



James E. Darling, Mayor

Aida Ramirez,	Mayor Pro-Tem, Commissioner – District 4
Javier Villalobos,	Commissioner – District 1
Joaquin J. Zamora,	Commissioner – District 2
Julian Omar Quintanilla,	Commissioner – District 3
John Ingram,	Commissioner – District 5
Veronica Whitacre,	Commissioner – District 6

Roel “Roy” Rodriguez, P.E., City Manager

Yvette Barrera, P.E., CFM, City Engineer

Gerardo Noriega, CTPM Director of Purchasing & Contracting

**Specifications, Forms of Contract,
Bond and Proposal For**

**INSTALLATION OF NEW GENERATOR
AT FIRE STATION # 5
PROJECT NO. 04-19-C22-411**

McAllen, Texas

DATED: APRIL 2019

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TECHNICAL SPECIFICATIONS INDEX

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END OF SECTION



Solicitation Type and Name: Invitation to Bid Installation of New Generator at Fire Station # 6

Solicitation Number: 04-19-C22-411

Summary of Work: *Work consists of a new emergency natural gas generator at Fire Station # 5*

Bid Opening: Sealed electronic bids addressed to Mr. Roel “Roy” Rodriguez P.E. will be received on **Friday April 26 , 2019 until 3:00 p.m., Central Standard Time (CST)** at which time they shall be unlocked in a public meeting to be held in Conference Room 2A (2nd floor) of McAllen City Hall. All electronic bid submittals must be posted on the City of McAllen’s bidding portal (<https://mcallen.procurement.com>) on or before the aforementioned dated and time. **Hard copy and/or late bids shall not be accepted.**

Pre-Submittal Conference: City of McAllen, City Hall, 2nd Floor, Conference Room 2a, 1300 Houston Ave, McAllen, Texas 78501 on **Wednesday April 17, 2019 at 10:00 a.m. CST,** all prospective respondents are encouraged to be in attendance.

Plans and Specifications may be obtained by visiting our bidding portal at <https://mcallen.procurement.com>. We are asking that vendors/contractors register online. Plans & specs may be viewed electronically. Once on the portal, after you have logged in you can click on the button titled “Documents” for details.

A Bidder’s Bond from a reliable surety company licensed to operate in the State of Texas or certified Cashier’s Check, payable without recourse to the City of McAllen, for the amount of not less than five (5) percent (%) of the total bid shall be submitted via a sealed envelope as a guaranty that, if awarded the contract, the bidder will enter into a contract with the City of McAllen. The Bidder’s Bond shall be submitted before the above-mentioned, electronic bid opening date and time. Failure to submit shall be grounds for disqualification.

<u>Hand-deliver Bid Bond:</u>	1300 Houston Avenue, Purchasing & Contracting Department
<u>If using Land Courier (e.g., FedEx, UPS):</u>	1300 Houston Avenue, Purchasing & Contracting Department
	McAllen, Texas 78501
<u>Mail Bid Bond:</u>	P.O. Box 220, McAllen, TX 78505-0220

Bid Bond shall be delivered in a sealed envelope and clearly marked as follows:

BID BOND FOR PROJECT NO. 04-19-C22-411 INSTALLATION OF NEW GENERATOR AT FIRE STATION # 5

Potential bidders are asked to post their questions on our bidding portal under the tab labeled “Clarifications” under the relative project number.

The City of McAllen reserves the right to refuse and reject any or all Bids and to waive any or all formalities or technicalities, or to accept the Bid considered the best and most advantageous to the City and to hold the bids for a period of sixty (**60**) days without taking action thereon.

Applicable Product Categories: 28539 Electrical Equipment Generators; 69043 Generators; 91082 Building Maintenance Wiring 91438 Construction Services Electrical

CITY OF MCALLEN – PURCHASING & CONTRACTING DEPARTMENT

INSTRUCTIONS TO BIDDERS

Bids will be submitted electronically via the electronic portal. Bid bonds must be submitted in a sealed envelope marked in the upper left hand corner with the name of Bidder and Title of Project.

Hand-deliver Bid Bonds: 1300 Houston Avenue, Purchasing & Contracting Department (3rd Floor)
If using Land Courier (i.e., FedEx, UPS): 1300 Houston Avenue, Purchasing & Contracting Department (3rd Floor), McAllen,
Texas 78501
Mail Bid Bonds: P.O. Box 220, McAllen, TX 78505-0220

In case of ambiguity, or lack of clearness in stating the prices in the bids, the Owner reserves the right to consider the most advantageous construction thereof, or to reject the bid. Unreasonable (or unbalanced) prices will authorize the Owner to reject any bid.

The successful bidder must furnish a performance bond and a payment bond upon the forms which are attached hereto in the amount of 100% of the contract price from an approved surety company holding a permit from the State of Texas to act as surety (and acceptable according to the latest list of companies holding certificates of authority from the Secretary of the Treasury of the United States) or other surety or sureties acceptable to Owner within ten (10) days from date of award of contract.

On all contracts that will equal to or exceed \$50,000.00, the performance bond and the payment bond must be provided from a surety that has a rating of "A" from AM BEST, MOODY'S or STANDARD & POORS.

In the event that the total amount bid is \$50,000 or less, the successful contractor has the option to enter into a single payment contract with the City of McAllen in lieu of a Performance Bond, provided that no money shall be paid to the contractor until completion of the work by the contractor and acceptance of same by the City of McAllen.

INSURANCE REQUIREMENTS

During execution of Contracts the successful Prime Contractor shall provide a Certificate of Insurance made to the City of McAllen, P.O. Box 220, McAllen, TX 78505-0220, (1300 Houston, McAllen, Texas 78501) and should reference the project number and project Name. The prime contractor shall ensure that any and all subcontractors and/or lower-tier subcontractors comply with the insurance requirements as depicted herein. Such coverage(s) shall be acquired and maintained, for the duration of the contract period. All certificates must be received prior to commencement of service/work. All Certificates of insurance shall be approved by the Risk Manager and/or his/her designated representative prior to the commencement of any work. The City of McAllen will accept the Acord Form 25 as the Certificate of Insurance only.

In the event the insurance coverage expires prior to the completion of this contract, a renewal certificate shall be issued thirty (30) days prior to said expiration date. The City must be notified at least thirty (30) days prior to any material change in and/or cancellation and/or non-renewals of such policies.

The term "City" shall include The City of McAllen and/or McAllen Public Utilities (MPU) and their employees, officers, officials, agent, and volunteers in respect to the contracted services. Any failure on the part of the City to request required insurance documentation shall not constitute a waiver of the insurance requirement.

The City reserves the right to make reasonable requests or revisions pertaining to the types and limits of that coverage.

INSTRUCTIONS TO BIDDERS Continued:

INSURANCE REQUIREMENTS Continued:

During the term of the Contract, the successful contractor/respondent/selected firm shall acquire and maintain, for the duration of the contract period the following insurances:

- A. **Comprehensive Commercial General Liability:** The Contractor/Respondent/Selected Firm shall provide minimum limits of \$250,000 each occurrence, \$500,000 annual aggregate combined single limit for bodily injury and property damage liability. This shall include premises/operations, independent contractors, products, completed operations, personal and advertising injury, and contractual liability. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs maintained by the City and shall name the “City of McAllen” as an additional insured with a waiver of subrogation. The policy of insurance shall be written on an “occurrence” form.

Blanket “XCU” – Explosion, Collapse & Underground
Independent Contractors
Care, Custody and Control
Contractual Liability

No endorsements excluding these coverages are allowed.

Additional Insured Requirement:

To the fullest extent of coverage allowed under Chapter 151 of the Texas Insurance Code, the City of McAllen and/or McAllen Public Utilities (MPU) shall be included as additional insured under the CGL policy, using ISO Additional Insured Endorsements CG20101001 and CG20371001, or endorsements providing equivalent coverage, including products completed operations

- B. **Business Automobile Liability:** The Contractor/Respondent/Selected Firm shall maintain limits of no less than \$250,000 combined single limit per occurrence for bodily injury and property damage, and \$500,000 annual aggregate. This insurance shall apply as primary insurance with respect to any other insurance or self-insurance programs maintained by the City and shall name the “City of McAllen” as an additional insured with a waiver of subrogation. The policy of insurance shall be written on an “occurrence” form.

Applicable as long as no fragile or perishable products are transported; otherwise, Cargo Insurance is required.

Additional Insured Requirement:

To the fullest extent of coverage allowed under Chapter 151 of the Texas Insurance Code, the City of McAllen and/or McAllen Public Utilities (MPU) shall be included as additional insured under the CGL policy, using ISO Additional Insured Endorsements CG20101001 and CG20371001, or endorsements providing equivalent coverage, including products completed operations.

INSTRUCTIONS TO BIDDERS Continued:

INSURANCE REQUIREMENTS Continued:

C. Builder's Risk/Fire & Extended Coverage

The Contractor shall insure the building or other work included in this contract on an all-risk (special causes of loss) policy, with an insurance company or companies acceptable to the Owner. The amount of the insurance at all times to be at least equal to the amount paid on account of work and material and plus the value of the work or materials furnished or delivered but not yet paid for by the Owner. Builder's Risk Policies shall cover loss of materials by theft, vandalism, malicious mischief or other loss whether materials are incorporated in the work or not.

The policies shall be in the names of the City and the Contractor, as their interests may appear, and certificates of insurance shall be delivered to the Owner before monthly partial payments are made. The policy shall provide for the inclusion of names of all other contractors, subcontractors and other employed on the premises as ensured and shall stipulate that the insurance companies shall have no right to subrogation against any contractors, subcontractors or other parties employed on the premises for any work building alterations, construction or erection to the described property.

- D. Workers' Compensation:** The contractor/respondent/selected firm shall provide and maintain workers' compensation insurance for all employees in the full amount required by statute and full compliance with the applicable laws of the State of Texas. Employer's Liability insurance shall be provided in amounts not less than \$500,000 per accident for bodily injury by accident; \$500,000 policy limit by disease; and \$500,000 per employee for bodily injury by disease."

In addition, a Waiver of Subrogation Endorsement shall be provided by the contractor naming the City of McAllen in said policy for Worker's Compensation Insurance. Contractor/Respondent/Selected Firm shall further ensure that all of its sub-contractors maintain appropriate levels of workers' compensation insurance.

- ~~E. **Professional Services - Insurance Provisions:** Errors & Omissions (Professional Liability): \$1,000,000 Each Claim Limit \$1,000,000 Aggregate Limit. If coverage is written on a claims-made basis, the retroactive date shall be on or prior to the date of the contractual Agreement. The certificate of insurance shall state that the coverage is claims-made and include the retroactive date. The insurance shall be maintained for the duration of the contractual Agreement and for four (4) years following completion of the services provides under the contractual Agreement or for the warranty period, whichever is longer. An annual certificate of insurance submitted to the City shall evidence coverage.~~

- F. Deductible Clause:** Contractor/Respondent/Selected Firm to declare self-insured retention or deductible amounts in excess of \$25,000.

INSTRUCTIONS TO BIDDERS Continued:

INSURANCE REQUIREMENTS Continued:

- G. **Other Provisions:** All insurance carriers shall be rated A6 or better and be published on a current A.M. Best Rating Guide, or some other recognized equivalent rating service (e.g., Moody's, Standard & Poor's). The City may request a copy of the insurance policy according to the nature of the project. City reserves the right to accept or reject the insurance carrier. All Certificates of Insurance shall be provided on the Acord Form 25. All insurance requirements are imposed and must be complied with by any and all sub-contractors, and/or lower-tier sub-contractors. A copy of endorsements providing Additional Insured, Primary Insurance and Waiver of Subrogation wording shall be attached to the certificates of insurance.

REQUIREMENTS

Bidders shall carefully examine the plans, specifications and other documents, visit the site of the work, and fully inform themselves as to all conditions and matters which can in any way affect the work or the cost thereof. Should the bidder find discrepancies in, or omissions from the plans, specifications or other documents, or should he be in doubt as to their meaning, he should at once notify the Engineer/Architect and obtain clarification by addendum prior to submitting any bid.

The City of McAllen encourages the hiring of minority and minority women subcontractors and/or suppliers whenever and wherever feasible.

General and/or Prime Contractors submitting bids and/or proposals to the City of McAllen shall be refunded their deposits upon return of plans and specs in good condition. All other recipients of plans and specs shall be reimbursed their deposit only if they return plans and specs in good condition to the Purchasing and Contracting Department no later than the 5th working day after bid opening.

The bidder is specifically advised that the bid must be accompanied by a certified cashier's check or a bid bond from a reliable surety company licensed to operate in the State of Texas totaling five percent (5%) of the greatest amount bid, as a guaranty that if awarded the bid, the successful contractor will enter into a contract with the City of McAllen. Cashier checks and/or bid bonds will be returned to all except the three lowest bidders within five (5) days after opening of bids. The remaining cashier checks and/or bid bonds will be returned promptly after the successful contractor has entered into a contract with the City of McAllen. If no award has been made within sixty (60) days after opening of bids, cashier checks and/or bid bonds will be returned accordingly.

It shall be the responsibility of the successful contractor to pick up all contract documents for execution, in a timely manner, at the Purchasing and Contracting Department after notification of award of contract by telephone, fax, e-mail or letter sent with return receipt requested. Contract documents will not be sent to contractor via regular mail. If the contractor elects to have the contract documents sent via overland carrier, an account number must be provided to the City of McAllen or the contract documents shall be sent "collect" to the contractor.

Payment Schedule - Contractor to submit to the City, Certificate for Payment on or before the 1st of the month. City to reciprocate with payment on or before the 30th of the same month.

INSTRUCTIONS TO BIDDERS Continued:

REQUIREMENTS Continued:

Contractor is advised that it shall be a requirement of this contract to submit the following forms, properly executed, along with their final Request for Payment: "AFFIDAVIT AND WAIVER OF LIEN-PRIME CONTRACTOR", "RELEASE AND WAIVER OF CLAIMS BY SUBCONTRACTORS AND PRODUCT VENDORS", "CONTRACTOR'S AFFIDAVIT AS TO STATUS OF LIENS". **Failure to submit these forms as required will cause a delay in payment to the contractor.**

Retainage - Contracts equaling a total amount of \$400,000 or over will bear a retainage of five (5) percent (%) on each partial disbursement. Contracts totaling less than \$400,000 will bear a retainage of ten (10) percent (%) on each partial disbursement.

Overtime - Time and one half will be paid for all hours worked in excess of forty (40) hours in one work week

Liquidated Damages for Failure to Enter into Contract

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid.

Liquidated damages in the amount per day shown in the "Time of Completion and Liquidated Damages" section of the Instructions to Bidders will be assessed against the Contractor for each calendar day or portion thereof that: (1) the Contractor has not fully and timely completed the specific portion or part of the work to be completed by the end of the current month as provided in the detailed description of work and/or schedule previously submitted by the Contractor on the first day of that particular month, after accounting for any agreed-upon changed orders, which will entitle the Owner to withhold the liquidated damages from the payment otherwise owed to the Contractor for work completed in that particular month; (2) the Contractor has not substantially completed all work following the expiration of the number of calendar days to complete the work referenced in the "Time of Completion and Liquidated Damages" section of the Instructions to Bidders, after accounting for any agreed-upon changed orders; or (3) all items listed as incomplete and attached to the Certificate of Substantial Completion are not completed or corrected after expiration of the agreed time allotted for completion and correction, including any approved extensions of time granted. These liquidated damages are cumulative.

The sum of the liquidated damages will be deducted from any monies due the Contractor. If no money is due the Contractor, said sum may be recovered by the Owner from the Contractor or the Contractor's surety, or from both combined. These deductions are to cover liquidated damages to the Owner for losses to Owner that include, but are not limited to, additional expenses of Contract administration, overhead and other costs resulting from failure of the Contractor to complete the Work within the designated time, and are not to be considered as penalties. The Owner shall not be considered liable for any extra or additional payment to the Contractor as a bonus or premium for early completion. Any failure on the part of the Owner to request or require payment or withholding of liquidated damages in any particular month shall not constitute a waiver

INSTRUCTIONS TO BIDDERS Continued:

REQUIREMENTS Continued:

of Contractor's requirement to pay, or the Owner's ability to withhold from payments owed to Contractor, any liquidated damages for work performed or completed in that particular month, in any prior or subsequent month, or at the time all work has been completed.

Delays because of strikes, fire, weather, or any cause beyond the contractors control shall be granted, but claims for extension shall be in writing within a reasonable time after the occurrence.

Time of Completion and Liquidated Damages

Bidder must agree to commence work on or before a date to be specified in written "Notice to Proceed" by Owner and to fully complete the project within the time stated on proposal. Bidder must agree also to pay as liquidated damages, the sum of as indicated on page F-2 for each consecutive calendar day thereafter as hereinafter provided in the Special Provisions (Refers to F2 of agreement form – LD'S).

Bidders are advised that they shall be required to go online to our Bidding Portal: <https://mcallen.procureware.com>. Bidders must submit a complete bid online. The complete bid includes bid prices, **every** page of the Bid Proposal Form (Section C) filled out completely, and the bid bond. Bidders must follow the step-by-step instructions below for both Electronic Bid and Sealed Bid. If this is your first time on our portal Click on the Login button, in the upper right-hand corner, kindly use your e-mail address under the "Forgot Password" area and a temporary Password shall be e-mailed to you. Once in the system you will be prompted for a "New" password. Respondents may Register and/or update their Vendor profile. To enter your bid prices just Click on the "Solicitation" tab, Select the appropriate Project and enter your bid. (Contractors are asked to check their submittals, in an effort to avoid discrepancies). The City of McAllen reserves the right to refuse and reject any or all Bids and to waive any or all formalities or technicalities, or to accept the Bid considered the best and most advantageous to the City.

ELECTRONIC BID INSTRUCTION

(4) Bidders must go online to the City's Bidding Portal (<https://mcallen.procureware.com>) to submit bid prices. Bidders are asked to read the Welcome Screen (PDF document) and register if they have not done so previously. Once on the bidding portal, follow the steps below to enter the **electronic bid**:

- I. Click on, "**Bids**" located on left-hand column.
- II. Find the applicable project and click the, "**Project Number**"
- III. Click on, "**Response**" tab.
- IV. In the, "**Questions**" tab, upload required scanned documents into the bid portal by clicking "**Browse**" for each item.
- V. Click on, "**Pricing**" tab and enter a Unit Price for each pricing item. A "**Comment**" field is available if needed.
- VI. Once both the Questions and Pricing information has been entered, the yellow "**Question Response and Pricing Response**" information messages will change from incomplete to complete. Then the "**Submit**" button will become available.

INSTRUCTIONS TO BIDDERS Continued:

REQUIREMENTS Continued:

- VII. Click “**Submit Bid**” button and review the terms and agreements, Popup Window that appears. If you agree to the terms and conditions, click the “**I Accept and Submit this Bid**” button.
- VIII. If you want to remove your bid, click the red, “**Withdraw Bid**” button in the “**Response**” tab.

The City may consider non-responsive any bid not prepared and submitted in accordance with the provisions herein and may waive any formalities and/or technicalities, or reject any and all bids

SEALED BID BOND. Bidders must submit their original Bid Bond or cashier’s check in a sealed envelope in accordance with the bid solicitation requirements prior to aforementioned date and time. **Late bid bonds will not be accepted.**

The Owner may consider non-responsive any bid not prepared and submitted in accordance with the provisions hereof and may waive any formalities and/or technicalities, or reject any and all bids.

All bids must be regular in every respect and no interlineations, excisions or special conditions may be made or included by the bidder.

HOUSE BILL (H.B.) 1295 (Certificate of Interested Parties – Form 1295)

In 2015, the Texas Legislature adopted House Bill 1295 (H.B. 1295). **For contracts entered into on or after January 1, 2016, Texas Government Code Chapter §2252.908 (H.B. 1295) provides that a Texas governmental entity or state agency may not enter into a contract that either (1) requires an action or vote by the governing body of the entity or agency or (2) has a value of at least \$1 million, unless the business entity submits a disclosure of interested parties to the governmental entity or state agency at the time the business entity submits the signed contract to the governmental entity or state agency. The Texas Ethics Commission (Commission) has adopted a certificate of interested parties form (Form 1295) and adopted rules requiring the business entity to file Form 1295 electronically with the Commission. Information from the Commission regarding the requirements, including rules and filing information, are available on the Commission’s website at the following links:**

<https://www.ethics.state.tx.us/tec/1295-Info.htm>

https://www.ethics.state.tx.us/whatsnew/FAQ_Form1295.html

https://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm

As a business entity under this law, it is your firm’s responsibility to comply with all disclosure laws including Chapter 2252. The City of McAllen as the governmental entity must ensure compliance of the same.

INSTRUCTIONS TO BIDDERS Continued:

Note: You will be required to register and create an account. Once registered, you will receive an email containing a password setup link. Click on the link to set your password. After you have established an account, you will use your email address, password, and user type (Business Entity) to log in to the filing application to enter the required information on Form 1295. Print a copy of the completed form which includes a unique certification of filing number assigned by the application. An authorized agent of the business entity must sign the form affirming under the penalty of perjury that the completed form is true and correct. The completed, printed, and signed Form 1295 bearing the unique certification of filing number must be submitted at the time the signed contract is submitted to the City of McAllen. Failure to comply may result in contract revocation and award to the next compliant contractor/vendor.

METHOD OF AWARD

This contract will be awarded on the basis of the lowest, responsive and responsible bidder meeting the requirements and the most advantageous to the City of McAllen

CHAPTER 176 OF THE TEXAS LOCAL GOVERNMENT CODE

Effective January 1, 2006, Chapter 176 of the Texas Local Government Code requires that any vendor or person considering doing business with a local government entity disclose in the Questionnaire Form CIQ, the vendor or person's affiliation or business relationship that might cause a conflict of interest with a local government entity. By law, this questionnaire must be filed with the records administrator of the City of McAllen not later than the 7th business day after the date the person becomes aware of facts that require the statement be filed. See Section 176.006, Local Government Code. A person commits an offense if the person violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

For more information or to obtain Questionnaire CIQ go to the Texas Ethics Commission web page at www.ethics.state.tx.us/forms/CIQ.pdf.

IF YOU HAVE ANY QUESTIONS ABOUT COMPLIANCE, PLEASE CONSULT YOUR OWN LEGAL COUNSEL. COMPLIANCE IS THE INDIVIDUAL RESPONSIBILITY OF EACH PERSON OR AGENT OF A PERSON WHO IS SUBJECT TO THE FILING REQUIREMENT. AN OFFENSE UNDER CHAPTER 176 IS A CLASS "C" MISDEMEANOR.

ANTI-LOBBYING PROVISION

During the period between bid submission date and the contract award, bidders, including their agents and representatives, shall not directly discuss or promote, verbal or written, their bid with any member of the City Commission, Bridge Board members directly or indirectly through others, seek to influence any City Council member, City staff, or City's Contractor(s) regarding any matters pertaining to this solicitation, except as herein provided. If a representative of any Bidder violates the foregoing prohibition by contacting any of the above listed parties with whom contact is not authorized, such contact may result in the Bidder being disqualified from the procurement process. Any oral communications are considered unofficial and non-binding with regard to this bid. Violation of this provision may result in the rejection of the bidder's bid, except in the course of City-sponsored inquiries, briefings, interviews, or presentations.

BID PROPOSAL FORM

TO: OWNER

The undersigned, as bidders, declares that the only person or parties interested in this proposal as principals are those named herein, that this proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the form of contract, Notice to Contractors, specifications and the plans thereon referred to, and has carefully examined the locations, and conditions and classes of materials of the proposed work; and agrees that he will provide all the necessary labor, machinery, tools, and apparatus, and other items incidental to construction, and will do all the work and furnish all the materials called for in the contract and specifications in the manner prescribed therein and according to the requirements of the Engineer/Architect as therein set forth.

It is understood that the following quantities of work to be done at unit prices are approximate only and are intended principally to serve as a guide in evaluating bids.

It is further agreed that the quantities of work to be done at unit price and materials to be furnished, may be increased or diminished as may be considered necessary, in the opinion of the Engineer/Architect, to complete the work fully as planned and contemplated, and that all quantities of the work, whether increased or decreased, are to be performed at the unit prices set forth below except as provided for in the specifications.

It is further agreed that lump sum prices may be increased to cover additional work ordered by the Engineer/Architect, but not shown on the plans or required by the specifications, in accordance with the provisions of the General Conditions. Similarly, they may be decreased to cover deletion of work so ordered.

The bid security accompanying this proposal shall be returned to the bidder, unless in case of the acceptance of the proposal the bidder shall fail to execute a contract and file a performance bond and payment bond within the ten (10) days after its acceptance and notification of acceptance has been transmitted to successful bidder via telephone, fax, e-mail or letter sent with return receipt requested, in which case the bid security shall become the property of the OWNER, and shall be considered as payment for damages due to delay and other inconveniences suffered by the Owner on account of such failure of the bidder. It is understood that the Owner reserves the right to reject any or all bids.

BID PROPOSAL FORM Continued:

BID PROPOSAL FORM MUST BE SUBMITTED IN DUPLICATE FORM

A Bidder's Bond in the amount of five (5) percent (%) of the Total Bid must be attached in compliance with the INSTRUCTION TO BIDDERS. The check or Bidder's Bond is to become the property of the City of McAllen, Texas in the event the construction contract (when offered by Owner) and bonds are not executed within the time set forth.

ELECTRONIC BID INSTRUCTIONS. Bidders must go online to submit their bid prices by following the instructions on the Instructions to Bidders. Bidding Portal: <https://mcallen.procurement.com>. **All supporting documents such as signature pages, attachments, and/ or additional information may be upload into the portal as previously instructed via Invitation, Notice to Bidders, Instructions to Bidders, and at the Pre-Bid Conference**

BID ITEMS DESCRIPTIONS AND ESTIMATE OF QUANTITIES APPROXIMATE ONLY:

Note: This table describes the various bid items and estimated quantities reflected on the official bid form maintained on the City's bidding portal. Do not use this table for submitting a bid. Refer to the Instructions to Bidders for step-by-step instructions for submitting electronic and sealed bids. (Contractors are asked to check their submittals, in an effort to avoid discrepancies).

The owner may consider non-responsive any bid not prepared and submitted in accordance with the provisions hereof and may waive any formalities and/or technicalities, or reject any and all bids.

No.	Internal Ref. No.	Type	DESCRIPTION	UOM	QTY
1	69-043	BASE	A new 120/240v emergency natural gas engine will be provided. The new emergency generator will provide emergency power to the building via a main distribution panel segregated into emergency and standby loads. A new transfer switch will be provided. New conduit will be routed from generator to the building	LS	1

BID PROPOSAL FORM Continued:

Number of working days to complete contract _____ (not to exceed **60 Working** days).

The undersigned agrees, unless hereinafter stated otherwise to furnish all materials as shown and specified in the Plans and Specifications.

Bidder hereby agrees to commence work under this contract within 10 days after Notice to PROCEED is issued and complete the work within _____ working days, and City recognized holidays.

DATE: _____

Respectfully submitted,

BY: _____
(Signature)

(Type or Print Name)

(Title)

(Legal Company Name)

(Address)

(Phone Number)

(Seal - If bidder is a Corporation)

(Fax Number)

(E-Mail)

SUPPLEMENT NO. 1 TO THE BID PROPOSAL FORM – NON-RESIDENT BIDDER

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.

Nonresident Bidder: Yes _____ No _____

If yes, does your state have a preference law?

Yes _____ No _____

Percent (%) of preference _____

(Date)

(Type or Print Name)

(Title)

(Company)

(Address)

(Phone Number)

(Fax Number)

SUPPLEMENT NO. 2 TO BID PROPOSAL - BOND INFORMATION

(Form to be Executed & Submitted with Proposal)

On all contracts that will equal to or exceed \$100,000.00, the performance bond and the payment bond must be provided from a surety that has rating of "A" from AM BEST, MOODY'S STANDARD & POORS.

MAIN COMPANY

AGENT'S NAME: _____
PLEASE TYPE/PRINT NAME

COMPANY NAME: _____

ADDRESS: _____

MAIN OFFICE TELEPHONE NO.: _____

LOCAL COMPANY

AGENT'S NAME: _____
PLEASE TYPE/PRINT NAME

COMPANY NAME: _____

ADDRESS: _____

LOCAL MAIN OFFICE TELEPHONE NO.: _____

PROJECT NO.: _____

PROJECT NAME: _____

CONTRACTOR: _____
SIGNATURE

PLEASE TYPE/PRINT NAME

COMPANY NAME

SUPPLEMENT NO. 3 TO BID PROPOSAL - NON-COLLUSION AFFIDAVIT

STATE OF _____

COUNTY OF _____

_____, of lawful age, being first duly sworn, on oath says, that (s)he is the agent authorized by the bidder to submit the attached proposal. Affiant further states that the respondent/bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to purpose at a fixed price or to refrain from proposing; or with any state official, city employee, Board Trustee, or benefit consultant as to quantity, quality, or price in the prospective contract, or any other terms of said prospective contact; or in any discussions or actions between bidders, city employee, Board Trustee, or benefit consultant concerning exchange of money or other things of value for special consideration in the letting of this contract.

Subscribed and sworn to before me this _____ day of _____, 2019.

Notary Public
State of _____
My Commission Expires: _____

SPECIAL PROVISIONS

Specifications which Apply

All work under this contract shall conform to the requirements of these specifications.

In cases where the standard specifications are in conflict with either Plans and Specifications or the Special Provisions, the order of supersedence shall be Special Provisions and Plans and Specifications.

All labor, materials, equipment, supervision and other services required for this construction will be furnished in accordance with plans and specifications as prepared by the City of McAllen.

City of McAllen has delineated work areas and access routes. Any damaged property not otherwise mentioned within plans or specifications to be installed, shall be the responsibility of the contractor (product and installation) as approved by City of McAllen.

The City of McAllen is a franchised area for sanitation and debris removal. Materials and debris can be disposed of by means of a dump truck or pickup truck. Should a roll-off container be needed due to the amount discarded a roll-off container would need to be set up through the City of McAllen Public Works Department (956-681-4050). Outside roll-off companies are not permitted on city projects.

Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

Security Measures

A contractor's superintendent shall be on the job at all times that construction workers are present at the construction site.

Testing

The owner reserves the option of testing any and all materials used in this construction. All testing will be made by an independent laboratory designated and paid by the owner, unless otherwise stated in the specifications of the items to be tested. Any costs associated with retesting of materials shall be the responsibility of the contractor as required by the City of McAllen. Any construction materials not meeting specifications may be rejected at contractor's expense or may be accepted by the city provided a deduction is granted. The Engineering Department must be notified 24 hours in advance of materials testing.

Schedule and Sequence of Construction

The Contractor shall, prior to beginning work, prepare and submit a proposed schedule of work to the Owner for his approval. Work schedule to be planned in coordination with **Engineering Department Zef Mendoza** personnel and performed such that there is minimal interference to **Fire Station NO.5**. Recommended construction hours are between the hours of 7:00am. to 6:00 pm.

SPECIAL PROVISIONS Continued:

Utilities

Contractor to provide for his own utility requirements.

Building Permit and Taxes

A building permit will be required for the construction of this project. Contractor is responsible for obtaining permit and any related fees.

Inspection of Work

The Owner will provide sufficient competent personnel for the inspection of the work while such work is in progress to ascertain that the completed work will comply in all respects with the standards and requirements set forth in the Specifications. Contractor will be responsible for payment of city inspection personnel if major work related issues are scheduled outside of the normal business hours, as is required by the City of McAllen. Not with standing such inspection, the Contractor will be held responsible for the acceptability of the finished work.

Owner's representatives shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access, and for inspection.

If the Specifications, the Engineer's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Engineer timely notice of its readiness for inspection. Inspections by the Engineer shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Architect/Engineer, it must be uncovered at the Contractor's expense, unless the Architect/Engineer has unreasonably delayed inspection.

Re-examination of the work may be ordered by the Architect/Engineer and, if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the Owner shall pay the cost of re-examination and replacement. If such work is not in accordance with the Contract Documents, the Contractor shall pay such cost.

Changes in the Work

The Owner may make changes in the Drawings and Specifications of scheduling of the Contract within the general scope at any time by a written order. If such changes, add to or deduct from the contractor's cost of the work, the Contract shall be adjusted accordingly. All such work shall be executed under the conditions of the original Contract except that any claim for extension of time caused thereby shall be adjusted at the time of ordering such change. In giving instructions, the Engineer shall have authority to make minor changes in the work not involving cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Architect/Engineer, an no claim for an addition to the Contract Sum shall be valid unless the additional work was so ordered.

SPECIAL PROVISIONS Continued:

Competency of Bidders

The Bidder must be capable of performing each of the various items of work bid upon. Upon request, the successful Bidder shall submit a complete statement of his financial resources and his previous experience in similar work.

Guarantee of Work

All workmanship, equipment and materials, furnished or installed by the Contractor shall be guaranteed for a period of at least one (1) year against faulty workmanship or defective materials. The warranty period shall begin on the date of substantial completion and acceptance of the project by the Owner and extend for a period of 365 days thereafter. Warranty Periods on punch list items shall begin when items are approved as corrected.

