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-C140	696-FD-16-B006	☒ SEALED BID (IFB) ☐ NEGOTIATED (RFP)	11/23/15	054481	05410010

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)
	Teresa Rhodes, CTPM, CTCM	PHONE NO.: (936) 437-7055 FAX NO. (325) 223-0310

Document Type: 9 **Statutory Cite: 2166.003 (b)**	ESTIMATED BUDGET: $117,300.00

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):

Install High Mast Lighting – 19 Bldg. & Perimeter Fence – Polunsky Unit located in Livingston, Texas

As Designed By: Texas Department of Criminal Justice Facilities Engineering
Two Financial Plaza, Suite 400
Huntsville, Texas 77340

Please provide the following information:
DUNS # 004928230 TAX ID # 74-1540453 CHARTER # 0021738400

11. The Contractor shall begin performance within 10 calendar days and complete it within 180 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 PM local time December 22, 2015 (date). 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) C.F. McDonald Electric, Inc. 504 Timber Creek Houston, TX 77017	15A. Telephone No. (Include Area Code) (713) 921-1368 15B. Fax No.: (713) 921-5109	16. EMAIL ADDRESS landon@mcdonaldinc.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.	1										
DATE	12/14/15										

19A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)	19B. SIGNATURE	19C. OFFER DATE
Harry Keller, Vice President		December 22, 2015

AWARD (To be completed by State)

20. ITEMS ACCEPTED:

Install High Mast Lighting – 19 Bldg. & Perimeter Fence – Polunsky Unit $196,600.00

21. AMOUNT	22. AMOUNT IN WRITING
$196,600.00	ONE HUNDRED NINTEY-SIX THOUSAND SIX HUNDRED DOLLARS AND ZERO 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-B006 and 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 Jerry McGinty Chief Financial Officer

27B. SIGNATURE	27C. DATE	28B. TEXAS DEPARTMENT OF CRIMINAL JUSTICE By	28C. AWARD DATE 3/18/16

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SECTION B

THE SCHEDULE
BID SCHEDULE

ITEM NO.	DESCRIPTION	QUANTITY	PRICE
01	**Base Bid**		

Install High Mast Lighting – 19 Bldg. & Perimeter Fence – Polunsky Unit located in Livingston, Texas as shown by the construction plans as prepared by the TDCJ Facilities Engineering.

Lump Sum **$ 196,600.00**

The Base Bid is separated as follows:

(1) Materials incorporated into the realty (Cannot be less than the price Contractor paid for materials)	$ 145,689.00
(2) Labor	$ 20,456.00
(3) Overhead and Profit (includes the cost of the Payment and Performance Bonds)	$ 30,455.00
TOTAL	**$ 196,600.00**

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.

_____

_____

_____

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; and

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 **one hundred eighty (180)** 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 **three hundred eighty-five dollars ($385.00)** 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 the Historically Underutilized Business (HUB) program, 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
9	9	8	7	7	7	7	7	7	5	7	8

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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. Changes will require the Contractor to submit a revised HUB Subcontracting Plan (Exhibit 1) to the Contract Administrator.

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.

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.

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 thatall additional steps aer 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.

8.4.5 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: Teresa Rhodes, CTPM, CTCM Contract Administrator and to Contractor at:

C.F. McDonald Electric, Inc.

504 Timber Creek

Houston, TX 77017

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 (Outside Five Foot Perimeter of Building)	3
5	Prevailing Wage Schedule (Building to Five Feet Beyond Building Line)	4
6	Substitution Request (Bidding Phase)	
7	Substitution Request (After execution of Contract)	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)	6

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 sixty-two percent (62%) 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.

_____, _____-_____-_____
(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
__X__ 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.

SAME

_____

_____

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 C. F.McDonald Electric, Inc.

By Harry Keller

Signature _____

Title Vice President

Date December 22, 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 Contract Administrator 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, Install High Mast Lighting - 19 Bldg. & Perimeter Fence– Polunsky Unit. Do Not Open Until 2:00 p.m., December 22, 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: Teresa Rhodes, CTPM, CTCM - Contract Administrator

(BIDS MUST BE RECEIVED BY 2:00 P.M. ON DECEMBER 22, 2015 AT THE DESIGNATED ADDRESS TO BE CONSIDERED RESPONSIVE)

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

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

C. 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
(Outside Five Foot Perimeter of Building)

General Decision Number: TX150123 01/02/2015 TX123

Superseded General Decision Number: TX20140123

State: Texas Construction Type: Heavy

Counties: Anderson, Falls, Freestone, Grimes, Houston, Jasper, Lee, Leon, Limestone, Madison, Milam, Newton, Polk, Sabine, San Augustine, Shelby, Trinity, Tyler, Walker and Washington Counties in Texas.

HEAVY 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

SUTX2009-122 04/21/2009

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	$ 13.00	0.00
LABORER: Common or General.....	$ 8.75	0.00
LABORER: Pipelayer.....	$ 11.25	0.00
OPERATOR: Backhoe/Trackhoe.....	$ 15.89	0.00
OPERATOR: Bulldozer.....	$ 14.25	0.00
OPERATOR: Front End Loader.....	$ 11.52	0.00
TRUCK DRIVER.....	$ 11.75	0.00

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
(Buildings to five feet beyond building line)

General Decision Number: TX150206 07/31/2015 TX206

Superseded General Decision Number: TX20140206

State: Texas Construction Type: Building

County: Polk County 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	05/15/2015
2	07/31/2015

* ASBE0022-003 06/01/2015

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	$ 22.63	11.90

BOIL0587-003 01/01/2013

	Rates	Fringes
Boilermaker.....	$ 22.71	20.63

CARP0551-006 04/01/2015

	Rates	Fringes
CARPENTER (Form Work Only).....	$ 22.50	8.33

IRON0084-009 06/15/2014

	Rates	Fringes
IRONWORKER, ORNAMENTAL, REINFORCING, AND STRUCTURAL.....	$ 22.02	6.35

LABO0154-017 05/01/2008

	Rates	Fringes
Laborers: (Mason Tender - Cement/Concrete).....	$ 14.53	3.49

PLUM0068-006 10/01/2013

	Rates	Fringes
Plumber.....	$ 31.30	9.49

SUTX2009-061 04/20/2009

	Rates	Fringes
BRICKLAYER.....	$ 18.00	0.00
CARPENTER, Includes Acoustical Ceiling Installation, Batt Insulation, and Metal Stud Installation (Excludes Drywall Hanging, and Form Work).....	$ 15.13	2.63
CEMENT MASON/CONCRETE FINISHER...	$ 12.09	0.00
DRYWALL HANGER.....	$ 13.89	1.00
ELECTRICIAN.....	$ 18.06	4.87
LABORER: Common or General.....	$ 9.24	0.00
LABORER: Landscape & Irrigation.....	$ 8.50	0.22
LABORER: Mason Tender - Brick...	$ 12.02	0.00
LABORER: Mortar Mixer.....	$ 12.00	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	$ 14.67	0.47
OPERATOR: Bulldozer.....	$ 13.00	0.35
OPERATOR: Crane.....	$ 21.33	0.00
OPERATOR: Forklift.....	$ 14.58	0.00
OPERATOR: Loader (Front End)....	$ 10.54	0.00
PAINTER: Brush, Roller and Spray, Includes Parking Lot Striping...	$ 11.75	0.00
ROOFER.....	$ 13.64	1.80
SHEET METAL WORKER.....	$ 17.00	0.00
TILE SETTER.....	$ 15.00	0.00
TRUCK DRIVER.....:....	$ 10.68	0.34

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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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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Union Average Rate Identifiers

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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:

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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.

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END OF GENERAL DECISION

ATTACHMENT NO. 6

SUBSTITUTION REQUEST
(Bidding Phase)

Not Applicable After Award of Contract

ATTACHMENT NO. 7

SUBSTITUTION REQUEST - AFTER EXECUTION OF CONTRACT

TEXAS DEPARTMENT OF CRIMINAL JUSTICE

PROJECT: _ PROJECT NO.: _____

TO: (A/E) FROM: (BIDDER)

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

Attachment 8 will be in TDCJ Contract File after award of Contract

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

	☐ Wood	☐ Block
☐ Single Story	☐ Metallic	☐ Concrete
☐ Multi-Story	☐ 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

Page 1 of _____

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. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
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: _____

10.A.21

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: _____
General Contractor Quality Control Manager

Contract Day No: _____

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:

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) _____

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

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: C. F. McDonald Electric, Inc. State of Texas VID #: _____

Point of Contact: Harry Keller Phone #: 713-921-1368

E-mail Address: harkel@mcdonaldinc.com Fax #: 713-921-5109

b. Is your company a State of Texas certified HUB? ☐ - Yes ☒ - No

c. Requisition #: 696-FD-16-B006 Bid Open Date: 12/22/2015 (mm/dd/yyyy)

Enter your company's name here: C. F. McDonald Electric, Inc. Requisition #: 696-FD-16-B006

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	Subcontractor for Pole bases, concrete, trenching	%	26 %	0 %
2	Supplier for Light Poles, Lights & Contactors	%	36 %	0 %
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: C. F. McDonald Electric, Inc. Requisition #: 696-FD-15-B006

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)
	Harry Keller	Vice President	12/22/2015

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: C. F. McDonald Electric, Inc. Requisition #: 696-FD-16-B006

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: Subcontractor for pole bases, concrete and trenching

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
Kennedy Contracting	☒ - Yes ☐ - No	1760369219	$ 49,470.00	26 %
	☐ - Yes ☐ - No	900/474574	$	%
	☐ - 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: C. F. McDonald Electric, Inc. Requisition #: 696-FD-16-B006

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:** Supplier for light poles, lights and contactors

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
Elec-Net Supply	☒ - Yes ☐ - No	1200371541	$ 68,182.00	36 %
	☐ - Yes ☐ - No	900/00447	$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
	☐ - Yes ☐ - No		$	%
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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.

Rev. 10/14

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-C140 **Date of Award:** _____ (mm/dd/yyyy) **Object Code:** _____ (Agency Use Only)

Contracting Agency/University Name: **Texas Department of Criminal Justice**

Contract Administrator Name : Teresa Rhodes

Contractor (Company) Name: C.F. McDonald Electric, Inc. **State of Texas VID #:** 17415404536

Point of Contact: Harry Keller **Phone #:** 713-921-1368

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)
Kennedy Contracting, Inc.	1760369219900	Yes	$ 49,470.00	$	$	
Elec-Net Supply	1200371541900	Yes	$ 68,182.00	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
			$	$	$	
TOTALS:			$ 117,652.00	$	$	

Signature: _____ **Title:** _____ **Date:** _____

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POLUNSKY UNIT

3872 FM 350 SOUTH -
LIVINGSTON, TEXAS 77351

INSTALL HIGH MAST LIGHTING -
19 BLDG & PERIMETER FENCE
MWR #05410010

NOVEMBER 23, 2015

TDCJ FACILITIES DIVISION
ENGINEERING

JAMES W. DILTS, P.E.

PROJECT SEALS

STATE OF TEXAS JAMES W. DILTS 56013 LICENSED PROFESSIONAL ENGINEER James W. Dilts 11-23-15 Texas Registration #56013 Project Engineer	

TDCJ ENGINEERING – Polunsky Unit
Install High Mast Lighting – 19 Bldg & Perimeter Fence

MWR# 05410010

CONTRACT DOCUMENTS FOR
POLUNSKY
Install High Mast Lighting – 19 BLDG & BALLFIELD PERIMETER FENCE
Livingston, Texas

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SECTION 01 10 00 – SUMMARY

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Project; work covered by Construction Documents

B. Contractor use of site and premises

C. Work sequence

D. TDCJ occupancy

E. Construction Duration

1.2 RELATED REQUIREMENTS

A. General and Special Conditions

B. Other Specification Sections as applicable

1.3 PROJECT – WORK COVERED BY CONSTRUCTION DOCUMENTS

A. The Work consists of the following:

1. This project consist of installing 2 new high mast (100') poles. The installation of the new lighting system includes poles, standards, and conduits. The new lighting system is fed by two existing electrical services.
2. The poles are galvanized steel coated with a black plastic coating to prevent corrosion. Each pole is to have a combination of 1000W HPS light fixtures with standby arctubes, and 1000W MH light fixtures. Fixtures are to be controlled via a photocell and time clock through a lighting contactor.

B. Perform Work under a single Lump Sum contract on Forms provided.

1. Work of this Contract is identified in Technical Specifications and on Drawings. Unless incorporated via an issued Addenda or Change Order, no other work is authorized.

2. Except as specifically noted, provide and pay for:
   i. Labor, material, and equipment.
      a. Owner is exempt from sales tax on products permanently incorporated in work.
         1. Obtain sales tax exemption certificate number from Owner.
   ii. Tools, construction equipment, and machinery.
   iii. Other facilities and services necessary for proper execution and completion of work.

3. Contractor to acquire and pay for all required permits.

i. Comply with codes, ordinances, rules, regulations, orders, standards, and other legal requirements of public authorities, which bear on performance of Work.
ii. Promptly submit written notice to Design Professional of observed variance of Construction Documents from legal requirements. Assume responsibility for Work known to be contrary to such requirements, without notice.

1.4 TDCJ OCCUPANCY

A. TDCJ will occupy the site and premises during entire period of construction for the conduct of normal operations.
1. Owner will occupy site and/or existing building(s) during entire construction period. Day-to-day operations will continue during the construction period.
2. Maintain existing exits, unless otherwise indicated on drawings.
3. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from PA.
4. Coordinate offender relocation and schedule shut-downs of equipment and utilities, as needed/applicable, for construction progress with TDCJ PA.
i. Provide not less than 48 hours' notice to PA of activities that will affect Owner's operations.
ii. All interruptions to Owner operations shall be minimized to the fullest extent possible.
1. If required, reference construction drawings for requirements for auxiliary equipment and services for extended outages required for construction activities.
2. Inadvertent interruption of Owner operations due to construction activities shall be corrected immediately by Contractor.
5. Protect areas being utilized by Owner from dust and debris by construction barriers, if required due to proximity of Owner occupation to construction area.
6. Use appropriate safety cautions, including barriers, to protect areas that are occupied, if required due to proximity of Owner occupation to construction area.

B. Cooperate with TDCJ to minimize conflict and to facilitate TDCJ operations.

C. Schedule Work to accommodate Owner occupancy.

1.5 CONTRACTOR USE OF SITE AND PREMISES

B. Use of Site: The construction site is a detention facility and therefore a secured facility.

1. Entry into the Unit is restricted and must be coordinated with security and maintenance personnel. Offenders are present at the site. Caution and compliance with corrections officers and other TDCJ personnel instructions are strictly required. Security provisions necessary must be included in Contract Sum.

2. Confine construction operations to areas indicated on drawings.

3. Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. The Warden will decide the contractor's parking and storage areas.
i. Schedule deliveries to minimize use of driveways and entrances.

ii. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.6 WORK SEQUENCE

A. Construct Work in stages or phases with each to be substantially complete before beginning next to accommodate TDCJ occupancy requirements during the construction period. Coordinate construction schedules and operations with TDCJ PA.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

A. The intent of Construction documents is to require all items necessary for the proper execution and completion of the work by Contractor. The Construction Documents are complementary and by their intent a complete and usable work product is expected to be provided. To meet this requirement the Contractor is expected to provide construction in place to include that which is indicated in the Construction Documents and that which may be reasonably expected to be required to make the work complete in all respects and consistent with established and accepted construction practices.

END OF SECTION 01 10 00

SECTION 01 31 00 – PROJECT COORDINATION

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Coordination of Work.

B. Coordination of Drawings.

C. Coordination of Meetings.

1.2 RELATED REQUIREMENTS

A. Cutting and Patching – Section 01 73 29.

B. Project Meetings – Section 01 32 00.

C. Substitutions – Section 01 33 00.

D. Quality Control – Section 01 40 00.

E. Contract Closeout – Section 01 77 00.

1.3 DESCRIPTION

A. Coordination:
   1. Coordinate scheduling, submittals, and work of various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.
   2. Conduct pre-installation conferences of each unit of work that requires coordination with other work.
   3. Coordinate Pre-Final Inspection, Final Inspection and Acceptance.

B. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation.
   1. Where installation of one part of the Work is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.
   2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

1.4 MEETINGS

A. In addition to Monthly Progress Meetings specified in Section 01 32 00 and Preparatory Inspection Meetings specified in Section 01 44 00, hold coordination meetings and pre-installation conferences with personnel and subcontractors to assure coordination of Work. Generally conduct meetings in accordance with Section 01 32 00.

B. Coordination Meetings:
   1. Conduct coordination meetings among subcontractors, suppliers and other concerned entities as necessary to establish and maintain coordination and schedules, and to resolve conflicts interferences and other matters in dispute.
   2. Conduct coordination meetings among subcontractors prior to production of coordination drawings to resolve major interferences of systems.
   3. Conduct coordination meetings among subcontractors to review, revise, correct and approve coordination drawings.

C. Preparatory Inspection Meeting:
   1. Conduct a Preparatory Inspection meeting at Project Site prior to installation of each unit of work which requires coordination with other work. Installer and representatives of manufacturers and fabricators who are involved in or affected by that unit of work, and with its coordination or integration with other work that had preceded or will follow, shall attend this meeting. Notify Owner of scheduled meeting dates at least 48 hours in advance.
   2. At each meeting, review progress of other work and preparations for particular work under construction.
   3. Record minutes of each conference, including resolutions, unresolved problems, and final plans of action. Distribute meeting minutes promptly to everyone concerned, including Owner.
   4. Do not proceed with affected work if Preparatory Inspection meeting cannot be successfully concluded. Initiate actions necessary to resolve problems that prevent progress of the Work. Reconvene Preparatory Inspection at earliest possible date to resolve problems and prevent delays in the Work.

1.5 COORDINATION OF SUBMITTALS

A. Schedule and coordinate submittals of work shown on coordination drawings.

B. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in services, such equipment.

1.6 COORDINATION OF CONTRACT CLOSEOUT

A. Coordinate completion and cleanup of work of separate sections in preparation for Pre-Final Inspection.

B. After occupancy of Premises by TDCJ, coordinate access to Site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of TDCJ's activities.

C. Coordinate closeout submittals, starting of systems, training program requirements, and instructions to TDCJ's personnel.

1.7 COORDINATION OF TDCJ'S SCHEDULES

A. Coordinate scheduling of TDCJ's contract closeout. Refer to Special Conditions for specific requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

SECTION 01 32 00 PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Project meetings shall include Pre-Construction Conference, Monthly Progress Meetings, and specially called meetings throughout the progress of the Work.

B. TDCJ Project Administrator shall schedule and administer Pre-Construction Conference, Monthly Progress Meetings, and specially called meetings.

