environmental design conditions.
1. Outdoor:
   a. Temperature: -20 to 120°F.
   b. Humidity: 10 to 100%.

2. Indoor:
   a. Temperature: 50 to 110ºF.
   b. Relative humidity: 10% - 90%, noncondensing.

B. Electrical supply characteristics: UPS-provided, 120-volt, single-phase, 60 Hz.

C. Control signals:
   1. Analog:
      a. Voltage: 24-volt dc.
      b. Range: 4 to 20 mA.
      c. Load impedance: 0 – 750 ohms, minimum.
   2. Discrete:
      a. Voltage: 120-volt ac, 24-volt dc.
      b. Contact type: Form C (1 NO, 1 NC), minimum.
      c. Rating: 2 amperes at 30-volts dc, minimum.

1.09 WARRANTY

A. Manufacturer's warranty:
   1. Warranty shall not begin until acceptance after final inspection of system by Owner.
   2. Specified availability shall be maintained throughout warranty period. Failure to achieve specified availability may at Owner option result in extension of warranty period until specified performance has been met for a continuous period equivalent to warranty period.

B. Special warranty (provide as alternate pricing and not part of base bid):
   1. Provide extended warranty for software and firmware supplied. Warranty shall provide parts and maintenance for installed system to Owner for period extending through startup and acceptance period of plant and for period extending 5 years beyond that date.
   2. Warranty provisions of license agreement shall cover system software and firmware including any third party software supplied with system.
   3. Provide telephone support service for period beginning with delivery of equipment and extending throughout software warranty period. Service shall provide telephone consultation services as required on operation, configuration development, trouble shooting, and maintenance of system hardware or software by persons in Contractor's organization who are thoroughly familiar with equipment and software supplied.

C. Extended correction period: Provide post-warranty software maintenance program. Program shall provide operating and configuration software upgrades for installed system to client for a period extending through startup and acceptance period of plant and for a period extending 5 years beyond that date.

1.10 LICENSE

A. Assign standard software license to Owner for software provided upon initial installation of each software component. Software licenses shall be issued in Owner's name and transferred without restrictions to Owner upon completion of Project.

B. Extend to Owner all rights of software purchase including telephone support during warranty period.

PART 2 PRODUCTS

2.01 SYSTEM REQUIREMENTS

A. System operation shall maintain constant duty cycle regardless of upsets, operator activities, or remote access of system from LAN.

B. Process variables shall be scanned, limit checked, broadcast and updated on monitor displays each second, synchronously.

C. Software maintenance functions shall not affect any drop in system except during download procedures.

D. System components shall be of solid-state, standardized, modular, plug-in construction. Modules shall be removable without need for rewiring.

E. Equipment shall be provided with operation indicating lights, test panels and other features to assist in testing and diagnostics. On-line self-diagnostic routines shall run automatically and notify operator of any malfunctions and location of malfunction.

F. Owner shall receive latest hardware technologies until equipment is purchased.

G. Provide special tools, test equipment, and software required for system installation, operation, and maintenance.

H. Expandability:
   1. System shall be expandable and easily changeable using "fill-in-the-blank" software.
   2. Expandable by addition of more drops. Addition of drops and new functions shall not affect existing operations and shall not degrade current performance.
   3. Expansion shall include addition of:
      a. Field equipment such as process controllers, local I/O modules, remote I/O communications modules, remote I/O modules, and serial interfaces to peripheral devices.
      b. Operator/engineering interface equipment such as operator workstation, engineering workstation, monitors, printers, and data archiving devices.
      c. Configuration additions such as I/O points, control loops, alarming, logging, performance calculations, environmental monitoring, graphics displays, sequence of events reporting, and historical data collection.
      d. Remote monitoring of system from existing LAN.
   4. Define overall system limitations proposed in terms of total I/O and update rates under all operating conditions.
   5. Expansion of system shall be implemented with hardware and software identical to that of base system if at all possible, or at a minimum shall be totally compatible with original system.

I. Reliability:
   1. Control system shall operate in power plant environment with high degree of reliability.
   2. Hardware shall consist of latest solid-state technology and packaged to operate in environment required.
   3. Control software shall implement simple, predictable, high-level task-specific organizations of modules.
   4. Failure of one drop will not affect any other drop in system.
   5. On-line diagnostics shall be provided to disconnect drop from process data highway should malfunction occur.
   6. Diagnostics shall be provided to quickly define failed part. Graphical representation for card-level diagnostics shall be provided.

J. Maintainability:
   1. Materials and equipment shall be standard products of reputable manufacturer regularly engaged in production of same. Where more than one unit of same item is required, items provided shall be identical.
   2. Contractor shall define number of different printed circuit cards, power supplies, and connectors required in system.
   3. Maintenance procedures shall be simple, straightforward and well documented.
   4. Software tools required to maintain, expand, reconfigure, and reload system shall be provided with each workstation.

K. Communications:
   1. Communication system shall provide redundancy such that single failure does not affect operation.
      a. Process data highway failure shall be reported to system immediately.
      b. System shall be capable of automatic detection and wrapping.
   2. Provide redundant process data highway. Process data highway shall be high-speed utilizing dual bus/star topologies, in accordance with ANSI 802.3.
   3. Highway data communication:
      a. Communication bus: Distributed controllers shall be interconnected with high-throughput network.
      b. Redundancy: Simplex Network shall utilized copper media backbone.
      c. Communication processors: Separate data highway network interface cards at each drop shall handle inter-drop communication and data transmission.
      d. Communication rate: Up to 100 MB/sec, sufficient to support at least 200,000 periodic data point values each second. Process variable information shall be available to every drop in system at least every 100 milliseconds.
      e. Communication media: Data highway backbone shall be copper or fiber optic media. Communication between highway and drops shall be copper or fiber optic media as required to meet system speed requirements.
      f. Communication protocol: Data highway communication shall use both synchronous and asynchronous modes.
      g. Reliability: No single drop point of failure shall disable any part of data highway. Self-diagnostics shall cause any drop to disconnect itself from system upon detection of any unrecoverable error.
   4. Management information communication:
      a. Communication Bus: Workstations shall interconnect to process data highway for new LAN. It shall be possible for remote devices to interconnect via bridges, switches, or routers.
      b. Communication protocol: Network shall be TCP/IP compliant.
      c. Redundancy: When used in redundant configuration network shall be capable of automatic error detection and wrapping when failure of primary bus or device is detected.

2.02 PERFORMANCE REQUIREMENTS

A. Accuracy: System shall report values conforming to standard values indicated by field instruments.

B. Availability: Overall system availability (operator workstation to field instruments) shall be 99% over 30-day test period. System is defined as available during periods where redundant component is out of service and network is still functional.

C. Reliability: Overall system reliability shall be 99% over 30-day test period.

D. Repeatability: System shall produce consistently acceptable results over 30-day test period.

E. Screen access and update within network shall be less than 2 seconds.

2.03 SOURCE QUALITY CONTROL

A. Prior to shipment of control equipment hardware and software, Owner and Engineer shall witness performance tests at Contractor's manufacturing facility.

B. Contractor shall be responsible for hardware and software provided for Contract and shall notify Owner and Engineer, in writing, when it is considered complete, in good operating condition, and ready for performance tests.

C. Testing costs:
   1. Pre-tests: Costs of conducting tests shall be borne by Contractor.
   2. Factory demonstration test:

a. Include cost of conducting factory demonstration test in Bid.
b. Owner will include cost of up to 3 persons including round trips for 5-day duration to Contractor's facility for factory demonstration tests.
c. Owner and Owner' Representative will each render bill to be paid by Contractor covering costs incurred by retesting or supplemental testing exceeding limits noted herein.
d. Billings to Contractor for Owner and Owner' Representative costs for retesting and supplemental testing exceeding limits noted herein shall be paid directly to Owner or Owner' Representative, as appropriate, within 30 calendar days from receipt by Contractor. Contractor's failure to pay such billings shall be cause for withholding final payment in amount equal to such costs.
e. Owner' Representative costs, when applicable, will be determined at Owner's Representative current per diem rates, plus direct expenses.

D. Factory demonstration tests:
1. Contractor's factory demonstration test shall include but not be limited to following requirements as described herein.
2. Visual inspection.
   a. Verify correctness of required tag identification of each system component and accessory including system processors, enclosures, peripherals, cabling, I/O boards, circuit breakers, power supply terminals, etc.
   b. Verify physical appearance and workmanship, hardware redundancy, furnished spare allocations and expandability conforms to specifications.
   c. Verify equipment is complete, marked and located according to parts lists, cabinet layouts and termination schedules.
   d. Check cable bundles, plugs and sockets, termination blocks and equipment racks and connections are clearly labeled.
3. Demonstration test:
   a. Input/output points: Confirm point-to-point wiring by continuity and verify database addressing, ranges, and alarm assignments by simulating one I/O point per I/O module at termination unit and viewing response on operator workstation. If any I/O point fails testing outlined above, Owner or Engineer reserves right to test points on associated I/O module.
      1) Analog inputs scaling, engineering unit values, and scan rates shall be verified. While cycling through input span, database alarm functions shall be demonstrated by noting graphic displays, alarm displays, and hard copy alarm documentation when alarm limits are exceeded.
      2) Analog output values shall be checked.
      3) Digital inputs shall be toggled to confirm status change and scan rate. Database linkages shall be verified by observing associated display data fields while changing state of database points and noting changes in state/color in respective fields. If alarms are generated, verify alarm listings and hard copy documentation.
      4) Digital output shall be checked.
   b. Demonstrate functionality of each control strategy.
      1) Use functional descriptions and control logic diagram.
      2) Simulate analog and discrete inputs as well as operator commands to demonstrate functionality of each control loop and sequence including both manual and automatic modes.
      3) Verify output signals response in proper direction and magnitude.
      4) Verify override and interlock logic.
      5) Verify action of controllers in both manual and automatic modes.
   c. Demonstrate functionality of digital communication interfaces:
      1) Verify communication interface with PLCs by forcing values in control program and monitoring response from operator workstation.
      2) Approximately 10% of values will be verified.
   d. Demonstrate on-line diagnostic capabilities including performance information statistics of stations and peripheral equipment.
   e. Demonstrate data management functions including one display of each type. Owner to select displays and trends to be demonstrated.

1) Review graphic display displays for content and verification of data field linkages.
2) Include verification that data collection occurs and that data collected and stored can be retrieved and displayed in form of reports or historical trends.
3) Simulated input data shall also be used to generate sample reports to confirm report format, calculation algorithms, and reporting frequencies.
4) Check trend displays during testing period.

f. Demonstrate system report generation including one specific report and one overall plant report. Owner will select report to be demonstrated.
1) Report content shall be verified to insure proper linkages, format, calculations and reporting frequencies.
2) Report format and logging capabilities shall be verified by introduction of real time data into database.
3) Report content shall be verified to insure proper linkages, format, calculations and reporting frequencies.

g. Demonstrate effects of system malfunctions on process controls.
1) Check power and grounding systems according to drawings. With main power disconnected, test earth grounds on power supply system be checking that there is an open circuit between cabinet frame and power rails.
2) Disconnect primary power supply to one of power modules in power supply systems. System should be unaffected in operation and supply failure alarm should be generated to operator for each system.
3) Disconnects highways and field buses to verify operation of redundant highway maintains system performance and a highway failure or backup highway selected alarm is generated.
4) Check redundant cards to verify that backup cards maintain system performance and appropriate alarm is generated.
5) Check that system properly reboots after power outage.

4. After factory demonstration testing, witnessed by Owner and Engineer, necessary corrections shall be made to system to satisfaction of Owner before system is shipped.

E. Tests results:
1. If system fails to perform properly:
a. Make necessary changes and adjustments to equipment.
b. Notify Owner and Engineer when system is ready for retesting.
c. Repeat factory demonstration testing at no cost to Owner or impact to project schedule.
2. If testing is substantially correct with minor defects, Contractor shall verify deficiencies are corrected in writing to Owner and Engineer.
3. Upon completion of hardware factory demonstration testing, Contractor shall submit certificate of test performance and compliance to Owner and Engineer.
4. Upon completion of application software application factory demonstration testing, Contractor shall submit certified copy of test results to Owner and Engineer. Included shall be a statement that system and application software have been tested and operate in accordance with specifications.

PART 3 EXECUTION

3.01 TRAINING

A. Provide training at Owner's site facilities following site acceptance tests. Training shall include aspects of operator's interface, system operation, and maintenance. Purpose of training session will be to answer questions by operations and maintenance personnel, which have arisen out of initial use of system during site acceptance.

B. Furnish training programs to train Owner' personnel in administration, configuration, operation, and maintenance of control system. Contractor shall provide basic required training and recommend additional training programs for Owner.

C. Two separate training programs shall be developed. Sessions shall be presented as operational training (2 sessions) and maintenance and configuration training (1 session). Training programs shall be conducted for numbers of personnel as listed below.
   1. Operator Training Group A: 3 personnel.
   2. Operator Training Group B: 3 personnel.
   3. Maintenance and configuration training:
      a. 3 maintenance technicians/personnel.
      b. 3 engineers/personnel.

D. Provide following quantities of training:
   1. Operator Training Group A: 40 hours.
   2. Operator Training Group B: 40 hours.
   3. Maintenance and Configuration Training: 40 hours.

E. Provide copies of training material for Owner.

F. Provide training to familiarize Owner' personnel with system. Training shall be oriented toward installed equipment and software and satisfy requirements for following.
   1. General training: Familiarize project management personnel, engineers, operators, and maintenance personnel with control system overview, philosophy, major hardware components, reporting, and data retrieval.
   2. Operator training:
      a. System equipment operation, both individually and collectively as operating system.
      b. Procedures required to operate and to modify each process from operator's workstation.
      c. Normal and abnormal startup and shutdown operating conditions.
      d. Operator/control system interactions in conjunction with use of process information system functions.
   3. Programmer training:
      a. Use and modify programs, as desired, during plant operation.
      b. Compose and generate required monitor-based process graphics and report/log formats.
      c. Write, edit, file, delete, and apply applicable programming language and high-level process control language programs necessary to implement control system and process information functions.
      d. Function and use of support and application software.

G. Training shall be taught by person with significant training experience. Instructor and course materials shall be approved in advance of training.

H. Tuition costs associated with training shall be included with Bid. For on-site training, food, lodging, and travel expenses for trainer shall be included.

I. Courses shall be scheduled such that courses do not overlap to allow same personnel to attend more than one training course.

J. Training shall be scheduled by system supplier minimum of 60 days in advance of start of training.

END OF SECTION

1) D. D. Erikson
2) T.J. Mergen

SECTION 13432

PROCESS CONTROL PANELS AND HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control panels and enclosures completely assembled with electrical controls mounted and wired for manufacturer's equipment.

B. Console operator interface station and enclosure completely assembled with electrical controls mounted and wired.

C. Mount and wire programmable logic controller and I/O chassis as specified in Section 13455 in selected panels and enclosures.

D. Performance tests.

1.02 ACTION SUBMITTALS

A. Shop Drawings:
1. Control panel and enclosures:
   a. Panel exterior general arrangement drawings showing location of surface and flushed mounted equipment.
   b. Panel interior arrangement drawings including:
      1) Locations and identification of terminal blocks.
      2) Locations and identification of racks/chassis and equipment mounted within.
      3) Arrangement of other equipment mounted inside panel identified by instrument tag number.
   c. Exterior panel wiring interface termination diagrams.
   d. List of nameplate legends and sizes for panel-mounted equipment.
2. Panel-mounted instruments: Manufacturer's data and/or specification sheets for control and instrument items, showing design parameters, equipment catalog designations, calibration range, features and options provided. Sheets shall be identified with corresponding instrument tag numbers.
3. Console operator interface station:
   a. Provide sample panel section mockups for TDCJ approval. Include various types of console pushbuttons (Option 1, 2, and 3) included in specifications. Layouts of panels shall be modified to incorporate larger pushbuttons specified for pushbutton Option 2 and pushbutton Option 3.
   b. Contractor shall not proceed with manufacturer of control console operator interface station until mockup is approved by TDCJ.

B. Quality assurance data:
1. Control panel and enclosures:
   a. Schematics and wiring diagrams identifying terminals, circuits, color of wire, and cable/wire numbers. Cable, wire, and terminal numbers for panels shall be assigned by panel provider. Cable, wire, and terminal numbers shall be instrument tag number oriented. Coordinate with electrical contractor to avoid duplication of wire and terminal numbers.
   b. Provide heat gain calculations for each panel/enclosure with all components energized and in operation. Calculations shall be based on ambient temperatures defined within specifications and with exterior panels in full exposure to sun. Provide adequate cooling for any panel in which internal cabinet operating temperature exceeds rating of any component mounted within enclosure.
2. Configurable controller, for information only: Listing of logical configuration of controller.

1.03 CLOSEOUT SUBMITTALS

A. Operation and maintenance manual.
   1. Complete instruction manuals and parts lists covering installation, operation, and maintenance of panel-mounted devices. Manuals shall include interface drawings defining terminal numbers and functions for interface with other instruments and equipment.
   2. Schematic and wiring diagrams for each panel/enclosure. Show color of wire, termination points, terminal numbers, cable and wire numbers.

B. Record Documents: "As-built" schematics and wiring diagrams defining terminals, cables, and wire numbers as specified above.

1.04 MAINTENANCE MATERIALS

A. Furnish separately packaged spare parts of following items:
   1. Fuses: 100% of each rating furnished with control equipment and used internally within panel/enclosure for circuit protection including, but not limited to, miscellaneous fuses on controllers, recorders, and indicators. Minimum of one standard package.
   2. Indicating lamps: 10% of each type furnished with control equipment. Minimum of one standard package.
   3. Relays: 10% of each type furnished with panel/enclosure. Minimum of one.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Ship control panels as recommended by control panel/enclosure manufacturer.

B. Provide removable eye bolt lifting lugs for large panels and suitable skids for safe handling.

C. Remove rack-mounted instruments, controllers, recorders, and indicators that could be damaged by shipment and package in original shipping cartons.

PART 2 PRODUCTS

2.01 DESIGN REQUIREMENTS

A. Panels shall satisfy UL-508A requirements.

2.02 FABRICATION

A. Size: Sufficient to house terminal blocks, wireways, power supplies, racks, chassis, and instruments required for each application. Provide 25% additional space for future expansion.

B. Oil-resistant gasket attached with oil-resistant adhesive.

C. Provide each panel/enclosure with industrial corrosion inhibitor emitters of sufficient size and quantity to protect contents of enclosure size selected. Emitters shall contain additional red metal inhibitors to protect brass and copper material in addition to ferrous metals.

D. Provide adequate cooling by means of air conditioners as necessary for any panel in which internal cabinet operating temperature exceeds rating of any component mounted within enclosure. Thermostat shall be used to control internal temperature.

E. Provide adequate heating by means of electric heater and thermostat for panel in which internal cabinet temperatures may fall below operating temperatures of component mounted within enclosure.

F. Provide "data pockets" for Drawing storage on inside face of panel.

G. Subpanels: Provide for full surface mounting of terminal blocks, wireways, power supplies, racks, chassis, and instruments.

H. Free-standing panels:
   1. Free-standing panels shall mount on 3" (75 mm) concrete pad provided.
   2. Construct control panel in accordance with manufacturer's standard, subject to Engineer's review.
   3. Control panel shall be self-supporting with angle iron or plate framework as necessary to obtain proper stiffness and support.
   4. Fabricate NEMA 12 control panel of 10-gage carbon steel plate with all-welded construction throughout. Welds shall be ground smooth, corners shall be rounded, and weld spatter cleaned. Corner construction shall be minimum of 1/8" inside radius.
   5. Provide reinforcing bracing from center of front panel to center of back.
   6. Surface of control panel shall be free from mars and defects. Finished panel surfaces shall be flat within 1/16" in 6'-0" and be smooth with rounded edges. Finished panel surfaces shall be 3/16" (5 mm) thick. Instrument cutouts and drilling shall be straight and true.
   7. Provide 10-gage full height access doors. Access doors shall have triple-point latch, stainless steel handle and lock, full length stainless steel "piano" type hinge, and sponge rubber gaskets. Door shall be supplied with devices to hold door in 105° position when fully opened.
   8. Provide, full-width, full height, real rectangular subpanel for *surface mounting of programmable controller,* other surface-mounted instruments, wiring troughs, and terminals strips.
   9. Provide full-length, side-mounted subpanels for installation of terminal strips.
   10. Base of control panel shall be adequately reinforced to permit anchoring to concrete pad.
   11. Supply 4 identical master keys which will operate all locks of each control panel.

I. Surface-mounted panels:
   1. Provide with seam-sealed construction with no holes or knockouts and with stainless steel collar studs for mounting subpanels.
   2. Provide Type 316 stainless steel hasp for padlocking.
   3. Provide full size subpanel.
   4. Color:
      a. Exterior: White, outdoor; gray, indoor.
      b. Interior: White.