Maintenance Support

Within ten days of the date of Substantial Completion of the project, deliver to the Owner three copies of the manufacturer's printed instructions regarding care and maintenance of the roof.

Final Clean Up

At the end of each day's work session contractor shall clean the premises, remove all construction debris and leave the Public Works site in a condition that daily work activities can proceed. Remove all trash, surplus and discarded materials, temporary services, materials and debris of every kind. The Contractor shall leave the site of the work in a neat and orderly condition equal to that which originally existed. Waste materials removed from the site shall be disposed of and **secured** at locations satisfactory to the City Of McAllen and shall be considered incidental to the bid.

Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials and work condemned by the Owner/Designer as failing to meet Contract requirements, whether incorporated in the work or not. The Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not take action to remove such condemned materials and work within 10 days after written notice, the Owner may remove them and may store the material at the expense of the Contractor. If the Contractor does not pay the expense of such removal and storage within ten days' time thereafter, the Owner may, upon ten days', written notice, sell such materials at auction or at private sale and shall pay the Contractor any net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

FOREWORD

These Agreement Forms and the Standard General Conditions of Contract which accompany them pertain to Engineering/Architectural Construction Contracts between Private or Public Owners and Contractors. They are intended as a guide in the preparation of Contract Documents for such construction and are subject to change or modification to suit particular conditions.

Ordinarily, a complete set of Contract Documents consists of the following:

- (a) Advertisement, or Notice to Contractors
- (b) Instructions to Bidder
- (c) Form of Bid or Proposal
- (d) Contract (Agreement)
- (e) General and Special Conditions of Contract
- (f) Specifications
 - 1. General
 - 2. Special
- (g) Drawings

The first three items are essential to all contracts that are bid competitively. However, the last four are those essential to the actual Contract. The Forms and Standards contained herein pertain to Items (d) and (e).

The Contract Forms cover three alternative basis of payment to the Contractor:

- 1. A Lump Sum Basis
- 2. A Unit Price Basis
- 3. A Cost-Plus Basis

The contracting Parties will select the desired form.

The Contract Form for a Cost-Plus Basis of Payment is based upon a payment consisting of Cost-Plus a Percentage Fee. Two other types are commonly used: Cost Plus & Fixed Fee and Cost Plus a Percentage or Fixed Fee with a guaranteed cost limit. The text of Articles III and IV can easily be adapted to either of the other two types of Cost-Plus Basis of payment. Sometimes, in a Cost-Plus Contract with a guaranteed cost limit, provision is made for dividing equally between the Owner and Contractor any savings below the cost limit that may be achieved in the execution of the work.

The City of McAllen encourages the hiring of minority and minority women subcontractors and/or suppliers whenever and wherever feasible.

FORM OF AGREEMENT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION

THIS AGREEMENT, made this ____ day of _____, _____, by and between CITY OF McALLEN, herein called "Owner", acting herein through its BOARD OF COMMISSION, and _____ of _____, County of _____, and State of _____ hereinafter called "Contractor."

It is understood ENGINEER/ARCHITECT representing OWNER shall be YVETTE BARRERA, P.E. C.F.M. ENGINEER. CITY OF MCALLEN, TEXAS

WITNESSETH, that the Contractor and the Owner, for the consideration hereinafter named, agree as follows:

ARTICLE I - SCOPE OF THE WORK.

The Contractor hereby agrees to furnish all of the materials and all of the equipment and labor necessary and to perform all of the work shown on the drawings and described in the specifications for the project entitled INSTALLATION OF NEW GENERATOR AT FIRE STATION # 5 PROJECT NO. 04-19-C22-411 for the contract amount of _____.

- (a) Drawings prepared for same by CITY OF MCALLEN, ENGINEERING DEPARTMENT
- (b) Specifications consisting of:
 1. "Standard General Specifications" issued by the CITY OF McALLEN and as issued in the contract documents.
 2. "Special Provisions" as prepared by City of McAllen, Engineering Department.
 3. The "General Conditions for Engineering/Architectural Construction".
 4. Addenda

NO. _____	DATED: _____
NO. _____	DATED: _____
NO. _____	DATED: _____

FORM OF AGREEMENT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION
Continued:

ARTICLE II - TIME OF COMPLETION.

“If the contractor fails to complete this contract in the working days specified, the time charge will be made for each working day thereafter”.

The time set forth in the proposal for the completion of the work is an essential element of the contract. For each working day in addition to the working days herein before stated as extended by the Owner, the amount per day given in the following schedule will be deducted from the money due or to become due to the Contractor not as a penalty, but as added expense for Engineering/Architectural supervision.

FOR AMOUNT OF CONTRACT	 COST PER DAY	
\$ 5,000.00	to	\$ 25,000.00\$100.00
\$ 25,001.00	to	\$ 100,000.00\$200.00
\$ 100,001.00	to	\$ 500,000.00\$250.00
\$ 500,001.00	and over	\$300.00

ARTICLE III - THE CONTRACT SUM.

(a) The Owner shall pay to the Contractor for the performance of the work the amounts determined for the total number of each of the following units of work completed at the unit price stated thereafter. The total number of units contained in this schedule is approximate only, and the final payment shall be made for the actual number of units that are incorporated in or made necessary by the work covered by the contract.

When and where applicable the original contract price may be increased or decreased as contemplated to complete construction as called for in the plans and specifications and in accordance with Texas Local Government Code Chapter 252 (Formerly Article 2368a V.T.C.S. Section 2a).

(b) Changes in the work made under Section 18 of the General Conditions, and not included in Article I, that cannot be classified as coming under any of the Contract units may be done at mutually agreed-upon unit price, or under the provisions of Article V “Extra Work”.

ARTICLE IV - PROGRESS PAYMENTS

The owner shall make payments on account of the Contract as follows:

(a) On not later than the first day of every month the Contractor shall present to the Engineer/Architect an invoice covering the total quantities under each item of work that has been completed from the start of the job to and including the last day of the preceding month, and the value of the work so completed determined in accordance with the schedule of unit prices for such items together with such supporting evidence as may be required by the Engineer/Architect.

**FORM OF AGREEMENT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION
Continued:**

ARTICLE IV - PROGRESS PAYMENTS Continued:

Measurements of units for payment shall be made in accordance with the Special Conditions of the contract.

(b) On not later than the 30th of the month, the Owner shall pay by mail to the Contractor (90%) of the amount of the invoice--less previous payments made. The (10%) retained percentage may be held by the Owner until the value of the work completed at the end of any month equals 50 percent of the total amount of the Contract after which, if the Engineer/Architect finds that satisfactory progress is being made he shall recommend that all of the remaining monthly payments be paid at a percentage of retainage less than stated above. Payments for work under, Subcontracts of the General Contractor, shall be subject to the above conditions applying to the General Contract after the work under a Subcontract has been 50 percent completed.

(c) Final payment of all moneys due on the contract shall be made within 30 days of completion and acceptance of the work.

(d) If the Owner fails to make payment as herein provided, or as provided in Article V (d), in addition to those remedies available to the Contractor under Section 23 of the General Conditions, there shall be added to each such payment daily interest at the rate of 6 percent per annum commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the Contractor.

ARTICLE V - EXTRA WORK

If the Engineer/Architect orders, in writing, the performance of any work not covered by the Drawings or included in the Specifications, and for which no items in the contract are provided, and for which no unit price or lump sum basis can be agreed upon, then such extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

(a) The contractor shall be reimbursed for all costs incurred in doing the work, and shall receive an additional payment of 5% of all such cost to cover his indirect overhead costs, plus 5% of all costs, including indirect overhead, as his fee.

(b) The "Cost of the Work" shall be determined as the net sum of the following items:

1. Job Office and all necessary temporary facilities such as buildings, use of land not furnished by the Owner, access roads and utilities. The costs of these items include construction, furnishings and equipment, maintenance during the period that they are needed, demolition and removal. Salvage valued agreed on or received by the Contractor shall be credited to the Owner.
2. All materials used on the work whether for temporary or permanent construction.

FORM OF AGREEMENT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION
Continued:

ARTICLE V - EXTRA WORK Continued:

3. All small tools and supplies; all fuel, lubricants, power, light, water and telephone service.
4. All plant and equipment at specified rental rates and terms of use. If the rental rates do not include an allowance for running repairs and repair parts needed for ordinary maintenance of the plant and equipment, then such items of cost are to be included in the Cost of the Work.
5. All transportation costs on equipment, material and men.
6. All labor for the project and including the salaries of superintendents, foremen, engineers, inspectors, clerks and other employees or officers, who do not devote their full time to their work.
7. All payroll charges such as Social Security payments, unemployment insurance, workmen's compensation insurance premiums, pension and retirement allowances, and social insurance premiums, vacation and sick leave allowances applicable to wages or salaries paid to employees for work done in connection with the contract.
8. All premiums on fire, public liability, property damage or other insurance coverage authorized or required by the Engineer/Architect or the Owner or regularly paid by the Contractor in the conduct of his business.
9. All sales, use, excise, privilege, business, occupation, gross receipt and all other taxes paid by the Contractor in connection with the work, but excluding state income derived from this contract and Federal Income taxes.
10. All travel or other related expense of general supervisory employees for necessary visits to the job excluding expenses of such employees incurred at the Home Office of the contractor.
11. All Subcontracts approved by the Engineer/Architect or Owner.
12. (Insert other costs proper for inclusion in this contract).
 - a.
 - b.
 - c.
13. Any other cost incurred by the Contractor as a direct result of executing the Order, subject to approval by the Engineer/Architect.

**FORM OF AGREEMENT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION
Continued:**

ARTICLE V - EXTRA WORK Continued:

14. Credit to the Owner for the following items:
- a. Such discounts on invoices as may be obtained provided that the Owner advances sufficient funds to pay the invoices within the discount period.
 - b. The mutually agreed salvage value of materials, tools or equipment charged to the Owner and taken over by the Contractor for his use or sale at the completion of the work.
 - c. Any rebates, refunds, returned deposits or other allowances properly credited to the Cost of the work.

(c) The cost of the work done each day shall be submitted to the Engineer/Architect in a satisfactory form on the succeeding day, and shall be approved by him or adjusted at once.

(d) Monthly payments of all charges for the Extra Work in any one month shall be made in full on or before the 15th day of the succeeding month. Those payments shall include the full amount of fee earned on the cost of the work done.

IN WITNESS WHEREOF the parties hereto have executed this Agreement, the day and year first above written.

CITY OF McALLEN OWNER

24-25

GERARDO NORIEGA, CTPM,
DIRECTOR PURCHASING & CONTRACTING

BY: _____
ROEL "ROY" RODRIGUEZ, P.E.,
CITY MANAGER

WITNESS:

LEGAL COMPANY NAME
(Contractor)

TYPE/PRINT NAME (Authorized
Company Representative)

BY: _____
SIGNATURE & TITLE

(CORPORATE SEAL)

PERFORMANCE BOND

STATUTORY PERFORMANCE BOND PURSUANT TO ARTICLE 2253
OF THE TEXAS LOCAL GOVERNMENT CODE AS AMENDED BY ACTS OF THE 1993,
73RD LEGISLATURE, CH. 268, § 1, EFF. SEPT. 1, 1993, AMENDED BY ACTS 1999, 76TH
LEGISLATURE, CH. 62, SECTION 8.20, EFF. SEPT. 1, 1999

KNOW ALL MEN BY THESE PRESENTS, THAT _____

(hereinafter called the Principal(s), as Principal(s), and _____

(hereinafter called the Surety(s), as Surety(s), are held and firmly bound unto _____

(hereinafter called the Obligee), in the amount of _____

_____ Dollars (\$ _____)

for the payment whereof the said Principal and Surety bind themselves, and their heirs,
administrators, executors, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Obligee, dated the
_____ day of _____, 20_____, for the _____

which contract is hereby referred to and made a part hereof as fully and to the same extent as if
copies at length herein.

PERFORMANCE BOND Continued:

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall faithfully perform the work in accordance with plans, specifications and contract documents, during the original term of said contract and any extension thereof that may be granted by the City of McAllen with or without notice to the surety and during the life of any guaranty required under the contract, and shall also truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all authorized modifications of said contract that may hereafter be made, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Statutory Performance Bond Pursuant To Article 2253 of the Texas Local Government Code as Amended by Acts of the 1993, 73rd Legislature, Ch. 268, § 1, Eff. Sept. 1, 1993, Amended By Acts 1999, 76th Legislature, Ch. 62, Section 8.20, Eff. Sept. 1, 1999, and all liabilities on this bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, this instrument is executed in five counterparts, each one of which shall be deemed an original, this the _____ day of _____ A.D., 20____.

Principal

ATTEST:

(Principal) Secretary
(SEAL)

Signature

Witness as to Principal

(Print/Type Name)

(Address)

(Address)

ATTEST:

Surety

(Surety) Secretary
(SEAL)

Attorney-in-Fact (Signature)

Witness as to Surety

(Print/Type Name)

(Address)

(Address)

NOTE: Date of Bond must not be prior to date of Contract

- (1) Correct name of Contractor; (2) A Corporation, a Partnership or an Individual, as case may be; (3) Correct name of Surety; (4) Correct name of Owner; (5) County or Parish and State; (6) Owner; (7) If Contractor is Partnership, all partners should execute bond.

PAYMENT BOND

STATUTORY PAYMENT BOND PURSUANT TO ARTICLE 2253
OF THE TEXAS LOCAL GOVERNMENT CODE AS AMENDED BY ACTS OF THE 1993,
73RD LEGISLATURE, CH. 268, § 1, EFF. SEPT. 1, 1993, AMENDED BY ACTS 1999, 76TH
LEGISLATURE, CH. 62, SECTION 8.20, EFF. SEPT. 1, 1999

KNOW ALL MEN BY THESE PRESENTS, that _____

(hereinafter called the Principal(s), as Principal(s), and _____

(hereinafter called the Surety(s), as Surety(s), are held and firmly bond unto _____

(hereinafter called the Oblige), in the amount of _____

_____ Dollars (\$ _____)

for the payment whereof, the said Principal and Surety bind themselves, and their heirs,
administrators, executors, successors and assigns, jointly severally, firmly by these presents.

WHEREAS, the Principal has entered into a certain written contract with the Oblige,
dated the _____ day of _____, 20_____, to

P A Y M E N T B O N D Continued:

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copies at length herein.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the said Principal shall pay all claimants supplying labor and material to him or a subcontractor in the prosecution of the work provided for in said contract, and any extension thereof that may be granted by the City of McAllen with or without notice to the surety and during the life of any guaranty required under the contract, and shall also truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all authorized modifications of said contract that may hereafter be made, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is executed pursuant to the provisions of Statutory Payment Bond Pursuant To Article 2253 of the Texas Local Government Code as Amended by Acts of the 1993, 73rd Legislature, Ch. 268, § 1, Eff. Sept. 1, 1993, Amended By Acts 1999, 76th Legislature, Ch. 62, Section 8.20, Eff. Sept. 1, 1999, and all liabilities on this bond shall be determined in accordance with the provisions of said Article to the same extent as if it were copied at length herein.

IN WITNESS WHEREOF, this instrument is executed in five counterparts, each one of which shall be deemed an original, this the _____ day of _____ A.D., 20_____.

Principal

ATTEST:

(Principal) Secretary
(SEAL)

Signature

Witness as to Principal

(Print/Type Name)

(Address)

(Address)

ATTEST: _____

Surety

(Surety) Secretary
(SEAL)

Attorney-in-Fact (Signature)

Witness as to Surety

(Print/Type Name)

(Address)

(Address)

NOTE: Date of Bond must not be prior to date of Contract

- (1) Correct name of Contractor; (2) A Corporation, a Partnership or an Individual, as case may be; (3) Correct name of Surety; (4) Correct name of Owner; (5) County or Parish and State; (6) Owner; (7) If Contractor is Partnership, all partners should execute bond.

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GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION

SEC. 1 - DEFINITIONS

(a) The Contract Documents shall consist of Advertisement for Bids or Notice to Contractors, Instructions to Bidders, form of Bid or Proposal, the signed Agreement, the General and Special conditions of contract, the Drawings, and the Specifications, including all modifications thereof incorporated in any of the documents before the execution of the Agreement.

(b) The Owner, the Contractor and the Engineer/Architect are those named as such in the Agreement. They are treated throughout the contract Documents as if each were of singular number and masculine gender.

(c) Wherever in this contract the word "Engineer"/ "Architect" is used it shall be understood as referring to the Engineer/Architect of the Owner, acting personally or through assistants duly authorized in writing by the Engineer/Architect.

(d) Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or to an authorized representative of such individual, firm, or corporation, or if delivered at or sent by registered mail to the last business address known to him who gives the notice, with a copy sent to the central office of the contractor.

(e) The term "Subcontractor" shall mean anyone (other than the contractor) who furnished at the site, under an Agreement with the contractor, labor, or labor and materials, or labor and equipment, but shall not include any person who furnishes services of a personal nature.

(f) Work shall mean the furnishing of all labor, materials, equipment, and other incidentals as are required to complete the Contract for the purpose for which it was intended but was not shown on the Drawings or called for in the Specifications, or is desired by the Owner in addition to that work called for in the Drawings and Specifications.

(g) Dispute shall mean lack of agreement between any parties that have any obligations, duties, or responsibilities under the terms of the contract, Drawings, or Specifications.

SEC. 2 - COPIES OF DRAWINGS FURNISHED

Unless otherwise provided in the Contract Documents, the Engineer/Architect will furnish to the Contractor, free of charge, all copies of Drawings and Specifications reasonably necessary for the execution of the work.

SEC. 3 - ORDER OF COMPLETION

On the first day of every month in which any portion of the work is to be completed, and at such times thereafter as may be reasonably requested by the Owner's Representative, the contractor shall submit schedules that show the order in which the Contractor proposes to carry out the work for the duration of the project and, in particular, for the current month, with dates at

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 3 - ORDER OF COMPLETION Continued:

which the Contractor will start each portion or part of the work, and specific estimated dates of completion of each portion or part of the work, and a detailed description of the specific portion or part of the work to be completed by the end of the current month. Contractor's failure to timely complete the specific portion or part of the work to be completed by the end of the current month will entitle the Owner to withhold liquidated damages from the payment otherwise owed to the Contractor for that particular month, as further provided in the Special Provisions.

SEC. 4 - OWNER OF DRAWINGS

All drawings, Specifications and copies thereof furnished by the Engineer/Architect shall not be reused on other work and, with the exception of the signed Contract, sets are to be returned to him on request, at the completion of the work.

SEC. 5 - FAMILIARITY WITH WORK

The Owner shall make known to all prospective bidders, prior to the receipt of bids, all information that he may have as to subsurface conditions in the vicinity of the work, topographical maps, or other information that might assist the bidder in properly evaluating the amount and character of the work that might be required. Such information is given, however, as being the best factual information available to the Owner. The Contractor, by careful examination, shall satisfy himself as to the nature and location of the work, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this Contract.

SEC. 6 - CHANGED CONDITIONS

Before such conditions are disturbed, the Contractor shall notify the Owner in writing of: (1) Subsurface or latent physical conditions at the site differing materially from those indicated in this Contract; or (2) previously unknown physical or other conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this Contract. The Architect/Owner's Representative shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or the time required for, performance of this Contract, the Contractor shall submit a claim for an adjustment in compensation and/or time. Any claim of the Contractor for an adjustment of compensation and/or time hereunder shall not be allowed or approved, and the Contractor waives all right to additional compensation or time, unless the Contractor provides written notice to the Owner of any physical or other conditions at the site differing materially from those indicated in this Contract, or differing materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in this Contract, within seven (7) days after the Contractor knew, or reasonably should have known, of such condition(s). If the Contractor timely provides written notice in accordance with this Section 6 and the parties fail to agree upon the adjustment to be made, the dispute shall be determined as provided in Section 39 hereof.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 7 - MATERIALS AND APPLIANCES

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation and other facilities necessary for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new and both workmanship and materials shall be of good quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials. **UNLESS OTHERWISE STIPULATED, THE CITY WILL NOT PAY FOR MATERIALS STORED ON HAND.**

SEC. 8 - EMPLOYEES

The Contractor shall at all times enforce strict discipline and good order among his employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned to him. The Owner shall have the authority to request that Contractor remove any objectionable employee from project site.

Adequate sanitary facilities shall be provided by the Contractor.

SEC. 9 - ROYALTIES AND PATENTS

The Contractor shall hold and save the owner and its officers, agents, servants and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of the contract, including its use by the Owner, unless otherwise specifically stipulated in the contract documents.

License or Royalty Fee: License and/or royalty fees for the use of a process which is authorized by the Owner of the project must be reasonable, and paid to the holder of the patent, or his/her authorized licensee, directly by the Contractor. If the Contractor uses any design, device or materials covered by letters, patent or copyright, he/she shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or his/her Sureties shall indemnify and hold harmless the Owner of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract, and shall indemnify the Owner for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

SEC. 10 - SURVEYS

Unless otherwise specified, the Owner shall furnish all land surveys and establish all base lines for locating the principal component parts of the work together with a suitable number of bench marks adjacent to the work. From the information provided by the Owner, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines and elevations.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

The contractor shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

SEC. 11 - PERMITS, LICENSES AND REGULATIONS

Permits and licenses of a temporary nature necessary for the prosecution and completion of the work shall be secured and paid for by the Contractor. Permits, licenses and easements of a permanent nature, that will be required after the completion of the project, will be secured and paid for by the Owner, unless otherwise specified. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the contractor observes that the Drawings and Specifications are at variance therewith, he shall promptly notify the Engineer/Architect in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

SEC. 12 - PROTECTION OF THE PUBLIC AND OF WORK AND PROPERTY:

The Contractor shall provide and maintain all necessary watchmen, barricades, warning lights and signs and take all necessary precautions for the protection, and safety of the public. He shall take all reasonable precautions to protect the Owner's property from injury or loss arising in connection with this contract. He shall make good any damage, injury or loss to his work and to the property of the Owner resulting from lack of reasonable protective precautions, except such as resulting from lack of reasonable protective precautions, except such as may be due to errors in the Contract Documents, or caused by agents or employees of the Owner. He shall adequately protect adjacent private and public property, as provided by law and the Contract Documents.

In an emergency affecting the safety of life, of the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Engineer/Architect, hereby permitted to act at his discretion to prevent such threatened loss or injury. He shall also so act, without appeal, if so authorized or instructed by the Engineer/Architect.

Any compensation claimed by the Contractor on account of emergency work, shall be determined by agreement, litigation or arbitration.

SEC. 13 - INSPECTION OF WORK

The Owner shall provide sufficient competent personnel, working under the supervision of a qualified Engineer/Architect, for the inspection of the work while such work is in progress to ascertain that the completed work will comply in all respects with the standards and requirements set forth in the Specifications. Notwithstanding such inspection, the Contractor will be held responsible for the acceptability of the finished work.

The Engineer/Architect and his representatives shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for such access, and for inspection.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

If the Specifications, the Engineer's/Architect's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Engineer/Architect timely notice of its readiness for inspection, and if the inspected is by an authority other than the Engineer/Architect of the date fixed for such inspection. Inspections by the Engineer/Architect shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Engineer/Architect, it must be uncovered if required by the Engineer/Architect at the Contractor's expense, unless the Engineer/Architect has unreasonably delayed inspection.

Re-examination of the work may be ordered by the Engineer/Architect, and, if so ordered, the work must be uncovered by the Contractor. If such work is found to be in accordance with the Contract Documents, the Owner shall pay the cost of re-examination and replacement. If such work is not in accordance with the Contract Documents, the Contractor shall pay such cost.

SEC. 14 - SUPERINTENDENCE

The Contractor shall keep on his work, during its progress, a competent superintendent and any necessary assistants. The superintendent shall represent the Contractor, and all directions given to him shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions shall be so confirmed on written request in each case. The Contractor shall give efficient superintendence to the work, using his best skill and attention.

SEC. 15 - DISCREPANCIES

If the Contractor, in the course of the work, finds any discrepancy between the Drawings and the physical conditions of the locality, or any errors or omissions in Drawings or in the layout as given by survey points and instructions, he shall immediately inform the Engineer/Architect, in writing, and the Engineer/Architect shall promptly verify the same. Any work done after such discovery, until authorized will be done at the Contractor's risk.

SEC. 16 - CHANGES IN THE WORK

The Owner may make changes in the Drawings and Specifications of scheduling of the Contract within the general scope at any time by a written order. If such changes add to or deduct from the contractor's cost of the work, the Contract shall be adjusted accordingly. All such work shall be executed under the conditions of the original Contract, **except that any claim for extension of time or additional compensation caused thereby shall be adjusted only at the time of ordering such change.**

In giving instructions, the Engineer/Architect shall have authority to make minor changes in the work not involving extra cost, and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Engineer/Architect, and no claim for an addition to the Contract Sum shall be valid unless the additional work was so ordered.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

The Contractor shall proceed with the work as changed and the value of any such extra or decreased work or change shall be determined as provided in the Agreement. The Contractor's acceptance of any written order(s) for changes in the work constitutes the Contractor's acknowledgement that all extensions, increases or deductions of time and/or compensation, and claims and disputes related to the subject of the written order(s), have been or were resolved by the written order(s). By accepting the written order(s) for changes in the work, the Contractor waives and releases any and all claims and causes of action, including, but not limited to, claims for additional compensation or extensions of time, related to or arising from any work added to, deducted from, or affected by the written order(s).

SEC. 17 - EXTENSION OF TIME

Extension of time stipulated in the Contract for completion of the Work may be made only when changes in the work occur, as provided in Section 16; and when the work is suspended as provided in Section 21 and when the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, his Subcontractors or suppliers, and which were not the result of their fault or negligence. Extension of time for completion shall also be allowed for any delays in the progress of the work caused by any act (except as provided elsewhere in these General Conditions) or neglect of the Owner or of his employees or by other contractors employed by the Owner, or by any delay in the furnishing of Drawings and necessary information by the Engineer/Architect, or by any other cause which in the opinion of the Engineer/Architect entitled the Contractor to an extension of time, including but not restricted to, acts of the public enemy, acts of any government in either its sovereign or any applicable contractual capacity, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, freight embargoes, usually severe weather, or labor disputes.

The Contractor shall notify the Owner's Representative within seven (7) days of any occurrence or conditions which in the Contractor's opinion entitle him to an extension of time. Such notice shall be in writing and shall be submitted in ample time to permit full investigation and evaluation of the contractor's claim. The Engineer/Architect shall acknowledge receipt of the Contractor's notice within 5 days of its receipt. The Contractor's failure to provide such notice shall constitute a waiver by the Contractor of any claim.

SEC. 18 - CLAIMS

If the Contractor claims that any instructions by Drawings or other media issued after the date of the Contract involve extra cost under this Contract, he shall give the Engineer/Architect written notice thereof within 7 days after the receipt of such instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property, and the procedure shall then be as provided for changes in the work. No such claim shall be valid unless so made.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 19 - DEDUCTIONS FOR UNCORRECTED WORK

If the Engineer/Architect deems it inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made therefore, unless the Contractor elects to correct to work.

SEC. 20 - CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor shall promptly remove from the premises all materials and work condemned by the Engineer/Architect as failing to meet Contract requirements, whether incorporated in the work or not. The Contractor shall promptly replace and re-execute his own work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not take action to remove such condemned materials and work within 10 days after written notice, the Owner may remove such condemned materials and may store the material at the expense of the Contractor. If the Contractor does not pay the expense of such removal and storage within ten days' time thereafter, the Owner may, upon ten days' written notice, sell such materials at auction or private sale and shall pay to the Contractor any net proceeds thereof, after deducting all the costs and expenses that should have been borne by the Contractor.

SEC. 21 - SUSPENSION OF WORK

The Owner may at any time suspend the work, or any part thereof by giving 1 day's notice to the Contractor in writing. The work shall be resumed by the Contractor within ten (10) days after the date fixed in the written notice from the Owner to the Contractor so to do. The Owner may reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of such suspension, eligibility and amount of disbursement to be determined by the Engineer/Architect.

If the work, or any part thereof, shall be stopped by notice in writing aforesaid, and if the Owner does not give notice in writing to the Contractor to resume work at a date within 15 days of the date fixed in the written notice to suspend, then the contractor may abandon that portion of the work so suspended and he will be entitled to the estimates and payments for all work done on the portions so abandoned, if any, but Contractor is not entitled to any compensation for loss of overhead, plant expense, and anticipated profit.

SEC. 22 - THE OWNER'S RIGHT TO TERMINATE CONTRACT

If the Contractor should be adjudged as bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed as a result of his insolvency, or if he should be guilty of a substantial violation of the Contract, then the Owner,

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 22 - THE OWNER'S RIGHT TO TERMINATE CONTRACT Continued:

upon the certificate of the Engineer/Architect that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor and his Surety seven days' written notice terminate the employment of the Contractor and take possession of the premises and of all materials, tools, equipment and other facilities installed on the work and paid for by the Owner, and finish the work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer/Architect.

SEC. 23 - CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

If the work should be stopped under an order of any court, or other public authority, for a period of more than three months, through no act or fault of the contractor or of anyone employed by him, or if the Engineer/Architect should fail to issue any estimate for payment within seven days after it is due, then the Contractor, may, upon seven day's written notice to the Owner's Representative, stop work or terminate this Contract and recover from the Owner payment for all work executed.

SEC. 24 - REMOVAL OF EQUIPMENT

In the case of termination of this Contract before completion from any cause whatever, the Contractor, if notified to do so by the Owner, shall promptly remove any part or all of his equipment and supplies from the property of the Owner, failing which the Owner shall have the right to remove such equipment and supplies at the expense of the Contractor.

SEC. 25 - RESPONSIBILITY FOR WORK

The Contractor assumes full responsibility for the work. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the work (except for any part covered by partial acceptance as set forth in Sec. 26). He agrees to make no claims against the Owner for damages to the work from any cause except negligence or willful acts of the Owner, acts of an Enemy, acts of war or as provided in Sec. 32.

Existing Structures: The Contractor shall, at his own expense immediately make permanent repairs and restore to original condition any and all utility lines, irrigation lines, pipe lines, pavement, or structures that are to remain in place and damaged by the Contractor's equipment or workmen during the performance of work under this contract, or damaged as a result of improperly executed work.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 25 - RESPONSIBILITY FOR WORK Continued:

Traffic Areas, Driveways, Entrances: All traffic areas, driveways and entrances shall be restored to usable condition at the Contractor's expense as the work progresses. The Contractor shall make every effort to cooperate with the wishes of the individual property owners in providing access to private property along the site of the work.

Detours: The Contractor shall do such work as may be necessary to provide and maintain a detour adjacent to all road structures for public travel. The Contractor shall maintain the detours in such condition that the public can travel over same in comfort and safety, and shall at his own expense perform such work as may be required to keep said detours open to the public at all times. The Contractor shall cooperate with the Engineer/Architect in the regulation of traffic and shall so govern his work that when it becomes necessary to suspend construction for a considerable period of time, the roadways will be re-opened to public travel. Materials and equipment shall be stored and the work shall be so conducted as to obstruct public travel as little as possible, and in no case shall there be less than twenty (20) feet in width of unobstructed roadway for the use of traffic. Materials and equipment stored in or near the path of traffic shall be protected with applicable traffic control devices in compliance with the Texas MUTCD.

Traffic Control Devices: When any section of the contraction site is closed to traffic, the Contractor shall furnish and maintain at each end of the closed section and at all intersecting streets - roads - construction site within the section, standard barricades, adequate warning signs and directional signs. All lights shall be kept burning from sunset to sunrise. If at any time the barricades are not, in the opinion of the Engineer/Architect, sufficient to prevent traffic from entering the closed portions of the street-road-construction site, the Contractor shall provide and maintain watchmen at such points and for such periods of time as the Engineer/Architect may direct. When directed by the Engineer/Architect, the Contractor shall provide and maintain such standard barricades, signs, lights and flags within the closed portion of the street-road-construction site as may be necessary to protect the work and safeguard local traffic.

No direct compensation except as specifically provided in these specifications will be made to the Contractor for the work and material involved in constructing and maintaining detours and approaches; furnishing, installing and maintaining barricades, danger, warning, and necessary for the proper direction, safety, and convenience of traffic during the Contract period, as this work is to be considered subsidiary to the several items for which unit prices are requested in the proposal.

SEC. 26 - PARTIAL COMPLETION AND ACCEPTANCE

If at any time prior to the issuance of the final certificate referred to in Section 39 hereinafter, any portion of the permanent construction has been satisfactorily completed, and if the Engineer/Architect determines that such portion of the permanent construction is not required for the operations of the Contractor but is needed by the Owner, the Engineer/Architect shall issue to the Contractor a certificate of partial completion, and thereupon or at any time thereafter

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 26 - PARTIAL COMPLETION AND ACCEPTANCE Continued:

the Owner may take over and use the portion of the permanent construction described in such certificate, and exclude the Contractor therefrom. The issuance of a certificate of partial completion shall not be construed to constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if he has failed to complete it in accordance with the terms of this contract. The issuance of such a certificate shall not operate to release the Contractor or his sureties from any obligations under this contract or the performance bond. If any prior use increases the cost of or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Engineer/Architect may determine, unless otherwise provided.