C. Entity responsible for scheduling and administering meeting is responsible for the following:
   1. Prepare agenda for meetings.
   2. Distribute written notice of each meeting 4 days in advance of meeting date.
   3. Make physical arrangements for meetings.
   4. Preside at meetings.
   5. Record the minutes; include significant proceedings and decisions.
   6. Reproduce and distribute copies of minutes within 3 days after each meeting.
      a. To participants in meeting.
      b. To parties affected by decisions made at meeting.

D. Representatives of subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of entity each represents.

E. TDCJ Project Engineer shall attend meetings to ascertain that Work is expedited consistent with Contract Documents and the construction schedules.

1.2 PRE-CONSTRUCTION CONFERENCE

A. A Pre-Construction Conference shall be held at the Project Site at a time to be designated by TDCJ Project Administrator.

B. Representatives of the Contractor, including Contractor's Quality Control Manager, Project Superintendent, and major subcontractors, shall be present.

C. As a minimum, the following items will be on the meeting agenda:
   1. Review of proposed subcontractors.
   2. Designation of key personnel.
   3. Communications.
   4. Coordination of trades.
   5. Schedule of Values.
   6. Construction Schedule.
   7. Critical work sequencing.
   8. Submittals.

9. Procedures for maintaining Project Record Documents.
10. Processing field decisions and Change Orders.
11. Submitting and processing monthly Applications for payment.

1.3 MONTHLY PROGREESS MEETINGS

A. During progress of construction, Contractor shall attend regular Monthly Progress Meetings scheduled by TDCJ in accordance with General Conditions.

B. The Quality Control Manager, Project Superintendent, and representatives of each major subcontractor shall attend progress meetings.

C. As a minimum, the following items will be on meeting agenda:
1. Review work progress since last meeting.
2. Note field observations, problems and decisions.
3. Review off-site fabrication problems and other problems affecting schedule.
4. Develop corrective measures and procedures to regain planned schedule.
5. Revise construction schedule as required.
6. Review submittal schedules and effect on construction schedule.
7. Review proposed changes and effect on construction schedule.
8. Coordination between elements of work.
9. Clarification of decisions required of TDCJ.
10. Review of subcontractor's forces on Project.
11. Review status and content of Project Record Documents.

1.4 SPECIALLY CALLED MEETINGS

A. Attendance of Contractor and major sub-contractors as required by TDCJ.

B. Agenda as applicable to subject of meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 32 00

SECTION 01 33 00 – SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTON

A. Procedures for Substitution Requests as required by the Contract Documents. Revise and resubmit Substitution Requests as necessary to establish compliance with the specified requirements.

1.2 RELATED REQUIREMENTS

A. General Conditions (Article 5.9) and Special Conditions

B. 0ther Specification Sections as applicable

1.3 QUALITY ASSURANCE

A. Coordination of submitted substitutions:
1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
2. Verify that each item and the submittal for it conform in all respects with the specifications and contract requirements.

B. Substitutions:
1. The contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when submitted on required Form provided in bid/contract documents, and when substantiated by the Contractor's submittal of required data.
2. Where any material, product, or equipment is specified by proprietary name, trade name, manufacturer name, generic name, or catalog number with the addition of such expressions as "or A/E approved equal", material, product, or equipment named is intended and no substitution will be allowed without written approval, per bid/contract documents.
3. Unless otherwise indicated the material, product, or equipment to be used are those specified and denote the type, quality, performance, etc. required. All proposals shall be based upon the use of specified material, product, or equipment, unless a substitution is approved and published in a written Addendum to the project.
4. Do not substitute material, product, or equipment unless substitution has been specifically approved in writing by the A/E.

C. "Or A/E approved equal",
1. Where the phrase "or A/E approved equal" occurs in the Contract Documents, do not assume that the material, product, equipment, will be approved as equal unless the material, product, or equipment has been specifically approved in writing by the A/E.
2. A Contractor who proposes to quote on the basis of an "or A/E approved equal" alternate material, product, equipment shall submit a Substitution

Request (Attachment 6) **10 days** prior to Bid Opening. Approved Substitutions must be issued in an Addendum to be considered for proposal. If an Addendum with approved substitution is not issued, specified material, product, or equipment must be used.

3. During the course of work, the Owner's representative may secure from the job site samples of material, equipment, or product being used and submit the samples to an independent testing laboratory for comparison. If the results demonstrate that the material, equipment, or products being used are not approved materials, the owner shall issue a Notice of Nonconformance, per 01 44 00 – Contractor's Quality Control.
4. During the course of work, if a specified or previously approved material, equipment, or product is determined to be unavailable due to strikes, lockouts, bankruptcy, discontinuance of production, documented shortages or similar occurrences, submit a Substitution Request (Attachment 7) as soon as unavailability is identified. Claim of unavailability is subject to approval by owner. Time Extension requests will be approved as a separate matter and will not be approved due to failure of Contractor to submit Substitution Request in a timely manner.

D. Procedure for Substitution Request Form

1. Substitution request **<u>including all required documentation</u>** shall be submitted to Owner's Representative
   a. During Bid – 10 days prior to Bid Opening, to Contract Administrator.
   b. During Contract Performance Period – as soon as unavailability is identified, to Project Administrator.
2. The Substitution Request must include documentation that the requested substitution is equal or superior to the specified material, product, or equipment. Failure to provide clear, accurate, and adequate documentation will be grounds for rejection.
3. Required documentation shall consist of applicable information which would aid the A/E in making an informed decision. Include **<u>side by side product comparisons</u>**, technical data, laboratory test results, product drawings, etc.
4. If use of the proposed material, product, or equipment would result in changes to the design of other elements, the submittal shall describe fully the changes required to the drawings or specifications. Any cost differences resulting from modifications to the drawings and specifications and the cost of making the changes, including charges for required design time by A/E, is the responsibility of the bidder/contractor.
5. **<u>No</u>** material, equipment, or product is considered "as equal" to the material, equipment, product specified until a Substitution Request has been approved by the A/E.

END OF SECTION 01 33 00

SECTION 01 34 00 – SUBMITTALS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Procedures for Submittal of Product Data, Shop Drawings, Samples, Mock-Ups, Requests for Information and other work-related submittals required by Contract Documents.

1.2 RELATED REQUIREMENTS

A. General and Special Conditions

B. Other Specification Sections as applicable

1.3 DEFINITIONS

A. Product Data – illustrations, standard schedules, performance charts, instructions, brochures, diagrams, test data and other information furnished by Contractor to illustrate material, product, equipment or system for some portion of the Work.

B. Shop Drawings – drawings, diagrams, schedules and other data specially prepared for the Work by Contractor or a Subcontractor, Sub-Subcontractor, Manufacturer, supplier or distributor to illustrate some portion of the Work.

C. Samples – physical examples which illustrate materials, equipment or workmanship to establish standards for the Work. Samples include field samples.

D. Action Submittals – written and graphic information and physical samples that require A/E's responsive action.

E. Informational Submittals – written and graphic information and physical samples that may or may not require A/E's responsive action.

F. Request For Information (RFI) – requests from Contractor for additional information, interpretation, clarification of, or to identify conflicts with, the Construction Documents.

G. Contract Closeout Submittals – contract closeout related information that does not require review and approval by the A/E and are to be retained for project files only.

1.4 SUBMITTALS (Other than RFIs and Contract Close-out submittals)

A. Per ARTICLE V., within 20 days after receipt of Notice to Proceed submit Submittal Schedule to Project Administrator for approval. Arrange the following information in tabular format.

1. Scheduled date for first submittal.
2. Specification number and title.
3. Submittal category (action or informational).
4. Name of supplier.
5. Description of the Work covered.
6. Scheduled date for Design Professional's final release or approval. (30 days after submittal.)

B. Coordinate preparation and processing of Submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

C. Schedule Submittals to allow number of days for review and processing of Submittals by TDCJ as stipulated in the General Conditions and in such sequence as to cause no delay in the Work.

D. Make Submittals promptly in accordance with approved Submittal Schedule.

1. Time for review shall commence on A/E's receipt of Submittal.
   a. Submittal review: 30 calendar days for each Submittal.
   b. Resubmittal review: 14 calendar days for review of each Resubmittal.
   c. Allow additional time if coordination with subsequent Submittals/Resubmittals is required.

2. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including Resubmittals.

E. Per approved Submittal Schedule:

1. Submit number of copies of Shop Drawings as determined at Pre-Construction Meeting (no more than 8) and meeting requirements set forth in relative Specification Section.

2. Submit number of copies of Product Data as determined at Pre-Construction Meeting (no more than 8) and meeting requirements set forth in relative Specification Section.

3. Submit number of sets of Samples/Mock-Ups as determined at Pre-Construction Meeting (no more than 3) and meeting requirements set forth in relative Specification Section.

4. Submit number of sets of other Submittals as determined at Pre-Construction Meeting (no more than 8) and meeting requirements set forth in relative Specification Section.

5. Submit number of Contract Closeout submittals as specified in Sections 01 70 00 and meeting requirements set forth in relative Specification Section.

F. Coordinate Submittals into logical groupings to facilitate interrelation of Products and Systems:

1. Simultaneously submit associated items of operating systems which require correlation for efficient function and installation.

2. A/E reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received and shall not be considered as a delay to Work progress.

G. Provide complete Submittals for review. Partial or incomplete Submittals will be returned, without review, for resubmission.

1. Check for coordination with other Work of the Contract and for compliance with the Construction Documents.

2. Mark with Contractor's approval stamp and provide Contractor's signature before submission to Project Administrator.
   a. Stamp each submittal with a uniform approval stamp with a statement certifying that submittal has been reviewed, checked and approved for compliance with the Construction Documents.

H. Transmittal Form:

1. Use Contractor's Transmittal form with Contractor's letterhead with title block or a permanently affixed label with Contractor's letterhead.

   a. Transmit each submittal using transmittal form or label.
      (1) Indicate name of firm or entity that prepared each Submittal on label or title block.
      (2) Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by A/E.
      (3) Include the following information on label for processing and recording action taken:
         (a) Project name.
         (b) Date.
         (c) Name and address of A/E.
         (d) Name and address of Contractor.
         (e) Name and address of subcontractor.
         (f) Name and address of supplier.
         (g) Name of manufacturer.

(h) Submittal number and revision identifier.
   i) Submittal number shall use Specification Section number followed by decimal point and then a sequential number (e.g. 15 08 10.01). Resubmittal shall include an alphabetic suffix after another decimal point (e.g. 15 08 10.01.A)
(i) Number and title of appropriate Specification Section.
(j) Drawing number and detail references, as applicable.
(k) Locations(s) where product is to be installed, as applicable.
(l) Other necessary identification
   i) Product specification sheets that contain multiple part numbers shall contain indication of specific part number applicable to submittal.
(m) Specifically identify deviations from the Construction Documents.
   i) On attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by A/E and PA on previous submittals, and deviations from requirements in the Construction Documents, including minor variations and limitations.

2. Package each submittal individually and appropriately for transmittal and handling.

3. A/E will return submittal without review, received from sources other than Contractor.

4. Maintain a Submittal Log tracking the following information:

   a. Submittal Number
   b. Date of submission of Submittal
   c. Date of receipt of Submittal response
   d. Response – Approved, No Exception Taken, Revise and resubmit, Rejected, etc.
   e. Date of Resubmittal

5. Only use material, equipment, products upon receipt of a Submittal response of "Approved" or "No Exception Taken".

   a. Informational Submittals that do not comply with requirements will be returned by A/E to be resubmitted by Contractor.
   b. Submittals not required by the Construction Documents may not be reviewed and may be discarded.

6. Approval – upon receipt of a Submittal response of "Approved" or "No Exception Taken", furnish copies to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities.

I. Resubmittals: Make Resubmittals in same form and number of copies as initial Submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit Submittals having made adjustments indicated in A/E response until they are marked "Approved" or "No Exceptions Taken" and dated by A/E.

1.5 REQUESTS FOR INFORMATION (RFI)

A. Immediately upon discovery of the need for information, interpretation, clarification, or direction, submit a Request for Information.

B. RFIs shall originate with the Contractor. RFIs submitted by entities other than Contractor shall be returned with no response.

C. Coordinate and submit RFIs in a prompt manner so as to avoid delays in work.

1. Allow 72 hours for A/E response.
2. Requests for Time due to Contractor's failure to submit complete and accurate RFIs in a timely manner will not be considered.

D. Use TDCJ form provided in Attachment 10 titled "State Documents and Forms". Include the following:

1. Project name.
2. Date.
3. Name of Contractor.
4. RFI number, numbered sequentially.
5. Detailed description of needed information or identified conflict.
6. References to drawings, details, notes, specification sections, etc.
7. Field dimensions and conditions.
8. Attached drawings, photos, Product Data, Shop Drawings, and other information necessary to communicate issue(s).
9. Proposed resolution if subject matter of RFI is within practice of Construction Contractor or a Sub-contractor on Project.
10. Preliminary estimation of anticipated costs/savings and/or additional Contract Time.
    a. If there is no anticipated change to Contract Sum or Contract Time, such shall be indicated.
    b. **An approved RFI does not constitute an approved change to Contract Sum or Contract Time. Use TDCJ forms provided in Attachment 10 titled "State Documents and Forms" to submit a Pending Change Request and/or Time Extension Request, as applicable, according to Contract procedures.**

E. The following RFIs will be returned without action:

1. Requests for approval of submittals.
2. Requests for approval of substitutions.
3. Requests for interpretation of A/E's action on submittals or substitutions.
4. Requests for coordination information already indicated in the Construction Documents.
5. Requests for adjustments in Contract Sum or Contract Time.
6. Incomplete RFIs.
7. RFIs with numerous or significant errors.

F. Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:

1. Project name.
2. Name and address of Contractor.
3. RFI number including RFIs that were dropped or otherwise cancelled.
4. RFI description.
5. Date RFI was submitted.
6. Date response was received.
7. Identification of related Minor Change in the Work, Field Order, Proposal Request, as appropriate.

G. Upon receipt of response:

1. Retain a copy of RFI/response with RFI log.
2. Tape a copy of RFI/response to backside of previous page of affected Construction Drawing set utilized for Red Line set.
3. If RFI response requires a re-statement of original content of RFI, re-submit using same RFI number with a revision qualifier such as .1 or –a. (Remain consistent throughout all RFIs.)
4. Respond within 10 calendar days if A/E's response requires additional consideration.

1.6 CONTRACT CLOSEOUT SUBMITTALS

A. Prepare and submit Contract Closeout submittals as required per individual Specification Sections.

PART TWO – PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals as required by individual Specification Sections.

1. Product Data:

a. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.

b. Prepare written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

(1) Type of product. Include unique identifiers for each product.
(2) Reference sheet number, detail, and/or specification number.
(3) Number and name of room or space.
(4) Location within room or space.

c. Submit Product Data before or concurrent with Samples/Mock-Ups and/or Shop Drawings.

d. Collect information into a single submittal for each element of construction and type of product or equipment.

e. Include the following information, as applicable:

(1) Manufacturer's written recommendations.
(2) Manufacturer's product specifications.
(3) Manufacturer's installation instructions.
(4) Standard color charts.
(5) Manufacturer's catalog cuts.
(6) Wiring diagrams showing factory-installed wiring.
(7) Printed performance curves.
(8) Operational range diagrams
(9) Mill reports
(10) Standard product operation and maintenance manuals.
(11) Compliance with specified referenced standards.
(12) Testing by recognized testing agency.
(13) Application of testing agency labels and seals.
(14) Notation of coordination requirements.

f. Mark each copy of each Submittal to show which products and options are applicable.

g. Upon approval:

(1) Retain one copy of each Product Data Submittal.
(2) Utilize for quality control of provided product.
(3) Utilize for coordination with other elements.
(4) Mark up and return as Project Record Document.

2. Shop Drawings:

a. Prepare written summary indicating types of elements required for the Work and their intended location. Include the following information in tabular form:
   (1) Type of element. Include unique identifiers for each element.
   (2) Reference sheet number, detail, and/or specification number.
   (3) Name of room or space.
   (4) Location within room or space.

b. Prepare project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Construction Documents or standard printed data.
   (1) Electronic copies of CAD Drawings of the Construction Drawings will not be provided for Contractor's use in preparing Shop Drawings.

c. If not previously submitted, submit Product Data concurrent with Shop Drawings.

d. Submit applicable Samples/Mock-Ups concurrent with Shop Drawings.

e. Collect information into a single submittal for each element of construction and type of product or equipment.

f. Fully illustrate requirements in the Construction Documents. Include the following information, as applicable:
   (1) Field dimensions.
   (2) Identification of products.
   (3) Fabrication and installation drawings.
   (4) Roughing-in and setting diagrams.
   (5) Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   (6) Shopwork manufacturing instructions.
   (7) Templates and patterns.
   (8) Schedules.
   (9) Design calculations.
   (10) Compliance with specified standards.
   (11) Notation of coordination requirements.
   (12) Notation of dimensions established by field measurement.
   (13) Relationship to adjoining construction clearly indicated.
   (14) Seal and signature of professional engineer if specified.
   (15) Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

g. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 34 by 44 inches.

h. Upon approval:
   (1) Retain one copy of each Shop Drawing Submittal.
   (2) Utilize for quality control of provided manufactured elements.
   (3) Utilize for coordination with other elements.
   (4) Mark up and return as Project Record Document.

3. Requests for Information (RFI):

   a. Hard-Copy RFIs shall have each page of attachments with the RFI number and sequential page number.
   b. Software-Generated RFIs shall contain substantially the same content as Hard-Copy RFIs and Attachments shall be provided as electronic files in Adobe Acrobat PDF format numbered as for Hard-Copy submission.
   c. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, details of affected or adjoining material, assemblies, attachments, products, components, equipment, etc needed to evaluate subject RFI and render an informed response.

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by individual Specification Sections.

1. Reports:
   a. All reports shall include a cover page with the following information:
      (1) Project name.
      (2) Type of report.
      (3) Name, contact information, qualifications of preparer.
      (4) Specification Section specifying report.

   b. All reports shall include footer information that, at minimum, includes page numbers.

B. Coordination Drawings: Comply with requirements in individual Specification Sections.

C. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Construction Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Construction Documents.

E. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

F. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Construction Documents.

G. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

H. Material Certificates: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Construction Documents.

I. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Construction Documents.

J. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Construction Documents. Include evidence of manufacturing experience where required.

K. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing, operating, and maintaining product or equipment. Include the following, as applicable:

1. Name of product.
2. Name, address, and telephone number of manufacturer.
3. Preparation of adjoining elements.
4. Required tolerances.
5. Sequence of installation or erection.
6. Required adjustments.
7. Recommendations for cleaning and protection.