J. Special features as specified in Panel Schedule:
   1. Panel nameplate.
   2. Size.
   3. Type.
   4. Style.
   5. Cable entry location.

K. Manufacturer: Control Engineering Company, Hoffman Engineering Company, or AE-approved equal.

2.03 PANEL-MOUNTED DEVICES

A. As specified for panel-mounting in Section 13455.

B. Control relays:
   1. Function: General logic hardware interlocks.
      a. Type: Plug-in.
      b. Construction: Continuous duty.
      c. Coil voltage: 120-volt ac, 60 Hz and 24-volt dc, as applicable.
      d. Switch configuration: 3-SPDT.
      e. Indication: Mechanical or LED to indicate energized relay.
      f. Switch rating: 10 amperes at coil voltage.
      g. Mounting: Socket for DIN-rail mounting.

h. Manufacturer: Allen Bradley, Type 700-HF, or AE-approved equal.
2. Function: Interposing relay for PLC output.
   a. Type: Plug-in.
   b. Construction: Continuous duty.
   c. Coil voltage: 120-volt ac, 60 Hz and 24-volt dc, as applicable.
   d. Switch configuration: 2-SPDT.
   e. Indication: Mechanical or LED to indicate energized relay.
   f. Switch rating: 5 amperes minimum at coil voltage.
   g. Mounting: Socket for DIN-rail mounting.

C. Surge suppressor:
1. Type: Pluggable surge suppression modules fitting into fixed base with hot swapping capability.
2. Capacity:
   a. Current: Up to 10kA surge current handling.
   b. Peak clamping voltage: <= 41.6 volt dc
   c. Resistance: 2.2 ohm in-line.
3. Discrete 24-volt dc signals:
   a. Circuits: 2 or 4, as shown on Drawings.
   b. Signals: Suitable for 24-volt dc discrete circuits.
   c. Model:
      1) 2 circuit plug-in module: PT 2x1-24DC-ST, Part No. 2856087, or AE-approved equal.
      2) 2 circuit base: PT 2x1-BE, Part No. 2856139.
      3) 4 circuit plug-in module: PT 4x1-24DC-ST, Part No. 2838322, or AE-approved equal.
      4) 4 circuit base: PT 4x1-BE, Part No. 2839363, or AE-approved equal.
4. Discrete 120-volt ac signals:
   a. Circuits: 2.
   b. Signals: Suitable for 120-volt ac discrete circuits.
   c. Model:
      1) 2 circuit plug-in module: PT 2x1VA-120AC-ST, Part No. 2839185, or AE-approved equal.
      2) 2 circuit base: PT BE/FM, Part No. 2839282, or AE-approved equal.
5. Ethernet signals
   a. Circuits – as shown on drawings.
   b. Signals – suitable for Ethernet communication.
6. Manufacturer: Phoenix Contact, or AE-approved equal.

D. One-shot relay:
1. Input voltage: 24 volts dc.
2. Output voltage 24 volts dc.
3. Contacts: 2 floating point PDT contacts.
4. Power Status display: Green LED.
5. Relay Active Status display: Yellow LED.
6. Manufacturer: Phoenix Contact, Model ETD-SL Series, or AE-approved equal.

E. Intrinsically safe barriers:
1. Function: Isolate switches in hazardous areas.
2. Type: Isolated switching.
3. Hazardous area classifications: Class I, II, III; Division 1, Groups A through G.
4. Power required: 120-volts ac, 60 Hz.
5. Mounting: Nonhazardous area on DIN rail.
6. Channels: 2.
7. Inputs: One dry contact per channel.
8. Outputs: SPDT relay contact per channel.
9. Manufacturer: Cooper Crouse Hinds, Model GHG-122-3121-D-1003, or AE-approved equal.

F. 24V DC power supply
1. Provide 1 or more 24-volt dc power supplies, as necessary, within each panel to power field transmitters, I/O, and related equipment.

2. Type: Simplex.
3. Input voltage:
   a. One 120-volt ac from panel uninterruptable power supply.
4. Rating: Amperage shall be 200% of required capacity.

G. 2V DC power supply
1. Provide 1 or more 2-volt dc, as necessary, within each panel to power LED lights in console operator interface station
2. Type: Simplex
3. Input voltage:
   a. One 120-volt ac power from panel uninterruptable power supply
4. Rating: Amperage shall be 200% of required capacity.

H. 4V DC power supply
1. Provide 1 or more 4-volt dc, as necessary, within each panel to power LED lights in console operator interface station
2. Type: Simplex
3. Input voltage:
   a. One 120-volt ac power from panel uninterruptable power supply
4. Rating: Amperage shall be 200% of required capacity.

I. Uninterruptable power supply
1. Provide 1 within each panel, reference IS-Series drawings.
2. Battery Type: Maintenance-free sealed Lead-Acid battery.
3. Input voltage:
   a. One 120-volt ac power from facility emergency power supply.
4. Alarms: Provide dry contact alarm for loss of power.
5. Power protection level of 9.
6. Size to provide five minute power to panel devices on loss of normal power, 750VA minimum.

2.04 CONSOLE OPERATOR INTERFACE STATION

A. Console:
1. Base cabinet: 10 gage stainless steel NEMA 12 lockable enclosure.
2. Seamless construction.
3. Color: Gray.
4. Quantity and size: Refer to IA-Series drawings.

B. Interface panel
1. Provide graphical layout similar to the existing control layout, refer to IA series drawings for layouts.
2. Material of construction:
   a. Polycarbonate overlay.
   b. Overlay shall be non-glare, non-yellowing, durable, and scratch resistant.
   c. Overlay shall be provided with a black background and through-colored lines and legends. Engraved lines and legends shall be reverse engraved and backfilled with accent colors.
   d. Entire graphics overlay shall be mounted to a 3/8" stainless steel enclosure to provide adequate mounting surface for the 8mm subminiature pushbuttons and lights.
3. Quantity and size: Refer to IA-Series drawings.

C. LED lights:
1. Color: Red, Green, Amber as shown on console layouts (IA-Series Drawings)
2. Voltage: 2 volts or 4 volts, as required.
3. Provide LED light with cable length to extend to terminal blocks in control panel.
4. Quantity and size: Refer to IA-Series drawings.
5. Manufacturer: Lumex Opto, or A/E approved equal.

D. Alarm horn:
   1. Continuous tone.
   2. Input voltage: 120-volt ac power.
   3. Manufacturer: Mallory, or A/E approved equal.

E. Sub-miniature pushbutton (Option 1):
   1. Size: 8 mm.
   2. Voltage rating: 30 volts-dc.
   3. Cap: Round, black.
   4. Barrel connector.
   5. Nonilluminated.
   6. Quantity and size: Refer to IA-Series drawings.
   7. Manufacturer/model: NKK/Series HB, or A/E approved equal.

F. Vandal-resistant miniature sealed pushbutton (Option 2):
   1. Size: 12.15 mm.
   2. Voltage rating: 50 volts-dc.
   3. Barrel connector.
   4. Nonilluminated.
   5. Quantity and size: Refer to IA-Series drawings.
   6. Manufacturer/model: ITW Switches/Series 57, or A/E approved equal.

G. Capacitance button (Option 3):
   1. Size: 25.4 mm.
   2. Voltage rating: 120 volts-ac.
   3. Nonilluminated.
   4. Touch controller module.
   5. Quantity and size: Refer to IA-Series drawings.

H. Manufacturer/model: Easter-Owens/Touchbolt, or A/E approved equal.

I. Light switches:
   1. Power lever: 10A @ 125/250V AC.
   2. Provide sealed version meeting IP67.
   3. Color: Black with On/Off Labling.
   4. Single pole double throw.

2.05 FACTORY WIRING

A. Provide complete factory wiring of control cabinet and equipment mounted thereon.

B. Provide separate circuits from power distribution panel for:
   1. UPS feeding PLC system and communication devices communication devices.
   2. Instrumentation and control devices.
   3. Lighting and service outlets.

C. Install continuous wire from terminal to terminal. Splices not acceptable.

D. Wire and cable:
   1. Analog signal cable:
      a. Configuration: Twisted pair, shielded, and jacketed.
      b. Insulation: 300-volt, 60°C, PVC, color-coded to permit identification of each conductor.
      c. Conductors: Stranded copper, 18 AWG.
      d. Shield: Metallized foil or tinned copper braid providing 100% coverage against noise together with 20 AWG stranded tinned drain wire.

2. Power wire:
   a. Rating: 600-volt, 90ºC, PVC insulation/jacket, Type MTW.
   b. Conductors: Stranded copper, 12 AWG.
3. Discrete signal wire:
   a. Rating: 600-volt, 90ºC, PVC insulation/jacket, Type MTW.
   b. Conductors: Stranded copper, 18 AWG.
4. Power and discrete signal wire insulation color:
   a. BLK: Line voltage.
   b. BRN: Line voltage/fused.
   c. RED: 120-volt control ac.
   d. ORG: 24-volt control ac.
   e. YEL: Caution/may be live from remote power source.
   f. GRN: Ground.
   g. BLU: Dc negative.
   h. VIO: Dc positive.
   i. WHT: Neutral at GND potential.

E. Group and route wire and cables from terminal blocks to panel-mounted instruments in separate wireways as follows:
   1. Low-voltage/low current dc analog signals (30-volts/50 mA or lower).
   2. High-voltage dc alarm signals (48-volts or greater).
   3. Low-voltage ac control signals (120-volts or lower).
   4. High-voltage ac power signals (greater than 120-volts).

F. Wiring interfaces:
   1. External connections:
      a. Install dedicated terminal strips for analog, discrete, and power signals.
      b. Provide manufacturer's standard connectors for communications, digital data, and multiplexed signals.
      c. Provide surge suppressor terminal blocks for analog and discrete signals that leave building structure: Refer to schematic diagrams for acceptable manufacturers.
      d. Provide intrinsically safe barriers for applications where field instruments are not rated as explosionproof for use in hazardous classified areas. Crouse-Hinds SPEC 504, or equal.
   2. Provide separate terminal strips and wireways for 120-volt ac and 24-volt dc circuits.
   3. Terminal block requirements:
      a. Type: High-density.
      b. Voltage: 600-volt.
      c. Wire range: 30 AWG to 12 AWG.
      d. Termination: Screw clamp compression with pressure plate.
      e. Mounting: Rail-mounted with end anchors and barriers.
      f. Spare: Provide greater amount of 20% or 6 terminals per terminal strip
      g. Manufacturer: Refer to schematic diagrams for acceptable manufacturers.
   4. Terminate maximum of 2 wires on single connect point.
   5. Wire PLC network communication cables point-to-point rather than terminating on interposing terminal blocks.
   6. Install power distribution blocks to parallel feed to power control devices. Parallel wiring from instrument to instrument not acceptable.
   7. Provide plug-in strip for ac supply power to devices requiring ac power via power cord.
   8. Circuit protection:
      a. Install individual circuit breakers for protection of control panel power supply circuits as identified above. Phoenix Contact TMC60 Series, or AE-approved equal.
      b. Group circuit breakers on separate terminal strip away from low-voltage instrumentation circuitry.
      c. Provide fuses or circuit breakers for protection of individual instrumentation circuits. Instrumentation circuits for field-mounted instruments may be combined in logical groupings of no more than 10 devices/signals.
         1) Fuses: Phoenix Contact UK 5-HESI Series, or AE-approved equal.

2) Circuit breakers: Phoenix Contact TMC42 Series, or AE-approved equal.

9. Provide 8 AWG internal copper grounding bus for ground connections.

G. Wire tags:
1. Type: Embossed, heat-shrink tubing. Fiber tape tagging not acceptable.
2. Color: White.
3. Identify both ends of wires and/or cables with permanent wire marker.

H. Service equipment:
1. Fluorescent lighting fixtures of sufficient size and quantity to provide 30 to 50 foot-candles of illumination within panel. Wire to UL-approved switch mounted inside panel.
2. Duplex, 120-volt ac, 3-wire grounded type convenience outlets. Provide 1 duplex receptacle per 12 sq ft of subpanel area. Service outlets shall be powered from separate voltage source than PLC equipment, as specified above.

2.06 NAMEPLATES

A. Provide permanent nameplates for devices mounted on or within panels. Provide separate nameplates. Standard nameplates included with instruments not acceptable. Plastic tape labeling not acceptable.

B. Type: Instrument nameplates shall be fabricated of laminated plastic, not less than 1/16" (2 mm) thick white Bakelite engraving stock with black core.

C. Size: Outside panel surface shall be 1" x 2" (25 mm x 50 mm), minimum.

D. Lettering: Engraved, approximately 3/16" (5 mm) high, minimum, subject to Engineer's review.

E. Attach with sheet metal screws after painting is complete. Glue adhesive not acceptable.

2.07 PAINTING AND FINISHING

A. Surfaces shall be commercial blast cleaned in accordance with SSPC SP6.

B. After preparation of surfaces, pits or indentations shall be filled with a 100% solid catalyzed epoxy putty compound.

C. After hardening of putty filler, filled areas shall be sanded smooth. Entire exterior surface shall be smooth and uniform to receive paint.

D. Manufacturer's standard interior and exterior paint shall be acceptable as primer coat.

E. Prepare interior and exterior surfaces for finish coat of paint in accordance with manufacturer's instructions.

F. Color:
1. Interior and subpanels: White.
2. Exterior, indoor panels: Slate gray.

G. Spray-apply paints to produce smooth, uniform coat, free of defects. SSPC PA-1 shall apply.

H. Each coat shall be properly cured according to manufacturer's instructions before application of succeeding coats.

2.08 SOURCE QUALITY CONTROL

A. Refer to Section 13400 for performance testing requirements.

PART 3 EXECUTION

3.01 INSTALLATION

A. Mount controls panels as shown on Drawings and/or where approved by Owner's representative.

B. Mount rigidly supported, level and plumb, and in such manner as to provide accessibility; protection from damage; isolation from heat, shock, and vibration; and freedom from interference with other equipment, piping, and electrical work.

C. Do not install equipment until adjacent heavy construction work has been completed to extent that damage will be unlikely to installation by such construction work.

D. Install outdoor surface-mounted panels within sun protection enclosures. Panels shall face north or east, where possible.

E. Install in accordance with manufacturer's recommendations.

3.02 FIELD PERFORMANCE TESTING

A. Refer to Section 13400 for operational availability test.

3.03 PANEL SCHEDULE

Item No.	Panel Nameplate	Size (inches) (H x W x D)	Type	Style	Cable Entry Location
1	WEST PICKET PLC CONTROL PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top
2	WEST PICKET GRAPHICS PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front and rear access	Bottom and Top
3	EAST PICKET PLC CONTROL PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom
4	EAST PICKET GRAPHICS PANEL	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front and rear access	Bottom
5	CENTRAL CONTROL PLC PANEL A	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top
6	CENTRAL CONTROL PLC PANEL B	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top
7	CENTRAL CONTROL PLC PANEL C	Refer to IA-Series Drawings	NEMA 12, stainless steel	Floor mount two door front access	Bottom and Top

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13435

PROCESS CONTROL SOFTWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Product Data: Requirements for software, programming and configuration.

1.02 ACTION SUBMITTALS

A. Product Data:
   1. Logic programming and configuration.
   2. Input/output partitioning database, in Microsoft Access (latest version) format.

PART 2 PRODUCTS

2.01 SOFTWARE REQUIREMENTS

A. System software shall be fully integrated into one software package for both process control and operator interface.

B. Software shall require only one database for tag and point reference to be modified for hard I/O or soft I/O changes to system. Information in central database shall be automatically accessed or downloaded to various controllers or operator workstations.

C. Changes to database shall be automatically tracked and software shall be self-documenting.

D. Software, exclusive of application software, shall be most recent revision applicable to system hardware at time of software freeze date as defined in Contract Documents.

E. Provide autotune function with features including but not limited to following:
   1. Suitable for processes with slow and fast dynamics.
   2. Compatible with self-regulating and integrating processes.
   3. Immune to noise and process load disturbances.
   4. Permit tuning of PID control blocks whether blocks reside in process controller or Fieldbus device.

F. System software, including that supplied by third parties, shall be furnished to Owner and Engineer with licensing agreement allowing use of program on supplied equipment and copying for archive or training purposes. Licensing shall be supplied with PLC to allow I/O expansion up to I/O count provided (including 25% spare I/O) plus 10%.

G. Software shall provide standard trending features.

H. Operating system: Latest version of Microsoft Windows platform on which PLC is certified to operate.

I. Office suite: Microsoft OfficeProfessional, or latest version.

J. Control system software: Provide control system manufacturer's operator interface software and functionality from each control system workstation for:
   1. Human Machine Interface.
   2. Interfaces to third party systems.

K. Provide complete set of system software including gateway drivers including but not limited to following:
   1. Modbus data interface.
   2. Ethernet gateway.

2.02 PROGRAMMING AND CONFIGURATION

A. Process control shall not be carried out in PC-based operator workstations. Perform execution of configuration software and operation of I/O in dedicated redundant process controllers.

B. Provide application software configuration of system. System configuration shall include database development, control strategy implementation and debugging.

C. I/O partitioning, programming, configuration, graphic screens, control, indication, trending, alarming, status, sequence of events, reporting, archiving, testing, commissioning, and startup assistance shall be responsibility of Contractor.

D. Program and configure control systems in accordance with Section 13486.

PART 3 EXECUTION

NOT USED

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13455

PROGRAMMABLE LOGIC PROCESS CONTROLLERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Programmable controller system.

1.02 WORK BY OTHERS

A. None.

1.03 INFORMATIONAL SUBMITTALS

A. Product Data:
1. Manufacturer's installation instructions and product data.
2. Complete set of instruction manuals sufficient for installation, programming, and operation of equipment supplied.

1.04 ACTION SUBMITTALS

A. Shop Drawings:
1. System network drawing indicating model numbers of items provided.
2. Outline and installation drawings for equipment and accessories provided, including mounting requirements, and grounding requirements. Submittal shall clearly identify each item by instrument tag number or specification section number and paragraph, part or catalog number and options or accessories provided.

B. Quality assurance data:
1. Recommended spare parts list.
2. Name and address of Owner's local supplier for spare parts.
3. Name and address of nearest technical support. Provide description of technical support and availability for following:
   a. Equipment, system software, and data communication.
   b. Application software.
4. Within 30 days of Factory Demonstration Tests, provide detailed performance criteria and testing procedures used to determine satisfactory operation meeting functional performance criteria of control algorithms, data communications, etc., including operating system(s) for process control equipment hardware and software.

1.05 CLOSEOUT SUBMITTALS

A. Record documents which accurately record actual location of controller cabinets and input and output devices connected to system. Include:
1. Interconnection wiring and cabling information.
2. Terminal block layouts in controller cabinets.
3. Input/output schedule in Microsoft Excel or Microsoft Access file format.
4. Electronic media and hard copy of ladder logic and control description.

B. Operation and maintenance data for each item, including each type of I/O card and processing card provided.
1. Bound copies of operating and programming instructions for all items.
2. Card replacement, adjustments, and preventative maintenance procedures and materials.

3. Complete set of instruction manuals sufficient for installation, programming, and operation of equipment furnished.

1.06 MAINTENANCE MATERIALS

A. Furnish 1 uninstalled spare for every 5 (or portion thereof) processors, power supplies, boards, modules, assemblies, and cables for PLC system. Spare chassis is not required.

1.07 QUALITY ASSURANCE

A. Design, construct, and test in conformance to NEMA ICS 1, ICS 2, and ICS 3.

1.08 DELIVERY, HANDLING, AND STORAGE

A. Delivery, storage, and protection shall be in accordance with manufacturer's recommended procedures.

B. Accept products on site in factory containers and verify damage.

C. Store products in clean, dry area. Maintain temperature in accordance with NEMA ICS 1.

1.09 WARRANTY

A. Vendor's warranty shall not begin until final acceptance of system by Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Allen Bradley CompactLogix, or AE approved equal.

2.02 PERFORMANCE REQUIREMENTS

A. Functional performance: Configuration and base level programs shall conform to control strategies specified.

B. Reliability:
1. Equipment hardware and software shall have uptime operation meeting functional performance criteria in manner reasonably satisfactory to Owner and Engineer.
2. Control equipment shall have no component whose failure shall cause system to be non-operative.

2.03 PROGRAMMABLE CONTROLLER SYSTEM

A. System shall provide following capabilities:
1. Field instrumentation wiring terminations, instrument signal input/output for system, monitor and control functions, and self-diagnostics.
2. Ability to expand control equipment, i.e. add controllers and local graphic interface panels. Control equipment shall be computer-compatible, but shall not require computer for data communication device expansion.
3. Capable of supporting copper of fiber-optic data communication for processor, work station, and remote I/O networking.
4. Multiple processors shall function as a network interfaced through data communication system with network programming capability. Processors shall support simultaneous on-line/remote programming and continuous data acquisition and control. Programming shall employ fill-in-the-blanks or interactive techniques.