SEC. 27 - PAYMENTS WITHHELD PRIOR TO FINAL ACCEPTANCE OF WORK

The Owner, as a result of subsequently discovered evidence, may withhold or nullify the whole or part of any payment certificate to such extent as may be necessary to protect himself from loss caused by:

- (a) Defective work not remedied.
- (b) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor.
- (c) Failure of the Contractor to make payments properly to Subcontractors or for material or labor.
- (d) Damage to another contractor.
- (e) Claims filed or reasonable evidence indicating probable filing of claims by Contractor against Owner.

No money may be withheld under (b) and (c) above if a payment bond is included in the Contract.

SEC. 28 - CONTRACTOR'S INSURANCE

The Contractor shall secure and maintain such insurance policies as will protect himself, his Subcontractors, and unless otherwise specified, the OWNER, from claims for bodily injuries, death or property damage which may arise from operations under this Contract whether such operations be by himself or by any Subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 28 - CONTRACTOR'S INSURANCE Continued:

- (a) **Statutory Worker's Compensation**
- (b) **Contractor's Public Liability and Property Damage -**

Bodily Injury:

each person _____ \$ _____
each person _____ \$ _____

SEE INSTRUCTIONS TO BIDDERS

Property Damage:

each accident _____ \$ _____
aggregate _____ \$ _____

- (c) **Automobile Public Liability and Property damage -**

Bodily Injury

each person _____ \$ _____
each accident _____ \$ _____

SEE INSTRUCTIONS TO BIDDERS

Property Damage:

each accident _____ \$ _____

All policies shall be for not less than the amounts set forth above or stated in the Special Conditions. Other forms of insurance shall also be provided if called for by the Special Provisions.

Certificates and/or copies of policy of such insurance shall be filed with the Engineer/Architect, and shall be subject to his approval as to adequacy of protection, within the requirements of the Specifications. Said certificates of insurance shall contain a thirty (30) day's written notice of cancellation in favor of the Owner. **(SEE SUPPLEMENTAL GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION)**

SEC. 29 - SURETY BONDS

The Owner shall have the right, prior to the signing of the Contract, to require the Contractor to furnish bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder, in such form as the Owner may prescribe in the bidding documents and executed by one or more financially responsible sureties. If such bonds are required, the premium shall be paid by the Contractor. The Owner may require additional bond if the contract is increased appreciably.

SEC. 30 - ASSIGNMENT

Neither party to the Contract shall assign the Contract or sublet it as a whole without the written consent of the other, nor shall the Contractor assign any moneys due to him or to become due to him hereunder, except to bank or financial institution acceptable to the Owner.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 31 - RIGHTS OF VARIOUS INTERESTS

Whenever work being done by the Owners or by other contractor's forces is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Engineer/Architect, to secure the completion of the various portions of the work in general harmony.

SEC. 32 - SEPARATE CONTRACTS

The Owner reserves the right to let other contracts in connection with this project. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs. The parties agree that the Owner shall not be responsible or liable for any delays in Contractor's progress or completion of the work that are caused, in whole or in part, by the acts or omissions of other contractors, subcontractors, or third parties.

If the proper execution or results of any part of the Contractor's work depends upon the work of any other contract, the Contractor shall inspect and promptly report to the Engineer/Architect any defects in such work that render it unsuitable for such proper execution and results.

SEC. 33 - SUBCONTRACTS

The Contractor shall, as soon as practical after signing of the Contract, notify the Engineer/Architect in writing of the names of Subcontractors proposed for the work.

The Contractor agrees that he is as fully responsible to the Owner for the acts and omissions of his Subcontractors and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

Nothing contained in the Contract Documents shall create any contractual relation between any Subcontractor and the Owner.

SEC. 34 - ENGINEER'S/ARCHITECT'S STATUS

The Engineer/Architect shall perform technical observation of the work. He has authority to stop the work whenever such stoppage may be necessary to insure the proper execution of the contract. He shall also have authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

SEC. 35 - ENGINEER'S/ARCHITECT'S DECISION

The Engineer/Architect shall, within a reasonable time after their presentation to him, make decisions in writing on all claims of the Owner or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the Contract Documents.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 36 – JURISDICTION AND VENUE; MEDIATION, LITIGATION AND ARBITRATION

As a condition precedent to any suit or arbitration being filed or initiated, any controversy or claim arising out of or relating to this contract, or the breach thereof, is subject to mandatory mediation to take place in Hidalgo County, Texas at a time agreed upon by the parties. Such mediation must be held within thirty (30) days after the date either party requests mediation, unless otherwise agreed. The Parties agree that any dispute arising out of or related to this Contract would likely involve an inquiry and interpretation of a substantial federal issue. Accordingly, the parties further agree that, if such mediation is unsuccessful, the proper and exclusive forum and venue in all legal actions brought to enforce or construe any of the provisions of this Contract shall be in the United States District Court for the Southern District of Texas, McAllen Division. The Owner and Contractor agree and stipulate that the United States District Court for the Southern District of Texas, McAllen Division, has personal jurisdiction over the parties. However, if federal subject matter jurisdiction is found to be lacking in any legal action, or if a federal court otherwise refuses or fails to exercise jurisdiction over the parties or the dispute, the Parties agree to submit any dispute arising out of or related to this Contract to binding arbitration pursuant to the Texas General Arbitration Act, Chapter 171 of the Texas Civil Practice and Remedies Code (“TAA”) and the terms of this Section 36. To the extent that TAA and this Section 36 conflict, the provisions of this Section 36 will apply.

The parties will select a single arbitrator in accordance with the rules of the American Arbitration Association. The parties further agree that all depositions in any arbitration shall be limited to a total of 24 hours for each party. The parties further agree that the parties shall not serve interrogatories or requests for admission on the other party. The parties further agree that the parties will instruct the Arbitrator, and the Arbitrator is required, to follow the substantive law of the State of Texas and to issue a reasoned award with findings of fact and conclusions of law. **The Arbitrator does not have authority to render a decision which contains a reversible error of state or federal law; the Arbitrator exceeds the Arbitrator’s powers if the Arbitrator renders a decision which contains a reversible error of state or federal law.** The parties further agree that a court reporter shall be present and keep a record of all hearings, which shall be conducted in Hidalgo County, Texas, and the cost of which will be divided equally among the parties notwithstanding any final award entered by the Arbitrator. The parties further agree that the award of the Arbitrator may be reviewed based on the record by a state district court having jurisdiction over the parties and the subject matter and that, notwithstanding the applicability of the TAA, such district court shall conduct a *de novo* review of the award of the Arbitrator and consider any improper application of the law, and/or abuse of discretion by the Arbitrator, in considering the award of the Arbitrator and determining whether to confirm, vacate or modify the award of the Arbitrator. The parties further agree that any judgment or final order entered by the district court is subject to further appellate review consistent with applicable rules of appellate procedure that otherwise would be followed upon a judgment or final order being issued by such district court.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 37 - COORDINATION WITH OTHER PARTIES

The Contractor shall coordinate the Contractor's schedule with the schedule, work, labor, materials and/or equipment provided by all other contractors, subcontractors, manufacturers and suppliers to ensure timely completion of the project. The Contractor shall be responsible for reducing, mitigating, eliminating or limiting any delays or damages caused, in whole or in part, by all other contractors, subcontractors, manufacturers, suppliers and any other third parties, including, but not limited to, delays or damages caused by a lack of access to the lands upon which the work under the Contract is to be done. The parties agree that the Owner is not liable for any delays or damages caused, in whole or in part, by any other contractors, subcontractors, manufacturers, suppliers and/or any other third parties. The Contractor shall provide at his own expense and without liability to the Owner any land and access thereto that may be required for temporary construction facilities, or for storage of material.

SEC. 38 - LAND FOR WORK

The Owner shall provide as indicated on Drawings and not later than the date when needed by the Contractor the lands upon which the work under this Contract is to be done, right-of-ways for access to same, and such other lands which are designated on the Drawings for the use of the Contractor. Such lands and right-of-ways shall be adequate for the performance of the Contract. Any delay in the furnishing of these lands by the Owner shall be deemed proper cause for an equitable adjustment in both Contract price and time of completion.

The Contractor shall provide at his own expense and without liability to the Owner any additional land and access thereto that may be required for temporary construction facilities, or for storage of material.

SEC. 39 - CLEANING UP

The Contractor shall remove at his own expense from the Owner's property and from all public and private property all temporary structures, rubbish and waste materials resulting from his operations. This requirement shall not apply to property used for permanent disposal of rubbish or waste, materials in accordance with permission of such disposal granted to the Contractor by the Owner thereof.

SEC. 40 - ACCEPTANCE AND FINAL PAYMENT

(a) Upon receipt of written notice that the work is substantially completed or ready for final inspection and acceptance, the Engineer/Architect will promptly make such inspection, and when he finds the work acceptable under the Contract and the Contract fully performed or substantially completed he shall promptly issue a certificate, over his own signature, stating that the work required by this Contract has been completed or substantially completed and is accepted by him under the terms and conditions thereof, and the entire balance found to be due the Contractor, including the retained percentage, less a retention based on the Engineer's/Architect's estimate of the fair value of the claims against the Contractor and the cost completing the incomplete or unsatisfactory items of work with specified amounts for each incomplete or defective item of work, is due and payable. The date of substantial completion of

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 40 - ACCEPTANCE AND FINAL PAYMENT Continued:

a project or specified area of a project is the date when the construction is sufficiently completed in accordance with the Contract Documents as modified by any change orders agreed to by the parties so that the Owner can occupy the project for the use for which it was intended.

(b) Before issuance of final payment, the Contractor, if required in the Special Conditions, shall certify in writing to the Engineer/Architect that all payrolls, material bills, and other indebtedness or liens, with the work have been paid, or otherwise satisfied, except that in case of disputed indebtedness or liens, if the Contract does not include a payment of all such disputed amounts, including all related costs and interest in connection with said disputed indebtedness or lien which the Owner may be compelled to pay upon adjudication.

(c) The making and acceptance of the final payment shall constitute a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work appearing within a one year guarantee period from date of acceptance, from the requirements of the Drawings and Specifications, or from the manufacturer's guarantees. It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled. In the event that the Contractor has previously made a claim that is still unsettled, the Owner shall be entitled to withhold from the final payment, as an offset, any amounts that the Owner, in its sole discretion, believes that the Contractor may owe to the Owner for liquidated damages or for the Contractor's failure to timely complete the project. Notwithstanding anything to the contrary herein, the Owner shall not be liable, in any event, for any interest that accrues on any amount(s) withheld from the final payment, as an offset, that the Owner, in its sole discretion, believes that the Contractor may owe to the Owner for liquidated damages or for the Contractor's failure to timely complete the project.

(d) If after the work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor's and the Engineer/Architect so certified, the Owner shall, upon certificate of the Engineer/Architect, and without terminating the contract, make payment of the balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

(e) If the Owner fails to make payment as herein provided, there shall be added to each such payment daily interest at the rate of 6 per-cent (%) annum commencing on the first day after said payment is due and continuing until the payment is delivered or mailed to the Contractor. The Owner shall not be responsible for paying any interest on any amount(s) withheld from any progress payments or from final payment that the Owner, in its sole discretion, believes that the Contractor may owe to the Owner for liquidated damages or for the Contractor's failure to timely complete the project.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 41 - GENERAL GUARANTY

Neither the final certificate of payment nor any provision in the Contract Documents nor partial or entire occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship. The Contractor shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of Substantial Completion. The Contractor warrants and guarantees for a period of one (1) year from the date of Final Acceptance of the system that the completed system is free from all defects due to faulty materials or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system or other work resulting from such defects.

The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

SEC. 42 - SHOP DRAWINGS

The approval of (shop) drawings by the Engineer/Architect shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Approval of such drawings will not relieve the Contractor of the responsibility for any error which may exist as the contractor shall be responsible for the dimensions and design of adequate connections, details and satisfactory construction of all work.

SEC. 43 - TESTING

All testing authorized by the Engineer/Architect that meets specification requirements will be paid for by the Owner; however, tests on materials that fail will be billed to and paid for by the Contractor.

SEC. 44 - PAYMENT SCHEDULE

Contractor to submit to the City, Certificate for Payment on or before the 1st of the month. City to reciprocate with payment on or before the 30th of the same month.

SEC. 45 - RETAINAGE

Contracts equaling a total amount of \$400,000.00 or over will bear a retainage of five (5) percent (%) on each partial disbursement. Contracts totaling less than \$400,000.00 will bear a retainage of ten (10) percent (%) on each partial disbursement.

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 46 - OVERTIME

Time and one half will be paid for all hours worked in excess of forty (40) hours in one work week.

SEC. 47 - INDEMNITY AND HOLD HARMLESS AGREEMENT

TO THE FULLEST EXTENT PERMITTED BY LAW, THE CONTRACTOR WILL DEFEND, INDEMNIFY AND HOLD HARMLESS THE OWNER, THE OWNER'S REPRESENTATIVE, THE ENGINEER/ARCHITECT AND THEIR AGENTS AND EMPLOYEES FROM ANY AND ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF OR RESULTING FROM THE PERFORMANCE OF THE WORK, INCLUDING, BUT NOT LIMITED TO, CLAIMS, DAMAGE, LOSS OR EXPENSES ATTRIBUTABLE TO BODILY INJURY, SICKNESS, DEATH OR TO ANY INJURY TO DESTRUCTION OF TANGIBLE PROPERTY, INCLUDING THE LOSS OF USE RESULTING THEREFROM, CAUSED IN WHOLE OR IN PART BY ANY NEGLIGENT OR WILLFUL ACT OR OMISSION OF THE CONTRACTOR, SUBCONTRACTOR, ANYONE DIRECTLY OR INDIRECTLY EMPLOYED BY THEM OR ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE.

SEC. 48 - RIGHT TO AUDIT

The City of McAllen reserves the right to audit the bidder's books and records relating to the performance of this contract. The City of McAllen, at its own expense, shall have the right at all reasonable times during normal business hours and upon at least twenty-four (24) hours' advance notice, to audit, to examine, and to make copies of or extracts from the books of account and records maintained by the vendor(s) with respect to the Construction Contract. If such audit shall disclose overpayment by City to vendor, written notice of such overpayment shall be provided to the vendor and the amount of overpayment shall be promptly reimbursed by vendor to the City. In the event any such overpayment is not paid within ten (10) business days after receipt of such notice, the unpaid amount of such overpayment shall bear interest at the rate of one percent (1%) per month from the date of such notice until paid.

SEC. 49 – LIMITATION OF LIABILITY

THE OWNER'S LIABILITY TO CONTRACTOR UNDER ANY CLAIM FOR BREACH OF CONTRACT IS LIMITED PURSUANT SECTION 271.153 OF THE TEXAS LOCAL GOVERNMENT CODE.

NOTWITHSTANDING THE FOREGOING, AND TO THE FULLEST EXTENT PERMITTED BY LAW, THE OWNER'S LIABILITY TO CONTRACTOR SHALL NOT EXCEED THE DIFFERENCE BETWEEN CONTRACTOR'S ACTUAL COSTS TO COMPLETE THE WORK, ON ONE HAND, AND THE TOTAL AMOUNT OF

GENERAL CONDITIONS OF CONTRACT FOR ENGINEERING/ARCHITECTURAL CONSTRUCTION Continued:

SEC. 49 – LIMITATION OF LIABILITY Continued

COMPENSATION FOR WHICH CONTRACTOR AGREED TO PERFORM ALL OF THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS AS REFERENCED IN THE BID SCHEDULE AND IN SECTION 4 OF THE CONTRACT AGREEMENT,

ALLOWING FOR ADJUSTMENTS IN THE COMPENSATION OWED TO CONTRACTOR PURSUANT TO ANY CHANGE ORDERS AGREED UPON BY THE PARTIES IN WRITING, ON THE OTHER HAND. ADDITIONALLY, REGARDLESS OF THE NATURE OF ANY CLAIM(S) ASSERTED AGAINST THE OWNER, THE PARTIES AGREE THAT THE OWNER SHALL NOT BE LIABLE TO THE CONTRACTOR FOR ANY LABOR OVERRUN, EQUIPMENT OVERRUN, MATERIAL ESCALATION, EXTENDED FIELD COSTS, DELAYS CAUSED BY THE SUBMISSION OF INCORRECT OR INCOMPLETE SUBMITTALS, CONSEQUENTIAL DAMAGES, INDIRECT DAMAGES, INCIDENTAL DAMAGES, PUNITIVE OR EXEMPLARY DAMAGES, OR ANY OTHER NON-DIRECT DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOSS OF BONDING CAPACITY, UNABSORBED HOME OFFICE OVERHEAD, LOSS IN LABOR PRODUCTIVITY, OR ANY CONSEQUENTIAL DAMAGES THAT OTHERWISE WOULD BE ALLOWED UNDER SECTION 271.153(A)(1) OF THE TEXAS LOCAL GOVERNMENT CODE.

SEC. 50 - CHAPTER 2270, TEXAS GOVERNMENT CODE

(50) “In accordance with Chapter 2270, Texas Government Code, a government entity may not enter into a contract with a company for goods and services unless the contract contains a written verification from the company that it: (1) does not boycott Israel; and (2) will not boycott Israel during the term of this contract.

CHAPTER 2252 TEXAS GOVERNMENT CODE

(51) In accordance with Chapter 2252 of the Texas Government Code, that (a) Bidder does not engage in business with Iran, Sudan or any foreign terrorist organization and (b) Bidder is not listed by the Texas Comptroller as a terrorist organization.

Bidder’s Acknowledgement of Prohibition on Contracts with Foreign Terrorist Organizations and with the Boycotting of Israel

The signatory executing this contract on behalf of company hereby verifies that the company is not on the Texas Comptroller’s list of terrorist organizations, is not engaged in business with Iran, Sudan or any foreign terrorist organization and will not boycott Israel throughout the term of this contract.”

**SUPPLEMENTAL GENERAL CONDITIONS OF CONTRACT FOR
ENGINEERING/ARCHITECTURAL
CONSTRUCTION**

1. INSURANCE

The Contractor shall not commence work under this contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor allow any subcontractor to commence work on his subcontract until the insurance required of the subcontractor has been so obtained and approved. For required coverages see INSTRUCTIONS TO BIDDERS on section entitled INSURANCE REQUIREMENTS.

Types of insurance normally required are: (SEE) INSTRUCTIONS TO BIDDERS on section entitled INSURANCE REQUIREMENTS

- (a) Worker's Compensation Insurance: The Contractor shall procure and shall maintain during the life of this contract Worker's Compensation Insurance as required by applicable State or territorial law for all of his employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Worker's Compensation Insurance.
- (b) Proof of Carriage of Insurance: The Contractor shall furnish the Owner with certificate showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement. "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by the Owner."

PREAMBLE TO RULE 110.110

The Texas Workers' Compensation Commission adopts new §110.110, concerning requirements for governmental entities awarding a contract for a building or construction project, and for persons providing services on a building or construction project for a governmental entity. The new rule is adopted with changes to the proposed text published in the April 26, 1994 issue of the Texas Register (19 TexReg 3131). Subsections (a)(7) and (c)(7) were amended by adding language to further clarify who is covered by the rule. Subsections (c)(7)(J) and (e)(3) were added to clarify that a contractor or subcontractor is representing to the governmental entity that workers' compensation coverage is provided. Subsections (d)(8)(C) were added to require specific language regarding representations of coverage to be added to contracts to provide services on the project. Subsections (c)(7)(F), and (c)(7)(I)(5), (d)(5), (d)(8)(F), (e)(6), and (e)(8)(F) were amended to reduce the retention period for contractors and other persons providing services on the project from three years to one year. Subsection (g) was changed to state that this rule applies to contract advertised for bid after September 1, 1994, rather than awarded after September 1, 1994.

The Texas Labor Code, §406.096, requires workers' compensation insurance coverage for all persons providing services on a building or construction project for a governmental entity. The commission is aware that this statutory requirement is not being met, and this rule is designed to achieve compliance and to implement a recordkeeping process which will enable oversight of compliance. The rule does this by placing requirements on the governmental entity and on contractors and other persons providing services on a project. These requirements include coverage, certificates of coverage, posted notices of coverage, and notification of changes in coverage status. The rule does not create any duty or burden on anyone which the law does not establish.

The rule defines terms which apply to governmental entity building or construction projects and sets up a clear procedure for governmental entities and contractors that bid for building and construction projects to follow in complying with the requirements of the Texas Labor Code §406.096. It also defines "persons who provide services on a project" who are subject to the statutory requirement of coverage, and sets forth their requirements to comply with the statute and the rule. It specifically excludes persons such as food/beverage vendors whose deliveries and labor are not permanently incorporated into the project. The rule puts persons on notice that providing false or misleading certificates of coverage, or failing to provide or maintain required coverage, or failing to report any change that materially affects the provision of coverage may subject the contractor or other persons providing services on the project to administrative penalties, civil penalties, or other civil actions.

The rule requires a governmental entity to timely obtain certificates of coverage, retain them for the duration of the project plus three years, and provide them to the commission upon request and to others entitled to them by law. It also requires the governmental entity, as a prerequisite to awarding a contract, and as part of the contract, to require that the contractor: provide coverage and certificates of coverage for the contractor's employees; timely obtain and provide the governmental entity all required certificates of coverage for all persons providing services on the project; retain certificates of coverage on file for the duration of the project and for one year thereafter; notify the governmental entity in writing by certified mail or person delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; post notices on each project site; and contractually require persons with whom it contracts to do the same, with the certificates of coverage to be provided to the person

PREAMBLE TO RULE 110.110 Continued:

for whom they are providing services. The rule also sets out the language to be included in bid specifications and in contracts awarded by a governmental entity and the information required to be in the posted notice to employees. It further established a method for obtaining the certificates from persons providing services on the project and providing them to the governmental entity.

It requires a contractor awarded a building or construction contract to: provide workers' compensation coverage to the contractor's employees for the duration of the project; file a certificate of coverage of the contractor's employees with the governmental entity prior to being awarded a contract; obtain and provide to the governmental entity, certificates of coverage from each other person with whom it has contracted to provide services on the project, prior to that person beginning work on the project; obtain and provide new certificates of coverage shown on the current certificate ends during the duration of the project; retain all certificates of coverage for the duration of the project and for one year thereafter; notify the governmental entity of material changes in coverage; contractually require each other person with whom it contracts to provide a certificate of coverage; and post notices on each project site.

All other persons providing services on a project have the same requirements as a contractor, with the exception of posting notices and with the exception that the certificate of coverage is given to the person for whom they contracted to provide services on the project. The rule uses the term "persons providing services on the project" in lieu of the statutory term "subcontractor" because the term "subcontractor" as used in the statute (§406.096) and in this rule is broader than standard industry usage. The use of the different terminology will prevent confusion.

The rule does not create any duty or burden on anyone which the law does not establish.

The new rule is adopted under the Texas Labor Code, §402.061, which authorizes the commission to adopt rules necessary to administer the Act, and Texas Labor Code, §406.096, which establishes requirements for governmental entities, contractors, and subcontractors ("persons providing services on the project") regarding workers' compensation coverage for workers on compensation coverage for workers on public building or construction projects.

Rule 110.100 Reporting Requirements for Building or Construction Projects for Governmental Entities

- (a) The following word and terms, when used in this rule, shall have the following meanings, unless the context clearly indicates otherwise. Terms not defined in this rule shall have the meaning defined in the Texas Labor Code, if so defined.
- (1) Certificate of coverage ("certificate")-A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees (including those subject to a coverage agreement) providing services on a project, for the duration of the project.
 - (2) Building or construction - Has the meaning defined in the Texas Labor Code, (e)(1).

PREAMBLE TO RULE 110.110 Continued:

- (3) Contractor - A person bidding for or awarded a building or construction project by a governmental entity.
 - (4) Coverage - Workers' compensation insurance meeting the statutory requirements of the Texas Labor Code, §401.011(44).
 - (5) Coverage agreement - A written agreement on form TWCC-81, form TWCC-82, form TWCC-83, or form TWCC-84, filed with the Texas Workers' Compensation Commission which establishes a relationship between the parties for purposes of the Workers' Compensation Act, pursuant to the Texas Labor Code, Chapter 406, Subchapters F and G as one of employer/employee and establishes who will be responsible for providing workers' compensation coverage for person providing services on the project.
 - (6) Duration of the project - Includes the time from the beginning of work on the project until the work on the project has been completed and accepted by the governmental entity.
 - (7) Persons providing services on the project ("subcontractor" in §406.096 of the Act) - Includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes but is not limited to independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity furnishing persons to perform services on the project. "Services" includes but is not limited to providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other services related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.
 - (8) Project - Includes the provision of all services related to a building or construction contract for a governmental entity.
- (b) Providing or causing to be provided a certificate of coverage pursuant to this rule is a representation by the insured that all employees of the insured who are providing services on the project are covered by workers' compensation coverage, that the coverage is based on proper reporting of classification codes and payroll amounts, and that all coverage agreements have been filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading certificates of coverage, or failing to provide or maintain required coverage, or failing to report any change that materially affects the provision of coverage may subject the contractor or other person providing services on the project to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- (c) A governmental entity that enters into a building or construction contract on a project shall:

PREAMBLE TO RULE 110.110 Continued:

- (1) include in the bid specifications, all the provisions of subsection (d) of this rule, using the language required by paragraph (7) of this subsection;
- (2) as part of the contract, using the language required by paragraph (7) of this subsection, require the contractor to perform as required in subsection (d) of this rule;
- (3) obtain from the contractor a certificate of coverage for each person providing services of the project, prior to that person beginning work on the project;
- (4) obtain from the contractor a new certificate of coverage showing extension of coverage:
 - (A) before the end of the current coverage period, if the contractor's current certificate of coverage shows that the coverage period ends during the duration of the project; and
 - (B) no later than seven days after the expiration of the coverage for each other person providing services on the project whose current certificate shows that the coverage period ends during the duration of the project;
- (5) retain certificates of coverage on file for the duration of the project and for three years thereafter;
- (6) provide a copy of the certificates of coverage to the commission upon request and to any person entitled to them by law; and
- (7) use the following language for bid specifications and contracts, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standard of documentation in Figure 1:

Article __. Worker's Compensation Insurance Coverage.

A. Definitions:

Certificate of coverage ("certificate")-A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project-includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

PREAMBLE TO RULE 110.110 Continued:

Persons providing services on the project (“subcontractor” in §406.096)-includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. “Services” include, without limitation, providing, hauling, or delivering equipment or materials, or providing labor, transportation or other service related to a project. “Services” does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- B. The contractor shall provide coverage, based on proper reporting a classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.044(44) for all employees of the contractor providing services on the project, for the duration of the project.
- C. The contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract.
- D. If the coverage period shown on the contractor’s current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.
- E. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:
 - (1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificate of coverage showing coverage for all persons providing services on the project; and
 - (2) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.
- F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.
- G. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project.

PREAMBLE TO RULE 110.110 Continued:

- H. The contractor shall post on each project site a notice, in the text, for and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.
- I. The contractor shall contractually require each person with whom it contracts to provide services on a project, to:
- (1) provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;
 - (2) provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;
 - (3) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (4) obtain from each person with whom it contracts, and provide to the contractor:
 - (a) a certificate of coverage, prior to the other person beginning work on the project; and
 - (b) a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any persons providing services on the project; and
 - (7) contractually require each person with whom it contracts, to perform as required by paragraphs (1) - (7), with the certificates of coverage to be provided to the person for whom they are providing services.
- J. By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with

PREAMBLE TO RULE 110.110 Continued:

J. Continued: the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, or other civil actions.

K. The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten (10) days after receipt of notice of breach from the governmental entity.

(d) A contractor shall:

- (1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
- (2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;
- (3) provide the governmental entity, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;
- (4) obtain from each person providing services on a project, and provide to the governmental entity:
 - (A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (6) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;

PREAMBLE TO RULE 110.110 Continued:

- (7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30-point bold type and text in at least 19-point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text in Figure 2 provided by the commission on the sample notice, without any additional word or changes:

(Figure 2)

REQUIRED WORKERS' COMPENSATION COVERAGE

“The law required that each person working on this site or providing services related to this construction project must be covered by workers’ compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee.”

“Call the Texas Workers’ Compensation Commission at 512-440-3789 to receive information on the legal requirements of coverage, to verify whether your employer has provided the required coverage or to report an employer’s failure to provide coverage.” and

- (8) contractually require each person with whom it contracts to provide services on a project, to:
- (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in subsection (e)(3) of this rule;
 - (D) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

PREAMBLE TO RULE 110.110 Continued:

- (E) obtain from each other person with whom it contracts and provide to the contractor:
 - (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (H) contractually require each other person with whom it contracts, to perform as required by paragraphs (A) - (H), with the certificate of coverage to be provided to the person for whom they are providing services.
- (e) A person providing services on a project, other than a contractor, shall:
- (1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
 - (2) provide a certificate of coverage as required by its contract to provide services on the project, prior to beginning work on the project;
 - (3) have the following language in its contract to provide services on the project:

“By signing this contract or providing or causing to be provided a certificate of coverage, the person signing this contract is representing to the governmental entity that all employees of the person signing this contract who will provide services on the project will be covered by workers’ compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission’s Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties criminal penalties, civil penalties, or other civil actions.”

PREAMBLE TO RULE 110.110 Continued:

- (4) provide the person for whom it is providing services on the project, prior to the end of the coverage period shown on its current certificate of coverage, a new certificate showing extension of coverage, if the coverage period shown on the certificate of coverage ends during the duration of the project;
- (5) obtain from each person providing services on a project under contract to it, and provide as required by its contract:
 - (A) a certificate of coverage, prior to the other person beginning work on the project; and
 - (B) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (6) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (7) notify the governmental entity in writing by certified mail or personal delivery, of any change that materially affects the provision of coverage of any person providing services on the project and send the notice within 10 days after the person knew or should have known of the change; and
- (8) contractually require each other person with whom it contracts to:
 - (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to it prior to that other person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in subsection (e)(3) of this rule;
 - (D) provide, prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (E) obtain from each other person under contract to it to provide services on the project, and provide as required by its contract;
 - (F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;

PREAMBLE TO RULE 110.110 Continued:

- (G) notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (H) contractually require each person with whom it contracts, to perform as required by paragraphs (A) - (H), with the certificate of coverage to be provided to the person for whom they are providing services.
- (f) If any provision of this rule or its application to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of this rule that can be given effect without the invalid provision or applications, and to this end the provisions of this rule are declared to be severable.
- (g) This rule is applicable for building or construction contracts advertised for bid by a governmental entity on or after September 1, 1994.

PREVAILING WAGE LEGAL REQUIREMENTS

The Contractor's attention is called to Articles 5159A and 5160 of the Revised Civil statutes of Texas which Statutes must be complied with. These articles are as follows:

ARTICLE 5159A:

SECTION 1. Not less than the general prevailing rate of per diem wages for work of a similar character in the locality which the work is performed, and not less than the general prevailing rate of per diem wages for legal holiday and overtime work, shall be paid to all laborers, workmen and mechanics employed by or on behalf of any County, City and County, City, Town, District or other political subdivision of the State, engaged in the construction of public works, exclusive of maintenance work. Laborers, workmen and mechanics employed by contractors or subcontractors in the execution of any contract or contracts for public works with the State, or any officer or public body thereof, or in the execution of any contract or contracts for public works, with any County, City and County, City, Town, District or other political subdivision of this State, or any officer or public body thereof, shall be deemed to be employed upon public work.

SECTION 2. The public body awarding any contract for public work on behalf of the State, or on behalf of any County, City and County, City, Town, District or other political subdivision thereof, or otherwise undertaking any public work, shall ascertain the general prevailing rate of per diem wages in the locality in which the work is to be performed for each craft or type of workmen or mechanic needed to execute the contract, and shall specify in the call for bids for said contract, and in the contract itself, what the general prevailing rate of per diem wages in the said locality is for each craft or type of workmen needed to execute the contract, also the prevailing rate for legal holiday and overtime work, and it shall be needed to execute the contract, also the prevailing rate for legal holiday and overtime work, and it shall be mandatory upon the Contractor to whom the contract is awarded, and upon any subcontractor under him, to pay not less than the said specified rates to all laborers, workmen and mechanics employed by them in the execution of the contract. The Contractor shall forfeit as a penalty to the State, County, City and County, City, Town, District or other political subdivision on whose behalf the contract is made or awarded, Ten Dollars (\$10.00) for each laborer, workman or mechanic employed for each calendar day, or portion thereof, such laborer, workman or mechanic is paid less than the stipulated rates for any work done under said contract, by him, or by any subcontractor under him, and the said public body awarding the contract shall cause to be inserted in the contract a stipulation to this effect. It shall be the duty of such public body awarding the contract, and its agents and officers to take cognizance of complaints of all violations of the provisions of this Act committed in the course of the execution of the contract, and when making payments to the contractor of monies becoming due under said contract to withhold and retain therefrom all sums and amounts which shall have been forfeited pursuant to the herein said stipulation and the terms of this Act; provided, however, that no sum shall be so withheld, retained or forfeited, except from the final payment, without a full investigation by the awarding body. It shall be lawful for any contractor to withhold from any subcontractor under him sufficient sums to cover any penalties withheld from him by the awarding body on account of said subcontractor's failure to comply with the terms of this Act, and if payment has already been made to him the contractor may recover from him the amount of the penalty or forfeiture in a suit at law.