8. Specifically identify requirements for special post commissioning maintenance activities required to maintain warranties that are outside of typical Periodic Maintenance requirements.

L. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name of product.
2. Name, address, and telephone number of factory-authorized service representative making report.
3. Statement on condition of adjoining elements and acceptability for installation of product.
4. Statement that products at project site comply with manufacturer's requirements.
5. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
6. Results of operational and other tests and a statement of whether observed performance complies with requirements.
7. Statement whether conditions, products, and installation will affect warranty.
8. Other required items indicated in individual Specification Sections.

M. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects, engineers and owners, and other information specified.

N. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Construction Documents. Submit of record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include name of firms and personnel certified.

O. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Construction Documents and, where required, is authorized by manufacturer for this specific Project.

P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include diagrams if applicable. Provide name and version of software, if any, used for calculations.

Q. Material Safety Data Sheets (MSDSs): submit per requirements in individual Specification Sections.

PART THREE – EXECUTION

(Not Used)

END OF SECTION 01 34 00

SECTION 01 40 00 - QUALITY CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. General Quality Control.

B. Workmanship.

C. Manufacturer's Instructions.

D. Manufacturer's Certificates.

E. Manufacturer's Field Services.

1.2 RELATED REQUIREMENTS

A. General Conditions and Special Conditions.

B. Other Specification Sections as applicable.

1.3 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 Owner.

B. Inspection and testing services are required to verify compliance with requirement specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.

C. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. 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.
2. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.

3. Requirements for the Contractor to provide quality control services required by the Owner or authorities having jurisdiction are not limited by provisions of this Section.

1.4 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.

1.5 MANUFACTURER'S INSTRUCTIONS

A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Owner before proceeding.

1.6 MANUFACTURER'S CERTIFICATES

A. When required by individual Specifications Section, submit six manufacturer's certificates stating that products meet or exceed specified requirements.

1.7 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 Project Administrator listing observations and recommendations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 40 00

SECTION 01 41 00- TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 GENERAL

A. Contractor shall employ and pay for the services of an Independent Testing Laboratory (Contractor's Quality Control Laboratory) to perform specified services and testing.

B. Employment of laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.

1.2 RELATED REQUIREMENTS

A. General Conditions and Special Conditions

B. Other Specification Sections as applicable

1.3 QUALIFICATIONS OF LABORATORY

A. Meet "Recommended Requirements for Independent Laboratory Qualification", published by American Council of Independent Laboratories.

B. Meet basic requirements of ASTM E 329, "Practice for Use in the Evaluation of Inspection and Testing Agencies as Used in Construction" and ASTM E543, "Practice for Determining the Qualification of Nondestructive Testing Agencies."

C. Authorized to operate in the State of Texas

D. Acceptable to TDCJ and approved in writing by TDCJ

E. Under the direction of a Registered A/E licensed in the State of Texas and having a minimum of 5 years engineering experience in inspection and testing of construction materials.

F. Testing equipment calibrated at 12 month intervals by devices of accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants. Submit copies of certificates of calibration.

G. Voluntarily participate in American Association of Laboratory Accreditation (AALA) program.

1. Laboratory shall possess a current Scope of Accreditation Certificate in type of tests required for the project.

2. Testing and Inspection Services performed at laboratory facility which has received A2LA accreditation, unless TDCJ specifically approves an alternate A2LA accredited laboratory or an acceptable project QA/QC program which provides for an adequate "extension" of accredited

laboratory. Such an "extended" laboratory which will operate more than a year must be separately assessed and accredited. A temporary field or project laboratory operating less than a year shall be under the fulltime supervision of management from an accredited laboratory. Test reports produced by the temporary field or project laboratory shall be signed by one of the accredited laboratory's signatories.

H. Inspectors and technicians with demonstrated competence in performing relevant tests and inspections and under direct supervision of persons meeting following requirements:

1. NICET Level II Certification in concrete, soils, or asphalt fields; or ACI Level II Certification in concrete.

I. Soils inspections for pier drilling, structural excavation and structural fill earthwork performed by a registered A/E or Geologist licensed in the State of Texas and having a minimum of 5 years experience in providing Geotechnical services. This individual shall be present at site and provide continuous inspections during pier drilling, structural excavation and structural fill earthwork procedures, steel reinforcement, and concrete placement.

1.4 AUTHORITY AND DUTIES OF LABORATORY

A. Cooperate with TDCJ's Architect/Engineer (A/E) and Contractor; provide qualified personnel after due notice.

B. Perform specified inspections, sampling and testing of materials and methods of construction.

C. Promptly notify PA, A/E and Contractor of observed irregularities or deficiencies of work or products.

D. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Construction Documents.
2. Approve or accept any portion of the Work.
3. Perform any duties of the Contractor.

E. Promptly submit written report of each test and inspection; 2 copies each to A/E and PA and one copy to Contractor. Each report shall include:

1. Date issued.
2. Project title and number
3. Testing laboratory name, address and telephone number.
4. Name and signature of laboratory inspector/technician and responsible reviewer
5. Date and time of sampling or inspection
6. Record of temperature and weather conditions

7. Date of test

8. Identification of product and Specification Section
9. Location of sample or test in the Project
10. Type of inspection or test
11. Results of tests and compliance with Construction Documents
12. Interpretation of test results that indicate unsatisfactory conditions

F. Submit certificates of testing, inspection or approval that are required by laws, ordinances, rules, regulations, orders or approval of public authorities. Submit same number of copies as required for tests and inspections.

1.5 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel and provide access to Work or to Manufacturer's operations.

B. Deliver to laboratory adequate quantities of representative samples of materials proposed for use and which require testing.

C. Provide to laboratory preliminary design mix proposed to be used for concrete, and other materials mixes which require control by testing laboratory.

D. Notify laboratory and PA sufficiently in advance of operations (minimum of 48 hours) to allow for laboratory assignment of personnel and scheduling of tests.

E. Furnish incidental labor and facilities:

1. To provide access to Work to be tested
2. To obtain and handle samples at Project Site or at source of product to be tested.
3. To facilitate inspections and tests, including scaffolding, or hoisting; required to inspect, and test structural elements.
4. For storage and curing of test samples

F. For TDCJ's Quality Assurance inspection and testing, furnish same incidental labor and facilities specified in this Article for Contractor's Quality Control Testing.

G. Provide adequate facilities for safe storage and proper curing of concrete test samples on project site for the first 24 hours and also for subsequent field curing in accordance with ASTM C31.

H. Make arrangements with laboratory and pay for additional samples and tests required for Contractor's convenience, including additional compressive strength tests required to confirm strength requirements for early form recovery.

I. Make arrangements with laboratory and pay for services to perform additional inspections, sampling and testing required when initial tests indicate Work does not comply with Construction Documents.

J. Coordinate and integrate inspection and testing services with Contractor's Quality Control Plan/Program, including:

1. Compile and submit complete list of inspections and tests required by the Construction Documents. List shall include test name, frequency, specification reference, and estimate of quantities.
2. Record results of inspections and tests conducted at site on appropriate Quality Control Reports.
3. Record results of off-site inspections and tests on appropriate Quality Control Reports.

1.6 TDCJ'S QUALITY ASSURANCE INSPECTION AND TESTING

A. The PA may, from time to time, perform additional Quality Assurance inspections and testing in accordance with the General & Special Conditions of the Contract.

1. The TDCJ will employ and pay for services of an independent testing laboratory to perform any additional Quality Assurance inspections and testing.

B. Quality Assurance inspections and testing conducted by the TDCJ's Quality Assurance Laboratory shall not relieve the Contractor from performing inspections and tests required by the Construction Documents or regulatory agencies.

C. The TDCJ reserves the right to utilize the Contractor's on-site Quality Control Laboratory Facilities, if any, for incidental handling, curing or storage of Quality Assurance samples.

1.7 REFERENCES

A. American Concrete Institute:

1. ACI 301-84 - Specifications for Structural Concrete for Buildings.
2. ACI 318-89 - Building Code Requirements for Reinforced Concrete

B. American Society of Testing Materials:

1. ASTM C31 - Making and Curing Concrete Test Specimens in the Field
2. ASTM C39 - Compressive Strength of Cylindrical Concrete Specimens
3. ASTM C78 - Flexural Strength of Concrete
4. ASTM C42 - Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
5. ASTM C94 - Ready Mixed Concrete
6. ASTM C109 - Compressive Strength of Hydraulic Cement Mortars
7. ASTM C136 - Sieve Analysis of Fine and Coarse Aggregates
8. ASTM C143 - Slump of Portland Cement Concrete.
9. ASTM C172 - Sampling Fresh Concrete
10. ASTM C231 - Test for Air Content of Freshly Mixed Concrete by the Pressure Method
11. ASTM C780 - Preconstruction and Construction Evaluation of Mortars
11. ASTM C1019 - Sampling and Testing Grout
12. ASTM D75 - Sampling Aggregates

13. ASTM D4318 - Liquid Limit, Plastic Limit and Plasticity Index of Soils
14. ASTM D698 - Moisture-Density Relations of Soils
15. ASTM D1556 - Density of Soil in Place by Sand-Cone Method
16. ASTM D1557 - Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-16 Rammer and 18 inch Drop.
17. ASTM D2167 - Density of Soil in Place by Rubber-Balloon Method
18. ASTM D2216 - Laboratory Determination of Water (Moisture) Content of Soil, Rock and Soil - Aggregate Mixtures
19. ASTM D2922 - Density of Soil and Soil Aggregate in Place by Nuclear Method
20. ASTM E164 - Ultrasonic Contact Inspection of Weldments

PART 2 – NOT APPLICABLE

PART 3 – EXECUTION

3.1 SOILS TESTING

A. Laboratory Sampling and Testing: For each type of off-site borrow material and site excavated soil material proposed for use, analyze samples to provide engineering soil classification, graduation and quality description, and perform 2 representative tests for each 10,000 cubic yards of soil material as follows:

1. Tests for liquid limit, plastic limit and plasticity index of soils in accordance with ASTM D4318.

2. Tests for moisture/density relations (optimum moisture and laboratory maximum density) of soil in accordance with ASTM D698 or D1557, as applicable.

3. Laboratory moisture content test in accordance with ASTM D 2216 for each soil type to calibrate nuclear density gauge.

B. In Place Moisture Density Tests:

1. Optimum Moisture-Density Relationship: If changes in soil occur which may affect optimum moisture content or laboratory maximum dry density, conduct one additional moisture-density relationship for each changed soil material in accordance with ASTM D698 or D1557.

2. In-Place Compaction Tests: Perform in-place compaction test for moisture content, and dry density of materials-in-place, to determine that subgrades, backfill and embankment fill materials have been compacted to specified density in accordance with ASTM D2167 or ASTM #2922. Perform at following frequencies:
   a. One test for each 10,000 square feet of area of each lift of subgrade fill or backfill placed under pavement or floor slabs, except that pavement test rate may be at minimum of 400 linear foot intervals along pavement center line. Stagger test locations in

each lift from those in previous lift. Provide a minimum of 3 tests for each lift for each building pad or pavement area.

b. One test for each 100 linear feet, or portion thereof, of each lift of trench backfill, with locations staggered between lifts.

c. One test for each 100 linear feet, or portion thereof, of each lift of backfill placed against foundation walls or grade beams, with locations staggered between lifts.

d. One test of each lift placed at any free-standing footing, pier, or similar support, with locations taken on a different side, in each case, from the lift below.

e. One test for each 100 square feet, or portion thereof, of each lift of fill placed beneath isolated footings, with locations staggered between lifts.

f. One test for each 100 linear feet, or portion thereof, of each lift of fill placed beneath strip footing, with locations staggered between lifts.

g. One test for each 15,000 square feet of area of each lift of embankment fill placed on site. Stagger test locations in each lift from those in previous lift.

C. Reports:

1. Laboratory Test Reports: Furnish a report for each test, describing variances from specified requirements, and state whether material meets specification requirements.

2. Field Test Reports: Furnish a report stating results for each test for each area. Identify soil type, location, lift and area. Reports may be combined on a daily basis, if so desired, provided that location of each test and applicable lift are clearly identified.

3.2 CONCRETE MIX DESIGN

A. Prepare and test proposed mix design for each scheduled class of concrete in accordance with procedures specified in Section 03 33 00.

B. Compressive strengths shall meet or exceed values specified for each class of concrete scheduled for each portion of the work. Requirements are based on 28-day compressive strength.

C. After sufficient data becomes available during construction, mix proportions may be adjusted in accordance with ACI 301, Section 3.11, if approved by Design Professional.

3.3 INSPECTION AND CONTROL OF CONCRETE

A. Inspect batch plant facilities for conformance to ASTM C94.Inspect initial weighing and batching of controlled concrete at batch plant at start of each day's placement.

B. Verify that materials used are in accordance with requirements of Construction Documents. Visually inspect aggregate stockpiles to determine uniformity of

grading, cleanliness and possible moisture variations. Confirm visual determinations by tests taken randomly, either daily or on lot basis.

C. Check for adjustment in batch weights to compensate for variations in moisture content.

D. Inspect plastic concrete at site to determine if concrete is thoroughly and properly mixed. Control consistency of mix to prevent segregation due to excessive water. Adjust amounts of mixing water to obtain uniform consistency of each batch.

E. Verify unauthorized addition of water which will exceed maximum allowable water/cement ratio for each mix design.

F. Monitor mixing time of concrete in trucks.

G. Certify each delivery ticket indicating class of concrete delivered, and record amount of water added, time of mixing, time of discharge, slump and location of placement.

H. Promptly report to PA details of reasons for rejection of any quantities of concrete. Report locations of concrete placements, quantities, date of placements and other pertinent facts concerning concrete represented by rejected specimens.

3.4 TESTING OF CONCRETE

A. Test Cylinders:

1. During progress of Work, mold, cure and test specimens of each different mix design or class of concrete placed in any one day.

2. For each 75 cubic yards of concrete placed, or part thereof over 10 cubic yards, make 4 compressive test cylinders during pour.

3. Mold and cure test cylinders in accordance with ASTM C31.

4. Test cylinders in accordance with ASTM C39: one at 7 days and 2 at 28 days.

5. Hold remaining cylinder for additional testing as directed by A/E through PA.

6. Make additional sets of 4 cylinders when obvious changes in mix are apparent.

7. Additional compressive test cylinders required for determination of early form removal shall be made at Contractor's option and expense.

B. Slump Tests:

1. Make slump tests for each 50 cubic yards of concrete placed, or for each set of cylinders in accordance with ASTM C143, whichever is greater.

2. Slump shall be measured to determine if conformance to limits specified have been achieved.

C. Strength:

1. Seven day compressive strength of concrete shall be a minimum of 65% of required 28 day compressive strength, unless otherwise specified or unless mix design tests indicate otherwise.

2. Strength level of concrete will be considered satisfactory if averages of all sets of 3 consecutive strength test results equal or exceed specified strength and no individual test result is below specified strength by more than 500 psi. Strength test shall consist of two specimens.

3. When strength of test cylinders falls below design strength, the Design Professional may require core tests, structural analysis or load tests as specified below.

D. Air Content of Normal-Weight Concrete: Determine total air content of air entrained concrete for each compressive strength test in accordance with ASTM C231.

E. Additional Testing for Concrete Paving: In addition to above specified testing, mold 4 beam specimens for each 150 cubic yards. Test beams in accordance with ASTM C78, 2 at 7 days and 2 at 28 days. (Third point loading).

3.5 TESTING DEFICIENT CONCRETE IN PLACE

A. General: When strength of concrete has been determined to be potentially deficient based on test results, provide core tests, structural analysis or load test as directed by AP to determine actual strengths.

B. Core Tests:

1. Obtain and test core specimens of at least 3 inches in diameter in accordance with ASTM C42. Cores shall be air dried (temperature 60°F to 80°F, relative humidity less than 60 percent) for 7 days before test and shall be tested dry.
2. At least three representative cores shall be taken from each member or area of concrete in place that is considered potentially deficient. The location of cores shall be determined by the PA so as least to impair strength of structure. If, before testing, one or more of the cores show evidence of having been damaged subsequent to or during removal from structure, it shall be replaced.
3. Concrete in the area represented by a core test will be considered adequate if the average strength of the cores is equal to at least 85 percent of and if no single core is less than 75 percent of the specified design strength.

4. Patch core holes as specified for patching in Section 01 73 10 – Cutting and Patching.

C. Structural Analysis: If core holes are inconclusive or impractical to obtain, the TDCJ may perform additional structural analysis at the Contractor's expense to determine safety of structure.

D. Load Test: If core holes and structural analysis do not confirm the safety of the structure, load tests may be required and their results evaluated in accordance with Chapter 20, "Strength Evaluation of Existing Structures" of ACI 318.

E. Other Testing: Testing by impact hammer, sonoscope, or other nondestructive devices may be permitted by TDCJ to determine relative strengths at various locations in structure or for selecting areas to be cored. Such test shall not be used as a basis for acceptance or rejection of the structure's safety.

F. Failed Tests: Concrete work judged inadequate by core tests, structural analysis or by results of a load test shall be replaced at Contractor's expense.

3.6 REINFORCING STEEL INSPECTION

A. Perform visual inspection prior to concrete placement for size, type, and quality of materials.

B. Observe and report on placement of reinforcement for conformance with Construction Documents and Shop Drawings, including size, and number of bars, vertical location, horizontal spacing, correctness of bends, splices, clearance between bars and forms, adequacy and security of supports and ties, and excessive congestion of reinforcing steel.

C. Visually inspect placement of anchor bolts for correct size, location and spacing.

D. Visually inspect embedded metal assemblies and deformed bar anchors for conformance with Construction Documents.

E. Visually inspect mechanical couplers for conformance with Construction Documents and Manufacturer's recommendations.

F. Immediately report conditions of non-conformance with Construction Documents and Shop Drawings to Contractor for correction. If Contractor fails to correct reported conditions, submit written report of non-conforming work to PA and A/E.

END OF SECTION 01 41 00

SECTION 01 42 00 - REFERENCES

PART 1 - GENERAL

1.1 STANDARDS

A. Applicability: For Products specified by reference to an association or trade standard, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Construction Documents, or applicable codes establish stricter standards.

B. Publication Dates:

1. Except as otherwise indicated, where compliance with a reference standard is required, comply with standard in effect as of date of issue of Construction Documents, except when a specific date is specified.

2. Copies of Standards: Where copies of standards are needed for proper performance of Work, obtain such copies directly from publication source.

1.2 SCHEDULE OF ABBREVIATIONS

A. Abbreviations and Names: Following is a partial list of construction industry standards organizations. Reference standards of these organizations are listed in respective specification sections using abbreviations contained below.