B. Data communication system shall be capable of supporting copper or fiber-optic media for processor, work station, local graphic operator interfaces, and remote I/O networking.
   1. Arrange system as indicated on Drawings.
   2. System hardware shall have sufficient data protection to prevent erroneous data communication during power-up or power-down.
   3. System shall recognize transmission format errors and either correct or request retransmission.
   4. Construct data communication of multipoint, multidrop configuration.
   5. Contractor shall be responsible for confirming final selection of components to support a fully complete and operable system.

C. Supply cabinets, consoles, power supplies, digital instrumentation, communications, interconnecting cables as required, and necessary voltage regulation or conditioning equipment for complete and operable system meeting performance and control description specifications.

D. Power supply: 120 volts ac, single-phase, 60 Hz.

E. Manufacturer shall have application training and customer assistance services available.

F. Major assemblies, subassemblies, circuit card, and devices shall be permanently marked with manufacturer's part or identification number.

G. Controller system shall be of modular design with plug-in processing unit, input/output frames or assemblies, and plug-in peripherals. Components shall be serviced and supported by same company.

H. Label I/O card strips with English descriptions.

I. Provide 5 spare CDs, DVDs, or other acceptable electronic media for use with programming panel.

2.04 SYSTEM COMPONENTS

A. Chassis:
   1. Capacity: 7, 10, or 17 slot.
   2. Catalog number: 1756-A7, 1756-A10, or 1756-A17 or A/E approved equal.

B. Power supply:
   1. Available input power source: 120-volt ac.
   2. Mounted left of chassis.
   3. Catalog number: 1769-PA75, or A/E approved equal.

C. Controller:
   1. Controller shall be configured by system integrator.
   2. Controller tasks: 32 tasks, 100 programs/task.
   3. Built-in communication ports: One USB 2.0.
   4. Communication options: EtherNet/IP.
   5. User Memory: 8 MB.
   6. CompactFlash Card: 1784-CF128 nonvolatile memory.
   7. I/O Memory: 980 KB.
   8. Lithium battery: 1756-BA.
   9. Configuration software requirements:
      a. Programming via RSLogix 5000 IEC 61131-3 compliant configuration software. Configuration software shall support relay ladders, structured text, function block diagram and sequential function chart programming.
      b. Program CPU on-line or off-line.
   10. Catalog number: ControlLogix 1756-L73, or A/E approved equal.

D. Local I/O modules:
   1. In addition to I/O quantities shown on Drawings and in Section 40 95 43-13, provide 20% spare installed I/O points of each type.
   2. Discrete input:
      a. Capacity: 32-point.
      b. Voltage: 24-volt dc, sinked.
      c. Grouping: 2 groups of 16 with common ground per group.
      d. Removable terminal block: 1756-TBNH 20 position NEMA screw clamp block RTB.
      e. Catalog number: 1756-Series, or A/E approved equal.
   3. Discrete output:
      a. Capacity: 32-point.
      b. Voltage: 24-volt dc, sourced.
      c. Removable terminal block: 1756-TBNH 20 position NEMA screw clamp block RTB.
      d. Catalog number: 1756-Series, or A/E approved equal.

E. Communication modules:
   1. Copper EtherNet I/P:
      a. Function: Interface ControlLogix system with other network components via copper media.
      b. Communication rate: 10/100 Mbps.
      c. TCP/IP connections: 128.
      d. Logix connections: 256.
      e. Connection:
         1) Single RJ-45 CAT 5 port.
         2) Single USB 1.1.
      f. Mounting position: Any slot in 1756 chassis.
      g. Catalog number: 1756-EN2T, or A/E approved equal.

2.05 PROGRAMMING DEVICE

A. Computer capable of interfacing with programmable controllers furnished by this contract. New laptop computer equipped with configuration and communication software shall be furnished to Owner. Refer to Section 13432 for specification requirements.

B. Programming device shall incorporate:
   1. Alphanumeric keypad.
   2. Function keys shall allow user to construct a relay ladder diagram on operator display screen, as well as complete programming instructions.

C. Programming controls shall permit user to enter, edit, and delete logic and to monitor registers in decimal, hexadecimal, binary or ASCII and obtain On/Off status of discrete I/O points.

2.06 PROGRAM DOCUMENTATION AND REPORT GENERATION SYSTEM

A. Programmable controller manufacturer shall provide a program documentation package to perform following tasks:
   1. Ladder diagram reports complete with ladder rungs; English description for every contact, bit, or word; organized logic sections with comment lines to identify logic function; rung comments to facilitate maintenance; and element cross references.
   2. Cross reference report: Sequential listing by element address of associated lines (or rungs).
   3. Input/output configuration summary: Table of entire I/O address range, showing which addresses are used by programmable controller program, which addresses have descriptions, and which are hardwired I/O points.
   4. Contact address listing: Lists I/O addresses and their associated symbolic definitions.
   5. Record, load, and verification of program logic with program file on compatible electronic media, and program difference listings.

B. Provide software to allow "off-line" programming using a Windows compatible computer. Software shall document program as listed above. Provide required accessories to load program between programming computer and programmable controller.PROGRAMMING

A. Configuration of control systems and their entry into microprocessor-based control system shall be responsibility of Contractor.

B. Configuration shall be derived from Section 13486.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install in accordance with manufacturer's recommendations and/or where designated by Engineer.

B. Locate enclosures where shown on Drawings and/or designated by Engineer. Enclosure shall be positioned to allow doors to be fully opened for easy access to wiring and components.

C. Mount rigidly supported, level and plumb, and in such manner as to provide accessibility; protection from damage; isolation from heat, shock, and vibration; and freedom from interference with other equipment, piping, and electrical work. Equipment shall not be installed until adjacent heavy construction work has been completed to extent that damage will be unlikely to installation by such construction work.

D. Manufacturer's recommendations referred to herein shall be as stated in manufacturer's instruction books and/or by manufacturer's service representative. Final interpretation of "installation requirements" will be by Engineer.

3.02 FIELD QUALITY CONTROL

A. Following field demonstration tests shall be conducted:
   1. Visual check will be performed to ensure correct equipment.
   2. Latest revision of configuration and base level programs has been loaded.
   3. Complete loop functional checks shall be performed.
   4. Input signals shall be applied to each loop, and when applicable, outputs measured.

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13456

DIGITAL PROCESS CONTROL COMPUTERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Laptop software and hardware.

B. Installation and configuration of laptop software and graphics.

1.02 RELATED REQUIREMENTS

A. Section 13400 - Common Work Results for Process Systems: Design requirements, submittals, and testing.

B. Section 13486 - Control System Operational Description.

1.03 ACTION SUBMITTALS

A. Within 60 days after contract award, submit drawing list and submittal schedule.

B. Prior to construction, submit:
   1. Shop drawings, manufacturer's installation instructions, and product data.
   2. System network drawing illustrating relationship of major hardware, software, and data communications components including model or release numbers. Drawing shall encompass PLC, laptop, and data communication components including processor and I/O model numbers.

C. Refer also to Section 13400.

1.04 INFORMATIONAL SUBMITTALS

A. Outline and installation drawings for equipment and accessories provided, including mounting requirements, and grounding requirements. Submittal shall clearly identify each item by instrument tag number or specification section and paragraph, part or catalog number and options or accessories provided.

B. Recommended spare parts list including maintenance, special tools, and test equipment. Provide name and address of manufacturer's local supplier for spare parts.

1.05 CLOSEOUT SUBMITTALS

A. Operation and maintenance manuals:
   1. Provide complete set of instruction manuals sufficient for installation, programming, and operation of equipment furnished.
   2. SCADA program documentation: Commented, fully documented diagrams in hard copy and computer media format of "as installed" programs.
   3. Equipment and software manuals:
      a. Equipment list identifying components, model numbers, and release levels.
      b. Operation and maintenance data for each hardware and software component.
      c. Programming/configuration instructions for components.
   4. Detailed instructions on operation of utility programs.
   5. Documentation concerning system software development:
      a. Diagrams, code annotation, and other pertinent documents to define system.
      b. Database structures, views, tables, and indexes.

6. Equipment lists including manufacturer's name, part number, serial number, revision number, and recommended spare parts.
7. Communication parameters needed to interface with other computers (speed, number of data bits, parity, modem control, etc.).

B. Project Record Documents:
1. Hard copy and electronic files containing PLC configuration, and sequence of operations.
2. Provide 2 sets of System computer back-up data recovery disks for Server and SCADA/HMI computer on DVD-ROM media.

C. Maintenance contracts shall include, but not limited to, PLC software.

D. Software license:
1. Standard software license for software provided under Contract shall be assigned to Owner upon initial installation of each software component.
2. Rights of software purchase including telephone support during warranty period shall be extended to Owner.

1.06 QUALITY ASSURANCE

A. Regulatory requirements: Equipment shall be in conformance to most recent issue of NEMA ICS 1, unless otherwise specified.

B. Provide hardware to manufacturer's latest revision level.

C. Provide manufacturer's system software updates for installed version as issued, from date of initial equipment through end of warranty period of Contract. Display software revision level on main menus.

1.07 DELIVERY, HANDLING, AND STORAGE

A. Delivery, storage, and protection shall be in accordance with manufacturer's recommended procedures.

B. Accept products on site in factory containers and verify any damage.

C. Store products in clean, dry area. Maintain temperature in accordance with NEMA ICS 1.

1.08 WARRANTY

A. Provide 1-year warranty. Warranty shall not begin until final acceptance of system by Owner.

B. Specified availability shall be maintained throughout warranty period. Failure to achieve specified availability may at Owner option result in extension of warranty period until specified performance has been met for continuous period equivalent to warranty period.

PART 2 PRODUCTS

2.01 COMPUTERS

A. Laptop:
1. Quantity: 1.
2. Location: Hand over to Owner.
3. Computer:
   a. CPU: Intel Core 2 Duo with latest frequency available at time of award of Contract not less than 2.4 GHz, with 3M cache, 1066 MHz front side bus, minimum:
   b. Case color: Black.

c. Memory: 1 GB dual channel SDRAM, upgradable to 4 GB, minimum.
d. Power supply:
   1) 120-volt ac adapter, nominal 200-watt, minimum.
   2) Extended life battery.
   3) 12-volt vehicle power adapter.
e. System hard drive: 250 GB, 7200 rpm, SATA 3Gbps, minimum.
f. Optical drive: DVD+/-RW: 8X minimum.
g. Graphics card: 512MB nVidia Quadro, or AE-approved equal.
h. Speakers: 2, internal.
i. Ports, minimum:
   1) 1394 Firewire.
   2) USB, minimum of 2.
   3) RJ-45 Ethernet.
j. Wireless networking: 1397 802.11b/g mini-card.
k. Modem: Internal USB.
l. Display: 17" WUXGA UltraSharp 1920 x 1200 resolution.
m. Accessories: Provide leather carrying case.
n. Software:
   1) Operating system: Windows 7 Professional 32-bit, with latest service pack.
   2) SCADA system:
      a) GE Intelligent Platforms (Intellution) "iFIX," Version 5.1, or latest.
      b) Wonderware "InTouch," Version 10.1, or latest.
      c) Rockwell Software "FactoryTalk", or latest.
      d) AE-approved equal.
   3) PLC system: Rockwell software RSLogix 5000, RSLinx, latest version, or AE-approved equal.
   4) Security software: Norton Internet Security 2011, or latest or AE-approved equal.
   5) Application software:
      a) Microsoft Office 2007 Professional, or latest.
      b) Adobe Acrobat 9.0, or latest
      c) Or AE-approved equal.
   6) Remote access software: None.
o. Manufacturer: Dell Latitude Series, or AE-approved equal.

2.02 PRINTERS

A. Color laser:
   1. Type: Color LaserJet.
   2. Connectivity:
      a. USB
      b. 10/100 Base-T.
   3. Networking: TCP/IP Ethernet.
   4. Data cable: Provide as required for selected connectivity.
   5. Paper handling:
      a. Manual feed.
      b. Tray for letter, legal, executive, and envelopes.
   6. Printing: Automatic duplex.
   7. Print language: HP PCL 5c, HP PCL 6, PostScript Level 3 emulation.
   8. Memory: 128 MB.
   9. Print resolution: 600 x 600 dpi.
   10. Print speed: Up to 21 ppm.
   11. Toner cartridges: Black, Cyan, Yellow, Magenta.
   12. Manufacturer: HP LaserJet Model CP2025dn, or AE-approved equal.

2.03 NETWORK COMPONENTS

A. Managed Ethernet switch:
   1. Application: Interface PLC, HMIs, and laptop computer.
   2. Features:
      a. Provide with multicast traffic control utilizing Group Management Protocol (IGMP) snooping.
      b. Provide with querying and filtering capability.
   3. Ports: Quantity of 8, minimum.
   4. Power required: 24-volt dc.
   5. Manufacturer: Allen Bradley Model 1783-EMS08T, N-TRON Model 708TX, or AE-approved equal.

2.04 SYSTEM PROTECTION

A. Provide surge protection for input power and data communication, including phone modem and telemetry. Black Box, Phoenix Contact, or AE-approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. System integrator shall provide monitor, keyboard, mouse, cables, and other ancillary devices required to set up server computer if deliverable workstation is not available at time of set-up. Unless specified to be provided, ancillary set-up components shall not be purchased by or turned over to Owner.

B. Refer to Section 13400.

3.02 FIELD PERFORMANCE TESTS

A. Refer to Section 13400.

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13486
CONTROL SYSTEM OPERATIONAL DESCRIPTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Control system description.

1.02 RELATED REQUIREMENTS

A. Section 13400 – Common Work Results for Process Systems.

B. Section 13435 – Process Control Software.

1.03 ACTION SUBMITTALS

A. Shop Drawings: Logic drawings.

1.04 CLOSEOUT SUBMITTALS

A. Record Documents: As-Built Logic drawings.

1.05 QUALITY ASSURANCE

A. Contractor shall implement logic in accordance with Drawings.

PART 2 PRODUCTS

2.01 CONTROL SYSTEM DESCRIPTION

A. Refer to "IL-Series" Loop drawings for control system descriptions.

PART 3 EXECUTION

NOT USED

END OF SECTION

1) D. D. Erikson
2) T. J. Mergen

SECTION 13775

CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Closed circuit television (CCTV) system including, but not limited to:
   1. Head end equipment, cameras, lenses, camera enclosures and miscellaneous accessories.
   2. Power supplies.
   3. Mounting brackets and miscellaneous mounting materials.
   4. Mounting racks and consoles.
   5. Monitoring equipment, recording, and playback devices.
   6. Peripheral control equipment
   7. Cables and accessories.
   8. Wiring, outlet boxes, junction boxes, and other necessary materials.

B. Operator workstations.

1.02 INFORMATIONAL SUBMITTALS

A. Sequence of operations: Descriptive statement and single-line block diagram showing how related equipment interface and operate as complete closed circuit television system.

B. Product Data: Manufacturer's technical data/cut sheets on each product to be utilized.

C. Shop Drawings:
   1. Point-to-point device location wiring diagrams with system device locations accurately shown on scaled architectural floor plans. No other system(s) shall be included on these plans.
   2. Detailed schematic wiring diagrams for system devices. Wiring information shall include cable type, conductor routings, quantities and complete termination/connection details for devices used with system.

D. Communication Protocol: Provide written documentation confirming open protocol communications allowing CCTV system to communicate via ethernet to intercom control system and PLC system selected for this project.

E. Software: 1 set of fully functional closed circuit television system software in manufacturer's original media packaging.

F. Quality assurance data:
   1. Complete documentation of inspections and tests performed, including any applicable certifications. Documentation shall note replacement of any system component or devices that failed during initial testing. Record of system field tests.
   2. List of recommended spare parts.
   3. Warranty data.

1.03 CLOSEOUT SUBMITTALS:

A. Manufacturer's user's manuals for operations, administration, installation and maintenance.

B. Maintenance schedules and procedures.

C. Training materials.

D. Commissioning test plan and check-off list.

E. "As-Built" Record Drawings: During system installation, maintain separate hard copy set of device location floor plan drawings, schematic wiring diagrams and point-to-point device wiring diagrams of closed circuit television system to be used for Record Drawings. Set: kept up to date, reflecting all changes and additions made to system. Copies of final "as built" Record Drawings: provided to owner in DXF format using latest version of AutoCAD.

1.04 QUALITY ASSURANCE

A. Regulatory requirements:
   1. System and components shall be listed under appropriate UL testing standard for closed circuit television applications and installation shall be in compliance with UL listing.
   2. Standards of foreign organizations shall not be used without prior written approval from Engineer.

B. Manufacturer qualifications:
   1. Closed circuit television head end and peripheral devices shall be manufactured 100% by single ISO certified U.S. manufacturer (or division thereof).
   2. Manufacturer of equipment shall have produced similar equipment for minimum period of 5 years.
   3. Manufacturer's authorized service representative: Competent, factory- trained engineer or certified technician: present on site to guide final checkout and to ensure system integrity.
   4. System hardware, software, control, monitoring and recording equipment and peripheral devices shall be listed as product of single U.S. manufacturer under appropriate category by UL and shall bear UL label. Partial listing not acceptable; and shall be manufactured 100% by single U.S. manufacturer (or division thereof) and each component shall display manufacturer's name.

C. Installer qualifications:
   1. Employ technicians on site to guide final checkout and to ensure system integrity.
   2. Technician shall be factory trained, authorized representative of equipment manufacturer.

D. Contractor qualifications:
   1. Local installation and service organization, currently recognized as factory authorized representative by manufacturer of specified system.
   2. Minimum of 5 years documented closed circuit television system installations in correctional facilities with similar scope to requirements.
   3. Provide minimum of 3 references whose closed circuit television systems are of similar complexity and have been installed and maintained by Contractor in last 5 years.
   4. Able to provide parts and labor to expand system specified, if so requested, for period of 5 years from date of acceptance.
   5. At time of Bid, Contractor shall be licensed by state or local jurisdiction to perform security work within state. Contractors with security licenses or permits pending shall not be considered acceptable for bidding on Project.
   6. Assure personnel working on project are registered with state or local jurisdiction systems licensing board as provided for by current state statutes.

1.05 DELIVERY, STORAGE AND HANDLING

A. Equipment and accessories: Clearly label, cover, and protect from damage during shipment.

B. During delivery and storage, equipment shall be handled in manner that prevents damage, denting or scoring.

C. Equipment and components shall be stored in clean, dry environment, protected from weather, humidity and temperature variations, dirt, water, construction debris and physical damage in accordance with manufacturer's instructions.

1.06 PROJECT CONDITIONS

A. Verify temperature and humidity conditions for both indoor and outdoor applications.

B. Refer to manufacturer's data/cut sheets for environmental parameters for each specific component of closed circuit television system.

C. When applicable, interconnect control equipment to existing systems without disruption to existing operations.

1.07 WARRANTY

A. Warrant system hardware, software, and installation against defects and workmanship for minimum of 12 months, covering all parts and labor, after acceptance by Owner. Provide alternate pricing for 3 year and 5 year warranties; 3 year and 5 year warranties shall not be included in Contractor base bid.

B. Guarantee system application software/firmware remains current at all times with latest enhancements and is supported by closed circuit television system manufacturer with unlimited remote dial-in diagnostics capability and technical telephone support.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Pelco.

B. Axis

C. Bosch/Philips/Burle.

2.02 SYSTEM DESCRIPTION

A. Equipment and materials used shall be standard components manufactured and available for purchase as standard replacement parts.

B. System shall provide management, control, monitoring and recording of cameras located within building(s) and selected areas shown, using type of head end, camera and lens technology specified.

C. System shall include necessary software and programming to perform following functions:
   1. Intercom system shall initiate a signal to display predetermined CCTV's on a monitor adjacent to intercom master station answering a call.
   2. Closed circuit television operations.
   3. Control and monitoring of equipment indicated.

D. Provide necessary wiring, connections, testing, cabling, labor, tools, equipment, and ancillary materials.

E. Provide camera power supplies.

F. Install CCTV system and bring to operational status for acceptance including, but not limited to:
   1. Determine hardware, software and operations requirements for implementation.
   2. Install hardware and software.
   3. Setup and configure communications between head end control equipment, operator workstations, cameras, monitors and recording devices.
   4. Setup and configure system application and database.
   5. Test system operations based on point-by- point walk through inspection.

6. Perform end-user training.

2.03 DESIGN REQUIREMENTS

A. CCTV: Power over Ethernet (POE).

B. System controller: 120 volts ac, 60 Hz, single-phase, electrically supervised.

C. Low-voltage power: 9 to 40 volts ac or dc, isolated, reverse polarity protected.

D. Complete installation shall conform to latest versions of applicable sections of NFPA 70 and local codes and requirements.