PREVAILING WAGE LEGAL REQUIREMENTS Continued:

SECTION 3. The contractor and each subcontractor shall keep, or cause to be kept, an accurate record showing the names and occupations of all laborers, workmen and mechanics employed by him, in connection with the said public work, and showing the actual per diem wages paid to each of such workers, which record shall be open at all reasonable hours to the inspection of the public body awarding the contract, its officers and agents.

SECTION 4. Any construction or repair work done under contract, and paid for in whole or in part out of public funds, other than work done directly by any public utility company pursuant to order of the Railroad Commission or other public authority, whether or not done under public supervision or direction or paid for wholly or in part out of public funds, shall be held to be “public works” within the meaning of political subdivision of this State in which the building, highway, road, excavation, or other structures, project, development or improvement is situated in all cases in which the contract is awarded by the State, or any public body thereof, and shall be held to mean the limits of the County, City and County, City, Town, District or other political subdivision on whose behalf the contract is awarded in all other cases. The term “general prevailing rate of per diem wages” shall be the rate determined upon as such rate by the public body awarding the contract, or authorizing the work, whose decision in the matter shall be final. Nothing in this act, however, shall be construed to prohibit the payment to any laborer, workman or mechanic employed on any public work as aforesaid of more than the said general prevailing rate of wages.

ARTICLE 5160. **Bond for Wages:**

Any person or persons, firm or corporation, entering into a formal contract with this State or its counties or school districts or other subdivisions thereof or any municipality therein for the construction of any public building, or the prosecution and completion of any public work shall be required, before, commencing such work, to execute the usual Penal Bond, with additional obligation that such contractor shall promptly make payments to all persons supplying him or them with labor and materials in the prosecution of the work provided for in such contract. Any person, company, or corporation who has furnished labor or materials used in the construction or repair or any public building or public work, and payment for which has not been made, shall have the right to intervene and be made a party to any action instituted by the State or any adjudicated in such action and judgment rendered thereon, subject, however, to the priority of the claims and judgment of the State or municipality.

If the full amount of the liability of the surety on said bond is insufficient to pay the full amount of said claims and demands, then, after paying the full amount due to the State or municipality, the remainder shall be distributed pro-rata among said intervenors. Provided, further, that all claims for labor and materials furnished to said Contractor, and all claims for labor and material furnished to any contractor shall be itemized and sworn to as required by Statutes as to mechanic’s lien claims, and such claims shall be filed with the County Clerk of the County, in which said work is being prosecuted, within ninety days from the date of the delivery of said material and the performance of said work. The County Clerk shall note on the mechanic’s lien record, the name of the claimant, the amount claimed, the name of the contractor and the name of the county, School District, other subdivisions, or municipality with which the contract was made; and the County Clerk shall index the claim under the name of the contractor and under the name of the County, School District, other subdivision or municipality; with which the contract was made.

PREVAILING WAGE LEGAL REQUIREMENTS Continued:

ARTICLE 5160. **Bond for Wages Continued:**

Provided further, that after completion and acceptance of completed project all moneys due contractor under said contract shall be held by the state or its counties or school districts or other subdivision, thereof or an affidavit made by Contractor that all just bills for labor and material under this contract has been paid in full by the Contractor.
Acts 1913, P. 185; Acts 1929, 41st leg., P.4881. Ch. 22 paragraph 1.

GENERAL PREVAILING WAGE RATES

General Decision Number: TX190255 01/04/2019 TX255

Superseded General Decision Number: TX20180305

State: Texas

Construction Type: Building

County: Hidalgo County in Texas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was 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 \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019

BOIL0074-003 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 28.00	22.35

ENGI0178-005 06/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
(1) Tower Crane.....	\$ 29.00	10.60
(2) Cranes with Pile Driving or Caisson Attachment and Hydraulic Crane 60 tons and above.....	\$ 28.75	10.60
(3) Hydraulic cranes 59 Tons and under.....	\$ 27.50	10.60

* IRON0084-011 06/01/2018

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 23.77	7.12

PLUM0412-004 04/01/2013		
	Rates	Fringes
PLUMBER.....	\$ 31.14	12.43

SUTX2014-031 07/21/2014		
	Rates	Fringes
BRICKLAYER.....	\$ 16.17	0.00
CARPENTER.....	\$ 14.21	2.22
CEMENT MASON/CONCRETE FINISHER...	\$ 12.46	0.00
ELECTRICIAN.....	\$ 18.44	4.53
INSULATOR - MECHANICAL (Duct, Pipe & Mechanical System Insulation).....	\$ 11.54	2.17
IRONWORKER, REINFORCING.....	\$ 12.01	0.00
IRONWORKER, STRUCTURAL.....	\$ 15.04	4.34
LABORER: Common or General.....	\$ 8.00	0.00
LABORER: Mason Tender - Brick...	\$ 10.00	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.89	0.96
LABORER: Pipelayer.....	\$ 11.00	3.47
LABORER: Roof Tearoff.....	\$ 10.06	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 14.04	1.01
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 13.93	0.00
OPERATOR: Bulldozer.....	\$ 18.29	1.31
OPERATOR: Drill.....	\$ 16.22	0.34
OPERATOR: Forklift.....	\$ 14.83	0.00
OPERATOR: Grader/Blade.....	\$ 10.00	0.00
OPERATOR: Loader.....	\$ 12.87	0.70
OPERATOR: Mechanic.....	\$ 17.00	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 16.03	0.00

OPERATOR: Roller.....	\$ 12.70	0.00
PAINTER (Brush, Roller, and Spray).....	\$ 11.27	0.00
PIPEFITTER.....	\$ 15.22	3.16
ROOFER.....	\$ 11.42	0.00
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 18.40	2.12
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 21.13	6.53
TILE FINISHER.....	\$ 11.22	0.00
TILE SETTER.....	\$ 12.15	0.00
TRUCK DRIVER: Dump Truck.....	\$ 12.39	1.18
TRUCK DRIVER: Flatbed Truck.....	\$ 19.65	8.57
TRUCK DRIVER: Semi-Trailer Truck.....	\$ 12.50	0.00
TRUCK DRIVER: Water Truck.....	\$ 12.00	4.11

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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.

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END OF GENERAL DECISION

**AFFIDAVIT AND WAIVER OF LIEN
PRIME CONTRACTOR**

STATE OF _____

COUNTY OF _____

Personally appeared before me, the undersigned Notary Public for said County and State
_____(Name of Individual),
_____(Title) of _____

(Prime Contractor), who being duly sworn by me states on oath that all product suppliers and Subcontractors, payrolls, sales tax, privilege tax or license, old age benefits tax, state and federal unemployment insurance, and other liabilities incurred in the performance of _____
(Type of Contract) Contract for the construction of improvements at **Project No. #** _____
Project Title _____(Name of Project), have been paid in full and that the above named Prime Contractor waives any claims and released _____
_____(Owner) from any rights or claims (including lien rights) for debts due and owing by virtue of the furnishing of any labor, products, and supplies furnished for such improvements.

The above named Prime Contractor agrees to indemnify the Owner and save him harmless on account of any loss he may sustain in reliance upon this Affidavit and Waiver of Lien including the amount of any lien he may be compelled to pay all costs relating thereto and a reasonable attorney's fee.

(Prime Contractor)

By: _____
Type/Print Name

Title: _____

Date: _____

Sworn to and subscribed before me
this the ___ day of _____, 20__.

Notary Public

My Commission Expires: _____

**RELEASE AND WAIVER OF CLAIMS BY
SUBCONTRACTORS AND PRODUCT VENDORS**

STATE OF _____

COUNTY OF _____

Personally appeared before me the undersigned authority in and for said County and State (Name of Individual), _____ (Title) of _____ (Company), who, being duly sworn by me states on oath that all bills for labor and products, sales tax, privilege tax or license, old age benefits tax, state and federal unemployment insurance and other liability have been paid in full, or that funds are in hand to discharge such liabilities when due, incurred in the performance of its Subcontract for furnishing labor or products in the construction of improvements at **Project No. #** _____ **Project Title** _____
_____ **(Name of Project & Location)**, upon receipt of check in the amount \$ _____, the undersigned company waives any claims and releases (Owner) _____ (Contractor) from any rights or claims for debts due and owing by virtue of the furnishing of any labor or products and any lien therefore.

(Name of Company)

Signature: _____

By: _____
Type/Print Name

Title: _____

Date: _____

Sworn to and subscribed before me
this ____ day of _____, 20__.

Notary Public

My Commission Expires: _____

**CONTRACTOR'S AFFIDAVIT
AS TO STATUS OF LIENS**

STATE OF _____

COUNTY OF _____

Personally appeared before me, the undersigned Notary Public for said County and State, _____(Name of Individual), _____(Title), of _____(Prime Contractor), who being duly sworn by me states on oath that to the best of his knowledge and belief, except as listed below, the Releases and Waivers of Claim attached hereto include all Subcontractors and all suppliers of labor, products, and equipment provided by all persons who may have lien against the property of _____(Owner), **Project No. #**_____ **Project Title** _____, located at _____, (Location of Project), arising out of the construction of improvements thereon.

Exceptions: (If none, write "NONE." Any exception listed shall be bonded by the Contractor to indemnify the Owner, and a copy of each such bond shall be attached hereto.)

- 1.
- 2.
- 3.
- 4.

(Name of Company)

By: _____
Type/Print Name

Title: _____

Date: _____

Sworn to and subscribed before me
this ____ day of _____, 20____

Notary Public
My Commission Expires: _____

TECHNICAL SPECIFICATIONS

SECTION 01010 - SUMMARY OF WORK**PART 1 - GENERAL**

1.01 SUMMARY

A. Project identification:

Fire Station No.5
5521 N 23rd St,
McAllen, TX 78504

B. Work Covered by Contract Documents:

Base Bid:

BUILDING EMERGENCY ELECTRICAL DISTRIBUTION:

A new 120/240v emergency natural gas engine will be provided. The new emergency generator will provide emergency power to the building via a main distribution panel segregated into emergency and standby loads. A new transfer switch will be provided. New conduit will be routed from generator to the building.

SPECIFICATIONS:

Unless otherwise noted, all construction specifications to be per FPC master specifications.

GENERAL:

Design Codes:

1. National Electrical Code (NEC) - 2015 Edition
2. Electrical Safety in the Workplace
3. Occupational Safety and Health Act (OSHA)
4. American with Disability Act (ADA)
5. American Society for Testing and Materials (ASTM)
6. FPC Guideline Specifications - Latest Revision.
7. Applicable state and federal codes, ordinances and regulations.
8. National Electrical Manufacturer Association (NEMA)
9. National Fire Protection Association (NFPA) - 2015 Edition.
10. International Building Code (IBC) - 2015 Edition
11. ASHRAE 90.1 - 2010 Edition.

- C. Particular project requirements:
1. Existing site conditions and restrictions:
(To be covered at pre-construction meeting)
 2. Requirements for sequencing or scheduling:
(To be covered at pre-construction meetings)
 3. Prior or concurrent work by Owner or others:
(To be covered at pre-construction meetings)
 4. Owner's partial occupancy:
(To be covered at pre-construction meetings)
 5. Contractor's use of existing facilities: Not Allowed.
- D. Permits: Apply for, obtain, and pay for permits required to perform the work. Submit copies to Architect.
- E. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. See individual specification Sections for requirements and submittals. Submit copies of inspection reports, notices and similar communications to Owner.
- F. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.
- G. Existing Conditions: Notify Owner of existing conditions differing from those indicated on the drawings. Do not remove or alter structural components without prior written approval.
- H. Definitions for terms used in the specifications:
1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
 2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
 3. Match Existing: Match existing as acceptable to the Owner.
- I. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the

Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.

- J. Writing style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

END OF SECTION-01010

SECTION 01045 – CUTTING AND PATCHING**PART 1 - GENERAL****1.1 COORDINATION**

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 SECTION INCLUDES

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

1.3 RELATED SECTIONS

- A. Section 01100 – Summary: Work by Owner or by separate Contractors.
- B. Section 01120 – Alteration Project Procedures.
- C. Section 01600 – Substitution Procedures.
- D. Individual Product Specification Sections:
 - 1. Cutting and patching incidental to work of the section.
 - 2. Advance notification to other sections of openings required in work of those sections.
 - 3. Limitations on cutting structural members.

1.4 SUBMITTALS

A. Submit written request in advance of cutting or alteration which affects:

1. Structural integrity of any element of Project.
2. Integrity of weather exposed or moisture resistant element.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of sight exposed elements.
5. Work of Owner or separate Contractor.

B. Include in request:

1. Identification of Project.
2. Location and description of affected Work.
3. Necessity for cutting or alteration.
4. Description of proposed Work and Products to be used.
5. Alternatives to cutting and patching.
6. Effect on work of Owner or separate Contractor.
7. Written permission of affected separate Contractor.
8. Date and time work will be executed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Primary Products: Those required for original installation.

B. Product Substitution: For any proposed change in materials, submit request for substitution in accordance with Section 01600 – Substitution Procedures.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing Work, assess conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work. Avoid unnecessary or extended exposure to weather of work exposed by cutting. Avoid entrapment of moisture or other deleterious mater between existing substrates and new work.
- C. Maintain excavations free of water.

3.3 CUTTING

- A. Execute cutting and fitting including excavation and fill to complete the Work.
- B. Uncover work to install improperly sequenced work.
- C. Remove and replace defective or non-conforming work.
- D. Remove samples of installed work for testing when requested.
- E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.4 PATCHING

- A. Execute patching to complement adjacent Work.

- B. Fit Products together to integrate with other Work.
- C. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- D. Employ skilled installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- E. Restore work with new Products in accordance with requirements of Contract Documents.
- F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION-01045

SECTION 01100 - SUMMARY**PART 1 - GENERAL****1.1 SUMMARY OF WORK**

A. Project Identification: As follows:

Project: Fire Station No.5 Located at 5521 N 23rd St, McAllen, TX 78503

1. Owner: City of McAllen

B. Contract Documents, dated February 2019 were prepared by City of McAllen

Staff. Base Bid: This project consists of the following:

A. BUILDING EMERGENCY ELECTRICAL DISTRIBUTION:

A new 120/240v emergency natural gas engine will be provided. The new emergency generator will provide emergency power to the building via a main distribution panel segregated into emergency and standby loads. A new transfer switch will be provided. New conduit will be routed from generator to the building.

SPECIFICATIONS:

Unless otherwise noted, all construction specifications to be per FPC master specifications.

GENERAL:

Design Codes:

1. National Electrical Code (NEC) - 2015 Edition.
2. Electrical Safety in the workplace.
3. Occupational Safety and Health Act (OSHA)
4. American with Disability Act (ADA)
5. American Society for Testing and Materials (ASTM)
6. FPC Guideline Specifications - Latest Revision.
7. Applicable state and federal codes, ordinances and regulations.
8. National Electrical Manufacturer Association (NEMA)
9. National Fire Protection Association (NFPA) - 2015 Edition.
10. International Building Code (IBC) - 2015 Edition
11. ASHRAE 90.1 - 2010 Edition.

Upon substantial completion of this project, the area will be a complete working system. Contractor's Use of Premises: During construction, Contractor shall secure area to ensure the general public cannot enter work area. Contractor's use of premises is limited only by Owner's right to perform work or employ other contractors on portions of Project:

1. These facilities will continue its occupancy and operations as such, contractor's activities shall not interfere with the operations as currently exist. A cooperative effort and relationship shall be established and exist between contractor and all involved personnel.
2. 24-hour notice to owner to advise of work to be performed.
3. Normal business working hours will be observed.

END OF SECTION - 01100

SECTION 01200 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 COORDINATION

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 UNIT PRICES

- A. Changes to the Work incorporating Unit Prices will be made by Change Order.

1.3 CONTRACT MODIFICATION PROCEDURES

- A. On Owner's approval of a proposal from Contractor, Architect will issue a Change Order on AIA Document G701, for all changes to Contract Sum or Contract Time.
- B. When Owner and Contractor disagree on the terms of a proposal, Architect may issue a Construction Change Directive on AIA Document G714, instructing Contractor to proceed with the change. Construction Change Directive will contain a description of the change and designate the method to be followed to determine changes to Contract Sum or Contract Time.

1.4 PAYMENT PROCEDURES

- A. Submit a Schedule of Values **at least 10 days before** the first Application for Payment. In Schedule of Values, break down Contract Sum into at

least one-line item for each Specification Section. Correlate the Schedule of Values with Contractor's Construction Schedule.

- B. Submit 3 copies of each application for payment on AIA Document G702/703, according to the schedule established in Owner/Contractor Agreement.
1. For the second Application for Payment through the Application for Payment submitted at Substantial Completion, submit partial releases of liens from each subcontractor or supplier for whom amounts were requisitioned in the previous Application for Payment.
 2. Submit final Application for Payment after completion of Project closeout procedures with release of liens and supporting documentation. Include consent of surety to final payment and insurance certificates.

END OF SECTION - 01200

SECTION 01300 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 COORDINATION

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 PROJECT MANAGEMENT AND COORDINATION

- A. Verify layout information shown on Drawings, in relation to property survey and existing benchmarks, before laying out the Work.
- B. Coordinate construction to ensure efficient and orderly execution of each part of the Work.
- C. Progress meetings will be held at Project site every two weeks. Notify Owner and Architect of meeting dates. Each subcontractor or other entity concerned with current progress or involved with planning or coordination of future activities, shall attend. The Contractor shall:
 - 1. **Prepare a progress meeting agenda.**
 - 2. **Prepare a sign in sheet for each progress meeting.**
 - 3. **Prepare minutes of each meeting and distribute to parties present.**

1.3 CONSTRUCTION SCHEDULE

- A. Prepare a horizontal bar-chart construction schedule. Provide a separate time bar for each activity and a vertical line to identify the first workday of each week. Use same breakdown of Work indicated in the Schedule of Values. As Work progresses, mark each bar to indicate actual completion.
1. Submit within twenty (20) days after date established for Commencement of the Work.
 2. Coordinate each element with other activities. Show each activity in proper sequence. Indicate sequences necessary for completion of related Work.
 3. Indicate Substantial Completion and allow time for Architect's procedures necessary for certifying Substantial Completion.
 4. Schedule Distribution: Distribute copies to Owner, Architect, subcontractors, and parties required to comply with dates.
 5. Updating: Revise the schedule after each meeting or activity where revisions have been made. Distribute revised copies to Owner, Architect, subcontractors, and parties required to comply with dates.

1.4 SUBMITTAL PROCEDURES

- A. Coordinate submittal preparation with construction schedule, fabrication lead-times, other submittals, and activities that require sequential operations.
1. No extension of Contract Time will be authorized due to failure to transmit submittals in time to permit processing sufficiently in advance of when materials are required in the Work.
 2. Architect will not accept submittals from sources other than Contractor.
- B. Prepare submittals by placing a permanent label on each for identification. Provide a 4 by 5 inch space on the label or beside title block to record

review and approval markings and action taken. Include the following information on the label:

1. Project name.
 2. Date.
 3. Name and address of Contractor.
 4. Name and address of subcontractor or supplier.
 5. Number and title of appropriate Specification Section.
 6. Contractor's certification that materials comply with specified requirements.
- D. Coordinate each submittal with other submittals and with work that does not require submittals.
- E. Product Data: Mark each copy to show applicable choices and options. Include the following:
1. Data indicating compliance with specified standards and requirements.
 2. Notation of coordination requirements.
 3. For equipment data, include rated capacities, dimensions, weights, required clearances, and furnishes specialties and accessories.
- F. Shop Drawings: Submit newly prepared information drawn to scale. Do not reproduce Contract Documents or copy standard information. Submit 1 reproducible print and 1 blue- or black-line print on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches. Architect will return the reproducible print.
- G. Include the following:

1. Dimensions, profiles, methods of attachment, coordination with adjoining work, large scale details, and other information, as appropriate for the Work.
 2. Identification of products and materials.
 3. Notation of coordination requirements.
 4. Notation of dimensions established by field measurement.
 5. Identification of deviations from Contract Documents.
- F. Samples: Submit Samples finished as specified and identical with the material proposed. Where variations are inherent in the material, submit sufficient units to show limits of the variations. Include product name or name of the manufacturer.
- H. Architect will review each submittal, mark as appropriate to indicate action taken, and return copies less those retained. Compliance with specified requirements remains Contractor's responsibility.

PART 2 - PRODUCTS (Not Applicable)

END OF SECTION-01300

SECTION 01340 - SUBMITTALS**PART 1 - GENERAL**

1.1 COORDINATION

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 WORK INCLUDED

- A. Provide shop drawings, product data, physical samples and color samples as indicated herein and in each technical section of these specifications.

1.3 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Additional submittal requirements specific to the particular section of the specifications.

PART 2 - PRODUCTS

2.1 SHOP DRAWINGS

- A. Prepare shop drawings using competent draftsmen, clearly and precisely showing the following:
 - 1. The size and gage of members.
 - 2. The method of anchoring and securing members of parts together.

3. The quantity and location of each item.
 4. Other pertinent data necessary to show the Work to be done and where and how it is to be done.
- B. Prepare Drawings to scale, including full size details as required to fix and illustrate the Work required. Do not use Contract Documents or reproductions thereof as shop drawing submittals.
- C. Each sheet of Drawings shall be 30 x 40 inches maximum size with borders. Provide a title block in the lower right hand corner with the following information:
1. Title of the sheet.
 2. Name and location of Project.
 3. Names of:
 - a. Architect/Engineer.
 - b. General Contractor.
 - c. Manufacturer of the specified materials and equipment.
 4. The date of the Submittal.
 5. The date of each correction or revision.
 6. **Submittal number including Division No.** (such as submittal no. 3 under Division 11 numbered "11-03").
- C. Fold drawings to 8-1/2x11 inch dimensions with title block exposed to top.
- D. Check the Drawings and add any corrections of field measurements needed. Stamp and sign the Contractor's approval, checker's signature, and date of approval before submitting to the Architect. Shop Drawings which do not bear the Contractor's stamp or have not been reviewed by the Contractor, will be returned by the Architect without review or approval.
- F. Number Shop Drawings consecutively. Indicate working and erection dimensions, arrangements, sectional views, necessary details including

complete information for making connections with other Work, kinds of materials, and finishes.

- G. Provide a transmittal letter in duplicate, pointing out any deviations from items, methods or named manufacturers included in the Specifications or on the Drawings. Note submittal file number including Division.
- H. Submit **six (6)** blue line prints of each Shop Drawing sheet. Make such corrections, changes, resubmit bound sets of Shop Drawings prints, as required herein, until approved is obtained. Any corrections or changes indicated on Shop Drawings shall not be considered as an extra work order.

2.2 PHYSICAL SAMPLES

- A. Provide duplicate samples of items as specified. Samples shall be 12 inches square or 12 inches long unless noted otherwise. Minimum liquid samples shall be 1 pint. Installed materials shall match approved samples.
- B. For Architect's permanent files provide one (1) 6" x 6" sample of all interior finishes, colors and materials (aluminum finish, glazing, plastic laminate, paint finish flooring materials, ceiling finish, etc.)
- C. Provide a transmittal letter with each sample, listing the following:
 - 1. Specification section title and paragraph specifying the material.
 - 2. Name and location of Project
 - 3. Names of:
 - a. Architect/Engineer.
 - b. General Contractor.
 - c. Manufacturer of the specified materials and equipment.
 - 4. The date of the Submittal.
 - 5. Submittal file number including Division.
- E. If samples are not acceptable they will be returned directly to the Contractor for modification and resubmission.
- F. If samples are acceptable, notification will be sent directly to the Contractor, and the sample retained for comparison with the complete Work.

2.3 MANUFACTURER'S PRODUCT DATA

- A. Provide **six (6)** copies of pre-printed Product Data of items as specified. Carefully mark out all items not applicable to the specified item.
- B. Standard catalogs, brochures, etc. including information not applicable to the project and not marked through, will be returned without review or approval.
- C. Provide a transmittal letter with the Product Data from each manufacturer, listing the following information:
 - 1. Name and location of Project.
 - 2. Names of:
 - a. Architect/Engineer.
 - b. General Contractor.
 - c. Manufacturer of the specified materials and equipment.
 - 3. The date of the Submittal.
 - 4. Submittal file number including Division.
- D. If Product Data is not approved, one copy will be marked and returned directly to the Contractor for modification and resubmission.
- E. If Product Data is approved, notification and one copy of the acceptable Product Data will be sent directly to the Contractor.
- F. When requested by the Architect, provide six (6) copies of each ASTM Federal Specification, or other applicable documents referenced in the material Section.

PART 3 - EXECUTION

3.1 REVIEW PROCEDURE

- A. Submittals will be reviewed with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the project and with the information given in the Contract Documents. Architect shall be allowed a maximum review period of **fourteen (14)** calendar days. The

review of a separate item shall not indicate a review of an assembly in which the item functions. Submittals that contain excessive errors or that are incomplete will be returned without review and approval and any delay caused thereby shall be the responsibility of the Contractor.

- B. If any submittals are not approved as submitted, all copies will be returned directly to the Contractor for revision. The reviewed submittals will be returned to the Contractor as soon as practicable.
- C. The Contractor shall make all revisions as noted and shall resubmit the required number of corrected copies of submittals, until no exceptions are taken. The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than those requested on previous submissions.
- D. The review of submittals shall not relieve the Contractor of responsibility for deviations from the requirements of the Contract Documents unless the Contractor has submitted, in writing, such deviations and written approval has been given to each specific deviation. The review shall not relieve the Contractor from responsibility for errors and omissions in the Shop Drawings and samples.
- E. No portion of the Work requiring a submittal shall commence until the submittal has been approved as designated in the Conditions of the Contract. All such portions of the Work shall be in accordance with the submittal that has been stamped with final "Reviewed Without Exceptions" note, or "Approved" note.
- F. Materials and equipment specified or approved prior to beginning the Work are required to be used on the Project. Any proposed substitution resulting from no availability of specified items must be proven "better than" by the Contractor and approved in writing by the Architect. Substitutions included in submittals shall be so noted and brought to the Architect's attention in the submittal and on the transmittal. Failure to follow this procedure will render the substitution as not acceptable whether or not reviewed by the Architect.
- G. The Contractor shall have the approved shop drawings at the site at all times for use in the construction of the Work. Failure of the Contractor to supply such drawings will be deemed sufficient cause to delay the Work until such drawings are available for field use and reference.

- H. For submittals that will be reviewed by one of the Architect's consultants, these submittals shall be delivered directly to the Architect. The Architect will then be responsible to provide the Consultant with a copy of the submittal.

- I. For submittals that will be reviewed by one of the Architect's consultants, do not send to the Consultant as part of the package any items which will be reviewed by the Architect. As an example, do not provide a single submittal package combining Structural Steel and Miscellaneous Metal Fabrications.

END OF SECTION-01340

SECTION 01411 - ENVIRONMENTAL PROTECTION**PART 1 - GENERAL****1.01 GENERAL REQUIREMENTS**

The contractor shall perform the work minimizing environmental pollution and damage as the result of construction operations. Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution and damage requires consideration of land, water, and air, and includes management of visual aesthetics, noise, solid waste, as well as other pollutants. The environmental resources within the project boundaries and those affected outside the limits of permanent work shall be protected during the entire duration of this contract.

A. SUBCONTRACTORS

The Contractor shall ensure compliance with this section by subcontractors.

B. PERMITS

The Contractor shall obtain all needed permits or licenses. The Owner will not obtain any permits for this project. The Environmental Protection Agency (EPA), through the national pollutant discharge elimination system (NPDES), requires general permits, a notice of intent, and a notice of discontinuation. The Contractor shall be responsible for implementing the terms and requirements of the appropriate permits as needed and for payment of all fees.

C. PRECONSTRUCTION SURVEY

Prior to starting any onsite construction activities, the Contractor and Owner shall make a joint condition survey, after which the Contractor shall prepare a brief report indicating on a layout plan the condition of trees, shrubs, and grassed areas immediately adjacent to work sites and adjacent to the assigned storage area and access routes as applicable. This report will be signed by both the owner and the Contractor upon mutual agreement as to its accuracy and completeness.

D. MEETINGS

The Contractor shall meet with representatives of the Owner to change the environmental protection plan as needed for compliance with the environmental pollution control program.

E. NOTIFICATION

The Owner will notify the Contractor in writing of any observed noncompliance with the previously mentioned Federal, State or local laws or regulations, permits, and other elements of the Contractor's environmental protection plan. The Contractor shall, after receipt of such notice, inform the Owner of proposed corrective action and take such action when approved. If the Contractor fails to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspensions.

F. PREVIOUSLY USED EQUIPMENT

The Contractor shall thoroughly clean all construction equipment previously used at other sites before it is brought into the work areas, ensuring that soil residuals are removed.

G. PAYMENT

No separate payment will be made for work covered under this section; all costs associated with this section shall be included in the contract unit and/or lump sum prices in the Bidding Schedule.

1.02 LAND RESOURCES

The Contractor shall confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, the Contractor shall identify the land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, the Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without permission. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Stone, earth or other material displaced into uncleared areas shall be removed.

A. WORK AREA LIMITS

Prior to any construction, the Contractor shall mark the areas that need not be disturbed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor's personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

B. LANDSCAPE

Trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques. Fencing shall be erected at sufficient distance from a tree trunk (usually equal to the diameter of the tree crown) to prevent compaction of soil over the root spread.

C. UNPROTECTED ERODIBLE SOILS

Earthwork brought to final grade shall be finished as indicated. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in cases where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be totally cleared. Clearing of such areas shall progress in reasonably sized increments as needed to use the developed areas as approved by the Owner.

D. DISTURBED AREAS

The Contractor shall effectively prevent erosion and control sedimentation through approved methods and Best Management Practices (BMP's) including, but not limited to, the following:

1. Retardation and control of runoff. Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, berms, and by any measures required by area wide plans under the Clean Water Act.
2. Erosion and sedimentation control devices. The Contractor shall construct or install temporary and permanent erosion and sedimentation control features as indicated on the drawings. Berms, dikes, drains, sedimentation basins,

grassing, and mulching shall be maintained until permanent drainage and erosion control facilities are completed and operative.

3. Sediment basins. Sediment from construction areas maybe trapped in temporary or permanent sediment basins in accordance with the drawings. The basins shall accommodate the runoff of a local 5 year storm (6.1" in 24 hours). After each storm, the basins shall be pumped dry and accumulated sediment shall be removed to maintain basin effectiveness. Overflow shall be controlled by paved weirs or by vertical overflow pipes. The collected topsoil sediment shall be reused for fill on the construction site, and/or stockpiled for use at another site. The Contractor shall institute effluent quality monitoring programs as requested by State and local environmental agencies.
4. De-watering of site and control of water quality. All water discharged from any excavation will be deposited at approved locations only. The Contractor will monitor water quality and not dispose of any material illegally. De-watering methods will be included in the Contractor's SWPPP.

E. CONTRACTOR FACILITIES AND WORK AREAS

The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas designated on the drawings or as directed by the Owner. Temporary movement or relocation of Contractor facilities shall be made only when approved. Borrow areas shall be managed to minimize erosion and to prevent sediment from entering nearby waters. Spoil areas shall be managed and controlled to limit spoil intrusion into areas designated on the drawings and to prevent erosion of soil or sediment from entering nearby waters. Spoil areas shall be developed in accordance with the grading plan indicated on the drawings. Temporary excavation and embankments for plan and/or work areas shall be controlled to protect adjacent areas from despoilment.

1.03 WATER RESOURCES

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Toxic or hazardous chemicals shall not be applied to soil or vegetation when such application may cause contamination of the fresh water reserve. Monitoring of water areas affected by construction shall be the Contractor's responsibility. All water areas affected by construction activities shall be monitored by the Contractor.

A. WASHING AND CURING WATER

Waste waters directly derived from construction activities shall not be allowed to enter stormwater or wastewater facilities.

B. FISH AND WILDLIFE

The Contractor shall minimize interference with, disturbance to, and damage of fish and wildlife.

1.04 AIR RESOURCES

Equipment operation and activities or processes performed by the Contractor in accomplishing the specified construction shall be in accordance with the State of Texas rules and all Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency shall be maintained. Monitoring of air quality, if required, shall be the Contractor's responsibility. All air areas affected by the construction activities shall be monitored by the Contractor. Monitoring results will be periodically reviewed by the Owner to ensure compliance.