AA	Aluminum Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACIL	American Council of Independent Laboratories
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASTM	American Society of Testing and Materials
AWS	American Welding Society
CRSI	Concrete Reinforcing Steel Institute
IBC	International Building Code (International Code Council)
NEC	National Electrical Code (by NFPA)
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SSPC	Steel Structures Painting Council
TXDOT	Texas Department of Transportation
UL	Underwriters Laboratories

END OF SECTION 01 42 00

SECTION 01 44 00 - CONTRACTOR'S QUALITY CONTROL

PART 1 – GENERAL

1.1 GENERAL

A. 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. 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.

1.2 RELATED REQUIREMENTS

A. General Conditions and Special Conditions

B. Other Specification Sections as applicable

1.3 QUALITY CONTROL PLAN/PROGRAM

A. General: The Contractor shall furnish for review by the TDCJ Project Administrator (PA) at the Pre-Construction Meeting the Contractor Quality Control (QC) Plan proposed to implement the requirements of the General and Special Conditions. The plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used. The PA 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 Staff shall implement the three phase control system for all aspects of the Work specified.
2. The pertinent qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a QC function.
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. The QC Manager shall issue letters of direction to all other

various Quality Control Representatives outlining duties, authorities and responsibilities. Copies of these letters will also be furnished to the PA.

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 Conditions and Section 01 34 00 - Submittals.
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 PA, the A/E and the 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. TDCJ 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 PA 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 A/E.

1.3 COORDINATION MEETING

A. After the Pre-Construction Conference, before start of construction, and prior to acceptance of the Quality Control Plan by the Quality Assurance Inspector (QA), 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, TDCJ's Quality Assurance Inspector (QA), PA and Site Staff. If required, the A/E, the Contractor's Quality Control Material Testing Lab, and TDCJ's Quality Assurance Testing Lab shall also attend. 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 QA.

Minutes of the meeting shall be prepared by the QA and signed by both the Contractor and the QA. 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.

1.4 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 System Manager's absence. Any 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 be separate from and in addition to the Contractor's Superintendent*** or other project management staff. The QC Manager shall report directly to the Contractor's home office Management. The Quality Control Manager shall not be removed without TDCJ's written consent.

B. QC Organizational Staffing:

1. The Contractor shall provide and maintain a QC Staff which 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 TDCJ acceptance before replacing any member of the QC Staff. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement. TDCJ reserves the right to have replaced, any member of the Quality Control Staff who is in the opinion of TDCJ not accomplishing their assigned duties.

C. QC Staff Qualifications: Following are the minimum requirements for the QC Staff. These minimum requirements will not necessarily assure an adequate staff to meet the QC requirements at all times during construction. The actual strength of the QC Staff may vary during any specific work period to cover the needs of the work period. When necessary for a proper QC organization, the Contractor shall add additional staff at no cost to TDCJ. 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: A graduate Engineer, graduate Architect, or a graduate of Construction Management***, with a minimum of 4 years construction experience on similar type construction to this contract ***<u>or</u> 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.

2. Supplemental Personnel: A staff shall be maintained under the direction of the QC Manager to perform all QC activities. The Staff must be of sufficient size to ensure adequate QC coverage of all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities. The QC plan will clearly state the duties and responsibilities of each staff member.

1.5 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. **Quality Controls shall include a three point inspection plan**. 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, Contractors Quality Control Material Testing Lab-if testing is required in the definable segment of work, PA, QA, and appropriate representatives of TDCJ. 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.

1. The PA 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, QA, PA, and the A/E will meet with the Contractor's Superintendent, Quality Control Manager and applicable Subcontractor's Superintendent and their Quality Control Representatives, and Contractors 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.

3. 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.

4. The PA shall be notified a minimum of 72 hours prior to the beginning of any initial inspection. The Contractors 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 TDCJ A/E 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 TDCJ PA at least 72 hours advance notice. The PA 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 Conditions, the PA and the TDCJ's A/E 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 TDCJ's A/E and the Inspector Team, by the PA 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 to the TDCJ's A/E by the QC Manager that the work is ready for Final Inspection and Acceptance, the TDCJ's A/E will within ten calendar days make a Final Inspection.

1.6 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. TDCJ may utilize the services of a Quality Assurance Material Testing Laboratory to perform tests of Materials as necessary to verify any testing performed by the Contractor's Material Testing Lab.
4. 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.
5. All deficiencies instituted by Contractor must include the proposed corrective action to be taken, and submitted to the TDCJ's A/E, PA, and QA for approval.
6. Upon satisfactory completion of the Remedial Action, the results shall be documented by the Contractor's Quality Control Material Testing Laboratory, with a copy of the results to the TDCJ's A/E. If Material Testing Laboratory Test Reports reveal nonconforming work or materials

in which the work effort has been completed and no longer correctable, the Quality Control Manager shall direct the Contractor to remove the work.

B. Deficiency Notice:

1. Ongoing work which is deficient shall be noted by the Contractor's Quality Control Manager via a Deficiency Notice. A log shall be kept by the Contractor on all such items and notice on all such items shall be given to the appropriate parties by the Contractor's Quality Control Manager. A copy of such notices shall be made on a daily basis to the TDCJ's PA, attached to the Quality Control Summary Report, and an updated copy of the Log shall be forwarded to the TDCJ's PA on a weekly basis, by the Contractor's Quality Control Manager. TDCJ reserves the right to advise the Contractor's Quality Control Manager of work that is deficient.
2. Deficient work is when the affected element of work is in-progress and discrepancies can be rectified as the work proceeds.

C. Remedial Action Request: TDCJ reserves the right to issue a remedial action request on deficient work that has not been corrected on an ongoing daily basis, recurring deficient work or materials, or deficient work that is in danger of being covered up. The Remedial Action Request will be copied to the Contractor's Quality Control Manager on a same day basis and shall require a written response by the Contractor's Quality Control Manager within 24 hours of issuance to the PA. Upon approval of the Contractor's proposed corrective action, the Contractor shall have 15 calendar days to successfully complete his remedial work. If after 15 calendar days, the Deficient Work is not resolved, the work identified shall become in nonconformance and a notice of non-conformance will be issued. When issued, a Notice of Nonconformance will preclude payment for the elements noted and will remain in effect until corrective actions have been submitted, approved and performed. A Remedial Action Request Log will be kept by the QA and a copy of this Log will be forwarded to the Contractor's Quality Control Manager on a weekly basis.

D. Notice of Nonconformance: A Notice of Nonconformance will be issued to the Contractor by the PA whenever there are violations of the terms of the Contract, including materials received and/or completed items of the Work found to be in nonconformance with contract requirements. Work not in conformance with the Contract Documents can be identified as work or material that cannot be corrected and must be replaced, work that in order to correct it must have a deviation from Contract Documents approved, or work in which an item must be substituted in lieu of that specified in the Contract Documents. When issued, a Notice of Nonconformance will preclude payment for elements noted and will remain in effect until corrective actions have been submitted, approved and performed. The Notice of Nonconformance Form will fully describe the nature and extent of nonconforming elements and will include space for the Contractor's Corrective Action Proposal, the TDCJ's A/E review of the Contractor's Proposal, TDCJ reinspection and/or verification of approved corrective rework and a space for the PA disposition of the Nonconformance matter.

E. Corrective Action: Correction of Deficient or Nonconforming Work will be monitored by the TDCJ's A/E. TDCJ will verify that the Deficient or Nonconforming work has been corrected, corrective action has been taken to prevent recurrence, and will record when the correction was completed. Significant conditions adverse to quality will be reviewed by the TDCJ's A/E to determine the cause and to review the Contractor's recommended corrective action that will preclude recurrence. Follow-up action shall be taken to verify implementation of the corrective action. The corrective action will be documented by the PA.

1.7 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 the QA 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 the Contract requirements shall be identified and issued as 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's 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 the TDCJ's A/E.

1.8 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. These records shall indicate a description of trades working on the Project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the Contract. The original of these records in report form shall be furnished to the PA daily within 24 hours after the date(s) covered by the report, including reports for days on which no work is performed. All calendar days shall be accounted for throughout the life of the Contract. Reports shall be signed and dated by the QC Manager. The report from the QC Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

1.9 QUALITY CONTROL OF REGULATORY REQUIREMENTS

A. Inspection of Clean Water Act Section 402(p): Provide Inspections required by Section 402(p) as follows:

1. Inspection shall as a minimum be performed once every 7 days or within 24 hours of rainfall of 1/2 inch or more. If the area in which the construction activity is taking place is an arid or semi arid zone, (10 to 20 inches annual rainfall average or less), the requirement for reporting is still within 24 hours of a 1/2 inch rainfall, but only once every 30 days if no such rainfall occurs.
2. Inspectors shall observe: Disturbed areas, areas used for storage of materials exposed to precipitation, structural control methods, and areas where vehicles enter and exit site.
3. Disturbed area or storage area shall be inspected for evidence of or the potential for pollutants entering the runoff from the site. Examine erosion and sediment controls to ensure they are performing correctly. If a location where runoff is discharged into U.S. waters (creeks, rivers, etc.) is accessible, it shall be inspected for significant impacts. Entrances and exits shall be inspected for off-site tracking. Non-storm water discharges such as water discharges are created as a result of construction activities and its associated activities, (i.e. truck washing, etc.) shall be inspected.
4. Inspections may result in alterations of the original Pollution Prevention Plan. Documentation of these recommended changes shall be included in the Inspection Reports.

B. Documentation of Inspections:

1. An Inspection Report shall include as a minimum: scope of inspection, name and qualifications of inspector, date of inspection, major observations, actions taken and actions recommended.
2. The Contractor shall maintain current records of inspection.
3. The original of these records shall be submitted to the PA within 24 hours after the date(s) covered by the report. Reports shall be signed by the QC Manager.

1.10 FORMS:

A. Refer to **TDCJ Attachment 10** for referenced copies of State Documents and Forms.

PART TWO – PRODUCTS
(Not Used)

PART THREE – EXECUTION
(Not Used)

END OF SECTION 01 44 00

SECTION 01 60 00 – MATERIALS, EQUIPMENT, AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Requirements for product delivery, storage and handling.

B. Manufacturer's instructions.

C. Product options and substitutions.

1.2 RELATED REQUIREMENTS

A. Conditions of the Contract.

B. Summary of Work – Section 01 10 00.

C. Submittals – Section 01 34 00.

D. Final Cleaning – Section 01 71 00.

E. Operating and Maintenance Data – Section 01 78 23.

1.3 GENERAL

A. Material and equipment incorporated into the Work:
   1. Conform to applicable specifications and standards.
   2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Project A/E.
   3. Manufactured and/fabricated products:
      a. Design, fabricate and assemble in accord with recognized industry standards.
      b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
      c. Two or more items of same kind shall be identical, by same Manufacturer.
      d. Products suitable for service conditions.
      e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

B. Do not use material or equipment for purposes other than that for which it is designed or is specified.

1.4 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with Manufacturer's instructions, obtain and distribute copies of such instructions to parties involved in installation, including two copies to Project Administrator.
   1. Maintain one set of complete instructions at Job Site during installation and until completion.
   2. Submit Project Administrator's copies with appropriate Product Data submittal.
   3. Handle, install, connect, clean, condition and adjust products in strict accord with such instruction and in conformity with specified requirements.
   4. Should job conditions or specified requirements conflict with Manufacturer's instructions, consult with Project Administrator for further instructions.
   5. Do not proceed with work without clean instructions.

1.5 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at Site.
   1. Deliver products in undamaged condition, in Manufacturer's original containers or packaging, with identifying labels intact and legible.
   2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and reviewed submittals, and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.6 STORAGE OF MATERIALS

A. Store products in accordance with Manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by Manufacturer's instructions.

B. Maintain enclosures in good condition, and remove at completion of Work.

C. Provide substantial platforms, blocking or skids to support fabricated products above ground. Cover products, subject to discoloration or deterioration from exposure, with impervious sheet coverings.

D. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.

E. Store materials on Site unless otherwise approved by TDCJ.

F. Do not use building as storage facility unless approved by TDCJ.

G. Provide additional storage at no cost to TDCJ in the event that additional storage area is required beyond that provided by Project Site.

H. Arrange stored materials to provide easy access for inspection.

I. When off-site storage is authorized, provide delivery and handling from off-site location to Project Site at no additional cost to TDCJ.

1.7 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Product Definitions:
   1. Products: The term "product" as used in the Project Specifications includes materials, equipment, and systems.
   2. Named Products: Identifications of products by naming a model number and Manufacturer.
   3. Standard of Quality:
      a. Where products are specified by naming model number(s) and Manufacturer(s) only, the named products establish a standard of quality.
      b. Where products are specified by Description or Reference Standard and by naming model number(s) and Manufacturer(s), the named product(s) together with the description or reference standard establishes a standard of quality.

B. Product List:
   1. Within 30 days after date of Contract, submit to Project Administrator five copies of complete list of major products proposed for installation.
   2. Prepare list on basis of each Specification Section.
   3. Owner will reply in writing within 15 days stating whether there is reasonable objection to listed items. Failure to object to a listed item shall not constitute a waiver of requirements of Contract Documents.

C. Listed or Named Manufacturers:
   1. Manufacturers listed or named in a product or system specification are those Manufacturers considered capable of manufacturing products conforming to the specification requirements.
   2. The "listing" or "naming" of a Manufacturer does not imply "acceptance" or "approval" of any standard product of that Manufacturer.
   3. Products listed or named Manufacturers proposed for use shall be equal to or the same in all respects to specified make or model number designations of named products and shall meet or exceed specification requirements.

D. Product Options:
   1. Products specified only by Reference Standards or by Description only: Any product meeting those standards or descriptions, by any Manufacturer.
   2. Products specified by naming several products: Any product named.
   3. Products specified by naming one or more products and listing or naming other Manufacturers: Select any named product and or a product of a listed or named Manufacturer which meets specification criteria and requirements and standard of quality established by the "named" base product.
      a. Contract Documents are based on use of "named" base products or Manufacturer.
      b. Proposed products of listed or named Manufacturers that do not meet the specification requirements of the "named" base product(s) will not be considered unless a Request for Substitution of the proposed product has been accepted by Project Engineer in accordance with requirements of Contract Documents.
      c. By using an optional product other than the "named" base product, or Manufacturer, Contractor represents that he will be responsible for adjustments to fit product to work and for providing additional work.
   4. Products specified by Description, Reference Standard and naming several products or Manufacturers: Any product named or any Manufacturer named whose product meets those descriptions, and standards and specification requirements.
   5. If colors, patterns and textures of a "named" product are specified, Owner reserves right to require substitution or optional products or products of a named Manufacturer other than "named" product.
   6. Submit a Request for Substitution for products or Manufacturers that are not specified or not included in above product options.

E. Substitutions during Bidding: During Bidding, Instructions to Bidders govern times and procedures for submitting requests for substitutions under requirements specified in this Section.

F. Substitution After Execution of Contract:
   1. No substitution will be considered after execution of Contract except for non-availability of specified item (including all by those Manufacturers indicated in the Contract Documents) due to:
      a. Strikes.
      b. Lockouts.
      c. Bankruptcy.
      d. Discontinued production.
      e. Proven shortage.
      f. Similar occurrences.
   2. Notify Owner, in writing, with substantiating data as soon as non-availability becomes apparent.
   3. Notify in time to avoid delay in construction.
   4. Forward submittal data as required for requests for substitutions.
   5. Substitute products shall not be ordered or installed without written acceptance.
   6. Owner will determine acceptability of substitutions.

G. Requests for Substitutions:
   1. Submit a separate request for each substitution. Document each request with complete data substantiating compliance of proposed substitution with requirements of Contract documents. Submit full-size sample if requested.
   2. Identify product by Specification Section and Article numbers. Provide Manufacturer's name and address, trade name, and model or catalog number.
   3. List product description, performance and test data and applicable reference standards.
   4. List name and address of similar projects on which product was used and date of installation. Include name and telephone number of Owner's Representative at referenced projects.
   5. Give itemized comparison of qualities of proposed substitution with specified product.
   6. State changes required in other elements of Work because of substitution.
   7. State effect on construction schedule.
   8. List availability of maintenance service, and source of replacement materials.
   9. Give cost data comparing proposed substitution with specified product, and amount of net change to Contract Sum.
   10. State reason for non-availability of specified product and attach affidavit, certification or other data a proof of non-availability.

H. Contractor's Representation: Request for substitution constitutes a representation that Contractor:
   1. Has investigated proposed product and determined that it is equal to or superior in all respects to specified product.
   2. Will provide same warranties for substitution as for product specified.
   3. Will coordinate installation of accepted substitution into Work, and make such other changes as may be required for Work to be complete in all respects.
   4. Waives all claims for additional costs, under his responsibility, related to substitution that subsequently becomes apparent.

I. Rejection of Substitution: Substitution will not be considered if:
   1. They are indicated or implied on Shop Drawings, or Product Data submittals, without prior formal request submitted and approved in accordance with this Section.
   2. Acceptance will require substantial revision of Contract Documents, or building spaces.
   3. Request for substitution does not indicate specific item for which request is submitted.
   4. Substitutions: Request Form is not properly executed.
   5. Acceptance of a Manufacturer only is requested.
   6. After execution of Contract, non-availability of product (including all indicated in Contract Documents) is not conclusively demonstrated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 71 00 – FINAL CLEANING UP

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Final cleaning at completion of Work.

1.2 RELATED REQUIREMENTS

A. General Conditions of the Contract.

B. Cleaning up required for specific products or work – Specification Section for that work.

1.3 DESCRIPTION

A. Execute final cleaning prior to pre-final inspection for final completion of each designated portion of the Work.

1.4 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. Disposable 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 workers 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. Clean light fixtures and lamps.

H. Replace broken or scratched glass with new glass.

I. Remove waste foreign matter and debris from area ways and drainage systems.

J. Prior to final inspection, conduct an examination of all work areas, to verify that entire Work is clean. Maintain cleaning until Final Acceptance.

END OF SECTION 01 71 00

SECTION 01 73 29 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Requirements and limitations for cutting and patching of Work.

1.2 DESCRIPTION

A. Execute cutting, fitting, and patching required to complete work or to:
   1. Make several parts fit properly.
   2. Uncover portions of work to provide for installation of ill-timed work.
   3. Remove and replace defective work.
   4. Remove and replace work not conforming to requirements of Contract Documents.
   5. Provide penetrations of non-structural surfaces for installation of piping and conduit.

B. In addition to Contract requirements, upon written instructions from Owner:
   1. Uncover work to provide for Owner's observation of covered work.
   2. Remove samples of installed materials for testing.
   3. Remove work to provide for alteration of completed work.