E. Wiring: In strict compliance with NFPA 70.

F. Control equipment shall have transient surge protection devices complying with UL 864 requirements. Circuits leaving building where closed circuit television system head end equipment is located and traveling to outlying buildings/locations shall be supplied with appropriate transient surge suppression devices.

G. Locate surge suppressors immediately prior to circuit leaving main building and immediately after circuit enters outlying building/location, regardless of distance between main and outlying buildings/locations.

H. Plenum-rated wiring and surge suppressors between buildings shall comply with NFPA 70 and UL 497, A, B and C.

I. Nonplenum-rated wiring and surge suppressors between buildings shall comply with NFPA 70.

J. Closed circuit television system shall be compatible with, and provide interface to intercom control management system and PLC controlling building doors and cells.

2.04 CLOSED-CIRCUIT TELEVISION SYSTEM

A. IP video management system:
1. Consist of software operating on an optimized hardware platform. Software shall consist of base software with individual, nonexpiring licenses in required quantity.
2. System software updates: Downloadable from publicly available website.
3. Support up to 128 combined IP and analog video streams, with up to 64 direct-attached analog cameras. Analog streams shall be supported using encoders.
4. Provide 280 Mbps throughput for recording of analog and IP video streams, playback, and export.
5. Support recording of JPEG, MPEG-4 and H.264 IP streams.
6. Support H.264 Megapixel video streams up to 10 Megapixel resolution with quantities based on total system of 280 Mbps throughput for recording of analog and IP video streams, playback, and export.
7. Provide system with fully open architecture with support for both IP-specific camera and cameras with ONIVIF compliance.
8. Support automatic detection IP cameras.
9. Support up to 64 looping analog camera inputs with direct-attached 16-channel encoders; up to 4 direct-attached units. Direct-attached 16-channel encoders shall support H.264 compression, CIF, 2CIF, and D1 resolutions at maximum 30ips, 16 audio inputs, and RS422/485 PTZ control.
10. Support unlimited number of systems connected over a network. Each system shall contain 2 1GB network ports; 1 for IP camera/encoder data, and 1 to connect to a network for client computer access.
11. System shall be viewed, managed, and played back through a single user interface software.
12. Operate on a 2nd Generation Intel® Core™ i7 processor and 8 GB of RAM.
13. Utilize Windows® 7 Ultimate 64-bit operating system.

14. Support and have option for internal DVD+/-RW.
15. Contain 2 DVI-D ports.
16. Allow expansion of IP video channel capacity through a licensing without any hardware modification.
17. Support multiple models of IP cameras and encoders.
18. Support recording internal server with additional storage utilizing SCSI storage.
19. Allow archival of video data to computers or SAN storage devices over a network connection. Archival schedule shall be either automatic at user-defined intervals or manual and shall be configurable per connected camera.
20. System specifications:
    a. Processor: 2nd Generation Intel® Core™ i7.
    b. Internal memory: 8 GB RAM.
    c. Network: 2 Gigabit Ethernet RJ-45 (1000Base-T).
    d. Storage: Up to 8 TB.
    e. PCI-E slots: 1 PCI-E x 16 and 1 PCI-E x 4.
    f. Auxiliary interfaces:
        1) USB Ports: 1 front (USB 2.0), 4 rear (2 USB 3.0; 2 USB 2.0).
        2) Power Input: 100 to 240 volts ac, 50/60 Hz, Autoranging.
21. Environmental specifications:
    a. Operating temperature: 10° to 35°C (50° to 95°F).
    b. Operating humidity: 20% to 80%, noncondensing.
    c. Gradient: 10% per hour.
    d. Operating altitude: –15 to 3,048 m (–50 to 10,000 ft).
    e. Operating vibration: 0.25 G at 3 Hz to 200 Hz at a rate of 0.5 octave/minute.

B. IP video management client software:
1. Provide capability of running video management system.
2. A client computer with system compatible software shall be user interface for viewing one or more systems. Live and recorded video and current event video shall be displayed on any client computer using a proper login and password. Client computer shall be able to connect to an unlimited number of recorders simultaneously to display live and recorded video.
3. Unlicensed and available to be installed on as many clients as required by user.
4. Compatible with multiple DVR and NVR platforms.
5. Password controlled so password functionality set at each connected system will be recognized at client. Password shall limit ability to access live or recorded video and ability to export video.
6. Allow multiple monitor support for up to 4 displays/client workstation, providing virtual matrix functionality.
7. Allow connection of keyboard controllers to client workstation.
8. Allow video streams to be selectable from a system tree on an individual camera, individual system, client defined local groups, or from predefined recorder based groups.
9. Tab-based work environment with ability to undock tabs creating virtual workspace on single or multiple monitor clients.
    a. Client tabs: Include system management, live, and search options.
    b. Tabs can be displayed simultaneously on client.
10. Video export to any system accessible media including locally to HDD, CD/DVD, Flash USB device or to network storage.

2.05 INDOOR, VANDAL-RESISTANT, 0.5 MEGAPIXEL NETWORK MINI DOME CAMERA

A. Offer dual video streams with up to 0.5 megapixel resolution (800 x 600) in progressive scan format.

B. Provide extended Wide Dynamic Range (WDR), low-light performance, and anti-bloom technology.

C. Use a true WDR sensor taking multiple exposures at pixel level and have a rating for WDR of 120dB.

D. Compact size with integrated varifocal 2.8~10 mm lens.

E. Capable of firmware upgrades through a network using a software-based device utility.

F. Camera enclosure shall offer impact resistance rating of IK10++ per EN62262 (50J). Enclosure shall be vandal- and tamper-resistant.

G. Back box: Plenum rated in accordance with NFPA 70.

H. Provide accessory port for hardware expansion.

I. Provide advanced low-light capabilities with sensitivity down to 0.0013 lux.

J. Offer auto focus functionality.

K. Provide service connector to assist installer when setting field of view and focusing camera.

L. Provide line-in and line-out audio and built-in microphone.

M. Support 2 simultaneous, configurable video streams. H.264 and MJPEG compression formats shall be available for primary and secondary streams with selectable Unicast and Multicast protocols. Streams shall be configurable in a variety of frame rates and bit rates.

N. Camera day/night model shall have removable IR cut filter mechanism for increased sensitivity in low-light installations. IR cut filter removal shall be configurable through a Web browser.

O. Support industry standard power over Ethernet (PoE), IEEE 802.3af, Class 2 to supply power to camera over network.

P. Use a standard Web browser interface for remote administration and configuration of camera parameters.

Q. Offer video output port providing NTSC/PAL analog video output signal for adjusting field of view and when focusing camera.

R. Support standard IP protocols.

S. Support open architecture best practices with a published API available to third-party network video recording and management systems.

T. Meet or exceed following design and performance specifications.
   1. Imaging device: 1/3", effective.
   2. Imager type: CMOS.
   3. Imager readout: Progressive scan.
   4. Resolution, maximum: 800 x 600.
   5. Signal-to-noise ratio: 50 Db.
   6. Auto iris lens type: DC drive.
   7. Electronic shutter range: 1~1/77,000 sec.
   8. Wide dynamic range: Rated 120 dB at sensor.
   9. White balance range: 2,000° to 10,000°K.
   10. Sensitivity: f/1.2; 2,850°K; SNR > 20 Db.
   11. Dome attenuation.
   12. Clear dome: Zero light loss.
   13. Smoked dome: f/1.0 light loss.
   14. Video encoding: H.264 in Base profile and MJPEG.
   15. Frame rate: Up to 8.
   16. Supported protocols: TCP/IP, UDP/IP.
   17. Lens: 2.8-10mm VF.
   18. Resolutions: 0.5 Megapixel.

2.06 ENVIRONMENTAL OUTDOOR 1.3 MEGAPIXEL NETWORK MINI DOME CAMERA

A. Offer dual video streams with up to 1.3 megapixel resolution (1280 x 960) in progressive scan format.

B. Provide extended Wide Dynamic Range (WDR), low-light performance, and anti-bloom technology.

C. Use a true WDR sensor that takes multiple exposures at pixel level and has a rating for WDR of 120dB.

D. Compact size with integrated varifocal 2.8~10 mm lens.

E. Capable of firmware upgrades through a network using a software-based device utility.

F. Camera enclosure:
   1. Environmentally rated and offer an impact resistance rating of IK10++ per EN62262 (50J).
   2. Vandal- and tamper-resistant and outdoor rated.

G. Provide advanced low-light capabilities with sensitivity down to 0.0013 lux.

H. Offer auto focus functionality.

I. Support 2 simultaneous, configurable video streams. H.264 and MJPEG compression formats shall be available for primary and secondary streams with selectable Unicast and Multicast protocols. Streams shall be configurable in a variety of frame rates and bit rates.

J. Provide built-in heater able to operate below 5°C (41°F).

K. Camera (day/night model) shall have a removable IR cut filter mechanism for increased sensitivity in low-light installations. IR cut filter removal shall be configurable through a Web browser.

L. Support industry standard power over Ethernet (PoE), IEEE 802.3af, Class 2 to supply power to camera over network.

M. Use standard web browser interface for remote administration and configuration of camera parameters.

N. Offer video output port providing an NTSC/PAL analog video output signal for adjusting field of view and when focusing camera.

O. Support standard IP protocols.

P. Support open architecture best practices with a published API available to third-party network video recording and management systems.

Q. Meet or exceed following design and performance specifications:
   1. Imaging device: 1/3", effective.
   2. Imager type: CMOS.
   3. Imager readout: Progressive scan.
   4. Resolution, maximum: 1280 x 960.
   5. Signal-to-noise ratio: 50 Db.
   6. Auto iris lens type: DC drive.
   7. Electronic shutter range: 1~1/77,000 sec.
   8. Wide dynamic range: Rated 120 dB at sensor.
   9. White balance range: 2,000° to 10,000°K.
   10. Sensitivity: f/1.2; 2,850°K; SNR > 20 Db.
   11. Clear dome: Zero light loss.
   12. Smoked dome: f/1.0 light loss.
   13. Video encoding: H.264 in Base profile and MJPEG.

14. Frame rate: Up to 8.
15. Supported protocols: TCP/IP, UDP/IP.
16. Lens: 2.8-10mm VF.
17. Resolutions: 1.3 Megapixel.

2.07 MONITORS

A. High-resolution color LED monitor:
   1. 27" actual viewing area. When viewing images from 2 cameras at one time, each view will be equally sized on screen.
   2. Widescreen.
   3. Resolution: 2560 x 1440 at 60 hz 800 TV lines.
   4. Table top mountable, housed in durable metal cabinet constructed of 10 gage stainless steel with replaceable plexiglass viewing area.
   5. Front panel controls and on screen display for easy adjustment of settings.
   6. VGA, DVI, USB, component video connection and audio connections connection.
   7. Input power: 100 - 240 volts ac, 50/60 Hz.
   8. Vertical refresh rate: 76 Hz.
   9. Horizontal refresh rate: 89 kHz.
   10. Horizontal viewing angle: 178.
   11. Vertical viewing angle: 178.
   12. Anti-glare hard coating.
   13. Operating temperature: 14° - 122°F (-10 - 50°C).
   14. Operating humidity: 10-90%.

B. Mounting rack: CCTV system components shall be rack-mounted in suitable enclosure, commercially available from industry leading manufacturer.
   1. Standard EIA vertical rack cabinet with appropriate vents and blanks.
   2. Provide hardware 19" racks for each housing unit and central control.
      a. Rack cabinets:
         1) Lockable 19" rack enclosures and housed in electrical room of central control and 2 mechanical rooms on second floor of each housing unit.
         2) Cabinets shall contain hardware and patch panels required for field wiring to intercom and CCTV system.
         3) Size as required to house all equipment as provided and specified.
   3. Front door: Full length, gray tinted plexiglass.
   4. Provide surge protection power strip of sufficient size and capacity to handle CCTV equipment housed within rack. Include minimum of 2 spare receptacles.
   5. Coordinate layout of intercom/CCTV 19" hardware rack with CCTV manufacturer to ensure properly sized racks are provided.

C. Control console:
   1. Provide for each housing unit and central control (3 total) and locate within each picket.
   2. Front of console shall consist of a solid surface with holes for routing cables associated with intercom system and CCTV system and custom constructed of 10 gage stainless steel enclosure with front.
   3. Top surface: Minimum of 24" wide and same depth of adjacent PLC control console.
   4. Top surface: Provide space for 27" CCTV monitor, holes in top for routing of cables and intercom master station. CCTV monitor shall be located in a enclosure with a glass window to view images.
   5. Enclosure access doors: Lockable and may contain intercom and CCTV hardware.
   6. Coordinate layout of intercom/CCTV console and 19" hardware rack with CCTV manufacturer to ensure properly sized console is provided.

2.08 UNINTERRUPTABLE POWER SUPPLY (UPS)

A. Provide 1 UPS to sustain operation on IP video management system. UPS shall be provided to sustain operation of all equipment located in main command center for a period of 10 minutes.

B. Provide continuous, no-break power during complete or momentary loss of supply power.

C. In normal operating mode, UPS shall condition line power protecting against environmental conditions, power surge, power sag, under-voltage, over-voltage, line noise, frequency (variation of waveform), transients and harmonic distortion.

D. Provide external bypass switch to allow UPS to be removed from incoming power line for service.

2.09 CONDUIT AND WIRE

A. Conduit: 3/4" (19 mm) minimum, in accordance with NEC, local, and state requirements.

B. Wire/coax:
1. Copper.
2. Locate in conduit or raceway. Conduit fill shall not exceed 40%
3. In accordance with local, state, and national codes and as recommended by manufacturer of system.
4. Number, size and type of conductors: As recommended by system manufacturer and as shown on Drawings.
5. 120 volts ac power circuits: 12 AWG minimum, 600-volt insulation.

C. Terminal boxes, junction boxes and cabinets: UL-listed for intended use and purpose.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify Site conditions prior to installation.

3.02 INSTALLATION

A. Install system components and appurtenances in accordance with manufacturer's specifications, referenced practices, guidelines, and applicable codes. Furnish necessary interconnections, services, and adjustments required for complete and operable system as specified. Install control signal, communications, and data transmission line grounding as necessary to preclude ground loops, noise, and surges from adversely affecting system operation.

B. Install wiring in dedicated conduit/raceway throughout. Cable shall not be pulled into conduits or placed in raceways, compartments, outlet boxes, junction boxes, or similar fittings with other building wiring.

C. Low voltage wiring outside control consoles, cabinets, boxes, and similar enclosures: Plenum rated where required by code.

D. Individually number wiring conductors connected to terminal strips and identify each cable or wiring group extended from panel or cabinet to building mounted device with name and number of particular device as identified and shown on Drawings.

E. Dress down neatly exposed wiring inside and outside of control consoles, cabinets, boxes and similar enclosures and secure with wiring cleats or wire ties.

F. Dress down neatly exposed metallic flexible conduit and armored cable and secure with low profile metal fasteners.

G. Provide locks for cabinets, boxes, and similar enclosures containing system components and/or cabling and easily accessible to employees or to general public. Boxes located above ceiling level in occupied areas of building shall not be considered to be accessible.

H. Cover junction boxes and small device enclosures below ceiling level and easily accessible to employees or general public with suitable cover plate and secured with tamperproof screws.

I. Repair factory finishes where damaged during construction.

J. Support boxes independent of conduit/raceway system.

K. Cable splices shall not be acceptable. Where multiple cables are required, use approved coupling adaptors.

L. Anchor equipment securely to walls, floor, and building steel, unless otherwise defined. Use expansion anchors in concrete and masonry. Install equipment level and plumb.

M. System devices identified on building drawings are intended to generally indicate areas where such devices are to be located. Contractor shall be responsible for determining final location of devices in accordance with Owner's requirements.

N. Riser diagrams are schematic and do not show every conduit, wire box, fitting, or other accessories. Provide such materials as necessary for complete and functioning installation. Install in accordance with referenced codes and specifications. Use weatherproof equipment or covers where installed in areas exposed to weather.

O. Remove nonconducting material from contact surfaces before making grounding connections. Ground system in accordance with manufacturer's recommendations.

3.03 TESTING AND COMMISSIONING

A. Place system into full and proper operation as designed and specified.
   1. Verify hardware components are properly installed, connected, communicating, and operating correctly.
   2. Verify system software is installed, configured, and complies with specified functional requirements.

B. Perform final acceptance testing in presence of Owner's representative, executing point-by-point inspection against documented test plan demonstrating compliance with system requirements as designed and specified.
   1. Submit documented test plan to Owner at least 14 days in advance of acceptance test, inspection and check-off.
   2. Conduct final acceptance tests in presence of Owner's Representative, verifying each device point and sequence is operating correctly and properly reporting back to control panel and control center.
   3. Acceptance by Owner is contingent on successful completion of check-off. If check-off is not completed due to additional work required, reschedule and perform complete check-off until complete in one pass, unless portions of system can be verified as not adversely affected by need for additional work.
   4. System shall not be considered accepted until acceptance tests have been successfully checked-off. Beneficial use of part or all of system shall not be considered as acceptance.
   5. Correct any and all deficiencies observed during final check-off at no cost to Owner until equipment and system components operate properly.

3.04 MANUFACTURER'S FIELD SERVICES

A. Provide on-Site, factory-trained technician to assist, advise, and manage installation personnel.

B. Perform system software modifications, upgrades, or changes. Response time of technician to Site shall not exceed 4 hours.

C. Provide hardware, software, programming tools, and documentation necessary to modify system on Site. Modification may include addition and deletion of devices, circuits, changes to system operation, and custom label changes for devices.

D. System structure and software shall place no limit on type or extent of software modifications performed on Site.

3.05 TRAINING

A. Provide system operations, administration, and maintenance training by factory-trained, authorized representative of manufacturer qualified to instruct:
   1. Owner will designate personnel to be trained.
   2. Provide printed training materials for each trainee including product manuals, course outline, workbook or student guides and written examinations for certification.
   3. Provide hands-on training with operational equipment.
   4. Training: Orient to specific system being installed under this Contract as designed and specified.

3.06 MAINTENANCE

A. Perform manufacturer's recommended preventative maintenance on applicable components and/or devices.

B. Contractor shall be primary contact and respondent for service and support and shall be officially recognized and backed by closed circuit television system manufacturer.

C. Extended and/or out of warranty terms at reasonable and customary rates shall be available from Contractor.

D. Provide alternate pricing for extended warranty and maintenance service after acceptance by Owner, alternate pricing shall not be included in Contractor base bid.
   1. Length of Contract: For period of 5 years after expiration of initial warranty.
   2. Submit payment terms and conditions with alternate bid.

DATA SHEETS CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM		Equipment Name: Tag No.: Rev.	
DESCRIPTION	**UNITS**	**SPEC DATA**	**VENDOR DATA**
Manufacturer	-	By Manufacturer	
Catalog/Serial No.	-	By Manufacturer	
Location of manufacturer	-	By Manufacturer	
SITE ENVIRONMENTAL CONDITIONS			
Ambient Temperature	°F		
Altitude	Ft		
Hazardous Area	Y/N		
CCTV SYSTEM HEADEND			
Floor or rack mounted	Floor/Rack		
Rack size			
CPU	Y/N		
Intranet/Ethernet connection	Y/N		
LAN	Y/N		
Wan	Y/N		
Color			
Size			
CAMERAS **(Reference drawings for quantities)**			
Camera type			
Fixed Color	Y/N		
PTZ Color	Y/NY/N		
Lens	Y/N		
EnclosureLens type			
IndoorFixed	Y/NY/N		
OutdoorVarifocal	Y/NY/N		
Mounting type/stylePan-tilt-zoom	Y/N		
Color	Y/N		
Enclosure			
Indoor	Y/N		
Outdoor	Y/N		
Mounting type/style			

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16050
BASIC ELECTRICAL METHODS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 - General Requirements apply to work in this section.

1.2 REQUIREMENTS OF REGULATORY AGENCIES AND STANDARDS

A. Regulatory Agencies: Installation, materials, equipment and workmanship shall conform to the latest editions of the following codes, standards, ordinances, regulations, etc.:
   1. National Electrical Code (NEC) (NFPA 70).
   2. Underwriters Laboratories (UL).
   3. American National Standards Institute (ANSI).
   4. National Fire Protection Association Codes (NFPA), including Life Safety Code.
   5. National Electrical Manufacturers Association (NEMA).
   6. Occupational Safety and Health Association (OSHA).
   7. Federal Americans with Disabilities Act (ADA).
   8. State of Texas Accessibilities Standards (Texas Civil Statutes).
   9. Texas Department of Licensing and Regulation (TDLR).
   10. City Electrical Codes and Ordinances.
   11. State Jail Facilities Standards, 1993 – State of Texas.
   12. Terms and conditions of the electrical utility and other authorities having lawful jurisdiction pertaining to the work required.