A. PARTICULATES

Dust particles, aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, light bituminous treatment baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. The Contractor must have sufficient, competent equipment available to accomplish these tasks. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs.

B. HYDROCARBONS AND CARBON MONOXIDE

Hydrocarbons and carbon monoxide emissions from equipment shall be controlled to Federal and State allowable limits at all times.

C. ODORS

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

D. SOUND INTRUSIONS

The Contractor shall keep construction activities under surveillance and control to minimize environment damage by noise. The Contractor shall comply with the provisions of the City ordinances.

1.05 WASTE DISPOSAL

Disposal of wastes shall comply with all applicable City requirements and as specified below.

A. SOLID WASTES

Solid wastes (excluding clearing debris) shall be placed in containers and emptied on a regular schedule. Handling and disposal shall be conducted to prevent contamination. Segregation measures shall be employed so that no hazardous or toxic waste will become co-mingled with solid waste. The Contractor shall transport solid waste and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. Contractor shall dispose of classified non-hazardous solid waste at disposal area. The Contractor shall comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

B. HAZARDOUS WASTES

The Contractor shall take sufficient measures to prevent spillage of hazardous materials during dispensing and collect waste in suitable containers observing compatibility. Toxic materials shall not be used within the construction site. The Contractor shall immediately transport hazardous waste and dispose of it in compliance with Federal and local laws and regulations. Storage of hazardous waste on the construction site is prohibited. Spills of hazardous materials shall be immediately reported to the Owner. Cleanup and cleanup costs due to spills shall be the Contractor's responsibility.

C. BURNING

Burning will not be allowed.

1.06 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area will be so designated by the Owner, if any has been identified. The Contractor shall take precautions to preserve all such resources as they existed at the time they were first pointed out. The Contractor shall provide and install protection for these resources and be responsible for their preservation during the life of the contract. If during excavation or other construction activities any previously unidentified or unanticipated resources are discovered or found, all activities that may damage or alter such resources shall be temporarily suspended. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone charcoal, or other deposits; rocks or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, the Contractor shall immediately notify the Owner. While waiting for instructions the Contractor shall record, report, and preserve the finds in accordance with the requirements of the Texas State Historical Preservation Office.

1.07 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all areas used for construction.

1.08 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore landscape features damaged or destroyed during construction operations outside the limits of the approved work areas at no costs to the OWNER.

1.09 MAINTENANCE OF ANTI-POLLUTION FACILITIES

The Contractor shall maintain permanent and temporary pollution control facilities and devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

1.10 TRAINING OF CONTRACTOR PERSONNEL

The Contractor's personnel shall be trained in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental pollution control.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION - 01411

SECTION 01460 - LABORATORY TESTING AND INSPECTION SERVICES**PART 1 - GENERAL**

1.01 GENERAL DESCRIPTION OF WORK:

- A. This item shall consist of all required testing and inspection services required to provide certification that the completed construction is in substantial compliance with the contract, plans and specifications.
- B. Testing and inspections shall include: all underground utilities (water, sewer & drainage), roadway embankment, subgrade, base & asphalt, curbs of all types, concrete pavements, concrete structures, signage, striping, and all other facilities as may be included in the overall scope of construction.
- C. Inspections may include observations to determine compliance with the prescribed stormwater pollution prevention plan (SW3P), trench safety, personal protection equipment and traffic control plans.
- D. The ENGINEER has the authority to observe, test, inspect, approve, and accept the work. The ENGINEER decides all questions about the quality and acceptability of materials, work performed, work progress, Contract interpretations, and acceptable Contract fulfillment. The ENGINEER has the authority to enforce and make effective these decisions.
- E. The ENGINEER acts as a referee in all questions arising under the terms of the Contract. The ENGINEER's decisions will be final and binding.

PART 2 - PRODUCTS (not used)**PART 3 - EXECUTION**

3.01 LABORATORY TESTING

- A. All required laboratory testing shall be completed by an independent, qualified testing laboratory approved by the CITY. All initial testing shall be paid for by the CITY. Any retesting required shall be paid for by the CONTRACTOR.
- B. Cost for additional review time will be billed to the CONTRACTOR by the OWNER for the actual hours required for the re-testing in accordance with the current rates as established by the contract between the CITY and the Testing Lab. Cost for the additional review shall be paid to the OWNER by the CONTRACTOR on a monthly basis.

3.02 INSPECTIONS

- A. PROVIDERS: All required inspections shall be provided by either the independent testing laboratory or by the City of McAllen Engineering department staff. All initial inspections conducted during normal business hours (8:00 am to 5:00 pm, Monday - Friday, excluding Holidays) shall be provided by the CITY at no charge. Any inspections or testing requested by the CONTRACTOR to be provided at any other time will be paid for by the CONTRACTOR. Any re-inspections or re-testing required shall be paid for by the CONTRACTOR.
- B. COSTS: Cost for additional review time will be billed to the CONTRACTOR by the OWNER for the actual hours required for the retesting in accordance with the current rates as established by the contract between the CITY and the Testing Lab. Cost for the additional review shall be paid to the Owner by the CONTRACTOR on a monthly basis.
- C. INSPECTORS: Inspectors are authorized representatives of the ENGINEER. Inspectors are authorized to examine all work performed and materials furnished, including preparation, fabrication, and material manufacture. Inspectors inform the CONTRACTOR of failures to meet Contract requirements. Inspectors may reject work or materials and may suspend work until any issues can be referred to and decided by the ENGINEER. Inspectors cannot alter, add, or waive Contract provisions, issue instructions contrary to the Contract, act as foremen for the CONTRACTOR, or interfere with the management of the work. Inspection or lack of inspection will not relieve the CONTRACTOR from obligation to provide materials or perform the work in accordance with the Contract. CONTRACTOR shall provide safe access to all parts of the work and provide information and assistance to the ENGINEER to allow a complete and detailed inspection and give the ENGINEER sufficient notice to inspect the work. Work performed without suitable inspection, as determined by the ENGINEER, may be ordered removed and replaced at CONTRACTOR's expense. CONTRACTOR shall remove or uncover portions of finished work as directed. Once inspected, restore work to Contract requirements. If the uncovered work is acceptable, the costs to uncover, remove, and replace or make good the parts removed will be paid for in accordance "Changes in the Work." If the work is unacceptable, CONTRACTOR shall assume all costs associated with repair or replacement, including the costs to uncover, remove, and replace or make good the parts removed. When a government entity, utility, railroad company, or other entity accepts or pays a portion of the Contract, that organization's representatives may inspect the work but cannot direct the CONTRACTOR. The right of inspection does not make that entity a party to the Contract and does not

interfere with the rights of the parties to the Contract.

D. FINAL INSPECTION: After all work is complete, the CONTRACTOR will request a final inspection by the ENGINEER authorized to accept the work. The final inspection will be made as soon as possible, and not later than 10 calendar days after the request. No working day charges will be made between the date of request and final inspection. After the final inspection, if the work is satisfactory, the ENGINEER will notify the CONTRACTOR in writing of the final acceptance of the work. If the final inspection finds any work to be unsatisfactory, the ENGINEER will identify in writing all deficiencies in the work requiring correction. Correct the deficiencies identified. Working day charges will resume if these deficiencies are not corrected within 7 calendar days, unless otherwise authorized by the ENGINEER. Upon correction, the ENGINEER will make an inspection to verify that all deficiencies were corrected satisfactorily. The ENGINEER will provide written notice of the final acceptance.

3.03 SCHEDULING

A. It shall be the CONTRACTOR'S responsibility to contact either the testing lab or the City of McAllen Engineering staff at least 48 hours before the required testing or inspection is to occur.

B. It shall be the CONTRACTOR'S responsibility to plan the construction in such a manner to allow the appropriate tests and inspections to be conducted without disruption to the construction process.

3.04 PREPARATION

A. CONTRACTOR shall be responsible for preparing the project site as necessary to conduct all required testing. This shall include, but may not be limited to: proper grading of construction site, completion of required compaction activities, complete installation of all forms, installation of all required reference points (grade stakes), provision of adequate traffic control, additional personnel and/or supplies and all necessary safety measures (i.e. OSHA compliant Trench Safety) as needed.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT:

A. This work shall be considered incidental to the completion of the project and no additional compensation shall be paid for this work.

4.02 PAYMENT

A. No separate payment shall be made for this item.

END OF SECTION - 01460

SECTION 01500 – TEMPORARY FACILITIES AND CONTROLS**PART 1 - GENERAL****1.1 COORDINATION**

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 SECTION INCLUDES

- A. Temporary Utilities: Electricity, lighting, heat, ventilation, telephone and fax service, water, and sanitary facilities.
- B. Temporary Controls: Barriers, enclosures and fencing, protection of the Work, and water control.
- C. Construction Facilities: Access roads, parking, progress cleaning, project signage and temporary buildings.

1.3 TEMPORARY ELECTRICITY

- A. Cost: By General Contractor. Utilize existing power service if approved by Owner. Extend temporary outlets in NEC and OSHA approved manner to facilitate construction.
- B. Provide power outlets for construction operations, with branch wiring and distribution boxes located as required. Provide flexible power cords as required.

- C. Provide main service disconnect and over correct protection at convenient location.
- D. Provide sufficient and adequate distribution equipment, wiring, and outlets to ensure unimpeded progress of the Work.
- E. Permanent convenience receptacles may be utilized during construction.

1.4 TEMPORARY LIGHTING

- A. Provide and maintain lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.
- B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.
- C. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- D. Permanent building lighting may be utilized during construction.
- E. Maintain lighting and provide routine repairs.

1.5 TEMPORARY HEAT

- A. Provide and pay for heating devices and heat as needed to maintain specified conditions for construction operations.
- B. Maintain minimum ambient temperature of 50 degrees F (10 degrees C) in areas where construction is in progress, unless indicated otherwise in product sections.

1.6 TEMPORARY COOLING

- A. If required for the proper installation of particular materials, systems, or equipment, provide and pay for cooling devices and cooling as needed to maintain specified conditions.

1.7 TEMPORARY VENTILATION

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidify, and to prevent accumulation of dust, fumes, vapors, or gases.

- B. Utilize existing ventilation equipment if approved by Owner. Extend and supplement equipment with temporary fan units as required to maintain clear air for construction operations.

1.8 TELEPHONE SERVICE

- A. Provide, maintain and pay for telephone service to field office.

1.9 FACSIMILE SERVICE

- A. Provide, maintain and pay for separate telephone line to be used solely for fax service to field office.

1.10 TEMPORARY WATER SERVICE

- A. Utilize existing water service if approved by Owner for construction operations.
- B. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing as required.

1.11 TEMPORARY SANITARY

- A. Provide and maintain required facilities and enclosures. Existing facility use is **not** permitted. Provide at time of project mobilization.

1.12 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas to protect existing facilities and adjacent properties from damage from construction operations and demolition. Barriers must isolated occupied use from construction activities. If and when needed, barriers must be capable of attenuating sound.
- B. Provide protection for existing plant life and landscaped. Maintain plant life and landscaped areas as necessary during construction operations. Replace damaged plant life.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- D. Barrier plan and method subject to approval by the Architect and the Owner.

1.13 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide 6 foot high fence around construction site, equip with vehicular and pedestrian gates with locks. Fence must be capable of restricting entry by on-site facility users.

1.14 WATER CONTROL

- A. Grade site to drain where additions are undertaken. Maintain excavations free of water. Provide, operate, and maintain pumping equipment and/or any other means, methods or techniques necessary to maintain excavation and site free of water.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.15 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protect for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.
- B. Provide temporary protection of existing wall cavities, substrates, and surfaces exposed to weather during cutting and minor demolition operations to prevent entrapment of moisture and development of mildew.

1.16 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection to prohibit damage and where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.
- C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

- D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- E. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- F. Prohibit traffic in all landscaped areas.

1.17 SECURITY

- A. Provide security and facilities to protect Work and existing facilities from unauthorized entry, vandalism, or theft.
- B. Coordinate project security program with Owner's existing security operations at project mobilization.
- C. Maintain program throughout construction period until Owner acceptance precludes the need for Contractor security.
- D. Restrict entrance of persons and vehicles into Project site and existing facilities, allowing entrance only to authorized persons and persons identified by the Contract Document and/or the Architect or Owner as authorized to visit Project site.

1.18 ACCESS

- A. Provide and maintain temporary roads accessing public thoroughfares to serve construction area.
- B. Extend and relocate as work progress requires. Provide detours necessary for unimpeded traffic flow.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Existing on-site roads may be used for construction traffic.

1.19 PARKING

- A. Provide temporary surface parking areas to accommodate construction

personnel. Existing site areas may be used if approved in advance by the Owner.

- B. Contractor to propose plan for Owner concurrence and approval.

1.20 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose off-site.

1.21 PROJECT IDENTIFICATION

- A. Provide project sign. Refer to drawings for size and content.
- B. Erect on site at location established by Architect.
- C. No other signs are allowed without Owner permission except those required by law.

1.22 FIELD OFFICES AND SHEDS

- A. Office: Weather tight with lighting, electrical outlets, heating, cooling and ventilating equipment, and equipped with sturdy furniture drawing rack, and drawing display table, phone and fax.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.
- C. Provide storage sheds and facilities to accommodate Work. Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and for inspection of products to requirements of Section 01600.

- D. Designated existing covered and uncovered hard paved areas and facilities may be used for field storage areas. Protect and secure existing areas used for storage. Upon completion of Work, clean, repair, and restore all existing areas used for storage and restore to acceptable condition.

1.23 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials prior to Substantial Completion.
- B. Remove underground installation to a minimum depth of 2 feet. Grade site to drain.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

END OF SECTION - 01500

**SECTION 01568 - EROSION AND SEDIMENT CONTROL DURING
CONSTRUCTION****PART 1 - GENERAL****1.01 WORK INCLUDED**

Furnish labor, materials, equipment and incidentals necessary to provide erosion and sediment control for the duration of the construction period including furnishing, installing and maintaining erosion and sediment control structures and procedures and the proper removal when no longer required.

The intent of this specification is to provide guidelines for the Contractor to adhere to all State, Federal, and Local environmental regulations. It is also the intent to provide preventive measures to keep sediment from entering any storm water system, including open channels. It is the Contractor's responsibility to adhere to all State, Federal and Local requirements. While the Owner may require the Contractor to install erosion control devices during construction, this will in no way relieve the Contractor of his responsibility.

1.02 QUALITY ASSURANCE

- A. Comply with applicable requirements of all governing authorities having jurisdiction. The Specifications and the Plans are not represented as being comprehensive, but rather to convey the intent to provide complete slope protection and erosion control for both the Owner's and adjacent property.
- B. Erosion control measures shall be established at the beginning of construction and maintained during the entire length of construction. On-site areas which are subject to severe erosion and off-site areas which are especially vulnerable to damage from erosion and/or sedimentation are to be identified and receive additional erosion control measures as directed by the Owner or the Engineer.
- C. All land-disturbing activities shall be planned and conducted to minimize the size of the area to be exposed at any one time and to minimize the time of exposure.
- D. Surface water runoff originating upgrade of exposed area shall be controlled to reduce erosion and sediment loss during the period of exposure.
- E. When the increase in the peak rates and velocity of storm water runoff resulting from a land-disturbing activity is sufficient to cause accelerated erosion of the receiving ditch or stream, the Contractor shall install measures

to control both the velocity and rate of release so as to minimize accelerated erosion and increased sedimentation of the stream as directed by the Owner or the Engineer.

- F. All land-disturbing activities shall be planned and conducted so as to minimize off-site sedimentation damage.
- C. The Contractor shall be responsible for periodically cleaning out and disposing of all sediment once the storage capacity of the drainage feature or structure receiving the sediment is reduced by one-half. The Contractor shall also be responsible for cleaning out and disposing of all sediment at the time of completion of the Work.

1.03 SUBMITTALS

Submittals shall be in accordance with Section 01300, SUBMITTALS, and shall include:

- A. Manufacturer's Literature: Descriptive data of installation methods and procedures.
- B. Certificates: Manufacturer's certification that materials meet specification requirements.

1.04 JOB CONDITIONS AND ORDINANCES

Comply with the local ordinances. If local ordinances require *more* stringent or additional erosion and sediment control measures during construction, Contractor shall provide such measures.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. STRAW BALES: Straw bales shall weigh a minimum of fifty (50) pounds and shall be at least 30" in length. Bales shall be composed entirely of vegetable matter and be free of seeds. Binding shall be either wire or nylon string. Jute or cotton binding is unacceptable. Bales shall be used for not more than three months before being replaced. However, if weather conditions cause biological degradation of the straw bales, they shall be replaced sooner than the three-month time period to prevent a loss of structural integrity of the dike.
- B. SILT FENCE: Silt fence fabric shall be a nylon reinforced polypropylene fabric which has a built-in cord running the entire length of the top edge of the fabric. The fabric must meet the following minimum criteria:

Tensile Strength, ASTM D4632	90 lbs.
Puncture Rating, ASTM D4833	60 lbs.
Mullen Burst Rating, ASTM D3786	200 psi.
Apparent Opening Size, U.S. Sieve No.	40

Silt fence shall be "Enviro Fence" preassembled silt fence, AMXCO Silt Stop prefabricated silt fence, AMOCO Style 2155 preassembled silt fence or approved equal.

- C. SILT FENCE POSTS: A minimum 2" x 2" (nominal) x 54" pressure treated wood posts of Number 2 Grade southern yellow pine or approved equal.
- D. SAND BAG: Sand bag material shall be polypropylene, polyethylene, polyamide or cotton burlap woven fabric, minimum unit weight four (4) ounces per square yard, mullen burst strength exceeding 300 psi and ultraviolet stability exceeding 70%. Length shall be 24 to 30 inches, width shall be 16 to 18 inches and thickness shall be six (6) to eight (8) inches and having an approximate weight of 40 pounds. Sand bags shall be filled with coarse grade sand, free from deleterious material. All sand shall pass through a No. 10 sieve.
- E. P.V.C. PIPE: Pipe shall be SDR-35 polyvinyl chloride having a minimum nominal internal diameter of 4". Pipes shall be sized for anticipated flows.
- F. SOIL RETENTION BLANKET: Soil retention blankets shall consist of a geocomposite of excelsior or fiber blanket with an extruded plastic net attached to the top side. The plastic net shall be photodegradable and the excelsior or fiber blanket shall be made smolder resistant without the use of chemicals. Soil retention blankets shall be high velocity type to resist severe runoff. The soil retention blanket shall be one (1) of the following classes and types:
1. Class 1. "Slope Protection"
 - (a) Type A. Slopes of 3:1 or flatter-Clay soils
 - (b) Type B. Slopes of 3:1 or flatter - Sandy soils
 - (c) Type C. Slopes steeper than 3:1 - Clay soils
 - (d) Type D. Slopes steeper than 3:1 - Sandy soils
 2. Class 2. "Flexible Channel Liner"

- (a) Type E. Short-term duration (Up to 2 Years)
Shear Stress (t_d) <1.0 lb./sq. ft.
- (b) Type F. Short-term duration (Up to 2 Years)
Shear Stress (t_d) 1.0 to 2.0 lb./sq. ft.
- (c) Type C. Long-term duration (Longer than 2 Years)
Shear Stress (t_d) > 2.0 to < 5.0 lb./sq. ft.
- (d) Type H. Long-term duration (Longer than 2 Years)
Shear Stress (t_d) greater than 0 Equal to 5.0 lb/sq. ft.

The Contractor has the option of selecting an approved soil retention blanket provided that selection conforms to the following list of approved soil retention blankets for slope protection applications:

CLASS I. SLOPE PROTECTION

TYPE A: Slopes of 3: 1 or Flatter- Clay Soils

Airtrol® ANTI-WASH®/GEOJUTE® (Regular)
Contech Standards®
Contech Standards Plus®
Green Triangle Regular®
Green Triangle Superior®
GREENSTREAK® PEC MAT
Curlex®
North American Green® S150
North American Green® S75
North American Green® SC 150
POLYJUTE® 407/GT
SOIL SAVER®
TerraJute®
Verdyol® ERO-MAT®
Xcel Regular®
Xcel Superior®

TYPE B: Slopes of 3:1 or Flatter-Sandy Soils

Contech Standards®
Contech Standards Plus®
GEOCOIR®/DEKOWE® 700

Green Triangle Superior®
Green Triangle Regular®
North American Green® 575
North American Green® SC 150
North American Green® S150
POLYJUTEO 407/CT
TerraJute®
Verdyol® ERO-MAT®
Xcel Superior®
Xcel Regular®

TYPE C: Slopes Steeper than 3:1-Clay Soils

Airtrol®
ANTI-WASH®/GEOJUTE® (Regular)
Contech Standards Plus®
Curlex®
Green Triangle Superior®
GREENSTREAK® PEC-MAT
North American Green® SC 150
North American Green® S150
POLYJUTEÔ 407/CT
SOIL SAVER®
TerraJute®
Xcel Superior®

TYPE D: Slopes Steeper than 3:1-Sandy Soils

Contech Standards Plus®
GEOCOIR®/DEKOWE®700
Green Triangle Superior®
North American Green®S150
North American Green®SC150
POLYJUTEÔ 407GT
TerraJute®
Xcel Superior®

CLASS II: FLEXIBLE CHANNEL LINER PROTECTION

PART 3 - EXECUTION

3.01 PREPARATION

- A. Contractor shall prepare the site for installation of the erosion and sediment control devices in accordance with the manufacturer's recommendations when applicable. At all times, CONTRACTOR, shall take extreme care during the installation of the applicable devices to minimize disturbance of the project site.

3.02 INSTALLATION

A. TEMPORARY STRAW BALE DIKE

1. Straw bales shall be embedded a minimum of 4" and securely anchored using 2" x 2" wood stakes driven through the bales into the ground a minimum of 6". Straw bales are to be placed directly adjacent to one another leaving no gap between them.
2. Bales shall be placed in a single row, lengthwise on proposed line, with ends of adjacent bales tightly abutting one another. In swales and ditches, the barrier shall extend to such a length that the bottoms of the end bales are higher in elevation than the top of the lowest middle bale. Additional bales shall be placed behind the first row where the bales abut each other. The additional bale is used to prevent unfiltered runoff from escaping between the bales.
3. The-excavated soil shall be backfilled against the barrier. Backfill shall conform to ground level on the downhill side and shall be built up to 4" above ground level on the uphill side. Loose straw shall be scattered over the area immediately uphill from a straw barrier.

B. SILT FENCE

The purpose of a silt fence is to intercept and detain water-borne sediment from unprotected areas to a limited extent. The Contractor shall excavate a 6-inch-wide by 6-inch-deep trench for site fence bedding along the lower perimeters of the site where necessary to prevent sediment from entering any drainage system. The Contractor shall install the silt fence in accordance with the manufacturer's recommendations and instructions. Silt fence is used during the period of construction near the perimeter of a disturbed area to intercept sediment while allowing water to percolate through. This fence shall remain in place until the disturbed area is permanently stabilized. Silt fence should not be used where there is a concentration of water in a channel or drainage way or where soil conditions prevent a minimum toe-in depth of 6" or installation of support post to depth of 12". Fabric shall overlap at abutting ends a minimum of 3' and shall be jointed such that no leakage or bypass occurs. If

concentrated flow occurs after installation, corrective action must be taken such as placing rock berm in the areas of concentrated flow.

C. SAND BAG BERM

1. The purpose of a sandbag berm is to intercept sediment-laden water from disturbed areas such as construction in stream beds, create a retention pond, detain sediment and release water in sheet flow.
2. A temporary sand bag berm shall be installed across a channel or right of way in a developing or disturbed area and should be used when the contributing drainage area is greater than 5 acres. The berm shall be a minimum height of 18", measured from the top of the existing ground at the upslope toe to the top of the berm. The berm shall be sized to have a minimum width of 48" measured at the bottom of the berm and 18" measured at the top of the berm.
3. The sand bag berm shall be inspected after each rain. The sand bags shall be reshaped or replaced as needed during inspection. Additional inspections shall be made daily by the responsible party and when the silt reaches 6", the accumulated silt shall be removed and disposed of at an approved site in a manner that will not contribute to additional siltation. The sand bag berm shall be left in place until all upstream areas are stabilized and accumulated silt removed; removal must be done by hand.

D. SOIL RETENTION BLANKETS

1. A soil retention blanket (SRB) is a geotextile or biodegradable fabric placed over disturbed areas to limit the effects of erosion due to rainfall impact and runoff across barren soil. Soil retention blankets are manufactured by a wide variety of vendors addressing a wide variety of conditions such as vegetation establishment and high velocity flow. Blankets are used in areas which are difficult to stabilize such as steep slopes, drainage swales or high pedestrian traffic areas.
2. The soil retention blanket, whether installed as slope protection or as flexible channel liner, shall be placed within 24 hours after seeding or sodding operations have been completed, or as approved by the Engineer. Prior to placing the blanket, the area to be covered shall be relatively free of all rocks or clods over 1-1/2" in maximum dimension and all sticks or other foreign material which will prevent the close contact of the blanket with the soil. The area shall be smooth and free of ruts and other depressions. If as a result of rain, the prepared bed becomes crusted or eroded or if any eroded

places, ruts or depressions exist for any reason, the Contractor shall be required to rework the soil until it is smooth and to reseed or resod the area at the Contractor's expense.

3. Installation and anchorage of the soil retention blanket shall be in accordance with the manufacturer's recommendations.

E. PROTECTION OF BARE AREAS

1. Apply seeding and soil retention blanket to bare areas including new embankment areas, fills, stripped areas, graded areas or otherwise disturbed areas, which have a grade greater than 5% or which will be exposed for more than 30 days.
2. Bare working areas on which it is not practical or desirable to install seeding and soil retention blankets, as determined by the Engineer, such as areas under proposed building slabs, shall be temporarily sloped to drain at a minimum of 0.2% and a maximum of 5% grade. These areas shall then be "track walked" with a crawler dozer traveling up and down the slope to form the effect of small "terraces" with the tracks of the dozer. Apply a minimum of three (3) coverages to each area with the dozer tracks,
3. Route runoff from the areas through the appropriate silt fence system.
4. Protect earth spoil areas by "trackwalking" and silt fences.

F. INTERCEPTOR SWALE

1. Interceptor swales may have a v-shape or be trapezoidal with a flat bottom and side slopes of 3:1 or flatter. These are used to shorten the length of exposed slope by intercepting runoff and can also serve as perimeter swales preventing off-site runoff from entering the disturbed area or prevent sediment-laden runoff from leaving the construction site or disturbed area. The outflow from a swale must be directed to a stabilized outlet or sediment trapping device. The swales should remain in place until the disturbed area is permanently stabilized.
2. Stone Stabilization shall be used when grades exceed 2% or velocities exceed 6 feet per second and shall consist of a layer of crushed stone 3" thick, or flexible channel liner soil retention blankets. Stabilization shall extend across the bottom of the swale and up both sides of the channel to minimum height of 6 inches above the design water surface elevation based on a two-year storm.

3. An interceptor swale shall be installed across exposed slopes during construction and should intercept no more than five (5) acres of runoff. Swales shall have a minimum bottom width of 2'-0" and a maximum depth of 1'-6" with side slopes of 3 :1 or flatter. Swale must have positive drainage for its entire length to an outlet. When the slope exceeds 3%, or velocities exceed 4 feet per second (regardless of slope), stone stabilization is required. Check dams are also recommended to reduce velocities in the swales possibly reducing the amount of stabilization necessary. Swales should be inspected on a weekly basis during wet weather and repairs should be made promptly to maintain a consistent cross section.
4. All trees, brush, stumps, obstructions and other material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
5. The swale shall be excavated or shaped to line, grade, and cross-section as required to meet criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. All earth removed and not needed in construction shall be disposed of in an approved spoils site so that it will be conveyed to a sediment trapping device.
7. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device.
8. The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.
9. Minimum compaction for the swale shall be 90% standard proctor.

G. LOCATION OF EROSION AND SEDIMENT CONTROL STRUCTURES

1. Locate erosion and sediment control structures as required to prevent erosion and removal of sediment from the project site. Silt fences shall be required for disturbed areas and soil stockpiles/spoil areas. Each silt fence installation shall have a minimum net length (exclusive of embedments into diversion dikes or other ineffective areas) of 25 feet. The runoff from a maximum of one (1) acre of disturbed area or soil stockpile/ spoil area shall be routed through any individual silt fence installation.
2. Install diversion dikes to divert runoff to the silt fence installation.

3. Install silt traps at the inlet (upstream) end of the drainage structures, including open channels, through which runoff from disturbed areas or soil stockpiles/spoil areas may drain.
4. Provide an overall erosion and sediment control system which protects disturbed areas and soil stockpiles/spoil areas. The system shall be modified by the Contractor from time to time to effectively control erosion and sediment during construction.

3.03 MAINTENANCE

- A. Maintain erosion and sediment control structures and procedures in full working order at all times during construction. This shall include any necessary repair or replacement of items which have become damaged or ineffective. Remove sediment on a regular basis which accumulates in sediment control devices and place the material in approved earth spoil areas or return the material to the area from which it eroded.
- B. Upon completion of construction, properly remove the temporary erosion and sediment control structures and complete the area as indicated.
- C. Soil retention blankets will not require removal if installed on a finished graded area specified to receive seeding.

3.04 FIELD QUALITY CONTROL

In the event of conflict between the requirements and storm water pollution control laws, rules or regulations or other Federal, State or Local agencies, the more restrictive laws, rules or regulations shall apply.

PART 4 - MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

The work as provided for by this specification shall be measured as lump sum or as noted on the bid request. When not line item is included in the Bid Proposal, this work shall be considered incidental to the completion of the project and no additional compensation shall be paid for this work.

4.02 PAYMENT

When shown in the proposal, the work as prescribed for in this specification shall be paid for labor, tools, equipment, excavation, backfilling, materials, and incidentals necessary to complete the work.

END OF SECTION

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Provide products of same kind from a single source. The term "product" includes the terms "material," "equipment," "system," and similar terms.
- B. Deliver, store, and handle products according to manufacturer's written instructions, using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage and to prevent overcrowding construction spaces.
 - 2. Deliver in manufacturer's original sealed packaging with labels and written instructions for handling, storing, protecting, and installing.
 - 3. Inspect products at time of delivery for compliance with the Contract Documents and to ensure items are undamaged and properly protected.
 - 4. Store heavy items in a manner that will not endanger supporting construction.
 - 5. Store products subject to damage on platforms or pallets, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required.
- C. Product Substitutions: Substitution will only be considered during the bidding period. Substitutions include products and methods of construction differing from that required or specified by the Contract Documents.
 - 1. Submit three (3) copies of CSI Substitution Request Form for each request for product substitution no less than 10 days prior to bid date. Identify product to be replaced and provide complete documentation showing compliance of proposed substitution with applicable requirements. Include a full comparison with the

specified product, a list of changes to other Work required to accommodate the substitution, and any proposed changes in Contract Sum or Contract Time should the substitution be accepted.

2. Owner will review the proposed substitution and notify Contractor of its acceptance or rejection.

PART 2 - PRODUCTS

2.1 PRODUCT OPTIONS

- A. Provide products that comply with the Contract Documents, are undamaged, and are new at the time of installation.
 1. Provide products complete with accessories, trim, finish, and other devices and components needed for a complete installation and the intended use and effect.
- B. Do not attach manufacturer's labels or trademarks, except for required nameplates, on surfaces exposed to view in occupied spaces or on the exterior.
- C. Select products as follows:
 1. Where a product or manufacturer is named, provide the item indicated or comply with provisions concerning product substitutions to obtain approval for use of an unnamed product or manufacturer.
 2. Where products or manufacturers are specified by name, accompanied by the term "or equal," provide the named item or comply with provisions concerning "product substitutions" to obtain approval for use of an unnamed product or manufacturer.
 3. Where a product is described with required characteristics, with or without naming a brand or trademark, provide a product that complies with those characteristics and other Contract requirements.
 4. Where compliance with performance requirements is specified, provide products that comply and are recommended in writing by the manufacturer for the application.

5. Where compliance with codes, regulations, or standards, is specified, select a product that complies with the codes, regulations, or standards referenced.
- D. Unless otherwise indicated, City will select color, pattern, and texture of each product from manufacturer's full range of options.

END OF SECTION - 01600

SECTION 01601 - SUBSTITUTION PROCEDURES**PART 1 - GENERAL****1.1 COORDINATION**

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 SUBSTITUTION REQUIREMENTS

- A. When material, article, or method is specified using name of proprietary product manufacturer, vendor, or method followed by phrase "or equal," specific item mentioned establishes basis upon which projects are to be built.
 - 1. Other manufacturers' materials, articles, and methods not named will be as substitutions provided required information is submitted on "SUBSTITUTION REQUEST FORM" and will not require substantial revisions of Contract Documents.
 - 2. This applies to specific construction methods when required by Contract Documents.
 - 3. Substitution Requests must be filled out on enclosed "Substitution Request Form".
- B. Whenever material, article, or method is specified or described without phrase "or equal," no substitutions will be allowed.