C. Do not cut into or cut away structural members of load-bearing structures without proper notification and approval.

1.3 SUBMITTALS

A. Submit written notice to Owner in advance of executing cutting which affects:
   1. Work of TDCJ or any separate contractor.
   2. Structural integrity of Work, cutting concrete and steel structural members.
   3. Integrity of weather-exposed or moisture-resistant elements.
   4. Efficiency, operation or maintenance of operational equipment.

B. Request shall include:
   1. Identification of Project, description of affected work, necessity for cutting, effect on other work, effect on structural integrity of Project, description of proposed work. Designate:
      a. Scope of cutting and patching.
      b. Trades to execute work.
      c. Products proposed to be used.
      d. Extent of refinishing.
   2. Alternative to cutting and patching.
   3. Written permission of separate contractor whose work will be affected.

C. Should conditions of Work, or schedule, indicate change of materials or methods, submit written recommendation to architect/engineer, including:
   1. Conditions indicating change.

2. Recommendations for alternative materials or methods.
3. Submittals as required for substitutions as specified in Section 01 33 00.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. General: Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations using methods least likely to damage elements retained or adjoining construction.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete Masonry: Do not cut into grouted lintels or bond beams without prior written approval of Owner.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3.4 CLEAN UP

A. Remove debris, rubbish, and materials resulting from cutting and patching operations daily.

B. Transport materials and legally dispose of off the Site.

END OF SECTION 01 73 29

SECTION 01 74 00 – WARRANTIES

PART 1 - GENERAL

1.1 GENERAL

A. Compile specified warranties.

B. Review to verify compliance with Contract Documents.

C. Warranties shall be written in the name of TDCJ.

1.2 RELATED REQUIREMENTS

A. General Warranty of Construction – Agreement and Conditions of the Contract.

B. Warranties and Certificates for specific – Each respective Section of Specifications.

C. Contract Closeout – Section 01 77 00.

D. Operating and Maintenance data – Section 01 78 23.

1.3 WARRANTY DATES

A. Unless otherwise stated in Contract Documents, warranties shall commence on the date of Final Acceptance or, if requested by TDCJ, on date of Beneficial Occupancy for entire work or designated portion thereof.

1.4 SUBMITTAL PROCEDURES

A. Assemble warranties and certificates executed by each of respective Manufacturers, suppliers and subcontractors.

B. Number of original signed copies required: two 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.

1.5 FORM OF SUBMITTALS

A. Assemble warranties and certificates in two separate 3-ring binders.

B. Format:
   1. Size: 8 ½" by 11"; fold larger sheets to fit into binders.
   2. Indexing: Tabbed fly-leaf for each separate product or system.
   3. Identification: Each binder cover and spine printed with title "WARRANTIES" and Project Title.

C. Binders: Commercial Quality, 3-ring, with durable and cleanable plastic covers, custom printed.

1.6 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put into service during progress of construction, submit documents within 10 days after inspection and acceptance.

B. Otherwise make submittals on date of Pre-Final Inspection, prior to final request for payment.

1.7 SUBMITTALS REQUIRED

A. Submit warranties as specified in respective Sections of Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - **EXECUTION (Not Used)**

END OF SECTION 01 74 00

SECTION 01 77 00 – CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 DESCRIPTION

A. Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedure 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.

1.2 RELATED REQUIREMENTS

A. Fiscal provisions, legal submittals and additional administrative requirements – Conditions of the Contract.

B. Partial Owner Occupancy – General Conditions.

C. Final cleaning Up – Section 01 71 00.

D. Project record documents – Section 01 78 39.

E. Operating and maintenance data – Section 01 78 23.

F. Warranties, bonds and closeout submittals required for specific products of work – Respective Specification Sections for that work.

1.3 PREREQUISITES TO PROJECT CLOSEOUT

A. Prerequisites to project closeout shall be in accordance with General Conditions.

B. 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 the General Conditions. Refer to General Conditions for procedures.
   2. Final Acceptance Inspection: Refer to General Conditions for procedures.

1.4 PREREQUISITES TO FINAL ACCEPTANCE

A. Prerequisites for Final Acceptance shall be in accordance with General Conditions.

B. Re-inspection Procedures:

1. Owner shall re-inspect the Work upon receipt of Contractor's notice that Work, including punch-list items resulting from earlier inspections, has been completed, except for items where completion has been delayed because of circumstances that are acceptable to Owner.
2. Upon completion of re-inspection, Owner shall either prepare a Certificate of Final Acceptance, or shall advise the Contractor of work that remains incomplete and of obligations that have not been fulfilled, but are required for final acceptance.
3. If necessary, the re-inspection procedure will be repeated. Contractor is subject to paying additional costs for re-inspection in accordance with General Conditions.

1.5 CLOSEOUT SUBMITTALS

A. At time of Pre-Final Inspection, submit following:
   1. Project Record Documents, to requirements of Section 01 78 39.
   2. Operating and Maintenance Data, Instructions to Owner's Personnel, to requirements of Section 01 78 23 and to respective Specifications requiring specific warranties.
   3. Warranties: Requirements of General Conditions, Section 01 74 00, and respective Specifications requiring specific warranties.
   4. Accounting of Fixed Assets: Submit a complete accounting of fixed assets which are incorporated into Project. Accounting shall include every piece of fixed equipment with its costs, Manufacturer, model number, serial number, and length of Manufacturer's warranty.

B. Prior to final payment, submit following:
   1. Evidence of Payment and Release of Liens, to requirements of General Conditions.
   2. Certificate of Insurance for Products and Completed Operations.
   3. Other written evidence or documentation required by General Conditions.

1.6 FINAL APPLICATION FOR PAYMENT

A. Upon execution of Final Completion certificate by Owner, 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 01 77 00

SECTION 01 78 23 – OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

A. Compilation of product data and related information required for maintenance of products.

B. Preparation of operation and maintenance data and instructions for systems equipment.

1.2 RELATED REQUIREMENTS

A. General Conditions of the Contract.

B. Submittals – Section 01 34 10.

C. Contract Closeout – Section 01 77 00.

D. Project Record Documents – Section 01 78 39.

E. Warranties – Section 01 74 00.

1.3 FORM OF SUBMITTALS

A. Prepare data in the form of an instructional manual.

B. Assemble data in durable 3-ring binders.

C. Format:
1. Size: 8 ½" x 11".
2. Drawings: Provide reinforced punched binder tab, bind in with text; fold larger drawings to size of text pages.
3. Indexing: Provide tabbed fly-leaf for each separate product, or each piece of operating equipment.
4. Identification: Each binder cover and spine printed with title 'OPERATING AND MAINTENANCE INSTRUCTIONS" and Project Title.
5. Binders: Commercial quality, 3-ring, with durable and cleanable plastic covers, custom printed.

1.4 CONTENT OF MANUALS

A. Table of Contents: Provide for each volume, arranged in a systematic order:
1. Contractors, name of responsible principal, address and telephone number.
2. A list of each product required to be included, indexed to content of volume.

3. Lists, with each product, name, address and telephone number of subcontractor or installer and local source of supply for parts and replacement.
4. Identify each product by product name and other identifying symbols as set forth in Contract Documents, not solely with Manufacturer's catalog number.

B. Product Data:
1. Include only those sheets that are pertinent to specific product.
2. Annotate each sheet to clearly identify specific product or part installed and data applicable to installation.

C. Drawings:
1. Supplement Product Data with drawings as necessary to clearly illustrate relations of component parts of equipment and systems and control and flow diagrams.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

D. Written Text: Provide in English language as required to supplement Product Data for particular installation, organized in a consistent format and in logical sequence of instructions for each procedure.

E. Warranties and Service Contracts: Include copy of each issued.

1.5 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Content, for each unit of equipment and system, as appropriate:
1. Description of unit and component parts:
   a. Function, normal operating characteristics, and limiting conditions.
   b. Performance curves, engineering data and tests.
   c. Complete nomenclature and commercial number of replaceable parts.
2. Operating procedures:
   a. Start-up, break-in, routine and normal operating instructions.
   b. Regulation, control, stopping, shutdown and emergency instructions.
   c. Summer and winter operating instructions.
   d. Special operating instructions.
3. Maintenance procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassembly, repair, and reassembly.
   d. Alignment, adjusting and checking.
4. Servicing and lubricating schedule.
5. Manufacturer's printed operating and maintenance instructions.
6. Original Manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
7. List of original Manufacturer's spare parts, Manufacturer's current prices, and recommended quantities to be maintained in storage.
8. Include testing and balancing reports.
9. Other data as required under pertinent Sections of Specifications.

B. Content, for each electric and electronic system, as appropriate:
   1. Description of system and component parts.
      a. Function, normal operating characteristics,, and limiting conditions.
      b. Performance curves, engineering data and tests.
      c. Complete nomenclature and commercial number of replaceable parts.
   2. As-installed color coded wiring diagrams.
   3. Operating Procedures:
      a. Routine and normal operating instructions.
      b. Sequences required.
      c. Special operating instructions.
   4. Maintenance procedures:
      a. Routine operations.
      b. Guide to "trouble-shooting".
      c. Disassembly, repair and reassembly.
      d. Adjustment and checking.
   5. Manufacturer's printed operating and maintenance instructions.
   6. List of original Manufacturer's spare parts, Manufacturer's current prices, and recommended quantities to be maintained in storage.
   7. Other data as required under pertinent Sections of Specifications.

C. Additional requirements for operating and maintenance data: respective Sections of Specifications.

1.6 MANUAL FOR MATERIALS AND FINISHES

A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for e-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Include Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

C. Additional Requirements: As specified in individual Specification Sections.

1.7 SUBMITTAL SCHEDULE

A. Submit two copies of proposed format and outline of manuals at least 60 days prior to Pre-Final Inspection.

B. Submit two copies of each completed data manual in final form 30 days prior to Pre-Final Inspection. Copy will be returned approved or with comments for revisions.

C. Submit four copies of approved data manuals in final form with 10 days prior to Pre-Final Inspection.

D. Have copies of manuals available for instruction of TDCJ's personnel.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23

SECTION 01 78 39 – PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

A. Maintenance and submittal of Record Documents.

1.2 RELATED REQUIREMENTS

A. General Conditions of the Contract.

B. Submittals – Section 01 34 00.

C. Contract closeout – Section 01 77 00.

D. Operating and maintenance data – Section 01 78 23.

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 Owner.

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 on weekly basis.

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 Drawings: Legibly mark to record actual construction.
   1. Other items set forth in General Conditions, Paragraph 3.4.

E. Specifications and Addenda: Legibly mark each Section to record:
   1. Manufacturer, trade name, catalog number of each product and item of equipment actually installed, particularly optional items and substitution items.

2. Changes made by Addenda, Change Order or modifications.

1.5 SUBMITTALS

A. At Contract closeout, deliver one copy of Record Documents to Owner.

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 of his authorized representative.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 01 78 39

SECTION 03 33 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Concrete equipment pads.
2. Duct Banks.

B. Related Sections include the following:
1. Division 31 Section "Drilled Concrete Piers and Shafts".

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

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

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Qualification Data: For manufacturer.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete,"
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

B. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

D. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.3 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.4 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I/II

a. Fly Ash: ASTM C 618, Class F or C.

B. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94/C 94M and potable.

2.5 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.6 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

D. Water: Potable.

E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

2.7 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

1. Fly Ash: 25 percent.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, and concrete with a water-cementitious materials ratio below 0.50.

2.8 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Duct Banks: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.45.
3. Slump Limit: 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: 5-1/2 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

2.9 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.10 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.2 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.3 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.

C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time

necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleed water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen sub-grade or on sub-grade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and sub-grade just before placing concrete. Keep sub-grade uniformly moist without standing water, soft spots, or dry areas.

3.4 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.5 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

   a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
   b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project..

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

3.6 FIELD QUALITY CONTROL

A. Testing and Inspecting: Contractor will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Inspections:

1. Steel reinforcement placement.
2. Anchor Bolts.
3. Verification of use of required design mixture.
4. Concrete placement, including conveying and depositing.
5. Curing procedures and maintenance of curing temperature.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.

   a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
6. Compression Test Specimens: ASTM C 31/C 31M.

   a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.

7. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.

   a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.

b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to A/E, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by A/E but will not be used as sole basis for approval or rejection of concrete.
11. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by A/E. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by A/E.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate dos not comply with the Contract Documents.

END OF SECTION 03 33 00

SECTION 26 05 10 - BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

1.1 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 Acts (OSHA).
7. Federal Americans with Disabilities Act (ADA).
8. State of Texas Accessibilities Standards (Texas Civil Statutes).
9. State Jail Facilities Standards, 1993 – State of Texas.
10. Terms and conditions of the electrical utility and other authorities having lawful jurisdiction pertaining to the work required.

1.2 SUMMARY

A. This Section includes the following:

1. Raceways.
2. Building wire and connectors.
3. Supporting devices for electrical components.
4. Electrical identification.
5. Cutting and patching for electrical construction.
6. Touchup painting.

1.3 SUBMITTALS

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

1.4 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. FMC: Flexible metal conduit.

C. IMC: Intermediate metal conduit.

D. LFMC: Liquid tight flexible metal conduit.

E. RGS: Rigid Galvanized Steel.

F. RNC: Rigid nonmetallic conduit.

G. RMC: Rigid metallic conduit.

1.5 QUALITY ASSURANCE

A. Electrical Components, Devices and Accessories: UL listed and labeled as defined in NFPA 70, Article 100, and marked for intended use.

B. Comply with NFPA 70.

1.6 COORDINATION

A. Coordinate inserts, sleeves, and openings with general construction work and arrange in building structure to facilitate the electrical installations that follow.
   1. Set inserts and sleeves in poured-in-place concrete, masonry work, and other structural components as they are constructed.
   2. Where conduits penetrate existing masonry work, contractor shall core-drill openings and install inserts. Contractor shall insure that inserts are water-tight.

B. Sequence, coordinate, and integrate installing electrical materials and equipment for efficient flow of the Work.

C. Coordinate electrical service connections to components furnished by utility companies.
   1. Coordinate disconnecting and connection of existing exterior underground and overhead utilities and services.
   2. Comply with requirements of authorities having jurisdiction and of utility company providing electrical power and other services.

D. Where electrical identification devices are applied to field-finished surfaces, coordinate installation of identification devices with completion of finished surface.

PART 2 - PRODUCTS

2.1 RACEWAYS

A. EMT: ANSI C80.3, zinc-coated steel, with set-screw or compression fittings.

B. LFMC: Zinc-coated steel with sunlight-resistant and mineral-oil-resistant plastic jacket.

C. RMC: Galvanized steel conduit. ANSI C80.1.

D. RNC: NEMA TC 2, 40-PVC

E. Raceway Fittings: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed. Fittings for RNC: NEMA TC 3; match to conduit or tubing type and material.

2.2 CONDUCTORS

A. Conductors, No. 10 AWG and Smaller: Solid or stranded copper.

B. Conductors, Larger than 10 AWG: Stranded copper.

C. Insulation: Thermoplastic, rated at 75 deg C minimum. THHN/THWN or XHHW-2 as specified in 3.4 A.

D. Wire Connectors and Splices: Units of size, ampacity rating, material, type, and class suitable for service indicated.

2.3 SUPPORTING DEVICES

A. Material: Cold-formed steel, with corrosion-resistant coating acceptable to authorities having jurisdiction.

B. Metal Items for Use Outdoors: Hot-dip galvanized steel.

C. Slotted-Steel Channel Supports: Flange edges turned toward web, and 9/16-inch diameter slotted holes at a maximum of 2 inches o.c., in webs, unless noted otherwise.

D. Raceway and Cable Supports: Manufactured clevis hangers, riser clamps, straps, threaded C-clamps with retainers, ceiling trapeze hangers, wall brackets, and spring-steel clamps or click-type hangers.

E. Expansion Anchors: Carbon-steel wedge or sleeve type.

F. Toggle Bolts: All-steel springhead type.

G. Powder-Driven Threaded Studs: Heat-treated steel.

2.4 ELECTRICAL IDENTIFICATION

A. Identification Devices: A single type of identification product for each application category. Use colors prescribed by ANSI A13.1, NFPA 70, and these Specifications.

B. Raceway and Cable Labels: Comply with ANSI A13.1, Table 3, for minimum size of letters for legend and minimum length of color field for each raceway and cable size.
   1. Type: Preprinted, flexible, self-adhesive, vinyl. Legend is overlaminated with a clear, weather- and chemical-resistant coating.
   2. Color: Black letters on orange background.
   3. Legend: Indicates voltage.

C. Colored Adhesive Marking Tape for Raceways, Wires, and Cables: Self-adhesive vinyl tape, not less than 3/4 inch wide by 7 mils thick. Scotch Brand #35 or approved equal.

D. Tape Markers for Wire: Vinyl or vinyl-cloth, self-laminating, wraparound type with preprinted numbers and letters. Scotch Brand #SPB or approved equal.

E. Engraved-Plastic Labels, Signs, and Instruction Plates: Engraving stock, melamine plastic laminate punched or drilled for mechanical fasteners 1/16-inch minimum thickness for signs up to 20 sq. in. and 1/8-inch minimum thickness for larger sizes. Engraved legend in black letters on white background.

F. Fasteners for Nameplates and Signs: Self-tapping, stainless-steel screws or No. 10/32 stainless-steel machine screws with nuts and flat and lock washers.

2.5 TOUCHUP PAINT

A. For Equipment: Equipment manufacturer's paint selected to match installed equipment finish.

B. Galvanized Surfaces: Zinc-rich paint recommended by item manufacturer.

PART 3 - EXECUTION

3.1 ELECTRICAL EQUIPMENT INSTALLATION

A. Materials and Components: Install level, plumb, and parallel and perpendicular to other building systems and components, unless otherwise indicated.

B. Equipment: Install to facilitate service, maintenance, and repair or replacement of components. Connect for ease of disconnecting, with minimum interference with other installations.

C. Right of Way: Give to raceways and piping systems installed at a required slope.

3.2 RACEWAY APPLICATION

A. Use the following raceways for outdoor installations:
   1. Exposed: RMC
   2. Concealed: RMC
   3. Underground, See Section 26 05 43.
   4. Boxes and Enclosures: NEMA 250, Type 3R, unless otherwise noted.

B. Use the following raceways for indoor installations:
   1. Exposed: RMC.
   2. Concealed (as defined by TDCJ): EMT.
   3. Damp or Wet Locations: RMC.
   4. Boxes and Enclosures: NEMA 250, Type 1, unless otherwise indicated.

3.3 RACEWAY AND CABLE INSTALLATION

A. Conceal raceways and cables, unless otherwise indicated, within finished walls, ceilings, and floors. Where raceways cannot be concealed in finished walls, contractor shall paint raceways and raceway support items to match adjoining mounting surface. All exterior raceways and raceway support items shall be painted to match adjoining mounting surface.