B. All conduit, boxes, power and control wiring shall be included, furnished and installed as a part of this project.

C. The work covered by Division 16 of the Specifications includes the furnishing of all materials, labor, transportation, tools, permits, and fees for the complete installation of all electrical work required in the Construction Drawings. The drawings are intended to convey the overall intent of the project. The contractor shall be responsible for product applications as required to provide complete and fully functioning system.

D. In the event that additional or special construction is required, the Contractor is responsible for providing all material and equipment which are usually furnished with such construction in order to complete the installation, whether indicated or not.

E. Installer Qualifications: Company specializing in installing the products specified in this section with minimum three years documented experience. Electricians shall be licensed for commercial work in Texas.

F. As indicated in the Notice to Bidders, the contractor is strongly encouraged to visit the site to familiarize himself with the existing conditions.
G. The contractor shall be responsible for all permits, fees, and licenses required for the project. All cost of such permits or fees shall be included in the bid.
H. All equipment and material shall be installed in accordance with the applicable manufacturer's recommendations and standards.
I. Install sleeves, sealant pans, and roof penetrations as required for the installation of the electrical work. All such work is subject to the approval of the A/E.
J. The Contractor shall familiarize himself with the requirements of the Division 1 and General and Special Conditions of the Contract of the specifications to be aware of specific restrictions relating to construction in a Correctional Facility.

1.3 SUBMITTALS

A. The intent of this section is to give general submittal information, refer to specific submittal information in the subsequent sections.
B. Submittals shall be in accordance with other sections as indicated. All submittals shall be complete and include model number, product data, etc. Prior approval before the project bid date is required for Division 16. All submittals will be reviewed by the A/E during the submittal process to determine technical acceptance.
C. Requirements for each submittal:
   1. Bear a dated stamp or specific written indication that the Contractor has reviewed and approved all submittal prior to submission to A/E.
   2. Be clearly and specifically marked as to which specific piece of equipment is being submitted, by use of a permanent marker, stamp, etc., so as to distinguish it from other pieces of equipment that may occur on the same page.
   3. Be clearly and specifically marked as to which available options are being submitted that are associated with a piece of equipment.
   4. Be complete with respect to quantities, dimensions, specific performance, materials, and similar data to enable the A/E to review the proposed equipment.
   5. Include product(s) date of manufacture.
D. In addition to the submittal review by the A/E of record, the submittals shall be reviewed by TDCJ personnel. All comments shall be incorporated by the Contractor.

PART 2 - PRODUCTS

2.1 EQUIPMENT REQUIREMENTS

A. The requirements for equipment specified or indicated on the drawings are based on information available at the time of design. If equipment furnished for installation has electrical requirements other than indicated, the Contractor shall make required

changes to accommodate the equipment supplied.

2.2 MATERIALS

A. All similar materials and equipment shall be the product of the same manufacturer for each subsystem in the design unless specified otherwise.
B. Materials and equipment shall be the standard products of manufacturers regularly engaged in the production of such material and shall be the manufacturer's current and standard design.
C. All materials used in the project shall be new.

PART 3 - EXECUTION

3.1 GENERAL

A. Fabrication, erection and installation of the complete electrical system shall be done in accordance with accepted good practice by qualified personnel experienced in such work and shall proceed in an orderly manner so as not to impede the progress of the project. The Contractor shall check all areas and surfaces where equipment material is to be installed, removed or relocated and report any unsatisfactory conditions before starting work. Commencement of work signifies this Contractor's acceptance of existing conditions. In the acceptance or rejection of the finished installation, no allowance will be made for lack of skill on the part of workmen. Surfaces requiring coatings will be completed prior to installation of any electrical work on these surfaces.
B. The drawings are diagrammatic. The installation requirements shall be carefully coordinated with structural, architectural and mechanical conditions and shall be adjusted to avoid conflict.
C. All work shall be concealed in walls, ceilings, chases unless specifically noted to be exposed or otherwise approved.
D. The locations of equipment are approximate and are not intended to convey the exact details and mounting of location of outlets, equipment and other items. Exact locations are to be field determined by actual measurements.
E. Consult all drawing details and specifications to provide for coordinated effort between various trades.
F. Disposal of Surplus and Waste Materials:
   1. Disposal: As a part of this contract, the Contractor shall provide for the off-site removal of all demolished equipment unless otherwise directed by TDCJ.
   2. Repair: Any damage that results from the work being performed by the Contractor shall be repaired in accordance with the General and Special Conditions of the Contract.
G. All submittals, substitutions or changes must be approved by A/E.
H. In all cases of conflict covering this scope of work, A/E shall be advised and approve in writing before proceeding with affected scope of work.

I. Deviation from this specification must be approved in writing by A/E prior to implementation.
J. All fasteners in inmate areas and less than 18 feet above the floor shall be tamper-resistant type torx head with center pin and approved by A/E. As a part of this contract provide 10 bits and 8 drivers for each size fastener.
K. At locations where new access doors are provided, key the doors to match existing access door locks. Paint all access doors to match existing finishes.
L. All devices, boxes, raceways, etc. installed in wet or hose-down areas shall be rated NEMA 4X.

3.2 PERFORMANCE TESTS

A. Thoroughly test all control circuits, and power circuits for proper operating condition and freedom from grounds and short circuits before acceptance is requested. All equipment, appliances and devices shall be operated under load conditions.
B. After the wiring system installation is complete, conduct operating tests for approval. Test all the wire, cable, devices and equipment after installation, to assure that all material continues to possess all the original characteristics as required by governing codes and standards listed in these specifications.
C. Perform such other tests as required by other sections of these specifications.
D. Furnish all instruments and labor for testing.
E. All material installed shall be listed, inspected, and approved by a nationally accepted testing laboratory such as UL and/or ETL. All material shall bear the UL or ETL label where available.
F. Refer to individual specification sections for additional performance tests for specific equipment.

3.3 SUBMITTAL AND APPROVAL OF MATERIALS

A. All requirements for submittals shall comply with the applicable provisions included in the individual specification sections.
B. All proposed material substitutions shall be done in accordance with applicable provisions of the TDCJ General and Special Conditions of the Contract.
C. A minimum of 8 sets of submittals shall be provided for all equipment.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16111
CONDUIT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Metal conduit.
B. Flexible metal conduit.
C. Liquidtight flexible metal conduit.
D. Electrical metallic tubing.
E. Non-metallic PVC conduit.
F. Fittings and conduit bodies.

1.3 RELATED SECTIONS

A. Section 16130 - Boxes.
B. Section 16170 - Grounding and Bonding.
C. Section 16190 - Supporting Devices.
D. Section 16195 - Electrical Identification.

1.4 REFERENCES

A. ANSI C80.1 - Rigid Steel Conduit, Zinc Coated.
B. ANSI C80.3 - Electrical Metallic Tubing, Zinc Coated.
C. ANSI/NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
D. ANSI/NFPA 70 - National Electrical Code.
E. NECA "Standard of Installation."

1.5 SUBMITTALS

A. Product Data: Provide for metallic conduit, flexible metal conduit, liquidtight flexible metal conduit, non-metallic conduit, fittings, conduit bodies and tamper-resistant fasteners.

1.6 PROJECT RECORD DOCUMENTS

A. Accurately record actual routing of conduits.

1.7 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.
B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect, and handle Products as indicated in the General Conditions.
B. Accept conduit on site. Inspect for damage.
C. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

1.9 PROJECT CONDITIONS

A. Verify that field measurements are as shown on Drawings.
B. Verify routing and termination locations of conduit prior to rough-in or material.

C. Conduit routing is shown on Drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

PART 2 - PRODUCTS

2.1 CONDUIT REQUIREMENTS

A. Minimum Size: 3/4 inch unless otherwise specified.

B. Wet and Damp Locations above grade: Use rigid galvanized steel or liquid tight flexible conduit.

C. Dry Locations: Use electrical metallic tubing for concealed locations and exposed locations except per Paragraph G below.

D. Below Slab: Non-metallic PVC conduit is acceptable within limitations specified.

E. Below Grade: Use only PVC-coated rigid galvanized steel, wrapped rigid galvanized steel, or non-metallic PVC conduit within limitations specified.

F. MC Cable: Shall not be utilized on this project.

G. All conduits where accessible in areas exposed to inmates up to 18'-0" above finished floor shall be rigid galvanized steel and shall have tamper-resistant fasteners. Inaccessible raceways may be EMT. Concealed conduits (inside pipe chases, above dry-wall or lay-in ceilings) and runs above 18' are considered inaccessible. Routing changes will be coordinated through the TDCJ Project Administrator subject to approval by the Unit Warden.

2.2 METAL CONDUIT

A. Manufacturers:

1. Allied
2. Wheatland
3. Or A/E approved equal.

B. Rigid Steel Conduit: ANSI C80.1.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel fittings.

2.3 FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Greenfield
2. Electri-Flex
3. Allied Tube
4. Or A/E approved equal.

B. Description: Interlocked steel construction. Aluminum is not permitted.

C. Fittings: ANSI/NEMA FB 1 with fittings approved for steel flex.

D. Applications: Use for final connections to motorized equipment subject to movement.

2.4 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

A. Manufacturers:

1. Ultratite
2. Electri-flex
3. Or A/E approved equal.

B. Description: Interlocked steel construction with PVC jacket.

C. Fittings: ANSI/NEMA FB 1.

D. Applications: Use for final connections to motorized equipment in exterior locations and areas subjected to moisture.

2.5 ELECTRICAL METALLIC TUBING (EMT)

A. Manufacturers:
   1. Allied.
   2. Wheatland.
   3. Or A/E approved equal.

B. Description: ANSI C80.3; galvanized tubing.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1; all steel, compression type.

D. Applications: Do not use below grade or in exterior locations. Use only in interior locations.

2.6 NON-METALLIC PVC CONDUIT

A. Manufacturers:
   1. Carlon
   2. Allied
   3. Or A/E approved equal.

B. Description: NEMA TC2, Schedule 40 PVC. Flame retardant type resistant to bending and cracking.

C. Vertical risers and elbows installed below grade shall be rigid conduit with wrapping.

D. All underground elbows shall be long radius.

E. Do not use above grade.

2.7 CONDUIT FITTINGS

A. Couplings and Terminations for Rigid Steel Conduit: Factory-made steel threaded couplings conforming to ANSI/NEMA FB1; bushing at all boxes and cabinets, with locknuts inside and outside box or cabinet.

B. Couplings and Terminations for Electrical Metallic Tubing (Compression Couplings): Join lengths of EMT with steel compression type couplings conforming to ANSI/NEMA FB1. Attach EMT to boxes or cabinets with steel compression-type box connectors having an insulated throat with locknuts.

C. Couplings and Terminations for Flexible Metal Conduit: Conforming to ANSI/NEMA FB1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install conduit in accordance with NECA "Standard of Installation."

B. Arrange supports to prevent misalignment during wiring installation.

C. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.

D. Group related conduits; support using conduit rack. Construct rack using steel channel.

E. Fasten conduit supports to building structure and surfaces under provisions of Section 16190.

F. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports

G. Do not attach conduit to ceiling support wires.

H. Arrange conduit to maintain headroom and present neat appearance.

I. Route exposed conduit parallel and perpendicular to walls.

J. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
K. Maintain adequate clearance between conduit and piping.
L. Maintain 12 inch clearance between conduit and surfaces with temperatures exceeding
104 degrees F.
M. Cut conduit square using saw or pipecutter; de-burr cut ends.
N. Bring conduit to shoulder of fittings; fasten securely.
O. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
P. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use factory elbows for bends in metal conduit larger than 2 inch size.
Q. Avoid moisture traps; install conduits with slopes and provide junction boxes with drain fittings at low points in conduit system.
R. Provide suitable fittings to accommodate expansion and deflection where conduit crosses, control and expansion joints.
S. Provide suitable pull string in each empty conduit except sleeves and nipples.
T. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
U. Ground and bond conduit under provisions of Section 16170.
V. Identify conduit under provisions of Section 16195.
W. All new and existing ducts/conduits shall be cleaned with flexible mandrel assembly. All existing underground conduits shall be thoroughly swabbed with a flexible mandrel prior to the installation of new cables.
X. All new exposed conduit routings shall be pre-approved prior to installation.
Y. All new conduit routing shall be approved by A/E.
Z. All wiring shall be in conduit.
AA. Contractor shall install fire sealant on conduit penetration through fire rated walls/ceilings. Sealant shall be rated to match the rated assembly.
BB. At each manhole and junction box, provide conductor and fiber optic cable tags as indicated in specification section.
CC. Contractor shall provide tamper resistant fasteners in areas where inmates are located. Refer to Section 16050 for additional information.
DD. Contractor shall provide conduit for new equipment as required.
EE. All exposed conduits located up to a height of 18 feet above floor level shall be rigid galvanized steel. Provide and install 2-hole conduit straps on 18 inch centers with tamper-resistant fasteners on these exposed conduits. This includes mechanical and electrical rooms.
FF. All empty conduits shall be capped.
GG. Underground conduits shall have a minimum cover of 24" above the top of the conduit. Refer to Section 16195 for marking tape.

3.2 INTERFACE WITH OTHER PRODUCTS

A. Install conduit to preserve fire resistance rating of partitions and other elements.

END OF SECTION

1) J. N. Gavin
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SECTION 16120
FIBER OPTIC CABLE SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Multimode fiber optic cable for outdoor and indoor nonplenum use.

B. Conduit, panels and panel-mounted equipment.

C. Accessories, testing, and commissioning.

1.02 ACTION SUBMITTALS

A. Prior to construction:
   1. Manufacturer's catalog data and Bill of Material listing Contractor-furnished materials including quantities and catalog numbers for:
      a. Fiber optic cable.
      b. Patch cords.
      c. Connectors.
      d. Termination housings.
      e. Jumper management panel.
      f. Media converters.
      g. Power supplies.
   2. Panels and enclosures:
      a. Panel exterior general arrangement Drawings showing location of surface and flushed mounted equipment.
      b. Panel interior arrangement Drawings including:
         1) Locations and identification of terminal blocks.
         2) Locations and identifications of racks and chassis and equipment mounted within.
         3) Arrangement of other equipment mounted inside panel identified by instrument tag number.
      c. Exterior panel wiring interface termination diagrams.
      d. List of nameplate legends and sizes for panel-mounted equipment.
      e. Schematics and wiring diagrams identifying terminals, circuits, color of wire, and cable/wire numbers. Cable and wire numbers for external wiring will be assigned by Engineer. Cable, wire, and terminal numbers for panels shall be assigned by panel provider. Cable, wire, and terminal numbers shall be instrument tag number oriented.

1.03 INFORMATIONAL SUBMITTALS

A. Fiber optic signal budget and loss calculation.

B. Test reports:
   1. Optical time domain reflectometer (OTDR) factory fiber optic cable test report on the reel when shipping completed and reel first arrives at construction site.
   2. OTDR test report for fiber optic cable following installation and terminations.
   3. Installed fiber optic cable losses report.

C. Certification that fiber optic cable conforms to requirements of this specification and applicable EIA Standard RS-455 testing procedures.

D. Provide heat gain calculations for each cabinet with components energized and in operation. Calculations shall be based on ambient temperatures defined within specifications and with exterior panels in full exposure to sun. Provide adequate cooling for panel in which internal cabinet operating temperature exceeds rating of component mounted within enclosure.

E. Panel-mounted instruments: Tabulation of equipment including accessories listed separately where not assembled with equipment item. Tabulation shall include item number, service equipment description, or identification, part or catalog number and other information helpful to installation of equipment and coordination of Project.

1.04 CLOSEOUT SUBMITTALS

A. Operation and maintenance manual.
   1. Complete instruction manuals and parts lists covering installation, operation, and maintenance of panel-mounted devices. Manuals shall include interface Drawings defining terminal numbers and functions for interface with other instruments and equipment.
   2. Schematic and wiring diagrams for each panel/enclosure. Show color of wire, termination points, terminal numbers, cable and wire numbers.

B. Record Documents: "As-built" schematics and wiring diagrams defining terminals, cables, and wire numbers as defined above.

1.05 QUALITY ASSURANCE

A. Regulatory requirements: Work shall be in accordance with latest editions of EIA Standard RS-455, ANSI C2, NFPA 70; and shall comply with EPA regulations.

B. Cable shall be from same manufacturer, of same type, and of same size.

1.06 DELIVERY, STORAGE AND HANDLING

A. Preparation: Ship cable on reel. Radius of reel drum shall be greater than minimum bend radius of fiber.

B. Wind cable on reel so unwinding can be done without kinking cable. 2 meters of cable at both ends of cable shall be accessible for testing.

C. Attach permanent label on each reel showing length, cable identification number, cable size, cable type, attenuation, bandwidth, date of manufacture, and identifying spool number.

D. Provide water-resistant label and indelible writing on labels.

E. Fiber shall be packaged under sufficient low tension to avoid degradation of fiber strength due to static fatigue.

F. Ship control panels as recommended by control panel and enclosure manufacturer.

G. Remove rack-mounted instruments, controllers, recorders, and indicators that could be damaged by shipment and package in original shipping cartons.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Provide equipment and cable rated for continuous operation under ambient environmental operating conditions of -30ºF to 175ºF and humidity up to 100% condensing or as normally encountered for installed locations.

B. Overhead cabling shall be resistant to ultraviolet (UV) degradation.

PART 2 PRODUCTS

2.01 FIBER OPTIC CABLE

A. Use: All-dielectric, loose tube indoor and outdoor cable.

B. Type:
1. Loose tube, containing multimode fiber optic conductors. Individual fiber conductors shall be color-coded.
2. All-glass, graded index, dual window, multimode fiber optic wave guides.
3. Fiber shall have nominal core diameter of 50 microns.
4. Fiber shall be coated with cladding material, which is concentric with the core.
5. Fiber cladding diameter shall nominally be 125 microns. Protect fiber with protective tube, jacketed nonmetallic strength member, and exterior jacket.
6. Cable shall have transmission window centered at 850 and 1300 nanometer wavelengths.
7. Attenuation of multimode fiber cable shall be not greater than 4.0 dB/km at 850 nm and not greater than 1.5 dB/km at 1300 nm.

C. Construction: Cable components shall withstand environment where cable is installed for minimum of 20 years.
1. Mechanical stress: Mechanical stress present in cable shall not be transmitted to optical fibers. Fiber optic cable shall be all-dielectric, loose tube construction. In loose tube construction optical fibers shall be surrounded by tube buffer, be contained in channel, or otherwise loosely packaged to provide clearance between fibers and inside of container to allow for thermal expansion without constraining conductor. Protective container shall be extruded from material having coefficient of friction sufficiently low to allow fiber free movement.
2. Protective covering: Provide continuous covering on single length cable with same material, and shall be free from holes, splits, blisters, and other imperfections. Covering shall be flame-retardant (where installed in lengths over 50' in length indoors), moisture-resistant, nonnutrient to fungus, ultraviolet light resistant, nontoxic, and electrically nonconductive.
3. Strength members: Nonmetallic strength members shall be integral part of cable construction. Combined strength of members shall be sufficient to support stress of installation and protect cable in service. Minimum proof test level shall be 50,000 psi.
4. Cable outer jacket: Provide polyvinyl chloride cable jacket. Jacket shall be continuous, smooth, and free from holes, splits, blisters, and other imperfections. Jacket shall be flame-retardant, moisture-resistant, nonnutrient to fungus, ultraviolet light resistant, nontoxic, and electrically nonconductive.
5. Impact and crush resistance: EIA TIA 455-25A, Table 2 for minimum impact energy for specified cable diameter. Minimum crush resistance of 220 Newtons per square centimeter, tested in accordance with EIA 455-41.
6. Storage temperature range: -40°C minimum and 70°C maximum.
7. Rating: Indoor/outdoor riser and tray.