- C. Costs for redesigns due to substituted items are responsibility of Applicant.
- D. In making request for substitution, Applicant/Contractor represents that he:
 - 1. Has personally investigated proposed product or method and determined that it is equal in all respects to that specified.
 - 2. Will provide same guarantee for substitution as for product or method specified.
 - 3. Will coordinate installation of accepted substitution into work, making design and construction changes to complete work in all respects following the Contract Documents.

1.3 SUBMITTAL OF DATA FOR PROPOSED SUBSTITUTIONS

- A. In order for substitutions that do not change design intent to be considered, submit no later than 10 days prior to bid date deadline, 3 copies of complete data set forth herein to permit complete analysis of proposed substitutions listed on submitted "SUBSTITUTION REQUEST FORM".
 - 1. For Products:
 - a. Identification including manufacturer's name and address.
 - b. Manufacturer's literature, including but not necessarily limited to:
 - 1) Product description, performance, and test data.
 - 2) Reference standards.
 - c. Samples where appropriate.
 - d. Name and address of similar projects on which product was used and dates of installation with contact name and telephone number.
 - 2. For Construction Methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 - c. Name and address of similar projects on which method was used and dates of use with contact name and telephone number.
 - 3. Comparison of proposed substitution with product or method specified

4. Data relating to impact on construction schedule by proposed substitution.
5. Impact on other contracts.

1.4 APPROVAL OF SUBSTITUTION

- A. Architect's decision regarding evaluation of substitutions will be final and binding.
- B. All approved substitutions will be incorporated into the Contract Documents by Addendum.

END OF SECTION-01601

SECTION 01700 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 CLOSEOUT SUBMITTALS

A. Record Specifications: Maintain one copy of the Project Manual, including addenda, as Record Specifications. Mark to show variations in Work performed in comparison with the text of the Specifications and modifications.

B. Operation and Maintenance Data: Organize data into three-ring binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following:

1. Emergency instructions.
2. Copies of warranties.
3. Product Data.

PART 2 - EXECUTION

2.1 EXAMINATION AND PREPARATION

A. Examine substrates and conditions for compliance with manufacturer's written requirements including, but not limited to, surfaces that are sound, level, and plumb; substrates within installation tolerances; surfaces that are smooth, clean, and free of deleterious substances; and application conditions within environmental limits. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Prepare substrates and adjoining surfaces according to manufacturer's written instructions, including, but not limited to, filler and primer application.

2.2 CUTTING AND PATCHING

A. Do not cut structural members without prior written approval of City Engineer.

B. For patching, provide materials whose installed performance will equal or surpass that of existing materials. For exposed surfaces, provide or finish materials to visually match existing adjacent surfaces to the fullest extent possible.

2.3 INSTALLATION

A. Comply with manufacturers written instructions for installation. Anchor each product securely in place, accurately located and aligned. Clean exposed surfaces and protect from damage. If applicable, prepare surfaces for field finishing.

3.4 FINAL CLEANING

B. Clean each surface or item as follows before requesting inspection for certification of Substantial Completion:

1. Remove labels that are not permanent.
2. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Leave concrete floors broom clean.
3. Clean the site. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

3.5 CLOSEOUT PROCEDURES

C. Request Substantial Completion inspection once the following are complete:

1. Advise Owner of pending insurance changeover requirements.
2. Submit Record Drawings and Specifications, maintenance manuals, warranties, and similar record information.
3. Deliver spare parts, extra materials, and similar items.
4. Remove temporary facilities and controls.
5. Complete final cleanup.
6. Touch up, repair, and restore marred, exposed finishes.
7. On receipt of a request for inspection, City's Engineering Department Personnel will proceed with inspection or advise Contractor of unfilled requirements. City's Engineering Department Personnel

will prepare the Certificate of Substantial Completion after inspection or advise Contractor of items that must be completed or corrected before the certificate will be issued.

- D. Arrange for each installer of equipment that requires operation and maintenance to provide instruction to Owner's personnel. Include a detailed review of the following:
1. Spare materials.
 2. Identification systems.
 3. Hazards.
 4. Warranties and bonds.
- E. Request inspection for certification of final acceptance, once the following are complete:
1. Submit a copy of the Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
- F. City's Engineering Department Personnel will reinspect the Work on receipt of notice that the Work has been completed.
1. On completion of reinspection, City's Engineering Department Personnel will prepare a certificate of final acceptance. If the Work is incomplete, Architect will advise Contractor of the Work that is incomplete or obligations that have not yet been fulfilled.

END OF SECTION - 01700

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 COORDINATION

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials and products.
- D. Where conflicts occur between the drawings and specifications, between different drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 SECTION REQUIREMENTS

- A. Unless otherwise indicated, demolished materials become Contractor's property. Remove from Project site.
- B. Items indicated to be removed and salvaged remain Owner's property. Remove, clean, and deliver to Owner's designated storage area.
- C. Comply with EPA regulations and disposal regulations of authorities having jurisdiction.
- D. Conduct demolition without disrupting Owner's use of the building.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 DEMOLITION

- A. Maintain and protect existing utilities to remain in service before proceeding with demolition, providing bypass connections to other parts of the building.
- B. Locate, identify, shut off, disconnect, and cap off utility services to be demolished.
- C. Employ a certified, licensed exterminator to treat building and to control rodents and vermin.
- D. Conduct demolition operations and remove debris to prevent injury to people and damage to adjacent buildings and site improvements.
- E. Provide and maintain shoring, bracing, or structural support to preserve building stability and prevent movement, settlement, or collapse.
- F. Protect building structure or interior from weather and water leakage and damage.
- G. Protect remaining walls, ceilings, floors, and exposed finishes. Erect and maintain dustproof partitions. Cover and protect remaining furniture, furnishings, and equipment.
- H. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
- I. Promptly patch and repair holes and damaged surfaces of building caused by demolition. Restore exposed finishes of patched areas and extend finish restoration into remaining adjoining construction.
- J. Promptly remove demolished materials from Owner's property and legally dispose of them. Do not burn demolished materials.

END OF SECTION-01732

SECTION 01740 - CLEANING

PART 1 GENERAL

1.1 SUMMARY

- A. During the course of the Work, maintain premises and adjacent sites free of waste, debris, and rubbish caused by construction operations.
- B. At completion of work, or at such other times as directed by the Engineer or Owner, remove waste, debris, rubbish, tools, equipment, machinery, and surplus materials. Clean sight-exposed surfaces; leave work area clean and ready for use.

1.2 SAFETY REQUIREMENTS

- A. Standards: Maintain Project in accordance with the following safety and insurance standards:
 - 1. Occupation Safety and Health Administration (OSHA)
- B. Hazards Control:
 - 1. Store volatile wastes in an approved manner or remove from premises daily.
 - 2. Prevent accumulation of wastes that create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Conduct cleaning and disposal operations to comply with federal, state and local antipollution laws.
 - 1. Rubbish and waste materials shall not be burned or buried on Project site.
 - 2. Volatile wastes, such as mineral spirits, oil, or paint thinner, shall not be disposed of into storm or sanitary drains.
 - 3. Wastes shall not be disposed of into streams or waterways.

1.3 SUBMITTALS

- A. Product Data:

1. Manufacturer's recommendations for cleaning specified products.
2. Proposed cleaning products for products where manufacturer's recommendations are not specified.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Select and use cleaning materials and equipment with care to avoid scratching, marring, defacing, staining, or discoloring surfaces cleaned.
- B. Use only cleaning materials recommended by manufacturer of surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.1 GENERAL

- A. Execute cleaning to ensure that buildings, grounds and public properties are maintained free from accumulations of waste materials and rubbish on a daily basis.
- B. Wet down materials and rubbish to lay dust and to prevent blowing dust.
- C. Clean site and public properties daily, and dispose of waste materials, debris, and rubbish.
- D. Provide on-site transportable cart containers for collection of waste, materials, debris, and rubbish as required.
- E. Remove waste materials, debris, and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.
- F. Handle materials in a controlled manner with as few handlings as possible. Materials shall not be thrown from heights.
- G. Maintain equipment on site, while work is in progress, in clean and dust-free condition.
- H. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly finished surfaces.

- I. Contain all runoff from Work and do not allow construction waste to leach into ground or water.

3.2 FINAL CLEANING

- A. Employ experienced workmen for final cleaning.
- B. In preparation for Substantial Completion, or occupancy, conduct final inspection of sight-exposed surfaces and of concealed spaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed finished surfaces.
- D. Repair, patch, and touch up marred surfaces to specified finish and to match adjacent surfaces.
- E. Broom clean paved surfaces; rake clean other surfaces on grounds.
- F. Clean equipment units if cleaning is required due to construction dust and activities.
- G. Maintain cleaning until project, or designated portion thereof, is occupied by Owner.

END OF SECTION-01740

SECTION 01770 - CLOSEOUT PROCEDURES**PART 1 GENERAL****1.1 SUMMARY****A. Section Includes:**

1. Closeout procedures.
2. Final cleaning.
3. Adjusting.
4. Project record documents.
5. Operation and maintenance data.
6. Warranties.
7. Spare parts and maintenance materials.
8. Demonstration and instructions.

B. Related Sections:

1. Section 01200 - Payment Procedures
2. Section 01500 - Temporary Facilities and Controls:
3. Section 01740 - Cleaning

1.2 CLOSEOUT PROCEDURES**A. Final Inspection:**

1. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with the Contract Documents and ready for inspection by the Project Manager and Engineer.
2. If Project Manager or Engineer performs reinspection due to failure of Work to comply with claims of status of completion made by

Contractor, Owner will compensate the Project Manager and Engineer for such additional services and will deduct the amount of such compensation from final payment.

- B. Submit final Application for Payment showing original Contract Sum, adjustments, previous payments, retainage withheld from previous payments, and sum remaining due.
- C. Closeout Submittals:
 - 1. Evidence of compliance with requirements of governing authorities.
 - 2. Construction photographs.
 - 3. List of subcontractors and suppliers, indicating firm name, area of responsibility or specialty, address, and telephone number.
 - 4. Certificate of Occupancy.
 - 5. Project Record Documents.
 - 6. Operation and Maintenance Data.
 - 7. Warranties.
 - 8. Keys and keying schedule.
 - 9. Spare parts and maintenance materials.
 - 10. Evidence of payment of Subcontractors and suppliers.
 - 11. Final lien waiver.
 - 12. Certificate of insurance for products and completed operations.
 - 13. Consent of Surety to final payment.

1.3 FINAL CLEANING

- A. Execute final cleaning in areas affected by work on this project prior to final inspection.
- B. Clean surfaces exposed to view:

1. Clean glass.
 2. Remove temporary labels, stains and foreign substances.
 3. Polish transparent and glossy surfaces.
 4. Vacuum carpeted surfaces; damp mop hard surface flooring.
 5. Pressure wash all horizontal surfaces with 1000 psi removing dirt and debris.
 6. Pressure wash all vertical surfaces with 100 psi removing dirt and debris
- C. Clean equipment and fixtures to a sanitary condition.
- D. Clean or replace filters of operating equipment.
- E. Clean debris from roofs and drainage systems
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.4 FINAL PAYMENT

- A. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- B. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.

2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

1.5 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.6 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other Modifications to the Contract.
 5. Reviewed Shop Drawings, Product Data, and Samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.

- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
1. Location, type and size of work completed.
 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 3. Field changes of dimension and detail.
 4. Details not on original Contract Drawings.
- F. Prior to Substantial Completion transfer marks made during construction to two sets of sepia reproducible transparency prints, and one half size set.
- G. Submit documents to Project Manager with final Application for Payment.

1.7 OPERATION AND MAINTENANCE DATA

- A. Provide three copies, 8-1/2 x 11 inches text pages, bound in three ring binders with durable plastic covers.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Contents:
1. Directory: List names, addresses, and telephone numbers of Engineer, Subcontractors, and major equipment suppliers.
 2. Operation and maintenance instructions: Arranged by system and subdivided by specification section. For each category, identify

names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:

- a. Significant design criteria.
- b. List of equipment.
- c. Parts list for each component.
- d. Operating instructions.
- e. Maintenance instructions for equipment and systems.
- f. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

3. Project documents and certificates including:

- a. Shop drawings and product data.
- b. Certificates.
- c. Photocopies of warranties and bonds.

D. Submittal:

1. Submit one copy of completed volumes in final form 15 days prior to final inspection.
2. Engineer will notify of any required revisions after final inspection.
3. Revise content of documents as required prior to final submittal.
4. Submit revised volumes within 10 days after final inspection.

1.8 WARRANTIES

- A. Provide two copies of each warranty.
- B. Execute and assemble documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of warranty period.

1.9 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to Project site in location as directed; obtain receipt prior to final payment.

1.10 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Utilize Operation and Maintenance Manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate startup, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed upon times, at equipment location.
- E. Prepare and insert additional data in Operation and Maintenance Manuals when need for additional data becomes apparent during instruction.

END OF SECTION-01770

SECTION 01800 - GENERAL NOTES

PART 1 - GENERAL

1.1 COORDINATION

- A. The General Conditions of the Contract for Construction and the Supplementary Conditions to the General Conditions of the Contract for Construction shall be considered as part of this section of the specifications.
- B. Each Bidder shall be responsible for determining during the bidding period the extent that any addenda issued during the bidding period may affect this section of the specifications.
- C. Reference Instructions to Bidders for requirements regarding substitutions of materials drawings, between different portions of this section of the specifications, or between different sections of the specifications, the more stringent requirements and the greater quantity shall apply.

1.2 GENERAL NOTES

- A. **Do not dimension the drawings. Any dimensions, questions, should be directed to the Architect or Engineer.**
- B. Contractor shall protect all streets and sidewalks and shall make all necessary repairs at his own expense.
- C. Shall at all times protect the excavations, trenches, and/or the building from damage from rain water, ground water, backing up drains or sewers and all other water. He shall provide all pumps and equipment and enclosures to provide this protection.
- D. Contractor shall provide all shoring, bracing and sheathing as required for safety and proper execution of the work and remove same when work is completed. Contractor shall be responsible for all scaffolding, shoring, bracing, sheathing, temporary construction and temporary walkways, etc., and shall hold harmless the Owner and Architect from any injury or litigation as a result of causes related to any scaffolding, shoring, bracing, sheathing, temporary construction and temporary walkways.
- E. Contractor shall comply with the Trench Safety Law Requirements.

1.3 WAIVER OF LIEN:

A. In submitting a proposal (Bid) Contractor, if awarded the Contract, explicitly warrants that the Owner shall be held free of any claim or lien of any nature resulting from Contractor’s pursuance or prosecution of the work. This shall cover any third party lien in any manner whatsoever concerning Contractor’s performance or payment on this project.

1.4 CONTRACTOR’S ASBESTOS FREE AFFIDAVIT:

A. In order to protect staff, employees and public in general from any unnecessary exposure to asbestos fibers, the Asbestos Hazard Emergency Response Act prohibits the use of asbestos containing materials in all forms in the construction and operation of this facility.

B. Failure to complete this waiver constitutes non-compliance with the job specifications. This document shall be attached to the Contract between Owner and Contractor.

1.5 AFFIDAVIT:

A. I, certify that I am familiar with the materials used in the construction of, and incorporated into, the construction described below. I further certify that to the best of my knowledge and belief no asbestos containing materials, either friable or otherwise were used in the process of constructing or incorporated into the construction.

B. The undersigned, being duly sworn upon his/her oath deposes and says that he/she is the person making the foregoing statements and that they are made in good faith and are true in every respect.

C. Contractor’s signature:

STATE OF

COUNTY OF

D. I, _____, a Notary Public in and for said County, in the State aforesaid, DO THEREBY CERTIFY THAT _____ personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person, and acknowledge that he/she signed, sealed, and delivered said instrument as his/her free and voluntary act, for the uses and purposes herein set forth.

GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS, DATE OF , 20

NOTARY PUBLIC:

MY COMMISSION EXPIRES:

(NOTARY SEAL)

END OF SECTION-01800

SECTION 26 02 00 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The requirements of the General Conditions and Supplementary Conditions apply to all Work herein.
- B. The Contract Drawings indicate the extent and general arrangement of the systems. If any departure from the Contract Drawings are deemed necessary by the Contractor, details of such departures and the reasons therefore, shall be submitted to the Architect for approval as soon as practicable. No such departures shall be made without the prior written approval of the Architect.

1.02 SCOPE OF WORK

- A. The Work included under this Contract consists of the furnishing and installation of all equipment and material necessary and required to form the complete and functioning systems in all of its various phases, all as shown on the accompanying Drawings and/or described in these Specifications. The contractor shall review all pertinent drawings, including those of other contracts prior to commencement of Work.
- B. This Division requires the furnishing and installing of all items Specified herein, indicated on the Drawings or reasonably inferred as necessary for safe and proper operation; including every article, device or accessory (whether or not specifically called for by item) reasonably necessary to facilitate each system's functioning as indicated by the design and the equipment specified. Elements of the work include, but are not limited to, materials, labor, supervision, transportation, storage, equipment, utilities, all required permits, licenses and inspections. All work performed under this Section shall be in accordance with the Project Manual, Drawings and Specifications and is subject to the terms and conditions of the Contract.
- C. The approximate locations of Electrical items are indicated on the Drawings. These Drawings are not intended to give complete and accurate details in regard to location of outlets, apparatus, etc. Exact locations are to be determined by actual measurements at the building, and will in all cases be subject to the Review of the Owner or Engineer, who reserves the right to make any reasonable changes in the locations indicated without additional cost to the Owner.
- D. Items specifically mentioned in the Specifications but not shown on the Drawings and/or items shown on Drawings but not specifically mentioned in the Specifications shall be installed by the Contractor under the appropriate section of work as if they were both specified and shown.
- E. All discrepancies within the Contract Documents discrepancies between the Contract Documents and actual job-site conditions shall be reported to the Owner or Engineer so that they will be resolved prior to the bidding, where this cannot be done at least 7 working days prior to bid; the greater or more costly of the discrepancy shall be bid. All labor and materials required to perform the work described shall be included as part of this Contract.
- F. It is the intention of this Section of the Specifications to outline minimum requirements to furnish the Owner with a turn-key and fully operating system in cooperation with other trades.

- G. It is the intent of the above "Scope" to give the Contractor a general outline of the extent of the Work involved; however, it is not intended to include each and every item required for the Work. Anything omitted from the "Scope" but shown on the Drawings, or specified later, or necessary for a complete and functioning heating, ventilating and air conditioning system shall be considered a part of the overall "Scope".
- H. The Contractor shall rough-in fixtures and equipment furnished by others from rough-in and placement drawings furnished by others. The Contractor shall make final connection to fixtures and equipment furnished by others.
- I. Contractor shall participate in the commissioning process; including but not limited to meeting attendance, completion of checklists and participation in functional testing.

1.03 RELATED SECTIONS

- A. General Conditions
- B. Supplementary Conditions
- C. Division One

1.04 COOPERATION WITH TRADES:

- A. Cooperation with trades of adjacent, related, or affected materials or operations shall be considered a part of this work in order to affect timely and accurate placing of work and bring together in proper and correct sequence, the work of such trades.

1.05 REFERENCES

- A. National Electrical Code (NEC)
- B. American Society for Testing and Materials (ASTM)
- C. Underwriter's Laboratories, Inc. (UL)
- D. Insulated Cable Engineer's Association (ICEA).
- E. National Electrical Manufacturer's Association (NEMA).
- F. Institute of Electrical and Electronic's Engineers (IEEE).
- G. American National Standards Institute (ANSI).
- H. National Fire Protection Association (NFPA).
- I. International Energy Conservation Code (IECC).

1.06 COMPLETE FUNCTIONING OF WORK:

- A. All work fairly implied as essential to the complete functioning of the electrical systems shown on the Drawings and Specifications shall be completed as part of the work of this Division unless specifically stated otherwise. It is the intention of the Drawings and Specifications to establish the types of the systems, but not set forth each item essential to the functioning of the system. In case of doubt as to the work intended, or in the event of amplification or clarification thereof, the Contractor shall call upon the Architect for supplementary instructions, Drawings, etc.

- B. Contractor shall review all pertinent Drawings and adjust his work to all conditions shown there on. Discrepancies between Plans, Specifications, and actual field conditions shall be brought to the prompt attention of the Architect.
 - 1. Approximate location of transformers, feeders, branch circuits, outlets, lighting and power panels, outlets for special systems, etc., are indicated on the Drawings. However, the Drawings, do not give complete and accurate detailed locations of such outlets, conduit runs, etc., and exact locations must be determined by actual field measurement. Such locations will, at all times, be subject to the approval of the Architect.
 - 2. Communicate with the Architect and secure his approval of any outlet (light fixture, receptacle, switch, etc.) location about which there may be the least question. Outlets obviously placed in a location not suitable to the finished room or without specific approval, shall be removed and relocated when so directed by the Architect. Location of light fixtures shall be coordinated with reflected ceiling plans.
- C. Additional coordination with mechanical contractor may be required to allow adequate clearances of mechanical equipment, fixtures and associated appurtenances. Contractor to notify Architect and Engineer of unresolved clearances, conflicts or equipment locations.

1.07 SCHEMATIC NATURE OF CONTRACT DOCUMENTS

- A. The contract documents are schematic in nature in that they are only to establish scope and a minimum level of quality. They are not to be used as actual working construction drawings. The actual working construction drawings shall be the approved shop drawings.

1.08 CONTRACTOR'S QUALIFICATIONS

- A. An approved contractor for the work under this division shall be:
 - 1. A specialist in this field and have the personnel, experience, training, and skill, and the organization to provide a practical working system.
 - 2. Able to furnish evidence of having contracted for and installed not less than 3 systems of comparable size and type that have served their Owners satisfactorily for not less than 3 years.
 - 3. Perform work by persons qualified to produce workmanship of specified quality. Persons performing electrical work shall be required to be licensed. Onsite supervision, journeyman shall have minimum of journeyman license. Helpers, apprentices shall have minimum of apprentice license.

1.09 DATE OF FINAL ACCEPTANCE

- A. The date of final acceptance shall be the date of owner occupancy, or the date all punch list items have been completed or final payment has been received. Refer to Division One for additional requirements.
- B. The date of final acceptance shall be documented in writing and signed by the architect, owner and contractor.

1.10 DEFINITIONS AND SYMBOLS

- A. General Explanation: A substantial amount of construction and Specification language constitutes definitions for terms found in other Contract Documents, including Drawings which must be recognized as diagrammatic and schematic in nature and not completely descriptive of requirements indicated thereon. Certain terms used in Contract Documents are defined generally in this article, unless defined otherwise in Division 1.
- B. Definitions and explanations of this Section are not necessarily either complete or exclusive, but are general for work to the extent not stated more explicitly in another provision of the Contract Documents.
- C. Indicated: The term "Indicated" is a cross-reference to details, notes or schedules on the Drawings, to other paragraphs or schedules in the Specifications and to similar means of recording requirements in Contract Documents. Where such terms as "Shown", "Noted", "Scheduled", "Specified" and "Detailed" are used in lieu of "Indicated", it is for the purpose of helping the reader locate cross-reference material, and no limitation of location is intended except as specifically shown.
- D. Directed: Where not otherwise explained, terms such as "Directed", "Requested", "Accepted", and "Permitted" mean by the Architect or Engineer. However, no such implied meaning will be interpreted to extend the Architect's or Engineer's responsibility into the Contractor's area of construction supervision.
- E. Reviewed: Where used in conjunction with the Engineer's response to submittals, requests for information, applications, inquiries, reports and claims by the Contractor the meaning of the term "Reviewed" will be held to limitations of Architect's and Engineer's responsibilities and duties as specified in the General and Supplemental Conditions. In no case will "Reviewed" by Engineer be interpreted as a release of the Contractor from responsibility to fulfill the terms and requirements of the Contract Documents.
- F. Furnish: Except as otherwise defined in greater detail, the term "Furnish" is used to mean supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
- G. Install: Except as otherwise defined in greater detail, the term "Install" is used to describe operations at the project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protection, cleaning and similar operations, as applicable in each instance.
- H. Provide: Except as otherwise defined in greater detail, the term "Provide" is used to mean "Furnish and Install", complete and ready for intended use, as applicable in each instance.
- I. Installer: Entity (person or firm) engaged by the Contractor or its subcontractor or Sub-contractor for performance of a particular unit of work at the project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protection, cleaning and similar operations, as applicable in each instance. It is a general requirement that such entities (Installers) be expert in the operations they are engaged to perform.

- J. Imperative Language: Used generally in Specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by the Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe responsibilities that must be fulfilled indirectly by the Contractor, or when so noted by other identified installers or entities.
- K. Minimum Quality/Quantity: In every instance, the quality level or quantity shown or specified is intended as minimum quality level or quantity of work to be performed or provided. Except as otherwise specifically indicated, the actual work may either comply exactly with that minimum (within specified tolerances), or may exceed that minimum within reasonable tolerance limits. In complying with requirements, indicated or scheduled numeric values are either minimums or maximums as noted or as appropriate for the context of the requirements. Refer instances of uncertainty to Owner or Engineer via a request for information (RFI) for decision before proceeding.
- L. Abbreviations and Symbols: The language of Specifications and other Contract Documents including Drawings is of an abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual word abbreviations of a self-explanatory nature have been included in text of Specifications and Drawings. Specific abbreviations and symbols have been established, principally for lengthy technical terminology and primarily in conjunction with coordination of Specification requirements with notations on Drawings and in Schedules. These are frequently defined in Section at first instance of use or on a Legend and Symbol Drawing. Trade and industry association names and titles of generally recognized industry standards are frequently abbreviated. Singular words will be interpreted as plural and plural words will be interpreted as singular where applicable and where full context of Contract Documents so indicate. Except as otherwise indicated, graphic symbols and abbreviations used on Drawings and in Specifications are those recognized in construction industry for indicated purposes. Where not otherwise noted symbols and abbreviations are defined by 1993 ASHRAE Fundamentals Handbook, chapter 34 "Abbreviations and Symbols", ASME and ASPE published standards.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.
- B. Deliver products to the project at such time as the project is ready to receive the equipment, pipe or duct properly protected from incidental damage and weather damage.
- C. Damaged equipment shall be promptly removed from the site and new, undamaged equipment shall be installed in its place promptly with no additional charge to the Owner.

1.12 SUBMITTALS

- A. Coordinate with Division 01 for submittal timetable requirements, unless noted otherwise within thirty (30) days after the Contract is awarded. The Contractor shall submit an electronic copy of a complete set of shop drawings and complete data covering each item of equipment or material. The submittal of each item requiring a submittal must be received by the Architect or Engineer within the above thirty day period. The Architect or Engineer shall not be responsible for any delays or costs incurred due to excessive shop drawing review time for submittals received after the thirty (30) day time limit. The Architect and Engineer will retain a copy of all shop drawings for their files. All literature pertaining to items subject to Shop Drawing submittal shall be submitted at one time. Submittals shall be placed in one electronic file in PDF 8.0 format and bookmarked for

individual specification sections. Individual electronic files of submittals for individual specifications shall not be permitted. Each submittal shall include the following items:

1. A cover sheet with the names and addresses of the Project, Architect, MEP Engineer, General Contractor and the Subcontractor making the submittal. The cover sheet shall also contain the section number covering the item or items submitted and the item nomenclature or description.
 2. An index page with a listing of all data included in the Submittal.
 3. A list of variations page with a listing all variations, including unfurnished or additional required accessories, items or other features, between the submitted equipment and the specified equipment. If there are no variations, then this page shall state "NO VARIATIONS". Where variations affect the work of other Contractors, then the Contractor shall certify on this page that these variations have been fully coordinated with the affected Contractors and that all expenses associated with the variations will be paid by the submitting Contractor. This page will be signed by the submitting Contractor.
 4. Equipment information including manufacturer's name and designation, size, performance and capacity data as applicable. All applicable Listings, Labels, Approvals and Standards shall be clearly indicated.
 5. Dimensional data and scaled drawings as applicable to show that the submitted equipment will fit the space available with all required Code and maintenance clearances clearly indicated and labeled at a minimum scale of 1/4" = 1'-0", as required to demonstrate that the alternate or substituted product will fit in the space available.
 6. Identification of each item of material or equipment matching that indicated on the Drawings.
 7. Sufficient pictorial, descriptive and diagrammatic data on each item to show its conformance with the Drawings and Specifications. Any options or special requirements or accessories shall be so indicated. All applicable information shall be clearly indicated with arrows or another approved method.
 8. Additional information as required in other Sections of this Division.
 9. Certification by the General Contractor and Subcontractor that the material submitted is in accordance with the Drawings and Specifications, signed and dated in long hand. Submittals that do not comply with the above requirements shall be returned to the Contractor and shall be marked "**REVISE AND RESUBMIT**".
- B. Refer to Division 1 for additional information on shop drawings and submittals.
- C. Equipment and materials submittals and shop drawings will be reviewed for compliance with design concept only. It will be assumed that the submitting Contractor has verified that all items submitted can be installed in the space allotted. Review of shop drawings and submittals shall not be considered as a verification or guarantee of measurements or building conditions.
- D. Where shop drawings and submittals are marked "**REVIEWED**", the review of the submittal does not indicate that submittals have been checked in detail nor does it in any way relieve the Contractor from his responsibility to furnish material and perform work as required by the Contract Documents.
- E. Shop drawings shall be reviewed and returned to the Contractor with one of the following categories indicated:
1. **REVIEWED:** Contractor need take no further submittal action, shall include this submittal in the O&M manual and may order the equipment submitted on.

2. **REVIEWED AS NOTED:** Contractor shall submit a letter verifying that required exceptions to the submittal have been received and complied with including additional accessories or coordination action as noted, and shall include this submittal and compliance letter in the O&M manual. The contractor may order the equipment submitted on at the time of the returned submittal providing the Contractor complies with the exceptions noted.
 3. **NOT APPROVED:** Contractor shall resubmit new submittal on material, equipment or method of installation when the alternate or substitute is not approved, the Contractor will automatically be required to furnish the product, material or method named in the Specifications and/or drawings. Contractor shall not order equipment that is not approved. Repetitive requests for substitutions will not be considered.
 4. **REVISE AND RESUBMIT:** Contractor shall resubmit new submittal on material, equipment or method of installation when the alternate or substitute is marked revise and resubmit, the Contractor will automatically be required to furnish the product, material or method named in the Specifications and/or provide as noted on previous shop drawings. Contractor shall not order equipment marked revise and resubmit. Repetitive requests for substitutions will not be considered.
 5. **CONTRACTOR'S CERTIFICATION REQUIRED:** Contractor shall resubmit submittal on material, equipment or method of installation. The Contractor's stamp is required stating the submittal meets all conditions of the contract documents. The stamp shall be signed by the General Contractor. The submittal will not be reviewed if the stamp is not placed and signed on all shop drawings.
 6. **MANUFACTURER NOT AS SPECIFIED:** Contractor shall resubmit new submittal on material, equipment or method of installation when the alternate or substitute is marked manufacturer not as specified, the Contractor will automatically be required to furnish the product, material or method named in the specifications. Contractor shall not order equipment where submittal is marked manufacturer not as specified. Repetitive requests for substitutions will not be considered.
- F. Materials and equipment which are purchased or installed without shop drawing review shall be at the risk of the Contractor and the cost for removal and replacement of such materials and equipment and related work which is judged unsatisfactory by the Owner or Engineer for any reason shall be at the expense of the Contractor. The responsible Contractor shall remove the material and equipment noted above and replace with specified equipment or material at his own expense when directed in writing by the Architect or Engineer.
- G. Shop Drawing Submittals shall be complete and checked prior to submission to the Engineer for review.
- H. Furnish detailed shop drawings, descriptive literature, physical data and a specification critique for each section indicating "compliance" and/or "variations" for the following items:
- Conduit and Fittings
 - Wire
 - Emergency Generator
 - Automatic Transfer Switches
- I. Refer to each specification section for additional requirements.

1.13 OPERATION AND MAINTENANCE MANUALS

- A. Prepare maintenance manuals in accordance with Division 1 and in addition to the requirements specified in Division 1, include the following information for equipment items:
1. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.
 2. Manufacturer's printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; and summer and winter operating instructions.
 3. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
 4. Servicing instructions and lubrication charts and schedules.