B. Install raceways and cables at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Locate horizontal raceway runs above water and steam piping.

C. Use temporary raceway caps to prevent foreign matter from entering.

D. Make conduit bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.

E. Use raceway and cable fittings compatible with raceways and cables and suitable for use and location.

3.4 WIRING METHODS FOR POWER, LIGHTING, AND CONTROL CIRCUITS

A. Feeders: Type THHN/THWN insulated conductors in raceway.

B. Underground Feeders and Branch Circuits: Type XHHW-2 insulated conductors in raceway.

C. Branch Circuits: Type THHN/THWN insulated conductors in raceway.

D. Remote-Control Signaling and Power-Limited Circuits: Type THHN/THWN insulated conductors in raceway for Classes 1, 2, and 3, unless otherwise indicated.

3.5 WIRING INSTALLATION

A. Install splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.

B. Install wiring at outlets with at least 6 inches of slack conductor at each outlet.

C. Connect outlet and component connections to wiring systems and to ground. Tighten electrical connectors and terminals, according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A.

3.6 ELECTRICAL SUPPORTING DEVICE APPLICATION

A. Damp Locations and outdoors: Hot-dip galvanized materials or nonmetallic, U-channel system components.

B. Dry Locations: Steel materials.

C. Selection of Supports: Comply with manufacturer's written instructions.

D. Strength of Supports: Adequate to carry present and future loads, times a safety factor of at least four, minimum 200-lb design load.

3.7 SUPPORT INSTALLATION

A. Install support devices to securely and permanently fasten and support electrical components.

B. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.

C. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers.

D. Size supports for multiple raceway installations so capacity can be increased by a 25 percent minimum in the future.

E. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps.

F. Install 1/3-inch diameter or larger threaded steel hanger rods, unless otherwise indicated.

G. Spring-steel fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2-inch and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports.

H. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals.

I. Install metal channel racks for mounting cabinets, disconnect switches, control enclosures, pull and junction boxes, and other devices unless components are mounted directly to structural elements of adequate strength.

J. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Perform fastening according to the following unless other fastening methods are indicated.
   1. Wood: Fasten with wood screws or screw-type nails.
   2. Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units.
   3. New Concrete: Concrete inserts with machine screws and bolts.

4. Existing Concrete: Expansion bolts.
5. Instead of expansion bolts, threaded studs driven by a powder charge and provided with lock washers may be used in existing concrete.
6. Steel: Welded threaded studs or spring-tension clamps on steel.
   a. Field Welding: Comply with AWS D1.1.
7. Welding to steel structure may be used only for threaded studs, not for conduits, pipe straps, other items.
8. Light Steel: Sheet-metal screws.
9. Fasteners: Select so the load applied to each fastener does not exceed 25 percent of its proof-test load.

3.8 IDENTIFICATION MATERALS AND DEVICES

A. Install at locations for most convenient viewing without interference with operation and maintenance of equipment.

B. Coordinate names, abbreviations, colors, and other designations used for electrical identification with corresponding designations indicated in the Contract Documents or required by codes and standards. Use consistent designations throughout Project.

C. Self-Adhesive Identification Products: Clean surfaces before applying.

D. Identify raceways and cables with color banding as follows:
   1. Bands: Pretensioned, snap-around, colored plastic sleeves or colored adhesive marking tape. Make each color band 2 inches wide, completely encircling conduit, and place adjacent bands of two-color markings in contact, side by side.
   2. Band Locations: At changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

E. Color-coded 208/120-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
   1. Phase A: Black.
   2. Phase B: Red.
   3. Phase C: Blue.

F. Color-coded 480/277-V system primary services, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:
   1. Phase A: Yellow.
   2. Phase B: Brown
   3. Phase C: Orange

3.9 CUTTING AND PATCHING

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces required to permit electrical installations. Perform cutting by skilled mechanics of trades involved.

B. Repair and refinish disturbed finish materials and other surfaces to match adjacent undisturbed surfaces. Repair and refinish materials and other surfaces by skilled mechanics of trades involved.

C. All wall penetration will be fire stop with fire retardant equal to fire rating of the wall penetrated.

FIELD QUALITY CONTROL

D. Inspect installed components for damage and faulty work, including the following:
   1. Raceways.
   2. Building wire and connectors.
   3. Supporting devices for electrical components.
   4. Electrical Identification.
   5. Cutting and patching for electrical construction.
   6. Touchup painting

3.10 REFINISHING AND TOUCHUP PAINTING

A. Refinish and touch up paint.
   1. Clean damaged and disturbed areas and apply primer, intermediate, and finish coats to suit the degree of damage at each location.
   2. Follow paint manufacturer's written instructions for surface preparation and for timing and application of successive coats.
   3. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
   4. Repair damage to PVC or paint finishes with matching touchup coating recommended by manufacturer.

3.11 MISCELLANEOUS PAINTING

A. Paint for existing and new switches
   1. Consult manufacturer of existing disconnect switch and new transfer switch regarding suggested paint materials.
   2. Clean switches and mask nameplates, indicating lights, gauges, buttons, and other functional appurtenances to prevent covering with paint.
   3. Verify that paint will not impede operation of equipment before applying paint.
   4. Switches and related mounting and support items shall be painted to match adjoining mounting surface.

3.12 CLEANING AND PROTECTION

A. On completion of installation, including outlets, fittings, and devices, inspect exposed finish. Remove burrs, dirt, paint spots, and construction debris.

B. Protect equipment and installations and maintain conditions to ensure that coatings, finishes, and cabinets are without damage or deterioration at time of Beneficial Occupancy.

END OF SECTION 26 05 10

SECTION 26 05 20 - GROUNDING AND BONDING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes methods and materials for grounding systems and equipment.

1.2 SUBMITTALS

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

B. Field quality-control test reports.

1.3 QUALITY ASSURANCE

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

B. Comply with UL 467 for grounding and bonding materials and equipment.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:

1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
    1. Bonding Conductor: No. 4 AWG, stranded conductor.
2. Bonding Jumper: Copper tape, braided conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.2 CONNECTORS

A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.

B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.

1. Pipe Connectors: Clamp type, sized for pipe.

C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad; 5/8 inches in diameter by 120 inches in length.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.

B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade.

C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.

D. Conductor Terminations and Connections:

1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.
3. Connections to Ground Rods at Test Wells: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.

3.2 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
1. Lighting circuits.
2. Three-phase motor and appliance branch circuits.
3. Armored and metal-clad cable runs.

3.3 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade, unless otherwise indicated.

   1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating, if any.

C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.

   1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
   2. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.

3.4 FIELD QUALITY CONTROL

A. Perform the following tests and inspections and prepare test reports:

   1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
   2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.

      a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
      b. Perform tests by fall-of-potential method according to IEEE 81.

B. Report measured ground resistances that exceed the following values:

   1. Power and Lighting Equipment or System with Capacity 500 kVA and Less: 10 ohms.

C. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.

END OF SECTION 26 05 20

SECTION 26 05 43 – ELECTRICAL UNDERGROUND DUCTS AND RACEWAYS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Conduit, ducts, and duct accessories for direct-buried and concrete-encased duct banks, and in single duct runs.
2. Handholes and pull boxes.

1.2 SUBMITTALS

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

B. Shop Drawings for Precast or Factory-Fabricated Underground Utility Structures: Include plans, elevations, sections, details, attachments to other work, and accessories, including the following:

1. Duct entry provisions, including locations and duct sizes.
2. Cover design.
3. Grounding details.
4. Dimensioned locations of cable rack inserts, and pulling-in and lifting irons.

C. Field quality-control reports.

1.3 QUALITY ASSURANCE

A. Comply with IEEE C2.

B. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUIT

A. Rigid Steel Conduit: Galvanized. Comply with ANSI C80.1.

B. RNC: NEMA TC 2, Type EPC-40-PVC and Type EPC-80-PVC, UL 651, with matching fittings by same manufacturer as the conduit, complying with NEMA TC 3 and UL 514B.

C. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit, IMC.

1. Comply with NEMA RN 1.

2. Coating Thickness: 0.040 inch, minimum.

D. IMC. ANSI C80.6

E. EMT: ANSI C80.3.

F. LFMC: Flexible steel conduit with PVC jacket.

G. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB1; listed for type and size raceway with which used, and for application and environment in which installed.

1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.

2. Fittings for EMT: Steel or die-cast, compression type.

3. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch, with overlapping sleeves protecting threaded joints.

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

2.2 NONMETALLIC DUCTS AND DUCT ACCESSORIES

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

1. AFC Cable Systems.
2. ARNCO Corporation.
3. Beck Manufacturing.
4. Cantex, Inc.
5. CertainTeed Corp.
6. Condux International, Inc.
7. DCX-CHOL Enterprises, Inc.; ELECSYS Division.
8. Electri-Flex Company.
9. IPEX Inc.
10. Lamson & Sessions; Carlon Electrical Products.
11. Manhattan Wire Products; a Belden company.
12. Or A/E approved equal.

B. Underground Plastic Utilities Duct: NEMA TC 6 & 8, Type EB-20-PVC, ASTM F 512, UL 651A, with matching fittings by the same manufacturer as the duct, complying with NEMA TC 9.

C. Duct Accessories:

1. Duct Separators: Factory-fabricated rigid PVC interlocking spacers, sized for type and sizes of ducts with which used, and retained to provide minimum duct spacing's indicated while supporting ducts during concreting or backfilling.
2. Warning Tape: Underground-line warning tape specified in Division 26 Section "Identification for Electrical Systems."

2.3 HANDHOLES AND PULL BOXES

A. Description: Comply with SCTE 77.

1. Color: **Gray**.
2. Configuration: Units shall be designed for flush burial and have **closed** bottom unless otherwise indicated.
3. Cover: Weatherproof, secured by tamper-resistant locking devices and having structural load rating consistent with enclosure.
4. Cover Finish: Nonskid finish shall have a minimum coefficient of friction of 0.50.
5. Cover Legend: Molded lettering,

   a. **"ELECTRIC."**.
   b. Tier level number, indicating that the unit complies with the structural load test for that tier according to SCTE 77.

6. Duct Entrance Provisions: Duct-terminating fittings shall mate with entering ducts for secure, fixed installation in enclosure wall.
7. Handholes 24 **inches wide by 24 inches long** and larger shall have factory-installed inserts for cable racks and pulling-in irons.

B. Fiberglass Handholes and Pull Boxes with Polymer Concrete Frame and Cover: Complying with SCTE 77 **Tier 5** loading. Sheet-molded, fiberglass-reinforced, polyester resin enclosure joined to polymer concrete top ring or frame.

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

   a. Armorcast Products Company.
   b. Carson Industries LLC.
   c. Christy Concrete Products.
   d. Synertech Moulded Products, Inc.; a division of Oldcastle Precast.
   e. Or A/E approved equal.

PART 3 - EXECUTION

3.1 CORROSION PROTECTION

A. Aluminum shall not be installed in contact with earth or concrete.

3.2 EARTHWORK

A. Excavation and Backfill: Comply with Division 31 Section "Earth Moving," but do not use heavy-duty, hydraulic-operated, compaction equipment.

B. Restore surface features at areas disturbed by excavation and reestablish original grades unless otherwise indicated. Replace removed sod immediately after backfilling is completed.

C. Restore areas disturbed by trenching, storing of dirt, cable laying, and other work. Restore vegetation and include necessary topsoiling, fertilizing, liming, seeding, sodding, sprigging, and mulching.

D. Cut and patch existing pavement in the path of underground ducts and utility structures according to Division 01 Section "Cutting and Patching."

3.3 DUCT INSTALLATION

A. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes to drain in both directions.

B. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of **48 inches**, both horizontally and vertically, at other locations unless otherwise indicated.

C. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.

D. Duct Entrances to Manholes: Use end bells, spaced approximately 10 inches o.c. for 5-inch ducts, and vary proportionately for other duct sizes.

1. Begin change from regular spacing to end-bell spacing 10 ft. from the end bell without reducing duct line slope and without forming a trap in the line.
2. Direct-Buried Duct Banks: Install an expansion and deflection fitting in each conduit in the area of disturbed earth adjacent to handhole.
3. Grout end bells into structure walls from both sides to provide watertight entrances.

E. Pulling Cord: Install 100-lbf test nylon cord in ducts, including spares.

F. Concrete-Encased Ducts: Support ducts on duct separators.

1. Separator Installation: Space separators close enough to prevent sagging and deforming of ducts, with not less than **4** spacers per 20 ft. of duct. Secure separators to earth and to ducts to prevent floating during concreting. Stagger separators approximately 6 inches between tiers. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.

2. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.

   a. Start at one end and finish at the other, allowing for expansion and contraction of ducts as their temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written recommendations, or use other specific measures to prevent expansion-contraction damage.
   b. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch reinforcing rod dowels extending 18 inches into concrete on both sides of joint near corners of envelope.

3. Pouring Concrete: Spade concrete carefully during pours to prevent voids under and between conduits and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Use a plank to direct concrete down sides of bank assembly to trench bottom. Allow concrete to flow to center of bank and rise up in middle, uniformly filling all open spaces. Do not use power-driven agitating equipment unless specifically designed for duct-bank application.
4. Reinforcement: Reinforce concrete-encased duct banks where they cross disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.
5. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.
6. Minimum Space between Ducts: 3 inches between ducts and exterior envelope wall, 2 inches between ducts for like services, and 4 inches between power and signal ducts.
7. Depth: Install top of duct bank at least 24 inches below finished grade in areas not subject to deliberate traffic, and at least 30 inches below finished grade in deliberate traffic paths for vehicles unless otherwise indicated.
8. Stub-Ups: Use manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor unless otherwise indicated. Extend concrete encasement throughout the length of the elbow.
9. Stub-Ups: Use manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.

   a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete.
   b. Stub-Ups to Equipment: For equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of base. Install insulated grounding bushings on terminations at equipment.

10. Warning Tape: Bury warning tape approximately 12 inches above all concrete-encased ducts and duct banks. Align tape parallel to and within 3 inches of the centerline of duct bank. Provide an additional warning tape for each 12-inch increment of duct-bank width over a nominal 18 inches. Space additional tapes 12 inches apart, horizontally.

G. Direct-Buried Duct Banks:

1. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.

2. Space separators close enough to prevent sagging and deforming of ducts, with not less than **4** spacers per 20 ft. of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6 inches between tiers.
3. Excavate trench bottom to provide firm and uniform support for duct bank. Prepare trench bottoms as specified in Division 31 Section "Earth Moving" for pipes less than 6 inches in nominal diameter.
4. Install backfill as specified in Division 31 Section "Earth Moving."
5. After installing first tier of ducts, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand-place backfill to 4 inches over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction as specified in Division 31 Section "Earth Moving."
6. Install ducts with a minimum of 3 inches between ducts for like services and 6 inches between power and signal ducts.
7. Depth: Install top of duct bank at least 36 inches below finished grade unless otherwise indicated.
8. Set elevation of bottom of duct bank below the frost line.
9. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
10. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.

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

11. Warning Planks: Bury warning planks approximately 12 inches above direct-buried ducts and duct banks, placing them 24 inches o.c. Align planks along the width and along the centerline of duct bank. Provide an additional plank for each 12-inch increment of duct-bank width over a nominal 18 inches. Space additional planks 12 inches apart, horizontally.

12. Boring is permissible with following requirements:
    a. Contractor shall utilize a ground penetrating radar or other such methods to locate underground utilities and/or obstacles. Contractor shall repair and/or replace elements damaged by boring effort at no additional cost,
    b. Must have a Texas 811 E-ticket number from 811.
    c. Must close all open trenches at end of each work day.
    d. The required depth is at less 36 inches.

3.4 INSTALLATION OF HANDHOLES AND PULL BOXES

A. Install handholes and pull boxes level and plumb and with orientation and depth coordinated with connecting ducts to minimize bends and deflections required for proper entrances. Use pull box extension if required to match depths of ducts, and seal joint between box and extension as recommended by the manufacturer.

B. Unless otherwise indicated, support units on a level 6-inch- thick bed of crushed stone or gravel, graded from 1/2-inch sieve to No. 4 sieve and compacted to same density as adjacent undisturbed earth.

C. Elevation: Set so cover surface will be flush with finished grade.

D. Install handholes and pull boxes with bottom below the frost line.

E. Install removable hardware, including pulling eyes, cable stanchions, cable arms, and insulators, as required for installation and support of cables and conductors and as indicated. Retain arm lengths to be long enough to provide spare space for future cables, but short enough to preserve adequate working clearances in the enclosure.

F. Field-cut openings for ducts and conduits according to enclosure manufacturer's written instructions. Cut wall of enclosure with a tool designed for material to be cut. Size holes for terminating fittings to be used, and seal around penetrations after fittings are installed.

G. For enclosures subject to occasional, nondeliberate, heavy-vehicle loading, form and pour a concrete ring encircling, and in contact with, enclosure and with top surface screeded to top of box cover frame. Bottom of ring shall rest on compacted earth.

1. Concrete: 4000 psi, 28-day strength, complying with Division 03 Section "Cast-in-Place Concrete," with a troweled finish.
2. Dimensions: As required.

3.5 GROUNDING

A. Ground underground ducts and utility structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."

3.6 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Demonstrate capability and compliance with requirements on completion of installation of underground ducts and utility structures.
2. Pull aluminum or wood test mandrel through duct to prove joint integrity and test for out-of-round duct. Provide mandrel equal to 80 percent fill of duct. If obstructions are indicated, remove obstructions and retest.

B. Correct deficiencies and retest as specified above to demonstrate compliance.

C. Prepare test and inspection reports.

3.7 CLEANING

A. Pull leather-washer-type duct cleaner, with graduated washer sizes, through full length of ducts. Follow with rubber duct swab for final cleaning and to assist in spreading lubricant throughout ducts.

B. Clean internal surfaces of manholes, including sump. Remove foreign material.

END OF SECTION 26 05 43

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Underground-line warning tape.

1.2 SUBMITTALS

A. Product Data: For each electrical identification product indicated.

1.3 QUALITY CONTROL

A. Comply with ANSI A13.1.

B. Comply with NFPA 70.

C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.