D. Cable: 2, 6, 12, 24 fiber strands, multimode.

E. Manufacturer: Belden, Corning, Panduit or A/E-approved equal.

2.02 PATCH CORDS

A. Pre-assembled end connections: Coordinate with intercom system manufacturer for connector type.

B. Fiber type: Multimode.

C. Fiber count: 2.

D. Cable construction: Interconnect.

E. Quantity: As required.

F. Length: As required.

G. Manufacturer: Corning Cable, Panduit, , or A/E-approved equal.

2.03 BUFFER TUBE FAN-OUT KIT

A. Function: Provide protection for fibers when terminating cables.

B. Length of tubing: 25" (635 mm).

C. Environment: Indoor/outdoor.

D. Quantity of fibers per buffer tube: 6.

E. Accessories:
1. Buffer tube fan-out kit assembly tool kit.
2. Buffer tube fan-out kit assembly consumables kit.

F. Manufacturer: Corning, Panduit, or A/E approved equal.

2.04 MECHANICAL TERMINATIONS

A. Connector type: Coordinate with intercom system manufacturer for connector type.

B. Fiber: 50 micron, multimode.

C. Insertion loss: 0.1 dB typical, 0.5 dB maximum.

D. Manufacturer: Corning, Panduit, or A/E-approved equal.

2.05 TERMINATION HOUSINGS

A. Use: Enclosure for termination of fiber optic cable(s).

B. Size: Accommodate fiber optic cable terminations.

C. Number of fibers: 2, 6, 12, 24, 48.

D. Location: As determined by Contractor for installation of PLC, Intercom, and CCTV systems selected.

E. Housing style: As required for application.

F. Provide breakout kits and other accessories as required for complete installation.

G. Single-panel housing (SPH):
1. Closet Connector Housing (CCH): Coordinate with intercom system manufacturer for connector type.
2. Construction: Black metal housing.
3. Dimensions: 6.3" H x 5.5" W x 2" D (160 mm H x 140 mm W x 50 mm D).
4. Accessories: Ledge-mount bracket.
5. Manufacturer: Corning, Panduit, or A/E approved equal. .

2.06 FIBER OPTIC PATCH PANEL

A. Use: Interconnection of fiber optics.

B. Location: As determined by Contractor for installation of PLC, intercom, and CCTV manufacturer selected.

C. Fibers within panel shall be terminated.

D. Style:
   1. Wall mounted style:
      a. Dimensions: As required.
      b. Rack units: .
      c. Doors: Front access solid doors.
      d. Color: Light gray.
      e. Manufacturer: Hoffman, Panduit, or A/E-approved equal.

E. Fabricate panel(s) in accordance with Section 13432 requirements.

F. Rating:
   1. Indoor: NEMA 12.
   2. Outdoor: NEMA 4X.

2.07 PANEL-MOUNTED EQUIPMENT

A. Copper-to-multimode fiber switch:
   1. Type: Hardened.
   2. 100-Mbps multimode fiber port: 1, Type ST.
   3. 100-Mbps copper ports: 5, Type RJ-45.
   4. Power: 120 volts ac.
   5. Manufacturer: Black Box, Panduit.

B. Power supplies
   1. Output voltage: 24-volts dc:
   2. Input voltage: 120 volts ac.
   3. Current output (maximum): 1.5 amperes.
   4. Size: 3.898" H x 1.378" W x 4.035" D (99 mm H x 35 mm W x 102.5 mm D).
   5. Manufacturer: Phoenix Contact, or A/E-approved equal.

2.08 SOURCE QUALITY CONTROL

A. Certify fiber optic cable conforms to requirements of this specification and applicable EIA Standard RS-455 testing procedures.

B. Fiber optic cable reel test: Test 100% of fibers with OTDR after shipment and prior to installation. Calibrate OTDR to show anomalies of 0.2 dB as minimum.

PART 3 EXECUTION

3.01 INSTALLATION - PANELS AND ENCLOSURES

A. Mount panels where acceptable to project administrator and Warden.

B. Mount rigidly supported, level and plumb, and in such manner as to provide accessibility; protection from damage; isolation from heat, shock, and vibration; and freedom from interference with other equipment, piping, and electrical work.

C. Do not install equipment until adjacent heavy construction work has been completed to extent that damage will be unlikely to installation by such construction work.

D. Install outdoor surface-mounted panels within sun protection enclosures.

E. Install jumper management panels directly above and below each CCH unit. One common jumper management panel may be used in applications where jumper management panel located between 2 CCHs.

F. Install in accordance with manufacturer's recommendations.

3.02 FIELD WIRING

A. Supports in vertical runs: As required by NFPA 70, Article 800.

B. Cable pulling:
1. Reels: Mount firmly on portable stand and secure against displacement.
2. Lubrication: Use an approved cable pulling lubricant with maximum coefficient of friction of 0.15.

C. Remove fiber coating material by mechanical means only.

D. Cable bending radius in accordance with manufacture data sheet.
1. "No load" condition: 15 times cable diameter, or 6" (152.4 mm), whichever is greater, minimum.
2. "Under load" (greater than 30% of full load): 20 times cable diameter, or 12" (304.8 mm), whichever is greater, minimum.

E. Install fiber optic cables in dedicated conduit between cabinets in separate rooms or buildings.

3.03 SPLICES

A. Not permitted.

3.04 CONNECTIONS

A. Fibers at each end of cable shall have jumpers or pigtails installed of not less than 3' (1 m) in length. Fibers at both ends of cable shall have connectors installed on jumpers. Mated pair loss, without rotational optimization, shall not exceed 1 dB. Pull strength between connector and attached fiber shall not be less than 20 lb (9 kg).

B. Identification and labeling:
1. Identification tags or labels shall be provided for each cable.
2. Markers, tags, and labels shall use indelible ink or etching which will not fade in sunlight, or in buried or underground applications.
3. Markers, tags, and labels shall not become brittle or deteriorate for period of 20 years.
4. Labeling format shall be identified and complete record shall be provided to Owner with final documentation.
5. Each cable shall be identified with type of signal being carried and termination points.

3.05 CONDUIT INSTALLATION

A. Provide 1" (25 mm) rigid galvanized steel conduit for indoor installation of fiber optic cable installed below 18' AFF.

B. New conduit installation shall comply with NFPA 70.

C. Openings in walls:
   1. Provide openings for passage of conduits through walls and floors.
   2. Sleeves:
      a. Provide for passage of conduits through walls or partitions.
      b. Material: Schedule 40 PVC conduit or pipe securely fastened in position.
   3. Openings made in existing walls and floors shall be patched and finished to match original material in composition and appearance.
   4. Openings made in fire-resistant rated walls shall be sealed after conduit installation to provide equivalent fire rating of wall.

D. Bends:
   1. Not more than equivalent of four 90° bends between pulling points.
   2. Use large radius (sweeps) for conduit bends.

3.06 FIELD QUALITY CONTROL

A. Test each fiber on reel after shipping is completed and prior to installation, using an OTDR. Cables with anomalies greater with 1 dB shall not be installed.

B. Testing shall be done by personnel qualified in fiber optic cable testing.

C. Test each fiber and fiber optic cable assembly in accordance with applicable test requirements of EIA Standard RS-455.

D. OTDR tests:
   1. Perform using test procedures of EIA 455-59.
   2. OTDR shall be calibrated to show anomalies of 0.2 dB as minimum. Photographs of traces shall be furnished to Owner.
   3. If circuit loss exceeds optical loss budget by more than 2 dB, circuit is unsatisfactory and shall be examined to determine problem. Owner shall be notified of problem and what procedures Contractor proposes to eliminate problem.

E. Submit typewritten report for each test to Owner.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16123
WIRE AND CABLE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Power wiring rated at 600V or less.
B. Wiring connectors and connections.
C. Control wiring rated at 600V.
D. Communication wiring.

1.3 RELATED SECTIONS

A. Section 16195 - Electrical Identification.
B. Refer to individual specification sections for other types of wiring and cable to include intercom, fire alarm and fiber optic cable.

1.4 REFERENCES

A. Quality Control: Requirements for references and standards.
B. NECA Standard of Installation (National Electrical Contractors Association).
C. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
D. NFPA 70 - National Electrical Code.

1.5 SUBMITTALS FOR REVIEW

A. Product Data: Provide product data for all power wiring.
B. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by the product-testing agency.

1.6 REGULATORY REQUIREMENTS

A. Conform to NFPA 70.
B. Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

1.7 PROJECT CONDITIONS

A. Verify that field measurements are as indicated.
B. Conductor sizes are based on copper.
C. Wire and cable routing indicated is approximate unless dimensioned.

1.8 COORDINATION

A. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

PART 2 - PRODUCTS

2.1 POWER WIRE (LESS THAN 600V)

A. Manufacturers:
   1. Belden.
   2. Southwire.

3. American Cable.
4. Houston Wire and Cable.
5. or A/E approved equal.

B. Description: Single conductor insulated wire.
C. Conductor: Copper.
D. Insulation Voltage Rating: 600 volts.
E. Insulation: Minimum requirements of NFPA 70 and as specified herein.
F. Metal clad cable shall not be used on this project.

2.2 WIRING CONNECTORS

A. Split Bolt Connectors:
1. Ilsco.
2. Buchanan.
3. Burndy.
4. Or A/E approved equal.

B. Solderless Pressure Connectors:
1. Ilsco.
2. Buchanan.
3. Burndy.
4. Or A/E approved equal.

C. Spring Wire Connectors:
1. Ideal.
2. Thomas and Betts.
3. Or A/E approved equal.

D. Compression Connectors:
1. Ilsco.
2. Buchanan.
3. Burndy.
4. Or A/E approved equal.

2.3 CABLE

A. Multi-conductor cable for control, interlocks, routed in cable tray and conduit:
1. Voltage rating: 600-volt.
2. AWG: 14 minimum.
3. Conductors: Annealed, bare copper, Class B, stranded.
4. Insulation: Flame-retardant, cross-linked polyethylene (XLPE) or complying with NEC Type XHHW-2.
5. Jacket: Flame-retardant, heat, moisture, and sunlight-resistant; polyvinyl chloride (PVC).
6. Conductors shall be cabled together with nonhygroscopic fillers.
7. Cover cable assembly with helically applied binding tape with minimum 10% overlap.
8. Color coding: Insulated conductors shall have colored insulation meeting ICEA Method 1, Table E-2 color code (K2 color code).
9. Each cable shall be identified by means of surface ink printing indicating manufacturer, number of conductors, size, voltage rating, and UL listing as rated for cable tray.

10. Cables shall pass IEEE 383 70,000 Btu/hr, and ICEA T-29-520, 210,000 Btu/hr vertical tray flame tests.
11. Temperature rating: 90°C for normal operation in wet or dry locations.

B. Category 6 communication cable circuited in tray, conduit or used for field wiring internal to cabinets.
1. Conductor: Solid, bare copper minimum No. 23 AWG.
2. Insulation: Fluorinated ethylene propylene (FEP) insulated singles.
3. Insulated conductors: Unshielded, twisted 4 pairs enclosed with a spline fluorinated ethylene propylene filler material.
4. Cable assembly shall be covered with clear "Flamearrest" jacket, sequentially marked at 2' (600 mm) intervals. Ripcord shall be integrally installed to allow easy removal of jacket material.
5. Each communication cable shall be identified by means of surface ink printing indicating manufacturer, model, or catalog number. Cable shall meet TIA/EIA CAT6.
6. Cables shall be capable of passing UL flame test Type CMP.
7. Manufacturer: Belden, or AE approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Verify the existing conditions prior to pulling conductors in raceways.
B. Verify that mechanical work likely to damage wire and cable has been completed.
C. Verify that raceway installation is complete and supported.
D. Visually inspect wires and cables for damages.

3.2 PREPARATION
A. Completely and thoroughly swab raceway before installing wire.

3.3 WIRING METHODS
A. All Locations: Use only, Type THW or THHN/THWN insulation, in raceway.
B. Use wiring methods indicated.

3.4 INSTALLATION
A. Quality Control: Manufacturer's instructions.
B. Route wire and cable as required to meet Project Conditions.
C. Install cable in accordance with the NECA "Standard of Installation."
D. Use solid conductor for electrical feeders and branch panel circuits 10 AWG and smaller.
E. Use stranded conductors not smaller than 14 AWG for control circuits.
F. Use conductor not smaller than 12 AWG for power and lighting circuits with the exception of pre-manufactured fixture whips, listed for such use and not exceeding 6' in length.
G. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
H. Install all conductors in conduit.
I. Pull all conductors into raceway at same time.
J. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
K. Protect exposed cable from damage.

L. All cables shall be neatly supported.
M. Use suitable cable fittings and connectors.
N. Neatly train and lace wiring inside boxes, equipment, and panelboards.
O. Clean conductor surfaces before installing lugs and connectors.
P. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
Q. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller.
R. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
S. Identify and color code wire and cable under provisions of Section 16195. Identify each conductor with its circuit number or other designation indicated.
T. The number of conductors in each conduit run shall be limited to the requirements as indicated on the drawings and indicated in 2011 National Electrical Code.

3.5 FIELD QUALITY CONTROL

A. Quality Control: Field inspection, testing and adjusting.
B. Inspect and test in accordance with NETA ATS, except Section 4.
C. Perform inspections and tests listed in NETA ATS, Section 7.3.1.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16130
BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES
A. Wall and ceiling outlet boxes.
B. Pull and junction boxes.

1.3 RELATED SECTIONS
A. Section 16140 - Wiring Devices: Wall plates in finished areas.

1.4 REFERENCES
A. NECA - Standard of Installation.
B. NEMA FB 1 - Fittings and Supports for Conduit and Cable Assemblies.
C. NEMA OS 1 - Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum).
E. NFPA 70 - National Electrical Code.

1.5 SUBMITTALS FOR CLOSEOUT
A. Contract Closeout: Submittals for Project closeout.
B. Record actual locations and mounting heights of outlet, pull, and junction boxes on project record documents.

1.6 REGULATORY REQUIREMENTS
A. Conform to requirements of NFPA 70.
B. Provide Products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 OUTLET BOXES
A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
B. Equipment Supporting Boxes: Rated for weight of equipment supported; include half-inch male fixture studs where required.
C. Cast Boxes: NEMA FB 1, Type FD, cast feralloy. Provide gasketed cover by box manufacturer.
D. Wall Plates for Finished Areas: As specified in Section 16140.
E. All boxes installed in areas exposed to inmates shall be cast, with no knockouts, and have tamper-resistant type torx head fasteners with center pin; fasteners shall be approved by A/E.

2.2 PULL AND JUNCTION BOXES

A. Surface Mounted Cast Metal Box: NEMA 250, Type 4; flat-flanged, surface mounted galvanized cast iron junction box. Provide a cast cover with neoprene gasket and stainless steel fasteners.

B. Boxes installed outdoors: NEMA 4X stainless steel rated.

C. All boxes installed in areas exposed to inmates shall be cast with no knockouts, and have tamper-resistant type torx head fasteners with center pin; fasteners shall be approved by A/E.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify locations of outlets in all locations areas prior to rough-in.

3.2 INSTALLATION

A. Install boxes in accordance with NECA "Standard of Installation."

B. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.

C. Set wall-mounted boxes at elevations to accommodate mounting heights specified in section for outlet device.

D. Electrical boxes are shown on Drawings in approximate locations unless dimensioned. Adjust box location up to 10 feet if required to accommodate intended purpose.

E. Orient boxes to accommodate wiring devices oriented as specified in Section 16140.

F. Maintain headroom and present neat mechanical appearance.

G. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.

H. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.

I. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods as required.

J. Align adjacent wall-mounted outlet boxes for switches, thermostats, and similar devices.

K. Use flush-mounting outlet box in finished areas.

L. Do not install flush-mounted boxes back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separation in acoustic rated walls.

M. Secure flush-mounted box to interior wall and partition studs. Accurately position to allow for surface finish thickness.

N. Install flush-mounted box without damaging wall insulation or reducing its effectiveness.

O. Use adjustable steel channel fasteners for hung ceiling outlet box.

P. Do not fasten boxes to ceiling support wires.

Q. Support boxes independently of conduit.

R. Use gang box where more than one device is mounted together. Do not use sectional box.

S. Use gang box with plaster ring for single device outlets.
T. Use cast outlet box in exterior locations exposed to the weather and damp/wet locations.
U. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations.
V. Provide touch up painting at all locations where existing boxes are removed from walls.
W. Junction boxes exposed to inmate accessible areas shall have minimum of 14 gauge thick cover plates.
X. Paint all new and existing fire alarm boxes and covers red.
Y. Junction boxes 4x4 and larger shall have a label installed on cover indicating purpose or wiring routed through box. Box labeling shall be pre-manufactured adhesive type. Markers shall not be permitted.

3.3 INTERFACE WITH OTHER PRODUCTS
A. Coordinate installation of outlet box for equipment connected under Section 16140.

3.4 ADJUSTING
A. Adjust flush-mounting outlets to make front flush with finished wall material.
B. Install knockout closures in unused box openings.

3.5 CLEANING
A. Clean interior of boxes to remove dust, debris, and other material.
B. Clean exposed surfaces and restore finish.

3.6 REPAIR
A. Repair any areas or surfaces damaged during conduit installation.
B. Paint (resurface) to original condition.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16140
WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Wall switches.
B. Receptacles.
C. Device plates covers.

1.3 RELATED SECTIONS

A. Section 16130 - Boxes.
B. Section 16195 – Electrical Identification.

1.4 REFERENCES

A. NECA - Standard of Installation.
B. NEMA WD 1 - General Requirements for Wiring Devices.
C. NEMA WD 6 - Wiring Device -- Dimensional Requirements.
D. NFPA 70 - National Electrical Code.

1.5 SUBMITTALS FOR REVIEW

A. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
B. Manufacturers with similar catalog numbers will not be considered as a basis for an equivalent product.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.
B. Provide Products listed and classified by Underwriters Laboratories, Inc., as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 RECEPTACLES

A. Manufacturers: Hubbell, Pass and Seymour or A/E approved equal.
B. Description: NEMA WD 1, Heavy-duty specification grade receptacle, with triple wipe contacts and grounding contacts integral with backstrap (no rivets)
C. Device Body: Ivory plastic for branch circuits for receptacles.
D. Configuration: NEMA WD 6, type as specified and indicated.
E. Convenience Receptacle: Type 5-20
F. GCFI Receptacle: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements. Hubbell, Pass and Seymour or A/E approved equal.

2.2 WALL PLATES
- A. Receptacle Cover Plate: Stainless steel.
- B. Weatherproof Cover Plate: Gasketed cast metal with gasketed device cover on exterior devices.
- C. Surface Mounted Plates: Galvanized steel plates

PART 3 - EXECUTION

3.1 EXAMINATION
- A. Verify that outlet boxes are installed at proper height.
- B. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- C. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

3.2 PREPARATION
- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean debris from outlet boxes, prior to device installation.

3.3 INSTALLATION
- A. Install in accordance with NECA "Standard of Installation."
- B. Install devices plumb and level.
- C. Install switches with OFF position down.
- D. Install receptacles with grounding pole on top.
- E. Connect wiring device grounding terminal to branch circuit equipment grounding conductor.
- F. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
- G. Connect wiring devices by wrapping conductor around screw terminal.
- H. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.
- I. Install blank cover plate to match other wall plates on all unused boxes.
- J. Refer to Specification Section 16195, Electrical Identification, for receptacle labeling requirements.

3.4 INTERFACE WITH OTHER PRODUCTS
- A. Coordinate locations of outlet boxes provided under Section 16130 to obtain mounting heights specified and indicated on drawings.
- B. Install all wall switches, thermostats, and fire alarm pull stations at 48 inches above finished floor.
- C. Install convenience receptacles at 18 inches above finished floor.

3.5 FIELD QUALITY CONTROL
- A. Quality Control: Field inspection, testing, adjusting, and balancing.
- B. Inspect each wiring device for defects.
- C. Operate each wall switch with circuit energized and verify proper operation.
- D. Verify that each receptacle device is energized.
- E. Test each receptacle device for proper polarity.
- F. Test each GFCI receptacle device for proper operation.

3.6 ADJUSTING
- A. Adjust devices and wall plates to be flush and level.

3.7 CLEANING

A. Clean exposed surfaces to remove splatters and restore finish.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16170
GROUNDING AND BONDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Grounding electrodes and conductors
B. Equipment grounding conductors.
C. Bonding.

1.3 REFERENCES

A. Section 01400 – Quality Control.
B. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems (International Electrical Testing Association).
C. NFPA 70 - National Electrical Code.

1.4 GROUNDING SYSTEM DESCRIPTION

A. Metal frame of the building.
B. Rod electrodes.

1.5 PERFORMANCE REQUIREMENTS

A. Grounding System Maximum Resistance: 10 ohms.

1.6 SUBMITTALS FOR REVIEW

A. Product Data: Provide for grounding electrodes and connections.

1.7 SUBMITTALS FOR CLOSEOUT

A. Section 01700 – Contract Closeout: Procedures for submittals.
B. Project Record Documents: Record actual locations of all components and grounding electrodes.
C. Certificate of Compliance: Indicate approval of installation by authority having jurisdiction.

1.8 REGULATORY REQUIREMENTS

A. Conform to requirements of NFPA 70.
B. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 MECHANICAL CONNECTORS

A. Material: Bronze.

2.2 WIRE

A. Material: Stranded copper.

B. Grounding Electrode Conductor: Minimum size to meet NFPA 70 requirements or as indicated on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide bonding to meet Regulatory Requirements.