1.14 COORDINATION DRAWINGS

- A. Prepare coordination drawings to a scale of 1/4"=1'-0" or larger; detailing major elements, components, and systems of mechanical equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the Work, including (but not necessarily limited to) the following:
1. Indicate the proposed locations of pipe, duct, equipment, and other materials. Include the following:
 - a. Wall and type locations.
 - b. Clearances for installing and maintaining insulation.
 - c. Locations of light fixtures and sprinkler heads.
 - d. Clearances for servicing and maintaining equipment, including tube removal, filter removal, and space for equipment disassembly required for periodic maintenance.
 - e. Equipment connections and support details.
 - f. Exterior wall and foundation penetrations.
 - g. Routing of storm and sanitary sewer piping.
 - h. Fire-rated wall and floor penetrations.
 - i. Sizes and location of required concrete pads and bases.
 - j. Valve stem movement.
 - k. Structural floor, wall and roof opening sizes and details.
 2. Indicate scheduling, sequencing, movement, and positioning of large equipment into the building during construction.
 3. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.
 4. Prepare reflected ceiling plans to coordinate and integrate installations, air distribution devices, light fixtures, communication systems components, and other ceiling-mounted items.
- B. This Contractor shall be responsible for coordination of all items that will affect the installation of the work of this Division. This coordination shall include, but not be limited to: voltage, ampacity, capacity, electrical and piping connections, space requirements, sequence of construction, building requirements and special conditions.
- C. By submitting shop drawings on the project, this Contractor is indicating that all necessary coordination has been completed and that the systems, products and

equipment submitted can be installed in the building and will operate as specified and intended, in full coordination with all other Contractors and Subcontractors.

1.15 RECORD DRAWINGS

- A. Maintain a continuous record during the course of construction of all changes and deviations in the work from the contract drawings. Upon completion of the work, purchase a set of "Auto Positive Tracings" on vellum and make corrections as required to reflect the electrical systems as installed. Location and size of all conduit shall be accurately shown to dimension. Submit three prints of the tracings for approval. Make corrections to tracings as directed and deliver "Auto Positive Tracings" to the Architect. Record drawings shall be furnished in addition to shop drawings. Symbols on the Record drawings shall correspond to the identification symbols on the contract drawings and equipment identification plates and tags.
- B. The Contractor shall maintain a set of clearly marked black line record "AS-BUILT" prints on the job site on which he shall mark all work details, alterations to meet site conditions and changes made by "Change Order" notices. These shall be kept available for inspection by the Owner, Architect or Engineer at all times.
- C. Refer to Division 1 for additional requirements concerning record drawings. If the Contractor does not keep an accurate set of as-built drawings, the pay request may be altered or delayed at the request of the Architect. Mark the drawings with a colored pencil. Delivery of as-built prints and reproducibles is a condition of final acceptance.
- D. The record prints shall be updated on a daily basis and shall indicate accurate dimensions for all buried or concealed work, precise locations of all concealed pipe or duct, locations of all concealed valves, controls and devices and any deviations from the work shown on the Construction Documents which are required for coordination. All dimensions shall include at least two dimensions to permanent structure points.
- E. Submit three prints of the tracings for approval. Make corrections to tracings as directed and delivered "Auto Positive Tracings" to the architect. "As-Built" drawings shall be furnished in addition to shop drawings.
- F. When the option described in paragraph F., above is not exercised then upon completion of the work, the Contractor shall transfer all marks from the submit a set of clear concise set of reproducible record "AS-BUILT" drawings and shall submit the reproducible drawings with corrections made by a competent draftsman and three (3) sets of black line prints to the Architect or Engineer for review prior to scheduling the final inspection at the completion of the work. The reproducible record "AS-BUILT" drawings shall have the Engineers Name and Seal removed or blanked out and shall be clearly marked and signed on each sheet as follows:

CERTIFIED RECORD DRAWINGS

DATE:

(NAME OF GENERAL CONTRACTOR)

BY: _____

(SIGNATURE)

(NAME OF SUBCONTRACTOR)

BY: _____
(SIGNATURE)

1.16 CERTIFICATIONS AND TEST REPORTS

- A. Submit a detailed schedule for completion and testing of each system indicating scheduled dates for completion of system installation and outlining tests to be performed and schedule date for each test. This detailed completion and test schedule shall be submittal at least 90 days before the projected Project completion date.
- B. Test result reporting forms shall be submitted for review no later than the date of the detailed schedule submitted.
- C. Submit 4 copies of all certifications and test reports to the Architect or Engineer for review adequately in advance of completion of the Work to allow for remedial action as required to correct deficiencies discovered in equipment and systems.
- D. Certifications and test reports to be submitted shall include, but not be limited to those items outlined in Section of Division 26.

1.17 MAINTENANCE MANUALS

- A. Coordinate with Division 1 for maintenance manual requirements, unless noted otherwise bind together in "D ring type" binders by National model no. 79-883 or equal, binders shall be large enough to allow 1/4" of spare capacity. Three (3) sets of all approved shop drawing submittals, fabrication drawings, bulletins, maintenance instructions, operating instructions and parts exploded views and lists for each and every piece of equipment furnished under this Specification. All sections shall be typed and indexed into sections and labeled for easy reference and shall utilize the individual specification section numbers shown in the Electrical Specifications as an organization guideline. Bulletins containing information about equipment that is not installed on the project shall be properly marked up or stripped and reassembled. All pertinent information required by the Owner for proper operation and maintenance of equipment supplied by Division 26 shall be clearly and legibly set forth in memoranda that shall, likewise, be bound with bulletins.
- B. Prepare maintenance manuals in accordance with Special Project Conditions, in addition to the requirements specified in Division 26, include the following information for equipment items:
 - 1. Identifying names, name tags designations and locations for all equipment.
 - 2. Fault Current calculations and Coordination Study.
 - 3. Reviewed shop drawing submittals with exceptions noted compliance letter.
 - 4. Fabrication drawings.
 - 5. Equipment and device bulletins and data sheets clearly highlighted to show equipment installed on the project and including performance curves and data as applicable, i.e., description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and model numbers of replacement parts.
 - 6. Manufacturer's printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; and summer and winter operating instructions.

7. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions, servicing instructions and lubrication charts and schedules.
 8. Equipment name plate data.
 9. Wiring diagrams.
 10. Exploded parts views and parts lists for all equipment and devices.
 11. Color coding charts for all painted equipment and conduit.
 12. Location and listing of all spare parts and special keys and tools furnished to the Owner.
 13. Furnish recommended lubrication schedule for all required lubrication points with listing of type and approximate amount of lubricant required.
- C. Refer to Division 1 for additional information on Operating and Maintenance Manuals.
- D. Operating and Maintenance Manuals shall be turned over to the Owner or Engineer a minimum of 14 working days prior to the beginning of the operator training period.

1.18 OPERATOR TRAINING

- A. The Contractor shall furnish the services of factory trained specialists to instruct the Owner's operating personnel. The Owner's operator training shall include 12 hours of onsite training in three 4 hour shifts.
- B. Before proceeding with the instruction of Owner Personnel, prepare a typed outline in triplicate, listing the subjects that will be covered in this instruction, and submit the outline for review by the Owner. At the conclusion of the instruction period obtain the signature of each person being instructed on each copy of the reviewed outline to signify that he has a proper understanding of the operation and maintenance of the systems and resubmit the signed outlines.
- C. Refer to other Division 26 Sections for additional Operator Training requirements.

1.19 SITE VISITATION

- A. Visit the site of the proposed construction in order to fully understand the facilities, difficulties and restriction attending the execution of the work.
- B. Before submitting a bid, it will be necessary for each Contractor whose work is involved to visit the site and ascertain for himself the conditions to be met therein in installing his work and make due provision for same in his bid. It will be assumed that this Contractor in submitting his bid has visited the premises and that his bid covers all work necessary to properly install the equipment shown. Failure on the part of the Contractor to comply with this requirement shall not be considered justification for the omission or faulty installation of any work covered by these Specifications and Drawings.
- C. Understand the existing utilities from which services will be supplied; verify locations of utility services, and determine requirements for connections.
- D. Determine in advance that equipment and materials proposed for installation fit into the confines indicated.

1.20 WARRANTY

- A. The undertaking of the work described in this Division shall be considered equivalent to

the issuance, as part of this work, of a specific guarantee extending one year beyond the date of completion of work and acceptance by Owner, against defects in materials and workmanship. Materials, appliances and labor necessary to effect repairs and replacement so as to maintain said work in good functioning order shall be provided as required. Replacements necessitated by normal wear in use or by Owner's abuse are not included under this guarantee.

- B. All normal and extended warranties shall include parts, labor, miscellaneous materials, travel time, incidental expenses, freight/shipping, refrigerant, oils, lubricants, belts, filters and any expenses related to service call required to diagnose warranty problems.

1.21 TRANSFER OF ELECTRONIC FILES

- A. Project documents are not intended or represented to be suitable for reuse by Architect/Owner or others on extensions of this project or on any other project. Any such reuse or modification without written verification or adaptation by Engineer, as appropriate for the specific purpose intended, will be at Architect/Owner's risk and without liability or legal exposure to Engineer or its consultants from all claims, damages, losses and expense, including attorney's fees arising out of or resulting thereof.
- B. Because data stored in electric media format can deteriorate or be modified inadvertently, or otherwise without authorization of the data's creator, the party receiving the electronic files agrees that it will perform acceptance tests or procedures within sixty (60) days of receipt, after which time the receiving party shall be deemed to have accepted the data thus transferred to be acceptable. Any errors detected within the sixty (60) day acceptance period will be corrected by the party delivering the electronic files. Engineer is not responsible for maintaining documents stored in electronic media format after acceptance by the Architect/Owner.
- C. When transferring documents in electronic media format, Engineer makes no representations as to the long term compatibility, usability or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by Engineer at the beginning of the Project.
- D. Any reuse or modifications will be Contractor's sole risk and without liability or legal exposure to Architect, Engineer or any consultant.
- E. The Texas Board of Architectural Examiners (TBAE) has stated that it is in violation of Texas law for persons other than the Architect of record to revise the Architectural drawings without the Architect's written consent.
 - 1. It is agreed that "MEP" hard copy or computer-generated documents will not be issued to any other party except directly to the Architect/Owner. The contract documents are contractually copyrighted and cannot be used for any other project or purpose except as specifically indicated in AIA B-141 Standard Form of Agreement Between Architect and Owner.
 - 2. If the client, Architect or Owner of the project requires electronic media for "record purposes", then AutoCAD/ Revit documents will be prepared by Engineer on electronic media such as removable memory devices, flash drives or CD's. These documents can also be submitted via file transfer protocols. AutoCAD/ Revit files will be submitted with all title block references intact to permit the end user to only view and plot the drawings. Revisions will not be permitted in this configuration.
 - 3. At the Architect/Owner's request, Engineer will assist the Contractor in the preparation of the submittals and prepare one copy of AutoCAD/ Revit files on electronic media or submit through file transfer protocols. The electronic media

will be prepared with all indicia of documents ownership removed. The electronic media will be prepared in a ".rvt" or ".dwg" format to permit the end user to revise the drawings.

PART 2 - PRODUCTS

2.01 SUBSTITUTIONS

- A. The names and manufacturers and model numbers have been used in the Contract documents to establish types of equipment and standards of quality. Where more than one manufacturer is named for a specific item of equipment, only one of the specified manufacturers will be considered for approval. Where only one manufacturer is mentioned with the phrase "or approved equal", Contractor may submit an alternate manufacturer for consideration, provided the following conditions are met:
1. Submit alternate equipment with complete descriptive data in shop drawing form. Provide sample of equipment upon request for review by Architect. Samples will be returned if requested in writing.
 2. Alternate equipment must be equal from the standpoint of materials, construction and performance.
 3. Alternate submittal must be presented to the Engineer/Architect ten (10) days prior to bid date for approval.
- B. The Architect and Engineer shall be the sole judge of quality and equivalence of equipment, materials and methods.

2.02 All materials and products used on this project shall be listed by Underwriters' Laboratories.

2.03 ACCESS DOORS

- A. Wherever access is required in walls or ceilings to concealed junction boxes, pull boxes, equipment, etc., installed under this Division, furnish a hinged access door and frame with flush latch handle to another Division for installation. Doors shall be as follows:
1. Plaster Surfaces: Milcor Style K.
 2. Ceramic Tile Surfaces: Milcor Style M.
 3. Drywall Surfaces: Milcor Style DW.
 4. Install panels only in locations approved by the Architect.

2.04 EQUIPMENT PADS

- A. Provide 4-inch-high concrete pads for indoor floor mounted equipment. Pads shall conform to the shape of the equipment with a minimum of 6 inch beyond the equipment. Top and sides of pads shall be troweled to a smooth finish, equivalent to the floor. External corners shall be bullnosed to a 3/4" radius, unless shown otherwise.
- B. Provide 6-inch-high concrete pads for all exterior mounted equipment. Pads shall conform to the shape of the equipment with a minimum of 6 inch beyond the equipment. Provide a 4-foot monolithic extension to the pad in front of the equipment for service when mounted on a non-finished area (i.e. landscape, gravel, clay, etc.) Top and sides of pads shall be troweled to a smooth finish. External corners shall be bullnosed to a 3/4" radius, unless shown otherwise.
- C. Provide a minimum 6-inch-high, steel reinforced concrete pad for generators. Pads shall be sized 6" larger than the outside perimeter dimensions. Provide a 4-foot monolithic extension to the pad around the equipment for service when mounted on a non-finished area (i.e. landscape, gravel, clay, etc.). Refer to structural details. Top and sides of pads shall be troweled to a smooth finish. External corners shall be bullnosed to a 3/4" radius,

unless shown otherwise. The generator shall be bolted to the concrete pad per the manufacturers details.

- D. Provide steel reinforced concrete pad for utility transformers. Pads shall comply with Utility Company Standards.

2.05 ESCUTCHEONS

- A. Provide heavy chrome or nickel plated plates, of approved pattern, on conduit passing through walls, floors and ceilings in finished areas. Where conduit passes through a sleeve, no point of the conduit shall touch the building construction. Caulk around such conduit with sufficient layers of two hour rated firesafing by Thermafiber 4.0 P.C.F. density, U.S.G. fire test 4/11/78 and seal off openings between conduit and sleeves with non-hardening mastic prior to application of escutcheon plate. Escutcheons shall be Gravler Sure-Lock, or approved equal.

2.06 SPACE LIMITATIONS

- A. Equipment shall be chosen which shall properly fit into the physical space provided and shown on the drawings, allowing ample room for access, servicing, removal and replacement of parts, etc. Adequate space shall be allowed for clearances in accordance with Code requirements. Physical dimensions and arrangement of equipment shall be subject to the approval of the Architect.

2.07 PAINTING

- A. All factory assembled equipment for electrical work, except light fixtures, that normally is delivered with a factory applied finish shall be delivered with a hard surface factory applied finish such as baked-on machinery enamel which will not require additional field painting. The finish shall consist of not less than 2 coats of medium gray color paint USA No. 61 Munsell Notation 8-3G, 6. 10/0.54 enamel. This Contractor shall protect this finish from damage due to construction operations until acceptance of the building. He shall be responsible for satisfactorily restoring any such finishes or replacing equipment that becomes stained or damaged.

2.08 ELECTRICAL SYSTEM IDENTIFICATION

- A. Conduit Systems: Provide adequate marking of major conduit which is exposed or concealed in accessible spaces to distinguish each run as either a power or signal/communication conduit. Except as otherwise indicated, use orange banding with black lettering. Provide self-adhesive or snap-on type plastic markers. Indicate voltage for that raceway. Locate markers at ends of conduit runs, on pull boxes, on junction boxes, near switches and other control devices, near items of equipment served by the conductors, at points where conduit passes through walls or floors, or enters non-accessible construction and at spacings of not more than 50 feet along each run of conduit. Switch-leg conduit and short branches for power connections do not have to be marked, except where conduit is larger than $\frac{3}{4}$ inch. Branch circuit conduits, junction boxes and pull boxes shall be marked with a permanent marker indicating panel name and branch circuit numbers.
- B. Underground Cable Identification: Bury a continuous, preprinted, bright colored plastic ribbon cable marker with each underground cable (or group of cables), regardless of whether conductors are in conduit, duct bank, or direct buried. Locate each directly over cables, 6 to 8 inches below finished grade.
- C. Identification of Equipment:

1. All major equipment shall have a manufacturer's label identifying the manufacturer's address, equipment model and serial numbers, equipment size, and other pertinent data. Care shall be taken not to obliterate this nameplate in any way.
2. A black-white-black laminated plastic engraved identifying nameplate shall be secured by stainless steel screws to each automatic transfer switch, switchboard, distribution panel, motor control center, motor starter panels and panelboards.
 - a. Identifying nameplates shall have ¼ inch high engraved letters and shall contain the following information:
 - 1) Name
 - 2) Voltage
 - 3) Phase
 - 4) "3" or "4" wire, and
 - 5) Where it is fed from.
 - b. An example of a panelboard nameplate is:
Center Panel – 1HB
480/277 volt, 3 phase, 4 wire
Center Fed from DP2
 - c. An example of an automatic transfer switch nameplate is:
Center ATS #2
480/277 volt, 3 phase, 4 wire, 4 pole
Center Fed from MSB and DPE
3. Each feeder device in a switchboard, distribution panel, and motor control center device shall have a nameplate showing the load served in ½ inch high engraved letters.
4. A black-white-black laminated plastic engraved identifying nameplate shall be secured by screws to each safety switch, disconnect switch, individual motor starter, enclosed circuit breaker, wireway, and terminal cabinet.
 - a. Identifying nameplates shall have ¼ inch high engraved letters and shall indicate the equipment served.
 - b. An example if a disconnect switch is: AHU-1.
5. Prohibited Markings: Markings which are intended to identify the manufacturer, vendor, or other source from which the material has been obtained are prohibited for installation within public, tenant, or common areas within the project. Also, prohibited are materials or devices which bear evidence that markings or insignias have been removed. Certification, testing (example, Underwriters' Laboratories, Inc.), and approval labels are exceptions to this requirement.
6. Warning Signs: Provide warning signs where there is hazardous exposure associated with access to or operation of electrical facilities. Provide text of sufficient clarity and lettering of sufficient size to convey adequate information at each location; mount permanently in an appropriate and effective location. Comply with recognized industry standards for color and design.
7. Operational Tags: Where needed for proper and adequate information on operation and maintenance of electrical system, provide tags of plasticized card stock, either preprinted or hand printed. Tags shall convey the message, example: "DO NOT OPEN THIS SWITCH WHEN BURNER IS OPERATING."

PART 3 - EXECUTION

3.01 EXCAVATING AND BACKFILLING

- A. Trenching and backfilling and other earthwork operations required to install the facilities specified herein shall conform to the applicable requirements of Division 2 (95% of maximum standard density). Where trenching or excavation is required in improved areas, the backfill shall be compacted to a condition equal to that of adjacent undisturbed earth and the surface of the area restored to the condition existing prior to trenching or

excavating operations. Provide a minimum of 3" of sand underneath all conduits. The plans indicate information pertaining to surface and sub-surface obstructions; however, this information is not guaranteed. Should obstructions be encountered whether or not shown, the Contractor shall alter routing of new work, reroute existing lines, remove obstructions where permitted, or otherwise perform whatever work is necessary to satisfy the purpose of new work and leave existing surfaces and structures in a satisfactory and serviceable condition. **All work shall comply with OSHA Standards.**

3.02 WORKMANSHIP AND CONCEALMENT

- A. The work of this Section shall be performed by workman skilled in their trade. Installation shall be consistent in completeness whether concealed or exposed. Each item of electrical work shall be concealed in walls, chases, under floors and above ceilings except:
 - 1. Where shown to be exposed.
 - 2. Where exposure is necessary to the proper function.

3.03 SLEEVES, CUTTING AND PATCHING

- A. This section shall be responsible for placing sleeves for all conduit passing through walls, partitions, sound walls, beams, floors, roof, etc. Sleeves through below-grade walls shall use water-tight fitting manufactured by O-Z/Gedney.
- B. All cutting and patching will be done under another Division, but this Section will be responsible for timely performance of this work and layout of holes and setting sleeves.
- C. All un-used sleeves shall be sealed with 2 hour UL approved fire sealant manufactured by "3M" or approved equal.
- D. Refer to 26 05 33 for additional requirements.

3.04 ELECTRICAL GEAR

- A. Install all electrical equipment in accordance with the National Electrical Code and as shown on the drawings.
- B. Lighting contractors, time clocks, disconnect switches, etc. mounted in mechanical/electrical rooms shall be mounted at a working height not requiring a ladder, when wall space is available. Installation of these devices at greater elevations shall be approved by the Engineer. Contractor shall provide a coordination sketch of each mechanical/electrical room noting locations and mounting heights of all electrical devices (note bottom and top elevations) shown to be installed. Sketches shall be provided to the Engineer for review and the general contractor for coordination with other trades working in these rooms.

3.05 CLEANING

- A. Clean lighting fixtures and equipment.
- B. Touch-up and refinish scratches and marred surfaces on panels, switches, starters, and transformers.

3.06 CORROSIVE AREAS

- A. In areas of a corrosive nature, which include but are not limited to the following: pool

equipment rooms, cooling towers and areas subject to salt air, etc., provide NEMA 4 X stainless steel or fiberglass reinforced enclosures for contactors, panel boards, controllers, starters, disconnects and materials used as supporting means (i.e. plastibond unistrut, pipe, fittings). The use of spray on coating may be acceptable in some applications.

3.07 TESTS AND INSPECTIONS

- A. Tests and inspection requirements shall be coordinated with Division I.
- B. Date for final acceptance test shall be sufficiently in advance of completion date of contract to permit alterations or adjustments necessary to achieve proper functioning of equipment prior to contract completion date.
- C. Conduct re-tests as directed by Architect on portions of work or equipment altered or adjusted as determined to be necessary by final acceptance test. No resultant delay or consumption of time as a result of such necessary re-test beyond contract completion date shall relieve Contractor of his responsibility under contract.
- D. Put circuits and equipment into service under normal conditions, collectively and separately, as may be required to determine satisfactory operation. Demonstrate equipment to operate in accordance with requirements of these specifications. Perform tests in the presence of Architect. Furnish instruments and personnel required for tests.
- E. Final Inspection:
 - 1. At the time designated by the Architect, the entire system shall be inspected by the Architect and Engineer. The contractor or his representative shall be present at this inspection.
 - 2. Panelboards, switches, fixtures, etc., shall be cleaned and in operating condition.
 - 3. Certificates and documents required hereinbefore shall be in order and presented to the Architect prior to inspection.
 - 4. Panel covers, junction box covers, etc., shall be removed for visual inspection of the wire, bus bars, etc.
 - 5. After the inspection, any items which are noted as needing to be changed or corrected in order to comply with these specifications and the drawings shall be accomplished without delay.
- F. The contractor shall provide a thermographic test using an independent testing laboratory using an infrared scanning device. This test shall include but not limited to all switchboards, distribution panelboards, panelboards, automatic transfer switches and other electrical distribution devices. This test shall be conducted to locate high temperature levels. This test shall be conducted between 3 to 8 months after occupancy, but not beyond the one year warranty period. Submit test to the architect and engineer using test reporting forms. All unacceptable conditions shall be corrected prior to the end of the warranty period.

END OF SECTION

SECTION 26 05 19 - WIRE, CABLE AND RELATED MATERIALS

PART 1 - GENERAL

1.01 SCOPE

- A. Provide 600 volt building wire, cable and connectors and 300 volt wire, cable and connectors.
- B. WORK INCLUDED: Include the following Work in addition to items normally part of this Section.
 - 1. Wiring for lighting and power.
 - 2. Automatic Control Wiring.
 - 3. Connection of equipment shown.
- C. WORK SPECIFIED ELSEWHERE:
 - 1. Heating, ventilating, and air conditioning equipment.
 - 2. Structured cabling system.
 - 3. Coaxial cables

1.02 STANDARDS

- A. UL83
- B. ASTM B-3
- C. All wire cable and connectors shall be UL approved.

1.03 ACCEPTABLE MANUFACTURERS

- A. 600 VOLT WIRE AND CABLE
 - 1. Southwire
 - 2. Encore
 - 3. Cerro
- B. 300 VOLT WIRE AND CABLE
 - 1. Westpenn
 - 2. Beldon
 - 3. Alpha
 - 4. Tappan - Southwire
- C. FLEXIBLE CABLE SYSTEMS
 - 1. AFC Modular Cable Systems
- D. CONNECTORS
 - 1. IlSCO
 - 2. Cooper
 - 3. AMP - TYCO
 - 4. Burndy
 - 5. Ideal

6. 3M
7. O.Z. Gedney
8. Thomas & Betts
9. Buchanan

1.04 SUBMITTALS

- A. Shop drawings shall include, but not limited to:
 1. Cutsheets of wire, cable and connectors to indicate the performance, fabrication procedures, product variations, and accessories.

1.05 REQUIREMENTS OF REGULATORY AGENCIES WORK IN ACCORDANCE WITH:

- A. National Electrical Code.
- B. Local, municipal, or state codes that have jurisdiction.

PART 2 - PRODUCTS

2.01 WIRING

- A. All wire shall be new and continuous without weld, splice, or joints throughout its length. It must be uniform in cross-section, free from flaws, scales and other imperfections.
- B. WIRE MATERIAL: Conductors shall be soft drawn, annealed copper. Aluminum wiring is not acceptable unless otherwise noted on drawings.
- C. TYPES:
 1. Provide type XHHW insulation for all buried feeders and service entrance conductors.
 2. Provide type "THHN/THWN-2" insulation for all branch circuits and above grade feeders.
 3. All wire No. 8 and larger shall be stranded. All wire No. 10 and smaller shall be stranded or solid.
 4. Provide type "XHHW" or other 90 degrees insulation wiring for branch circuit wiring installed through continuous rows of fluorescent fixture bodies.
 5. All 300-volt cable including but not limited to telephone, fire alarm, data, CATV and security shall be UL listed for use in return air plenums.
- D. CONDUCTOR SIZES
 1. Feeder conductors shall be sized for a maximum of 2% drop in rated voltage at scheduled load.
 2. Branch circuit conductors shall be sized for a maximum 3% drop in the rated voltage to the longest outlet on the circuit.
 3. Minimum wire shall be No. 12, unless otherwise shown on Drawings or required by Code.
- E. COLOR CODING: No. 6 or larger shall use tape for color coding. No. 8 and smaller wire shall be color coded in accordance with the governing authority requirements or as follows:

120/208 Volt
Neutral: White
Phase A: Black
Phase B: Red
Phase C: Blue
Ground: Green

277/480 Volt
Neutral: Gray
Phase A: Brown
Phase B: Purple
Phase C: Yellow
Ground: Green

120/240 Volt
Neutral: White
Phase A: Black
Phase B: Orange
Phase C: Blue
Ground: Green

2.02 GROUNDING

Permanently connect all conduit work, motors, starters, and other electrical equipment to grounding system in accordance with the National Electrical Code.

PART 3 - EXECUTION

3.01 WIRE

- A. Do not pull wire into conduit until Work of an injurious nature is completed. Where two or more circuits run to a single outlet box, each circuit shall be properly tagged. Wyreze or approved equal may be used as a lubricant where necessary.
- B. Splices shall be fully made up in outlet boxes with compression crimp-on type splice connectors.
- C. Joints and splices will not be permitted in service entrance or in feeders. Joints in branch circuits will be permitted where branch circuits divide, and then shall consist of one through-circuit to which the branch shall be spliced. Joints shall not be left for the fixture hanger to make. Connect joints and splices with Buchanan Series "2000" solderless connectors complete with insulating caps or properly sized twist on wire nuts
- D. All stranded conductors shall be furnished with lugs or connectors.
- E. Connectors furnished with circuit breakers or switches shall be suitable for copper wire termination.
- F. "Sta-Cons" shall be used to terminate stranded conductors on all switches and receptacles.
- G. All stranded #10 and small conductors shall be terminated with an approved solderless terminal if the device or light fixture does not have provisions for clamp type securing of the conductor.
- H. The jacket for all travelers used on 3-way and 4-way switches shall be pink.

3.02 BALANCING SYSTEM

The load on each distribution and lighting panel shall be balanced to within 10% by proper arrangement of branch circuits on the different phase legs. Provide written documentation showing results. Submit with O & M manuals.

3.03 LOW VOLTAGE WIRING

- A. Low voltage wiring shall be plenum rated. All wiring in mechanical rooms, electrical

rooms, drywall ceiling, inaccessible areas, underground, plaster ceiling, inside concealed walls areas exposed to occupant view, and other areas subject to physical damage shall be run in conduit.

- B. Low voltage wiring shall be routed in separate raceways from power wiring systems.
- C. Sleeves shall be placed in the forms of concrete, masonry and fire rated walls, floor slabs and beams, for the passage of wiring. Sleeves should be set in place a sufficient time ahead of the concrete work so as not to delay the work. Sleeves shall be rigid galvanized steel.
- D. Provide Caddy J-hooks supported independently from other system to support cable at 4-foot on center or closer if required by manufacture.

3.04 CABLE SUPPORTS

- A. Provide cable supports in all vertical raceways in accordance with Article 300-19 of the NEC.

3.05 DEFECTS

- A. Defects shall include, but are not to limited to, the following:
 - 1. Tripping circuit breakers under normal operation.
 - 2. Improperly connected equipment.
 - 3. Damaged, torn, or skinned insulation.

END OF SECTION

SECTION 26 05 26 - GROUNDING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

- A. The requirements of the General Conditions and Supplementary Conditions apply to all work herein.

1.02 SCOPE

- A. **WORK COMBINED WITH OTHER SECTIONS:** Combine the work specified herein with the following Sections to form a single responsibility for the Work:
 - 1. Electrical.
 - 2. Basic materials and methods.
- B. Provide electrical service, equipment and wiring device grounding as shown, scheduled and as specified.
- C. The types of grounding include, but not limited to, the grounding bonding of all equipment devices, building steel piping, and as required by the National Electrical Code, Local Inspection Department and Power Company.

1.03 STANDARDS

- A. NATIONAL ELECTRICAL CODE (NFPA-70)
- B. Local municipal and State codes that have jurisdiction.
- C. NECA

1.04 ACCEPTABLE MANUFACTURES

- A. Provide grounding products manufactured by Copperweld and Cadweld.

1.05 SUBMITTALS

- A. Shop drawings shall include, but not limited to the following:
 - 1. Cut sheets of ground rods, clamps and connectors.
 - 2. Grounding system diagram.

PART 2 - PRODUCTS

- A. **GENERAL:** Provide all materials required to construct a complete grounded electrical system.
- B. **GROUND RODS:** Ground rods shall be 3/4" inch diameter by 10 feet long construction with copper jacket and a steel core.
- C. **CLAMPS:** Ground clamps shall be copper except for steel or iron pipes in which the clamps shall be galvanized iron.
- D. **CONDUCTORS:** Conductors shall be connected by means of an approved pressure connector or clamp.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. GENERAL: Install grounding system as shown and specified to ensure a properly grounded system.
- B. GROUNDING SEPARATELY DERIVED ALTERNATING CURRENT SYSTEM
 - 1. STANDBY EMERGENCY GENERATOR: The generator neutral shall be bonded to the generator when a 4 pole switched neutral automatic transfer switch is specified.
- C. GROUNDING CONDUCTOR: A grounding conductor and metallic conduit system shall bond all equipment served by the electrical system. Provide a flexible bonding jumper for isolated metallic piping and ductwork and around expansion fittings and joints.
- D. CONDUIT GROUNDING BUSHING:

Conduit terminating in equipment that has a ground bus such as switchboards, panelboards, etc., shall have grounding bushings installed. Ground each conduit by means of a grounding bushing and to the ground bus in the equipment.
- E. MOTORS: The frame of all motors shall be grounded.
- F. SPECIAL GROUNDING: Provide a #6 AWG copper grounding conductor for each telephone board, television system, etc. Terminate the grounding conductor on ground bus and to the building electrical grounding system. Refer to 800-40(d) and 820-40(d) of the NEC.
- G. REMOTE PANELBOARDS: Provide a grounding electrode conductor all remote panels as required by the NEC and shown on drawings.
- H. LIGHTING FIXTURES: Flexible fixture whips containing a green grounding conductor shall be used to connect light fixtures. Flexible fixture whips shall not exceed ten feet.
- I. RECEPTACLES: All receptacles shall be grounded using the branch circuit grounding conductor. Receptacles shall use an approved grounding yoke.

- 3.02 TESTING: Perform a ground resistance test using a biddle analog or digital portable earth/ground resistance tester. The system resistance shall not exceed 5 OHMS. Provide additional electrodes as required (refer to 250-84 of the NEC or the most current edition 250-56). Test shall not be conducted following wet weather. Provide personal instruments to conduct these tests and submit certified test for review. Test shall be verified by Engineer.