PART 2 - PRODUCTS

2.1 UNDERGROUND-LINE WARNING TAPE

A. Tape:

   1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical utility lines.
   2. Printing on tape shall be permanent and shall not be damaged by burial operations.
   3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

B. Color and Printing:

   1. Comply with ANSI Z535.1 through ANSI Z535.5.
   2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.

C. Tag: Type ID:

1. Detectable three-layer laminate, consisting of a printed pigmented polyolefin film, a solid aluminum-foil core, and a clear protective film that allows inspection of the continuity of the conductive core, bright-colored, continuous-printed on one side with the inscription of the utility, compounded for direct-burial service.
2. Overall Thickness: 5 mils.
3. Foil Core Thickness: 0.35 mil.
4. Weight: 28 lb/1000 sq. ft..
5. 3-Inch Tensile According to ASTM D 882: 70 lbf, and 4600 psi.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

3.2 IDENTIFICATION SCHEDULE

A. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.

1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.

   a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG.
   b. Colors for 208/120-V Circuits:

      1) Phase A: Black.
      2) Phase B: Red.
      3) Phase C: Blue.

   c. Colors for 480/277-V Circuits:

      1) Phase A: Brown.
      2) Phase B: Orange.
      3) Phase C: Yellow.

B. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.

1. Limit use of underground-line warning tape to direct-buried cables.
2. Install underground-line warning tape for both direct-buried cables and cables in raceway.

END OF SECTION 26 05 53

SECTION 26 09 23 - LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following lighting control devices:

1. Time switches.
2. Outdoor photoelectric switches.
3. Lighting contactors.
4. Snap switches.

1.2 SUBMITTALS

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

B. Field quality-control test reports.

C. Operation and maintenance data.

1.3 QUALITY ASSURANCE

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

PART 2 - PRODUCTS

2.1 TIME SWITCHES

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

1. Area Lighting Research, Inc.; Tyco Electronics.
2. Grasslin Controls Corporation; a GE Industrial Systems Company.
3. Intermatic, Inc.
4. Leviton Mfg. Company Inc.
5. Lightolier Controls; a Genlyte Company.
6. Paragon Electric Co.; Invensys Climate Controls.
7. Square D; Schneider Electric.
8. NSi Industries LLC, TORK.
9. Cooper Industries, Inc.
10. Or A/E approved equal.

B. Electronic Time Switches: Electronic, solid-state programmable units with alphanumeric display; complying with UL 917.

1. Contact Configuration: SPST.
2. Contact Rating: 20-A inductive or resistive, 120/240-V ac.
3. Program: 8 on-off set points on a 24-hour schedule.
4. Circuitry: Allow connection of a photoelectric relay as substitute for on-off function of a program.
5. Astronomic Time: All channels.
6. Battery Backup: Not less then seven days reserve to maintain schedules and time clock.

2.2 OUTDOOR PHOTOELECTRIC SWITCHES

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

1. Area Lighting Research, Inc.; Tyco Electronics.
2. Grasslin Controls Corporation; a GE Industrial Systems Company.
3. Intermatic, Inc.
4. Paragon Electric Co.; Invensys Climate Controls.
5. Square D; Schneider Electric.
6. NSi Industries LLC, TORK.
7. Or A/E approved equal.

B. Description: Solid state, with SPST dry contacts rated for 1000-VA inductive, to operate connected relay, contactor coils, or microprocessor input; complying with UL 773A.

1. Light-Level Monitoring Range: 1.5 to 10 fc , with an adjustment for turn-on and turn-off levels within that range, and a directional lens in front of photocell to prevent fixed light sources from causing turn-off.
2. Time Delay: 15-second minimum, to prevent false operation.
3. Surge Protection: Metal-oxide varistor, complying with IEEE C62.41.1, IEEE C62.41.2, and IEEE 62.45 for Category A1 locations.
4. Mounting: Twist lock complying with IEEE C136.10, with base-and-stem mounting or stem-and-swivel mounting accessories as required to direct sensor to the north sky exposure.

2.3 LIGHTING CONTACTORS

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

1. Allen-Bradley/Rockwell Automation.
2. ASCO Power Technologies, LP; a division of Emerson Electric Co.
3. Eaton Electrical Inc.; Cutler-Hammer Products.
4. Grasslin Controls Corporation; a GE Industrial Systems Company.
5. Square D; Schneider Electric.
6. NSi Industries LLC, TORK.
7. Or A/E approved equal.

B. Description: Electrically operated and electrically held, combination type with fusible switch, complying with NEMA ICS 2 and UL 508.

1. Current Rating for Switching: Listing or rating consistent with type of load served, including tungsten filament, inductive, and high-inrush ballast (ballast with 15 percent or less total harmonic distortion of normal load current).
2. Fault Current Withstand Rating: Equal to or exceeding the available fault current at the point of installation.
3. Enclosure: Comply with NEMA 250, Type 3R.
4. Provide with control and pilot devices as indicated on Drawings, matching the NEMA type specified for the enclosure.

2.4 SNAP SWITCHES

A. Comply with NEMA WD 1 and UL 20.

B. Switches, 120/277 V, 20 A:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

   a. Cooper; 2221 (single pole), 2222 (two pole), 2223 (three way).
   b. Hubbell; CS1221 (single pole), CS1222 (two pole), CS1223 (three way).
   c. Leviton; 1221-2 (single pole), 1222-2 (two pole), 1223-2 (three way).
   d. Pass & Seymour; 20AC1 (single pole), 20AC2 (two pole), 20AC3 (three way).
   e. Or A/E approved equal.

2.5 WALL PLATES

A. Single and combination types to match corresponding wiring devices.

1. Plate-Securing Screws: Metal with head color to match plate finish.
2. Material for Finished Spaces: Steel with white baked enamel, suitable for field painting 0.035-inch- thick.
3. Material for Unfinished Spaces: Galvanized steel.
4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in "wet locations."

2.6 FINISHES

A. Color: Wiring device catalog numbers in Section Text do not designate device color.
   2. Wiring Devices Connected to Emergency Power System: Red.

2.7 CONDUCTORS AND CABLES

A. Power Wiring to Supply Side of Remote-Control Power Sources: Not smaller than No. 12 AWG. Comply with requirements in Division 26 Section "Basic Electrical Materials and Methods."

PART 3 - EXECUTION

3.1 SENSOR INSTALLATION

A. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.

3.2 CONTACTOR INSTALLATION

A. Mount electrically held lighting contactors with elastomeric isolator pads, to eliminate structure-borne vibration, unless contactors are installed in an enclosure with factory-installed vibration isolators.

3.3 WIRING INSTALLATION

A. Wiring Method: Comply with Division 26 Section "Basic Electrical Materials and Methods." Minimum conduit size shall be 3/4 inch.

B. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.

C. Size conductors according to lighting control device manufacturer's written instructions, unless otherwise indicated.

D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.

3.4 IDENTIFICATION

A. Identify components and power and control wiring according to Division 26 Section "Basic Electrical Materials and Methods."

1. Identify controlled circuits in lighting contactors.
2. Identify circuits or luminaries controlled by photoelectric and occupancy sensors at each sensor.

B. Label time switches and contactors with a unique designation.

C. Label manual snap switch as “HIGH MAST OVERRIDE SW”

3.5 FIELD QUALITY CONTROL

A. Perform the following field tests and inspections and prepare test reports:

1. After installing time switches and sensors, and after electrical circuitry has been energized, adjust and test for compliance with requirements.
2. Operational Test: Verify operation of each lighting control device, and adjust time delays.

B. Lighting control devices that fail tests and inspections are defective work.

C. Prepare test and inspection report.

3.6 DEMONSTRATION

A. Train TDCJ's maintenance personnel to adjust, operate, and maintain lighting control devices.

END OF SECTION 26 09 23

SECTION 26 56 29 – SITE LIGHTING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Luminaires

B. High Mast Pole Systems

C. Ballasts

D. Lamps

1.2 RELATED REQUIREMENTS

A. General and Special Conditions

B. Drawings and other Specification Sections as applicable.
   1. See Construction Drawings for luminaire mounting heights, pole heights, and location requirements.

1.3 DEFINITIONS

A. CRI: Color-rendering index.

B. HID: High-intensity discharge.

C. Luminaire: Complete lighting fixture, including ballast housing if provided.

D. Pole: Luminaire support structure, including tower used for large area illumination.

E. Standard: Same definition as "Pole" above.

1.4 STRUCTURAL ANALYSIS CRITERIA FOR POLE SELECTION

A. Dead Load: Weight of luminaire and its horizontal and vertical supports, lowering devices, and supporting structure, applied as stated in AASHTO LTS-4.

B. Live Load: Single load of 500 lbf (2224 N), distributed as stated in AASHTO LTS-4.

C. Ice Load: Load of 3 lbf/sq. ft. (143.6 Pa), applied as stated in AASHTO LTS-4.

D. Wind Load: Pressure of wind on pole and luminaire, calculated and applied as stated in AASHTO LTS-4.
   1. Wind speed for calculated wind load for poles exceeding 50 feet (15 m) in height is 110 mph (177 km/h).

1.5 SUBMITTALS

A. Product Data:
   1. For each luminaire, arranged in the order of lighting unit designation. Include data on features, accessories, finishes and the following:
      a. Physical description of fixture, including dimensions and verification of indicated parameters.
      b. Luminaire dimensions, effective projected area, details of attaching luminaire, accessories, and installation and construction details.
      c. Luminaire materials
      d. Photoelectric relays.
      e. High-intensity-discharge ballasts.
      f. High-intensity-discharge lamps.
      g. Electrical and energy-efficiency for ballasts.
   2. Cable Lowering System and Portable Drive Motor.
   3. Poles.
   4. Base plate and anchor bolts.

B. Shop Drawings:
   1. Anchor-bolt templates keyed to specific poles and certified by manufacturer.
   2. Photometric analysis of proposed system.
   3. Detailed line drawings of High Mast Pole System provided from manufacturer.

C. Wiring Diagrams: Power, signal and control wiring.

D. Coordination Drawings: Mounting and connection details, drawn to scale, for exterior luminaires with requirements specified by pole manufacturer.

E. Source quality-control test reports.

F. Field quality-control test reports.

G. Operation and Maintenance Data: For luminaires to include in maintenance manuals.

H. Warranties: Special warranties specified in this Section.

1.6 QUALITY CONTROL

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
   1. Testing Agency's Field Supervisor: Person currently certified by the International Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Other testing procedures are acceptable if prior written approval by TDCJ is given.

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

D. Comply with IEEE C2, "National Electrical Safety Code."

E. Comply with NFPA 70.

1.7 COORDINATION

A. Coordinate luminaires with mounting and wind load requirements.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace luminaires or components of luminaires and lamps that fail in materials or workmanship; corrode; or stain, or chalk due to effects of weather or solar radiation within specified warranty period. Manufacturer may exclude lightning damage, hail damage, vandalism, abuse, or unauthorized repairs or alterations from special warranty coverage.

1. Warranty Period for Luminaires: Two years from date of Beneficial Occupancy.
   a. Warranty Period against defects in materials, workmanship, or surface preparation resulting in significant Metal Corrosion shall be Two years from date of Beneficial Occupancy.
   b. Warranty Period against defects in materials, workmanship, or surface preparation resulting in significant paint coverage degradation shall be Two years from date of Beneficial Occupancy.
2. Warranty Period for Lamps: Replace lamps that fail within 24 months from date of Beneficial Occupancy.
3. Warranty Period for Ballasts: Replace ballasts that fail within 24 months from date of Beneficial Occupancy.
4. Warranty Period for Poles: Two years from date of Beneficial Occupancy.
   a. Warranty Period against defects in materials, workmanship, or surface preparation resulting in significant Metal Corrosion shall be Two years from date of Beneficial Occupancy.
   b. Warranty Period against defects in materials, workmanship, or surface preparation resulting in significant paint coverage degradation shall be Two years from date of Beneficial Occupancy.

1.9 EXTRA MATERIALS

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

1. Lamps: 10% of total for each type and rating installed. Furnish at least one of each type.
2. Glass and Plastic Lenses, Covers, and Other Optical Parts: 10% of total for each type and rating installed. Furnish at least one of each type.
3. Ballasts: 10% of total for each type and rating installed. Furnish at least one of each type.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists the following requirements apply to product selection:
   1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
   2. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 LUMINAIRES, GENERAL

A. Complying with UL 1598 and listed for installation in wet locations.

B. Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form, support to prevent warping, and sagging.

E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit re-lamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during re-lamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.

G. Exposed Hardware Material: Stainless steel.

H. Plastic Parts: High Resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.

I. Reflecting surfaces shall have a minimum reflectance as follows: unless otherwise indicated:
   1. White surfaces: 85 percent.
   2. Specular surfaces: 83 percent.
   3. Diffusing specular surfaces: 75 percent.

J. Lenses and Refractors Gaskets: use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.

2.3 HIGH MAST POLE SYSTEMS

A. High Mast Pole Systems – Each individual High Mast Pole System includes the high mast pole, lowering device, and luminaires and shall be manufactured and tested as an integral system and provided and warranted by one manufacturer. Any proposed deviation to be considered must include an analysis and certified test data demonstrating equal or greater performance.

1. High Mast Pole – Holophane MHP Series or A/E approved equal.

   a. Pole shall include shaft, handhole, support plate, anchor base, anchor bolts and nuts.

   b. Pole Shaft: Shall consist of round tapered steel tubes with standard taper rate of 0.14 inches per foot. The pole sections shall telescope together a minimum of 1.5 times the bottom section top diameter at the point of overlap. No field welding shall be permitted in the assembly of the pole. Pole sections shall be fabricated of ASTM A-595 Grade A material possessing 60,000-psi minimum yield strength. Galvanized poles shall be hot dipped galvanized in accordance with ASTM A-123. Poles shall have a finish coat of black TGIC or urethane polyester powder. Coat shall be 2.0 mils thick when dry. Handholes: Shall be a 10"W x 30"H opening at the base of the pole. The hinged handhole cover shall be manufactured from 0.35" thick hot dipped galvanized steel and sealed with a neoprene rubber gasket and features cover pull- downs to insure weather-tight protection. The cover shall have a hot dipped galvanized steel hasp for locking it closed with a pad-lock. Hinges shall be manufactured from 7 gauge hot dipped galvanized steel and offer adjustability of cover for weather-tight fit. Hinge and cover pull-down components shall be fastened to the rim with 0.25"-20 UNC stainless steel carriage bolts for tamper resistant attachment. A stainless steel tag shall be attached with epoxy to the inside of the hand-hole cover engraved with the following instructions: "Replace HPS lamps on Red fixtures with double-arc tube lamps only"

   c. Base Plate: Shall be integrally welded to the pole shaft with a full penetration butt weld with backup bar. The base plate shall be fabricated of ASTM A-36 material possessing 50,000-psi minimum yield strength. A ½-13 UNC-2A nut shall be welded to the base plate for grounding.

   d. Anchor Bolts: Shall be fabricated of ASTM F1554, Grade 55 material possessing 55,000-psi minimum yield strength. Each 1.75" diameter bolt shall be imbedded as shown on drawings. All anchor bolts shall be provided with one leveling nut and one hold down nut per ASTM A-563 Grade DH. The exposed threaded ends of the anchor bolts and the anchor bolt nuts shall be galvanized ASTM A-153.

   e. The pole, complete with lowering device, and luminaires with all enclosures in place, shall be capable of withstanding a sustained wind velocity not less than 100 mph with gusts up to 130%. Poles shall be designed for use with the specified lowering device, luminaires, and pole base enclosure.

   f. There shall be a manual hand-operated photo control override switch identified with an engraved stainless steel tag and accessible from the hand-hole inside the pole base.

   g. Branch Circuit Protection and Enclosure.

      1) The pole base assembly shall include a heavy-duty NEMA 4 stainless steel Enclosure with padlock hasp to be mounted on the pole exterior. The Enclosure shall house two circuit breakers sized for the correct voltage and phasing supplied for the luminaire loads. All conductors from the base of the pole shall be fed to the Enclosure from inside the pole. All hardware shall be stainless steel including mountings and nipples between the Enclosure and the pole. All exposed screws shall be tamper-proof.

      2) A suitable length of the composite power cord shall be provided from the Enclosure with the proper connector. This cable/connector shall mate to the pole composite cable and connector and also to the weatherproof test inlet provided on the lowering ring assembly.

   h. For construction or installation purposes, use only dimensions and information shown on approval drawings or templates provided for the specific order.

2. Lowering Device – Holophane 05 Series as specified on construction documents or A/E approved equal.

   a. The lowering device shall consist of three main subassemblies: headframe, lowering ring, and winch assembly. All material shall be of corrosive resistant nature including stainless steel, aluminum or galvanized steel unless otherwise specified. All fixtures utilized on the lowering device shall have passed an accelerated vibration test of at least 1g. The complete high mast system, consisting of lowering device and the specified luminaires shall be subjected to full-scale wind tunnel testing to determine actual loading for the high mast pole design.

      1) Headframe Assembly

         a) The headframe shall consist of a one-piece welded assembly with a hot dip galvanized finish after fabrication. All fasteners used for additional covers or other items shall be stainless steel. The headframe shall incorporate six hoist cable sheaves. Each sheave shall be a minimum six-inch diameter and the cable groove shall be machined with a circular cross-section to match the cable diameter. The sheaves shall have oil impregnated, pressed-in sintered bronze bushings. Each sheave shall be fabricated from steel and have a zinc electroplated finish per ASTM A633, including a yellow chromate dip. The sheaves shall meet or exceed the requirements of the Wire Rope Technical Board, Wire rope cables that operate over the sheaves shall be 7-x-19 construction aircraft cable, 3/16" as specified, stainless steel. The cables shall meet MIL Spec W83420C and Federal Specification RR-W-410d.

         b) The headframe shall incorporate a power cord roller assembly consisting of multiple rollers providing a minimum 7-inch bending radius for the cord. The design shall prevent the power cord from riding up the sides of the rollers and shall incorporate keeper bars on each end to secure the cord.

         c) Top Latching - Three high strength cast aluminum latch barrels shall be provided on the headframe assembly. Each latch barrel shall be designed to hold the entire weight of the ring and luminaires. All cam surfaces of the barrel shall be internally located and not affected by environmental conditions such as icing. The latch barrels shall support the ring in a top-latched position, unloading the transition assembly, wire rope cables and the winch when the device is not in operation.