B. Providing grounding connections to the surge protection devices as recommended by the equipment manufacturer.

C. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

3.2 FIELD QUALITY CONTROL

A. Section 01400 – Quality Control.

B. Inspect and test in accordance with NETA ATS, except Section 4. Provide test documentation to TDCJ PA.

C. Perform inspections and tests listed in NETA ATS, Section 7.13. Provide test documentation to TDCJ PA.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16190
SUPPORTING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract, and Division 1 – General Requirements apply to work in this section.

1.2 SECTION INCLUDES

A. Conduit and equipment supports.
B. Anchors and fasteners.

1.3 REFERENCES

A. NECA - National Electrical Contractors Association.
B. ANSI/NFPA 70 - National Electrical Code.

1.4 REGULATORY REQUIREMENTS

A. Conform to requirements of ANSI/NFPA 70.
B. Furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.1 PRODUCT REQUIREMENTS

A. Materials and Finishes: Provide adequate corrosion resistance. All exterior fasteners shall be stainless steel.
B. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products.
C. Anchors and Fasteners:
   1. Concrete Structural Elements: Use expansion anchors and preset inserts.
   2. Steel Structural Elements: Use beam clamps, spring steel clips and steel ramset fasteners.
   3. Concrete Surfaces: Use self-drilling anchors and expansion anchors.
   4. Sheet Metal: Use sheet metal screws.
D. All fasteners exposed to inmates shall be tamper resistant type torx head with center pin and approved by A/E.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation".

C. Do not fasten supports to pipes, ducts, mechanical equipment, and conduit.

D. Obtain permission from the A/E through the PA before drilling or cutting structural members.

E. Install surface-mounted cabinets and panelboards with minimum of four anchors.

F. Install conduit supports a maximum spacing specified in the NEC.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16195
ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
- A. Drawings, General Conditions and Special Conditions of the Contract, and Division 1 - General Requirements apply to work in this section.

1.2 SECTION INCLUDES
- A. Nameplates and labels.
- B. Wire and cable markers.

1.3 REFERENCES
- A. ANSI/NFPA 70 - National Electrical Code.

PART 2 - PRODUCTS

2.1 NAMEPLATES AND LABELS
- A. Engraved 3-layer laminated plastic, white letters on black background.
- B. Locations:
  1. Control equipment enclosure.
  2. Communication cabinets and computer cabinets.
  3. Field disconnects, start-stop stations, control panels.
  4. Junction boxes 4x4 and larger
  5. Interior to control cabinets where conduits enter. Provide label by conduit to identify field devices the conductors are connected to.
- C. Letter Size:
  1. Use 1/4-inch letters for identifying individual equipment and loads.
  2. Use 1/4-inch letters for identifying grouped equipment and loads.
  3. Use 3/4-inch letters for identifying Main Disconnect equipment.
- D. Nameplates and labels shall include:
  1. Equipment identification.
  2. Source of power.
  3. Junction boxes identifying type of circuits, electrical, intercom, and CCTV.
- E. Refer to Drawings for additional panel marking requirements for the unit shutdown switches at central control.

2.2 WIRE/CONDUIT/BOX MARKERS
- A. Description: Brady B-321 Heat-Shrink Polyolefin markers, or A/E approved equal. Typed label to identify each termination end point of the conductor. DC conductors shall identify polarity.
- B. Locations: Each conductor at wireway, pull boxes, outlet and junction boxes, and each load connection. All conduit penetrations identifying the location of each end. Provide label on all PLC Controls wire, fiber optic cables, intercom, CCTV, speaker and fire alarm wiring.
- C. Legend:
  1. Power and Lighting Circuits: Branch circuit or feeder numbers.

D. Boxes:
   1. Label each junction box in accessible locations to indicate the type of system (i.e.; security; power circuit - 1,3,5; etc.) Box labeling shall be pre-manufactured adhesive type. Markers shall not be permitted.
   2. Any new and existing boxes serving the fire alarm system shall have boxes painted red. Box covers shall also be painted red.

E. Overcurrent devices for fire alarm equipment.
   1. Provide labeling and circuit breaker identification in accordance with NFPA 72.

F. Paint band all fire alarm conduits (both reused existing and new) with 6" of red paint on 10' spacing, at both sides of every wall penetration, and every location entering/leaving a room. This painting shall be neatly done in a professional manner.

2.3 CABLE/FIBER TAGS

A. Polyethylene Tags: At each in-grade junction box and manhole, provide polyethylene tags that are a minimum of .08 inches thick, non-corrosive, non-conductive, resistive to acids, organic solvents. Provide a one-piece, nylon self locking tie. Identify cable with block letters.

2.4 UNDERGROUND CONDUIT MARKING TAPE

A. Description: Detectable solid foil core tape, color per APWA color code, 3" width, resists acids and alkalis found in soil.

B. Labeled "CAUTION BURIED COMMUNICATION LINE BELOW".

C. Manufacturers:
   1. Reef Industries.
   2. Pro-Line.
   3. Or A/E approved equal.

PART 3 - EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive nameplates and labels.

3.2 APPLICATION

A. Install nameplate and label parallel to equipment lines.

B. Secure nameplate to equipment front using screws or rivets.

C. Identify all conductors at every termination indicating endpoints of termination and tag identification as required.

D. Color coding for phase identification:

120/208 Volts	Phase
Black	A
Red	B
Blue	C
White	Neutral
Green	Ground

Conductor phase and voltage identification shall be made by color-coded insulation for all conductors smaller than No. 6 AWG. For conductors No. 6 AWG and larger, identification shall be made by color-coded insulation, or conductors with black insulation may be furnished and identified by colored electrical tape. Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16670
SURGE SUPPRESSION DEVICES

PART 1 - GENERAL

1.1 SECTION INCLUDES
- A. Surge Suppression Devices (SSD).

1.2 RELATED SECTIONS
- A. Section 16123 - Wire and Cable.
- B. Section 16170 - Grounding and Bonding.

1.3 REFERENCES
- A. The specified system shall be designed, manufactured, tested and installed in compliance with:
  1. Canadian Standards Association (CSA)
  2. American National Standards Institute and
  3. National Electrical Manufacturer Association (NEMA)
- B. Institute of Electrical and Electronic Engineers (ANSI/IEEE C62.11, C62,41, and C62.45)
- C. Federal Information Processing Standards Publication 94 (FIP PUB 94)
- D. National Fire Protection Association (NFPA 20, 70, 75 and 780)
- E. Underwriters Laboratories (UL 1449, UL 1283) MIL-STD-220A

1.4 DEVICE DESCRIPTION
- A. Self-contained series device. Devices Listed as RU (UL component) must be enclosed in a NEMA enclosure and installed per manufacturer's recommendations.

1.5 SUBMITTALS FOR REVIEW
- A. Product Data: Provide dimensions and materials of each component.
- B. Documentation of specified device's UL 1449 Listing and clamping voltage ratings of all protection modes shall be included as required product data submittal information.
- C. Documentation of the specified device's UL 1283 Complimentary Listing shall be included as required product data submittal information.
- D. Include product(s) date of manufacture.

1.6 PROJECT CLOSEOUT SUBMITTALS
- A. Furnish manufacturer's installation manual with installation, start up, trouble-shooting guide and operating instructions for the specified device.
- B. Furnish manufacturer's electrical and mechanical drawings which show device dimensions, weights, components, connection locations/details, mounting provisions, and wiring diagram.
- C. Record actual device locations.

1.7 REGULATORY REQUIREMENTS
- A. Product Listing: UL listed under UL 1449 (2-9-2007 Rev 2.5) Standard for Transient Voltage Surge Suppressions (TVSS) and the surge ratings shall be permanently affixed to the SSD.

PART 2 - PRODUCTS

2.1 SURGE SUPPRESSION DEVICES

A. Electrical:

1. Nominal operating voltage shall be 120V, two wire, plus ground.
2. Maximum continuous operating voltage shall be greater than 115% of the nominal system operating voltage.
3. Operating frequency range shall be at least 47 to 63 Hertz.
4. All protection modes shall be as defined by NEMA LS and shall follow IEEE 1100 recommendations for protection in all models.
5. Protection Modes:
   a. Line to Neutral Protection.
   b. Line to Ground Protection.
   c. Neutral to Ground protection.
   d. Surge current capacity, based on an 8 x 20 microsecond waveform shall be:
   e. Maximum single impulse current – 80 KA per phase.
6. Performance ratings shall be based on the UL 1449 listing ratings for IEEE C62.41 Category B3 impulse waveforms of 6kV 1.2 x 50 microseconds, 3kA 8 x 20 microsecond waveshapes.
7. Typical response time shall be 1.0 nanoseconds or less.
8. The SSD shall utilize metal oxide varistors for surge protection.
9. The SSD shall include optional fusing with status LED on unit face that takes the SSD off line without affecting the power to the load.
10. Manufacturers: Innovative Technology Model HS-30A, Surge Suppression Incorporated S-SPT12030A, or A/E approved equal.

B. Electronic:

1. Provide surge protection for 4 pair Cat 6 outside plant cables as well as Cat 6 UTP cables for Lan/Data applications
2. UL listed for primary (497) and isolated loop (497B) applications
3. Meets TIA/EIA standards 568 and 758 Cat 6 performances
4. Solid State protection
5. May be used between buildings as a building entrance protector or a isolated loop protection device.

2.2 ENVIRONMENTAL REQUIREMENTS

A. Storage temperature range shall be -55 to +85 C (-67 to +185 F)
B. Operating temperature range shall be -40 to +50 C (-40 to +122 F)
C. Operation shall be reliable in an environment with 0% to 95% non-condensing relative humidity.
D. SSD shall not generate any appreciable audible noise.
E. SSD shall not generate any appreciable magnetic fields.
F. SSD shall be capable of operating up to an altitude of 6,000 feet above sea level.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Connect SSD in series between power source and Control Panel power connection terminals, keeping conductors from SSD to Control Panel terminals as short and straight as practically possible. Follow the SSD manufacturer's recommended installation practices and comply with all applicable codes.

B. Mount SSD in NEMA 1 enclosures adjacent to Control Panel.

C. Electrical and mechanical drawings shall be provided by the manufacturer, which show SSD dimensions, weights, component and connection locations, mounting provisions, connection details and wiring diagram.

3.2 FIELD QUALITY CONTROL

A. Refer to General Conditions.

B. Inspect each wiring device for defects.

C. Verify that all connections are properly bonded.

3.3 WARRANTY

A. Refer to General Conditions for warranty requirements.

END OF SECTION

1) J. N. Gavin
2) T. J. Mergen

SECTION 16730

INTERCOM SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Integrated rack mounted intercom/paging system including wiring, connections and testing.

1.02 PRICE AND PAYMENT PROCEDURES

A. Include alternate price for extended warranty and maintenance service after acceptance by Owner, alternate bid price shall not be included in Contractor Base Bid.
   1. Length of Contract shall be for a period of 5 years after expiration of initial warranty.
   2. Submit payment terms and conditions with alternate bid.

1.03 INFORMATIONAL SUBMITTALS

A. Product Data:
   1. Manufacturer's technical data/cut sheets on each product to be used.
   2. Equipment list, itemizing major system components. Each item shall be identified by manufacturer and model number, brief description of its function within system, and quantity provided.
   3. Sequence of operations: Descriptive statement and single-line block diagram showing how related equipment shall interface and operate as integrated intercom/paging system.

B. Quality assurance data:
   1. Complete documentation of inspections and tests performed, including any applicable certifications. Documentation shall note replacement of any system component or devices that failed during initial testing. Record of system field tests.
   2. List of recommended spare parts.
   3. Warranty data.

1.04 ACTION SUBMITTALS

A. Shop Drawings:
   1. Equipment rack detail drawing:
      a. Front view, showing location of rack mounted equipment.
      b. Rear view, showing necessary connections between components of system and power connections for components.
   2. Point-to-Point device location wiring diagrams with system device locations accurately shown on scaled architectural floor plans. No other system(s) shall be included on plans.
   3. Detailed schematic wiring diagrams for system devices. Wiring information shall include cable type, conductor routings, quantities and complete termination/connection details for devices used with system.
   4. Detailed system and controls descriptions.
   5. Detailed system and controls schematics.
   6. Detailed site specific operating instructions.

1.05 CLOSEOUT SUBMITTALS

A. Operation and maintenance data:
   1. Contractor shall provide 3 complete sets of operation and maintenance manuals for system supplied under this Contract.
      a. Installation Instructions: Manufacturer's printed instructions describing manufacturer's recommended installation procedures.

b. Operating Instructions: Manufacturer's printed instructions describing proper operation.
c. Equipment Identification: Nameplate information for each piece of equipment.
d. Maintenance Instructions: Manufacturer's printed instructions describing manufacturer's recommended maintenance.
e. Spare Parts Lists: Parts listing of spares provided under the Contract.
f. Suppliers and Contractors List: List of contractors and suppliers who supplied and installed equipment, systems, materials or finishes. Includes company name, address, and telephone number.
g. Tag Directories: Directory identifying tag number and equipment description and location.
h. Drawings List: List of contract and system drawings.
i. Product Data: Manufacturer's product data for equipment, systems, materials, and finishes.

B. Documentation:
1. Training materials.
2. Commissioning test plan and check-off list.

C. Maintenance contract: Demonstrate proof of after-hours service arrangements and provide telephone numbers to be used for such service.

D. Record Drawings: During system installation, maintain separate hard copy set of device location floor plan drawings, schematic wiring diagrams and point-to-point device wiring diagrams of integrated intercom/paging system to be used for Record Drawings. Set shall be kept up to date, reflecting changes and additions made to system. Copies of final "as-built" Record Drawings shall be provided to Owner in DXF format using latest version of AutoCAD.

1.06 QUALITY ASSURANCE

A. Regulatory requirements: Standards of foreign organizations shall not be used without prior written approval from Engineer.

B. Installer qualifications: Employ technicians on site to guide final checkout and to ensure system integrity. Technician shall be factory trained, authorized representative of equipment manufacturer.

C. Manufacturer qualifications:
1. Manufacturer shall have produced similar equipment for minimum period of 5 years.
2. Equipment, including peripheral devices, shall be manufactured 100% by single ISO certified U.S. manufacturer (or division thereof) and each component shall display manufacturer's name.
3. Equipment, including peripheral devices, shall be listed as product of single U.S. manufacturer under appropriate category by Underwriter's Laboratories, Inc., (UL), and shall bear UL label. Partial listing is not acceptable.
4. Manufacturer's authorized service representative: Competent, factory- trained Engineer or certified technician shall be present on site to guide final checkout and to ensure system integrity.

D. Contractor qualifications:
1. Contractor shall have minimum of 5 years documented intercom/paging system installations of similar scope to requirements of this specification.
2. Contractor shall have ability to provide parts and labor to expand system specified, if so requested, for period of 5 years from date of acceptance.
3. Contractor shall be local installation and service organization, currently recognized as factory authorized representative by manufacturer of specified intercom/paging system.
4. Provide minimum of 3 references whose integrated intercom/paging systems are of similar complexity and have been installed and maintained by Contractor in last 5 years.
5. At time of bid, Contractor shall be licensed by state or local jurisdiction to perform intercom system work within state. Contractors who have licenses or permits pending shall not be considered acceptable for bidding on this project.
6. Contractor shall assure that personnel working on project are registered with state or local jurisdiction Systems Licensing Board as provided for by current state statutes.

1.07 DELIVERY, STORAGE AND HANDLING

A. Equipment and accessories shall be clearly labeled, covered and protected from damage during shipment.

B. During delivery and storage, equipment shall be handled in manner that prevents damage, denting or scoring.

C. Equipment and components shall be stored in clean, dry environment, protected from weather, humidity and temperature variations, dirt, water, construction debris and physical damage in accordance with manufacturer's instructions.

1.08 SITE CONDITIONS

A. When applicable, interconnect control equipment to existing systems without disruption to existing operations.

B. Refer to manufacturer's data/cut sheets for environmental parameters for each specific component of intercom/paging system.

C. Verify temperature and humidity conditions for indoor and outdoor applications.

1.09 WARRANTY

A. Equipment and installation shall be warranted against defects and workmanship for minimum of 12 months, covering parts and labor, after acceptance by Owner.

B. Guarantee that integrated intercom/paging system can be upgraded, in future, with its manufacturer's latest enhancements and is supported by system manufacturer with unlimited technical telephone support.

C. Maintenance warranty:
   1. Provide warranty service during normal business hours and shall also demonstrate full capability of providing 24-hour service for after-hours emergency calls.
   2. After-hours emergency service shall be performed at Contractor's standard published service rates.
   3. Contractor shall be primary contact and respondent for service and support and shall be officially recognized and backed by integrated intercom/paging system manufacturer.
   4. Extended and/or out of warranty terms at reasonable and customary rates shall be available from Contractor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Harding Instrument Co. Ltd.

B. Dukane.

C. Stentofon.

D. SimplexGrinnell.

2.02 SYSTEM DESCRIPTION

A. Furnish, install, connect, and test component equipment required to form complete, operative, integrated intercom/paging system including, but not be limited to annunciators, speakers, microphones, mounting racks and consoles, cables and accessories, wiring, conduit (with pull strings), outlet boxes, junction boxes and other necessary materials

B. Provide necessary wiring, cabling, labor, tools, equipment, and ancillary materials necessary.

C. Install intercom/paging system and bring it to operational status for acceptance including but not limited to:
   1. Determine operations requirements for implementation.
   2. Supply and installation of an integrated intercom and communications system.
   3. System shall include equipment, installation, installation materials, set up, and testing to form a complete operating system.
   4. Independent system functions and integrated system functions shall be fully verified as part of system testing and commissioning.
   5. Work of this Contract also includes providing operating and maintenance manuals, training and demonstration, and extended warranty.

2.03 DESIGN REQUIREMENTS

A. Primary power: 120 volts ac, 60 Hz, single-phase, electrically supervised.

B. Complete installation shall conform to latest versions of applicable sections of NFPA 70 and local codes and requirements.

C. System wiring shall be in accordance with good engineering practices as established by EIA and NFPA 70. Wiring shall meet established state and local electrical codes. Wiring shall test free from grounds and shorts.

D. Control equipment shall have transient surge protection devices complying with UL 1449 and NFPA 70 requirements.

E. System shall include following functions:
   1. Door control intercom.
   2. Intercom station audio monitoring.
   3. Zoned public address.
   4. Multi-channel program distribution.
   5. Output and event response control.

F. System shall integrate with following other security and communication systems utilizing Ethernet to form a comprehensive facility management network:
   1. Graphic control panels.
   2. PLC door control system.
   3. Closed circuit television system.

G. System devices shall be designed for use in correctional facilities.

2.04 INTERCOM SYSTEM DESCRIPTION

A. System shall include comprehensive programmable microprocessor based communications system consisting of central control exchange capable of handling up to 200 remote stations.
   1. Locate programmable functions in battery backed RAM to prevent loss in power failure condition.

2. Systems shall have provisions for battery back-up and charger specifically designed for use with system power supplies. Systems using ac uninterruptible power supply (UPS) system not acceptable.
3. Provide controllers, expanders, paging amplifiers, intercom stations, master stations, and microphones for a complete intercom system.
4. Integrated intercom and communications system shall include following components:
   a. Digital controllers.
   b. Remote digital expanders.
   c. Station control cards.
   d. Paging expanders.
   e. Administrator software for configuring and maintaining system.
   f. Intercom master stations.
   g. Intercom stations.
   h. Discrete input/output modules.
   i. Auxiliary power supplies.
   j. Paging amplifiers.
   k. Loudspeakers and horn loudspeakers.
5. Interconnect digital controller, remote digital expanders, and paging expanders to form intercom exchanges capable of standalone local operation. Each digital controller shall be capable of supporting up to 4 remote digital expanders.
6. System capacity shall allow for 10 master stations and 250 intercom stations.
7. Intercom system shall include ability to be controlled by graphic control panels, pushbuttons, and switch selector panels.
8. System frequency response: 300 to 3,500 Hz.
9. Intercom station output: 82 dB SPL at 3' with 82 dB SPL input at face of transmitting station.
10. System equipment shall comply with radiation limits for Class A digital devices of FCC Rules Part 15, Subpart B.
11. Voice communications between intercom master stations and intercom stations shall be automatically switched half duplex with press-to-talk override.
12. Identification numbers for each category of device, group, zone, etc. shall range from 1 to 99,999.
13. Alphanumeric description for each device, group, zone, etc. shall allow up to 20 characters and spaces.
14. Intercom station field wiring shall be supervised for short circuit and open circuit faults.
15. System boards shall include self-diagnostic functions for complete operational and communication testing.
16. Devices shall be capable of insertion or removal from service while system is fully operational. Other system activity not directly related to unit's insertion or removal shall not be affected.
17. System diagnostics shall include ability to test system communications and devices from controller front panel keyboard.
18. System shall include ability to make on-line changes to system configuration.
19. System shall include logging functions for system activity and system maintenance.
20. On-line factory support shall be available through modem installed in controller.