END OF SECTION

SECTION 26 05 33 - RACEWAYS

PART 1 - GENERAL

1.01 SCOPE

- A. Provide electrical raceways and fittings as shown, scheduled and specified.
- B. The types of raceways and fittings required are as follows:
 - 1. Rigid hot-dipped galvanized steel conduit (GRC) (RMC)
 - 2. Intermediate hot-dipped galvanized steel conduit (IMC)
 - 3. Electrical metallic tubing (EMT)
 - 4. PVC (Sch. 40 & 80)
 - 5. Flexible metal conduit (FMC)
 - 6. Liquid-tight flexible metal conduit (LFMC)
 - 7. PVC coated rigid galvanized steel conduit
 - 8. Rigid Aluminum Conduit (RAC)

1.02 STANDARDS

- A. ANSI, C80.1 & C80.3
- B. NEMA FB-1
- C. NEMA TC3
- D. UL, 6, 797 & 1242

1.03 ACCEPTABLE MANUFACTURERS

- A. Raceways
 - 1. Allied
 - 3. Republic
 - 2. Prime Conduit (Carlon)
 - 3. Wheatland Tube
 - 4. Cantex
 - 5. Western Tube
 - 6. Robroy Industries
- B. Fittings
 - 1. Appleton
 - 2. Crouse Hinds
 - 3. Steel City
 - 4. O.Z. Gedney
 - 5. Carlon
 - 6. Raco, Inc.
 - 7. Bridgeport
- C. Boxes

1. RACO
2. Thomas and Betts
3. EATON
4. Crouse-Hinds
5. Appleton

D. Surface

1. Hubbell
2. Wiremold

1.04 SUBMITTALS

A. Product data shall include but not be limited to:

1. Cutsheets for raceways, fitting, solvents, primers, etc.

1.05 REQUIREMENTS OF REGULATORY AGENCIES WORK IN ACCORDANCE WITH:

- A. National Electrical Code.
- B. Local, municipal, or state codes that have jurisdiction.

PART 2 – PRODUCTS

A. Rigid Galvanized Steel Conduit.

1. Hot-dip galvanized rigid steel conduit, galvanized after fabrication. Products shall comply with UL6 and ANSI C80.1. All threads shall be galvanized after cutting. A uniform zinc coating shall be applied to the inner and outer walls.
2. Fittings shall be threaded and shipped with thread protectors.

B. Aluminum Rigid Conduit

1. Rigid aluminum (alloy 6063-T1) conduit shall be manufactured using 606 3 Alloy in temper designation T-1. Products shall comply with UL6A and ANSI 680.5
2. Fittings for rigid aluminum conduit shall be threaded aluminum shipped with thread protectors.

C. PVC Coated Rigid Galvanized Steel Conduit.

1. Conduit shall be same as rigid metal conduit with a factory-applied 40-mil-thick covering of polyvinyl chloride (PVC) bonded to the metal.
2. Fittings shall be the same as rigid metal conduit fittings with a factory-applied, 40-mil-thick covering of polyvinyl chloride (PVC) bonded to the metal

D. Intermediate Metal Conduit (IMC).

1. Conduit shall be similar to rigid steel conduit except thinner wall.

2. Fittings shall be threaded hot-dipped galvanized and shipped with thread protectors.
- E. Electrical Metallic Tubing (EMT).
1. EMT shall be made of hot-dip galvanized strip steel. The interior shall be coated with a corrosion-resistant lubricant for ease of wiring pulling.
- F. Rigid Nonmetallic Conduit (PVC).
1. Conduit shall be schedule 40 or 80 polyvinyl chloride (PVC), UV stabilized, rated for 90°C conductors.
 2. Fittings shall be solvent weld socket type.
- G. Flexible Metal Conduit (Greenfield).
1. Spirally wound continuously interlocked zinc coated strip steel.
 2. Fittings shall be one screw for smaller than 1-1/2-inch, two screw for 1-1/2-inch and larger, double clamp steel or malleable iron, either cadmium plated or hot-dip galvanized.
- H. Liquid-Tight Flexible Steel Conduit (Seal Tite).
1. Spirally wound continuously interlocked zinc coated strip steel with a UV stabilized polyvinyl chloride (PVC) outer jacket bonded to the conduit.
 2. Fittings shall be compression type, malleable iron, with insulated throat, either cadmium plated or hot-dip galvanized.

2.01 PULL BOXES

- A. Exterior in-ground pull boxes shall be concrete or polymer as manufactured by Brooks, Dalworth, Hubbell Quazite, or approved equivalent. Covers shall include identification of systems contained.

2.02 WIREWAYS

- A. Wireways shall be made of not less than 16-gauge sheet steel for 4 inch and 6 inch square sizes and 14 gauge steel for 8 inch and 12 inch square sizes. Couplings end plates, and knockouts shall be furnished as required. Each section of wireways shall be rigidly supported.
- B. The finish shall be ANSI-49 gray epoxy paint applied by a cathodic electrode position paint process over a corrosion resistant phosphate preparation for NEMA 1 wireways. Provide galvanized steel for NEMA 3R wireways. NEMA 3R wireways and auxiliary gutters are for horizontal mounting only.

2.03 FITTINGS

- A. Couplings for rigid steel or intermediate conduit shall be hot dipped galvanized steel. Set screw type is not acceptable.

- B. Steel or malleable iron fittings shall be used on all other raceway types except for PVC. Die-cast fittings are not allowed.
- C. Couplings for aluminum raceways shall be threaded aluminum.
- D. EMT systems shall utilize steel insulated throat, threadless, water tight compression type connectors and threadless steel water tight compression type couplings.
- E. Coupling and connectors accessories and fittings for PVC coated rigid galvanized steel shall be PVC coated.
- F. Liquidtight Flexible Metal Conduit (LFMC) fittings shall be steel. Plastic is not acceptable.
- G. Provide nylon bushing on end of all low voltage cabling system conduits (sleeves, rough-ins, etc.).

PART 3 - EXECUTION

3.01 PROVIDE CONDUIT AS FOLLOWS:

A. GENERAL

The Drawings are diagrammatic, and are intended to show the general location of outlets, devices, fixtures, and arrangement and control of circuits. The Contractor shall determine exact locations by actual measurement of the building or by reference to the Architectural Drawings.

- B. Except as noted or otherwise specified, all wiring shall be installed in galvanized rigid steel, rigid aluminum conduit or electrical steel tube (EMT) of the proper size to contain the number of conductors required in accordance with the latest edition of the N.E.C. Where conduit sizes are shown on the drawings, these shall take preference. Contractor shall epoxy coat galvanized rigid steel conduit for use in natatoriums.
- C. Raceways shall not be routed below or within slab-on-grade, foundations, or below grade of suspended slab structures, unless specifically noted or indicated otherwise on plan.
- D. EMT in sizes up to 4 inches when concealed or not exposed to damage and located indoors only. (EMT is not acceptable in wet and damp location.)
- E. PVC coated rigid galvanized steel shall be used for all penetrations of slab on grade.
- F. Rigid galvanized steel where embedded in concrete or masonry construction, mechanical yard or in exterior/interior applications where subject to damage.
- G. Rigid aluminum shall be used in exterior applications. (i.e. roof, top of canopies)
- H. PVC schedule 40 and 80 may be utilized underground, in or below slab where shown on the construction documents.
- I. MINIMUM SIZE: 3/4 inch.
- J. PVC coated rigid galvanized steel conduit shall be coated inside and outside.

- K. PVC coated rigid galvanized steel conduit shall be used at cooling towers, corrosive areas and pool pump rooms.
- L. Fixture whips: Refer to 26 51 00 for additional information.
- M. Flexible metal shall be used for connecting rotating equipment installed in conditioned spaces.
- N. Liquidtight Flexible Metal Conduit (LFMC) shall be used for connecting rotating equipment installed in non-conditioned spaces and outside.
- O. Of such size, and so installed that conductors may be drawn in without injury or excessive strain.
- P. Where entering panels, pull boxes, junction boxes, or outlet boxes, shall be secured in place with lock nuts inside and outside, and insulated bushings inside.
- Q. Have Red seal type VCC or approved equal cable supports in risers, as required by N.E.C.
- R. Have ends reamed after cutting and application of die.
- S. Keep conduit corked and dry during construction, and swab out before conductors are pulled.
- T. Have bends and offsets made with approved tools. Bends or offsets in which the pipe is crushed or deformed shall not be installed.
- U. Where not embedded in concrete or masonry, be firmly secured by approved clamps, half-straps or hangers.
- V. Have O.Z. Gedney or approved equal expansion fittings where crossing building expansion joints.
- W. Except in the mechanical equipment rooms, run conduit concealed, and by the shortest practicable route between outlets. Install risers, drops, and offsets necessary to avoid conflict with ductwork, piping, structural members, and similar items.
- X. Install exposed conduit in mechanical rooms, and elsewhere as indicated, parallel to horizontal and vertical lines of walls, ceilings, and floors.
- Y. Fixtures in finished areas having suspended acoustical ceilings shall be connected to outlet boxes of lighting grid by flexible metal conduit; length not to exceed ten feet (six feet if using 3/8" manufactured fixture "whips").
- Z. Outlet boxes in partitions shall never be set back to back. They shall be offset to prevent undue noise transmission from room to room.
- AA. Concealed conduit shall run in as direct manner as possible using long bends. Exposed conduit shall be run parallel with or at right angles to the lines of the building; and all bends shall be made with standard conduit elbows or conduit benders. Not more than equivalent of four quarter bends shall be used in any run between terminals and cabinet, of between outlet or junction boxes. Approved condulets shall be used in lieu of conduit elbows where ease of installation and appearance warrants their use and approved by the engineer. Conduit joints shall be made with approved couplings and unions.

- BB. Conduits shall be continuous from outlet to outlet and from outlets to cabinets, junction or pull boxes and shall be electrically continuous throughout. Terminals of all conduits shall be provided with double lock nuts and bushing or terminated on conduit hubs. Use of running threads is prohibited.
- CC. Each entire conduit system shall be installed complete before any conductors are drawn in. Every run of conduit shall be finished before covering up to guard against obstructions and omissions.
- DD. Sleeves shall be placed in the forms of concrete, masonry and fire rated walls, floor slabs and beams, for the passage of conduits. Sleeves should be set in place a sufficient time ahead of the concrete work so as not to delay the work. Sleeves shall be rigid galvanized steel with a minimum thickness of 1.07MM and set to extend 4" above slab.
- EE. All pipe penetrations through walls and concrete floors shall be fire rated by applying USG Thermafiber in the space between the concrete and the pipe. The fire rating shall be additionally sealed by using 3M brand model CP 25 or 303 fire barrier caulk and putty. All fire rating material shall be installed in accordance with manufacturer's printed instructions.
- FF. All conduit shall be cleaned and swabbed to remove all foreign matter and moisture prior to pulling wire and cable. All boxes in which conduits terminate shall be cleaned of all concrete mortar and other foreign matter.
- GG. Provide #30 nylon pulling line in all conduits in which permanent wiring is not installed.
- HH. All conduit shall be securely fastened and supported using hot galvanized malleable iron one-hole pipe straps, clamps, hanger or other means approved by the engineer. Supports shall be as required per NEC. Tie wire shall not be used as support or securing means. Support conduit independently of ceiling hanger wire. Use all thread rods to support outlet boxes, junction boxes and conduit.
- II. When PVC conduit is routed underground, all stub-up's and bends 15° and greater shall be PVC coated rigid galvanized steel. Use PVC coated rigid galvanized steel when penetrating concrete on grade.
- JJ. Flexible and liquid-tight flexible steel conduit shall be used for final connections to utilization equipment. Liquid-tight flexible steel conduit shall be used for all exterior locations and all interior locations subject to moisture, vibrations, rotating equipment and dry-type transformers. Refer to Section 26 02 00 for additional information concerning flexible steel conduit.
- KK. Contact the Architect and Engineer for an installation review before covering any below grade or above grade conduit.
- LL. All new outlets shall be flush mounted. In remodeled areas where wall construction prohibits flush mounting, provide Hubbell 2400 series, unless noted otherwise. Verify exact location and routing with architect before installation.
- MM. Contractor shall not penetrate water proof barriers without using proper fitting to maintain barriers. This shall include exterior walls and slabs. Coordinate with Architect for proper methods.

3.02 CONDUIT CORROSION PROTECTION

- A. Branch circuit conduits installed in concrete slabs on fill or grade shall be positioned in a manner to ensure complete concrete cover. In no case shall such conduits be exposed below or above the slab surfaces, or penetrate the waterproof membrane.
- B. At locations where metallic conduits pass through slabs on grade or transitions below grade, PVC coated rigid galvanized conduit shall be used.
- C. Conduit installed in the air gap between the water resistant barrier and finish brick shall not exceed 2ft in length.

3.03 EXPANSION JOINTS

- A. Install approved expansion fitting in all conduit runs in excess of 150 feet or when crossing building expansion joints.

3.04 OUTLET AND JUNCTION BOXES

- A. Provide an approved galvanized outlet box with adequate volume for number of conductors installed.
- B. Provide standard galvanized switch boxes of the required number of gangs. Switch boxes where conduit is exposed shall be handy boxes or approved equal.
- C. Outlet boxes for receptacles shall be similar to Universal 52151 with suitable raised cover. Receptacle boxes where conduit is exposed shall be handy boxes or approved equal.
- D. Weatherproof boxes shall be FS or FD. Provide these boxes in all non-conditioned areas, exterior areas and natatoriums.
- E. Outdoor boxes shall be NEMA 3R, with conduit connections made by Myers Hubs.
- F. See notes and details on Drawings for special box requirements.
- G. Provide junction boxes required to facilitate installation of the various conduit systems. Provide support boxes required for risers, each complete with approved cable supports as described elsewhere in this Division.
- H. Outlet boxes for drywall shall be standard galvanized 4" square boxes with the appropriate device cover. Secure all outlet boxes with a backing brace connected to two adjacent studs. Mounting brackets with a single ear to rest against the backing sheet rock are not acceptable.
- I. Provide floor outlet fittings for telephone to match fittings for duplex floor receptacles.
- J. Provide 3-1/2" deep gangable masonry boxes in all masonry wall (CMU). Steel City GW-135-G or approved equal.
- K. Provide shallow 4"x4" boxes in all demountable partitions.
- L. Metallic boxes located in fire rated walls or partitions shall be separated by a minimum horizontal distance of 24 in. This minimum separation distance between metallic boxes may be reduced when "Wall Opening Protective Materials" (CLIV) are installed according to the requirements of their Classification. Metallic boxes shall not be installed on opposite side of walls or partitions of staggered stud construction unless "Wall Opening Protective

Materials” are installed with the metallic boxes in accordance with Classification requirements for the protective materials.

- M. Junction, pull boxes, condulets, gutters, disconnects, contactors, etc., above 2-foot x 2-foot grid ceilings shall be mounted within 18-inches of ceiling grid. Above 2-foot x 4 – foot grid ceiling they shall be mounted within 30-inches of ceiling grid. All junction box, pull box, gutter openings shall be side or bottom accessible.

3.05 THRU-WALL SEALS

- A. Provide O.Z. Gedney “Thru-wall” seals for all conduits passing through concrete structure below grade, above grade, and floor penetrations below grade. These prevent moisture from entering the building.
- B. Straight sleeves are not acceptable.

3.06 PULL BOXES

- A. Interior Pull boxes shall be provided for conduit systems as required and shall be constructed of galvanized steel of not less than gauge and size specified by National Electrical Code. Size pull boxes per NEC 314.28.
- B. Where two or more feeders pass through a common pull box, they shall be tagged to indicate clearly their electrical characteristics, circuit number, and panel designation.
- C. Exterior in-ground pull boxes shall have open bottoms with sand and rock beds below box for drainage of water. Provide closed bottom boxes where specified. Closed bottom boxes shall be provided with sumps for portable pump to allow for extracting water. Refer to details on the drawings.
- D. Pull boxes mounted in pole bases shall be coordinated with the pour of the pole base and shall be flush with finished footing.

3.07 WIREWAYS

- A. Wireways shall be installed as indicated or required and locations shall be coordinated with architect.
- B. Wiring in wireways shall be neatly bundled, tied and suitably tagged.

END OF SECTION

SECTION 26 32 13 - ENGINE GENERATOR

PART 1 GENERAL

1.1 SUMMARY

- A This section includes the following items from a single supplier:
 - 1. Engine Generator Set.
 - 2. Enclosure
 - 3. Related Accessories as specified

- B Related Requirements
 - 1. It is the intent of this specification to secure an engine-driven generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
 - 2. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted minimum 10 days prior to the closing of the bid with a line by line summary description of all the items of compliance, any items that have been omitted or have been taken exception to, and a complete description of all deviations.
 - 3. It is the intent of this specification to secure a generator set system that has been tested during design verification, in production, and at the final job site. The generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
 - 4. All equipment shall be new and of current production by an international, power system manufacturer of generators, transfer switches, and paralleling switchgear. The manufacturer shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

1.2 SUBMITTALS

- A Action Submittals
 - 1. Product Data
 - a The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied; schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set, the transfer switch, and the remote annunciator panel if it is included elsewhere in these specifications.
 - 2. Shop Drawings

- B Informational Submittal
 - 1. Certificates
 - a The generator set shall be listed to UL 2200 or submitted to an independent third party certification process to verify compliance as installed.
 - 2. Test and Evaluation Reports
 - 3. Manufacturer's Instruction
 - 4. Source Quality Control Submittals
 - 5. Field or Site Quality Control
 - 6. Manufacturer's Report

- C Closeout Submittal
 - 1. Maintenance Contracts
 - 2. Operation And Maintenance Data
 - 3. Warranty Documentation

D Maintenance Material Submittals

1. Provide one (1) copies of the following documents and manuals for the engine, the alternator, and the generator set:
 - a) Operation Manuals
 - b) Warranty Certificate
 - c) Installation Manuals
 - d) Wiring Diagrams
 - e) Specification Sheets

1.3 Quality Assurance

A Regulatory Agency

1. The generator set shall conform to the requirements of the following codes and standards:
 - a CSA C22.2, No. 14-M91 Industrial Control Equipment.
 - b EN50082-2, Electromagnetic Compatibility-Generic Immunity Requirements, Part 2: Industrial.
 - c EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
 - d IEC8528 part 4, Control Systems for Generator Sets.
 - e IEC Std 61000-2 and 61000-3 for susceptibility, 61000-6 radiated and conducted electromagnetic emissions.
 - f IEEE446 Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
 - g NFPA 70, National Electrical Code, Equipment shall be suitable for use in systems in compliance to Article 700, 701, and 702.
 - h NFPA 99, Essential Electrical Systems for Health Care Facilities.
 - i NFPA 110, Emergency and Standby Power Systems. The generator set shall meet all requirements for Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit. Component level type tests will not substitute for this requirement.
2. Qualifications
 - a The equipment shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production and service of its complete product line.
 - b The power system shall be produced by a manufacturer who has produced this type of equipment for a period of at least 10 years and who maintains a service organization available twenty-four hours a day throughout the year.
3. Manufacturers
 - a The power system shall be furnished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.

1.4 Delivery, Storage, and Handling

- A Delivery and Acceptance Requirements
- B Storage and Handling Requirements

1.5 Field or Site Conditions

A Ambient Conditions

1. Engine- generator set shall operate in the following conditions without any damage to the unit or its loads.
 - a Ambient Temperature: 100 °F
 - b Altitude : 500 ft
 - c Relative Humidity: 95%

2.1 Equipment

A Equipment

1. The generator set shall be a Kohler model KG60 with a 4P10X alternator. It shall provide 60.00 kVA and 60.00 kW when operating at 120/240 volts, 60 Hz, 1.0 power factor. The generator set shall be capable of a 130°C Standby rating while operating in an ambient condition of less than or equal to 100 °F and a maximum elevation of 500 ft above sea level. The standby rating shall be available for the duration of the outage. A 2 Year Warranty shall be included.
- 2.

B Engine

1. The minimum 6.2-liter displacement engine shall deliver a minimum of 103 HP at a governed engine speed of 1800 rpm, and shall be equipped with the following:
 - a. Electronic isochronous governor capable of 1.0% steady-state frequency regulation
 - b. 12-volt positive-engagement solenoid shift-starting motor
 - c. 130-ampere automatic battery charging alternator with a solid-state voltage regulation and negative ground polarity
 - d. Positive displacement, full-pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain
 - e. Dry-type replaceable air cleaner elements for normal applications
 - f. The engine shall be naturally aspirated and fueled by Natural Gas
 - g. Operating fuel pressure for natural gas shall be between 7.0 and 11.0 inches of H2O
 - h. Natural gas fuel consumption at 100% load shall not exceed 975 cubic feet per hour when operating in standby configuration
 - i. The exhaust manifold shall be dry.
 - j. Exhaust flow shall not exceed 478 cubic feet per minute at rated kW.
 - k. Exhaust temp shall not exceed 1274F at rated kW.
 - l. The engine shall have a minimum of 8 cylinders in a V configuration and be liquid-cooled
2. The engine shall be EPA certified from the factory
3. The generator must accept rated load in one-step.

C Alternator

1. The alternator shall be salient-pole, brushless, 2/3-pitch, with 4 bus bar provision for external connections, self-ventilated, with drip-proof construction and amortisseur rotor windings, and skewed for smooth voltage waveform. The ratings shall meet the NEMA standard (MG1-32.40) temperature rise limits. The insulation shall be class H per UL1446 and the varnish shall be a vacuum pressure impregnated, fungus resistant epoxy. Temperature rise of the rotor and stator shall be limited to 130°C Standby. The PMG based excitation system shall be of brushless construction controlled by a digital, three phase sensing, solid- state, voltage regulator. The AVR shall be capable of proper operation under severe nonlinear loads and provide individual adjustments for voltage range, stability and volts-per-hertz operations. The AVR shall be protected from the environment by conformal coating. The waveform harmonic distortion shall not exceed 5% total RMS measured line-to-line at full rated load. The TIF factor shall not exceed 50.
2. The alternator shall have a maintenance-free bearing, designed for 40000 hour B10 life. The alternator shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.
3. The generator shall be inherently capable of sustaining at least 300% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current-support devices.
4. Motor starting performance and voltage dip determinations shall be based on the complete generator set. The generator set shall be capable of supplying 138.00 LRVKVA for starting motor loads with a maximum instantaneous voltage dip of 35%, as measured by a digital RMS transient recorder in accordance with IEEE Standard 115. Motor starting performance and voltage dip determination that does not account for all components affecting total voltage dip, i.e., engine, alternator, voltage regulator, and governor will not be acceptable. As such, the generator set shall be prototype tested to optimize and determine performance as a generator set system.

D Vibration Isolation

1. Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

2.2 Source Quality Control

A. Non-Conforming Work

1. To ensure that the equipment has been designed and built to the highest reliability and quality standards, the manufacturer and/or local representative shall be responsible for three separate tests: design prototype tests, final production tests, and site tests.
- a. **Design Prototype Tests.** Components of the emergency system, such as the engine/generator set, transfer switch, and accessories, shall not be subjected to prototype tests because the tests are potentially damaging. Rather, similar design prototypes and preproduction models shall be subject to the following tests:
 - i. Maximum power (kW)
 - ii. Maximum motor starting (kVA) at 35% instantaneous voltage dip.
 - iii. Alternator temperature rise by embedded thermocouple and/or by resistance method per NEMA MG1-32.6.
 - iv. Governor speed regulation under steady-state and transient conditions.
 - v. Voltage regulation and generator transient response.
 - vi. Harmonic analysis, voltage waveform deviation, and telephone influence factor.
 - vii. Three-phase short circuit tests.
 - viii. Alternator cooling air flow.
 - ix. Torsional analysis to verify that the generator set is free of harmful torsional stresses.
 - x. Endurance testing.
- b. **Final Production Tests.** Each generator set shall be tested under varying loads with guards and exhaust system in place. Tests shall include:
 - i. Single-step load pickup
 - ii. Safety shutdown device testing
 - iii. Rated Power @ 0.8 PF
 - iv. Upon request a certified test record sent prior to shipment.
- c. **Site Tests.** The manufacturer's distribution representative shall perform an installation check, startup, NFPA110 2 hour Resistive Load Bank and building load test. The engineer, regular operators, and the maintenance staff shall be notified of the time and date of the site test. The tests shall include:
 - i. Fuel, lubricating oil, and antifreeze shall be checked for conformity to the manufacturer's recommendations, under the environmental conditions present and expected.
 - ii. Accessories that normally function while the set is standing by shall be checked prior to cranking the engine. These shall include: block heaters, battery chargers, alternator strip heaters, remote annunciators, etc.
 - iii. Generator set startup under test mode to check for exhaust leaks, path of exhaust gases outside the building, cooling air flow, movement during starting and stopping, vibration during operation, normal and emergency line-to-line voltage and frequency, and phase rotation.
 - iv. Automatic start by means of a simulated power outage to test remote-automatic starting, transfer of the load, and automatic shutdown. Prior to this test, all transfer switch timers shall be adjusted for proper system coordination. Engine coolant temperature, oil pressure, and battery charge level along with generator set voltage, amperes, and frequency shall be monitored throughout the test.

END OF SECTION

SECTION 26 32 23 - AUTOMATIC TRANSFER SWITCH

PART 1 GENERAL

1.1 SUMMARY

- A This section includes the following items from a single supplier:
 - 1. Automatic transfer switch
 - 2. Related Accessories as specified
- B Related Requirements
 - 1. It is the intent of this specification to secure an automatic transfer switch that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
 - 2. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted minimum 10 days prior to the closing of the bid with a line by line summary description of all the items of compliance, any items that have been omitted or have been taken exception to, and a complete description of all deviations.
 - 3. It is the intent of this specification to secure an automatic transfer switch that has been tested during design verification, in production, and at the final job site. The automatic transfer switch will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
 - 4. All equipment shall be new and of current production by an international, power system manufacturer of generators, transfer switches, and paralleling switchgear. The manufacturer shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

1.2 SUBMITTALS

- A Action Submittals
 - 1. Product Data
 - a The submittal shall include specification sheets showing all standard and optional accessories to be supplied; schematic wiring diagrams, dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set, the transfer switch, and the remote annunciator panel if it is included elsewhere in these specifications.
 - 2. Shop Drawings
- B Informational Submittal
 - 1. Certificates
 - 2. Test and Evaluation Reports
 - 3. Manufacturer's Instruction
 - 4. Source Quality Control Submittals
 - 5. Manufacturer's Report
- C Closeout Submittals
 - 1. Maintenance Contracts
 - 2. Operation And Maintenance Data
 - 3. Warranty Documentation
- D Maintenance Material Submittals
 - 1. Literature

1.3 Quality Assurance

- A Regulatory Agency
 - 1. The automatic transfer switch shall conform to the requirements of the following codes and standards:

- a UL 1008 - Standard for Transfer Switch Equipment
 - b IEC 947-6-1 Low-voltage Switchgear and Control gear; Multifunction equipment; Automatic Transfer Switching Equipment EN55011, Limits and Methods of Measurement of Radio Interference Characteristics of Industrial, Scientific and Medical Equipment.
 - c NFPA 70 - National Electrical Code
 - d NFPA 99 - Essential Electrical Systems for Health Care Facilities
 - e NFPA 110 - Emergency and Standby Power Systems
 - f IEEE Standard 446 - IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
 - g NEMA Standard ICS 10-2005, Electromechanical AC Transfer Switch Equipment.
 - h EN61000-4-4 Fast Transient Immunity Severity Level 4
 - i EN61000-4-5 Surge Immunity Class 4 (voltage sensing and programmable inputs only)
 - j IEEE 472 (ANSI C37.90A) Ring Wave Test
 - k IEC Specifications for EMI/EMC Immunity (CISPR 11, IEC 1000-4-2, IEC 1000-4-3, IEC 1000-4-4, IEC 1000-4-5, IEC 1000-4-6, IEC 1000-4-8, IEC 1000-4-11)
 - l CSA C22.2 No. 178 certification
2. Qualifications
- a The automatic transfer switch shall be produced by a manufacturer who is ISO 9001 certified for the design, development, production and service of its complete product line.
 - b A manufacturer who has produced this type of equipment for a period of at least 10 years and who maintains a service organization available twenty-four hours a day throughout the year shall produce the automatic transfer switch.
3. Manufacturers
- a The automatic transfer switch shall be furnished by a single manufacturer who shall be responsible for the design, coordination, and testing of the complete system. The entire system shall be installed as shown on the plans, drawings, and specifications herein.
 - b The manufacturer shall maintain a national service organization of employing personnel located throughout the contiguous United States. The Service center's personnel must be factory trained and must be on call 24 hours a day, 365 days a year.
 - c The manufacturer shall maintain records of each switch, by serial number, for a minimum of 20 years.

1.4 Delivery, Storage, and Handling

- A Delivery and Acceptance Requirements
- B Storage and Handling Requirements

1.5 Field or Site Conditions

A Ambient Conditions

- 1. Automatic transfer switch shall operate in the following conditions without any damage to the unit or its loads.
 - a Ambient Temperature: -4 to 158 Degrees F
 - b Relative Humidity: 5% to 95% noncondensing

1.6 Warranty

A Manufacturer's Warranty

- 1. The ATS shall include a standard warranty covering two (2) years to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from the date of initial startup.
- 2. The ATS manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall regularly engage in maintenance contract programs to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions; adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and functional tests performed on all systems.

PART 2 PRODUCTS

2.1 Equipment

A Equipment

1. Furnish and install an automatic transfer switches system(s) with 2-Pole / 3-Wire, Solid Neutral,
2. **250** Amps, 240V/60Hz. Each automatic transfer shall consist of an inherently double throw power transfer switch mechanism and a microprocessor controller to provide automatic operation. All transfer switches and controllers shall be the products of the same manufacturer.

B Manufacturer

1. Automatic transfer switches shall be Kohler Service Entrance Rated - Programmed Transition KEP-DFNA-0250SNN. Any alternate shall be submitted for approval to the consulting engineer at least 10 days prior to bid date. Alternate bids shall include a line-by-line clarification of the specification marked with "D" for deviation; "E" for exception, and "C" for comply.

C Enclosure

1. The ATS shall be furnished in a NEMA 1 enclosure.
2. All standard door mounted switches and indicating LEDs shall be integrated into a flush-mounted, interface membrane or equivalent in the enclosure door for easy viewing & replacement. The panel shall be capable of having a manual locking feature to allow the user to lockout all membrane mounted control switches to prevent unauthorized tampering. This cover shall be mounted with hinges and have a latch that may be padlocked. The membrane panel shall be suitable for mounting by others when furnished on open type units.

2.2 Operation

A Operators

B Controls

1. A four line, 20 character LCD display and dynamic 4 button keypad shall be an integral part of the controller for viewing all available data and setting desired operational parameters. Operational parameters shall also be available for viewing and control through the communications interface port or USB. The following parameters shall only be adjustable via a password protected programming on the controller:
 - a Nominal line voltage and frequency
 - b Single or three phase sensing
 - c Operating parameter protection
 - d Transfer operating mode configuration (Standard transition, Programmed transition, or Closed transition)

C Voltage and Frequency

1. Voltage (all phases) and frequency on both the normal and emergency sources shall be continuously monitored, with the following pickup, dropout, and trip setting capabilities (values shown as % of nominal unless otherwise specified):

Parameter	Dropout/Trip	Pickup/Reset
b Under voltage	75 to 98%	85 to 100%
c Over voltage	106 to 135%	95 to 100% of trip
d Under frequency	95 to 99%	80 to 95%
e Over frequency	01 to 115%	105 to 120%
f Voltage unbalance	5 to 20%	3 to 18%
2. Repetitive accuracy of all settings shall be within $\pm 0.5\%$ over an operating temperature range of -20°C to 70°C.
3. An adjustable dropout time for transient voltage and frequency excursions shall be provided. The time delays shall be 0.1 to 9.9 seconds for voltage and .1 to 15 seconds for frequency.
4. Voltage and frequency settings shall be field adjustable in 1% increments either locally with the display and keypad, remotely via the communications interface port or USB.
5. The controller shall be capable of sensing the phase rotation of both the normal and emergency sources. The source shall be considered unacceptable if the phase rotation is not the preferred rotation selected (ABC or BAC). Unacceptable phase rotation shall be indicated on the LCD; the service required LED and the annunciation through the communication protocol and dry contacts. In addition, the phase rotation sensing shall be capable of being disabled, if required.
6. The controller shall be capable of detecting a single phasing condition of a source, even though a voltage may be regenerated by the load. This condition is a loss of phase and shall be considered a failed source.

7. Source status screens shall be provided for both normal & emergency to provide digital readout of voltage on all 3 phases (phase to phase and phase to neutral), frequency, and phase rotation.

2.3 Accessories

- A. Programmable Exerciser. A programmable exerciser shall be supplied to allow programming of up to 56 on/off events.
- B. Standard I/O Module. The standard I/O Module shall have two programmable inputs and six programmable outputs.
 - i. Inputs Available 2
 1. Contact Closure
 2. Current 5mA Max.
 3. Connection Type Terminal Strip
 4. Wire Size #14-24 AWG
 5. Max Distance 700 feet
 - ii. Outputs Available 6
 1. Contact Type Form C (SPDT)
 2. Contact Rating 2A @ 30VDC, 500mA @ 125VAC
 3. Connection Type Terminal Strip
 4. Wire Size #14-24

2.4 Source Quality Control

A Test and Inspection

1. Upon request, the manufacturer shall provide a notarized letter certifying compliance with all of the requirements of this specification including compliance with the above codes and standards. The certification shall identify, by serial number(s), the equipment involved. No exceptions to the specifications, other than those stipulated at the time of the submittal, shall be included in the certification.
2. The ATS manufacturer shall be certified to ISO 9001 International Quality Standard and the manufacturer shall have third party certification verifying quality assurance in design/development, production, installation and servicing in accordance with ISO 9001.

END OF SECTION