      2) Lowering Ring Assembly

         a) The ring shall be fabricated of #7-gauge steel with a hot-dipped galvanized finish. The assembly shall include the appropriate number of luminaire mounting arm brackets fabricated from 2" pipe of sufficient strength to support the specified luminaire. The mounting arms shall be hot-dip galvanized finished and shall bolt to the ring with stainless steel hardware.

         b) A NEMA 3R aluminum junction box shall be provided that includes a weatherproof inlet on its exterior for testing of the luminaires and lamps at ground level. The enclosure shall be factory pre-wired for two 480V – 3∅ circuits with the appropriate number of 16/3 Type STW-A cords for luminaires and appropriately sized main power cord. The power cord shall be securely attached to the ring using cable clamps.

         c) A single ring-mounted NEMA twist-lock receptacle with 480V photocell shall control two appropriately sized contactors, one for each circuit.

         d) Ring Assembly- Top Latch Systems –

i. The ring assembly top latch system shall consist of three 1-pieces, investment cast stainless steel latch pins shall be provided on the ring. Each latch pin shall be capable of individually supporting the entire weight of the ring and luminaires. Each latch pin shall be capable of individual rotation. Indicating flags shall distinguish the latching/unlatching sequence, and shall be visible from ground level. The latching or unlatching sequence shall impart no more than one (1) g of force to any component of the system including luminaires and lamps.

e) Self Centering Ring Assembly

i. The self centering ring assembly shall consist of roller contact, spring-loaded, cast aluminum arms designed to protect the pole, luminaires and lamps from damage during raising and lowering of the luminaire ring assembly. The centering system shall keep the ring concentric to the pole during the raising and lowering operation. The centering arms shall be inter-connected to prevent jamming of the system on the pole during high winds. The springs shall be stainless steel. The rollers shall be non-marking.

f) The ring shall provide provision to mount and balance the ring for proper operation.

3) Transition Assembly

a) The transition assembly shall be designed to prevent misalignment of the three hoist cables. The wire rope cables shall be attached to the transition assembly with properly sized wire rope thimbles and factory non-corrosive swaged fittings. The attachment shall prevent the wire rope cable from untwisting under load. The transition plate shall be fabricated of stainless steel.

4) Winch

a) The internal winch assembly shall have an ultimate strength of five (5) times the lifted load. The winch shall include a 30:1 worm gear reduction and an internal drag brake on the input shaft to prevent free spooling of the winch drum. The drum shall be supported on both ends and shall include a stainless steel cable keep designed to aid the correct spooling of the winch cable. The winch drum shall be factory pre-wound with minimum 1/4" diameter stainless steel high strength 7-x-10 construction aircraft cable.

5) Power Cord

a) The main power cord shall be a single composite cable consisting of; seven (7) #10 AWG conductors to provide power for the luminaires.

3. Luminaires

a. Luminaires:

1) Metal Halide High Mast Luminaire: Holophane HMAO Series Luminaires, Open glass encased specular aluminum reflector with IES Type V Symmetric Cutoff distribution or A/E approved equal.

2) High Pressure Sodium High Mast Luminaire: Holophane HMAO Series Luminaires, Open glass encased specular aluminum reflector with IES Type V Symmetric Cutoff distribution or A/E approved equal.

b. Lamps:

1) As specified on Drawings.

c. Ballast Types and Features: UL 40 deg. C ambient, 480 Volt, double fusing for high-mast.

d. Shall conform to the latest version of the State of Texas Dark Skies Law, Chapter 425, Regulation of Certain Outdoor Lighting.

B. Portable Drive Motor Holophane LDM series or A/E approved equal.

1. The drive motor assembly shall:

a. Be portable.
b. Interface with the winch assembly to operate the lowering device.
c. Include a minimum 1-hp heavy duty reversing type electric motor with a stalled torque at least twice that required to operate the lowering device.
d. Drive the winch through a torque limiter coupling to limit the driving force on the hoist and winch cables. The torque limiter shall be factory pre-set. In addition, there shall be a backup shear pin designed to shear at a torque level between 50% and 100% over the torque limiter setting.
e. Have a 20ft cord with drum switch for remote operation.
f. Be supplied with a step-down transformer to provide 120V to the motor.

2.4 HIGH-INTENSITY DISCHARGE LAMP BALLASTS

A. General: Comply with NEMA C82.4 and UL 1029. Shall include the following features, unless otherwise indicated:

1. Type: Constant-wattage autotransformer or regulation high-power-factor type.
2. Minimum Starting Temperature: Minus 22 deg F for single-lamp ballasts.
3. Normal Ambient Operating Temperature: 104 deg F.
4. Open-circuit operation will not reduce average life.
5. Ballast Fuses: One in each ungrounded power supply conductor. Voltage and current ratings as recommended by ballast manufacturer.

B. High-Pressure-Sodium Ballasts: Protected starter will sense lamp failure within 3 to 10 minutes at which time the starting cycle stops.

2.5 HIGH-INTENSITY-DISCHARGE LAMPS

A. High-Pressure-Sodium Lamps for High Mast: NEMA C78.42, wattage and burning position as scheduled, CRI 21 (minimum), color temperature 1900, and average rated life of 24,000 hours. Dual arc-tube with instant re-strike. Sylvania LU1000/SBY Clear 1000W HPS Standby Arc Tube Lamp or A/E approved equal.

B. Metal-Halide Lamps for High Mast: ANSI C78.1372, wattage and burning position as scheduled, CRI 65 (minimum), and color temperature 4000. Sylvania MS1000/BU-ONLY Clear 1000W Super Metalarc or A/E approved equal.

2.6 FACTORY FINISHES

A. Field Painting Finish: Manufacturer's standard prime coat finish read for field painting.

B. Finish: Manufacturer's standard polyester powder paint applied to factory-assembled and –tested luminaire before shipping. Metal Halide fixtures shall be gray. High Pressure Sodium fixtures shall be Tiger Drylac RAL-3000 Red or A/E approved equal.

2.7 SOURCE QUALITY CONTROL

A. Factory test fixtures with ballasts and lamps, certify results for iso-footcandles curves, zonal lumen, average and minimum ratios, and electrical and energy-efficiency data for ballasts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Pole Installation

1. Align pole foundations of poles for optimum directional alignment of luminaires and their mounting provisions on the pole.

2. Clearances: Maintain the following minimum horizontal distance of poles from surface and underground features, unless otherwise indicated on Drawings:

   a. Fire Hydrants and Storm Drainage Piping: 60 inches Water, Gas, Electric, Communication, and Sewer Lines: 10 feet.
   b. Trees: 15 feet.

3. Concrete Pole Foundations: Set anchor bolts according to anchor-bolt templates furnished by pole manufacturer. Concrete materials, installation, and finishing requirements are specified in Division 3 Section "Cast-in-Place Concrete." and Division 31 Section "Drilled Concrete Piers and Shafts."

B. Install lamps in each fixture.

C. Luminaire Attachment: Fasten to indicated structural supports.

D. Adjust and level fixtures.

E. Adjust and level all poles to the manufacturer's recommendations.

F. Adjust and level all fixture mounting rings to the manufacturer's recommendations.

3.2 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.3 FIELD QUALITY CONTROL

A. Contractor shall provide independent test reports that high mast poles are plumb and level by documenting the vertical alignment of each pole installed. The report shall indicate the offset distance of the center of the top of the pole from the center of the bottom of the pole as measured by a surveyor's

transit. Measurements shall be taken with no wind and with the sun directly overhead or on a cloudy day to minimize the effect of deflection from wind or "sunflower effect".

B. Inspect each installed fixture for damage. Replace damaged fixtures and components.

C. Tests and Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits and luminaires with normal power source for 100 continuous hours. Measure light intensities at night at 50 points within the project area to be determined by Project Administrator. Use photometers with calibration referenced to NIST standards.

D. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

E. Provide onsite training by manufacturer for:
   1. Lowering device operation
   2. Maintenance
   3. Lamp and ballast replacement

END OF SECTION 26 56 29

SECTION 31 20 00 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings, General and Special Conditions of the Contract and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
   1. Excavating and backfilling for utility trenches for utilities and pits for buried utility structures.

B. Related Sections:
   1. Division 31 Section "Drilled Concrete Piers and Shafts" for excavation of shafts and disposal of surplus excavated material.

1.3 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

   1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
   2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

   1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by A/E. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by A/E. Unauthorized excavation, as well as remedial work directed by A/E, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or ¾ cu. Yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the follow in size and performance ratings, without systematic drilling, ram hammering or ripping.

1. Excavation of Footings, Trenches, and Pits: Track-mounted hydraulic excavator; equipped with a 42-inch wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom; measured according to SAE J-1179.

2. Bulk Excavation: Track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.

3. Blasting will not be permitted.

I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material ¾ cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by a geotechnical testing agency, according to ASTM D 1586.

J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

K. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

L. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

M. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 QUALITY CONTROL

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

1.5 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission through PA and authorities having jurisdictions.

2. Provide alternate routes around closed or obstructed traffic ways if required by TDCJ or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing earth moving indicated on property adjoining Owner's property will be obtained by Owner before award on Contract.

1. Do not proceed with work on adjoining property until directed by A/E.

C. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

D. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.

2. Parking vehicles or equipment.

3. Foot traffic.

4. Erection of sheds or structures.

5. Impoundment of water.

6. Excavation or other digging unless otherwise indicated.

7. Attachment of signs to a wrapping materials around trees or plants unless otherwise indicated.

E. Do not direct vehicles or equipment exhaust towards protection zones,

F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487 or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487 or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (37.5-mm) sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

I. Sand: ASTM C 33; fine aggregate.

J. Impervious Fill: Clay gravel and sand mixture capable of compacting to a dense state.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

A. Prevent surface water and ground water from entering from excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXPLOSIVIES

A. Explosives: Do not use explosives!

3.4 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
   a. 6 inches outside of minimum required dimensions of concrete east against grade.
   b. 6 inches beneath pipe in trenches, and the greater 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material, 4 inches deeper elsewhere, to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

3.6 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by A/E.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by A/E.

3.7 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Roadways: Provide 6-inch- thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 6 inches of concrete before backfilling or placing roadway subbase course. Concrete is specified in Division 03 Section "Cast-in-Place Concrete."

D. Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

E. Place and compact final backfill of satisfactory soil to final subgrade elevation.

3.9 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.

3.10 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.11 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. For utility trenches, compact each layer of initial and final backfill soil material at 90 percent.

3.12 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.

2. Cut out soil spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus 1/2 inch.

3.13 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by A/E.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.14 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 31 20 00

`SECTION 31 63 29 - DRILLED CONCRETE PIERS AND SHAFTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Dry-installed drilled piers.

1.3 SUBMITTALS

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

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Shop Drawings: For concrete reinforcement detailing fabricating, bending, supporting, and placing.

D. Qualification Data: For qualified Installer, land surveyor and testing agency.

E. Material Certificates: For the following, from manufacturer:

1. Cementitious materials.
2. Admixtures.
3. Steel reinforcement and accessories.

F. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

G. Field quality-control reports.

H. Other Informational Submittals:

1. Record drawings.

1.4 QUALITY CONTROL

A. Installer Qualifications: An experienced installer that has specialized in drilled-pier work.

B. Testing Agency Qualifications: Qualified according to ASTM C 1077, ASTM D 3740, and ASTM E 329 for testing indicated.

C. Drilled-Pier Standard: Comply with ACI 336.1 unless modified in this Section.

D. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to drilled piers including, but not limited to, the following:
   a. Discuss existing utilities and subsurface conditions.
   b. Review coordination with temporary controls and protections.

1.5 PROJECT CONDITIONS

A. Existing Utilities: Locate existing underground utilities before excavating drilled piers. If utilities are to remain in place, provide protection from damage during drilled-pier operations.

1. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, adapt drilling procedure if necessary to prevent damage to utilities. Cooperate with Owner and utility companies in keeping services and facilities in operation without interruption. Repair damaged utilities to satisfaction of utility owner.

B. Interruption of Existing Utilities: Do not interrupt any utility to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility according to requirements indicated:

1. Notify Engineer and PA no fewer than two days in advance of proposed interruption of utility.
2. Do not proceed with interruption of utility without written permission obtained through the PA.

C. Project-Site Information: A geotechnical report has not been prepared for this Project and is not available.

D. Survey Work: Engage a qualified land surveyor to perform surveys, layouts, and measurements for drilled piers. Before excavating, lay out each drilled pier to lines and levels required. Record actual measurements of each drilled pier's location, shaft diameter, bottom and top elevations, deviations from specified tolerances, and other specified data.

1. Record and maintain information pertinent to each drilled pier and cooperate with Owner's testing and inspecting agency to provide data for required reports.

PART 2 - PRODUCTS

2.1 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

2.2 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I/II

a. Fly Ash: ASTM C 618, Class C.

B. Normal-Weight Aggregate: ASTM C 33, graded, 1" nominal maximum coarse-aggregate size. Provide aggregate from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.

1. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: ASTM C 94/C 94M and potable.

D. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
3. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
4. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.3 STEEL CASINGS

A. Steel Pipe Casings: ASTM A 283/A 283M, Grade C, or ASTM A 36/A 36M, carbon-steel plate, with joints full-penetration welded according to AWS D1.1/D1.1M.

2.4 CONCRETE MIXTURES

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 limits as if concrete were exposed to deicing chemicals.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Proportion normal-weight concrete mixture as follows:

1. Compressive Strength (28 Days): 4000 psi.
2. Maximum Water-Cementitious Materials Ratio: 0.45.
3. Minimum Slump: Capable of maintaining the following slump until completion of placement:

   a. 4 inches for dry, uncased, or permanent-cased drilling method.
   b. 6 inches for temporary-casing drilling method.
   c. 7 inches for slurry displacement method.

4. Air Content: Do not air entrain concrete.

2.5 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.6 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, vibration, and other hazards created by drilled-pier operations.

3.2 EXCAVATION

A. Unclassified Excavation: Excavate to bearing elevations regardless of character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions.

1. Obstructions: Unclassified excavation may include removal of unanticipated boulders, concrete, masonry, or other subsurface obstructions. No changes in the Contract Sum or the Contract Time will be authorized for removal of obstructions.

2. Obstructions: Unclassified excavated materials may include removal of unanticipated boulders, concrete, masonry, or other subsurface obstructions. Payment for removing obstructions that cannot be removed by conventional augers fitted with soil or rock teeth, drilling buckets, or underreaming tools attached to drilling equipment of size, power, torque, and downthrust necessary for the Work will be according to Contract provisions for changes in the Work.

B. Classified Excavation: Excavation is classified as standard excavation, special excavation, and obstruction removal and includes excavation to bearing elevations as follows:

1. Standard excavation includes excavation accomplished with conventional augers fitted with soil or rock teeth, drilling buckets, or underreaming tools attached to drilling equipment of size, power, torque, and downthrust necessary for the Work.
2. Special excavation includes excavation that requires special equipment or procedures above or below indicated depth of drilled piers where drilled-pier excavation equipment used in standard excavation, operating at maximum power, torque, and downthrust, cannot advance the shaft.

    a. Special excavation requires use of special rock augers, core barrels, air tools, blasting, or other methods of hand excavation.
    b. Earth seams, rock fragments, and voids included in rock excavation area will be considered rock for full volume of shaft from initial contact with rock.

3. Obstructions: Payment for removing unanticipated boulders, concrete, masonry, or other subsurface obstructions that cannot be removed by conventional augers fitted with soil or rock teeth, drilling buckets, or underreaming tools attached to drilling equipment of size, power, torque, and downthrust necessary for the Work will be according to Contract provisions for changes in the Work.

C. Prevent surface water from entering excavated shafts. Conduct water to site drainage facilities.

D. Excavate shafts for drilled piers to indicated elevations. Remove loose material from bottom of excavation.

1. Excavate bottom of drilled piers to level plane within 1:12 tolerance.
2. Remove water from excavated shafts before concreting.
3. Excavate rock sockets of dimensions indicated.

E. Notify and allow testing and inspecting agency to test and inspect bottom of excavation. If unsuitable bearing stratum is encountered, make adjustments to drilled piers as determined by Engineer.

1. Do not excavate shafts deeper than elevations indicated unless approved by A/E.
2. Payment for additional authorized excavation will be according to Contract provisions for changes in the Work.

F. Excavate shafts for closely spaced drilled piers and for drilled piers occurring in fragile or sand strata only after adjacent drilled piers are filled with concrete and allowed to set.

G. Temporary Casings: Install watertight steel casings of sufficient length and thickness to prevent water seepage into shaft; to withstand compressive, displacement, and withdrawal stresses; and to maintain stability of shaft walls.

1. Remove temporary casings, maintained in plumb position, during concrete placement and before initial set of concrete.

H. Tolerances: Construct drilled piers to remain within ACI 336.1 tolerances.

1. If location or out-of-plumb tolerances are exceeded, provide corrective construction. Submit design and construction proposals to Architect for review before proceeding.

3.3 STEEL REINFORCEMENT

A. Comply with recommendations in CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy bond with concrete.

C. Fabricate and install reinforcing cages symmetrically about axis of shafts in a single unit.

D. Accurately position, support, and secure reinforcement against displacement during concreting. Maintain minimum cover over reinforcement.

E. Use templates to set anchor bolts, leveling plates, and other accessories furnished in work of other Sections. Provide blocking and holding devices to maintain required position during final concrete placement.

F. Protect exposed ends of extended reinforcement, dowels, or anchor bolts from mechanical damage and exposure to weather.

3.4 CONCRETE PLACEMENT

A. Place concrete in continuous operation and without segregation immediately after inspection and approval of shaft by Owner's independent testing and inspecting agency.

1. Construct a construction joint if concrete placement is delayed more than one hour. Level top surface of concrete. Before placing remainder of concrete, clean surface laitance, roughen, and slush concrete with commercial bonding agent or with sand-cement grout mixed at ratio of 1:1.

B. Dry Method: Place concrete to fall vertically down the center of drilled pier without striking sides of shaft or steel reinforcement.

1. Where concrete cannot be directed down shaft without striking reinforcement, place concrete with chutes, tremies, or pumps.
2. Vibrate top 60 inches of concrete.

C. Coordinate withdrawal of temporary casings with concrete placement to maintain at least a 60-inch head of concrete above bottom of casing.

1. Vibrate top 60 inches of concrete after withdrawal of temporary casing.

D. Screed concrete at cutoff elevation level and apply scoured, rough finish. Where cutoff elevation is above the ground elevation, form top section above grade and extend shaft to required elevation.

E. Protect concrete work, according to ACI 301, from frost, freezing, or low temperatures that could cause physical damage or reduced strength.

1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
2. Do not use calcium chloride, salt, or other mineral-containing antifreeze agents or chemical accelerators.

F. If hot-weather conditions exist that would seriously impair quality and strength of concrete, place concrete according to ACI 301 to maintain delivered temperature of concrete at no more than 90 deg F.

1. Place concrete immediately on delivery. Keep exposed concrete surfaces and formed shaft extensions moist by fog sprays, wet burlap, or other effective means for a minimum of seven days.

3.5 FIELD QUALITY CONTROL

A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:

1. Drilled piers.
2. Excavation.
3. Concrete.
4. Steel reinforcement placing.

B. Testing required: Provide concrete batch tickets to show compressive strength (28 Days) of at less 4000 psi for the mix placed in the pier shafts.

3.6 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 31 63 29