2.05 INTERCOM SYSTEM OPERATION

A. Master Station types:
   1. Advanced master station:
      a. Display shall provide alphanumeric descriptions of functions, station and device names, and current activity. Function key labeling shall change depending on location within menu structure and options available to operator. Master station shall display current number of calls in queue, number of acknowledged calls, and number of disabled stations.
      b. Advanced master stations, through their command functions shall have ability to:
         1) Place and answer calls.
         2) Call requests can be programmed to be received by another master station.
         3) Make group calls and zoned public address announcements.
         4) Adjust their intercom volume level.
         5) Recall last station with a single control.

6) Adjust display back lighting.
7) Select 12 or 24 hour clock display.

c. Volume adjustments of master station and intercom station levels shall be controllable during communications. Each station's volume level shall be independently software controlled. Level settings shall remain in effect until modified by future adjustment.
d. Master stations shall include ability to be placed in unmanned mode, which automatically routes associated call handling functions to a pre-defined secondary master station.
e. Answer calls.
   1) Call requests can be programmed to be received by another master station.
   2) Make group calls and zoned public address announcements by pressing selected pushbuttons on control console.
f. Adjust their intercom volume level.
g. Recall the last station with a single control.
h. Call placement from an intercom station:
i. Depressing an intercom station's call push-button to place a call request in queue of master station or stations assigned to receive that station's calls. Calls shall be queued in order of priority level associated with intercom station and time that call was placed.
j. Advanced master station shall normally display identity of top 3 calls in its call request queue. Call identity includes the Door Number and/or an alphanumeric descriptor. Descriptor shall be up to 20 characters in length.
k. Advanced master station display shall indicate total number of calls currently in its queue. Scroll keys shall enable master station to view all calls in queue.
l. Calls not answered within pre-programmed time maybe place a secondary call request on an assigned master station.
m. Call answering at an intercom master station:
   1) System shall notify operator call is incoming. System shall provide call confirmation tone (single beep) at master station when call is placed. Tone verifies that call has been placed into system queue. Tone shall be programmable to be disabled if desired.
   2) Intercom system shall communicate with CCTV system via Ethernet and display pre-determined CCTV images on a monitor adjacent to master station answering call if intercom/door is not viewable from control console controlling the door.
   3) Intercom master stations shall be able to answer top call request in its queue by depressing 'Next' function key. At completion of call, 'End' function key shall close communication link and remove call from queue.
   4) Queued calls may be answered out of sequence by scrolling through queue to desired call. Selected call shall flash on display and may be answered by depressing 'Enter' key. Pressing 'End' key closes communication link, removes call from queue and returns master station display to top of queue.
n. Master station shall display identity and type of connected device.
o. Program distribution:
   1) System shall receive audio program from tuners, tape decks, etc. for program distribution to intercom stations and/or loudspeaker circuits.
   2) System shall distribute programs to remote digital exchanges through digital audio trunk. Additional program sources can be connected locally at each remote digital exchange.
   3) Program distribution (channel, volume, on, off) control is from intercom advanced master stations. Each intercom station, station group, or page zone shall be independently controllable.
   4) Program distribution shall be temporarily suspended to affected intercom stations or paging zones during paging announcements.
   5) Program distribution to affected intercom stations shall be temporarily suspended during voice communications.
p. Paging:
   1) Master stations shall have ability to page to pre-determined groups of intercom stations and/or loudspeaker zones.
   2) Paging selection shall be made by selecting page function and a group or zone from selection list. Alternately, zone number may be entered after page function has been selected.

q. CCTV interface:
   1) System shall transmit command signals to CCTV controller to route camera signals to viewing monitors.
   2) Whenever a master station answers a call from an intercom station or places a call to an intercom station, camera associated with intercom station shall be displayed on monitor associated with master station.

2. Master Audio Interface Station:
   a. Intercom station designated as a master station. Master audio interface intercom may be integrated into a control console or provided with a faceplate constructed of 11-gage brushed stainless. Internal steel offset grille shall restrict inserting objects through speaker grille. Stations shall be ruggedly constructed for use in correctional facilities and resistant to damage from misuse, soil, and sprays.
   b. Each intercom station shall incorporate an internal loudspeaker, microphone preamplifier, and function multiplexing circuitry. Pushbuttons shall provided on each station for answering intercom calls or paging specific zones. Pushbuttons shall be software assignable for placement of call requests or control of auxiliary functions.
   c. Pushbuttons shall be stainless steel and vandal-resistant. Pushbuttons shall be solid metal piezo-electric type with no moving parts and a 50 million operation lifetime.
   d. Loudspeakers: Waterproof mylar cone type.
   e. Master Audio Interface Stations shall have ability to:
      1) Answer calls.
      2) Call requests can be programmed to be received by another master station.
      3) Make group calls and zoned public address announcements by pressing selected pushbuttons on control console.
      4) Adjust their intercom volume level.
   f. Call placement from an intercom station:
      1) Depressing an intercom station's call push-button to place a call request Calls not answered within pre-programmed time maybe place a secondary call request on an assigned master station.
   g. Call answering at an Master Audio Interface Station:
      1) System shall notify operator call is incoming. System shall provide call confirmation tone (single beep) at master station when call is placed. Tone verifies that call has been placed into system queue. This tone shall be programmable to be disabled if desired.
      2) Intercom system shall communicate with CCTV system via Ethernet and display pre-determined CCTV images on a monitor adjacent to master station answering call if the intercom/door is not viewable from the control console controlling the door.
      3) Operator shall press and hold the pushbutton associated with the intercom wall station he desires to communicate with. While holding the pushbutton the operator may speak and it will be transmitted and emitted from the wall intercom speaker. Once the operator releases the pushbutton the wall intercom microphone is activated and the individual by the intercom may speak to the operator in the picket. Once communication is complete then the operator shall press the "Clear" pushbutton on the control console.
   h. Paging:
      1) Stations shall have ability to page to pre-determined groups of intercom stations and/or loudspeaker zones.
   i. CCTV interface:
      1) System shall transmit command signals to CCTV controller to route camera signals to viewing monitors.

2.06 HARDWARE

A. Digital controllers:
   1. Form an intercom exchange capable of independent local operation. Exchange capacity shall be increased by connecting up to 4 remote expanders to each controller.
   2. Multiple controllers may be networked together via digital audio trunks and/or Ethernet data networks to form larger systems.

3. Controller shall contain cards providing USB ports, Ethernet ports, serial ports, audio interface and programming capability required to control intercom system and communicate with other systems.
4. Front panel keypad/display for system setup and maintenance.
5. Convert incoming audio signals to digital format and outgoing signals to analog format.
6. intercom master station audio, press-to-talk and hook switch status transmitted over 2 single shielded pair cables with wiring supervision to detect open circuit and short circuit faults.
7. Internal modem for remote troubleshooting.

B. Remote digital expanders:
1. Provide master station and intercom features similar to digital controllers to facilitate exchange expansion.
2. Provide 8 amplified paging outputs that can drive 25 Vrms loudspeaker circuits and provide 5 watts output per channel. Adjacent channels may be bridged to obtain higher power.

C. Station control cards:
1. Provide card with minimum of 16 half-duplex intercom station ports which can be employed in adjacent pairs for full duplex devices.
2. Provide interface that converts incoming audio signals to digital format and outgoing signals to analog format. Each channel shall monitor status of up to 2 switches associated with each intercom station.
3. Provide separate audio power amplifier for nonblocking call operation.
4. Station audio, switch, and power functions may be transmitted over a single shielded pair cable with supervision to detect open circuit and short circuit faults.

D. Paging zone expanders: Provide 3 page inputs (from an audio amplifier) with each input having 6 selectable relay controlled outputs. One relay controlled output for each input that can be used to key an audio amplifier.

E. Administrator software for configuring and maintaining system:
1. Function on a standard PC to support system configuration, diagnostics, maintenance, and logging but not be required for system operation.
2. 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 shall 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 shall 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 shall include:
   a. Display of system activity with filtering options.
   b. Search by time and date.
   c. Search by device.
   d. Search by parameter.

F. Advanced intercom master station:
1. Desktop intercom master stations shall consist of display, keypads, internal speaker/microphone, telephone handset with hook switch, headset jack, and external buzzer contacts.

2. Display module shall consist of 4 line by 20-character alphanumeric LCD display mounted behind a brushed stainless steel faceplate. Display shall include scratch- and impact-resistant window, adjustable viewing angle, and adjustable back lighting. Character size: 0.19" H x 0.12" W.
3. Provide 5 function keys below display to enter menu selections. Function key action shall be labeled on display and vary according to location in menu structure and current options available.
4. Separate 19 button keypad shall include standard 12 numeric keypad keys, two scroll keys, enter key, clear key, headset key, mute key, and press-to-talk key.
5. Key switch lifetime for all keys, 10 million operations.
6. Telephone handset with coiled cord, press-to-talk bar, and hook switch cradle shall be mounted on side of master station. Lifting handset from hook switch automatically disconnect loudspeaker/microphone communications.
7. Desktop-mounted intercom master station top housing assembly shall be fabricated with single piece, brushed stainless steel, slope-faced faceplate. Rear, bottom, and side panels shall be single-piece formed steel with welded joints and matte black finish. Overall housing dimensions, excluding rubber feet, 9.5" W x 10.25" D x 4.5" H .

G. Basic master intercom station:
1. Network and power supply interface, audio amplification and processing module, network and operating status LED's, ribbon cable header for connection to display module.
2. External microphone interface with phantom power capability.
3. External loudspeaker interface.
4. Microphone with press-to-talk switch interface.
5. External buzzer contact closure interface.
6. Surface wall mount enclosure nominally 9" H x 6.5" W x 1.8" D.
7. Capable of activating 8 separate paging zones.

H. Discrete input/output modules:
1. Each discrete I/O (input/output) module shall interface up to 48 contact closure type input monitor points and 48 solid-state (16 relay, 48 relay) output control points. Outputs shall be current sink (voltage source, LED driver, form C contact) type.
2. Inputs shall be supervised for open circuit and short circuit faults in field wiring. With terminating resistors, each supervised input is able to monitor 2 contact points for total of 96 inputs.
3. DIO modules: Rack- or wall-mounted.

I. Network repeaters:
1. Extend LonWorks network cable limits or increase node limits. Each unit shall include 4 network ports. Data received on any port shall be retransmitted on other ports.
2. Units shall be surface wall-mounted and include depluggable screw terminal connectors, redundant power supply connections, and internal fuse to protect circuitry.

J. Analog intercom stations:
1. Design for mounting on existing backboxes or new two-gang boxes. Construct faceplates of 11-gage brushed stainless. Internal steel offset grille to restrict inserting objects through speaker grille. Stations shall be ruggedly constructed and resistant to damage from soil and sprays.
2. Each intercom station shall incorporate internal loudspeaker, microphone preamplifier, and function multiplexing circuitry. Provide one pushbutton on each station. Pushbuttons shall be software assignable for placement of call requests or control of auxiliary functions.
3. Pushbuttons shall be vandal-resistant and of stainless steel. Pushbuttons to be solid metal piezo-electric type with no moving parts and a 50 million operation lifetime.
4. Loudspeakers: Waterproof mylar cone type.
5. Intercom station functions shall be transmitted over a single shielded pair cable. Stations shall be provided with MTA type insulation displacement connector requiring no wire stripping for installation.
6. Outdoor intercom stations shall be identical in all respects to standard intercom stations, except that metal plates and hardware to be stainless steel, and internal circuitry and components shall be conformally coated.

K. Intercom station boards:
   1. Use to interface generic intercom stations and loudspeakers to system station audio boards for 2-way voice communication or audio monitoring.
   2. Units shall include microphone preamplifier, line supervision electronics, multiplexing electronics, and loudspeaker transformer.
   3. Units shall include pigtail and switch options as required for each location.

L. Paging amplifiers:
   1. Provide paging amplifiers and zone switching as required to perform functions described herein and indicated on Drawings.
   2. Constant voltage output type with power output capacities to drive loudspeakers connected at sufficient levels with no more than 90% amplifier loading.

M. Loudspeakers:
   1. Nominal 8" diameter dual cone type units. Loudspeakers to incorporate 6-ounce permanent magnet and include a 5-watt multi tap transformer for use on 25-volt and 70-volt constant voltage type distribution systems.
   2. Provide each loudspeaker with standard baffle plate and flush-mounted enclosure. Baffle and enclosure shall be all metal construction and finished in polar white baked on enamel.

N. Horn loudspeakers:
   1. Weatherproof compression driver units with integral screwdriver adjustable multi-tap transformer for use on both 25-volt and 70-volt constant voltage distribution systems. Integral mounting plate suitable for mounting on a standard outlet box shall include swivel type alignment bracket.
   2. Units shall be rated to handle 15 watts input power. Nominal sensitivity 110 dB SPL at 3' with 1 watt input.

O. Control console:
   1. Intercom control shall be built into door control console. This may be a faceplate mounted into door control console.
   2. Coordinate layout of the intercom with door control console manufacture and CCTV manufacturer to ensure properly sized cabinets and consoles are provided.

P. 19" hardware cabinet:
   1. Provide hardware 19" racks for each housing unit and administration building central control. Rack cabinets shall be lockable 19" rack enclosures and housed in central control and in the mechanical rooms on second floor of each housing unit. Cabinets shall contain hardware and patch panels required for field wiring to intercom and CCTV system.
   2. Coordinate layout of intercom/CCTV console and 19" hardware rack with CCTV manufacturer to ensure properly sized racks are provided.

2.07 UNINTERRUPTABLE POWER SUPPLY (UPS)

A. One UPS shall give provided to sustain operation on IP video management system. Provide UPS to sustain operation of all equipment located in main command center for a 10-minute period.

B. Provide continuous, no-break power during complete or momentary loss of supply power.

C. In normal operating mode, UPS shall condition line power protecting against environmental conditions, power surge, power sag, under-voltage, over-voltage, line noise, frequency (variation of the waveform), transients, and harmonic distortion.

D. Provide external bypass switch to allow UPS to be removed from incoming power line for service.

2.08 CONDUIT AND WIRE

A. Conduit: 3/4" (19 mm) minimum, in accordance with NEC, local, and state requirements.

B. Wire:
   1. Material: Copper.
   2. In conduit or raceway with conduit fill not exceeding 40%.
   3. In accordance with local, state and national codes and as recommended by manufacturer of intercom/paging system. Number, size and type of conductors shall be as recommended by system manufacturer and as shown on Drawings.
   4. 120-volt ac power circuits: 12 AWG minimum, 600-volt insulation.
   5. Wiring run in underground conduits: Suitable for wet locations.

C. Terminal boxes, junction boxes and cabinets: UL-listed for intended use and purpose.

D. Provide factory manufactured field interface cables to limit wire nut splice connections.

E. Field wiring shall conform to manufacturer's recommendations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify Site conditions prior to installation.

3.02 INSTALLATION

A. Inspect both substrate and conditions under which Work shall be performed. Do not proceed until unsatisfactory conditions have been corrected in and acceptable manner.

B. Verify accuracy of dimensions, allowances, and clearances on site prior to commencing with any work that may be affected by those dimensions, allowances, and clearances.

C. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

D. Supervise construction activities to ensure that no part of Work, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

E. Provide adequate ventilation for heat radiating equipment.

F. Install equipment to provide maximum safety to operating and maintenance personnel.

G. Install system components and appurtenances in accordance with manufacturer's specifications, referenced practices, guidelines and applicable codes. Furnish necessary interconnections, services and adjustments required for complete and operable system as specified. Control signal, communications and data transmission line grounding shall be installed as necessary to preclude ~~ground loops, noise and~~ surges from adversely affecting system operation.

H. Wiring shall be installed in dedicated conduit/raceway throughout. Cable shall not be pulled into conduits or placed in raceways, compartments, outlet boxes, junction boxes, or similar fittings with other building wiring.

I. Provide cabinets, boxes and similar enclosures containing integrated intercom/ paging system components and/or cabling easily accessible to employees or to general public with lock. Boxes located above ceiling level in occupied areas of building shall not be considered accessible.

J. Cover junction boxes and small device enclosures below ceiling level and easily accessible to employees or general public with suitable cover plate and secure with tamper proof screws.

K. Repair factory finishes where damaged during construction.

L. Support boxes independent of conduit/raceway system.

M. Anchor equipment securely to walls, floor, and building steel, unless otherwise defined. Use expansion anchors in concrete and masonry. Install equipment level and plumb.

N. System devices identified on building drawings are intended to generally indicate areas where such devices are to be located. Contractor shall be responsible for determining final location of these devices in accordance with Owner's requirements.

O. Riser diagrams are schematic and do not show every conduit, wire box, fitting or other accessories. Provide such materials as necessary for complete and functioning installation. Install in accordance with referenced codes and these specifications. Use weatherproof equipment or covers where installed in areas exposed to weather.

P. Remove nonconducting material from contact surfaces before making grounding connections. Ground intercom/paging system in accordance with manufacturer's recommendations.

Q. If more or larger conduit is required than exists or is indicated on Drawings, allow for such additional conduit in contract price.

R. System equipment shall be contained within equipment racks, cabinets, or closets. If more or larger racks or cabinets are required than exist or are indicated on Drawings, allow for such additional equipment racks and cabinets in contract price.

S. System equipment and field devices shall be held securely in place. Fastenings and supports shall be selected to provide a safety factor of 3.

T. System equipment equipped with plug in power connectors shall be connected to a dedicated receptacle. Do not use tap connectors for plugging in multiple plugs into a single receptacle.

U. Cable within equipment racks, cupboards, and cabinets, or on backboards, shall be neatly bundled and secured.

V. Wires shall not be nicked, have strands removed, or have frayed strands when removing insulation or terminating.

W. Provide factory-manufactured interface cables for each field interface board. Provide terminal blocks in cabinet or on backboard for factory cable interface to field wiring.

X. Color identification of wiring:
   1. Identify wiring by continuous insulation color.
   2. Where multi-conductor cables are used, use same color-coding system for identification of wiring throughout.
   3. Maintain uniform phasing and color-coding throughout system.

Y. Name identification of wiring:
   1. Identify wiring at all equipment locations, pull boxes, junction boxes, and outlet boxes.
   2. Develop uniform identification scheme for use throughout system.
   3. Record wire name identification on applicable drawings and provide wiring tables within operating and installation manuals.

Z. Use one of following marking materials:
   1. Heat shrink sleeves.
   2. Clear plastic tape wrap-on strips with designated labeling section.

AA. Install a UL497 rated surge suppression device on copper communication and power cables connected to intercom control equipment, see Section 16670.

3.03 TESTING AND COMMISSIONING

A. Place entire system into full and proper operation as designed and specified.

B. Verify hardware components are properly installed, connected, communicating and operating correctly.

C. Perform final acceptance testing in presence of Owner's Representative, executing point by point inspection against documented test plan demonstrating compliance with system requirements as designed and specified.
   1. Submit documented test plan to Owner at least 14 days in advance of acceptance test, inspection and check-off.
   2. Conduct final acceptance tests in presence of Owner's Representative, verifying each system component is operating correctly.
   3. Acceptance by Owner is contingent on successful completion of check-off; if check-off is not completed due to additional work required, re-schedule and perform complete check-off until complete in one pass, unless portions of system can be verified as not adversely affected by need for additional work.
   4. Integrated intercom/paging system shall not be considered accepted until acceptance tests have been successfully checked-off. Beneficial use of part or all of system shall not be considered as acceptance.
   5. Correct any and deficiencies observed during final check-off at no cost to Owner until equipment and system components operate properly.

3.04 MANUFACTURER'S FIELD SERVICES

A. Provide an on-site, factory-trained technician to assist, advise and manage installation personnel.

B. Provide system components necessary to modify/expand integrated intercom/paging system on site. Modification may include addition and deletion of devices, circuits, or changes to system operation. System design and structure shall place no limit on type or extent of modifications performed on site.

3.05 TRAINING

A. Provide system operations, administration and maintenance training by factory-trained, authorized representative of manufacturer qualified to instruct:
   1. Owner will designate personnel to be trained.
   2. Provide printed training materials for each trainee including product manuals, course outline, workbook or student guides and written examinations for certification.
   3. Provide hands-on training with operational equipment.
   4. Training shall be oriented to specific system being furnished as designed and specified.

B. Provide demonstration and instruction sessions to familiarize Owner's operation and maintenance personnel with systems and their operation and maintenance.

C. Establish agendas for demonstration and instruction sessions in conjunction with Owner. Coordinate scheduling of sessions with Owner.

D. Provide a four 4-hour sessions over 2 days for instruction and demonstrate operation of systems.

E. Provide 3 days of 8-hour technical seminars for 4 people to demonstrate configuration, troubleshooting, repair, and maintenance of system.

3.06 MAINTENANCE

A. Perform manufacturer's recommended preventative maintenance on applicable components and/or devices.

END OF SECTION

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